

## Adjustment Processes, Social Service Delivery and the Environment: Some Macro-Micro Linkages in Tanzania

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### Abstract

Tanzania is now in the third of the three phases identified with SAPs: from the growth-oriented programme of 1986/87 to 1988/89; then to one accommodating social dimensions in 1989/90-1991/92; and now to the institutional reforms as outlined in PFP (1991/92-93/94) and the RFPB (1993/94-1995/96). There were severe underfunding in the social sectors starting before SAPs, but becoming critical under the first phases of adjustment processes. Incomes and employment opportunities fell too during the period, and the refuge to informal sectors became conspicuous at the time.

As a result of government shrinkage, and in the absence of efficient coping up mechanisms by the poor, these areas have faced severe environmental problems. Other social services like agricultural extension, education, health, and 'law enforcement' demand significant details, now lacking, to establish unambiguous links to environment. Casual empiricism suggests possible environmental problems as dilapidation of structures (schools, drainage systems, hospital support services, animal dips, etc.) accelerates, mainly reflecting diminished public commitment of funds.

### 1. General Overview

#### 1.1 Adjustment Processes and Their Phases

This article is about adjustment processes as specifically manifested through public policies of the governments in power, and their links to social service

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delivery and the environment. We trace the general policies of many countries with Tanzania-type economies from the stop-gap measures of the pre-SAP era, to those of ERP I and ERP II; and gradually to the current processes of institutional reforms in which liberalism extends not only to the final goods markets but also to capital goods markets. The latter is credited with changing the equilibrium configuration and the ground rules of operation in a more fundamental way.

Generally, the processes of structural adjustment were proceeded by some stabilization policies, and for Tanzania the pre-SAP (83-85) policies were notable. Stabilization involved mainly short-term policies that aimed at realigning domestic absorption with domestic supply, and the immediate results were reflected in budget cuts and corresponding shrinkage of government delivery systems. Trade and exchange regime policies gradually became conspicuous too. This was the first phase coined simply as "growth oriented" adjustment through demand contraction and realignment.

Structural adjustment, on the other hand, was about policies designed to influence the equilibrium configuration itself by making structural reallocations, and changing some of the ground rules of production and exchange. It was to be characterized by three main objectives:

- (a) macroeconomic balance in national expenditure and income
- (b) efficiency in resource use, involving resource switching, where necessary
- (c) raising economic growth and living standards, especially for the poor.

It is clear that the first objective was typically an aspect of stabilization and demand management to "get the prices right". The second objective put emphasis on improving resource allocation and growth, mainly through changing the structure of incentives and improving the performance of the public sector. Raising living standards, particularly for the poor, was the added "social dimension" of adjustment. Public policy turned to helping the poor and the vulnerable groups in view of the long lags in the "trickle down" anticipated under pure market forces. The latter generation of adjustment programmes were thus to have a "human face"; having a poverty focus and social service delivery orientation.

Institutional reforms constitute the latest "vintage" in the long list of adjustment processes. Their greatest manifestations show in public sector reforms—both the civil service and the parastatals—and in financial sector

reforms. Civil Service changes touch on the structure of governments, pay reforms, personnel control records, training and productivity enhancement. In all cases the goal is for small governments that are well-funded and well-motivated.

In the parastatals the primary objective is to reduce direct government involvement in the economy, and some of the topical arrangements for "divestiture" are:

- (a) public share offerings
- (b) private sale, including joint ventures
- (c) public auction
- (d) management buyouts
- (e) management contract or lease of assets
- (f) retention under performance contracts, and
- (g) liquidation.

In the context of Tanzania, the new blueprint on reforms is embodied in the Policy Framework Paper 1991/92-1993/94, and the Rolling Plan and Forward Budget 1993/94 - 1995/96, which address all reform components.

## 1.2 Public Policies and Social Service Delivery

The links between adjustment processes and social service delivery appear well established in analytical literature and empirical studies. They centre around the relationship of public policies (and non-policies), and primary and secondary incomes. Primary incomes derive from primary claims on resources which arise directly out of the productive process and accumulation, whereas secondary incomes are a result of transfer of primary incomes. Such links have been established for Tanzania in the on-going study coined "REPOA in Tanzania" (see Bagachwa, ed., (1994)). For primary incomes, the clearest manifestation in Tanzania has been in the (temporary?) loss in employment opportunities in the classical sectors (mainly the public sector) under adjustment processes of growth orientation.

Employment opportunities are the primary avenue for the poor to earn their livelihoods. Rental property and returns from investments or productive assets, which are the other forms of primary incomes, are mainly the domain of the rich, and so do not appear useful as direct candidates on poverty alleviation. In a great part of post-independence Tanzania social service delivery were a

primary domain of the public sector, normally through direct budget vetting. These were transfers or secondary incomes, and in the nomenclature of adjustment processes they constituted what are called "welfare and consumption interventions". Under adjustment processes government contraction has affected these services negatively, and the greatest losers have been the poor.

### 1.3 Environmental Concerns in Development

There are claims that the earlier programmes of adjustment, and the forces that preceded them—both policy-derived and those exogenous—may have done irreparable damage to the environment. The environmental priorities for development globally revolve around water pollution, air pollution, solid and other hazardous wastes, land and habitat degradation, and atmospheric changes. In Tanzania three areas are very conspicuous: water pollution (for both the urban and rural areas), solid and other hazardous wastes (especially for urban congested and industrial areas) and land and habitat degradation (especially with regard to deforestation, overgrazing and over-harvesting of natural resources like minerals, forests, sand, fish, wild animals, etc.). The following examples are relevant:

1. Where population pressure is serious, land and habitat appear "worst disturbed". Population emigration is more conspicuous from such areas for those who can afford to emigrate. Those who cannot afford to move out are facing abject poverty of very serious proportions (Kilimanjaro, Rungwe and Usambara are typical examples). The government had once attempted resettling some people, through the budget, in some regions of Morogoro and Rukwa. However, when social services in the new settlements could not be sustained the bulk of people simply left the new settlements, in some cases having adopted "scotched earth" policies to subsist before giving up. The plight of these areas (sources of emigration as well as the destination of migrants) can be linked to public policies (shrinking ability by government under contractionary regimes) and the environment, especially in relation to the survival mechanisms these people were forced to resort to. It is no wonder some of these areas are "re-inventing" new plagues ("tauni" in the Usambaras), diseases considered eradicated world-wide.

2. Where pastoralism has been practised heavily, land degradation has been serious. There are no credible laws and by-laws to check the precarious balances between humans, livestock and the environment. Most pastoral regions are also some of the poorest in the country. No one seems to talk about livestock extension services, and even the simple livestock "dips" common place in the 1960s and 1970s are no where to be seen any more. Failure of public policies with regard to social services for pastoralism is very conspicuous in this area.
3. Lacking a serious and enforceable urbanization and overall land policy has resulted into growth and proliferation of squatter settlements in urban areas. Carrying capacities of land and infrastructural services have been overwhelmed in the era of shrinking budgets under adjustment processes. This seems to add to the misery of the poor who correspondingly relied more on government support, not to mention the plight of the same in an era of laxity in laws governing environmental pollution (industrial wastes, domestic wastes, water pollution, and the like).
4. Pockets of mining, fishing and forest harvesting are some of the most polluted areas facing environmental decay. This is notable in areas where small scale operations are dominant. These operations have been a product of deliberate government policy on deregulation and liberalization, but the necessary bylaws, the necessary social services, and the necessary regulations have not been provided. As such the externalities of such operations have not been internalized, i.e., polluters have not been charged for the social costs of their pollution and degradation. This reflects on failure of public policies in social service delivery, and the accelerating environmental degradation.

From the above examples, it is obvious that there is need for environmental policies that accommodate the plight of social service delivery under the ongoing economic and political liberalism.

## 2. Conceptual Framework: SAPs, Social Services and the Environment

### 2.1 SAPs and Social Services

In current usage, the process of reform can be defined to include both

expenditure and demand reducing stabilization programmes (IMF derivative), and expenditure switching adjustment policies to reduce distortions in product and factor markets (WB focus). There have been attempts to amplify the role of this dichotomy, as for instance where short term imbalances may worsen as a result of trade liberalization, or when an expansionary fiscal policy may be warranted to provide a cushion for an expected reduction in economic activity during a transition period which may result in worsening of existing imbalances.

The impacts of SAPs on social service delivery are mediated through changes in the direct role of the state in mobilizing resources (tax revenues and borrowings) and providing transfers and such services, relative to the independent incomes of households to cater for the difference between actual services needed and government capacity. Prior to the 1980s when serious adjustment processes took a global note, most LDCs considered social service delivery as a primary state function. The greatest beneficiaries were, by design, to be the poor and the disadvantaged or vulnerable groups. Elaborate programmes evolved in education, water, health, shelter, feeder roads, extension services in agriculture and animal husbandry, and food security. These were to be supplemented by the target groups' ability to provide for more quality services if governments' services were substandard, or simply to fend for themselves in areas where government support was not readily conspicuous. It is thus no wonder that SAPs and social service delivery have been linked directly to public policies and poverty alleviation.

When such a linkage is established analytically, it is argued that there will be two dimensions to the analysis. First, the changes in the direct role of the state in the provision of such services; and second, the role of the reform in the changes of employment, factor payments and market determined prices to the extent that these are primary parameters in determining the real incomes of the (poor) households. The changing role of the state is more directly assessable through changes in revenues and expenditure commitments, whereas public policies may be held accountable for indirectly affecting the functioning of critical factor and product markets especially employment opportunities and incomes.

The empirical verdict is society-specific depending on the external conditions a country is exposed to and the policy framework and economic conditions at the time of embarking on such adjustment processes. It is worth noting that most studies on the impact of adjustment processes neglect to incorporate fully into their analysis the unparalleled crises such countries faced before embarking

on adjustment. With the policies of the early post-colonial state it was believed that governments should assume control of the economies to "speed up development".

Realities by the early 1980s showed virtual disintegration and collapse of such economies when adjustment processes were being initiated. Official markets had ceased to function, infrastructure and social services had decayed, and the fiscal and external imbalances had become grievous. In this sense government capacity had been overwhelmed. On the other hand, incomes—particularly of the poor—had stagnated at best, and often declined. The primary beneficiaries of such distortions and stagnations were the elite who are said to have succeeded in creating and exploiting rent-seeking opportunities, and not the poor whose participation in official factor and product markets was negligible.

Thus, conceptually the link between SAPs and social service delivery is through underfunding by the state (as budgets shrink even further), and abject poverty of the target groups that renders it impossible for them to accommodate such vacuum as governments drop out.

## 2.2 *Social Service Delivery and the Environment*

While admitting that economics is yet to work out a clear conceptual framework linking public policies, social service delivery and the environment—no science, let alone social science, discipline has been able to—there are clear empirical indicators (in Tanzania and elsewhere) that provide such links and which may form the seedlings of an analytical framework. One basic approach works through the impact of policies (in this particular context SAP policies) on poverty and its alleviation, to the extent that the primary beneficiaries of social services by design are the poor.

In summary form, the argument flows as follows. Public policies have a bearing on social service delivery (health, water/sanitation, education, drainage/refuse collection, shelter and the socio-economic infrastructure like extension services to agriculture/livestock, feeder roads, for industry, agriculture, mining and natural resource harvesting; and "law enforcement" as a social 'sector'), the prime beneficiaries being the poor (at least in design). With government shrinkage as a result of SAPs and other exogenous developments, there is a general dilapidation of such services. In the absence of coping up mechanisms the decay accelerates, with some obvious

environmental implications like filth in streets, unclean water supplies, land and habitat degradation, industrial pollution from industrial liquid and solid wastes, and uncontrolled use/abuse of natural resources as 'law enforcement' and governance are replaced even further by increased economic and social 'liberalism'. This is further augmented by declining incomes/employment opportunities for the poor who traditionally were the primary target group in expanded public sector employment and income generation programmes. Survival tactics for the poor may be further contributory factors in the increase in environmental problems, as has been echoed by WCED:

Poverty is a major cause and effect of global environmental problems. It is therefore futile to attempt to deal with environmental problems without a broader perspective that encompasses international inequality (WCED, 1987:3).

This was re-echoed more recently by Shridiath Ramphal and UNICEF, (1994):

Poor people often destroy their own environment - not because they are ignorant, but to survive. They over-exploit their soils, over-graze fragile grasslands and cut down dwindling forest stocks for firewood. In the context of short term needs of survival each decision is rational; in the longer term and wider context, the effects are disastrous ... Poverty is both a cause and an effect of environmental degradation (Ramphal, 1990:39).

In the context of the African crisis, a summary statement from Timberlake (1985) read "... Africa has taken too much from its land as well. It has overdrawn from its environmental accounts, and the result for much of Africa has been environmental bankruptcy".

### 2.3 Public Policies and the Environment

It is now well-known that in addition to the deliberate practices of governments under economic liberalism and government shrinkage notable under SAPs public policies and non-policies can independently have environmental implications. Kikula and Mwalyosi (1994) have traced policies in Tanzania in relation to environment management from pre-colonial times. They note that in the pre-colonial era, the most conspicuous efforts were in sound conservation measures built in the indigenous agricultural practices such as the Matengo pit system, the Ukerewe Islands mixed farming system, the Iraq farming system, and the Mount

Cultivation System in Ufipa. Under the colonial setting soil erosion and its relation to crop production, animal husbandry, afforestation, tsetse scourge, irrigation water supply, roads, railways and public welfare were a subject of study of a special committee set up by the colonial government in 1931 (under the then Director of the Amani Agricultural Research Station). They further note that the success of the colonial administration in conservation and resource management was in terms of establishing national parks, game reserves, game controlled areas and forest reserves; which currently provide the reserves of biodiversity.

A chronology of independent Tanzania efforts at environmental management policies links institutional developments (establishment of National Environmental Management Council, The National Land Use Planning Commission, and the Division of Environment in the Ministry of Tourism, Natural Resources and the Environment), various by-laws, and pockets of localized programmes (Hifadhi Ardhi Dodoma (HADO); Soil Erosion Control and Agroforestry Project (SECAP) in Lushoto; Hifadhi Ardhi Shinyanga (HASHI); and Hifadhi Mazingira Iringa (HIMA)). There are claims that some national campaigns may have done significant damage to the environment. For example, education for self reliance campaigns, villagization, and *Kilimo cha Kufa na Kufona*, did a lot of damage to the environment where they involved mass mobilization and over-use of resources (natural resources, wood, land, forests, etc) with little scientific management for purposes of maintaining the fragile ecological balance that existed before the launch of such campaigns. Of course in design such campaigns were not meant to result into environmental problems.

In Tanzania, institutionally three ministries share the responsibility of environmental issues especially in soil and water conservation. These are the Ministry of Agriculture and Livestock Development, the Ministry of Energy, Water and Minerals and the Ministry of Natural Resources and the Environment. Of late concerns with sanitation, urban filth, water and air pollution bring in four ministries: the Ministry of Health, the Ministry of Regional Administration and Local Government, the Ministry of Legal and Constitutional Affairs, and the Ministry of Trade and Industries. Thus as part of the conceptual framework one would want to learn the kind of "vision" a government in power has over the concerns with sustainable ecological balances and biodiversity, and how such a vision is translated into action programmes on the environment.

### 2.4 Towards a Synthetic Analytical Framework: SAPs, Social Service Delivery and the Environment

The skeletal conceptual framework in this section has the following flow of arguments.

1. Public policies (SAPs or no SAPs) may be embodied in a national plan and programme of action that has a vision on environmental concerns (ecological balances and biodiversity). Such would carry specific policies on the environment in the form of conservation, extension services, infrastructural services, and the classic "social services". The primary target group is usually the poor, and to them this is some form of secondary incomes as earlier defined. The primary incomes for the poor are earned through the labour process: wage employment or self-employment.
  2. Government may face budgetary and external imbalances, both policy-derived and exogenous. In such a case the government may reduce its commitments, including those earmarked for social services and environmental conservation. This is to be seen as a reduction in secondary incomes, primarily of the poor who normally gain disproportionately as public investment in social programmes expand (under primarily distributive philosophy). Government may also reduce its labour absorption programmes, this in turn eroding primary incomes of the poor, or increasing taxes (and thus consumer prices) to try to reduce imbalances. This too has the direct effect of reducing primary real incomes of the poor.
  3. The environment suffers in three ways: (a) directly through reduction of government commitments resulting in social service decay (b) indirectly through the poor's survival tactics that render over-use and abuse of resources a direct possibility, and (c) indirectly through the coping up mechanisms of the private well-to-do who would not be expected to worry about externalities and environmental concerns in the absence of direct government regulations that penalize the producers of the "public bads".
- Under SAPs the following are evident:
- (a) Governments shrink, the biggest casualties being social services and

public employment opportunities, especially if the overwhelming emphasis is 'growth and production efficiency'

- (c) Most LDCs face distorted markets, and the labour market is one of the least developed. Shrinking public employment is not fully compensated by private initiatives except in the form of marginal informal sector participation by those released from public investment. Disguised unemployment becomes widespread, and poverty increases in the short to medium term.
  - (c) The policy mix in SAP is such that the immediate losers are the poor as a result of (a) imminent price rises with economic liberalism, reduction of subsidies, financial sector deregulations and general reliance on the market forces, and (b) divestiture and reduction in overall government participation in the economy which earlier on may have accommodated externalities, unlike in a typical private setting that ensues with SAPs.
  - (d) In this vein environmental problems are actually accentuated even more relative to pre SAPs era. Thus controlling for the initial conditions, SAPS aggregate environmental problems through (a) too much encouragement to private initiatives which generally do not concern themselves with externalities and "public bads" and (b) increased poverty in the short to medium term (under overemphasis on growth and efficiency) making the poor resort to survival tactics that simply multiply environmental problems (as in the quote from Ramphal (1990) cited above).
- ### 3. Some Macro-Micro Linkages in Tanzania
- #### 3.1 Tanzania's Adjustment Processes in Perspective
- The actual policies and programmes of adjustment in Tanzania were initially covered under ERP I and ERP II (1986-89 and 1990-92 respectively). ERPI was classically the growth emphasis programme, and the only reference to services was given as objective 2 (see Chapter III of ERP I document) as "... to rehabilitate the physical infrastructure of the country in support of directly productive activities". On the other hand, with reference to social services ERP II or ESAP noted as one of its objectives "... to rehabilitate the social services by identifying and designing appropriate strategies and programmes that would

enhance people's participation in the operation and management of these services".

The most current official thinking on the current and anticipated reforms in Tanzania is embodied in the Policy Framework Paper (PFP) 1991/92-1993/94, and the Rolling Plan and Forward Budget (RFPB) 1993/94-1995/96. Whereas the former (PFP) has broad policies for each of the about ten sectors identified, the latter tries to operationalize such policies in the form of an action plan and a forward budget covering three years. For purposes of this paper, ERP I, ERP II, and the period guided by the PFP and the RFPB shall be considered the sample period, augmented by conditions obtaining before the launch of ERP I (i.e. pre-1986).

The shift in economic policy emphasis in Tanzania that started with ERP I—and now degenerating into overall institutional and structural changes—is explained in terms of the problems which faced the economy in the latter part of the 1970s which led to its virtual collapse by the early 1980s. The overriding orientation reflects on the statement "It became clear that the public sector was no longer capable of bringing about social-economic progress alone as had been originally envisaged. Restructuring and down-sizing was necessary in order to enable it play an active and efficient role in the development of the economy" (URT, 1993:3). The government sees its role as being in the maintenance of law and order, provision of social and economic infrastructure, formulation and pursuit of appropriate macro-economic policies, and the creation of an enabling environment for other actors on the economic scene.

From that macro frame one sees its sectoral translation in the Plan. In particular, there are broad groupings of both sectoral and cross-sectional issues in the following setting: productive sectors; economic service sectors; social service sectors; cross-sectional issues, and administrative issues. Of immediate relevance to this study are:

- (a) transport, water and energy (economic service sectors)
- (b) education, housing, health (social service sectors), and
- (c) the environment (cross-sectional issues).

Note that in each cluster there are more listings than those picked for this study (see URT, 1993: 25-26). It is also worth noting that by singling environment as a cross-sectional issue one would expect it to feature in every sector in which environmental concerns are conspicuous.

The sectoral translation of the macro policies in relation to social service delivery and the environment relevant to our discussion are articulated in the Plan as follows:

#### **1. Transport:**

**Objective:** To minimize transport related environmental hazards.

**Policy:** To enhance transport safety and sound environment.

#### **Strategies:**

- (i) Reviewing and updating national legislation on transport operational and safety requirements in line with international conventions and agreements.
- (ii) Strengthening survey and inspection of transport operating equipment.
- (iii) Ensuring conformity of infrastructure design standards to environmental protection requirements.

#### **Priority areas:**

- (i) Rehabilitation of priority trunk and rural roads.
- (ii) Improvement of the rural travel and transport.

#### **2. Water**

##### **Objectives:**

- (i) To provide adequate, clean and safe water by the year 2002 to the whole population for health improvement and socio-economic development.
- (ii) To ensure that the development of the sector is environmentally, socially and financially sustainable.

##### **Policies:**

- (i) Promote community participation, including cost sharing in the rural water supply subsector activities.
- (ii) Improve the environmental sustainability of water supplies.

##### **Strategies:**

- (i) Developing various approaches to involve communities in the management of water supplies.

- (ii) The Water Law Department to continue issuing appropriate water rights and monitoring the use of water from the sources.
- (iii) Designing appropriate measures for control and monitoring of water pollution.

**Priorities:**

- (i) Rehabilitation of dilapidated schemes.
- (ii) The drought stricken and flood areas to receive priority funding.

**3. Energy:**

**Objectives:**

- (i) To ensure that the existing and expanded supply of energy is environmentally sustainable.

**Policies:**

- (i) Improvement of the availability, reliability and security of energy supply.
- (ii) Promotion of energy development that is environmentally sustainable.

**Strategies:**

- (i) Rehabilitation of existing systems.
- (ii) Substitution of alternative sources for wood fuel, like coal and biomass.
- (iii) Encourage afforestation and reforestation programmes.
- (iv) Instituting by-laws and regulations for the protection of hydro-power sources.

**Priorities:**

- (i) Rehabilitation of existing energy infrastructure.
- (ii) Research and development in local renewable energy sources.
- (iii) Promote efficient use of wood and charcoal.

There are no specific objectives in the health, education and housing sectors that directly touch on the environment. However, the "sector" of environment as a cross-sectional issue in the RPF has sufficient details on objectives, policies, strategies and priority areas which would constitute a national environmental policy and action programme. The objectives centre on the need to:

- (i) protect and conserve the marine coastal environment
- (ii) conserve natural resources and oversee the management of industrial wastes
- (iii) raise public awareness in environmental management and
- (iv) consolidate a holistic approach in environmental conservation and sustainable development.

The policies touch on beach erosion, water pollution, vegetation cover in drainage basin systems, land degradation and desertification, and industrial wastes.

**3.2 The Context of Social Service Delivery in Tanzania**

We have noted the global (macroeconomic) picture that governs public policies in relation to social and economic service delivery and the environment. The sectoral translation are embodied in sectoral and cross-sectional plans specifying objectives, policies, strategies and priorities. Here we touch on the empirical evidence of historical performance of some of these specific sectors.

**3.2.1 Water and Sanitation**

Tanzania had never had a national policy for water supply until 1991. No policy on sanitation exists. In the absence of a policy, the national goal stated in 1971 (by TANU) was taken as reflecting national resolve, and it was understood that the Party and Government would endeavour to provide clean, potable and reliable piped water as a free service, and within a reasonable walking distance of not more than 400 meters to every household by 1990 (for a rural population then estimated at about 20 million people). In 1980 a review was made on the implementation of the first half of the water programme. It was estimated that at the beginning of the decade 38% of the total rural population would have been served with potable water. The most recent figures show that rural water supply coverage is 46%, while urban coverage stands at 67% (for 1993). The "underfunding" in the sector is reflected in the difference between demand and supply as shown in some areas by Table 1.



From Table 1, under-provisioning of water is conspicuous. To date the situation has not improved; if anything it has further deteriorated. Such underprovisioning is also reflected in the government budget set aside for the sector in real terms, and relative to the other sectors. Overall verdict (Economic Survey, 1993) shows that underfunding in the sector has been quite conspicuous.

As for sanitation the average rural coverage is estimated at 79% and 85% for the urban. Sanitation facilities used include central sewerage systems, septic tanks with soak pits, traditional latrines, and VIP latrines. Sanitation services are poor in urban areas as evidenced by garbage on streets, sewerage running in open gutters, latrines overflowing, and unhygienic facilities for emptying pit latrines and for collecting solid waste. Of the about 60 urban centres in Mainland Tanzania only 8 towns have sewerage systems, i.e., Dar es Salaam, Tanga, Mwanza, Moshi, Arusha, Dodoma, Tabora, and Morogoro. Most of these systems are dilapidated and overwhelmed (Kivugo, 1994), and the often-cited constraints, among many others, include inadequate fundings, insufficient water supplies, and inadequate enforcement laws.

From the environmental pollution angle, urban and industrial solid wastes and liquid wastes are the major causes of air pollution, water pollution and soil pollution in urban areas. In Dar es Salaam, Msimbazi river is the biggest river flowing through densely populated areas. Most of the water polluting industries in the city are also found in areas drained by this river. Steinbach (1974), cited in Kivugo (1994), described it as de-oxygenated, foul smelling, turbid, contaminated and polluted with an overload of untreated domestic and industrial effluent. The Msimbazi valley is now even more heavily industrialized with residential houses built in the flood plain (Tabata, Jangwani, etc), thus compounding pollution problems in the absence of proper drainage facilities.

In the rural areas water pollution is mainly a function of agricultural activities and a few scattered industries. Tanga region's sisal industry is one case where it is reported that sisal plantations discharge effluent directly into rivers and streams without pre-treatment.

3.2.2 Energy and the Environment

As the economy expands the needs for energy also increase: for agriculture, the household and transport. Energy as a social service (and thus of direct relevance to operations at the household level) in Tanzania has seen elaborate government effort in its development. Institutionally the Ministry of Water,

Table 1: Water Demand and Supply in Urban Areas (June 1992) Cubic Meters per day

Town	Water Demand (1)	Water Supplied (2)	(2/1) % (3)
Arusha	38000	30000	79
Dar es Salaam	409500	191000	47
Iringa	20000	9700	49
Bukoba	9000	6200	69
Dodoma	47670	33140	70
Moshi	27000	15040	56
Musoma	11010	7680	70
Mbeya	30000	20000	67
Mtwara	8500	3600	42
Mwanza	48245	37800	78
Kibaha	779	720	92
Songea	7126	4300	60
Sumbawanga	3500	2800	80
Shinyanga	11609	8895	77
Singida	6700	2950	44
Tabora	21237	8300	39
Tanga	40217	24400	61
Kigoma	18600	12000	65
Lindi	3500	1500	43
Morogoro	30000	19000	63
Total Urban	912581	494269	54

Source: Ministry of Water, Energy and Minerals

Energy and Minerals is the main umbrella, and in each supply case there are also elaborate institutions like TANESCO (in the case of electricity), TPDC and TIPER (in the case of petroleum and its products), and various research institutes that research on and develop prototypes. The Energy Policy of Tanzania was developed recently in 1992. It seeks to develop more efficient energy sources from biomass, petroleum, electricity, coal, wind, and solar power.

Both petroleum exploration/development and electrification are still in the public sector. As part of the distributive philosophy of the Arusha Declaration, the government had decided to provide for (especially household) energy as a social service and prices were generally pan-territorial, low and subsidized until at least the mid 1980s. However, with the economic crises and the subsequent adjustment processes subsidies were gradually done away with, and the prices have since risen tremendously. The effect of this trend, and the slowed pace of development of the energy sector due to budget squeeze, has been for the poor households to resort back to the traditional, and environmentally harmful, sources of energy: woodfuel and charcoal.

Energy is used in the households for cooking, heating, and lighting. In rural areas fuelwood and charcoal consumption represent about 90% of total final energy consumption, of which about 80% is used for domestic cooking and heating. Commercial fuels like kerosene, electricity and liquified petroleum gas account for about 1% of domestic energy requirements.

The interaction between energy and the environment is evident at all the stages of the energy system: from exploration for energy resources, conversion of energy from one form to another, and finally the use patterns of such energy. At the level of exploration the search for oil is the most conspicuous, and the environmental consideration is in the acquisition of seismic data. Since this is usually done in virgin land, game reserves, in lakes and off-shore it usually requires clearance of vegetation over long distances. The actual data collection may require the use of explosive materials such as dynamite. In both instances the damage to the environment including destruction of surface and marine life may be considerable. Blowouts have been recorded too especially in the processes of exploration and exploitation, leading to environmental disasters such as the Songosongo well, commonly cited as "a tip of the iceberg" on the kind of environmental disasters to expect in the future if conditions are not controlled adequately.

In the case of exploitation of wood for fuels, the practice of charcoal-making

is environmentally the worst offender. The commonly used kilns require on the average 12 tons of wood in order to produce 1 ton of charcoal. Another destructive effect of exploitation of wood as an energy source is in crop-drying. For instance, it requires 130 cubic metres of wood to cure 1 ton of tobacco. A total production of 11,554 tons in 1989 therefore required a total of 17,000 hectares of natural woodland to be cleared for one season alone. It is not surprising that tobacco growing areas of Tabora, Shinyanga, Iringa and Ruvuma are now facing environmental disasters as a result of such massive deforestation.

### 3.2.3. Urban Housing and the Environment

The rapid urbanization processes in Tanzania have been accompanied by many urban problems, the critical one being in shelter and housing, as well as the rapid growth of squatter settlements. Housing is in critical shortage, resulting into tents skyrocketing from Tsh. 15.00 - 40.00 per room per month in the 1960s and early 1970s to Tsh. 2000.00 - 4000.00 per room per month in the mid 1980s in the private housing market, which accommodates 80-90% of the population in most major urban centres. Rising rents have in turn led to increased overcrowding in single rooms, a health and environmental hazard in the face of overwhelmed other services (waste disposal, etc.).

During the 1960s the government pursued a policy of slum and squatter clearance in urban areas, clearing residential areas with supposedly the worst houses, and rebuilding those areas with "low-cost modern housing" for low income families. The National Housing Corporation (NHC) was established in 1962 for the purpose of constructing houses or other buildings, and carrying out approved housing schemes. An additional task was that of slum and squatter clearance, and the redevelopment of such areas to higher standards. In terms of dwelling units constructed over the years, the peak was between 1964/65 and 1973/74 when NHC constructed on the average more than 1200 units per annum (2350 in 1968/69 and 2064 in 1977/72). By the early 1980s this average had fallen to below 100 and by the mid 1980s to less than 50. The Registrar of Buildings (RoB), established in 1971, got involved in construction of residential units which were largely medium and high cost units in regional towns, and thus not readily affordable by the majority of urban population (RoB has now been disbanded).

Even if combined, NHC and RoB efforts were unable to even satisfy 25% of the demand for housing in urban areas in Tanzania. There are two related

problems to date. First, is that of unmet promise in housing in urban areas. It is possible to link fast urbanization to government commitment to build houses for the poor in urban areas. When such commitment fell short, the poor resorted to squatting aggravating environmental problems associated with unplanned housing/shelter construction (drainage, waste disposal and the like). The second problem results from the shrunk budgets on 'sites and services' as well as in maintaining the units that were constructed earlier. NHC dwelling units are some of the most unsanitary in urban areas, with filth, garbage and sold/liquid wastes scattered all over; posing serious environmental problems.

#### 3.2.4. Other Social Services

Underfunding in the social sectors in Tanzania, especially in health and education, has been a subject of a recent study by Lawson (1994). The exact link of these social services to environment is not very obvious. However, empiricism shows that many school and hospital structures are dilapidated and drainage systems simply not working. These pose a threat in relation to communicable diseases and epidemics since such facilities are typically crowded with people. This is one area requiring serious research.

Agricultural (and livestock) extension services, once very well-established and supportive of agricultural development, are another casualty in the era of shrinking budgets. Again, even though there are no direct links to lack of such services and environmental problems, empiricism shows that overgrazing and inappropriate agricultural practices are associated with serious soil erosion and land degradation. This is an area also demanding serious inquiry. Partly as a result of diminished extension services previously offered by government, Shinyanga, Tabora, Singida, Dodoma and parts of Arusha are gradually becoming semi-deserts due to overgrazing and inappropriate agricultural practices.

#### 4. Conclusion

This paper has provided a skeletal framework around which to organize the discussion of public policies in their linkage to social service delivery and the environment. The major focus has been with regard to public policies under adjustment processes. Three phases have been identified with adjustment processes. The first phase was the typically "growth-oriented" programmes, called simply the classical SAPs, followed by the so-called "poverty-focused and

social-service focused" programmes that carried a "human face". The new wave is that of institutional changes which are fundamentally changing the economies and the way governments operate.

We have argued that analytically the link between SAPs and social service delivery is more straight forward than that between social service delivery and the environment. SAPs have generally involved government shrinkage, reflecting adjustments necessary as part of response to cumulative crises that preceded them. Liberalism has also affected market prices in both goods and factors. The link to social services is that such services would be expected to suffer due to (a) government shrinkage and reduction in government commitment to the sectors; and (b) limited ability on the part of beneficiaries (the poor) to provide for alternative funding in the wake of declines in employment and income opportunities as the public sector (the primary employer and provider) shrinks. The poor thus suffer in a dual way: from the reduction in government provisioning (i.e. in secondary income), and from the declines of their own real primary incomes (limited employment opportunities).

Falling social services provisioning have environmental implications. In urban settings water and sanitation, housing and shelter, and energy problems become conspicuous as government delivery falls. This is because typically poor people depend more on public support in such services. When they are forced to survive on their own they aggravate environmental problems. In the rural areas land degradation and deforestation are major the problems mainly due to the absence of supportive extension services and efficient energy sources.

It is evident that government resources will continue to be strained for some time. However, environmental problems cannot wait since they affect the very ecological and biodiversity balances upon which civilization itself depends. Four areas demand immediate action:

1. A national environment policy and action programme should be formulated along the framework currently appearing in the Rolling Plan and Forward Budget. It is known there is a draft policy that is yet to find friendly enforcers.
2. A critical mass of support (minimum threshold) to social services that have obvious environmental linkages should be established and fully funded (even at the expense of other sectors if necessary). This may be part of a programme on poverty alleviation.

