The Impact of Structural Adjustment Programmes on Natural Resource Use Pattern at a Household Level in Tanzania: The Case of Ulanga District

Helen Kape N. Peters and Prem L. Sankhayan[1]

1. Introduction

The problems of natural resource use and agricultural performance in Tanzania, like most of Sub Saharan Africa (SSA), have in recent years been a source of concern to both government and international institutions. The combination of inclement climate, fragile ecology, unstable world markets, poor economic performance, plus the negative thrust of past policies has produced the disturbing scenario of diminishing exports, escalating imports of agricultural commodities, and deterioration of the natural resource base. The economic decline is attributed mainly to the poor performance of the agricultural sector where majority of the population live and work.

As a cure to the economic ills, a need for the introduction of structural adjustment programmes (SAPs) was felt even before 1980. After a number of unsuccessful experiments with its own economic policies—such as the National Economic Survival Programme, 1981-82; and Structural Adjustment Programme, 1982-85—and amid pressure from external donors, in 1986 Tanzania adopted the Economic Recovery Programme, ERP I, which was a very comprehensive policy package like the Arusha Declaration of 1967 (Bagachwa & Mbelle, 1994). All subsequent economic reforms have taken designs similar to the ERP I.

While formulating and implementing the economic reforms, no special attention was paid to their effects on the natural resource use and the quality of environment. Such concerns are relatively new. In this context, however, little has been documented so far. It is, now widely believed that the SAPs can

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[1]Centre for Sustainable Development Agricultural, University of Norway.

influence land use, cropping pattern, resource allocation, and consequently environmental quality with respect to sustainability. The assessment of the impact of SAPs on natural resource use is, therefore, essential for ensuring the movement of the economy on a sustainable path.

It is important to look at the changes in resource use pattern, management of resources under SAPs, and draw inferences on future use. It might be too early or difficult to determine the impact of SAPs on resource use, services; or to separate it from natural processes that might influence it. However, it is important to try to understand the changes that the farmers go through in allocating resources for different uses. It is likely that SAPs will continue for a very long time to come and, therefore, it is fair to reflect continuously on the past experiences and plan for the future. Investigations on the impacts of SAPs is essential so as to help in suggesting necessary modifications in the agricultural policies in the future which are consistent with the overall objective of conservation of natural resources and sustainability.

This study aims at studying the effect of SAPs on natural resource use and related aspects at household level in Tanzania.

2. Selection of Study Sample and Collection of Data

Ulanga district, one of the five districts that form the Morogoro region, was chosen for the study because bench mark data were available for the year 1984-85 from an earlier household study (Mlambiti, et al 1992). This was helpful in monitoring the changes in land use during the past nine years.

Three villages; namely, Mtimbira, Lupiro and Ruaha—representing adequately the physical features of the district—were selected for detailed investigations. Forty households were selected from each of the three sampled villages, thus making a total study sample of 120.

Data were collected through field survey conducted from July to November 1993. A questionnaire containing open and close-ended questions was developed to give the respondents a chance to express themselves fully. It was first pre-tested on five farmers in each village and slight modifications were then made.

3. Results and Discussion

3.1 Changes in Cultivated Area

The cultivated land area was observed to have increased on 47.5 per cent of the

sample households, each in Mtimbira and Lupiro, and 23.7 per cent in Ruaha during the last five years (Table 1). On the whole, in all the three villages taken together, the farm area had either increased or remained the same on about 75 per cent of the farm households. The reasons given for the increase were the increased family consumption and cash needs necessitating the clearing of more land. Some farmers increased their land area because of improved availability of cash enabling them to use increased levels of crucial inputs, such as, tractor power, herbicides, fertilisers and hired labour. Considering the homogeneous nature of peasant farms, there appeared a tendency to increase the land holdings mainly through clearing of new land.

Table 1: Distribution of sample households according to changes in cultivated area on their farm over the past five years.

Village	Number of households reporting change in the cultivated area on the farm			
	Increased	Decreased	Same	No response*
Mtimbira	19(47.5)	3(7.5)	15(37.5)	3(7.5)
Lupiro	19(47.5)	1(2.5)	11(27.5)	9(22.5)
Ruaha	9(23.7)	3(7.9)	15(39.5)	11(28.9)
Total	47(39.8)	7(5.9)	41(34.7)	23(19.5)

*Newly migrated into the village.

It was, however, not possible to relate the increase in the cultivated area on the sample farms to the SAPs.

3.2. Shifts in Area Under Different Crops Over Time

In order to have an idea about the shifts in area under different uses over time, area under food and cash crops, fallow, and that under trees for the sample farmers in 1993-94 was compared with that reported by Mlambiti (1992 et al) for the same sample for the year 1984-85.

The results from the analysis indicated that there was some shift in land area

allocated to food crops and cash crops since 1984/85 (Table 2). Land area allocated to food crops increased by 24.7, 79.6 and 24.5 per cent in Mtimbira, Lupiro and Ruaha respectively. This has happened mainly as a result of shift of land area from cash crop production in all the villages. Data for fallow land and area under trees were not available for the past years, but the results of this study showed that 25 and 45 per cent of respondents had allocated land for fallow and tree plantation in Mtimbira as against 80 and 12.5 per cent in Lupiro; and 15 and 68 per cent in Ruaha.

Table 2. Shifts in area under different land uses over time

Village	Area under food crop in acres			Area under cash crops in acres			HH fallow land		HH tree cropped	
	84-85	92-93	per cent Change	84-85	92-93	per cent Change	No.	%	No.	%
Mtimbira	134.9	168.2	24.7	33.3	27	-18.9	10	25	18	45
Lupiro	88.8	159.5	79.6	31.8	6.25	-80.3	35	80	5	12.5
Ruaha	81.75	101.8	24.5	35.5	22	-38	6	15	26	68

Note: HH refers to households.

The shift in area from traditional cash crops like cotton to food crops may be attributed to improvements in the relative profitability of the latter, mainly as a result of the economic reforms. Deteriorated performance of the cooperatives - reflected through late payments made to the farmers for their produce of cash crops—has further helped the process of shift in area under crops.

3.3 General Trends in Crop Production

For the reasons already explained, the production of cotton was observed to have decreased considerably since the year 1984/85. All the farmers in Lupiro were found to have stopped growing cotton completely by the 1992/93 crop season. In Mtimbira and Ruaha, however, 7.5 per cent and 5.3 per cent were still growing this crop (Table 3).

Nearly all the farmers in Ruaha, Mtimbira and Lupiro have increased the production of rice. Since the market for the former major cash crop cotton had fallen, rice took over the role of a new cash crop. It is becoming both a major

cash and food crop in the district of Ulanga. Apart from the easy marketability and its importance as a staple food, rice doesn't require as high inputs use as cotton. Also, by growing rice, the farmers are able to exploit more fully the nutrients which are deposited from the floodings. Like rice, the production of maize has also been by and large on the increase. It was grown traditionally for food but nowadays it has also become an important cash crop.

Table 3. General trends in the production of different crops.

Crop	MTIMBIRA			LUPIRO			RUAHA		
	+	-	Same	+	-	Same	+	-	Same
Cotton	7.5	92.5	0	0	100	0	5.3	94.7	0
Rice	97.5	2.5	0	97.5	2.5	0	100	0	0
Maize	85	12.5	2.5	82.5	5	12.5	97.4	2.6	0
Cereals	37.5	20	42.5	0	62.5	37.5	18.4	0	81.6
Beans	20	20	60	22.5	22.5	55	84.2	7.9	7.9
Cowpea	32.5	50	17.5	5	87.5	7.5	-	-	-
G'nuts	-	-	-	-	-	-	89.5	5.3	5.2

Key: + = Increased; - = Decreased.
*The figures in the table are in per cent.

3.4 Assessment of the Impact of SAPs:

Identifying the actual impact of SAPs on natural resource use and environment still continues to be a difficult problem. Due to limitations inherent to the existing techniques, there is no standard methodology available for this purpose. In this study, we have used simple tabular analysis for making before and after comparisons.

The impact of SAPs was assessed on various aspects having a bearing on the households in the three villages included in the study sample. The respondents were asked to comment on the changes—in production of food and cash crops, marketing operations, availability of consumer goods, environmental status, health services and education—which could be attributed to changes in economic policies (Table 4).

3.4.1 Production of Food Crops

Of all the respondent farmers in the three villages, 66.3 per cent reported improvement in the production of food crops over the last five years. The main reason given for this change was an increase in both area and yields. Favourable price regime and improved marketing system due to SAPs for the food crops seems to have played an important role in this regard.

3.4.2 Production of Cash Crops

The main traditional cash crop of the district used to be cotton. Cashewnuts and oil seeds are some other cash crops grown on a very small scale. The production of these cash crops has registered a downward trend according to 66.1 per cent of the respondents. Such a phenomenon can be explained in terms of relatively unfavourable prices and marketing facilities for these crops during the course of SAPs.

3.4.3 Marketing Operations

In the history of Tanzania, agricultural marketing was controlled by state formed bodies, such as co-operatives, marketing boards and crop authorities since independence. The thinking behind the formation of crop authorities was that each authority should have overall charge of the crop(s) for which it was responsible not only by purchasing, processing and selling it, but also by providing credit and extension, operating innovation campaigns, and investing in processing facilities. Although well-organised marketing boards could have a positive role in commodity prices and income, there is hardly any doubt that they have been used as a medium through which the state only appropriated surpluses from the agricultural sector and failed to play its anticipated role due to embezzlement by officials and poor services and accountability (Raikes, 1986; Havnevik et al, 1988; Okogu, 1989).

An integral part of structural adjustment programmes (SAPs), therefore, included the abolition of state-owned marketing boards which bought agricultural products at prices determined by them. Marketing boards in Tanzania have now been partially abolished. This study attempted to find out the trends in marketing operations and their effect on the households.

Table 4: Assessment of the impact of SAP reforms on different aspects in three villages of Ulanga district.

		Reporting households	
Aspect	Type of Changes	Number	Percent
1.Production of food crops	-improved	79	66.3
	-deteriorated	30	25.4
	-same	2	1.69
	-don't know	7	5.9
2.Production of cash crops	-improved	31	26.3
	-deteriorated	78	66.1
	-same	2	1.7
	-don't know	7	5.9
3.Marketing operations	-improved	16	13.6
	-deteriorated	94	79.7
	-same	0	0.0
	-don't know	8	6.8
4.Availability of consumer goods	-improved	103	87.3
	-deteriorated	7	5.9
	-same	1	0.8
	-don't know	7	5.9
5.Availability of inputs	-improved	39	33.1
	-deteriorated	65	55.1
	-same	5	4.2
	-don't know	9	7.6
6.Environmental status	-improved	30	25.4
	-deteriorated	45	38.1
	-same	30	25.5
	-don't know	13	11.0
7.Health services	-improved	32	27.1
	-deteriorated	71	60.2
	-same	6	5.1
	-don't know	9	7.6
8.Educational Services	-improved	27	22.9
	-deteriorated	70	59.3
	-same	8	6.8
	-don't know	13	11.0

Nearly 80 per cent of the respondents felt that the marketing operations had deteriorated. Reasons given included very poor market organisation, i.e., high transport costs and poor roads, poor storage facilities, bureaucracy, and inadequate manpower and knowledge. However, others attributed it to lack of demand, failure of co-operatives, and exploitation by the private traders. Over all, it appears likely that neglect of co-operatives under the SAPs and lack of interest on the part of private traders due to low profitability may be the reasons for the observed phenomenon.

3.4.4 Availability of Consumer Goods

One of the positive things that has occurred in Tanzania due to SAPs is the relaxation of the import regulation by the government. Shops which used to be empty ten years back are teaming with goods to date. This is supported by 87.3 per cent of the respondents who agreed that the availability of consumer goods had increased tremendously due to privatisation which gave an incentive to the individual entrepreneurs for competition. Some of the farmers, however, did not have sufficient purchasing power to benefit from the improved situation. In some remote areas of the country, the availability of consumer goods has remained the same as five years ago, mainly due to poor infrastructure and long distances from major towns.

3.4.5 Availability of Agricultural Inputs

Before the introduction of SAPs, input subsidies had been viewed as a compensation for low output prices, and a way of solving the conflict between the two contradictory goals of cheap food and increased production (Boussard, 1992). Removal of input subsidies could, therefore, generally decrease agricultural production and be harmful to the households. The availability of agricultural inputs today is undisputedly improved due to privatisation. However, what is disputed is availability in adequate amounts at the right time and place. More than half of the respondents in this study felt that input availability had deteriorated. Reason given for the poor availability of agricultural inputs was mainly the high prices.

3.4.6 Environmental Status

The impact of the SAPs on environmental status is by no means clearly positive

or negative. The neglect of environmental concerns in the SAPs was due to the general view that:

(i) at the time the SAPs were initiated the environment was not a priority investment areas,
(ii) it was also assumed that a correct economic policy could address environmental problems,
(iii) environmental protection would lead to more budgetary outlays which was in conflict with the goal of achieving fiscal balance, and
(iv) environmental degradation and macroeconomic crisis were viewed as unrelated problems (Holden and Shanmugaratnam, 1994).

In this study, 38.1 per cent of the respondents stated that the environmental status had deteriorated due to increased clearing of forests for agricultural purposes, fuelwood, building materials, etc. Also, logging has increased as a means of selling the wood to generate some income. The remaining of the respondents felt that either the environmental status had improved or remained unchanged due to recent conservation measures. Such a question may be quite difficult to answer and thus the conclusions drawn may not be very reliable. A question may be interpreted differently by different people causing differences in response. There is some likelihood of improvement in the environmental status also due to changes in cropping pattern, leading to decreased area under cotton and thus lower use of insecticides in the area of study. Thus the environmental impacts may not be easily assessed due to several conflicting effects.

3.4.7 Health Services

SAPs may influence people's health status by affecting expenditures on health-related services not only by changing the cost of these services, but also by reducing the real incomes due to changes in wage earnings and farm profits (World Bank, 1990). Effects on health are often multi-dimensional and difficult to measure. The health sector seems to have been the worst affected by budget cuts, and yet the health status of a population is vital in countering a socio-economic crisis (Havnevik *et al*, 1988).

Of all the respondents questioned, 60.2 per cent stated that health services had deteriorated since the implementation of SAPs. This is because of increased medical costs. The farmers had to pay for all the health services as a result of reduction of government expenditure in health services.

3.4.8 Education Services

The output of the education system in a country is the result of supply and demand factors. The supply side consists of the schools and institutions, as well as the teaching body and materials. SAPs may imply budgetary cuts for the public education system, increases in user charges for education, changes in pricing policies for school materials and increased rationing of access to public schools. On the demand side, adjustment policies will affect household incomes as well as prices, which will have an impact on the amount of education services demanded (World Bank, 1990).

This study found that the educational services had deteriorated considerably (59.3 per cent). This has been attributed to inability of households to send their children to schools due to increased educational expenses in the face of reduction of household income.

4. Summary and Conclusions

The question of how SAPs affect different aspects of the economy, households, natural resources and the environment is becoming a focus of attention, and will continue to be so even in the future. There is a need to find out whether the adjustments have been beneficial, detrimental, or both, especially to natural resource use. However, links between SAPs and natural resource use are often indirect and complex. It is, therefore, difficult to determine the impact of SAPs on natural resource use or separate it from natural processes; or to differentiate the "without" from the "with" adjustment situation. Though profoundly controversial, SAPs often lead to changes in resource allocation, output prices, subsidies, and institutional arrangements which in turn affect the production, marketing and consumption of agricultural products especially food, and consequently the living conditions of the households.

The study confirmed that agricultural production had increased over the past five years due to extensive cultivation by clearing more forests, as well as through intensification. Also, with better marketing conditions for food crops, a shift was observed from cash crops to food crops. Agricultural land area allotted for cotton production (which used to be the main cash crop) had declined and instead it was used for growing rice, maize, cassava, etc. Much of the working capital has now been shifted towards the production of rice from the previously grown cash crop cotton. The same is true for the other inputs too.

Food production had increased mainly due to the free marketing system, and the failure to market cash crops. Production of cash crops has decreased due to a number of reasons; both internal and external (e.g., drop in world market prices). The availability of consumer goods has markedly improved. On the other hand, health services, education and agricultural input use are becoming poorer. There is no conclusive evidence on the environmental status, but a cursory observation indicated an increase in logging and expansion of agricultural land by clearing forests.

The shift in crop growing activities and the expansion of agricultural land rather than intensification may have important implications on the economy and welfare of the peasant households and the environment in future. Shifts in area from a crop like cotton to rice and maize is likely to improve the environment through decreased use of insecticides and pesticides. Such conclusions may, however, be more location specific and should not be generalised for the entire country. For example, Sankhayan (1994) studying the impact of SAPs on peasant households in Ruvuma and Kilimanjaro regions has arrived at just the opposite conclusions. The combined effects of reforms are often complex. In addition, SAPs are not usually targeted towards natural resource use and the environment. More attention has to be paid to these aspects to achieve a sustainable resource use. It is, therefore, necessary to conduct further studies into this aspect in the country so as to enhance the understanding of the linkages between SAPs and natural resource use on the household level, and its long-term effects on agricultural sustainability.

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