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Sector investments as part of national fiscal policy: Experience from ASIP in Zambia

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Sector Investments as part of National Fiscal Policy: Experience from ASIP in Zambia

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October 2001

Abstract

Sector investment programmes have become a common tool in development assistance. However, their contribution to national growth of production and poverty reduction has been less investigated. The sector investments can be seen as a part of national fiscal policy, but, when run poorly, they can become a fiscal burden. Based on the evidence from running sectoral programmes, this paper recommends a thorough preparation phase for programmes, as well as the need to link sector programmes to national budgeting process. If programmes become an integral part of the national fiscal policy, they can contribute to governments' budgeting process and allow for greater flexibility in terms of revenue collection and expenditure. Using a case study from the Agricultural Sector Investment Programme (ASIP) in Zambia, this paper illustrates the problems that can arise from a partial implementation of a sector investment programme.

Keywords: agricultural sector investments, Zambia, fiscal policy, scenarios, household income

JEL classification: O23, O55

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1 Introduction

The area of public expenditure and fiscal policy in developing countries is a vast and complex subject to study. Although we are dealing with national budgeting and sectoral revenue and expenditure, there remains the social aspect of policies, eventually some will be gainers and some losers in the process.

This paper discusses the possibilities and threats of using a sector investment programmes as a part of national development strategy. National budgeting is a complex issue in developing countries. Revenue collection is problematic since taxation systems are often ineffective. Donor funds are attractive, but at the same time difficult to administrate. From the perspective of this paper, the sector investment programmes offer a unified approach to donor aid administration. However, the problem is to integrate the sectors' needs with national budgeting. This becomes even more difficult when the government operates on a cash budget with limited flexibility in the timing and allocation of expenditure.

The ways to allocate public spending are numerous, yet the available resources are scarce. In determining how the public expenditure should be allocated, one can distinguish between expenditure on non-productive and productive sectors. The rationale for investments in productive sectors is that the resulting economic growth is increasing the overall wealth. This argument is often challenged with the view that wealth accumulates to few and the overall impact is hardly a decline in poverty. Investments in non-productive sectors, on the other hand, are likely to create social safety nets and other means to reduce inequality. Sector investment programmes (SIPs), sectoral development programmes (SDPs) or sector-wide approaches (SWAPs) all refer to a concept designed to take into consideration the needs of a particular sector as a whole. Strategic planning, budgeting and aid administration follow a national scheme to support the sectors' development. Relevant terminology for sector investments includes:

- Basket funding is the ideal case of a sector investment programme. This means that all donors contribute to a single fund which is administrated by the recipient government.
- Sector strategy means defining national priorities and targets of a given sector. Usually this is done most effectively using bottom up strategy. This means that each district level office will prioritize development needs of the district, these individual reports are combined at the province level office and finally delivered to the Ministry at the national level.
- Aid ownership means taking responsibility of the aid received. This also means that donor aid must be 'consistent with' government policy (Noonan 1997). In the long run, it should be made national priority to reduce the need for technical assistance and increase the local capacity to manage the aid administration and processing of the funds

The consequences of poor implementation of a sector programme are illustrated using evidence from the agricultural sector investment programme (ASIP) in Zambia.¹ Of the productive sectors, agricultural production has a special role. This is because it has very close direct linkages to rural household income, which is not observed in the input-output analysis. This is because of the weak linkages with other sectors of production. However, using social accounting matrices, an extension to input-output models, to capture the linkages between production and household income can highlight the importance of agricultural sector. In this paper, a social accounting matrix for Zambia² is utilized to carry out scenarios of alternative ways to allocate funds within the agricultural sector.

This paper is organized in the following way. First, in section 2 the current situation of sector investment programmes is described. In section 3 the fiscal policy aspects of sector programmes are discussed. In section 4, a brief introduction to case study of ASIP in Zambia is given using historical data from country's agricultural production. Section 5 presents policy simulations from the programme implementation and section 6 provides some conclusions from the paper.

2 State of the art of sector investment programmes

Sector investment programmes can be defined as a joint donor and government effort to allocate available scarce financial resources according to nationally defined targets and projects. However, the programme should be flexible to take into consideration any relevant changes within the economy as opposed to fixed long-term expenditure plan. This section provides some of the basic ideas of the sector investments and their status in Africa. In the second part of this section, more practical issues are dealt with.

Sector investment programmes can take place on various sectors, including health and education, infrastructure and energy. However, there are issues which are common in these sectors, namely their historically low levels of public expenditure. As an integral part of a sector investment programme, the governments have been obliged to commit funding in addition to donor contributions. This has led to more careful public expenditure considerations and commitment.

World Bank (Harrold 1995: xi-xii) has defined sector investment programmes to have the following qualities:

- programmes are sector-wide in scope and cover both current and capital expenditures
- they are based on clear sector strategy and policy framework
- the responsibility of the programme is on local authorities

¹ A more in-depth analysis of ASIP can be found in Nokkala (2001).

² The social accounting matrix used is based on Adam and Bevan (1998).

- all donors agree on the ideology and financing of the sector investment programme
- wherever possible, all practices under the programme should be common
- local activity should be increased and technical assistance reduced in the programme administration

Traditionally, development aid has been based on project support. This approach has many advantages. First, it has kept aid expenditure under donors' control. The monitoring and evaluation framework has been relatively simple to organize. Second, earmarking has made it possible to justify the expenditure, for instance in Finland the Parliament approves the annual development expenditure. Third, project aid has made it possible to provide technical assistance and supplies using domestic enterprises to produce the services. This has meant that the aid expenditure has remained in the donor country, providing employment etc.

The World Bank has promoted the sector programmes, launching them at a relatively rapid speed. It has produced documentation for guidance, arranged working groups and additional consultancy to promote the planning and implementation of sector programmes. This quick progress has had its opponents as well. First of all, the speed of the reforms has left the recipient governments little time to prepare its organization for a sector-wide approach. At the same time, the process of formulating programmes has been fast and has perhaps not touched all the relevant issues. For instance, in the case of education sector investments, in some cases groups such as rural girls and disabled children were left out of a sector programme. The situation was improved in a revision of the programme, but this illustrates how a careful research on the sectors' problems was missing in the planning stages.

According to World Bank (Jones 1997), five critical points in the project based aid can be distinguished:

- The recipient countries lack responsibility in donor-driven projects
- Aid is often allocated to other targets than originally agreed upon
- Successful projects do not contribute to sectoral development
- Implementation of the projects is often weak
- The large number of individual projects uses up administrative resources

Most of the current sector programmes focus on social sectors, health and education. The rationale for this is that these sectors are lagging behind in development and it is considered easier to receive funds to these activities rather than to production. In developing countries, expenditure on social sectors has taken only a small portion of total government expenditure and even a relatively smaller share of the GDP.

Foster (2000) listed a total of 78 sector programmes in progress in 2000. In 1994, there were only two programmes running, in 1996 a total of 19 programmes were running

(Cleaver 1997). The division by sectors shows that 47 out of 78 programmes focused on social sectors, 3 focused on environment, 20 focused on infrastructure and energy and 10 focused on agriculture (Table 1).

Some countries have argued that more stress should be placed on sector investments on productive sectors. In many countries the small and medium-sized industry development could be emphasized as a sector investment programme. There are many practical reasons why the programmes focus on areas such as social sectors and agriculture. Many donor countries face domestic problems with unemployment in the industrial sectors and it can be difficult to promote industries in a developing country when domestic problems also exist. In the long run, it also seems that promoting these industries could increase their international competitiveness and create more problems to donor country producers.

Despite the large number of programmes, the overall performance level has been low. In some cases, the concept of a sector investment programme has been used to create partial solutions. In Zambia, there are two sector programmes on education: basic education and technical and vocational training. The reason for this has been that altogether four different Ministries have responsibilities of providing education services and because of the political importance of aid disbursements the original education sector investment programme was divided into two programmes. Even this choice of two separate programmes has not solved all the practical problems in implementation (Nokkala 1998).

An important question in the African context is the political economy of aid. In the traditional sense, money has equalled power and the situation may not have improved considerably. Sector investments mean large lump sum investments and increased importance of the responsible institutions and persons. This creates pressures to allocate disbursements not only by curriculum importance but also by political importance. Examples from previous aid administration cases, for instance in Ethiopia, have shown that agricultural expenditure can be used as a political tool. For instance, regional disparities in the disbursements can appear due to the Ministers' own background.

Table 1
Sector programmes by sector and region (Foster 2000, 9)

	<i>SPs</i>	<i>Agri</i>	<i>Educ</i>	<i>Energy</i>	<i>Env</i>	<i>Health</i>	<i>Transp</i>	<i>Urban</i>	<i>Water</i>
West Africa	32	4	8			10	8	1	1
East Africa	15	2	3	1	1	4	3	1	
Southern Africa	20	4	3	2	2	5	2		2
Asia	9		6			3			
Latin America	2		2						
Total	78	10	22	3	3	22	13	2	2

The political influence of the sector investments is not simply about the dialogue between different ministries. The targeting of donor driven investments creates also a powerful political tool. Again, the examples from Ethiopia have shown that the political elite of ethnical minority has targeted expenditure to minority areas, leaving the rest of the country with less resources. This has been especially problematic, since most of the expenditure has been provided in the areas where the standard of living already has exceeded the national average. These policies have not promoted a more equal distribution of income, in contrast they have created more biased growth.

It can be argued that some of these problems could be overcome by using the Ministry of Finance as a channel for disbursements. It is true that this arrangement would decrease the role of sector Ministries but at the same time it would increase the power of the Ministry of Finance. In many countries, this would mean that the Prime Minister could become less important in the political hierarchy. In Zambia, the Minister of Agriculture has changed a number of times during the ASIP planning process, perhaps indicating that the political leadership of the programme has remained elsewhere.

3 Sector investments and public expenditure management

The sector investments, from the practical point of view, relate to a number of critical areas where the success or failure of a given programme is measured. These areas include monitoring and evaluation practices, financing and the capacity building within the implementing organization. It has often been the case that the programme formulation in terms of the strategically important targets has been more important than focusing on the practical issues concerned with the implementation. The result has been that there have been considerable delays and dissatisfaction in the donor community as a consequence of this poor performance. If a sector programme could be carried out free of all practical problems, it is assumed to be much more efficient.

The monitoring of a sector programme is understood as 'continuous self-assessment process during programme implementation by the implementors mainly serving day-to-day management purposes; focuses on efficiency, effectiveness (and impacts)' (Oksanen and Lönnqvist 1998: 11). The evaluation is an assessment of a programme, carried out independently by parties not involved in the every day management of the programme with main focus on effects and impacts of the programme. Noonan (1997, iii) reports that there is substantial variation in the extent to which standard government reporting systems are used. Most international development agencies have their own guidelines for monitoring (Oksanen and Lönnqvist 1998: 13). In addition to reliability and availability of information, there would seem to be problems with decentralization reforms. According to Noonan, it becomes an important issue at which level the support is given. The financing process is described in more detail in the next section.

The monitoring and reporting process includes progress monitoring, sustainability monitoring and compatibility with donor policies and priorities. The progress monitoring is based on the programme framework and follow-up to targets defined as key issues in a programme. Sustainability monitoring is usually carried out in the annual reporting of a programme. This monitoring includes factors such as policy support, technology used, impacts on the environment, gender and socio-economic issues, assessment of capacity of the institutions and financial sustainability of the programme.

The compatibility is included in some donor countries in the project or programme annual reporting requirements, meaning that the programme follows the guidelines of the donor country.

It is not surprising that the monitoring and evaluation aspects are complex in a sector investment programme. For instance, the ASIP in Zambia involves over a dozen of donor agencies with as many monitoring practices. Regarding evaluation, it seems that this is the area where more common practices can be achieved. Perhaps this is also one of the areas in which a fast harmonization of existing practices could be achieved, if suitable negotiation framework was established.

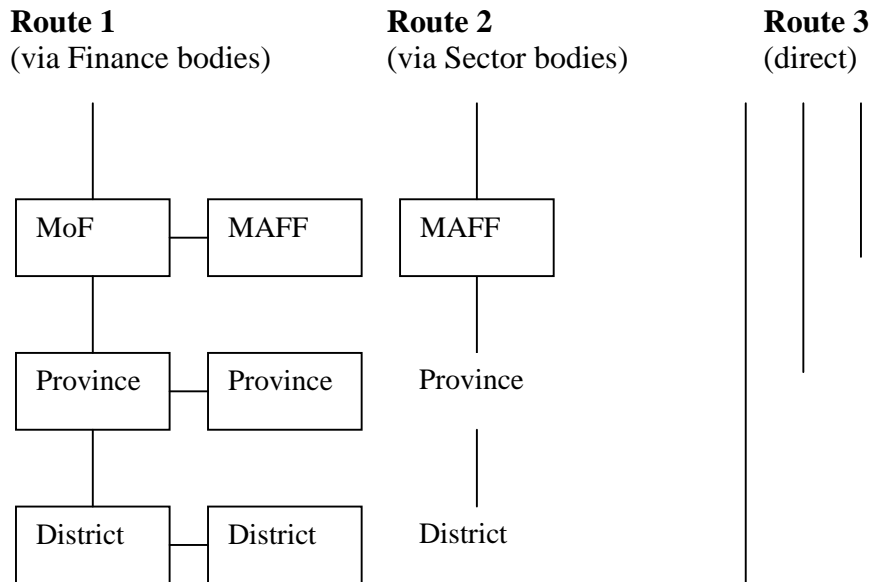
In principal, many of the problems with monitoring and evaluation process accumulate to financing as well. Book-keeping practices within Ministries can be rather careless and the staff responsible for the administration of the funds seldom has high degrees in business and administration. The need for technical assistance has been a high priority in the past. The demands to reduce the amount of technical assistance are based on the aid ownership and capacity building arguments but often it has been the case that the aid management has been supervised by ex-patriots.

In addition, many problems with sector investments have their origins in the financing process of the programmes. Based on traditions, each donor has applied an individual coordination procedure, which satisfies their domestic auditing systems. In the case of ASIP in Zambia, there has been considerable disagreement and dissatisfaction on the part of Ministry of Agriculture, Forestry and Fisheries and the donor community. On behalf of the Ministry, concern has been on the fact the donors have not given up their original demands. Furthermore, it has been argued that the disbursements should not necessarily go through the Ministry of Finance bodies (route 1 in Figure 1) but through sector bodies. This argument is based on the fact that the Ministry of Finance lacks capacity to administrate the funds effectively (MAFF 1998: 55-56). If the Ministry of Finance is in charge of the funds, it would mean that the Ministry of Agriculture, Food and Fisheries would receive a portion of the sector investment funds at each level of administration according to the programme expenditure plan.

Using the Ministry of Finance as a disbursement channel is justified if we consider this as part of the national planning process. Sector programmes do have a component of the national expenditure, meaning that some of the funding must come from the Ministry of Finance. In this respect, donor disbursements could become part of the national budget and spent according to the sector investment plan. In principle, this should not be harmful to optimal implementation since the expenditure has been decided within the responsible Ministry.

Very often it is the case that the responsible ministries control the aid expenditure, which would be the route 2 in the Figure. In this arrangement, the aid expenditure would be received by MAFF and allocated to different levels of the Ministry according to the programme expenditure plan. This would also make it possible to reallocate some of the funds in the case of unexpected need to reformulate the ASIP framework. Finally, route 3 in the figure refers to the common situation in the project type of aid administration. Here, the expenditure is allocated from individual donors to the final users at different administrative levels. Such practices can also take place under a sector investment programme but they are against the principle of basket funding and do not create harmonized expenditure and management systems.

Figure 1
Alternative disbursement channels (Lister 1997: 76)



Experiences from other sector programmes show that moving to basket funding should be stated as a long-term objective, as it is most likely difficult to achieve in the early stages of the programme. During the sector investment programme development, emphasis should be put on development of financial management and reporting systems. To overcome these programmes, MAFF report (1998: 56) suggests areas subject to special interest:

- Common rules on the use and management of technical assistance
- Common rules on arrangements for paying supplementation or allowances to government staff
- Establishment of joint review procedures
- Harmonization of common reporting systems and timetables
- Use of common expenditure programming formats and
- More modest pilot basket funding arrangements for particular activities

Although the list represents experiences from the ASIP in Zambia, these findings bear common features of sector investment financing. Moving towards a more harmonized system of financing is in line with the monitoring and evaluation process development. However, the physical obstacle to development is in many cases difficult to avoid, in the form of undereducated staff at the recipient organization. Thus, it has become increasingly important to combine sector investments with capacity building exercises within the programme implementing organizations.

4 Sector investment expenditure in Zambian agriculture: background

4.1 Political environment in Zambia

The Government of Zambia (GoZ) has been a dominant factor in the economy. If the Government wishes to actively increase the income equality, interference with the agricultural producer prices may provide substantial improvement in this respect. However, the historical evidence has not supported this policy choice. More or less, the agricultural sector has been exploited to collect revenues or to support urban consumers.

In a country rich with natural resources and ability to invest, it is difficult to understand why the agricultural sector development has been modest. Agriculture plays a central role in the development because a large part of the income in poor countries is related to the agricultural production. If it is in the governments' interest to increase the welfare of the people, strategies should focus on increasing the productivity in agriculture and then the market prices for products sold (Gillis et al. 1992, 488).

The Government of Zambia has not been very successful in decentralizing the administration. More or less, the ministries located in Lusaka have been responsible for aid administration and practices. Following the principle of basket funding, this may not necessarily be a negative issue. However, unless the needs are recorded from the bottom up, the success of a sector investment programme is questionable. In this respect, there remains a need to decentralize management and evaluation skills.

It is striking that Zambia has always had an unfilled potential in agricultural production. Like its other natural resources, the country has land and human resources, yet it has been unable to provide sufficient food supplies to satisfy the increasing domestic demand. Despite the growing investments in extension services and the farmer support, the overall performance has remained poor. This is linked with the fact that the investments in general have been poorly targeted in Zambia. The revenues from copper exports were invested in non-profitable ways, for instance in infrastructure to support the copper mining industry, leaving the economic conditions unchanged (Nokkala 1997). The impacts of these neglects show in the review of agricultural sector development, presented in the following section.

4.2 Agricultural production in Zambia

The Government has not supported agriculture in the past, more or less the sector has been exploited by collecting revenues from the export earnings. However, the macroeconomic policy has changed dramatically in the 1990s. First, the Government decided not to follow a World Bank Structural Adjustment Program (SAP) but later after a change in the political leadership led to pursue these policies again. One of the conditionalities for SAP continuation was a removal of trade barriers, both for imports and exports. Zambia has followed these objectives and, as a consequence, it is one of the most open economies in the world. This is perhaps opening new opportunities for the GoZ to intervene in the agricultural markets. As this study shows, the macroeconomic impacts of public expenditure on agriculture can be substantial.

The important role of agriculture in Zambia is illustrated by the fact that of the total population, 60 per cent earn their income from the agricultural production (Talvela et al. 1997, 15). The number is even higher in the northern part of Zambia, where more than 80 per cent of the population belongs to the agricultural sector. The majority is peasant households (Table 2).

In the colonial period there were restrictions to moving into towns from the rural areas. When these restrictions were no longer in effect, there was a huge migration to urban areas in Zambia. The share of urban population doubled from 20.5 per cent in 1963 to 40.9 per cent in 1980, and has continued to rise in the 1990s. The simultaneous increase in the urban consumption and the decrease in rural production growth made it impossible to sustain self-sufficiency in the food production. This led to an increase in the imports, worsening the international currency reserves. Such development has created pressures to market the domestic products in order to reduce the need for imports (Chiluvumbo 1992, 50).

Zambia is 750,000 square kilometers in area, with a total population of nearly 10 million. Within the country, the agricultural conditions vary, from the rainfall averages of 1200 mm/a in the north to 700 mm/a in the south and south-west. The quality of soil is generally poor, only less than 60 per cent of the arable area is good for the cultivation. The climate varies from the dry season between April and November to the rainy season from November to March (Talvela et al. 1997, 14).

There are 700,000 to 800,000 farming units in Zambia, classified in to four different units (Talvela et al. 1997, 16):

- Large scale commercial farms with more than 40 hectares of arable land, totalling 700 in number, situated near rail lines and using modern production techniques;
- Medium-scale commercial farms with 10 to 40 hectares of arable land;
- Small-scale semi-commercial farms with one to 10 hectares of arable land; and
- Traditional subsistence farmers with cultivated area less than 2.5 hectares, totalling 600,000.

Table 2
Population growth in Zambia, rural and urban population, millions of people
(FAOSTAT Agricultural database)

Year	1964	1970	1975	1980	1985	1990	1995
Total population	3,614	4,189	4,841	5,738	6,410	7,239	8,193
Urban	843	1,264	1,686	2,285	2,624	3,038	3,525
Rural	2,771	2,925	3,155	3,453	3,786	4,201	4,668

The British South African Company, which initially ruled Zambia until 1926, and the Northern Rhodesia Government were both concerned with minerals and settling farmers to engage in the crop and cattle farming. Taxation policies led to a situation where it was impossible to start small-scale farming activities. The only option available was to work in the mines. The settler farmers promoted their products to be consumed by the mine workers, which stagnated the village production as it was considered to be more profitable to sell the labour inputs elsewhere instead of village agriculture. Thus, in the colonial period the development of agriculture in Zambia was almost equal to the development of commercial farming (Chiluvumbo 1992, 48).

The agricultural production Zambia can be divided into two subsectors: the commercial and the noncommercial agriculture. These two sectors are also separated in the social accounting matrix for Zambia, presented in section 5. The noncommercial agriculture has been almost exclusively based on food crops, namely maize, cassava, sorghum, groundnuts, beans and millet. The commercial agriculture has focused on more commercial crops: coffee, tea, sugar cane, wheat, seed maize, soyabeans, tobacco, beef cattle, dairy cattle and pigs. In the commercial agriculture, the producers can be further distinguished into two categories, private farms and state parastatal estates. The number of the latter has decreased over the last years as a consequence of privatisation efforts of the Government of Zambia. Most of the commercial farmers are white, and their contribution to Zambian marketed crops has been substantial, around 40 per cent for maize and beef (Chiluvumbo 1992, 43).

In the early 1980s, the government launched efforts to release the agricultural potential of the northern areas of Zambia. The overall objective was to secure national supply of maize, thus Zambia experienced 'a maize boom'. The promotion of maize supported by subsidised credit and inputs, extension services, marketing support, and raised producer prices. The marketing of maize was arranged through cooperatives and new maize varieties were developed by the national research agency. The strategy engaged more small farms into maize production. However, by the beginning of 1990s, the maize boom was already history. Reasons for this were mainly its economic unsustainability, due to high production costs in small farms, and also the market integration of small farms. Most of these farms are situated in roadless rural areas, so the logistics of supplying the markets became costly and difficult (Kokwe 1997, 36-78).

As it should be noted, the access to land has not been the major problem of the land ownership. As said before, there are large commercial farms but also a vast noncommercial production of agricultural products. The noncommercial farming suffers from the lack of access to relevant technology, inputs, training and credit. These factors contribute to the low revenues from the small scale farming activities (Chiluvumbo 1992, 44-45). The land use has traditionally been based on chitemane, a shifting cultivation system that requires large amounts of wood biomass for crop production. The system has low carrying capacity of population per hectare, meaning that the capacity limit has been exceeded in most areas where chitemane has been used. In order to avoid deforestation there have been attempts to illegalize the chitemane system (Holden 1996, 4). The yields per hectare have been low, 3 bags of maize (90 kg per bag) per hectare have been produced. This is low compared to the 51,7 bags in the Commercial Agriculture (Chiluvumbo 1992, 43).

In the colonial era, the agricultural sector was under heavy control, leading to large scale commercial farming, mostly run by the ex-patriots. This led to infrastructure

development in the favour of large farms and the sector was mainly neglected in the development strategies. Since the independence in 1964, the Government of Zambia has been heavily involved in the agricultural sector development. The policy choice between small-scale peasant farming and large commercial farms was decided in the favour of peasant farms, as the policies were humanistic at that time. President Kaunda had hoped that participation by the masses would increase the total production and improve the living conditions in the rural areas. The participation was promoted, for instance, via cooperative movements (Kokwe 1997). Other programmes included large-scale state production units (parastatals), collective ranches, intensive development zones and intensive rural development programmes. The exports of agricultural production were subject to taxation, as a part of national strategy.

The collapse of copper export earnings forced the government to seek for alternative sources of economic development. Export crop oriented policy was formulated in the late 1970s, and some success was achieved with tobacco, cotton, and particularly sugar. The revenue gains remained modest, partly because the large investors were not interested in investing into these products (Talvela et al. 1997, 19).

One of the key policies over the decades has been to guarantee the availability of low-priced food to the poor urban population. The target of supplying consumers with food products was carried out promoting maize cultivation. This policy decision had a number of implications: First, technology was developed to hybrid maize varieties. This led to distortions among the producers, favouring the large farms. Second, the supply of inputs was heavily subsidized in order to secure the production capacity. Third, while maize production was promoted, other traditional varieties were neglected, such as cassava and millet. Finally, the policy was very consumer-oriented: The focus was on providing the cheap food to urban population, leaving the producers to come up with strategies to supply the sufficient amount (Talvela et al. 1997, 16-17).

The agriculture pricing policy was based on the principle of equal pricing, which meant that the prices were kept at the same level nation-wide. This principle reflected the ruling party UNIPs statement: One Zambia, one nation. Economically, this policy was inefficient, leading to misallocation of resources and foregone production possibilities. The equal price did not reflect the real costs of production. This policy was maintained until the late 1980s, when the liberalization policies led to price differentiation (Talvela et al. 1997, 19).

Looking at the figures for agricultural production, Table 3 provides information regarding the gross agricultural production, food production, cereal production and crop production over the same time period. Especially the fluctuation in the value of cereal production is considerable over the years.

Table 3
Gross agricultural production value data 1964-1995 1000 US\$
(FAOSTAT Agriculture database)

	1964	1970	1975	1980	1985	1990	1995
Agriculture	289,2	327,9	483,6	428,4	476,2	540,0	544,8
Food	270,8	317,7	471,8	413,5	456,5	516,3	514,4
Crop	193,3	202,3	324,6	247,8	302,2	336,1	316,6
Cereals	109,7	97,9	203,4	123,4	150,0	153,2	113,2

The government of Zambia was heavily involved with the agricultural sector development, as can be seen from the policy decisions. Until the early 1980s the agricultural marketing was carried out by NAMBOARD, a government organization founded for the promotion of agriculture. NAMBOARD was organized according to the functional model of the colonial Maize Control Board. At some stages NAMBOARD was the biggest employer in Zambia. The organization was accused of being inefficient and it was closed down in 1981. Its functions were mainly taken over by the cooperatives. These cooperatives were not supported only for the agricultural sector policies but also because of political reasons. Similar accusations as in the case of NAMBOARD emerged relatively soon after the shift to cooperatives. Finally, the marketing activities were returned to NAMBOARD in 1985 (Talvela et al. 1997, 19).

The first big step towards the market liberalisation was taken in September 1990, when the cooperative monopoly on the maize trade was abolished (Kokwe 1997, 1). In 1991, the rest of the monopolies in agribusiness were abolished as well. Liberalization policies allowed private companies to enter the agricultural markets. The principle of the markets was that inputs were allowed to purchase from any seller and the output could be sold to any buyer. Despite the rapid progress in the liberalization the knowledge of free market functioning remained poor (Talvela et al. 1997, 20). The aims of the agricultural market liberalisation were to develop an efficient and effective agricultural marketing and processing system, to develop a more efficient input supply system and to develop agricultural sector exports (IESR 1998, 13).

As it can be derived from the policy choices in the past, the development process has been weakened by the lack of consistent policy framework. The shift from the government controlled agricultural markets to liberalized markets has been problematic as the government has needed to reorient its strategy. There has not been private interest in developing the agricultural sector in the past, due to the state subsidies and parastatal organizations. In the absence of private organizations to take over the former state functions in marketing and distribution, it has been very difficult to fully justify the government completely withdrawing from the provision of services (Gould 1998, 54-55).

Rural policies in Zambia have been a part of the national policy since the 1950s. The rural policy has been practised in periodical campaigns, under which rural development projects have been implemented. The objectives of these policies have been ill-defined and the policies have been limited to agricultural targets but excluded income, nutrition

and access to services. It can be concluded that there is a substantial need to improve the rural policies (Talvela et al. 1997, 17).

Policies and their effectiveness under ASIP must be reviewed using the information given in this section. Chiluvumbo (1992, 48-51) has listed a number of reasons for the poor performance of the agricultural sector in Zambia. In his opinion, the key issues have been:

- Colonial heritage
- Post-independence policies and implementation
- Population distribution
- Production by the masses
- Unfavourable political environment

When compared with crisis in sub-Saharan Africa, listed by Ghai and Smith in the first part of this section, we can see that there are similarities to regional problems, thus indicating that the situation in Zambia is not different from the overall situation in the region. Perhaps the production by the masses can be classified as the Zambian speciality, although such booms in the production of special crop(s) have appeared also elsewhere. It will be interesting to see how the ASIP curriculum corresponds to the former targets or whether new targets have been chosen.

5 Effects of sector investment expenditure on household income

5.1 Scenarios of ASIP implementation

Sector investments as a tool of national fiscal policy are studied using the evidence from Zambian ASIP. Different policy scenarios were created to simulate different expenditure patterns and also the effects of low expenditure levels contrasted with the high expenditure levels.

The policy analysis were carried out using a social accounting matrix constructed for Zambia. The base year of the SAM is 1995. Four scenarios were created:

- the actual implementation scenario
- the optimal implementation scenario
- the full expenditure on noncommercial agriculture scenario and
- the half expenditure on commercial agriculture and half on noncommercial agriculture scenario

The effects of these expenditure patterns were contrasted with respect to income effects and household labour supply. The description of each scenario is given in the following sections.

Certain limitations of a SAM must be taken into consideration when the policy experiments are evaluated. First of all, the SAM used in this study is not based on a coherent data from input-output tables. This means that additional consistency checks have been needed. Second, the SAM has a rather small number of accounts. Therefore, it has set limitations to the level of analysis. This means that although we can identify linkages between different sectors and institutions, there may be specific linkages at a more detailed level of disaggregation that could be of interest. However, these are not captured in the matrix. Finally, in the analysis to follow, it should be stressed that the results presented are on the 'other things remain constant' basis. This means that the outcomes of the scenarios, even the one based on actual expenditure under the agricultural sector investment programme, hardly reflect the reality in the end of 1997. This is because no additional measures under the structural adjustment programme, no Government expenditure on other sectors or any technological progress or increase in the volume of exports were taken into account.

5.2 The actual implementation scenario

The actual implementation could represent a base line scenario for analyses of the alternatives to what actually occurred in the period 1996-97. In other words, this could be the point of comparison for other development strategies, such as the optimal implementation scenario.

The assumption in this scenario is that the funds were directed more towards the commercial farms of Zambia, which in fact have been the ones benefiting from the export-oriented policies. Although it is clear that small scale farmers have also gained some of the support, it is likely that these farms also have access to market services. It is against this background the scenario is based on the insertion of the funds to the commercial agriculture.

For the actual implementation scenario, the expenditure in US dollars was given by the real expenditure under the ASIP framework. Gould (1998, 63) presented data on expenditures, which was used for the insertions of current price US\$, as reported in Table 4.

Table 4
The ASIP expenditure in actual implementation scenario, US\$ million
(Gould 1998, 63)

	Government funds	Donor funds	Total funds	Exchange rate	Total (K billion)
1996	19,7	11,8	31,5	1100	34,650
1997	30*	55*	85	1200	93,500
Total	49,7	66,8	116,5		128,150

*= estimates based on project documents

These figures were further converted to 1995 prices using a composite index of the retail prices in Zambia as a deflator (IMF 1999, 11). This gave a total impact of K 88 billion as a the actual ASIP implementation over the two years.

5.3 The optimal implementation scenario

This scenario represents the optimal use of ASIP programme funds if they had been subject to disbursements according to the original implementation plan. Thus, this means the insertion of the funds proposed in the ASIP documents in full. The difference in magnitude is considerable if contrasted with the actual implementation scenario. In this scenario, we can assume that the government has been interested in increasing the agricultural production rather than focusing on the social problems. The expenditure data is presented in Table 5.

Again, the US\$ amounts were converted to 1995 Kwacha using the same deflator as in the case of the actual implementation scenario. This resulted in the expenditure of K173 billion over the two years.

It is very easy to see that this level of expenditure will produce results that are quite different from the previous scenario. Although the expenditure pattern is the same as in the actual implementation scenario, the absolute amount of expenditure is much higher in this scenario, the total difference was K85 billion. With the fixed multipliers this automatically means that the effects will be proportional to the expenditure levels.

5.4 The full expenditure on noncommercial agriculture scenario

Having followed the most likely expenditure patterns of the ASIP funding in the first two scenarios, the third scenario has a different starting point. This scenario represents an alternative, according to which the total programme expenditure in ASIP would be directed to the noncommercial agriculture. As the multipliers have shown, this would mean higher increase in the income of the Unskilled Rural Households.

Table 5
The level of expenditure according to the original ASIP plan, US\$ million
(Gould 1998, 63)

	Government funds	Donor funds	Total funds	Exchange rate	Total (K billion)
1996	29,6	69,2	98,8	1100	108,680
1997	35	100	135	1200	162,000
Total	64,4	169,2	233,6		270,680

Here, the agricultural policy is used as a policy instrument in a sense that it would be aimed at alleviating rural poverty. The policy would focus both at income distribution and the development of small-scale farming activities, which were previously undermined in the agricultural policy. Basically, the concern of the government would be the food security through increased production of food crops as opposed to the starting point of the actual and optimal implementation strategies. Also, this policy would be supporting the Harris-Todaro-model results, leading to an increase in the rural income level, and creating disincentives to move to urban areas.

This is an unlikely expenditure pattern because of its political infeasibility. However, it would represent the governments' efforts to develop rural regions and to direct concrete transfers to the poorest share of the population, the rural households working in noncommercial agricultural production. The figures for full disbursement in 1996-97, US\$ 153,8 million, were allocated to the noncommercial agriculture to illustrate the effects of a full scale programme focusing on rural income generation. However, it should be kept in mind that such a programme may also generate more economic activity in the marginal areas. This would increase demand for extension and input services. This type of a policy package would clearly aim at solving some of the problems in income distribution and net migration from the rural areas. Otherwise, it is very unlikely that the government of Zambia could suddenly promote the rural areas through such a comprehensive support package.

5.5 The half-half expenditure scenario

This last scenario represents a division of the total programme expenditure between noncommercial agriculture and commercial agriculture on equal basis. This means that the respective expenditures on the commercial and the noncommercial agriculture would be US\$ 176,9 million, equivalent to the totals in the two previous scenarios. This means that a shock equivalent to US\$ 88,45 million was inserted as a single shock to both sectors.

This scenario would represent a strategy focusing on income distribution, preventing the migration to urban areas and an increase in the productivity. This scenario may also include some real life elements, as it seems like a plausible assumption that at least some of the ASIP expenditure would have been directed to the noncommercial agriculture. This was already explained earlier when the two-fold strategies for agriculture were discussed. However, the scenario has no similarity with the real expenditure since there were no basis to determine which portion of the funds should go to the noncommercial agriculture in these scenarios.

According to ASIP planning documents, there has been a focus both on the public and private sector projects with roughly equal expenditure of the donor funds. This is not directly indicating a relationship between the expenditure on the commercial or on the noncommercial agriculture. As it turns out, the public sector projects have been financed through the multilateral donor institutions whereas the private sector activities have been financed by the bilateral donors. This also inherited from the project-based funding era, when the cooperation partnerships were established through NGOs and private institutions. It could be interpreted in the context that the activities focusing on the broad development of the rural areas would be financed from the public sector

finance scheme. However, due to the political nature of ASIP funding, such a conclusion cannot be binding.

5.6 Results from the policy experiments

In this section the scenarios are compared in terms of their income effects on the unskilled rural households. Table 6 shows the effects of the four policy experiments on the unskilled rural households. The difference between the best outcome of scenarios and any other given scenario is also shown in the last column of the table. Not surprisingly, the difference is greatest in the case of the actual implementation scenario, which has the smallest expenditure as opposed to the other scenarios, which utilise a greater amount of funds.

It can be seen that the difference between the actual implementation and the full expenditure on noncommercial agriculture is over ten per cent in the total value of the increase in unskilled rural household income. If measured in Kwacha billion, the actual implementation scenario produces less than one fourth of the increase provided by the noncommercial agriculture scenario. Regarding the possible case in which the full implementation would have led to allocating some of the funds to noncommercial agriculture, the results are not too different between the three scenarios using the planned expenditure figures. The difference between the optimal implementation scenario and the mixed expenditure scenario would have been only less than two per cent, as would have been the difference between the mixed strategy and the noncommercial agriculture.

So far we have been concerned with the income effects of different policy experiments. Another issue worth examining is the labour supply decision of the households, especially those in the rural areas. How do these policies stimulate the employment opportunities for rural households? It is clear that an increase in the supply of labour should take place if the expenditure in agriculture increases considerably, thus demanding more resources to the agricultural production in the rural areas.

Table 6
A comparison of policy experiment effects on the rural unskilled household income

Policy experiment	Effect on unskilled rural households, %	Effect on the unskilled rural households (K billion)	Difference with the best outcome, %
Actual	6,8	52,74	11,5
Optimal	13,4	103,68	4,9
Noncommercial	18,3	142,35	-
Half-half	15,9	123,73	2,4

To see if this has been the case, Table 7 provides a comparison of changes in the unskilled rural labour supply. If policies were targeted towards the noncommercial agriculture, there would be an increase in the demand for unskilled rural labour. Even when the expenditure level in the noncommercial agriculture experiment is considerably higher than in the case of the actual implementation scenario, the difference in demand for urban labour remains almost the same. This indicates that policies focusing on small scale farming activities would have little effects on the labour demand in the urban areas whereas the effects on the local supply of labour would be considerably higher.

However, it is interesting to see that the optimal implementation of ASIP would have had the greatest impact on the urban labour supply as well. The effect on the skilled urban labour would have been an increase of more than 18 per cent. This again seems like an indicator of the land ownership linkages. The results presented show that there are considerable differences not only between the results provided by the use of two expenditure levels but also when the expenditure is targeted differently.

7 Conclusions

This paper has provided a rethinking of the benefits of public expenditure on sector investments in Africa. From the national authorities' point of view, sector investments can be an important source of foreign currency, which is needed to balance the governments' foreign reserves. On the downside, when a programme is not running according to programme documents and expectations, withdrawals and delays in disbursements can lead to serious fiscal problems. This is especially the case in countries which run on cash budget, which means that possibilities to shift resources from one ministry to another are limited. Incidentally, many countries running sector investment programmes also operate on cash budget.

Regarding the impacts of sector investment programmes on national economy, the direct and indirect economy-wide effects should be taken into consideration instead of only the primary effects on the sector itself. This study utilized a social accounting matrix for Zambia. The advantage of using a SAM in the analysis instead of input-output framework has been that the effects on the household income have been captured. The result is that the policies aimed at promoting agricultural production do have a significant income generation effect as well. The findings in this paper suggest

Table 7
Unskilled rural labour supply in policy experiments

Policy experiment	Effect on Unskilled rural labour %	Effect on the Unskilled rural labour (K billion)	Effect on the urban labour supply %
Actual	10,1	23,31	9,4
Optimal	19,9	45,8	18,5
Noncommercial	26,1	60,2	11,7
Half-half	23,1	53,3	15,2

that agricultural sector investments may promote growth and reduce poverty. The findings are important in the sense that if the government wishes to achieve growth with the consideration of income distribution at the same time, these goals can be met through a single sector policy. This is true especially in the cases where the funds are allocated not only to commercial agricultural production but also to noncommercial production.

Empirical evidence from Zambia shows no significant attempt to integrate sector investments to a broader national public expenditure strategy. However, the evidence presented here is from the agricultural sector in Zambia only. This suggests there is a need for further research. Similar policy analysis should be carried out in other sectors and countries as well, to see if the findings of this study could be observed elsewhere. As sector investments contribute to national budget in a substantial way in many countries, a more thorough review of the fiscal impacts is needed to arrive to conclusions that bear universal meaning.

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