The United Nations University

WIDER

World Institute for Development Economics Research

Working Papers No. 118

April 1995

Employment-Based Safety Nets:

Exploring an Alternative Approach to Limit the Adverse Consequences of Recurrent Droughts in Ethiopia

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March 1995

This revised version of an earlier paper was prepared for circulation at the Stockholm Roundtable which was held between 22-24 July 1994, on the conference theme: Change: Social Conflict or Harmony? The earlier paper was presented at an economics colloquium in March 1993 at the University of Helsinki, Finland. I am grateful to Professor Jan Otto Andersson, Åbo Akademi, Finland, for helpful comments.

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1. Introduction

This study is about famine prevention in Ethiopia. Famines, in the case-study country, are often described as situations where a large number of people are faced with extreme scarcity of food with a resultant wide-spread mortality. But it was quite uncommon for famines to be typified as situations where large-scale mortality occurred because large sectors of a population were faced with an extreme scarcity of purchasing power, until it was shown to be so in the case of the Wello (1972 -73) famine in Ethiopia.[1] The former approach envisages famines as a case of food availability decline (FAD), while according to the latter (entitlements approach), famines are not *necessarily* a case of food availability, but rather of peoples' command over available food. Broadly speaking, the above represent the two competing perceptions of famines as they relate to the case-study country.[2] The two approaches essentially imply different policy prescriptions. The food centred approach, FAD, necessarily focuses on strategies for making more food available, while the entitlements approach implies interventions designed to augment the incomes of the vulnerable groups in the society. The subsequent discussions were inspired by the latter view.

Under circumstances where rural economic processes are under constant threat of disruption by endemic phenomenon like droughts, the demand on the resources of the public sector necessarily becomes more pronounced. It is argued herein that, however modest the financial and other resources available to any government, there is a moral imperative dictating that prompt action be taken to remove the risk of death by starvation. The premise of this paper is that such right to food can be restored by early intervention through incomes supplementing employment programmes.

Why famine prevention through employment generation programmes instead of other interventions? Two justifications can be forwarded to satisfy this question. The first is

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[1] See Sen, A. (1981). Also see Endale, D. (1993).

[2] See Sen (1981); Dréze and Sen (1989); Aredo (1989); Baulch (1987); Carlson (1982); Devereux (1988); Jansson, Harris, Penrose, (1987); Kumar (1990); Wolde Mariam (1986).

the realisation that drought induced mass rural unemployment (extensive entitlements failure) was a dominant feature of the major famines of the last two decades. Absence of public intervention to redress the situation had allowed a disabled economic process (drought induced output and activity decline) to develop into raging famines.[3] Focussing efforts towards exploring the possibilities of employment generation for famine prevention, therefore appears to be suggested by the nature of the problem.

The second justification for such an approach is the growing disillusionment with the famine prevention strategies to date. These strategies which have invariably concentrated on food supply considerations, mainly through emergency relief programmes, can be considered to have questionable records of achievements both in rendering timely and unhampered relief and in averting the recurrence of famine conditions. If one accepts the fact that in any famine the poor die first, then the emergency relief approach becomes untenable even on grounds of social justice. This is so because, in the interim between the recognition of the famine situation and the measures taken to procure the required food supplies, many of the poor could exhaust their resources and perish while the better-offs can hold their own. Moreover improving the emergency relief delivery system is hampered by the endemic nature of droughts in the region which instead imply the need for a more sustained programme than emergency intervention.

The adequacy of resources in general and financial resources in particular is also at the heart of the issue of famine prevention. The requirements for financial resources (domestic and foreign exchange) could be expected to be massive regardless of whether the preferred approach is emergency intervention or the sustained programme of income support being forwarded by this paper. The latter approach however, especially when implemented as employment-generating public work programmes, need not necessarily result in significant foreign exchange requirements. The financial resource implications however are still massive as the appropriate measures for raising the required funds could have serious trade-offs with other economic and social functions of the state.

The paper is therefore organised as follows. Section 2 will canvass relevant country experiences, followed in section 3 by an overview of rural employment schemes in the case-study country. Section 4 will forward the arguments in support of the preferred approach - that of sustained employment generation programmes (SEGPs) - as opposed to approaches based on emergency interventions. Sections 5, 6, and 7, will address issues on

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[3] This issue has been analysed in detail under a different paper titled *The Ethiopian Famines Entitlements and Governance* and which was a part of the same research project. See Endale (1993).

the question of resources for funding the preferred famine prevention strategy. Concluding remarks are provided in the last section.

2. Rural Employment Generation

From the extensive literature on rural employment generation, one could classify the various on-going efforts and attempts at rural employment promotion into the indirect and direct approaches.[4] What is here referred to as the indirect approach to rural employment promotion pertain to those policies and investment strategies of governments that take economic growth and development as their primary objectives while issues of rural employment creation are accorded only secondary importance with the underlying assumption that economic growth and development entail positive impacts on employment. Such indirect approaches also incorporate specific goals for employment generation but within the framework of an overall growth and investment objectives.[5]

Unlike the indirect approaches, the direct approaches have rural employment creation as a primary objective and appear to be the response to increasing poverty and under-employment in developing countries. Special rural employment creation programmes could either be based on wage-employment or self-employment. Wage-employment programmes are typified as being those schemes that provide short term employment in rural areas particularly during agricultural slack seasons and are mostly conducted through public works programmes. Such programmes mobilise the labour force in the locality to develop the infrastructure in the area such as the construction of roads, irrigation systems (canals, ditches, dikes etc.,) and can be conducted through either the payment of wages in cash or through food-for-work programmes. Self-employment programmes are, on the other hand, regarded to be those that promote entrepreneurship among the rural poor, and are usually directed at specific target groups such as "...landless agricultural workers, marginal farmers, unemployed youth and women."[6]

In order to properly assess the available options for creating employment opportunities for the specific purpose of famine prevention, it would be instructive to proceed by asking whether there are lessons to be learned from the experience of countries that have been

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[4] For Third-World country experiences on public interventions aimed at maintaining the entitlements of vulnerable groups see Dréze (1990); Anand and Kanbur (1991); Dréze (1990a); Deolalikar (1986); ILO/ADB (1986); Dréze and Sen (1989); Bigman (1982).

[5] See ILO/ADB (1986); on various aspects of employment; see also Lakshman (ed.)(1984); Oakley and Marsden (1984); Haveman and Palmer (eds.) (1982); Krueger (1983); Kannan (1990); ILO (1989). For basic concepts see Sen (1975).

[6] See Deolalikar (1986), p. 2.

pursuing strategies of rural-employment creation through the direct approaches cited above. In this context the experience of India provides useful insights.

According to one analysis employment generation had been incorporated, ever since the first five-year plan, as a goal of economic planning with each plan indicating the number of additional jobs to be created as well as their sector distribution.[7] Unlike the first two plans which, according to the same source, had focused on long term policies to generate rural employment, the third and subsequent plans included supplementary rural works programmes. This was a recognition of the fact that "...while long-term measures to permanently solve the unemployment problem were critical, there was also an important role for short-run or interim relief programmes for the rural poor, such as public works or credit and subsidies for asset creation for the self employed."[8] A well known example of public works schemes organised on a large scale in order to make employment readily available within a short distance from the participant's village is the Employment Guarantee Scheme of Maharashtra. The generation of employment on a large scale had been instrumental in averting famine in the early 1970s and has ever since provided employment opportunities for household living below the poverty line. Tackling the problems of famine, poverty and under-employment in the Indian experience have therefore required direct measures through wage-employment as well as self-employment.[9]

Is it possible to use self-employment as a possible approach in the event of drought-induced decline in incomes? The literature does not indicate any attributes of self-employment schemes which could make such an approach a suitable model for intervention under famine conditions. Self-employment programmes which often need credit facilities and training for rural skill-building could have significant impact under some programmes, but may not be suitable as interventions for famine prevention under drought conditions where the immediate need is that of maintaining household incomes for vulnerable communities whose usual livelihoods have been temporarily stalled by drought. Wage-employment has an obvious advantage over self-employment as a vehicle for interventions to prevent famines under such circumstances. Furthermore, wage employment is also more suitable for implementation within a very short lead time as well as a short distance from the locality where the vulnerable section of the populations are expected to be. It therefore follows that our analysis and discussion of employment

7 Ibid., pp. 91-134

8 Ibid., (1986), p.100.

9 See Kannan (1990); Deolalikar (1986); Drèze and Sen (1989).

generation programmes for famine prevention will be more in line with our understanding of wage-employment rather then self-employment.

By way of summarising the preceding discussion, it is noted that there are a number of lessons to be learned from the experiences of other developing countries. Firstly, it becomes quite apparent that, in the context of the Ethiopian economy the nature of the famine problem - i.e., the gradual impoverishment of a landed peasantry through drought induced loss of production and incomes - would require that, at the outset, rural employment generation needs to be perceived as a direct form of intervention rather than an indirect one. Such a direct approach also needs tc be based on wage-employment but does not however exclude parallel intervention aimed at encouraging self-employment through special schemes.

The second lesson to be learned from the experiences of the other least developing countries (LDC) is that the type of direct interventions generally revolve around rural based activity areas such as infrastructure and developmental public-works, community based activities, reforestation and soil-conservation works. Moreover it is notable that the creation of these wage-employment opportunities can be achieved through either the payment of food in kind directly as in food-for-work programmes, or through cash payment schemes.

3. Rural Employment Schemes in Ethiopia

It has been argued in an earlier paper that the famine problem in Ethiopia could be framed in terms of mass unemployment which deprives the vulnerable population of their entitlements to food thus leading, in the absence of appropriate interventions, to mass starvation and deaths.[10] Given these premise, it was also argued that an appropriate famine prevention strategy would have to include an early intervention by way of supplementing the incomes of the vulnerable through the creation of employment opportunities.

This following section will therefore discuss two approaches - the food-for-work (FFW) approach and the cash-payment schemes - and assess their evolution as alternatives or complementary modes of payments for income support of famine vulnerable communities within the set-up of emergency intervention.

[10] See Endale (1993).

3.1. Food-for-Work Programmes

One notes, on canvassing the record on such activities in Ethiopia, that food-for-work (FFW) schemes are associated with two types of food-aid.[11] The first type is the emergency food-aid, which is provided to a country by donors during periods of food crisis, and the second is what is known as programme (project) food-aid and which is provided on a more regular basis. Under both types of food-aid, the operation of food-for-work schemes entails the payment of food in lieu of cash for the accomplishment of some physical task. However the distinction in the primary objectives of such food-aids sets the limits to the types and extent of tasks expected from the beneficiaries in return for the food payments.

In the case of emergency relief or post-emergency rehabilitation programmes, the primary objective of food-for-work is feeding the destitute people while getting some work done. The amount of work expected to be done in this context appears to be a compromise between, on the one hand the reluctance to give free handouts of food to people who have some capacity to do useful work, and on the other, the need to provide the food requirements of the affected people. This issue of food-for-work as part of an emergency relief programme is clearly debatable as some would argue that such works are a waste of labour as they are often devised to keep large numbers of people occupied rather than do useful work. In the opinion of one writer, who maintains that the temptation to get something in return for food distribution during emergency food-for-work should be controlled, "...it is not only a question of avoiding useless 'make-work' projects; it is the more important question of efficiency in saving lives."[12] He argues that FFW when used as a vehicle for emergency food distribution, should not be burdened with various considerations required for sound public works planning. While such arguments emphasise the emergency situations, it is also to be recognised that a secondary benefit of such projects, in spite of their emergency nature, is that some useful work could also be accomplished in the process and evidences exist that some useful community works have been accomplished in this way.[13]

The second category of FFW projects, that which utilises project food-aid, has been part of the rural development scene in Ethiopia for almost three decades.[14] These projects are

11 See ONCCP (1986). See also McCann (1987); Grannell (1986); UN/FAO World Food Programme (1982); UN/FAO World Food Programme (1986); Admassie and Gebre (1985); Holt (1986); Hareide (1986).

12 See Holt (1986), p.28.

13 See ONCCP (1986); Hareide (1986); Holt (1986); Deolalikar (1986); Adams (1986).

14 See ONCCP (1986); UN/FAO World Food Programme (1982); UN/FAO World Food Programme (1986).

often organised with the primary objective of accomplishing tangible development objectives like undertaking soil and water conservation programmes, construction and maintenance of irrigation canals, major roads, etc. In particular, the need to commit large resources of the FFW programme for conservation activities, appears to be an attempt at stemming the adverse effects of soil erosion and of deforestation on the declining productivity of the erosion-prone highlands of the country. Droughts were also being increasingly associated with the high level of deforestation in these regions and soil conservation and reforestation through FFW programmes appeared to be one appropriate vehicle for carrying out corrective schemes.

According to one source, the origin of such project activities goes back in the 1960s, when it was used successfully to carry out large-scale conservation work in the northern part of the country, and also for construction of small dams and ponds as well as rural roads.[15] The same source points out that by 1973-74 the food-for-work conservation programme was expanded to include five areas in three of the famine prone regions of the country and that the project was then conducted by the Ministry of Agriculture who used it as a demonstration and pilot exercise in reforestation and in the rehabilitation and protection of agricultural lands. The project was supported by the World Food Programme (WFP) which contributed 25,000 metric tons (MT)of wheat and sorghum. This was increased to 85,000 MT of wheat and vegetable oils in 1975-76, to 145,000 MT of wheat and edible oils in 1980, and to 250,000 MT for the three years starting in 1982 by which time the project had expanded to include erosion prone and chronically food deficit areas of nine of the administrative regions in the country.[16] By 1991 the project has encompassed 17 of the 30 regions of the country.[17] Although the objectives of such projects were development oriented in terms of enhancing the productivity of the agricultural sector through soil and water conservation, it has been noted that FFW also "...tries to improve and supplement the inadequate diets of the farmers in areas of drought and famine conditions."[18] In fact according to some accounts the reason for the Ministry of Agriculture's expansion of the food-for-work activities towards drought affected regions, had been that soon after the 1973 -74 famine, it was requested to start up small-scale public-works by the Relief and Rehabilitation Commission (RRC) which was trying to

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[15] See ONCCP (1986).

[16] See also UN/FAO World Food Programme (1982); UN/FAO World Food Programme (1986).

[17] See Ministry of Agriculture (1991).

[18] See ONCCP (1986), p.11.

phase out of free distribution of relief food while still maintaining food support during a rehabilitation phase.[19]

This secondary objective of providing the participating households with income supplement became increasingly evident during the 1980s. A survey of food-for-work projects indicated that there were about 60 such project on-going or planned to start that year (1986), and that they were being run by 22 non-governmental organisations, UNICEF and two Red Cross organisations.[20] The report also maintained that the biggest food-for-work operation carried out in the country was still undertaken by the Ministry of Agriculture backed by the World Food Programme (WFP) which operates in most of the administrative regions of the country and that "...it is the biggest WFP Food-for-work project in Africa and the second biggest in the world."[21] The various food-for-work projects being carried out now are either development oriented, like in the case of the Ministry of Agriculture, or they are motivated by humanitarian and relief objectives like in the case of most of the non-governmental organisation (NGO) sponsored food-for-work projects.

3.2. Cash-Payment Programmes

As has been made evident so far, the idea of employment creation in connection to famine relief or rehabilitation, in the case-study country, had been apparent in the activities of some NGOs. The experience to date shows that food-for-work projects are by far the more frequent method of intervention. However there also were a few projects in selected areas in the country which were based on cash-payment schemes rather than the usual food payments.

It was during the famine periods of 1983-85 that cash payment schemes (also known as cash-for-food schemes) were first tried in the case-study country. According to the evaluation report on the "Local Purchases of Food Commodities Project" which was one of the pilot projects on such schemes, the primary objectives were the reduction of delays in the delivery of emergency assistance, the minimisation of transportation costs, and the avoidance of the displacement of the population which migrates in search of relief, encouraging in so far as possible community development, and the promotion of self-

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19 See Holt (1986).

20 See Hareide (1986), pp. 45-53.

21 See Hareide (1986), p. 45. See also UN/FAO World Food Programme (1982); UN/FAO World Food Programme (1986).

sufficiency.[22] To the extent that the famine relief aspects are emphasised by such programmes, it would be very difficult to distinguish such projects from pure gratuitous cash-payment schemes where the beneficiaries are not required to perform some tangible function.

Although it can be seen that the initiation of the cash distribution project was in direct response to the problems cited above the other important consideration was the diminished purchasing power observed in some regions. It had been realised that not only were there some localities within the famine stricken region which still had grain available for the market in spite of widespread drought conditions, but that the drastic decline in the entitlements of the population due to repeated production shortfalls over the previous years had made it impossible for the victims to buy the food. The decline in entitlements could be so intense that people could starve even when food was available on the market. An underlying assumption as cited in the report was also that people were not entirely destitute when they remain in their own homes but need assistance to tide them over their difficult periods.

The pilot project cited above was initiated with about 1500 families in two different administrative regions of the country. The beneficiary households were entitled to a certain amount of money per month as food subsidy as well as a one-time payment for the purchase of seed. The project was initially planned to have a duration of six months (until harvest from the small rains) but was later extended for a further six months due to the continued failure of the small rains. It has also been cited that, subsequent to the above pilot project report there were ten such projects in four regions of the country.[23]

Such projects have been evaluated subsequently. One such evaluation, by an RRC/UNICEF Project Co-ordinating Team, attests to the usefulness of cash-for-food projects as substitutes to food distribution in places where food grains are obtainable from nearby markets at reasonable prices.[24] Another report indicates a more recent finding that

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[22] See RRC-UNICEF (1985a). It was considered necessary at the time to initiate such a programme in view of the numerous problems facing the relief and rehabilitation commission (RRC). According to the evaluation report the RRC has been "...making strenuous efforts to meet the demands made upon it: advance warning of food deficit areas, procurement of assistance and transportation, storage and distribution of relief food to various parts of the country. However even if sufficient assistance from external sources had been received, this would not necessarily mean that the assistance could reach all of the beneficiaries in time: internal transportation and distribution of relief food is often hampered by bad roads, shortage of vehicles, lack of adequate maintenance facilities and by the insufficiency of funds for hiring trucks, as well as a lack of storage facilities in the rural areas." P.2. Also for a brief summary of the cash-for-food programme, see Intercom/UNICEF, (1988), p.3.

[23] See Intercom/UNICEF (1988).

[24] See RRC-UNICEF (1985).

communities which benefited from cash-for-food were better equipped to face new catastrophes and points out that the beneficiaries, which were "...initially identified as the most needy from among the population today, have more resources than their initially 'better off' neighbours. This demonstrates that, indeed, there exists means of linking emergency and rehabilitation."[25]

The evaluation team further found that food purchases in the local markets by the beneficiaries had not been difficult; that some of the beneficiaries had invested in livestock and farm implements through the thrifty use of the cash payments; that the developmental activities were not only impressive but that such an approach also had several advantages over the traditional food-for-work approach; and that the project saved lives, prevented migration and also encouraged family re-unification.[26]

From the above account of the cash-for-food pilot project in Ethiopia, it can be observed that the usefulness of such projects was envisaged exclusively in the context of a famine relief operation, i.e., either as a substitute for relief food distribution in appropriate situations or to supplement it. The impression one gets from the evaluation report is that the requirement to engage in the community development activities was not a critical issue and that the project retained its essentially cash-relief character and to quote the report "...no-one in need of assistance but incapable of participating in the work was to be excluded from the project for that reason."[27] The works generally consisted of a variety of community development projects including road construction, small scale irrigation works, reforestation and terracing. However the evaluation team, while maintaining that such approaches are necessitated by the lack of purchasing power on the part of the people affected in situations where there is no shortage of food grains in the market, also points that it does not "...in any way claim that this is always the case at all times, everywhere in the country. In fact, the team feels that relief food distribution will remain the most important element of relief work in the country, and that relief food assistance will still be required from outside sources in large quantities".[28]

Two important features of the food-for-work and cash-payment schemes can be gathered from the above background. These are firstly, that although food-for-work programmes

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[25] See Intercom/UNICEF (1988), p. 3.

[26] RRC-UNICEF (1985a), pp. 3-6.

[27] Ibid., p.3.

[28] Ibid., p.6.

had been closely linked with developmental project loans, their use in connection with the rehabilitation of famine victims seems to have become increasingly important particularly among the NGOs. The cash-for-work aspect of such projects evolved (in contrast to a purely gratuitous cash relief scheme) in connection with the need to curtail the development of dependency on relief through requiring the beneficiary households to participate in some community development programme in a way which did not interfere with their own farming obligations. Secondly to the extent that such projects have been used for purposes of famine prevention, they have been routinely regarded as part of the emergency intervention rather than as part of a coherent strategy of famine prevention. These aspects deprive such employment generation projects of any development benefits unless such benefits happen incidentally. The following section will therefore argue the case for more sustained employment generation programmes as distinct from the emergency interventions assessed above. It will be argued that sustained employment generation programmes can provide the required safety net against future famines, while at the same time, providing tangible development benefits.

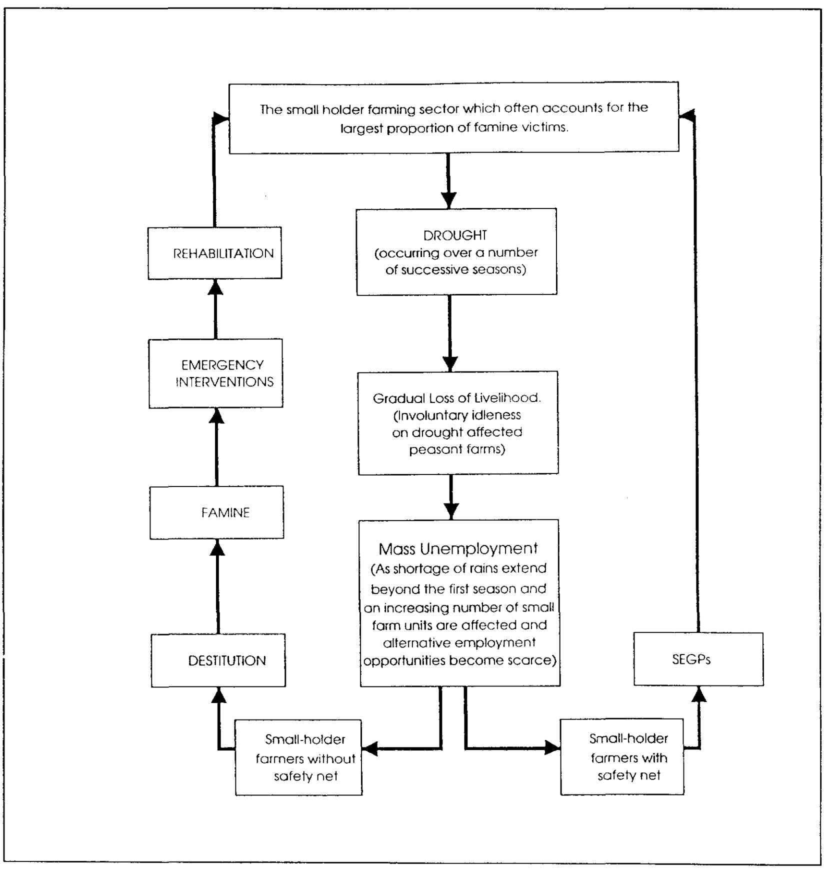
4. Sustained Employment Generation Programme: The Preferred Approach

When a farmer able and willing to work and with resources such as his labour, land, and capital is rendered unable to work because of the shortage of rains, he can be considered to be an unemployed person. When this happens to a large community of farmers then the situation represents a case of mass-unemployment. The contemporary Ethiopian famines had developed when such conditions were allowed to persist over a number of seasons.[29]

Occasional shortage of rains may be a fact of life that may not be easily avoided in the case-study country. That such rain shortages, through various processes, should lead to famines is however a deplorable outcome and underscores the absence of a safety net to help maintain the entitlements of the affected population. As the processes leading to famines within the case-study country are typically triggered by the shortage of rains rather than deficiencies in the farmers' endowment of land, labour or capital, public intervention to uphold the income of such vulnerable groups through the provision of alternative employment opportunities would help avoid the eventual necessity for an emergency famine relief operation.

[29] This short-coming has been underscored in Endale (1993) where it was argued that the government's failure to restore lost entitlements was a primary factor in the development of famines in Ethiopia.

It is the primary argument of this paper that such a safety net, in the form of *sustained* employment generation programmes (SEGPs), should be initiated and maintained in order to curb the processes that lead to famines in the country. A necessary feature of sustained employment generation programmes, being proposed here, is that such programmes are to be maintained on a continuous basis and not initiated just as a response to emergency situations. Such an approach has particular advantages as will be discussed later. The following diagram illustrates the location of SEGPs *vis-à-vis* the processes that lead to famines.



Why SEGPs? The justifications for SEGPs as a public strategy for famine prevention revolves around a number of considerations which can, for convenience, be grouped under the following three headings:

1) The limitations of the emergency approach.
2) The longer term development benefits that could be achieved through sustained employment support programmes.
3) The inherent advantages of income support as a strategy for famine prevention in view of particular processes that lead to famines in the country.

These are further discussed below.

4.1. The Limitations of the Emergency Approach

Preparedness for emergency intervention must in general assume that the phenomenon for which the preparedness is being sought must be a rare event. Droughts and less than adequate precipitation are, on the other hand, endemic to the region. If the drought-induced production declines are allowed to develop into famines, as has been the case in the past, then famines cannot be regarded as rare events and their resolution requires a more sustained approach rather than emergency preparedness.

An emergency preparedness approach must also assume that the anticipated distress can be contained within the short time spans characterising emergency interventions. Instead, the probable frequency of famine conditions, as indicated in the preceding paragraph, could render emergency intervention an on going enterprise thereby undermining the basic rationale for such interventions.

The moral imperative to act when faced with famine conditions, generally means that emergency measures are adopted whatever their costs, thus leading to uneconomic and wasteful use of resources. Moreover, emergency interventions had required, at least in the context of famine relief within the case-study country, the joint efforts of the government and non-governmental organisations (NGOs) - an alliance often motivated by the level of distress among the affected populations. It is clear therefore that neither such alliance nor the high activity levels (and the associated high resource costs) implied by emergency interventions can be regarded as sustainable.

Besides the above shortcomings, emergency intervention as a strategy for famine prevention is inherently inefficient at saving lives. This follows because in the interval between the recognition of the famine condition and the initiation of the emergency measures, the most vulnerable of the affected could perish. Given the backward infrastructure developments of the case-study country, emergency interventions can well be regarded as a last resort at damage control.

Besides the inefficiency at life-saving, emergency intervention, as an approach to famine prevention, contributes very little in terms of reducing the recurrence of famine conditions by not aiming for tangible, longer term benefits as discussed under the following heading.

4.2. The Long-Term Development Benefits

How does the preferred approach - SEGPs - differ from other income support programmes initiated as part of an emergency intervention? As is evident from the discussion on food-for-work and cash-payment schemes (preceding section), the idea of employment generation as a supplementary approach to emergency famine relief and rehabilitation is not new in the case-study country. Non-governmental organisations (NGOs) associated with famine relief were particularly prominent in experimenting with different approaches to employment schemes particularly due to their reluctance for free food handouts and their concern with considerations of dependency which beneficiaries could develop on such food-handouts.[30] However, the use of employment schemes, even as alternative and convenient techniques of targeting beneficiaries for relief-food distribution, can only be of limited value at the height of an emergency situations. For example, conditions may be such that, either due to limitations of local administrative capabilities or the urgency due to impending famine, screening through food-for-work or similar employment schemes may not be possible. Such limitations on employment generation schemes at the height of an emergency usually mean that there is no other option but to distribute the available relief to the whole population in the affected community with the usual drawbacks - not all members of the affected community are equally needy during periods of impending famine.

Even during the rehabilitation period that follows the height of the emergency interventions, food handouts are provided through various mechanisms including employment generation programmes set up as part of the emergency operations. Here again, although the urgency associated with famine relief is not as pressing, the primary purpose is still the distribution of sufficient food to the affected communities with little or no weight given to the quality or amount of work performed. Such schemes are not much different from the gratuitous food handouts of emergency interventions.

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[30] On responses to famines, in terms of relief measures, see RRC-UNICEF (1985a), RRC-UNICEF (1985); Padmini (1985); Stephenson and Romanovsky (1987); Brown, et al. (1986); Mayer (1975); Holt (1980); Mckerrow (1979); Dodge and Alnwick (1986); WFP (1986); Young (1987); Mclean (1988); Webb; Braun; Yohannes (1992).

The productive value of employment generation programmes that are initiated as part of emergency interventions is questionable. Evidence exists in the literature that suggest that such schemes, with their emphasis on direct famine relief, have very little value in terms of developmental benefits which are crucial for reducing the vulnerability to famines of the affected population both in the short run and long run.

The difference between such schemes and SEGPs lies in that the latter type of projects are geared towards activities that constitute useful investments that could both in the short and long run reduce the incidence of poverty and thereby vulnerability to famine. Such developmental benefits are attainable due to the *non-emergency* feature of such programmes which allows sufficient scope for appropriate project planning.

This scope for project planning, besides enabling SEGPs to be used as safety nets against famines, also make possible the use of such projects for accelerating the development of the infrastructure of the country.

That the extremely backward infrastructure of the country could be improved through activities that could be accomplished by means of mass participation and the comparative advantage of labour intensive techniques, also enhance the possibility of using SEGPs as an integral part of the normal activities of various government ministries. For example, much needed infrastructure development within the rural sector which includes land improvements, afforestations, irrigation works, and rural road construction, among others, as well as significant improvement in the social and health infrastructure could be brought about through proper design and implementation of SEGPs.

Employment generation programmes as part of an emergency intervention are therefore devoid of developmental objectives, unless such benefits happen to be incidental. Without any developmental benefits such schemes clearly amount to direct food handouts and as such are not sustainable. The preoccupation with emergency relief and rehabilitation and the governments lack of a coherent strategy for employment generation programmes (EGPs) has clearly undermined the potential role of such schemes.

On the other hand, the role that EGPs as *sustained* programmes can play has a dual character in that both the objective of economic development as well as that of maintaining the entitlements of the vulnerable communities could be accomplished concurrently. SEGPs could be initiated as a national network of employment schemes. Such SEGPs should be centrally located within clusters of peasant associations and be able to provide employment support throughout the year to the most vulnerable sectors of the community. Participation in the project could be limited by setting the payments below the going wage rates and at levels which will attract only the most disadvantaged while maintaining minimal subsistence levels.

4.3. The Advantages of the Preferred Approach

Employment generating programmes (whether initiated as emergency interventions or SEGPs) could have various advantages, as opposed to other non-employment approaches, which could make them particularly well suited to the specific circumstances of the case-study country. However as argued above, because of the inherent defects of the emergency approach, such advantages tend to enhance the case for *SEGPs*, which, while having all the advantages of income support programmes in general, do not have the disadvantages arising from an emergency approach.

One such inherent advantage is that such projects could serve as a screening mechanism which limit the income supplement to those who needed it badly enough to be willing to work for it.[31] This would of course mean that wages paid on such projects would have to be set at a level sufficiently lower than the going market rate.[32] This is a necessary feature of SEGPs designed for famine prevention purposes, which quite apart from the developmental objective, as stated earlier, also have the dual role of ensuring the minimal survival needs of those able and willing to work. This welfare aspect of SEGPs has to be prevented from attracting labour away from other gainful employment be it from the rural sector or the urban sector. If a distress situation is allowed to develop into full fledged famine for a variety of reasons (say because the EGP in the affected community was not operational early enough), one apparent short-coming of this screening advantage of EGPs would be the fact that the screening applies only to those able-bodied sections of the vulnerable populations. For purposes of famine prevention the aged and disabled as well as the children and lactating mothers in the community would require a separate relief arrangement and may be expected to benefit from such income supplementing programs only to the extent that they are dependants of able-bodied adults participating in the programmes. This shortcoming also underscores one advantage of why the EGPs should be sustained programmes so that the distress is not allowed to develop into one requiring emergency interventions.

[31] See Dréze (1990).

[32] See Ravallion (1990).

Another advantage of such programmes is their early warning function.[33] The degree of participation in the schemes can be taken as indicative of the distress condition affecting the region. The number of participants in an employment generation programme in a particular area can be expected to vary directly with the increase in the level of distress within the community. This together with any observations on changes in population migratory patterns as reflected in the regional composition of programme participants could be used as warning signals of an impending famine. Through careful monitoring, such knowledge could be used in combination with other indicators in order to enhance the general level of preparedness to prevent the onset of famine. This is of particular relevance to the case-study country where, as has been analysed under a separate paper of this research project, the market prices of grains, which are components of the current early warning system, could fail to provide meaningful early warning signals. This arises, as detailed in the indicated paper, from the highly fragmented character of local markets which act as isolated units and therefore highly sensitive to specifically local circumstances only; the distortions in the price mechanisms introduced by the various controls and restrictions on private trading; poor transport networks; and poor information flows. With market prices that are highly distorted and unreliable, the potential contribution of SEGPs as early warning systems, has promising prospects.

A third potential advantage is that SEGPs could stem the tendency for the disruptive migratory patterns associated with famine disasters.[34] A sustained programme of income support in the rural communities can ameliorate the absence of alternative employment opportunities. In those parts of the study area most prone to repeated drought and famine, such a lack of alternative sources of income within close proximity to the affected areas has triggered large scale migrations to other regions both within the country and beyond.[35] Although the adoption of migration as a survival strategy has enabled large numbers of the populations to survive famines, there are numerous accounts that such massive distress movements have been a source of untold human sufferings. Under such circumstances the establishment of alternative sources of income through SEGPs as close to the affected areas as possible becomes a necessary strategy.[36] At the same time, the absence of severe cultural and other inhibitions for migrating over long distances, have been observed during past famines among the famine distressed communities in the case-

33 See Dréze and Sen (1989).

34 See Hugo (1984) for a review of the demographic impact of famines in general.

35 See Cutler (1984); Rahmato (1991); Pankhurst (1986); and for aspects of drought induced migration in general see Dréze and Sen (1989), Dréze and Sen (eds.) (1990); Mclean (1985).

36 See Winer (1989); See also Seaman and Holt (1980); Hugo (1984); Rahmato (1991); Turton and Turton (1984).

study country.[37] This could imply a mobile work force which in turn further enhances the advantage of operating SEGPs. Mobility of a work force could make it possible to design and operate SEGPs not only within clusters of peasant associations but also among clusters of communities in such a way as to attain economies of scale to scarce resources including managerial and supervisory skills.

A fourth advantage favouring SEGPs has to do with the particular institutional aspects of the case-study country. This advantage can be broadly divided into two, with the first being the advantage that arises from the vast amount of experience acquired over the years in famine interventions. The second institutional advantage arises from the experience gained by the concerned government and mass organisations in mass-mobilisation programmes (food-for-work for development, etc.).

Advantages that arise from the experiences obtained in the various facets of famine intervention and which include income support schemes, although as emergency interventions, can be expected to have enhanced the adequacy of not only the public sector but also of non-governmental organisations including both international and local institutions. The experiences acquired regarding income supplementing programmes as emergency interventions, particularly since 1985, can be put to good use for the successful implementation of SEGPs.

The other type of institutional advantage - that which relates to the experience acquired by governmental as well as mass organisations - was mainly in connection with food-for-work (FFW) programmes for developmental purposes through the use of the WFP food aid. The organisational and institutional capacity acquired through the frequent use of such schemes over the last two decades, represent valuable assets that could provide the basis for the successful implementation of a large scale network of SEGPs. In this regard, the government organisation that can play the key role in the future and which has acquired the most experience in the past is the Ministry of Agriculture. The role of the Ministry of Agriculture in the implementation of employment generation programmes is probably the least difficult to envisage. The ministry deals, for the most part, with the rural population and its area of activities also happen to enable the more diverse selection of works for employment generation purposes. These include projects such as reforestation; projects for the prevention of land degradation by water and soil erosion; projects aimed at the expansion of productive capacity through the expansion of the country's irrigation potentials; the construction of rural roads and other rural

[37] See Rahmato (1991), Cutler (1984).

infrastructure, etc. The Soil and Water Conservation Services established within this ministry has already acquired some acclaim for having undertaken some large food-for-work campaigns.[38]

The grass-root mass organisations - the *peasant associations* - are the complementary institutional features of the case-study country that can be used to advantage in the implementation of a large network of SEGPs. These basic organisational units of the rural economy were established by proclamation early during the socialist revolution that started in 1974 -75 and have been instrumental in implementing various social reforms among which is the land reform.[39] The national literacy campaign is another of the achievements attributable to these mass organisations. As shown in Appendix 2 the number of peasant associations found throughout the nation numbers about 19,928 distributed between the thirteen administrative regions of the country.[40] The total membership within these organisations adds up to 5,720,028 households. As these include virtually all rural residents, peasant associations provide, besides other advantages, a convenient frame for the planning and implementation of rural based, labour intensive projects of the type which SEGPs are envisaged to be.

5. Sustained Employment Generating Programmes: At What Cost?

An assessment of the capabilities of the case-study country to launch and sustain the type of income supplementing programme that could eliminate the risk of famines would therefore be a necessary component of this study. While such an assessment could presumably be conducted in purely qualitative terms, it was considered equally useful to obtain some idea on the probable financial magnitudes involved. Such quantitative aspects will not only enhance the qualitative analysis but would also provide sufficient clarity in identifying the available policy options.

To this end, this section will outline the probable cost of SEGPs on the basis of cost figures on a pilot project obtained from the case-study country. Section 6 will assess implications of the cost estimates for SEGPs in the context of budgetary appropriations. In section 7 the structure, productivity and prospects of the tax system are qualitatively assessed and alternative sources of public revenue in the context of financing SEGPs are

[38] See WFP (1986).

[39] See for example Woube (1986).

[40] The administrative regions have recently been reclassified into twenty five administrative and five autonomous regions.

also discussed. The section will also complement the qualitative arguments with a comparative static exercise on the probable effects of SEGPs on the budget deficit and on consumer prices, under different assumptions regarding the choice of financing arrangement available to the government.

As has been discussed in preceding sections, the concept of public works in the form of food-for-work (FFW) is not new to the case-study country. Such projects have played increasing roles as emergency interventions as well as ameliorating the conditions of famine victims during the rehabilitation phase. The World Food Programme (WFP) which is the major source of food-aid used for FFW (mainly in connection with developmental objectives like conservation, reforestation, etc.,) has been increasingly willing to use part of the food-aid in connection with projects that aim to achieve simultaneously both developmental objectives and increased household food security.[41] To this end the WFP had come up with the cost estimates for a pilot project for possible implementation in one sub-region during 1992 -93. By extending this cost estimate, with suitable modifications, into the national grid of peasant associations, we can obtain a crude estimate of the cost implications of SEGPs at the national level.

We start by converting the sub-regional cost figures into their equivalent in terms of peasant association clusters. This is made to take advantage of a useful institutional feature of the case-study country - the fact that the rural communities consist of peasant associations established by proclamation, and spread over the habitable regions of the country with each organisation having control over an area not exceeding twenty *gashas* (about 800 hectares).[42] The sub-regional costs were converted into costs per cluster of peasant associations rather than cost per peasant association in order to avoid the difficulty in allocating indivisible project costs among individual peasant associations. The annual cost per cluster therefore becomes Birr 3,102,777 and the cost implications to the nation as a whole is depicted in Table 1:

[41] The researcher during one of the field trips to the case study country, in connection with this research project, had a fruitful discussion with the concerned officials at the WFP office in Addis Ababa. It turned out that the WFP had worked out the outline of a cost estimate of a pilot project to be implemented in one sub-region. For project details see WFP (1991).

[42] See Woube (1986). The peasant associations were established by proclamation in connection with the land reform of 1975. They have been instrumental not only in implementing the land reform but have subsequently played useful roles in matters requiring mass mobilisations.

Table 1

Regions	Clusters*	Costs (millions of Birr)
Arssi	32	99,288,864
Bale	19	58,952,763
Gamo Gofa	25	77,569,425
Gojam	56	173,755,512
Gondar	33	102,391,641
Hararge	42	130,316,634
Illubabor	31	96,186,087
Kefa	51	158,241,627
Shewa	167	518,163,759
Sidamo	50	155,138,850
Tigray	10	31,027,770
Wellega	69	214,091,613
Wello	38	117,905,526
Total	643	1995,085,611

Cost assumptions are provided in Appendix 2
* Each cluster is comprised of 32 peasant associations.

It is the basic argument of this paper that a social security safety net comprised of SEGPs should be made within reach of the rural communities. If one such scheme was to be initiated within each cluster (comprised of 32 peasant associations), the financial burden to the state would amount to 1,995 million Birr. This would amount to about 31 percent of the national budget with the 1990 -91 budget appropriations taken as the base.[43] Because of assumptions in the cost build-up, the establishment of an EGP in each of the 643 clusters provides year-round employment support to about 25 percent of the households with the employment opportunity offered to only one member per household.[44]

While a public expenditure item that threatens to absorb 31 percent of the national budget, may appear to be formidable, it should also be noted that there are longer term developmental benefits that can arise from such commitments. EGPs that are implemented on a sustained basis can easily be incorporated into national and sector development plans and thereby help the large-scale, labour intensive development of essential rural infrastructure. Rural road construction, irrigation works, reforestation and

[43] The last published budgetary appropriation, before the last government came to an end, was that of the fiscal year July 1990 to June 1991. Since then the Ethiopian political scene has been uncertain (to say the least) and characterised by strife and tribal conflict. The Transitional government has attained an unstable truce with rival groups and a lot depends on the elections to be held in 1994 which would mark the first stage towards the formation of a democratic government. We therefore had to base the analysis on the last published budgetary appropriation.

[44] With a total number of 19,928 peasant associations and 5,720,028 households, the number of households per cluster number 8,896. The cost build-up of the WFP pilot project proposes to provide employment to about 2,300 households with only one member from a household being allowed to participate. This provides coverage for about a quarter of the households. (See Appendix 3).

soil conservation are all activities that are essentially labour intensive and could be organised and implemented in such a way as to ensure clear developmental benefits while enabling the vulnerable sectors of the community to maintain survival incomes. Moreover, given the endemic nature of the famine problem, and the massive resources expended on frequent occasions for purposes of emergency interventions, implementing EGPs on a sustained longer term basis may prove to be a better use of resources than the sporadic and massive resource inputs required by emergency interventions. The latter type of projects (emergency interventions), due to their purely welfare orientation may lack the longer-term developmental benefits and represent a less optimum use of scarce resources when compared with SEGPs.

6. Implications to Budgetary Appropriations

How does the cost-estimate compare with other budgetary appropriations? To discuss this comparative aspect we will again make use of the budgetary appropriations of the 1990 - 91 fiscal year, the latest year for which data was available. Some of the salient features of the budget are as indicated in Table 2. As is evident from the data, the budgetary appropriations for the 1990 -91 fiscal year were heavily concentrated in Administrative and General Services which controls 43.8 percent of the total budget. National defence which is just one expenditure component within this category, controlled 36.7 percent of the total budget. In sharp contrast are allocations for Economic Services and Social Services which had 28.2 percent and 15.4 percent respectively. This heavy bias towards defence expenditures is a reflection of the unstable military situation in the country during most of the preceding decade.[45]

[45] The previous Head of State had, on a number of occasions during 1990, disclosed that military expenditures had been draining national resources during most of the decade. See Addis Zemen, various issues of the Amharic language newspaper for 1990.

Table 2

Description	Recurrent (Million Birr)	Capital (Million Birr)	Total (Million Birr)	% Of Total
1) Administrative and General Services (Party and organs of state; justice; national defence*; public order and security; general services).	2,655.9	132.1	2,788.1	43.8
2)Economic Services (Agriculture and water resources; industry; mines and energy; trade and tourism; transport and communications; construction; economic development study).	242.9	1550.5	1793.4	28.2
3)Social Services (Education and training; culture and sports; health; labour and social affairs; Housing and community services).	738.9	243.9	982.8	15.4
4) Various Expenditures (Pension payments to government employees; public debt and bank charges; provisions and subsidies).	801.7	-	801.7	12.6
Grand total	4,439.5	1,926.6	6,366.1	100

Source: Compiled from Negarit Gazeta (1990)

* National defence alone had an allocation of 2,338.9 million Birr or 36.7% of total budget.

This lop-sided appropriation of budgetary resources is also evident from Table 3 which shows the level allocated over time to the major components of government expenditure. Viewed over time, it is also evident that defence expenditure had been a significant drain of public resources over the decade.

Table 3

Government expenditure by sector (% of total exp.)	1980	1981	1982	1983	1984	1985	1986	1987
1) Administrative and General Services:								
General pub. serv.	2	2	2	2	3	3	3	2
Defence	30	34	40	36	39	35	32	31
2) Economic Services	22	23	28	37	30	34	36	35
Agriculture	6	6	9	16	9	13	14	12
3)Social Services:								
Education	9	10	11	9	11	11	10	11
Health	3	4	4	3	4	4	3	4

Source: World Bank Software (1990), African Economic and Financial Data. Data on Diskette. The World Bank, Washington D.C.

It can be argued therefore that the heavy financial commitment implied by the large-scale implementation of SEGPs (31 percent of the national budget) is not beyond the financial capability of the nation, but rather a matter of budgetary reallocation. In the final analysis the choice becomes one of a trade-off between military spending on the one hand and famine prevention/cum longer term development benefits on the other.

7. Public Revenue and Financing

Although formulating the financial requirements of SEGPs as a trade-off against military spending is indicative of one possible venue for financing *famine prevention*, alternative approaches have also got to be explored. In this regard the primary questions to be addressed by this sub-section are: How was the performance of the tax system and can the tax system be relied upon to mobilise the required additional financing for purposes of the famine prevention strategy (i.e., SEGPs) being discussed? What are the alternative (non-tax) sources of finance that could be tapped? We will start by assessing the budgetary revenues corresponding to the budget appropriations presented in the preceding sub-section. This will be useful not only to identify the principle sources of revenue but is also indicative of the alternatives which the government has for raising the required additional funding. The budgetary revenues corresponding to the appropriations detailed above are as follows(Table 4):

Table 4

Description	Million Birr	Million Birr	% of Total
1) Domestic Revenue			
Tax Revenue*	2,140.2		33.6
Non-Tax Revenue	1,139.8		17.9
Sub-total		3,280.0	51.5
2) External Assistance			
Cash Grants	70.0		1.1
Technical Assistance	342.9		5.4
Sub-total		412.9	6.5
3) Loans and Credits			
External Credits	756.6		11.9
Domestic Borrowing	1,916.5		30.1
Sub-total		2,673.1	42
Grand total		6,366.0	100

Source: Compiled from Negarit Gazeta (1990)
* [This is further divided into direct taxes (861.5), and indirect taxes (1,278.7)]

The financing of the 1990 -91 fiscal year had required the mobilisation of tax and non-tax revenues, external assistance as well as domestic and external credits. The biggest share of the budget appropriation was to be financed from domestic revenues (51.5 percent). The second important source of financing had been domestic and external borrowing to the tune of 42 percent of total expenditures, followed by a 6.5 percent from external assistance. The proceeds from the tax system, while accounting for most of the domestic revenue (65.24 percent), is only a third of the total budgetary requirement (33.6 percent). The balance of domestic revenue comes from non-tax revenues. The various sources of financing will be briefly reviewed below.

7.1. Domestic Revenue

Tax-revenue: Can the productivity of the tax system be enhanced, in terms of significant increases in revenue, through radical policy reforms in the short and medium term ? There are good reasons to believe not. In the first place, the tax system of the case-study country has undergone a number of reforms during the last three decades. Back in the nineteenth century as well as the early twentieth century, taxes and tributes were normally paid in the form of labour as well as in whatever commodity the tax-payer (peasant or trader) possessed.[46] This was due to the poor development of the monetary system of the economy as well as the highly primitive character of production. A succession of tax proclamations, aided by the increased monetisation of the economy and the sweeping

[46] See Pankhurst (1967).

changes brought about by the land reform of 1975, paved the way for a uniform system of agricultural taxation, reformed the tax administration and ensured that the tax system conform to generally accepted standards.[47] Notably the most recent proclamation (1990) was made with the belief that the consolidation of the many scattered indirect taxes, to quote the Special Decree, "...can facilitate tax administration and collection ...and can, thereby, increase government revenue".[48] The Ethiopian tax system, besides the objective of raising financial resources for public functions, also has as its objective the creation of a suitable environment for economic growth while maintaining an egalitarian order through acceptance of the principle of progressive taxation as a way of ensuring a desirable income distribution for the community.[49] Therefore, given the already installed legislation which aimed at strengthening the tax system, a radical tax reform may have very little to recommend it as a method of tapping additional revenue to meet the increased financial requirements required by SEGPs.

A further reason why the tax system may not be counted upon to provide the extra revenue in the short run has to do with the level of poverty characterising the case-study country and the consequent limited capacity for direct taxation. It can be seen that direct taxes which account for about 40 percent of tax-revenue (see Table 4) is partly a reflection of the subsistence conditions of peasant production. Such a low level of production and income does not allow the tax system, no matter how vigorously applied, to realise the full taxable potential of the rural sector which would be possible with higher production and incomes. Needless to say, extracting additional revenue from the rural sector through the more vigorous application of direct taxation may be further frustrated by the income loss resulting from the recurrent famine conditions.

That direct taxation should account for less of the tax-revenue is also a generally accepted feature of underdeveloped countries. A number of studies have established that taxation, while it is generally considered the biggest source of government revenue in both industrialised and developing countries, shows marked differences in pattern, with the industrialised countries relying more on direct taxes, mainly income and corporate profits, and developing countries more on indirect taxes such as sales taxes and import and export duties.[50] It is also indicated in the literature that observations over the last century have

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[47] For the various proclamations on the tax system see the respective issues of the Negarit Gareta No. 204/1963; No. 217/1965; No. 249/1967; No. 146/1955; No. 205/1963 and No. 16/1990. See also Abraham and Abraha (1975); Ruhewza et al., (1967).

[48] See Negarit Gazeta (1990).

[49] The new economic policy issued towards the end of the 1980s incorporated a set of tax incentives aimed at encouraging the active participation of the private sector in the economic activities of the country.

[50] See Kitchen (1986). Also see Lewis (1984); Bird and Oldman (1967); Due (1967); Heller (1967); Wang (1976).

shown that the relative importance of direct taxes vis-à-vis indirect taxes have tended to increase with increasing industrialisation. The predominance of indirect taxes in the government revenue can therefore be taken as an indication of the low taxable capacity prevalent in developing countries.[51] This high dependence on indirect taxes (including taxes on foreign trade) is also prevalent in the case-study country as illustrated in Table 5:

Table 5

Tax structure (as % of total revenue.)	1980	1981	1982	1983	1984	1985	1986	1987
1) Direct taxes:								
Income & profit taxes	21	25	28	25	27	28	27	30
2) Indirect taxes:								
Taxes on goods & services	24	22	21	20	22	23	19	21
Import duties	15	16	15	14	14	12	11	15
Export duties	21	13	10	9	11	8	10	5

Source: World Bank Software (1990), African Economic and Financial Data. Data on Diskette. The World Bank, Washington D.C.

It can be seen from Table 5 that, over time, taxation (both direct and indirect) has been and still is the major source of government revenue. The large contribution of import and export duties to tax revenue conforms to general observations that the tax system in Sub-Saharan Africa has relied more on foreign trade for reasons such as, among others, the size of the international trade base and the absence of alternatives.[52] Although its share in total revenue has declined over the years, taxation of international trade is still a principle component of the tax revenue. Seen in aggregates, the revenue from indirect taxes such as taxes on goods and services as well as import and export duties has consistently provided a bigger share of tax revenues.

The ratio of the tax revenue to national income is also used by some to indicate the level of taxation appropriate for a developing country. It is stated that the less advanced the economy, the lower the ratio of tax payments to national income.[53] Judged by this standard, the case-study country, in spite of significant increases over the last decade,

[51] See Shalizi and Squire (1985), also Wang (ed.) (1976).

[52] See Shalizi and Squire (1985). According to them the contribution of taxes on international trade to total revenue exceeds 40 percent in Sub-Saharan Africa, as compared to about 35 percent in South Asia and 30 percent in East Asia and Latin America. These aggregate statistics do not fully portray the circumstances of the case-study country where the share of the taxes on international trade and transactions has declined sharply from 30.4 percent of total revenue in 1972 to 19.6 percent in 1989. See The World Bank. (1991).

[53] See for example Heller (1967), pp. 10-12. See also Shalizi and Squire (1985). Based on data on Sub-Saharan Africa, Shalizi and Squire have concluded that the tax system in the sub-continent differs from other regions in the rapid growth of the tax revenue as a proportion of GDP which they placed at about 17 percent in 1979. They consider this proportion unusually high given the low level of incomes in the region and particularly when contrasted with the corresponding proportion for the South Asian countries which have significantly higher income levels but where the proportion of tax revenue to GDP was only about 12.4 percent at that time.

appears to have some potential for raising revenue through the use of the tax system in the long run with increasing economic growth. This can be gathered from Table 6 which gives current revenue (both tax and non-tax revenues) as a ratio of national income. (Assuming taxes account for about 65 to 70 percent, the indicated figures should be reduced by about a third to get a rough approximation of tax payments as a ratio of national income.)

Table 6 Total Current Revenue as a Percentage of GDP

Year	Proportion	Year	Proportion
1974 -75	12.8	1980 -81	19.7
1975 -76	13.0	1981 -82	20.5
1976 -77	14.8	1982 -83	20.5
1977 -78	16.3	1983 -84	22.4
1978 -79	17.2	1984 -85	23.4
1979 -80	18.4	1988 -89*	25.2

Source: The World Bank (1987) and (*) from The World Bank (1991) "World Development Report".

To summarise: In the preceding discussion we had attempted to address the question of whether or not the tax system could be relied upon to help mobilise the additional financial resource requirements needed by SEGPs designed for famine prevention. The question raised does not have a clear answer. Instead, the approach followed was to enable, at best, an informed judgement to be reached regarding various aspects of the question. It appears that, while there may be some untapped taxable potentials, as judged by the particular tax structure which was characteristic of underdeveloped countries, as well as by the observed pattern in the ratios of tax payments to national income, such potentials were contingent on the longer-term improvement in the growth performance of the economy. Such potentials can be regarded as unattainable in the short and medium term period which is the relevant period for the famine prevention programme being assessed. We had therefore tended to conclude that, as judged by the recent tax reforms, particularly in connection with indirect taxation, further taxation legislation may not be a promising venue for tapping additional revenue in the short run. While additional efforts in this direction may undoubtedly result in increased revenue in the long run, the short to medium term period relevant for SEGPs suggest alternative policy options. The equally grim prospects for raising the additional finance through intensifying direct taxation of rural incomes was also considered to be not so encouraging.

Non-tax Revenue: Although taxes provide the bulk of the domestic revenue, non-tax revenues are also significant sources as indicated in Tables 4. In the budget proclamation for the fiscal year 1990 -91 (Table 4) the share of non-tax revenue was 17.9 percent of the financial requirements needed to meet the total budget appropriations. Non-tax revenues were also about 34.75 percent of the domestic revenues (tax plus non-tax revenues) required for the same purpose. When viewed over time, non-tax revenue has become an increasingly important source of proceeds as depicted in Table 7:

Table 7
Growth of Non-tax Revenue and Share of Public Enterprises in Non-tax Revenue.

Year	% Share of non-tax revenue in Domestic Revenue	% Share of public enterprises in non-tax revenue	Year	% Share of non-tax revenue in Domestic Revenue	% Share of public enterprises in non-tax revenue
1974 -75	16.7	63.9	1980 -81	22.5	82.2
1975 -76	21.2	70.1	1981 -82	23.5	83.2
1976 -77	15.0	66.4	1982 -83	25.1	85.2
1977 -78	21.0	45.3	1983 -84	23.4	84.7
1978 -79	20.4	55.1	1984 -85	28.4	70.6
1979 -80	16.9	70.0	1988 -89	30.7	

Source: Compiled from various sources.
Data on 1974 -75 to 1984 -85 from The World Bank (1987) and data on 1988 -89 from The World Bank (1991), "World Development Report".

The share of non-tax revenue, as illustrated in the same table, has been growing at a rapid pace from a the level of 16.7 percent in 1974 -75 to almost twice this amount by 1988 -89. The most obvious explanation for the increase could be the fact that since 1975 state enterprises have become a dominant feature in the case-study country due mainly to the socialist ideology of the previous regime. It is interesting to note that in spite of the negative image which public enterprises have from the point of view of profitability and rational resource allocation, they have in fact been an increasingly important source of public revenue as can be gathered from the Table 7.

The change in government and the recent economic policy declaration of the Transitional Government indicate a move towards a free market economy.[54] This suggests that the large number of state enterprises that have proven unprofitable over the years could be disposed of and so provide a major source of government revenue in the short and medium term. Furthermore, the operating efficiency of even those state enterprises that have managed to break-even could be significantly improved if managed by the private

[54] See Negarit Gazeta (1991); various issues of the Addis Zemen for 1991-1992; and also Laine (1991) in which the author (also the Prime Minister of the Transitional government) outline the proposed economic policy framework.

sector rather than the government. A well planned privatisation scheme could therefore not only ensure that the share of state enterprises in non-tax revenue is increased through enhanced profitability, but also provide additional revenue through the limited sale of shares in these enterprises to the private sector. This potential for raising additional government revenue through privatisation provides a further justification for the need to install a social security safety net in the form of SEGPs in order to eliminate the persistent threat of famines.

7.2. External Assistance

The crucial role of external assistance (both cash grants and technical assistance) which accounted for about 6.5 percent of the financing for the budget appropriations assessed in the forgoing discussion, can not be overemphasised for the smooth implementation of an employment based safety net against famines. However, while maintaining the importance of external assistance, the uncertainty associated with foreign aid by Western nations, of which there was an almost total embargo prior to the early 1990s, means that the resources to finance the income support programmes must be based on principles of self-reliance. Should there be such funds forthcoming then all the better. The establishment of a safety net against famine should not be made conditional on the availability of such resources.[55] The same argument applies to the uncertainty with regard to external loans. The highly labour intensive character of SEGPs designed for famine prevention purposes also means that the foreign exchange constraint would not be binding. We therefore refrain from a lengthy treatment of external assistance for these reasons.

7.3. Loans and Credits

An attempt to assess the feasibility of undertaking an income supplementing programme for purposes of famine prevention would inevitably have to raise some questions regarding the borrowing option of the state. This option, as indicated in Table 4, had provided the second important source of financing for the budget appropriation assessed in the foregoing discussions. The two categories of government borrowing, external

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[55] This has an important implication to the future of such programmes. The government is accused of having established the RRC (Relief and Rehabilitation Commission) simply to propagate information on the development of famines to the international community. Large scale famine deaths are therefore taken to be a failure of the international donor community to respond to the call for help. This has diluted the government's accountability and commitment for sustained famine prevention measures. The dominance of food centred emergency interventions over alternative approaches (e.g., SEGPs) observed during the last decade could be interpreted in terms of such dependence of the government on donor assistance.

credits and domestic borrowing, had together provided about 42 percent of the total financial requirements. External credit alone accounted for 11.9 percent while the balance came from domestic borrowing. The question is : Can these alternative sources be stretched further in order to raise the additional finance required for providing a safety net against famines through SEGPs?

External loans: We will therefore first look at the patterns of past government external borrowing. It should however be noted that, as has been mentioned earlier in the relevant section, SEGPs designed for famine prevention purposes, would be labour intensive undertakings which could be undertaken through mobilising domestic financial resources without entailing significant foreign exchange requirements. This implies that the external borrowing option may not be of critical importance in assessing the feasibility of such a safety net against famines. None the less, this financing option will be briefly assessed.

As illustrated in Table 8 the government appears to have been increasingly dependent on international sources over the past decade. Between 1975 and 1989, for which data was available, the level of indebtedness increased almost nine times. By 1989, most of the outstanding loan was long-term debt (about 95 percent) with the balance being short term.

Table 8 External Borrowing

Years	total external debt (mill. US $)	Years	total external debt (mill. US $)
1975	344.0	1982	1237.0
1976	402.0	1983	1393.0
1977	500.0	1984	1543.0
1978	563.0	1985	1879.0
1979	727.0	1986	2187.0
1980	803.0	1987	2590.0
1981	1136.0	1989	3013.0

Source: Compiled from various World Bank sources.
Data on 1975 to 1987 from The World Bank (1990) and data on 1989 from The World Bank (1991).

While the long-term trend had been as illustrated in Table 8, the capacity of the government to mobilise additional financial resources through external borrowing (assuming willing loaners are forthcoming) is difficult to establish in an objective manner. Following a World Bank convention, which sets criteria for middle income countries depending on the severity of indebtedness, we could obtain some indication on the case-study country's external borrowing options although the country is categorised as low income. According to this convention, which uses four key ratios, a middle income country is regarded as being severely indebted if three of the four ratios are above critical levels.[56] Table 9 has been constructed for comparison purposes on the loan status as of 1989 for which data was available.

Table 9

Description of ratios (percent)	Critical levels (percent)	Ethiopia	Sub-Saharan Africa
1) Debt to GNP	50	50.6	96.9
2) Debt to exports of goods and all services	275	416.8	362.0
3) Accrued debt service to exports	30	38.7	22.1
4) Accrued interest to exports	20	11.6	10.2

Source: Compiled on the basis of data in The World Bank (1991).

It can be seen from Table 9 that three of the four ratios have been exceeded by Ethiopia while Sub-Saharan Africa in aggregate has exceeded two of the critical levels. Judging by criteria no. 1, the country, although slightly exceeding the critical level, could still have further borrowing capacity in view of the fact that the Sub-Saharan average is even far in excess. Criteria no. 2 clearly votes against further borrowing. Criteria no. 3, which also exceeds the critical level significantly, could also be stretched to accommodate further borrowing if the additional loans are structured to have minimal impact, in the short and medium term, on the debt servicing schedule of the country. This would be so, for example, in the case of concessionary loans with extended grace periods (5 to 10 years moratorium on principal repayments). Criteria no. 4 is clearly favourable to further borrowing. While it could be argued, on the basis of such rationalisations (with regard to nos. 1 & 3), that the external borrowing option was still available to the country, strict adherence to the criteria instead, would indicate that severe payment difficulties could be encountered through a significant increase in the level of external loans.[57]

Domestic Government Borrowing: This option has been used by the government in order to balance the difference between the budget appropriations and budgetary expenditures as financed through domestic revenue (tax and non-tax), external borrowing and external assistance (cash grants and technical assistance). As indicated in Table 4, this item had accounted for 30.1 percent of total budgetary financing. In Ethiopia where

[56] See The World Bank (1991), pp. x, xi. See also pp. 204-269.

[57] On aspects of external debt see The World Bank (1991b); The World Bank (1991c); O'Neill, (ed.) (1990); also on issues related to external aid see Hayter and Watson (1985); Singer (1988); Reutlinger (1984); Borton, Stephenson and Morris (1988); Meillassoux (1974); Fitzpatrik and Story (1988).

the banking system is yet at a rudimentary stage and financial markets (for bonds and securities) are absent, domestic government borrowing is effected through the National Bank/cum Treasury. The question posed earlier (can this sources be stretched further in order to raise the additional finance required for providing a safety net against famine?) therefore has a short affirmative answer: To the extent that this option is used to adjust the imbalances between the government's expenditures and tax (and other) receipts, the facility can be stretched at will, with the limits set by the possible adverse consequences of the deficit finance.

We will therefore discuss further aspects of the issue on the basis of Table 10 which was constructed under rather simple assumption. It provides useful insights however, regarding the likely magnitudes of change in the key variables addressed. The simple model of government expenditure and revenue, on which the table was based, has been constructed in order to assess the sensitivity of the level of consumer prices to alternative financing schemes. However, as is true of models of this type in general, the implications are to be taken with caution and only as a supplement to the qualitative analysis in the forgoing sub-sections. (Details on the model are given in Appendix 1)

Column 1 of the table gives the alternative actions which could be taken to raise the required financial requirement (on the basis of the cost estimates given earlier). Column 2 indicates the percentage change in the existing level of the budget deficit which would result from the corresponding actions given in column 1. Column 3 and column 4 give the percentage changes in the level of consumer prices (the rate of inflation) under two different assumptions. Under column 3 it is assumed that the indicated finance will entail a budget deficit to be financed through monetary expansion to the same tune as the financial requirement. Under column 4 it is assumed that the same level of financial requirement will result in a lower budget deficit as part of the expenditure will be met by the increased revenue arising from the increased income. Here it is assumed that expansion in the money supply, in the presence of unemployed resources, could increase real income.[58] The increased income would in turn enhance government revenue and result in a lower level of budget deficit than under column 3. The lower budget deficit would mean a lower impact on the price level (lower rate of inflation). Justification for this formulation was obtained from the significant and positive relationship between the supply of money and GNP for the Ethiopian economy between 1970 and 1990.

[58] For this view see, for example, Ackley (1978), Dornbusch. and Fisher (1987); Ghatak (1981).

Table 10

Alternative actions	Percent change over previous levels		
	The budget deficit.*	Price level **	
		a	b
1) Assuming budgetary reallocation away from military spending towards financing SEGPs. There would not be any additional change in the level of the government's budget deficit and there need not be any incremental effects on the level of prices with the reallocation than would be expected without the reallocation.	0	0	0
2) Assuming domestic credit expansion to fully meet the required resource need. The budgetary deficit is increased by the amount of the additional financial requirement, and the incremental effect of such financing on the price level can be expected to be significantly higher than otherwise.	104	79	34
3) Assuming different combinations of credit expansion and alternative financing sources (e.g., Aid, external borrowing, etc.)			
a) 25 percent of project financed through credit expansion	26	20	8
b) 50 percent of project financed through credit expansion	52	40	17
c) 75 percent of project financed through credit expansion	78	59	25

* Domestic borrowing (and thereby increased money supply) is the residual means available to the government for financing the excess of its expenditure over revenues.

** The consumer price index has been taken to indicate the price level. The percent change refers to the expected change in the consume price index as a result of the particular action taken over what would have prevailed without the action.

Alternative 1 assumes that budgetary reallocation could be carried out in order to meet the required financing for the safety net. Such a financing arrangement would not increase the existing level of budget deficit and would therefore have no incremental impact on the level of consumer prices over and above that which would have been expected without the reallocation. Clearly the feasibility of the employment safety net is strongly suggested by this alternative in view of the existing misallocation of public funds towards military expenditures. Initiating a nation-wide network of SEGPs, on the basis of the cost estimates discussed earlier, can amount to 1,995 million Birr. The budget allocation for military spending for the base year of our analysis was 2,339 million Birr. Given the political will to do so, the financing of famine prevention through a sustained programme of employment generation is within the means available to the state.

Alternative 2 assumes that the total cost of the programme will be fully financed through additional deficit spending by the government. Such an action would be expected to raise the existing level of the budget deficit by an additional 104 percent. One possible adverse consequences of such an action would be to raise the level of prices by a further 79 percent than would have prevailed otherwise. Clearly this would not appear to be a desirable course of action. Even if the increased money supply resulted in increasing real income and thereby eased the level of deficit financing through enhancing government revenues, the inflationary impact of this alternative would still appear to be sizeable (34 percent). However it is highly unlikely that such large-scale schemes would be undertaken in this manner. What would be more realistic is to expect additional non-inflationary funding through foreign aid and foreign loans would be a component part of such programmes. Such a mix would be expected to reduce the possible adverse consequences and enhance the feasibility of the proposed safety net as indicated in the following alternative.

Alternative 3 assumes such a mixed financing scheme. Assuming 25 percent of the requirement is covered through credit expansion with the balance coming through various other sources particularly foreign aid and loans, the impact on the price level is expected to be quite reasonable under the circumstances. Under the assumptions of column 4, the incremental impact of the price level can even attain a single digit level. The adverse consequences in terms of the price level become increasingly unfavourable as the proportion financed through the budget deficit increases (assuming that the incremental budget deficit due to the programme is financed through the expansion of the money supply.) This all adds up to one conclusion: that financing a safety net against famines through the initiation of a network of sustained employment generation programmes is not beyond the means available to the government.

8. Summary and Conclusions

Rural mass-unemployment arising from drought-induced production declines can be linked to the wide-spread famines that have plagued the case-study country over the last two decades. This basic fact appears to have been undermined by the famine prevention policy over the period, as is evident from the overriding commitment and preoccupation with emergency interventions that are set in motion only when the famine conditions are underway. The provision of food-handouts for famine relief through various emergency interventions and which has been instrumental in saving so many lives can only address the symptoms rather that the cause and therefore provide only short term support to the affected communities. Such an approach is clearly not sustainable given the endemic nature of the factors that induce production declines. The need for a more sustainable strategy for famine prevention is therefore becoming increasingly apparent.

This paper has argued strongly for sustained employment generation programmes (SEGPs) as an alternative approach. What distinguishes SEGPs from other income support schemes designed as emergency interventions is their non-emergency feature and which enable proper planning and integration of such projects in sector development plans. Particular institutional and organisational features in the country enhance this possibility. Among such institutional features are the peasant associations which have acquired a good deal of experience over the years in activities that require mass mobilisation, and government organisations with adequate capacity to implement such programmes. Participation in such programmes would be expected to be minimal during normal seasons and increase with the level of distress. Effective wage management ensures targeting the most needy. The non-emergency feature of the programme enables project planning to ensure that the infrastructure and other communal works have tangible development benefits.

The desirability of income supplementing programmes for famine prevention purposes may not be much in doubt. The feasibility of such programmes however is a different matter, depending more on considerations of finance, both domestic and foreign, as well as the international relations which the particular country has with aid donor governments. These issues have been discussed qualitatively. To complement the qualitative analysis, a simple model of government income and expenditures has also been constructed in order to assess the sensitivity of the budget deficit and the level of consumer prices to alternative financing schemes.

The following points are implied by the study on the basis of both the qualitative and quantitative analysis:

- The implementation of SEGPs as a safety net against recurrent famines implies a heavy reliance on the public sector's financial resources. The prospects for raising the required additional finance through the tax system was not considered promising due, among other things, to the high level of poverty prevailing in the economy.

- Among potential sources for tapping the required financial resource, the most promising was the reallocation of funds earmarked for other programmes. Military spending, which absorbs a disproportionate portion (36.7 percent) of government budgetary appropriation, was pointed out as a likely source.

- An appropriate scheme of privatisation would yield additional financial proceeds through outright transfer of unprofitable state-enterprises to the private sector. This would also enable the public sector to maintain controlling shares in the profitable ones, thereby obtaining proceeds from the sale of shares while enhancing their profitability through the increased participation of the private sector.

- While upholding the crucial role of external assistance in facilitating the smooth implementation of the proposed safety net against famines through SEGPs, it was argued that the establishment of such a safety net should not be made conditional on the availability of such assistance. Should there be external assistance forthcoming then all the better since the success of the programme is even more ensured.

- Domestic borrowing was therefore considered the source of last resort. But this may not be much of an option if confronted with conditionalities of fiscal restraints imposed by international financial organizations. Despite this, the initiation and maintenance of SEGPs as safety nets against future famines in the case-study country may *not* be beyond the capabilities of the state although there may be trade-offs with economic growth objectives.

- While the political setting and geographic features of the case-study country may have changed (in view of the detachment of the Eritrean region) from the settings assumed under this study (the beginning of the 1990s), it is nevertheless believed that not much change has occurred in either the economic realities or the conditions of famine vulnerability. The issues raised by this study are still believed to be relevant to the present situation in the country, which has recently been under renewed threat of yet another major famine.

9. Appendices

Appendix 1

A Simple Model of Government Finances

We start describing the model by noting first what it is *not* designed for. The model is not an income determination model although the empirical relationship between national income and government current revenue are made use of. This enables us to do away with considerations of production functions and the labour market. Although the broad money supply is retained as an exogenous variable, the model excludes the money market which is actually undeveloped in the case-study country.[59] The model therefore focuses attention on one sector only - the government sector and its expenditures and revenues.

The model is meant to provide insights regarding the following questions: What are the implications to the government's finances of different levels of commitment to SEGPs? What are the implications to the budget deficit of alternative financing arrangements for such programmes? How would the deficit financing impact on consumer prices?

These questions have been treated qualitatively in the foregoing sub-section. The idea behind the quantitative treatment is therefore to complement that section through providing some idea of the magnitudes involved.

While in any macroeconomic system a large number of variables are bound to be affected directly or indirectly by a particular policy action, in the simple model presented here, only those variables that are of direct, relevance in the context of our analysis, are treated explicitly. This was done in the interest of keeping the analysis focused and within the context. It is also in line with the comparative static approach adopted which "...freezes time and asks how the endogenous variables at one single point in time would differ in response to differing assumed values of the exogenous variables at that point in time."[60] Hence the policy *instruments* will be the money supply (broadly defined) and the level of SEGPs, both of which are exogenous variables of the system. Both the consumer price index and the budget deficit will be considered the policy *targets*.

The model is described as follows:

Total government expenditure (G) is taken to depend on government capital expenditures (Gk), government recurrent expenditures (Gr) and loan repayments (Gl). Expenditure on SEGPs (sustained employment generation programmes) are normally subsumed in the other expenditure items and are here shown separately to facilitate the analysis:

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[59] The financial sector like other sectors of the economy is highly underdeveloped particularly regarding the absence of institutions for the trading of bonds and equities. The interest rate which is administered (institutionally fixed) by the government does not have the traditional roles it plays in the developed market economies. Investment decisions, until the recent expulsion of the Marxist regime, used to be made by the government regardless of the prevailing rates of interest.

[60] See Sargent (1979), p. 109.

Government revenues (R) is taken to depend on domestic revenue (Rd) and external sources (Rf) such as external assistance, foreign loans and credits:

R = R(Rd, Rf,)

The budget deficit (B) that has persisted over the last 18 years in the country has been adopted as a feature of government finance:

B = G - R

Increased expenditure through deficit financing is expected to have an incremental affect on the level of prices in the economy, particularly the consumer prices (P):

P = P(B)

The Empirical Model

$$Gk = \alpha_0 + \alpha_1 I \quad (1)$$
$$Gl = \alpha_2 + \alpha_3 D \quad (2)$$
$$Gr = \alpha_4 + \alpha_5 Gk \quad (3)$$
$$G = Gk + Gl + Gr + SEGPs \quad (4)$$
$$Y = \alpha_6 + \alpha_7 M \quad (5)$$
$$Rd = \alpha_8 + \alpha_9 Y \quad (6)$$
$$R = Rd + Rf \quad (7)$$
$$B = G - R \quad (8)$$
$$P = \alpha_{10} + \alpha_{11} B \quad (9)$$

The system has 14 variables of which five are exogenous and the rest endogenous. The exogenous variables are I (Gross domestic investment), D (Total external loans), M (Broad money supply), Rf (Government revenue from external sources), SEGPs (Government expenditure on employment generation programmes).

The relationships between the variables is assumed to be linear. Equation (1) relates government capital outlay with gross domestic investment. This is consistent with the circumstances in the case-study country where domestic investment is primarily a function of the state. Equation (2) relates loan repayment obligations of the government with the total external loan indebtedness. Equation (3) relates government recurrent expenditures with government capital outlays.[61] This is considered reasonable in view of the government's heavy involvement in domestic investment. Equation (5) relates gross national income with the money supply (broadly defined).

Equation (6) gives domestic revenue (Rd) as a function of gross national income (Y). This is not the standard tax function as would be appropriate in a purely Keynesian analysis of fiscal policy. Besides the data difficulties associated with deriving the disposable personal income from aggregated data, the conceptual difficulties of a Keynesian approach to the

[61] See Ghosh (1968), where a similar relation was used. Although significantly different in scope and purpose the model in Ghosh has inspired the approach adopted in this model. On general econometric approaches see Christ (1966); Fair (1984); Kennedy (1987); Koutsoyiannis (1977).

supply constrained underdeveloped economy is also a consideration.[62] The equation is therefore a revenue function and includes, besides both direct and indirect taxes, also the non-tax revenue (about 30 percent of domestic revenue). Moreover, gross rather that net national income was used (due to data problem) but in view of the economy being primarily agrarian with backward production relations, the capital consumption allowances can be expected to be relatively small. In spite of the data limitations the empirical relation as given does nevertheless provides a useful relation between the variables. Equation (9) relates the deficit financing of the government with the consumer prices.

The remaining equations are identities. Equation (4) gives the components of total government expenditure, equation (7) gives the sources of government finance, and equation (8) gives the level of the budget deficit.

The estimated parameters are as follows:

Equation No.	Estimated parameters		t- ratios	R^2
(1)	α_0	-346	-2.09	.61
	α_1	0.823	4.67	
(2)	α_2	-18	-1.86	.91
	α_3	0.045	11.54	
(3)	α_4	701	4.80	.80
	α_5	2.38	7.58	
(5)	α_6	6234	31.15	.88
	α_7	0.786	11.56	
(6)	α_8	-4296	-7.5	.89
	α_9	0.723	10.53	
(9)	α_{10}	39.38	4.52	.56
	α_{11}	0.066	4.08	

Note:
Equation numbers correspond with foregoing list.
The parameter that shows the low t-value (α_2) is an intercept terms.
OLS was used in the estimations.

The system as a whole is causal. There are three complete sub-systems of zero order in the variables Gk, Gl, and Y; two complete sub-systems of first order in the variables Gr, and Rd; and again two complete sub-systems of second order in the variables G and R. The remaining endogenous variables B and P form complete sub-systems of third and fourth order respectively.

[62] See Agarwala (1970). The author provides strong arguments on why a Keynesian approach would not apply to the realities of developing economics. See also Ghatak (1981).

Appendix 2

Peasant Associations by Regions.

Region	Number of Peasant Associations	Household Members		
		Male	Female	Total
Arssi	1,027	214,966	25,292	240,253
Bale	594	109,097	4,659	113,756
Gamo Gofa	803	197,033	12,875	209,908
Gojam	1,778	526,106	57,281	583,477
Gondar	1,063	336,122	27,837	363,959
Hararge	1,346	429,925	26,988	456,913
Illubabor	978	167,045	11,068	178,113
Kefa	1,621	366,450	20,257	386,716
Shewa	5,352	124,2771	153,486	1,396,257
Sidamo	1,616	524,624	90,882	615,506
Tigray	319	94,429	49,005	143,434
Wellega	2,208	344,559	26,203	370,762
Wello	1,223	534,426	126,543	660,969
Total	19,928	5,087,652	632,376	5,720,028

Source: Central Statistical Authority.(1990) "Facts and Figures: Peoples Democratic Republic of Ethiopia" Addis Ababa.

Appendix 3

Cost estimates.

The probable costs of SEGPs were derived from the WFP Project Document which, given the WFP's involvement with food-for-work programmes in the region, is assumed to incorporate reasonable contingencies and therefore provide a fairly useful, even if crude, cost estimate. Although the cost build-up in the WFP document was in terms of food-costs (at import prices) and non-food costs, with in-kind mode of payment assumed, the money value equivalent was retained in projecting the cost of SEGPs over the national grid. This entails a number of advantages: The first is that the total resource commitment in a SEGP site would correspond closely with that of typical food-for-work projects. This would make it easier to maintain provisions (payments) at a minimum in order to discourage dependency and encourage participants to be constantly on the lookout for alternative employment (either wage or self-employment). The second advantage is that local authorities managing the SEGPs would have the option of choosing the mode of payment - either as wage or in kind- depending on local food supply situations. Payment in kind would appear preferable if food stocks are already known to be in short supply in the locality, and if not, the equivalent payment in money would be indicated. A third advantage is that, although the analysis emphasises the capacity of the government to install such a national grid of safety net, there is a high likelihood that such a scheme could incorporate a significant amount of aid (e.g., food-aid). This possibility is accounted for by retaining features of the cost build-up that use import prices of grain. Furthermore, since high participation in SEGPs at any one time is an indication of some distress condition (e.g., drought) that may require food imports, border prices are more appropriate than local prices, which can be expected to show a good deal of variability.

Summary of Project costs	**in Birr**
1) Project Food Costs	5,436,381
Food commodities	3,667,900
External transport, insurance, etc.	1,287,500
Internal storage, transport, etc.	480,981
2) Total Non-Food Costs	769,173
Total Project Costs	6,205,554

Source: Compiled on the basis of the detailed cost figures given in the WFP Project document : WFP (1991), WFP Office, Addis Ababa.

Note:
The figures given are to support one cluster of 32 peasant associations over a two-year period. The annual cost for one cluster is therefore Birr 3,102,777.

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