

# **POLICY REFORM AND NAURAL RESOURCE MANAGEMENT**

## **WEEK 2 DAY 5**

### **LAND TENURE AND LAND REFORM, CREDIT POLICY AND ECONOMIC POLICY REFORMS AND THEIR ENVIRONMENTAL IMPACT: AN INTEGRATED ANALYSIS TOWARDS MORE SUSTAINABILITY**

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**ABSTRACT:** Wherever there is human activity, the environment undergoes influences, and often suffers negative impact from agriculture or industrial activity. Over the last two decades, SAPs that comprise a number of measures that are not necessarily environmental-neutral have influenced economic policy. The impact of human economic activity against this background of SAPs on the environment and natural resources in Third World countries is analysed and approaches for sustainable economic development combined with environmental policy proposed. Land policy, combined with credit for inputs and long-term investment, is another topic that needs attention as both clearly fall within the framework of a broader economic policy. It is the thesis of this chapter that increased security of land tenure through development of private property should go hand in hand with the development of viable financial institutions that can offer timely credit for long-term investment in land resource improvement and seasonal credit.

**Keywords:** systemic, holistic, sustainability, transparency

## 1. INTRODUCTION

Many countries either in the so-called developed world or the developing world face, and have always faced, environmental problems that are usually caused by nature and/or by man. There often is a causal feedback and/or feedforward relationship between both nature and man, so that it is sometimes difficult to differentiate between both and/or to know for sure which of both (nature or man) is/was the prime cause of degradation.

**Q. Point out environmental problems in your country, and give the direct and indirect cause(s) which lead to these negative events. In fact, what we would like to construct here are the so-called problem trees leading to these events.**

Popular wisdom often blames the climate or geographical conditions for environmental problems. Disasters such as those caused by volcanoes exploding, hurricanes, and tsunamis or, in some specific cases, droughts and floods (such as the ones that have caused the 1998 problems in China) are definitely peak climatic events with huge negative impact. However, numerous flood and drought events, to name just those, are caused and/or exacerbated by human interventions and activities (or lack thereof).

More recent global problems that arose with ozone depletion, global warming, etc. are clearly caused by human activities. In some cases, they are a direct consequences of a (more or less recent) change in technology and thus go hand in hand with the modern, energy-consuming way of life that has been developed and introduced in most parts of the world. In others, however, they are inherent to traditional production methods, the prevailing farming system in a number of areas (which includes and even 'depends' on seasonal/annual burning of the vegetation to clear the land for cropping and kill off noxious weeds and pests) or linked to the crop produced (the case of methane production which comes with irrigated rice production as shown in Asia).

To summarise, when considering the impact of man on the environment and identifying the root causes of environmental problems one considers the impacts on the environment/natural resources of (i) natural resource management practices; (ii) socio-economic factors; and (iii) institutional, policy, legal and regulatory frameworks that influence how people interact with the environment. These will be presented and discussed in the following text

## **2. STRUCTURAL ADJUSTMENT PROGRAMS AND THE ENVIRONMENT**

An important element in the discussion when dealing with environmental issues in the context of developing countries, are the Structural Adjustment Programs (SAPs) that have been implemented (or 'imposed') in numerous developing countries since the early '80s. At that moment, deepening economic problems in scores of developing countries forced governments to recognise they were living beyond their means: many countries were surviving only by relying on repeated infusion of foreign capital or by drawing down natural capital at unsustainable rates. SAPs sought to correct these economic balances and improve the economic efficiency of developing and transition economies.

Under these SAPs (and amongst other objectives), government expenditure had/has to come down, and production output increased to improve the balance of payment and debt situation of the country. On a national level, these reforms sought to shift economies from inward- to outward-oriented growth strategies through liberalised trade regimes; to reduce the role of the state in economic affairs, particularly as a direct economic agent; to support privatisation of major sectors of national economies, to remove impediment to the international flow of capital and support formation of domestic capital markets; and to deregulate and reform domestic labour markets. Initially conceived of and applied as a means to restructure national economies, SAPs have transcended the national context for which they were designed. They became a tool of global economic policy: i.e. this internally consistent, relatively uniform package of economic reforms has been fundamental to forging the globally integrated economic system unfolding today. By a global (ised) economy is meant a system in which economic agent tend to operate at a global level, and by an integrated economy is meant a system in which national economies are increasingly interdependent.

Most developing countries have had little choice but to adjust to the new economic realities of the emerging global market system. Left uncorrected, the downward cycle of scores of national economies during the 1980s would have guaranteed (to varying degrees) a deepening of poverty, the collapse of social cohesion, and a weakening of the natural resource base. Failure to adjust would have guaranteed further marginalisation from world markets and equally constrained access to international capital. The most pressing question therefore is not whether to undertake SAPs but rather what their purpose, priorities, and processes should be.

The concrete measures to reach these objectives are manifold, but normally contain a strong increase in industrial and agricultural production components ultimately geared at

maximising export revenues. SAPs and the emerging global economic order more generally have been driven by the promise that an export-led growth strategy would raise living standards of individuals and countries around the globe. However, if all countries undergoing SAPs try to increase their outputs, there is a significant chance that by focusing on similar products in countries endowed with the similar resources (climate, soil), prices will come down. This will force them to increase production output even more in order to maintain their export revenues at the same level.

This increased production spiral in the absence of adequate environmental legislation (a context of checks and balances) and/or controlling bodies and measures has already and can further worsen existing and cause new environmental problems in developing countries that are only too eager to maximise profits. In the words of Susan George, the (new) production models advocated by these SAPs will boomerang in the face of the developed world (the leading force behind the drive and pleas for structural adjustment) as they cause environmental degradation, increased drug abuse and un(der)employment, among others. The increased industrial and agricultural production under SAPs through the use of production technology and processes that maximise output in a context of limited environmental legislation is a threat to the environment not only in the developing countries themselves but also in the (adjacent) developed or other countries and the world at large.

**Q. How would you evaluate the impact of SAP on the environment in your country (if, of course your country has been through a SAP)? More specifically, could you point out what (agricultural and industrial) production processes have been changed/intensified under these SAPs?**

**Q. Is diversification of the production processes and the kind of products produced in countries that implement SAP a solution to the problem of negative environmental impact of these SAPs?**

Although there was initial scepticism on behalf of the major development institutions, the results of a study by WWF on the environmental costs and benefits of SAPs in three developing countries (Côte d'Ivoire, Mexico and Thailand), firmly established the influence of macro-economic and sectoral reforms on the natural resource base of developing countries (Reed, 1992).

The latter concern only became evident after SAPs had been implemented. Indeed, predating, then running parallel to, the evolution of SAPs has been the emergence of sustainability as the new development paradigm. But, whereas structural adjustment was driven and shaped by the very centres of international economic power, sustainable development emerged from public pressure (organised through NGOs or green political parties), ultimately forcing itself onto the agenda of governments and international institutions.

This emergence of new development standards of sustainability is a reflection of the historic shift taking place in the human condition. The period of abundance of environmental goods and services has given way to one of growing environmental scarcities (as first denounced by the Club of Rome report in 1972). This change was caused by the cumulative effects of humankind's failure to protect the environmental functions of our ecological infrastructure and by the conversion of environmental resources into short-term income-generating activities.

Over the last 20 years, two major forces have challenged and partially corrected these unnecessarily high environmental costs. First, direct pressure from civil society in both (especially) industrialised and (to a lesser degree) developing countries has demanded public intervention to halt and repair the damages being inflicted on the environment. Second, northern and southern countries have been engaged in protracted debate over both the causes of the development crisis in the South, and the attribution of responsibility for addressing environmental needs. That debate has embraced environmental issues as well and, in response, has altered patterns and priorities of international financial transfers and development assistance.

However, despite the strengthening of national environmental management capacity and the implementation of international environmental agreements, all signs point to increasingly broad and severe environmental problems in the years to come.

#### **Box 1. An Operational Definition of Sustainable Development**

Sustainable development is *people-centred* in that it aims to improve the quality of human life, and it is *conservation-based* in that it is conditioned by the need to respect nature's ability to provide resources and life-supporting services. In this perspective, sustainable development means improving the quality of human life while living within the carrying capacity of supporting ecosystems.

This definition is a *normative* concept that embodies standards of judgement and behaviour to be respected as the human community seeks to satisfy its needs of survival and well-being. The definition embraces three basic components: the economic, social and environmental, which constitute the foundation of sustainable development. The three are intimately interdependent and, consequently, require that efforts to promote development support all three components. Programs addressing only one of these three will also influence the two others, a mechanism that is often forgotten.

The *economic* component of sustainability requires societies to pursue economic growth paths that generate an increase in true income, not short-term policies that lead to long-term impoverishment. Further, it means that societies generate an optimal flow of income while maintaining their basic stock of capital. Economic sustainability also implies internalising all costs, including the societal and environmental cost associated with the production and disposition of goods, thereby implementing the **full cost principle**.

The *social* dimension of sustainable development embodies the fulfilment of basic human needs and equity of opportunity. For a development path to be sustainable over a long period, wealth, resources and opportunity need to be shared in such a manner that all people have access to minimum standards of security, human rights, and social benefits, such as food, health, education, shelter, and opportunities for self-development. Social equity means ensuring that all people have access to education and the opportunity to make productive, justly remunerated contributions to society.

The *environmental* dimension of sustainable development is predicated on maintaining the long-term integrity and therefore the productivity of the planet's life-support systems and environmental infrastructure. Environmental sustainability requires that *environmental goods and services are used in such a way as not to diminish the complex interrelated functions of nature or the overall contribution of environmental goods and services to human well-being*. Application of this precautionary principle should become an integral feature of all development programs to ensure against either human harm or ecological irreversibilities.

### *2.1. Short-term Environmental Impact of Adjustment Programs, and the New Economic Order (Year 1998) in General.*

Analytical research and evaluation of the impact of SAPs on the environment has lead Reed (1996) to draw up five general conclusions which show the complexity of the outcomes of the adjustment process(es) on economic, social, and environmental aspects of adjusting countries.

The first conclusion is that the SAPs facilitated integration of the countries' economies into the emerging and ever developing global market system by adopting a development strategy based on:

- promotion of an outward-oriented growth strategy;
- expansion of the private sector's role as the growth process's driving force;
- removal of barriers to the international flow of capital;
- diminution of the state's economic role; and
- deregulation and restructuring of domestic labour markets.

The adjustment programs differ from the emerging export-oriented economic model only in that these programmatic instruments compress and accelerate economic reforms to help countries adjust more rapidly to international market conditions. The subsequent conclusions regarding environmental impacts can thus be extended beyond adjustment programs per se to the emerging economic order more generally.

Second, integration of developing countries and especially those undergoing SAPs into the emerging global market system by changing relative prices has mixed environmental impacts. Environmental effects depend on (1) specific components of the reform packages; (2) the incentive structure in place prior to adjustment; and (3) the institutional medium through which the reforms are implemented. Many price corrections associated with adjustment programs hold the potential for effecting positive economic and environmental outcomes. BUT they often do not realise this potential because complementary policy and institutional reforms do not accompany price corrections. This mixed environmental record reflects the lack of intentionality to use the adjustment process to strengthen national environmental performance as a vital component of a country's long-term economic growth.

Third, the environmental impacts of SAPs programs differ according to the kind of economy undergoing reform, that is, whether they are extractive, agricultural, manufacturing, or information/service economies (the latter not being discussed):

- a principal response of *extractive economies* to SAPs is to expand and intensify extraction of natural resources to be traded on international markets. This is consistent with the types of policy changes applied, including removing barriers to capital flows, encouraging expansion of the export sector, and reducing the state's regulatory capacity as regards natural resource management. Under these conditions, the environmental impacts are often damaging, and indications are that these negative effects are cumulative.
- In *agricultural economies*, the commercial and subsistence sectors have reacted quite differently to new price signals. *Commercial farmers* responded to the new price signals transmitted from the outward-oriented growth model by expanding and often diversifying production. The ability of *medium-size to large commercial farmers* to respond to new prices, to work within emerging marketing conditions, and to use inputs more efficiently often enabled them to absorb the deteriorating ratio of input-producer product prices experienced in some countries. There have even been some environmental improvements associated with these changes, and the intensified agricultural production should strengthen those positive impacts over time. In contrast, *subsistence farmers* extensified production in response to deteriorating economic and social conditions, leading to major environmental damage. In some countries, farmers are confronted by both internal and external agricultural frontiers. Rural families with little or no land have no alternative but to intensify pressure on marginally productive agricultural areas or enter the growing ranks of informal workers in urban centres. The mutually reinforcing dynamic of deepening poverty and environmental degradation in broad areas of some countries indicates that environmental problems will indeed worsen in coming years. The actual overall response and environmental impacts depend largely on the relative size and the economic and social conditions of those two agricultural economic sectors.
- Countries with an important *manufacturing sector* have also tried to adjust to intensified international competition, reduced government subsidies, and privatisation programs. Their reforms' environmental impacts range from more efficient use of increasingly scarce natural resources to higher levels of pollution caused by increased, albeit more efficient, industrial production. The potential environmental gains are frequently offset by the failure to implement complementary policy and institutional reforms. If and when manufacturing is accompanied by extractive and agricultural activities there is even a greater tendency towards deeper integration into international markets, including increased opportunities for commercial farmers, coupled with downward pressure on wages and living standards of the poor, particularly the rural poor. As a consequence, there is also here an intensified pressure from the poor on available but often marginal agricultural lands, and increased, unsustainable, mining of natural resources in order to survive. When the rural poor have exhausted those limited, often short-term opportunities, they spill into urban areas to be absorbed into the informal sector associated with the manufacturing economy.

Fourth, SAPs affect social classes and groups to varying degrees and in distinct ways. Moreover, adjustment effects different changes in the ways those social groups interact with and rely on the country's environment and natural resources:

- In the *stabilisation* phase, the benefits of the adjustment programs have accrued more consistently to the wealthy, the export-oriented producers and merchants, the commercial farmers, and the investors in extractive industries. The environmental impacts of these more dynamic, better-off, or dominant social sectors as they respond to new market conditions differ: sometimes environmental performance improves, sometimes the country's environmental fabric is weakened.
- Many adjustment program costs have been shouldered by landless and subsistence farmers, workers in the rural and urban informal sectors, redundant employees, and women (SAPs are thus not gender neutral). Their standard of living has declined owing largely to the combined effects of price corrections, government fiscal policy reforms, and changes in functions of the state. Although some migrate, the dominant response of the poor to downward pressure on their living standards is to increase pressure on the environment and natural resources in order to survive. In so-called frontier situations, the rural poor turn to survival foods collected in the wild to survive hereby often depleting reserves and upsetting precarious equilibria (Van Damme, 1997). More in general, this poverty-induced environmental degradation is often characterised by irreversible impacts on natural resources and services provided by the environment.
- Economic and social inequalities between these groups have grown during adjustment. Although better-off groups can respond more efficiently to new price incentives, the more vulnerable groups often exhaust their productive assets to merely survive. Poor small farmer families in Zambia living off 1.2 to 1.5 ha plots can only hope that their plots will yield enough food for them to survive, they lack, however, the necessary capital base to invest in alternative, non-food, cash crops which could earn them additional income and have them profit from the advantages of the liberalisation process (Van Damme, personal observations). Failure to implement corrective social policy to address the growing social inequities also undermines the potential positive economic and environmental outcomes of price corrections.

Fifth, the changing role of the state has had significant environmental effects. Reducing the state's role as an economic agent is a major contribution of adjustment programs in helping to reduce government mismanagement and correct fiscal imbalances. Accompanying this positive change, however, was the widespread weakening, if not dismantling, of government institutions that has undermined economic reforms, jeopardised social stability, and threatened environmental sustainability. Fiscal reductions diminished government agencies' ability to manage and protect natural resources, internalise the environmental costs of expanded economic activity, develop sorely needed environmental infrastructure, and provide basic public goods and services. The cutbacks reduced - often drastically - social service, extension services, and other programs that

were core elements of the government's redistributive function and its role as guarantor of basic conditions of social equity.

## 2.2. *Root Causes for Environmental Problems in the Third World (de Queiroz, 1996).*

The SAPs' environmental impacts usually come on top of a structural/chronic pre-existing situation where the state already had/has significant difficulties coping with environmental issues.

Indeed, developing countries usually have a high proportion of people living under the poverty level both in rural and urban environments. Moreover, many households only have limited scope for changing their production system and thus their way of life as they lack the proper and adequate (in quantity and quality) resource base (money, land and access to inputs) to engage in alternative production processes.

In this way, a first and important cause for negative environmental impact of the production processes in developing countries is that *most rural households are forced to utilise resources in an unsustainable manner in the absence of adequate alternative sources of livelihood*. The traditional environment in which most rural households have to operate sometimes exacerbates this situation. Many traditional systems (e.g. in Africa) are not stimulating change and/or actually forcing people to maintain the status quo in order to comply with traditional rules and ways of life. Physical and socio-economical isolation because of non-existent or limited infrastructure development, and difficult geographical conditions limit exchange of production factors and exposure to alternative production models. Limited access to and contact with markets and the market economy in general, limit the introduction of new technology that could improve local resource use and even increase the production system's long term sustainability and viability.

Second, in numerous countries, there is a *manifest lack of an institutional framework that could and should undertake cross-sectoral management planning, and monitoring and evaluation*.

Third most countries only have *weak government and non-government institutions (NGOs) that are unable to either regulate or facilitate sustainable natural resource management (NRM)*.

Fourth, the lack of proper attention and training has resulted in *weak local-level institutions that are unable to transmit grassroots expectations, lobby for greater local community empowerment and/or sustainably managed natural resources*. For example, the NGOs are often not capable of building the necessary counterpower vested in a well-trained and organised civil society which could act as a counterbalance of the formal political power that is often corrupt and not capable of taking the necessary decisions or developing the right policy.

Fifth, there often is a *manifest lack of awareness on the part of policy makers of the potential of sustainable NRM.*

Sixth, there often is a *lack of an appropriate legal, strong, impartial and regulatory framework geared towards checking negative policy impacts.*

### 2.3. The Impacts of Adjustment on the Long-term Sustainability of Developing Countries

So, one could ask, what now? What are the short-, medium- and long-term perspectives for often capital-poor developing countries? Again, there are different levels and perspectives from which to consider the problem.

#### 2.3.1. The Economic Dimension of Sustainable Development

The main issue in assessing the economic dimension of sustainable development is whether the adjustment process has helped countries generate a steady stream of income, while not weakening their long-term productivity, as they are integrated more deeply into the global market system.

With a few exceptions, the adjustment programs have indeed helped the countries improve, albeit sometimes modestly, traditional macro-economic indicators through (1) increased aggregate productivity; (2) improved current account balances; (3) reduced fiscal deficits; and, in a few countries, (4) strengthened international capital flows. These improvements represent important steps toward pursuing sustainable development strategies, indicating government commitment to exercise financial discipline and to live within the countries' income levels. Moreover, one of the adjustment's most important economic contributions has been to remove economic distortions that disfavoured the agricultural sector for many years.

Although commercial agricultural production expanded and diversified in many countries, there still remain uncertainties as to whether the benefit of the new economic regime actually reach small farmers and rural families. Numerous experiences indeed show that resource, i.e. capital, poor subsistence farmers are often *de facto* excluded from commercial agricultural production processes. These farmers depend on non-governmental and/or often artificial and temporary donor-driven project or development program support to be able to integrate into the so-called modern sector with no guarantee at all that their activities will indeed become and stay viable and sustainable (see examples in Sub-Sahara Africa, Zambia amongst others).

#### **Box 2. Towards Sustainable Development Projects and Programs**

Development must be appropriate not only to the environment and the resources, but also to the culture, history, and social systems of the place where it is to occur.

Unsuccessful development projects can usually be seen, although sometimes only after the fact, as in some way inappropriate to their setting. Ideas, technologies, or processes that have worked well in one part of the world are grafted hastily onto another part, where they may not fit at all. Temperate-zone agricultural

methods are applied unthinkingly to the tropics. Hydroelectric dams are constructed on a scale too large for the region's electricity needs. Machinery that requires more skilled maintenance or spare part than are available is installed. Export-based industries are started, where what is really needed is basic subsistence for the local population.

Many successful projects, on the other hand, have been uniquely fitted to their circumstances. They have been based on a thorough knowledge of, and respect for, the people, the ecosystem, and the indigenous natural resources. Often the people themselves who are, after all, the best experts on the local situation originate them. The following are characteristics of these appropriate development projects:

- they are based on renewable and local resources rather than on non-renewable or distant ones;
- they sustain and increase the yield of natural resources, and they use resources efficiently, rather than exploiting them for short-term increases in production;
- they are undertaken on a scale small enough to permit diversity, flexibility, and resilience against mechanical or social breakdown, rather than on a scale chosen for purposes of international comparative advantage;
- ownership is broadly based rather than concentrated, and owners are local and directly involved, rather than far away (empowerment and local institution building and training);
- projects occur where the greatest numbers of people and the greatest needs are, which in most places means rural and agriculture-based development rather than urban and industrial-based; through this approach, rural exodus will also be stemmed, and urban development decreased;
- the projects produce basic foods and goods for the local population;
- they build on the strengths and skills already present in the population, but they also encourage the development of realistically attainable and useful new skills; they permit individual and social growth and evolution; they use not only human muscles, but also the human mind and human creativity; and
- they respect and enhance the variety and productivity of the local ecosystem; in this respect, ethnobotany can help in finding useful and new alternatives to existing crops/useful plants, thus bypassing dependency-creating biotechnological solutions (Kumar & Murck, 1992).

Examples: the system of stone dams in Africa reduces erosion and flash floods with the simple device of stonewalls laid out along the contours of the land. The contours are surveyed with great accuracy by watching how a drop of water runs along a string tied between two sticks. It is a system that can be adopted by anyone, with little training and with resources near at hand. The interplanting of coffee fields with *Erythrina* trees (Fabaceae), a trick long known to Central American farmers and which recently became introduced in Central Africa, shades the coffee plants, holds down erosion, and provides nitrogen-rich leaves either as a mulch for the ground or as feed for animals; its root system is colonised by *Rhizobium* bacteria that are able to synthesise nitrogen from the air and make it available for the plant, and ultimately the soil. Appropriate technologies like these are simple and relatively easy to execute, but they are based on sophisticated understanding of local needs and resources. Moreover, they can be used to promote people-centred and nature-centred economic development without sacrificing yield and production.

In contrast to the modest improvements in macro-economic indicators, adjustment programs have had a net negative impact in generating employment opportunities for the poor, most vulnerable sectors of adjusting societies. Recessions and economic dislocations (see the recent examples in South East Asia, and Russia), have increased the ranks of the under- and unemployed, worsened working conditions, and led to the expansion of the informal sector in the majority of SAP-countries. The short-term costs of stabilisation, resulting from environmental damage, loss of extension services, and weakened delivery of health and education services, may inhibit the countries' longer-term ability to expand productivity and employment opportunities, particularly for small- and medium-size producers.

State functions have undergone major changes under adjustment. On the positive side, the state's role as an economic agent has been significantly reduced in areas in which it has performed less efficiently than the private sector. On the other hand, when the private sector has no interest in certain sectors, the state is left with the task of managing underperforming sector activities which discredits it even more in the face of the citizen-customer. Regulatory functions in the financial sector have been strengthened to ensure transparent and stable conditions for foreign capital to participate in national markets. On the negative side of the ledger, however, is the significant decline in the state's ability to regulate the social costs of economic activities under the aegis of structural adjustment. This point is also reflected in the weakening of environmental regulations and standards designed to protect society from the negative environmental impacts generated by the private sector. These changes in state functions under adjustment have set back the ability to internalise environmental cost in most SAP-countries: regulatory activities are relaxed, capture of resource rents has fallen, and enforcement programs have been cut or eliminated. No efforts have been made to integrate *full-cost pricing* into the adjustment program's cost-benefit calculations.

### 2.3.2. The Social Dimension of Sustainable Development

Equity is the fundamental concern of sustainability's social dimension, providing all people access to minimum standards of security, human rights, and social benefit, including food, health and education.

Distributional equity worsened in most SAP-countries, reflecting the difficulty of, or, at times, the indifference of societies to the redistribution of wealth and productive assets, and to the creation of new productive opportunities for the economically weak and vulnerable. Moreover, the short-term negative impacts of fiscal retrenchment on social service programs have fallen largely on those social groups, including the rural and urban poor and the uneducated, who are least able to maintain their living standards during the dislocations caused by the adjustment process. In most cases, the adjustment costs have fallen disproportionately on women.

#### **Box 3. Women, Environment and Development**

Poor women in rural areas are often the main providers of basic needs for their families. As such, they become *de facto* natural resource managers. Women in such circumstances, who generally sustain exceedingly heavy work loads and must cope with severe environmental degradation, are often forced into ecologically damaging modes of resource utilisation by sheer lack of time and scarcity of resources (capital, inputs). FAO has estimated that in 1980, to meet their fuelwood needs, nearly 1.2 billion people in developing countries were cutting wood faster than it was being replaced by regrowth. The effects of such unsustainable use patterns may also range beyond the first-order environmental impacts: where fuelwood is in critically short supply, nutrition and sanitation may also suffer because boiling water becomes an impossible luxury. Furthermore, crop residues and dried dung may be diverted from the fields into use as fuels, a practice that can appreciably diminish soil fertility and thus reduces crop yields (Agarwal, 1986). Poor rural women continue to be blamed for environmental problems such as deforestation in the Sahel and the Himalayas, whereas, in reality they are the victims of their situations. Poverty and environmental

degradation are inextricably linked in the lives of the rural poor - again, it is useless to address them as separate issues.

The role of women as preservers and guardians of environmental sustainability has been chronically unsupported, unrecognised, undervalued, and underremunerated: *Women bear the brunt of environmental degradation, through their proximity to and dependence on the environment, while also being held responsible for this decline. Unable to reverse the erosion of resources to which the household had access, women are placed in the impossible position of acting as guardians of an environment which is as undervalued and exploited as their own labour* (Redclift, 1987, cited by Kumar and Murck, 1992).

Some of the more damaging aspects of this marginalisation have been the exclusion of women from land ownership and access to credit and resource rights; the sexual division of labour and the evolution of the concept of women's unremunerated work as 'unproductive'; the disqualification and illegitimation of the skills and understanding of women with respect to environmental management; the denial of access to formal education for women and girls; and the exclusion of women from the formal processes of legislation and policy making. Yet, there is and has always been an active, participatory, creative, positive aspects of women's involvement with the environment. Women have traditionally nourished the fundamental values of sacredness, connectedness, and respect for the natural environment. They have formulated, preserved, and transferred vast bodies of knowledge concerning sustainable practices in agriculture, sylviculture, aquaculture, water and energy resource management, and even (it is now recognised) the regulation of birth rates and population.

In virtually all cases, governments imposed adjustment programs from above, with little or no consultation with civil society. Adjustment programs seem to reinforce the prevailing political economy in the adjusting societies, strengthening the dominant position of the elites and keeping populous sectors on the margins of political and economic decision making.

#### **Box 4. Socially Sustainable Development and the Environment (Kumar & Murck, 1992)**

Why does it make sense for planners and policy makers to encourage the education, participation and organisation of people ? And why is it crucial, in the general context of sustainable development, to begin by meeting the most basic needs of people ?

Many grassroots movements, some of which have now achieved almost mythical status, have made enormous progress and set standards in the domains of sustainable environmental management and conservation of important natural resources. What these movements and efforts have in common is the organisation, education and participation of people, as well as mobilisation through effective communication. The primary resource for sustainable development truly is the creative initiative of people. Equally important is the empowerment of people to decide their own fates, to command access to and utilisation of traditional lands and resources, to determine which methods of production and resource utilisation are best suited to their particular circumstance, and to control the sizes of their own families. When this type of power is localised and placed in the hands of the people who most care for and depend upon a particular resource or plot of land, the eventual usage is most likely to be sustainably, creatively, and equitably managed. *There is mounting evidence that when poor people have secure rights and adequate stocks of asset to deal with contingencies, they tend to take a long view, holding on tenaciously to land, protecting and saving trees* (because they know which will yield interesting products, PVD) *and seeking to provide for their children* (Chambers, 1988).

Examples: the Kana Indians on the offshore islands of Panama, indigenous people of the tropical rain forest, have maintained their traditional values in spite of outside pressure for development. They have managed to resist this pressure largely through the creative approach of establishing a wildlife reserve with research facilities for visiting scientists on part of their land. Rubber tapers and nut gatherers in Brazil and other

countries have demonstrated how traditional methods can be used to extract useful materials from the tropical forests without disrupting ecological integrity. The Namib Topnaar show the same knowledge and skills when it comes to living and surviving off the scarce Namib desert plant resources (Van den Eynden, et al., 1992). In Kenya, the number of trees planted locally by villagers exceeds the number planted in government reforestation and afforestation programs. In Burkina Faso, Mossi women in a local NGO (the Naam group) instigated the building of a small earthen dam. The dam's reservoir is used to store rainfall, which has raised local water table levels, allowing for the digging of wells for improved irrigation and domestic water supplies. Trees planted around the perimeter of the reservoir have provided branches and leaves used for fuel and medicine. Similar initiatives have been developed through Flemish NGO-driven activities in northern Togo, in collaboration with the local NGO RAFIA. In both cases, the dams were locally initiated in response to problems that were not being adequately resolved by government or donor-assisted programs; the technology involved was appropriate to the site; people's needs were defined by the peoples themselves; and these needs were met sustainably, with minimal disruption of the natural environment, using local resources, skills and technology.

The conclusion is and should be that grassroots organisations and movements are clearly of fundamental importance to sustainable environmental management world-wide.

### 2.3.3. The Environmental Dimension of Sustainable Development

The main concern in assessing the environmental dimension of sustainability is maintaining the integrity of a country's environmental infrastructure and life-support systems. All SAP-countries have experienced and still experience loss of renewable natural resources through deforestation, soil degradation, and watershed disruption during the adjustment period. In some countries, these environmental trends worsened under adjustment; in others pre-established trends continued and were emphasised.

One of the principal immediate effects of adjustment is expanded extraction of non-renewable resources, including petroleum, semi-precious stones, gypsum, alumina, gold, diamonds, copper, and other ores (sometimes until depletion). Expanded extractive activities, growing industrial production, and increased numbers of heavily polluting vehicles have contributed to growing pressures on the sink functions of the adjusting countries. Moreover, economic reforms contributed, directly or indirectly, to declining soil fertility, loss in quantity and quality of water resources, and changes in and loss of vegetative cover. Whatever regulatory standards were in place prior to adjustment, the general tendency has been to relax them so as to reduce private enterprise's short-term economic costs (and so much for free-market economy).

*Consumption of natural capital to finance macro-economic imbalances is a central part of the adjustment programs in several countries. Drawing down natural capital has been encouraged by government policy and accelerated by the poor, who have used natural resources to survive.* Conversion of natural capital stocks has not been accompanied by investment of rents or other revenues in productive enterprises or by programs to maintain or rebuild natural capital stocks. Failure to respect the precautionary principle was demonstrated by policy makers' absolute neglect in considering the environmental impacts of the economic restructuring process.

Further, most countries experience a serious decline in the institutional capability of natural resource departments. Staffs are reduced, operational budgets cut, and mandates narrowly defined. Enforcement capabilities are cut back, regulatory standards mostly ignored, and national environmental strategies are pushed aside in the face of 'pressing financial needs'.

#### *2.4. Emerging Challenges to Sustainability in the Global Market*

SAP-countries with important extractive and/or agricultural sectors have a tendency to open their borders to international capital flows as an integral part of the adjustment process. The weakening of government and regulatory functions further encourages placing natural resources more directly under the control of the international market system.

Some governments facilitate the wholesale transfer of once nationally owned natural resource assets to private interests. Other governments open up areas of their countries to private concerns seeking to identify and exploit marketable natural resources (mineral ores, but also timber). As a result, *price signals* from international markets, *not* development strategies that consider both social needs and opportunity costs, are now pre-eminent in defining the rates and conditions under which those resources are used as well as who the beneficiaries will be. Moreover, price signals from international markets will encourage externalisation of environmental costs to the detriment of long-term sustainability. This trend offers little hope for establishing sustainable economic foundations for extractive economies as the resources are depleted or degraded. Moreover, there is a recurring failure to ensure development of backward and forward economic linkages that, over time, will encourage development of more diversified, stable economies.

As an International Monetary Fund study states: *since their short-lived recovery in 1984, real non-oil commodity prices have fallen by about 45 percent (over a ten year period; personal comment), translating into a sharp deterioration in the terms of trade for most commodity-dependent exporters.* In 1998 (until August) alone, overall commodity prices decreased by 40 percent, which could forebode world-wide deflation. If this trend continues, and all signs indicate that it will, agricultural and extractive economies are being relegated to a decreasing share of global economic wealth. Moreover, under the conditions indicated in this study, agricultural economies are using up their productive capacity at an unsustainable rate, with scant indication of diversifying these resource-dependent economies.

Studies show that some farmers, mainly large- and medium-size commercial farmers, have responded efficiently and flexibly to the new opportunities offered by recently opened international markets. In a number of countries, the commercial processing sector has acted as a leading sector, bringing capital-poor small farmers into mainstream economic activities through so-called outgrower schemes geared at producing the raw

(agricultural) materials that the processing plants need. The private firms provide farmers with the necessary inputs, and guarantee production will indeed be bought (at remunerative and thus motivating prices). Failing this, the majority of small farmers have not been able to respond to the new price incentives and market opportunities during the transitional period. In fact, the daily struggle-for-survival forces many to overtax their resources, thereby weakening their productive capacity. The studies further show that this survival response has accelerated the drawing down of natural capital, including wetlands and forests, wildlife (including marine fauna), and mineral wealth, while also overtaxing the productivity and regenerative capacity of soils, watersheds, grass- and woodlands.

These trends indicate that inequalities are growing in the agricultural sector. SAPs and the export-led development strategy are not acceptable if, as signs indicate, they continue to generate inequalities and reinforce structures that give rise to inequality. The unacceptability of this approach is particularly applicable to societies where poverty is pervasive, where population growth rates exceed gains in productivity, and where the rural poor face both the external and internal frontiers of agricultural production.

The influence of the state, the main agent for internalising environmental costs and correcting policy failures, has declined under the adjustment process. As a result, market failures as regards the environment, including unpriced environmental services and externalisation of costs, among others, will generate even further negative impacts, with their attendant problems at many levels of national life.

Failure to correct these problems on a national level accentuates concern for addressing market failures and *externalities*<sup>1</sup> on a global level. No uniform or inclusive international mechanisms currently exist to internalise environmental costs despite the fact that market relations are deepening their embrace of natural resources around the world. Nor are there guarantees that the growing relative scarcity of environmental goods and services will be reflected in prices of natural resources before extensive irreversibilities are incurred by expansion of the global market system. Moreover, there is no system of governance that will help establish market-based incentives to reduce pollution having transboundary origins and impacts.

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<sup>1</sup> The term externalities refers to situations where the actions of one agent, producer or consumer, affect the welfare of other agents through channels other than prices. Pollution is the classic example: a firm may as a consequence of its production activities pollute an adjacent river; this may adversely affect the production possibilities of other firms along the river. Or the pollution may lead to a deterioration in the fishing opportunities in the river. In any case, the polluting river causes increased costs and discomfort to other agents. When externalities are present, the market allocation is inefficient. If production has externalities which create costs to other agents, the total marginal cost to society of producing this commodity must include these and will thus lie above the firm's marginal cost. The core of externalities is thus that those who generate them need not take full account of their actions. The rationale for policy actions is that the market allocation may be improved by making agents take proper account of externalities. Externalities may also be positive, benefiting other agents. But the conclusion remains the same: externalities make the market allocation inefficient, and the basic reason is that agents do not consider the costs and benefits caused to other agents by the externalities their actions generate. They fail to do so because there are no markets for externalities (Yusuf, 1983).

In short, while the designers of adjustment programs herald the new growth opportunities offered by integration into the global market system, government and development agencies continue to disregard the growing environmental challenges associated with the emerging economic order, threatening the prospects of maintaining a sustainable economy and human community in the long-term.

### **3. RECOMMENDATIONS WITH RELATION TO SAP AND NATURAL RESOURCE MANAGEMENT**

The previous sections indicate the need for basic changes regarding the objectives and content of structural reforms both in extractive and agricultural economies, and in diversified economies with large agricultural or extractive sectors. The results also indicate that basic changes should be made in the development strategies of those economies to ensure their long-term economic, social and environmental viability in the emerging world economy.

The recommendations presented below are predicated on the view that structural reforms are central to improving the long-term productivity and stability of many developing countries, especially with relation to their natural resources. The underlying theme of these recommendations is not to diminish the importance of implementing economic reforms but to ensure a change in how the costs and benefits of adjustment - and of the emerging development model - are and should be distributed. Specifically, they seek to ensure that costs and benefits are distributed more equitable and that *social and environmental costs are built into the calculus of development strategies*.

Environmental policy should be concerned with the efficient use of our natural environment. Efficiency should not be understood as being opposed to environmental protection and concern for an excessive rate of depletion of natural resources. It means, however, an explicit recognition of the fact that our natural environment may serve many purposes, which may frequently be incompatible with each other. Hence we have to strike a balance between various uses of the natural environment, and in so doing, efficiency should be the guiding star. Environmental policy, in general, should provide a set of operational objectives and measures in environmental management by which the overall efficiency objective can be met. There are two reasons for formulating such an environmental policy. First, there are strong reasons to expect inefficiencies in the market allocation of goods and services of the natural environment. This is due to externalities, imperfect information, and the public character of many environmental goods and services. To design measures to reduce such inefficiencies against the broader background of SAPs is an important task in environmental policy. Secondly, in most third world economies, public activity plays an important role both in production and consumption and thus has a considerable impact on the allocation of resources, including the utilisation of the natural environment. Many public activities not directly concerned with environmental management do have important environmental consequences. This is true, e.g., of public (often donor-driven) investment projects like water reservoir, irrigation projects, the building of electric power stations, as well as for production

activities under public control (although the latter now tend to disappear). A correct evaluation of these activities requires that their environmental impacts be duly accounted for. Thus a second important task in environmental policy is to determine how this should be done.

**Box 5. Economic Development and Care for the Environment are Compatible, Interdependent, and Necessary**

Environmental protection and economic development need not be seen as conflicting goals but can indeed both be pursued at the same time without negatively affecting one another.

Sometimes in the short-term, there are indeed stark and difficult sacrifices of environmental resources for economic resources, or vice versa. Examples: a new hydroelectric dam will flood farmland or wilderness. If the tropical forests are not turned into grazing land, income from beef exports will be lost. If nuclear waste materials are not dumped into the ocean, the cost of nuclear energy will be much higher. If the fishing fleet stays within sustainable catch limits, less fish will be caught. But many apparent dilemmas of this sort come from looking at the problem with too narrow a focus, and especially over too short a time horizon:

- catch limits may cause some fishermen to be unemployed, but if overharvesting destroys the fish population, *all* of them will be unemployed. A systemic, long-term view makes it clear that the fish catch should be limited to sustainable levels, and that some compensation or retraining may be needed if there are too many fishermen;
- improper disposal of nuclear waste may make nuclear-generated electricity seem less expensive than other energy sources, but that is bad accounting. Damage caused by wastes is a real cost, though it may be hidden, occurring in some other part of the economy or ecological system. To make rational choices among alternative energy systems, we have to take *all costs* into account. That may make some undertakings look more expensive, but the truth is that they *are* more expensive. When proper accounting reveals that truth, better management/policy decisions are made.

High productivity, modern technology, and economic development can co-exist with a healthy environment. They *must* co-exist or the development will not be sustainable. In fact, it will not even be real development unless it integrates all parts of the pyramid from the fundamental resources of the planet to human satisfaction and fulfilment.

### *3.1. Integrating Environmental Issues into Macro-economic Reforms*

Implementing reforms simply to correct economic distortions and improve efficiency is not a sufficient basis for designing adjustment programs. Restructuring economies through policy reforms should be guided by a long-term strategy based on each country's needs as well as on the potential position it could occupy in the emerging international market system. The country's natural resource base and environment should be central in shaping that strategic vision:

- to this end, governments and international development agencies should apply strategic environmental assessments to all countries undergoing macro-economic reform. The basic purpose of strategic assessment is to:
  - review the development strategy of each country;
  - identify the foundations of future economic and social development;
  - identify the role of the environment and natural resources in that development strategy; and

design adjustment programs tailored to those specific conditions.

- In extractive and agricultural economies, a clear strategic vision, not just *getting the prices right*, should be articulated as to how those sectors will drive the countries' economic development.

In extractive economies:

- national economic accounts should be established that register depletion and degradation of natural resources;
- extraction of non-renewables should be coupled with plans to reinvest rents and profits in long-term income-generating activities;
- information should be made available to the public regarding the capture of resource rents and the structure of government subsidies, in short, how the benefits of resource extraction are being used for public or private gain;
- national trade policies should be established that will promote long-term sustainability in the country; a central requirement of promoting sustainable trade policies is analysing and making public their environmental costs.

In agricultural economies:

- national economic accounts should be established that integrate depletion of forest resources and degradation of agricultural lands and watersheds into the calculation of economic performance (and do consider them as actual losses, not benefits !);
- indicators and mechanisms should be established for monitoring productivity of agricultural lands, expansion of the agricultural frontier, and conversion of forests into agricultural lands;
- priority should be given to using structural reforms to increase the productivity of farmers, particularly small farmers, through measures that include maintaining agricultural extension services (and in the absence of state-run services these should be built from farmers' unions), providing credit for inputs and technology improvements, and maintaining subsidies on inputs and farm implements until productivity gains and increased savings allow for gradual removal.

On the specific subject of credit, attention should be drawn to the fact that credit best comes after savings, and that even the rural poor should be urged to engage in saving schemes in order to build their production system from the bottom upwards. Donor-financed credit programs have indeed often been proved to be counterproductive and outright failures when it came to long-term sustainability (also see Koning and Van Damme, 1998).

With regard to timber production, the Forest Stewardship Council is advocating sustainable forest exploitation and commercialisation of certified wood that has indeed been produced in environment-friendly conditions with all possible guarantees for long-term sustainability.

**Box 6. New Forestry: Managing Forests as Ecosystems (Kumar & Murck, 1992)**

In 1989, the International Tropical Timber Organisation (ITTO) reported that only a fraction of a percent of the world's forests were being logged in a way that could be considered sustainable. This is not surprising, as the forest industry has tended to focus on extracting trees from forests and has only occasionally given adequate consideration to the continued production of trees on logged sites. But with the rise of *new forestry concepts*, there is new interest within the forestry community in managing forests as ecosystems, rather than seeing them simply as sources of timber. There is also recognition that, instead of treating biological diversity as an impediment to timber production, forestry will need to maintain and if possible restore the complexity of life that gives rise to both forests and wood.

Among the factors that new forestry takes into consideration are the underground organisms that help keep soils fertile, including mycorrhizal fungi, bacteria and microfauna. Because soil organisms play such a crucial role, disturbances to soil during and following logging can reduce the capacity of the forest to regenerate. 'New' foresters are also considering other biological factors in forest communities that demonstrate the importance of maintaining as many pre-logging conditions as possible throughout the timber cutting cycle.

On top of these considerations, the value of indigenous resource management strategies is becoming more widely recognised. They are well adapted to their environments, rely on local resources rather than expensive imported inputs, and can provide rural families with a diverse diet, fuelwood, fodder, and other necessities, including some cash income. They can also contribute to the conservation of biological diversity. Indigenous and traditional knowledge can be applied in forest management, as it can be used in agriculture, animal husbandry, aquaculture, beekeeping, and other natural resource activities.

One of the most important impediments to sustainable forest management is that there is a lack of information about the ecology of different forest types, including information about the conditions required for regeneration. Therefore, the first step should be to fully inventory the ecosystem, including physical, chemical and biological features.

In diversified manufacturing economies, the transformation of extractive and agricultural economies into diversified manufacturing economies remains the primary objective of most developing countries today. Such structural change generates new social and environmental impacts and entails redistribution of costs and benefits to different social groups and geographic areas:

- a strategic vision should be articulated regarding the role the natural resources and environmental goods and services will play in the transformation process and in sustaining the manufacturing economy;
- a natural capital investment plan should be articulated and made public to ensure the long-term productivity of natural resources required for maintaining the manufacturing economy;
- such information should be used to establish national economic accounts that register depletion and degradation of natural resources; in parallel, national sustainability indicators should be established to monitor economic, social and environmental performance.

### 3.2. Addressing Poverty

One of the underlying justifications of adjustment programs is to remove biases against the poor, particularly the rural poor, and to encourage expansion of the agricultural and

tradable goods sectors. However, many small farmers are not able to respond to new price incentives in a timely manner and, as a consequence, they respond by overtaxing their productive assets in order to survive. From the perspective of the rural poverty-environmental degradation nexus, the following two recommendations are required to reverse this trend:

- adjustment programs should ensure that government mechanisms are put in place to provide input, credit, and extension support during the transitional period from government to private ownership of production/transformation/processing/marketing, transportation, and credit system; ideally, the latter will not come to potential clients *ex nihilo* (the so-called cold money approach) but be built from the bottom following an initial period of saving, and the development of a local financial intermediary system;
- during the transitional period, adjustment programs should also establish information mechanisms (gathering and dissemination of market and price information) to help small farmers respond effectively to the new price structures, to learn how to shift and diversify crop mixes, and to market their produce until more stable marketing and distribution mechanisms are in place; it is illusory to think that this type of information will spread in an informal way and reach all stakeholders/parties concerned/interested without proper support from the government or an organised body of producers/traders/...

In addition, the following society-wide measures should be implemented to prevent poverty-induced environmental degradation:

- *social services, education and health care* should be maintained, given their central role in supporting the survival of the rural and urban poor;
- particular emphasis should be placed on providing services and income-generating opportunities for *women*, particularly through micro-enterprise development, as they have been recognised almost everywhere to represent a better opportunity;
- programs and mechanisms for promoting distributional equity should be reintroduced as a central objective of the adjustment process; in this respect, the taxation system should be revamped and/or developed properly so as to provide the state with the proper means to build an equitable system of social welfare;
- transitional employment and training programs and targeted food assistance programs should be strengthened in all adjustment exercises; with regard to the latter, it should be clear to the recipients of this food assistance that the food aid is only temporary, and can *never* replace their own food production.

### 3.3. *Changing the Role of the State*

A different understanding of the state's role in the context of the emerging global economy is required to provide goods and services for which neither civil society nor the private sector can or will assume responsibility. This change is made more urgent by

current development ideology that, in the context of the globalisation of the world economy, questions the validity of a wide range of government actions that were once widely supported. During this period of major global change, policy makers and international development agencies should:

- identify area in which the state's role as economic agent is needed until the private sector can fulfil the same role. These functions, whether as equity holders in development activities or guarantors of private sector initiatives (e.g. through guarantee funds with banks dispensing credits to farmers), must be both tailored to country conditions and transitional in nature. This role is an absolute necessity when implementing SAPs: in the past (and in most cases also at present), the state's role was completely obliterated and all initiative expected to come from the market. Experience has shown however that the state still has a role as moderator, and should define the overall framework and policy environment in which to operate.
- strengthen the government's managerial and administrative capacity in the environmental sector. Improve pollution monitoring capability, enforce regulations as regards urban pollution and extractive industries, and establish a market-based system of environmental incentives; The State should also adapt its legislation so that it conforms to international treaties and laws, and make investments in agriculture and industry dependent on environmental effect report.
- identify and promote responsibilities of the state as a producer of social and environmental goods and services. These range from providing social services in health and education, to developing environmental infrastructure for water, sanitation, and soil management, to gathering and disseminating environmental data.
- strengthen fiscal and regulatory means to ensure full-cost pricing so that prices include extraction, production, depletion, and environmental costs. In this respect, the *eco-tax* idea as it has been developed in the West can also be an instrument in sensitising the citizen-consumer to choose the most environmental-friendly alternative in product acquisition. Higher prices for environment-unfriendly goods and especially packaging (bottles, bags, tins, tetra bricks) should promote the eco-friendly alternative. Re-utilisation of products should also be promoted over recycling as the environmental cost of the latter usually exceeds that of the first alternative (with a few exceptions).
- improve national planning capacity, ensuring the integration of economic growth and environmental management strategies.

### *3.4. Implementing National Institutional Reforms*

Closely tied to strengthening the role of the state is addressing institutional constraints, particularly in low-income countries. Among them are issues of uncertain property rights, population planning policies and programs (which is a 'tricky' social issue), environmental data collection and monitoring systems, difficulties in integrating national environmental action plans into macro-economic development strategies, and a weakened capacity to enforce existing environmental laws and regulations. Through strategic environmental assessment, adjustment programs should identify the areas in which

institution building must occur so that integration into the global economy is done on a sustainable basis. Further, the designer of adjustment programs should identify the areas in which economic reforms must be preceded by institutional reforms and strengthening to ensure that the economic benefits of adjustment are not offset by institutional and policy failures.

### 3.5. *Strengthening Participation of Civil Society*

The importance of local awareness groups of citizens continues to grow in response to the absence of a real political opposition that is able to voice the will of the people it represents against (some of) the policy measures defined by the government and the inability of governments and the private sector to deliver many and especially adequate services to broad sectors of citizens. Adjustment programs should be used as an opportunity to:

- deepen education and dialogue with communities to solicit input on adjustment objectives, priorities, and conditionalities; mobilise support for the requisite economic reforms, and expand dialogue about future development options;
- involve community groups and NGOs in the delivery of social services and increase responsibility for managing local resources to formulate local development plans, administer mitigation programs, strengthen local participation, and build local group capability;
- expand the scope of community groups to address growing environmental challenges, identify development activities' costs and benefits, and mobilise support for long-term environmental protection activities.

The big role of NGOs in developing countries is to build local capacity to better analyse, plan, manage, and monitor its development along sustainable lines. This includes raising awareness that the environment is an integral part of everyday life and its protection/preservation a *condition sine qua non* for survival. Most initiatives in the West to amend environmental legislation have come from grassroots organisations that acted against the government to obtain changes/improvements. In this context, the market (the citizen who is aware of certain dysfunctions) has often driven the supplier (the state and further the operators) to change his approaches and policy. The role of civil society can not be stressed enough. It should be built at a grassroots level, in urban and rural settings even if this means going against the vested powers.

Policymakers concerned with relationship between development and NRM have been seeking ways to promote better local management of resources used in common, such as grazing land, forests, and wildlife and biological resources. During the eighties, there has been an upsurge of academic interest in local-level common property management institutions, exemplified by the National Research Council volume, *Common Property Resource Management* (1986), and a collection of articles on *The Question of the Commons* (McCay and Acheson, 1987). Several policy studies have advocated the merits of decentralised, local management of communal resources, whereas donor agencies and

national governments have used pilot projects as vehicles for testing various models of local-level management.

### *3.6. Reforming International Financial Institutions*

Globalisation of the world economy, reflecting the new role of private capital, is significantly changing international financial institutions' contributions to the development process:

- rethinking the current approach to lending policy consistent with the needs of different kinds of economies and the international division of labour will improve multilateral lenders' overall operational effectiveness. An important feature of rethinking the current approach is expanding the axiom of *getting the prices right* to include *getting long-term social and environmental strategies right*, particularly in extractive and agricultural countries. A parallel reorientation is required so that policies and practices vigorously seek to internalise social and environmental costs of project- and policy-based lending operations.
- this refocusing should give priority to strengthening the capacity of government institutions, particularly in low-income countries, to plan and manage their respective functions in providing public goods and services.
- lending priorities should shift away from financing projects for which private sector funds can be used and toward developing the public goods sectors to which private sector funds will not flow. This shift should include improving efficiency in delivering social services, building and maintaining environmental infrastructure, and strengthening resource management capacity.
- a centralised function of the World Bank, to be carried out in conjunction with all multilateral development banks, should be to strengthen monitoring and analysis of data capacities in general and more specifically those pertaining to development trends, providing analysis and assistance in strategy formulation to developing countries and sharing information with governments and civil society.
- International Monetary Fund stabilisation programs should be redesigned to protect government managerial and administrative capacity in adjusting countries. Greater attention must be given to protecting governments' ability to provide environmental and social services on which the long-term productivity of countries depends. the differential impacts of fiscal reductions on different sectors of adjusting countries, particularly low-income societies, should be given far greater attention.

The 'buzz word' in this context clearly is **capacity building**. In numerous developing countries, official services have not been properly built and equipped to face the challenges of a global world annex economy. **Transparency** is another factor which needs to be built into the system, so that society as a whole would be able to see, monitor, and control what is going on, and could, when necessary, rectify and reorient policy.

### *3.7. Reforming International Institutions*

Whereas monitoring and regulatory capacities may exist on the national level to ensure compliance with environmental laws and promote social objectives, they have no parallel on a global level. In the context of the globalisation of the world economy, such monitoring and regulatory mechanisms should be established. Initial steps in developing those functions should include:

- reform of the system of national accounts (Sheng, 1995). All countries and international agencies should use national accounting systems that reflect environmental values. Each country's accounting approaches must be adjusted to reflect specific environmental problems in extractive, agricultural, and manufacturing societies. Similar accounting methods must be adopted across the board by multilateral lenders and the IMF to reflect more accurately real productivity gains of the economy rather than distorting these figures by including consumption of natural capital (and counting it a benefit).
- establishing sustainability indicators: the impacts of structural adjustment should be monitored through application of sustainability indicators that reflect changes in economic, social, and environmental conditions.
- reform of the international trade system: international trade regimes such as the World Trade Organisation, the North American Free Trade Agreement, and Mercosur should require that participating governments:
  - have in place a minimal environmental regulatory enforcement capacity to encourage internatilisation of environmental costs.
  - conduct assessments and monitor the environmental costs and benefits of various trade regimes.
  - guarantee public transparency of the environmental impacts of the trade regimes in which the country participates.
  - reform international trade rules to ensure their compatibility with rigorous national and international environmental standards.

#### **Box 7. Environmental Accounting**

One of the theses of this text is that the modern industrial world is not using appropriate indexes to measure economic growth and tally profits, nor do the indices provide an accurate picture of the value of resources and the cost of environmental deterioration.

Many private industries make a practice of discounting future costs and future benefits, often taking environmental costs into account (although not with adequate weight). The need for national accounting systems in which both present and future costs of any resource depletion, waste disposal and cleanups, and general environmental deterioration resulting from economic development are properly weighted is widely recognised. Many developed countries already employ such schemes for the use of internal decision making. For example Norway uses a system of natural resource accounting where the value of material resources, such a fossil fuels and other minerals, biotic resources, such as fisheries and forests, and environmental resources, such as land, water, and air, are taken into account; in the USA and Japan the focus is on pollution and environmental quality).

Although the need for such a change in accounting procedure is also recognised on an international scale, the system details have proven more complicated to resolve. Various alternatives - most of them interesting, but none entirely satisfactory - have been proposed. The United Nations Statistical Office, for example, has

proposed a system of environmental accounts, highlighting the costs of pollution and the value of natural resources used in development. Such accounts would form a 'satellite' system of accounts, rather than replacing the current United Nations System of National Account, and would result in an environmentally adjusted Gross National Product (GNP). An alternative proposed by the World Resources Institute, would be to integrate natural resource accounts into the same balance sheets used for other capital and to treat depletion and degradation of natural resources like depreciation of other forms of physical capital.

The traditionally used indicator of national economic health and growth, GNP, is fundamentally misleading because it does not take into account resource depletion and environmental degradation, concentrating instead on measuring progress only in terms of 'productive economic activity. The GNP has the further drawback that it measures only 'formal' sector economic activity ignoring, for example, informal household labour and marketing transactions.

Three alternative indicators of economic growth - each with its own strengths and weaknesses - are: (1) the Human Development Index (HDI); (2) per capita grain consumption; and (3) the Daly-Cobb Index of Sustainable Economic Welfare (ISEW).

The HDI has been devised by UNDP. It is a combined measurement of life expectancy, literacy, and the command over resources needed for a decent life (as indicated by the GDP). Perhaps the main advantage of the HDI is that it includes a measurement of human well being as a fundamental aspect of economic growth, although it fails to account directly for environmental depletion and degradation. The Worldwatch Institute suggests using per capita grain consumption as a better indicator of well-being in low-income countries. The author has dealt with and used per capita yearly cereal consumption in preparing IFAD projects in China. In fact, grain consumption is a more sensitive indicator of environmental degradation than income is, issuance it will be immediately affected by man-made environmental effects such as flooding, air pollution, and global warming, whereas natural effects (such as El Nino) may also have their influence.

The third indicator, ISEW, is a sophisticated, comprehensive index of economic progress, that takes into account various consumption factors, in addition to inequities in the distribution of consumption, environmental degradation, and various environmental costs including depletion of non-renewable resources, loss of agricultural land due to soil erosion or urbanisation, and so on. The main problem with the ISEW is that it depends on the availability of a comprehensive database, which exists only for a very few countries in the world.

One particularly controversial aspect of accounting schemes that attempt to include environmental costs and benefits into a reckoning of economic progress is the concept of shadow costing. In shadow costing, a price or monetary value is placed upon things like respect for the environment, beauty, sacredness, a sunrise, or a sunset. On one hand, shadow costing at least introduces into industrial economics the awareness that nature does have a value of its own. Furthermore, if something is valued monetarily, perhaps it is more likely to be protected and preserved. On the other hand, is it not ultimately false, degrading, even soul-destroying to assume that all things in creation must have a specific value in (Western) human terms ?

## 4. LAND TENURE AND NATURAL RESOURCE MANAGEMENT<sup>2</sup>

### 4.1. Introduction

*Land tenure* refers to the *manner and conditions under which access to land is obtained, its use managed and ultimately the proceeds distributed*. Sustainable agricultural development requires, therefore, that the tenure system should guarantee security not only in respect of

<sup>2</sup> This part draws on an unpublished text written by Oluoch-Kosura, W. (1998). Land Tenure and Land Use Reforms. Department of Agricultural Economics, University of Nairobi, Kenya, 38 pp.

use and acquisition of land as a physical asset, but, more important, also of the short and long-term investments which operators may wish to make on it. As land is the most important agricultural production factor, land tenure is a crucial factor in agricultural development. It is important that those concerned with issues of development, develop a clear understanding about it.

In order for the land tenure system to be efficient, several conditions need to be fulfilled. First, tenure rules should be simple, clear and unambiguous regarding conditions under which access or exit from land may be obtained. In situations where such rules are both written and unwritten, this means that those to whom these rules are directed in both government and society at large and who therefore must conduct daily business on land issues should understand and internalise them. The notion of simplicity, clarity and lack of ambiguity have legal as well as socio-cultural significance. Second, the operation of the tenure system as a whole should be robust and flexible, and accommodate competing demands for consumptive utilisation, resource generation, management and conservation, and sustainability as may be appropriate in particular production contexts. In this respect, it is important that the tenure system should facilitate the development of a land market for all property rights' categories (i.e. freeholds and leaseholds), including lesser interests such as licenses, sustaining tenancy and temporary occupancies. Third, production structures and infrastructures should be capable of managing the competing interests and demands of various categories of land users in an equitable and sustainable manner. Thus, tenure rules should ensure the outcome of agricultural operations including decision-making and thus not demotivate subsequent investment of labour, time, technology and capital. In that context, the nature of access to land by women and children/youngsters is an important consideration, and has to be seen against the broader issue of gender problems. Fourth, tenure rules must be sensitive to culture and ecology and capable of organic evolution as both change. No single tenure regime is therefore good for all time, place and circumstance, there is no scope for universal application.

#### 4.2. Land Tenure Systems

Generally speaking three broad systems of land tenure can be identified in the developing world. These are customary tenure, individual tenure, and “public” tenure.

*Customary tenure* involves occupation, use and control of land by ascertainable social and/or ethnic groups for use by individuals at clan, sub-clan and family level. Land tenure in Africa is communal in nature, meaning that all the attributes of ownership and decision-making with respect to use is vested in collective entities such as families, lineages and even tribes. The rules governing access and use of land are primarily based on one's membership and status in the social group, which controls a particular territory. There is usually a recognised traditional authority or head (i.e. *chef de terre*) to direct the process of land allocation to those entitled to it at the various levels. Generally, individual families enjoy fairly well defined spatial and temporal rights of use over different parcels of land. *Rights* in land are an artefact of the total *culture* of a people. Tenure therefore describes not merely the relationship between people and the physical *solum*, but perhaps more precisely, that

between social individuals within organisations as such but also in relation to resource availability, utilisation and sustainability. Tenure relations in especially Africa are not only complex, but vary widely in their social and economic functions. The extent to which a particular set of tenure relations shapes decision making in specific agricultural production contexts will therefore equally vary. Customary tenure regime prevails in numerous Sub-Saharan African and some South American and Asian countries, except in those countries where deliberate attempts have been made to transform this traditional and subsistence agriculture system to other forms of tenure (e.g. Kenya) or where large-scale expropriation of land for white/European settlement or commercial plantation has been undertaken (esp. in former English colonies such as Kenya, Zambia, Zimbabwe, or South Africa in Africa, or a number of middle American countries).

*Individual tenure* involves registered private ownership and, theoretically, absolute freedom of use and transfer of rights over clearly demonstrated parcels of land. This tenure regime usually arose from the customary regime or through alienation of land at the beginning of this century (expropriation of land), as colonial administrations, judicial officers and anthropologists of that time, spent a great deal of their time searching for *ownership* meaning exclusive control (as it existed in Europe), by individuals, of land in Africa. Where no such ownership was found, it was assumed that the land in question was *vacant*, *unoccupied* and the subject of *no tenure rights*. This perspective was used to defend the massive expropriation of land for white settlement in East, Central and Southern Africa, especially by the British, at the beginning of this century. In smallholder areas in numerous African countries, the operations involved in individual tenure are in practice still subject to strong social and cultural forces representing the resilience of customary tenure principles (Okoth-Ogendo *et al.*, 1991).

*State or public tenure* involves direct ownership and control of land by the state through the government. These land surfaces may include forests, national parks, urban centres and other alienated or unalienated land. State tenure is in a sense a kind of individual tenure.

#### 4.3. *The Customary Tenure Factor in Land Use and Rural Development.3 The Tenure Factor in Land Use and Rural Development.3 The Tenure Factor in Land Use and Rural Development.3 The Tenure Factor in Land Use and Rural Development.3 The Tenure Factor in Land Use and Rural Development.3 The Tenure Factor in Land Use and Rural Development*

The dismal performance of the agricultural sector in Sub-Saharan Africa leads many to question the suitability of customary land tenure arrangements in the light of the necessary transition from subsistence to commercialised agriculture as a necessary step in development. Dorner (1972) and Harrison (1987) argue that because customary tenure systems are deeply embedded in cultural and political systems, and offer multiple rights of land use to members of particular social groups, they exclude non-members of the group from land transactions. Factor markets are distorted, thus undermining full integration of rural economies into national and international markets.

There are several other ills associated with customary tenure. First, the structure of owning and using land appears incapable of providing security to agricultural operators. Lack of security in this context does not mean instability of tenure rights under communal ownership but rather the lack of negotiability of “title” under it. Specifically, land under customary tenure can hardly ever be used as a basis (i.e. collateral) for obtaining production credit since it is impossible to obtain the full consent of all stakeholders involved for such a transaction. Second, the very centrality land takes in the social organisation of African countries is often the cause of continuous miniaturisation and sub-economic percolation, as families and individuals seek to retain a land component in their social status. This is clearly evident in customary inheritance procedures in patrilineal societies that emphasise the right of every male descendant to receive a share of the family land however small it may have become. Fragmentation often leads to diseconomies of time and labour utilisation, while sub-economic partition leads to diseconomies of scale (size); whereas both often negatively influence natural resource utilisation. Customary tenure therefore appears to be the cause not only of waste in terms of labour and time but also of the reduction of land surface areas to units of no economic value. Some studies now also distinguish the concept of miniaturisation from fragmentation. The first may result largely from land inheritance procedures described above. Fragmentation may result from deliberate exchanges of land parcels by operators to benefit from diverse micro-climatic conditions. Therefore, fragmentation may be considered a risk management strategy in cropping. Third, where land rights are vested in communities as opposed to individuals, the issue of who owns what interest in what land is not easy to determine. This leads to protracted litigation and, consequently, unnecessary expenditures that could better be invested in land improvement. The subsequent lack of investment in land improvement and/or protection often leads to degradation and erosion, and thus loss of fertility. Fourth, since under customary tenure all risks and benefits associated with land use are usually equally shared among community members, no particular incentive to preserve and sustain land resources can be expected. Thus, the so-called *Tragedy of the Commons*<sup>3</sup>, defined by Hardin (1968), sets in and leads to land mining, erosion, over-grazing and other forms of over-exploitation and subsequent land deterioration which are a common feature of African agrarian systems. These process

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<sup>3</sup> Using communal grazing as his model, Hardin (1968) argued that the marginal benefits to the individual herder of adding an additional animal to an optimally stocked commonage will exceed his marginal costs, measured in terms of reduced range productivity resulting from the animal’s contribution to overgrazing. This is because the marginal costs of overgrazing are shared among the community of users, while the herder enjoys the total benefit of the added unit of production. Under such circumstances, rational herders will build up their private herds even after the carrying capacity of the common is exceeded. Ecological collapse results. For Hardin, the solution was tenure reform to something resembling private property. In his analysis, Hardin implicitly assumes zero marginal herding costs, a point on which Stryker (1984) disagrees as he states that as more pasture resources are used *increasing amounts of labour and capital have to be applied at the margin to obtain equal increments of production*. Diminishing returns can exist in the absence of overgrazing and can lead herders to limit stock numbers before the technical limits to production are reached. Ciriacy-Wantrup and Bishop (1975) faulted Hardin for failing to distinguish between open access and common property: the first situations are characterized by an absence of property rights; or a free-for-all situation; under common property, individuals have certain specified use rights to a common resource. For Ciriacy-Wantrup and Bishop (1975), Hardin’s (hypothetical) pasture was a valid example of open access. But, according to them, the use rights of individuals could be defined and limited so that overuse of the common resource would not result.

results in desertification or the unequivocal loss of fertility that is so characteristic for the farming systems and (agro-)ecosystems of most developing countries.

The above ills make many subscribe to the idea that *agricultural development cannot thrive except on conditions of individual tenure. It is argued that the ills associated with customary tenure regimes must be removed as a precondition to agricultural development.* The kind of prescription that could ‘cure’ the above ills was tried in Kenya, following the Swynnerton Plan (1954). In general, it starts from the idea that concentrating all attributes of ownership in individuals, empowers them to make, free of community control, all decisions germane to land use. The implementation of this tenure conversion process is what land tenure reform is all about. In the case of Kenya, it involved asystematic adjudication of rights, consolidation of holdings, survey of parcels and registration of individual titles to be carried out in all areas subject to customary tenure.

Some programs of range tenure reform, such as the Tribal Grazing Lands Policy (TGLP) in Botswana, drew their rationale directly from Hardin’s *tragedy of the commons* (1968). The TGLP granted individuals long-term, exclusive lease rights to previously communal grazing land (Lawry, 1989).

However, in many settings, communal use has economic and ecological advantages over individual use. The costs of delineating clear private property rights to many kinds of resources, would be prohibitively high. Therefore, certain resource needs of poor people and small-scale users are more likely to be met within common property regimes. In arid or semi-arid rangelands, where range productivity varies seasonally and spatially with variable rainfall, communal use accommodates relatively easy herd movement in pursuit of available grazing. The concept of common property provides a useful corrective to Hardin’s oversimplified critique of collective resource use. However, we should not underestimate the difficulty of establishing common property arrangements. Credible common property rules will emerge from social and economic relationships that can sustain rule-making and rule-enforcing institutions. The changing nature of village economies and social relations, coupled with growing pressures on local resources, may limit the scope for local action. Care must be taken not to ascribe to common property arrangements extant under former social and economic conditions the ability to manage successfully resources under contemporary circumstances. In this regard, it is useful to distinguish between a ‘minimum’ definition of common property and common property arrangements required to regulate resource use intensively.

A minimum definition of common property is met where rules define who has access to the commons (e.g. only residents of a village having access to the surrounding pasturage/forest products). Explicit controls over the behaviour of qualified commons users will become necessary where, due to technological change or population growth, local resource demand exceeds sustainable supply. Modernisation has often reduced incentives for individuals to participate in localised collective arrangements, has undercut the economic viability of common property institutions, and has reduced the political legitimacy of local management authorities.

Local common property management will not emerge simply by giving greater official rein to local action. Policy initiatives will have little impact unless an important array of incentives supportive of common property management is operating at the local level. Limited financial resources should be focused on extension and technological assistance programs. In the short term, policies are needed which address the respective weaknesses of states and local communities in managing communal resources. Where possible, state and communities should co-manage natural resources. Long-term policies should be based upon an assessment of incentives for individual participation in communal management activities and upon a thorough review of the economic, social and political costs/benefits of alternative arrangements.

#### **Box 8. Farming Systems and Tenure in Africa**

Sub-Saharan Africa is characterised by a diversity of farming practices ranging from forest fallow system in areas of low population density to nearly continuous multiple crop cultivation in high-density areas. Between these two extremes there are a whole range of farming systems characterised by relatively shorter but varying fallow periods (Ruthenberg, 1972). Population density is the major factor influencing the length of fallow period, together with other factors such as climatic conditions, soil quality, political organisation, inheritance patterns, agricultural technology and degree of commercialisation and integration into the market economy. Given the diversity of environmental and socio-economic conditions and culture, Africa exhibits a wide range of seemingly different land tenure systems. These systems are not static but dynamic as conditions and thus the characteristics of the systems change. We witness a complex mix of tenure arrangements although the customary tenure system appears to bear a striking similarity across regions in Africa. In most cases, these systems are governed by several principles relying on kinship as the primary organising factor.

Over time, customary tenure systems, however, experience spontaneous simplification and individualisation of rights whereby households increasingly acquire broader rights of exclusion and transfer as population pressure, and levels of commercialisation and market integration increase. Boserup (1981), Cohen (1980) and Noronha (1985) have characterised the typical steps in the process of transition from more diffuse and collective to more specific and exclusionary rights, concluding that the trend toward increased privatisation of rights over specific processes provides necessary incentives for investment in particular plots. This shows that within the broad category of customary tenure systems, a continuum of complex tenure systems can be identified in Africa.

#### **Box 9. The Evolution of Tenure Regimes in Africa: Some Policy**

The transformation of land tenure arrangements in Africa has largely been influenced by the state. The earliest tenure transformation programs were not motivated by the desire to promote improved productivity among indigenous farmers. Land registration exercises were largely associated with measures designed to provide land for European settlers, plantation owners and mercantile traders. This was achieved through enactment of legislation extinguishing customary claims over land deemed unoccupied, and the subsequent issuance of leasehold titles to new occupants. In most cases, little effort was made to transform indigenous, customary land tenure arrangements. The administration of land in areas remaining after alienation, including regulation of access, enforcement of contracts and settlement of disputes, was left to authorities exercising customary law. The few exceptions where registration of land operated by African farmers was undertaken to increase production was where cash crops were involved like in Sudan in 1920, or to protect the interests of local elites as in Uganda in 1922 (Migot-Adholla and Bruce, 1994).

Transformation of tenure arrangements among African producers in the early periods was largely made in the context of settlement and resettlement programs, e.g. following eradication of tsetse fly infestation (Kenya,

Uganda) or in a deliberate effort to redistribute population (South Africa). In some cases, resettlement also involved the development of economic and social infrastructure, implying considerable control of land tenure rights by public institutions. Thus, settlement projects have tended to provide temporary tenure, with only conditioned rights. In cases of extreme land degradation, authorities sought to change land use practices without resorting to resettlement (e.g. the land betterment or improvement schemes of Kenya, Zimbabwe and South Africa).

Transformation of tenure to achieve social justice and promotion of greater productivity are a relatively new phenomenon. Such reform gained widespread popularity in Asian and Latin America countries in the period after World War II. Given the highly skewed pattern of land distribution and often exploitative production relations prevailing in those regions at the time, the reform paid dividends. Several countries in the region subsequently achieved impressive growth rates in agricultural output following land reforms and other wider (more technical) reforms commonly referred to as the Green Revolution. On the basis of that experience, development specialists tended to recommend land tenure conversion, and introduction of individual property rights as a means of inducing increased agricultural productivity (Swynnerton, 1954; Dorner, 1972; World Bank, 1974). Kenya, was thus influenced to undertake land reforms in 1954.

Other significant interventions in customary tenure practices have involved instituting collectivised agriculture to reorganise relations in production. The longest and best-known examples of such efforts were the Ujamaa Village Scheme in Tanzania during the 1970s and the *co-opérative d'aménagement rural* in Benin during 1960s. Although the Ethiopian land reform during the 1970s had elements of both the Tanzanian and Beninese experiments, its primary goal appears to have been equity-driven, since land was to be distributed to the landless equally. Students of agriculture in Africa agree that such experiments in collectivisation have been economic failures. The initiator of the Ujamaa program, Julius Nyerere, himself acknowledged the failure of the system almost two decades after trying to promote it.

#### 4.4. Land Tenure Security.1 What is Land Tenure Security

*Land tenure security* exists when an individual perceives that he or she has *rights to a piece of land on a continuous basis, free from imposition, the danger of appropriation or interference from outside sources, as well as the ability to reap the benefits of labour and capital invested on that land, including any land/soil improvement technology that might have been used to increase the land's production ability and its sustainable use*. Tenure security therefore is understood to have three components: breadth of right, duration and assurance with legal and economic dimensions (Place, *et al.*, 1994).

The legal dimension defines the *composition (breadth) and duration of rights*: a person holds with complete assurance the rights embodied in his/her tenure, even if his/her tenure is short and confers meagre rights. The economic component defines the value and certainty of economic benefits derived from the *de facto* tenure of land resource. Economic actions may diverge from legal allowance as a result of price incentives, high legal costs or weak legal enforcement. Robustness or breadth of rights is the legal quantity or bundle of rights held (or the possession of key rights), if certain ones are more important than others. Usually, the greater the number of rights associated with a parcel, the greater the economic value of the holding, *ceteris paribus*.

*Duration* is the length of time during which a given right is legally valid. The time horizon should be sufficiently long to enable the holder of the bundle of rights to recoup with confidence the full income stream generated by the investment. As land rights are generally secure for each season, tenure insecurity is less an issue for short-term inputs (fertiliser) than for capital long-term improvements with benefit streams stretching far into the future (trees, irrigation). However some fertilisers/elements may have long-term effects that provide greater benefits to subsequent users than the producer who actually applied them. The same applies to soil amendments such as organic fertiliser application, which help to (re)build the soil's (chemical) fertility and (physical) structure, and which have a cumulative effect that can take years/decades/centuries to fully express itself. The poor, sandy soils in Flanders are a case in point: their fertility was built up during the Middle Ages. Starting from the abbeys, manure and compost were consequently applied on the same soils generation upon generation, land tenure being secure enough to motivate individual farmers and farmer communities to continue to improve the soil factor. Long-term investment efforts like irrigation and road infrastructure development, land levelling, etc. demand long-term security.

*Assurance* implies that right(s) and duration are held with certainty. However, rights and duration are seldom absolutely present or absent. They are held with varying degrees of certainty at different points in time. Rights that are absolutely certain or assured (e.g. through registration or unquestionable guarantee by the local community) should theoretically enhance incentives for long-term investment and resource conservation. However, due to limited resource availability and weak legal enforcement, assurance may be unable to prevent squatting, encroachment or loss of harvest. Tenure insecurity therefore is a function of four elements:

1. Inadequate number of absolute rights in the bundle.
2. Inadequate duration in one or more rights.
3. Lack of assurance in exerting rights.
4. High costs of enforcing rights.

Another dimension adding to the complexity of tenure security is the overlapping tenure systems as discussed above. Security of tenure in most of Africa is fundamentally derived from the indigenous tenure system but is shaped to varying degrees by legal statutes and local administrative procedures. Where state tenure is imposed and enforcement is absolute, the indigenous system would disappear, leaving only the distribution of land rights imposed by the state administration system. Since state enforcement in most of Africa is generally weak, a mix of two or more systems of concurrent land rights may exist, depending on the situation. Most operators, especially in the smallholder agricultural and pastoral areas are subjected to complex and conflicting requirements of two or more of such regimes. Which of these is predominant in decision-making is not easy to determine, nor is it always clear how this influences (sustainable) natural resource management.

It should also be pointed out that isolating tenure variables from the total context in which agrarian systems operate only provides a partial view of how agricultural production and

natural resource management processes respond to both proprietary and non-proprietary stimuli. An adequate view of why certain agrarian communities thrive while others remain in perpetual crisis cannot be obtained from an analysis of tenure institutions alone. A more rigorous assessment of agricultural and natural resource performance under different tenure regimes than has hitherto been undertaken will be required if strong and convincing causal linkages between tenure and productivity/sustainability are to be established.

Land tenure security issues therefore revolve around two dimensions: *what piece of land and whose rights*. An individual with multiple parcels may not hold uniform land rights on each of them (e.g. purchased and/or rented parcel). Similarly, an individual may not have equal certainty in his or her ability to exercise an identical set of rights over multiple parcels. We can also not assume that land use decisions can be traced solely to the tenure security of one individual (household head), ignoring the rights of other family members. It is recognised that in Africa family members other than the household head may allocate rights to plots of land for their family use, while the household head maintains supra-familial authority over transfer rights (including intra-familial allocation). Patrilineal societies may differ from matrilineally organised communities, as gender may also be an issue.

### **Q. How is land tenure organised in your country ?**

#### *4.5. Land Tenure and the Need for Credit*

Tenure security theoretically has both demand-side (incentive to farmers-users) and supply-side (incentive to lenders-providers) effects.

On the demand side, an improvement in tenure security increases demand for medium- to long-term land improvements (such as water harvesting technology in low rainfall and/or drought-stricken areas, or soil conservation measures) which increase sustainable use of the land resource, and for mobile farm equipment (tractors, animal power) which increases labour efficiency. The increase in demand comes from two sources: (1) greater tenure security increases the likelihood that the farmer-operator will capture the investment returns; and (2) increased tenure security is expected to reduce incidence of disputes, freeing resources that would otherwise go for protracted litigation. Demand for short-term (or seasonal) inputs such as seeds, farm chemicals and labour, increases as a result of enhanced tenure security or are derived from land improvements (e.g. better soil structure due to conservation measures may improve profitability of fertiliser use). If viable and locally developed and/or adapted technologies, access to inputs and extension advice, as well as labour and financial resources are all available, enhanced tenure security is expected to lead to higher investment, and thus better natural resource use and yields.

The potential supply side effects reinforce higher yield achievement even if insufficient financial resources are available to households. In this regard, increased tenure security may enhance the land's collateral value and improve the creditworthiness of the landholder. This raises the lenders' expected returns for long-term credit. Or, stated otherwise, the

development of a sustainable, production-oriented land tenure system should go hand in hand with the development of financial institutions geared towards serving the investment needs of the rural populations that have access to or safe use of land. In this way, secure land tenure will increase the demand for timely credit and normally spur the development of financial institutions that can provide it. These institutions should be profit making and operate along normal market regulations, i.e. using economically viable interest rates. Only in this way can these institutions become permanent bodies that are also independent of government interference. In this context, subsidies and grants cannot be tolerated because they disturb the normal functioning of market mechanisms, whereas they also create a dependency on the side of the clients who grow to expect to be assisted indefinitely.

As pointed out before, the formal credit market as such will also benefit from secure land tenure, as land titles will be used as collateral in obtaining necessary production credit. Collateral is often a problem in resource-poor environments, so that the need for credit is or cannot be satisfied. Even group liability schemes, where physical collateral is substituted by group members taking responsibility to repay the credit given to the group by putting pressure on individual members and threatening them with social exclusion in case of default (i.e. moral collateral), may ultimately face problems in securing large enough sums of credit, especially in the absence of savings. In most cases, the only alternative borrowers have is to turn to the informal money market with its usually high interest rates (for an extensive discussion of these issues, see Konings and Van Damme, 1998).

Increased tenure security is also expected to have positive effects on land markets. Both rental and sale market activities depend on transfer rights held by individuals and on the cost of enforcing these rights. Potential buyers need assurance that the seller is indeed the holder of all rights pertaining to the transfer. Potential lessors also need assurance that lessees will not acquire rights other than those agreed upon. In the absence of off-farm opportunities, marketable labour skills, or old age welfare (or other social security) schemes, many rural households will be reluctant to sell land at any price. Enhancements in tenure security are therefore likely to encourage markets for rentals rather than for sales in such circumstances. Efficiency gains would therefore arise if enhanced tenure security reduces the cost of land transactions and productive users are able to outbid less efficient and thus less resourceful users in land transfers.

Land value is expected to increase with increased tenure security either from the demand or supply side. Theoretically at least, land value reflects the present value of the return of the future income stream expected by the operator. Net income will be positively related to tenure security as long as the expected yield response to investment is positive and the output price response in the aggregate is sufficiently elastic. Thus, sales of land in areas where individual rights to land are ubiquitous or titling programs are in operation, should theoretically realise higher prices than sales in other areas, *ceteris paribus*.

Improvements in agricultural performance may be elusive and may not follow the scheme presented in the chart for several reasons:

- farmers' investment demands may be weak for reasons other than security of tenure. Even where demand is enhanced by tenure security, farmers may be unaware of technological options and/or new technological developments. Investments may be unprofitable or investment returns may be risky, or deemed to be so. Poorly developed input markets may result in poor distribution systems that lead to inadequate supply of complementary inputs or unaffordable input prices.
- financial constraints may prevent farmers from investing in land improvement technology. Usury laws may prevent lenders from raising interest rates to mobilise capital<sup>4</sup>. Although credit access for certain individuals with title may improve, credit supply in the aggregate may remain unchanged due to inelasticity. Poorly developed financial systems may result in exorbitant administrative charges and poor delivery of credit services to rural areas. Moreover, possession of land title is not sufficient to induce credit expansion unless *de facto* tenure permits lenders through foreclosure and land transfers to convert the land asset into a financial asset and *vice versa*. There is thus a great need for flexibility and free market initiatives.
- it does not necessarily follow that more land improvements will increase yields. Households may prefer leisure or may pursue off-farm opportunities, substituting investment for farm labour. At the same time, investment may be targeted towards reducing yield variance rather than increasing mean yield.

The reasons given for lack of significant improvement in agricultural performance with enhanced tenure security do not mean that tenure security is not crucial for agricultural development or for improved natural resource utilisation. It simply means that secure tenure is a necessary but not sufficient condition to achieve improved agricultural performance. The expected benefits would be strongest in situations of dynamic technology and well-functioning input and output markets. Whether registration would stimulate output response and environmental resilience under the given conditions would depend on whether tenure security is significantly higher than under the indigenous system, and on whether credit use following financial institution development is enhanced.

**Box 10. The Swynnerton Plan (Kenya) and its Implications on Agricultural Sector Performance**

<sup>4</sup> This clearly shows the importance of creating the right legal environment, and thus to develop the 'right' policy framework. In this context, the so-called *loi PARMEC* which was imposed by the World Bank on CFA-countries in West Africa, and voted by all of them except in Benin, prevents informal saving and/or credit schemes to apply interest rates that are higher than twice the discount rate of the respective national banks. Although devised to protect the customer/potential lender and/or saver, the law is basically preventing the development of a viable and autonomous financial sector which, especially in the rural areas, may face higher costs and risks, and would thus need to apply higher interest rates to cover them in the case of credit. Similarly, these institutions can only attract savings from institution wary rural costumers when they are able to offer interesting interest rates.

In the case of high inflation environments (e.g. Zambia 30 - 40 % in 1998) the whole discussion becomes even more difficult, and financial mediation will probable be replaced by barter and saving/credit provision in kind instead of in cash.



Records at the Kisumu Land Registry e.g. indicate that in one registration area, Lower Nyakach of Kisumu District, out of 109,545 titles which have been processed, only 24,893 (i.e. 23%) have to date, been collected. In Upper Nyakach, where registration was completed in the 1960s, out of the 8,493 titles processed, only 2,360 (i.e. 28%) have been collected. Similar trends have been observed in all districts where registration has been completed. Further, the fact that the act of charging or mortgaging land can lead to foreclosure has scared off many registered smallholders in Kenya. Consequently, there has been reluctance even among those who may have collected their land certificates, to use them as collateral.

In addition, a number of developments seem to have led credit agencies to change their initial attitude. First, because most families regard documentary title as little more than evidence of established occupancy, threats of or actual foreclosure has always met violent response especially from those non-registered family members whose present or future inheritance rights would be affected by loss of the land in question. Second, very high default rates among small-scale farmers appear to have convinced credit institutions that without additional collateral or substantial guarantees, it is unsafe to lend money on the security of title alone. Third, most credit agencies have turned out to be very poor judges of creditworthiness of farmers. Besides, not very many of them have sufficient manpower to supervise the use of loans once issued. Even where credit is supplied in the form of farm inputs and other in-kind deliveries, the absence of supervision means that these are very often liquidated upon receipt and proceeds diverted to other uses.

The implication of these developments on financial flows to smallholder agriculture has been far-reaching. In the first instance, credit institutions including AFC and Communal Banks, now demand substantial collateral before they can grant loans. This means that most smallholders are effectively excluded from the farm-credit market. The AFC was established in 1963 specifically to cater for the credit needs of the African farmers at a time when they had no access to loans issued by the Land Bank. Evidence shows that the large-scale sector (including ranches) and farmers engaged in wheat and commercial maize production who are entitled to Seasonal Crop Credits (SCC) continue to consume the lion's share of AFC loans. It is estimated that the number of small-scale farmers shown here constitute no more than 2 % of registered proprietors in the country in any given year. Secondly, commercial banks, and the plethora of financial institutions that have mushroomed in Kenya since the 1980s appear to have withdrawn completely from the smallholder farm credit market. Those lending in agriculture now deal almost exclusively with large farm operators especially those in the former scheduled areas.

Thirdly, evidence is now available to the effect that agricultural land is increasingly being used to secure loans for commercial and other non-farm enterprises. What is emerging, therefore, is that far from operating as a vehicle for the capitalisation of agriculture, registration may well lead to credit shortages in that sector. The pay-off, of course, is that the fear expressed by the 1955 Royal Commission that African agriculture might become over-indebted, has not in fact materialised.

As a result of the foregoing, the level of farm input use is necessarily limited. Studies on the use of fertilisers, improved seeds, animal feed, crop protection chemicals and veterinary care, indicate that most of these are common mainly in high-value cash crops such as coffee, tea and commercial maize, and in livestock development, or in conditions where infrastructure is well-developed. Use of hand tools and animal traction remains, among smallholders, the general rule regarding land preparation. Use of tractors is confined to large farms or smallholder areas with access to the relatively cheap government tractor hire service.

### **(3) Impact on Land Market Activity**

The impact of tenure reform on land market activity is difficult to assess. It is known, for example, that in certain areas, the adjudication and consolidation processes may have generated an active market for rural elites before actual registration was effected. There is also evidence that after registration, land market operations continued. In addition, traditional land market operations such as tenancy or sharecropping arrangements that have always existed in respect of customary land rights have persisted alongside those stimulated by the tenure reform process.

Registration of land may have stimulated land market operations in several ways. First it made it possible for subdivisions and transfers to be documented and recorded. It is significant in this respect that the vast majority of transfers presented to Land Control Boards in the smallholder areas have typically been preceded by subdivisions. Second, since clan or family land can no longer be expanded through progressive encroachment or settlement, registry transactions remain the only relatively trouble-free method of acquiring land rights. Third, there is evidence that families or individuals with more land than they are able to develop (usually because they are asset- and/or input-poor) have been more than willing to subdivide such inputs.

The impact of land market operations on social organisation and agricultural production is difficult to assess. What is clear is that those who have gained most from these transactions in customary tenure areas and smallholder settlement schemes are rural elites, urban salariat and businessmen who have always had the resources to invest in land purchase. That also implies that the distribution of power and social influence in rural society has changed considerably.

#### (4) Impact on Land Disputes and Disputes Settlement

Note has been taken of the fact that the search for individual ownership during adjudication gave rise to a great deal of disputes which in turn caused considerable delays in the completion of reform in many parts of the country. It was expected, however, that once disputes were resolved at this stage, registered proprietors would have quietude of possession and would hence be in a position to develop their land without fear of further complications. Evidence from areas of high population pressure suggests that customary tenure reform did not quite solve this problem. What appears to have happened is that subsequent generations soon began to challenge the indefensibility of registered title, particularly when attempts were made to extinguish their inheritance rights through subdivisions and transfers. At first, the courts sought to resolve such disputes by affirming the sanctity of registered title as a literal reading of the relevant statute, the registered Land Act, requires. Later, both High Court and Court of Appeal came up with the view that registered proprietors were no more than trustees of those in whom customary rights of use and inheritance were vested before the tenure reform process was initiated. In the end, legislation was passed purporting to exclude the jurisdiction of the courts in respect of land disputes altogether and vesting this in Land Tribunals to be presided over by community elders.

It will take many generations before the kind of disputes now emerging in the former trust land areas can disappear. As long as the bulk of land parcels, whether registered or not, are traceable to ancestral heritage, social perceptions will regard present occupiers or users as mere custodians thereof. This is the view that most Land Control Boards have adopted, namely, that a registered proprietor will not normally receive consent for a transfer unless all members of his/her family are in agreement.

#### • Impact on Social Institutions.5.3      Impact on Social Institutions.5.3      Impact on Social Institutions.5.3

The avowed aim of tenure reform, as has been indicated, was to free individual land operators from the fetters of community and family control, a result which was expected to release entrepreneurship and incentive. The fact that community and family controls had an important role to play in society was not appreciated or simply ignored. These controls kept social bonds circumscribed by land relations intact, ensuring stability both in space and time for present and future operators. It was these controls that guaranteed stability of social reproduction, security of access to land, integrity of transgenerational rights and equity in the distribution of land within and among social groups. By directing its assault to these mechanisms, customary tenure reform was meant to be expressly disruptive of society. Indeed, early colonial administrators had opposed comprehensive reform precisely on these grounds.

One of the consequences that emerges clearly from the above analysis is that the reform process has and will continue to generate a great deal of tension or even conflict in the smallholder areas. The resilience of customary perception of land rights as shown in the continuation of disputes, informal subdivisions after the demise of registered proprietors and, the rather sluggish behaviour of the land market, will continue to fuel more tension. Many generations hence, however, it is quite likely that continuous attempts at vindication of

statutory rights by registered proprietors will overcome that resilience. If that happens, alternative mechanisms of social regulation especially on the level of resource distribution and transmission, will have to be devised.

There are other social impacts already evident as a result of tenure reform. The first is the disappearance of community grazing grounds as a result of attempts to individualise just about every piece of land in an adjudication area. This has had a direct effect on community relations since families can no longer pasture their livestock away from their registered parcel. Apart from the fact that this may have affected livestock production especially among land-poor families, it has also generated conflicts of its own. Technical trespass leading to destruction of hedges and even crops has become common, particularly in the older registration areas. In some of these areas where dairy activity has potential, the farmers have resorted to zero-grazing their animals where fodder or grass is cut from wherever it can be found and brought to a confined animal. Thus, a market for fodder and grass has emerged. The second is the organisation and use of community labour by clan or family groups, a practice that was based, in part, on the fact that land resources were ultimately community resources. The fact that such land has become individualised or exclusively controlled, means that any form of labour must now be hired and paid for in cash. The third is that tenure reform has begun to generate landlessness as a result, *inter alia*, of the combined effect of population pressure and increased exclusivity of use rights. Although it appears that the resilience of customary tenure principles will continue to postpone the emergence of absolute landlessness, the latter is eventually inevitable.

- **Impact on Gender Relations**

Much has been written about the manner in which indigenous social organisations allocated or determined access and control of land rights, and the implications this had for the social and production status of women in particular. The broadly held, but not necessarily correct, view is that women had no land rights under indigenous law. The position of widowed, separated or divorced women has been particularly highlighted in this respect. The above view draws on the mistaken assumption that men *owned* land and that women were therefore merely labourers.

The gender distribution of land rights in indigenous organisations was more complex than the simple typology outlined above. All members of society had guaranteed access to land over which their particular communities had established occupancy. The quality of that access, however, varied with the manner in which membership was acquired, i.e. by birth, marriage, co-optation or adoption. Extinguishment of one's membership status meant, however, that the access rights of that member were necessarily compromised. Such an eventuality, however, was usually rare.

The impacts of customary tenure reform on these arrangements have been nothing short of devastating. In the first instance, those who were in charge of land adjudication simply ignored established access rights, assuming, instead, that the powers of control which was vested in lineage or family heads, was equivalent to ownership. As a general rule, they recorded those heads as exclusive owners of the land in question, unless, of course, the head himself directed otherwise. The result, at least in point of theory, is that a large number of present, and all of future, community members were expropriated or disenfranchised. The greatest losers in this regard were women and children. Second, although the new tenure regime, as embodied in the Registered Land Act, did not exclude anybody from acquiring land through ordinary market operations, the fact that women had little threshold resources to invest in land purchase made it difficult for them to redress imbalances created by tenure reform. Third, increased marital instability in society may have exacerbated the position of married women in that they would no longer appeal to indigenous principles as a way of retaining access to land especially in the context of spousal death, separation or divorce (Migot-Adholla and John, 1994). As registered proprietors begin to assert their statutory rights to land, this situation will get worse.

The implications of this analysis are that customary tenure reform may have transformed women from guaranteed access rights holders to agricultural labourers, *per excellence*. Given the fact that throughout Africa, it is women who supply most of the agricultural labour any way, the impact of this on production processes could be considerable.

#### 4.6. Conclusions and Recommendations

Tenure issues are important and must be pursued, especially when perceived of as part of a comprehensive land policy. Experience from Asia and Latin America indicates that where the problems of the peasantry are properly identified, targeting reform to carefully defined issues can be very effective. The break-up of feudal and semi-feudal tenure systems in those regions is a case in point.

Briefly, the traditional Asian agrarian structure before European colonisation was organised around the village community. Local chiefs and peasant families each provided goods and services - produce and labour from the peasant to the chief in return for protection, rights to use community land, and the provision of public services. Decisions on the allocation, disposition, and use of the village's most valuable resource (i.e. land) belonged to the tribe or village community, either as a body or through its chief. Land could be redistributed among village members as a result of either population increase or natural calamities like droughts, floods, famines, war, or disease. Within the community, families had a basic right to cultivate land for their own use, and they could be evicted from their land only after a decision by the whole village community. The arrival of the Europeans (mainly British, French and Dutch) led to major changes in the traditional agrarian structure, some of which had already begun: *colonial rule acted as an important catalyst to change, both directly through its effects on property rights and indirectly through its effects on the pace of magnetisation on the indigenous economy and on the growth of population* (Myrdal, 1968). In the area of property rights, European land tenure systems of private property ownership were both encouraged and reinforced by law. One of the major social consequences of the imposition of these systems was the *breakdown of much of the earlier cohesion of village life with its often elaborate, though informal, structure of rights and obligations. The landlord was given unrestricted rights to dispose of the land and to raise the tribute from its customary level to whatever amount he was able to extract. He was usually relieved of the obligation to supply security and public amenities because these functions were taken over by the government. Thus, his status was transformed from that of a tribute receiver with responsibilities to the community to that of an absolute owner unencumbered by obligations towards the peasants and the public, other than the payment of land taxes* (Myrdal, 1968).

Contemporary landlords in India and Pakistan are able to avoid much of the taxation on income derived from their ownership of land. Today, the typical landlord in South Asia is an *absentee owner* who lives in town, and turns over the working of the land to sharecroppers and tenant farmers. In many respects, therefore, his position of power in the economic, political, and social structure of the rural community is analogous to that of the Latin American *patron*. There is a difference in that the former is an absentee owner whereas the latter often lives on his *latifundio*. But the efficiency and productivity implications are the same.

The creation of individual titles to land made possible the rise to power of another dubious “agent of change” in Asian rural socio-economic structures, i.e. the moneylender. Once private property came into effect, land became a negotiable asset that could be offered by

peasants as security for loans, and, in the case of default, could be forfeited and transferred to the often unscrupulous moneylender. At the same time, Asian agriculture was being transformed from a subsistence to a commercial orientation, both as a result of rising local demand in new towns and, more importantly, in response to external food demands of colonial European powers. With this transition from subsistence to commercial production, the role of the moneylender changed drastically. In the subsistence economy, his activities had been restricted to supplying the peasant with money to tide him over a crop failure or to cover extraordinary ceremonial expenditures such as family weddings or funerals. Most of these loans were paid in kind (i.e. in the form of food) at very high interest rates. With the development of commercial farming, however, the peasant's cash needs grew significantly. Money was needed for seeds, fertiliser, and other inputs. It was also needed to cover his food requirements if he shifted to the production of cash crops such as tea, oil palm, rubber, or jute. Often moneylenders were more interested in acquiring peasant lands as a result of loan defaults than they were in extracting high rates of interest. By charging exorbitant interest rates or inducing peasants to secure larger credits than they could manage, moneylenders were often able to drive the peasants off their land. They could then reap the profits of land speculation by selling this farmland to rich and acquisitive landlords. Alternatively, they often became powerful landlords themselves. At any rate, largely as a consequence of the moneylender's influence, Asian peasant cultivators have seen their economic status deteriorate steadily over time.

The final major force altering the traditional agrarian structure in Asia has been the rapid rate of population growth, esp. over the past 40 years. The ultimate impoverishment of the peasantry was thus the inevitable consequence of a process of fragmentation, economic vulnerability, and loss of land to rich and powerful landlords.

It is in this context that *land reform* policies have been defined and implemented in a number of Asian and Latin American countries. Land reform is defined as the *deliberate attempt to reorganise and transform existing agrarian systems with the intention of improving the distribution of agricultural incomes and thus fostering rural development*. Among its many forms, land reform may entail (1) provision of secured tenure rights to the individual farmer; (2) transfer of land ownership away from small classes of powerful landowners to tenants who actually till the land; (3) appropriation of land estates for establishing small new settlement farms; and (4) instituting land improvements and irrigation schemes.

Although traditional African communal social systems differ markedly from those agrarian structures prevalent throughout much of Asia and Latin America, the temporary economic status of the small farmer is not very different among the three regions. Achieving subsistence is still the major objective of Third World, and especially, the African, peasant agriculture. Unless low-productivity peasant agriculture can be transformed rapidly into higher-productivity farming in Asia and Latin America (primarily through judicious land reform accompanied by concomitant structural changes in socio-economic institutions) and Africa (basically through improved farming practices geared at greater soil productivity and better natural resource management; and greater price incentives), the hundreds of millions

of impoverished and increasingly landless rural dwellers face an even more precarious existence in the years immediately ahead.

Although Africa agrarian issues are in no way identical to those confronted in Asia and Latin America, there are areas in which limited and specially directed policy options can be effective. For example, there is an urgent need to re-examine the suitability of the administrative structures and bureaucracies entrusted with the implementation of various reform options, especially in the light of the SAPs that have been going on in most of these countries. Somehow it has always been assumed that these structures, particularly those inherited from colonialism are fully equipped, at all times, to handle any program whatever its complexities and ideological parameters.

Further, more indirect efforts at inducing changes in agrarian structure (again: as those that may be induced by SAPs, including those measures geared at financial institutions reforms) may offer better prospects for success than direct and deeply surgical operations such as customary tenure conversion. Since there is evidence that technological advances in agriculture especially where these lead to intensification and/or mechanisation of land practices have profound effects on tenure arrangements, and also on natural resource management practices and thus environmental sustainability, that option can be pursued and its impact carefully monitored. In addition, reform must, as indicated earlier, be accompanied by a package that would make it cost-effective for the peasantry to invest in change. Quite often it is the cost to the farmer of making reform work that is the primary impediment to transformation.

Where comprehensive reform is going on as in the case in Kenya, the social, technical and ecological landscape introduced by the exercise can still be put to very good use. For example, the registration process offers opportunity to try new ideas. One of these is the use of the legal cadastre (the property register) for the preparation and implementation of a fiscal cadastre (a land tax system). Although the modalities that go into the determination of how and who to tax, the rate of taxation to be used, and degree of accuracy required of land registry information may take some time to settle, proponents of land taxation believe that this is perhaps the most important use to which tenure conversion can be put.

Another is the use of the land register for the design of a land resources' inventory and information system. This can then be used to monitor the nature, quality and potential productivity of land, and natural resources in general, in different ecological regions. That information would also be useful in the formulation of land settlement policies and programming of support services infrastructure for agriculture. Combined with efficient survey and remote sensing capabilities, the land register can be a most powerful tool indeed for achieving enhanced agricultural development.

The third prospect involves the manipulation of the exploiting property regime to achieve results not otherwise obtainable by their promulgation *per se*. For example, one of the effects expected of customary tenure conversion and which has not occurred to the extent anticipated, is the development of a land market. Part of the explanation is to be found in

the fact that most often agricultural property regime includes market control measures that have proved not only expensive but also time-wasting. In addition to eliminating or at least restricting the extent of such control, the development of a land market can be stimulated through the design of simple *pro forma* conveyance precedes which the farmers can administer on their own. This, when coupled with a fully decentralised land registry system, can be particularly useful especially in areas where landholders are not able to make productive use of all or a substantial amount of available land. To subject a farmer to the rigors of "lawyer's law" has proved counterproductive in many countries.

The fourth is that the operation of a property regime is always incomplete until the rules governing the transmission of property are tackled. Much of the explanation for widespread, *de facto* subdivision, and the breakdown of land registry practice (as shown in the case of Kenya) is precisely that the property system does not address this crucial issue. Depending on what the goals of any particular program may be, the extent to which it handles transgenerational issues - how and who receives what rights after the demise of present holders - will, to no small extent, determine its success.

Finally, there is also need to revamp and rationalise the various bureaucracies that have jurisdiction in the agrarian sector with the aim, *inter alia*, of eliminating overlaps, conflicts, contradictions and inertia. This would, in addition to any other benefits accruing from the property system *per se*, ensure efficient and timely flow of public resources to the peasantry who most need them. Further, deliberate attempts must be made to depoliticise issues of production and productivity in agriculture. Although land relations are by their very nature political, once a program has been designed and executed, basic economic criteria should then determine its success or failure. Excessive political involvement in the actual management of land relations is not always productive.

**Box 11. Land Titling for Land Conservation: Key Issues and Conclusions (Wachter, 1992)**

It should be clear that the issue of land titling for land conservation is complex and that land titling itself is neither good nor bad. The following points seem to come up:

- *private property rights regimes are not the only alternative*; as pointed out in the text, the institution of common rights to land, prevalent in many traditional societies, must be considered seriously. It must be recognised that they often are very sophisticated systems, well adapted to local ecological and socio-economic conditions. The different agricultural systems based on individual landholding, common property, and state property (former eastern block), over land give rise to different tenure insecurity issues, and individual freehold land titles are not always the appropriate solution;
- *informal land right regimes do not always call for land titling*; land titling is not always required where formal, legal land rights are missing. In Africa, traditional land management systems based on informal rights still function fairly well. There is evidence that land titling may not be necessary where peasants have secure, though informal land rights; the system is flexible and adaptable to changing socio-economic conditions, and an understanding of land titling is lacking. This does not mean that one should romanticise traditional land management systems and ignore the pressures put on them by modern developments. A need for land titling and registration arises when there are growing uncertainties about the application and effectiveness of indigenous systems to control land use and land transactions. This takes place most often when there is confusion about which are the legitimate authorities with power to control land use and land transactions, and where land values and pressures on land are rising;

- *while land titling is necessary, it is not sufficient*; land titling for land conservation seeks not only to increase tenure security, but also to improve access to credit and to foster the development of land markets; there is strong evidence that the success of land titling depends on the interaction of these factors as well as on the existence of an enabling environment: extension, education in land conservation technologies, rural infrastructure. In some situations, increasing the security of tenure is all that is required; however, where investment in the land make it a capital good, the linkages to credit, land markets, and other supportive factors become crucial. *A land title by itself obviously does not provide sufficient incentives for land conservation if it does not provide access to credit or guarantee an adequately functioning land market or other aspects of an enabling environment*;
- *both registration of rights and redefinition of rights have their place*;
- *the legal system and the institutional environment are important to the success of land titling for land conservation*; the institutional environment is crucial for a land-titling-oriented land conservation policy because it largely determines the costs and the benefits of land titles for those who are to receive titles. An appropriate institutional environment provides political and judicial stability, a framework for the settlement of disputes over land rights, and effective enforcement of property rights; at the same time, it reduces the costs of land titles by providing an efficient land administration infrastructure with simple procedures for obtaining and keeping a land title, by efficiently implementing land titling projects, and by reducing the need for private enforcement of land rights;
- *environmental safeguards and an undistorted incentive structure are also needed for land titling to be environmentally beneficial*; today we know much about environmentally detrimental incentives in developing countries, particularly in the realm of agricultural and forestry policies: input subsidies, depressed output prices, environmentally damaging land tax policies (rewarding large landowners for leaving their land idle, e.g.) all require reform. Sometimes regulatory interventions may be needed, such as agro-ecological zoning to protect fragile lands with protective functions, or the banning of specific land uses.

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