CHAPTER SEVEN

AGRICULTURE

Agriculture in Zambia has the potential to pull many people out of poverty. Good performance in the sector translates into overall improvement of the country's Gross Domestic Product, creates jobs and expands the tax base. It is intended that the sector becomes one of the key engines for the anticipated growth both directly and indirectly through agricultural processing industries. In view of the potential multiplier effects that the sector has on the economy, restoring high and sustained agricultural growth is critical for reducing poverty in Zambia.

Over 80 percent of the rural population directly depend on agriculture for food and income. However, most rural agricultural productivity is very low as most farmers are engaged in mere subsistence production. Finding additional cash crops with robust markets can be a means to raise their incomes substantially and reducing poverty. Zambia must drastically improve agricultural productivity and export competitiveness if she has to come out of income poverty.

Situational Analysis Resource Base

Zambia is well endowed with resources for reducing poverty through realising its agricultural potential. A wide range of crops, livestock and fish can be produced because of diversity in agro-ecological zones. The country's land area is approximately 752,000 square kilometres, of which, 12 percent is suitable for arable use. However, only about 16 percent of the arable land is presently cultivated. About 16 million hectares are fit for rangeland grazing.

Zambia also has abundant surface and underground water resources. It has numerous rivers, lakes and dams. The total country's ground water is estimated at 1,740,380 million cubic metres while the ground water recharge is estimated at 160,080 million cubic meters per annum. While the irrigable land is estimated at 423,000 hectares, less than 40,000 hectares or nine percent is actually irrigated. This is concentrated mostly on commercial farms for the production of sugar, wheat and plantation crops.

Table 5: Summary of Irrigation Potential in Zambia

Catchments / basin area	Existing Scheme (ha)	Additional irrigation Potential	Total Potential (ha)	Percent of Total Potential
Upper Zambezi basin	2,000	110,000	112,000	26
Kafue basin	13,000	152,000	165,000	39
Luangwa Basin	-	14,000	14,000	-
Luapula and Tanganyika Basin	2,000	62,000	64,000	15
Commercial farms in different basins	8,000	-	8,000	-
Ground water irrigation	N/a	60,000	60,000	14
Total	25,000	398,000	423,000	100

Source: World Bank, Agricultural Sector Strategy: Issues and Options (Quoted by Zambia Investment Centre, undated.

The agricultural sector was by 1998 estimated to support about 603.000 farming households. The sector comprises small-scale, medium-scale and commercial farmers. On average the small-scale farmers operate on less than two hectares of land and constitute about 75 percent of farm holdings. On the other extreme side, commercial farmers cultivate areas above sixty hectares and are less than one percent of the farming households. The rest is made up of emergent and mid commercial farms at 20 percent and four percent respectively.

Agro-Ecological Zones and the Land tenure System

Zambia is divided into three main agro-ecological zones based on soils, climatic factors, rainfall patterns and common agricultural activities. The main characteristics of the three main zones are outlined in Table 3 below.

Table 3: Main features of Zambia's Agro-ecological Zones

Zone	Location	Characteristics				
		Elevation (m)	Rainfall (mm)	Growing Season (days)	Temperature (Centigrade)	
I	Major valley areas	300 – 900	000	00 100	20 25	
	Southern parts of Western and Southern Provinces	900 - 1,200	>800	80 – 120	20 - 25	
II	Plateau of Central, Eastern, Lusaka and Southern Provinces Kalahari sand plateau in Western Province	900 - 1,200	800 – 1000	100 - 140	23 - 25	
III	Part of degraded Central African Plateau covering Northern, Luapula, Copperbelt North- Western Provinces and parts of Serenje and Mkushi districts		>1000	120 - 180	16 - 25	

Source: Compiled from Bunyolo, Chirwa and Muchinda, 1995.

Zone I, constitutes about 12 percent of the country and covers Luangwa and Zambezi river valleys. It has low altitude and low erratic rainfall with a short growing season. Although it is hot and humid with poor soils in some places, it is suited for growing drought resistant crops. Goat rearing and fishing potential are high as is cattle rearing and cashew nut production in west of Zambezi River in Western Province.

Zone II covers 48 percent of the country. The rainfall and growing season in this area is moderate supporting agricultural products like maize, tobacco, ground nuts, sunflower, soybeans, wheat, vegetables, sweet potatoes, cotton and the rearing of livestock such as cattle, goats and poultry. This is the area where commercial production has been concentrated because of relatively good ecological conditions and services. It presents highest potential for growth in the agricultural sector.

Zone III constitutes about 42 percent of the total land area. It covers North-Western, Copperbelt, Northern and Luapula Provinces. It has the highest rainfall and growing season. The crops grown include cassava, rice, sweet potatoes, sunflower, soybeans, millet, sorghum, pineapples and maize.

Zambian land tenure is categorised into two main systems: Customary and the Leasehold Land Tenure. Under the former land is controlled through traditional authorities. They

allocate land to any one who is entitled and needs it and this normally happens without problems. The local tribe owns Land and individuals have a right to its use. The Customary land covers about 94 percent of the total land in Zambia. It can be transferred into leasehold tenure if the local chief and the community agree.

Under the leasehold tenure a title deed is held for a renewable period of 99 years on state land. About 6 percent of the total landmass is affected. Leasehold Tenure system provides a sense of security and places intrinsic value on land for commercial transactions. The bulk of the leasehold land is situated in Southern, Central, Lusaka and Copperbelt provinces. In other provinces, it is little and can be almost non-existent

Leasehold tenure land can be obtained free upon successful application from the state. However, it often takes long to obtain and many people eventually resort to buying after giving up. Although land is plenty in Zambia, artificial shortages exist due to absentee landlords and a non-systematic approach to alienating rural land including cumbersome procedures in obtaining title deeds. Government recognition of the need to insure gender equity in land allocation is reflected in the draft land policy document which states that to ensure equal access to land between women and men, 30 percent of the allocation of land will be set aside for women applicants.

Agricultural Performance

Because agriculture is predominately rain-fed, its performance has highly been variable and inadequate.

Table 1: Agriculture Real Growth Rates, 1992-2000

Year	1992	1993	1994	1995	1996	1997	1998	1999	2000
Rate	(33.1)	68.1	(18.9)	33.4	(0.6)	(5.1)	6.1)	23.2	1.8

Source: Ministry of Finance and Economic Development

This has negatively affected the food security in the country, requiring imports in some years. At household levels, one of the consequences especially in the rural areas has been malnutrition. About 45 to 47 percent and 6 percent of rural households experience chronic malnutrition (stunting) and wasting respectively. Also, one of the key potential engines for economic growth and poverty reduction has remained untapped.

Although overall agricultural expansion has been little, cash crops especially exports have expanded a lot in the 1990s. Agricultural exports have risen from US\$55 million in 1996 to \$171 million in 1999. Agriculture has been a critical player in the rising non-traditional exports with its share rising from 23 percent in 1996 to 40 percent in 2000.

Current Constraints

A fundamental problem faced by the sector is lack of adequate investment. The indicators for this include the small fraction of arable land (12 percent) being used and the low exploitation of irrigation potential. Regarding the latter it is noteworthy that between 1995-97, only 0.9 percent of the cropland in Zambia was irrigated. The comparable figures for Zimbabwe, South Africa, East Asia and Iatin America and Caribbean were

4.7 percent, 7.9 percent, 36.3 percent and 13. 5 percent respectively. Other indicators for low investment such as little utilisation of machinery and fertilisers point in the same direction.

The result of limited investment is extreme low productivity resulting in little or no growth. Over the period 1996-98 value added per worker in the sector was a paltry US209 compared to \$347 and \$3 880 in Zimbabwe and South Africa respectively. Also, productivity in agriculture in Zambia is on average just about a third of that in other sectors.

The following factors have also contributed to the unfavorable performance of the sector:

- □ In the 1990s an unstable macroeconomic environment led to fiscal and monetary restraint leading to high interest rates, which made borrowing uneconomical. This is further compounded by occasional exchange rate instability
- □ Rapid pace of implementation of the liberalisation process not matched by private sector participation which led to a void in agricultural marketing
- □ Poor and inadequate rural transport infrastructure.
- □ High input prices
- □ Undeveloped financial markets leading to death of long-term capital for all levels of producers. Rural finance is virtually non-existent.
- □ HIV/AIDS epidemic has negatively affected productivity and the food security
- □ Land degradation as a result of unsustainable agricultural practices
- Discrimination against women farmers, although they are majority in the rural areas
- □ Environmental degradation
- ☐ Increased crime has increased production costs because of investments in security.
- □ Low utilisation of land because of cumbersome procedures in obtaining title deeds, land being unserviced, and lack of enforcement in repossessing unutilised land.

Current Policy on Agriculture and Poverty Reduction

New agricultural policies were introduced in 1991. The sector was liberalised entailing decontrolling markets, liberalising prices and removing food subsidies and state monopolies input delivery. The Agricultural Credit Management Programme (ACMP) was launched in 1994 to be a transitory arrangement for the provision of credit for fertiliser and seed as well as way of strengthening the capacity of private traders to act as financial intermediaries. However the implementation of this program was not successful.

Within the framework of liberalisation, the Agricultural Sector Investment Program (ASIP) was launched in 1996 to coordinate Government and donor assistance to harmonise sector activities to achieve optimal resource use. ASIP was a growthenhancing program aimed at achieving sectoral objectives of food security, income and employment generation, maintaining a sustainable resource base, agro-industry support and enhanced balance of payment contribution.

Further, the Food Reserve Agency (FRA) was established with the sole purpose of maintaining national strategic reserves to ensure national food security but its mandate was extended in view of the slow response by the private sector to provide marketing services. The Agricultural Consultative Forum (ACF) was also set to play the role of facilitating private and public sector partnerships and dialogue.

The following have been cited as some of the strengths of the current agricultural policy and institutional framework:

- □ Bias against agriculture lessened, leading to expanding in non-traditional exports.
- ☐ Increased private sector participation in agricultural marketing.
- □ Improved stakeholder participation due to the various for asuch as ACF.
- □ Growth in out-grower and contract farming schemes. It is estimated that about 100,000 farm holdings are under this arrangement.

The PRSP Interventions in Agriculture

The main policy objectives in agriculture for poverty reduction are as follows:

- □ To generate income and employment through increased agricultural production and productivity;
- □ To enhance the sector's contribution to the national balance of payments by increasing agricultural export
- □ To contribute to sustainable industrial development by providing locally produced agro-based raw materials; and
- □ To ensure national and household food security through dependable annual production of food stuffs but also bearing in mind that food security can be achieved by viable production of cash crops and using the income to buy food.
- □ Adequate supplies of basic foodstuffs at competitive costs;
- □ To ensure that the existing agricultural resource base is maintained and improved upon;

We shall proceed as follows:

Firstly, Zambia will build on her recent success in agriculture exports by exporting even more. Success in economic expansion and poverty reduction depends on export success because the limited domestic demand is a barrier to growth. This will be in addition to other measures such as improving feeder roads and strengthening farmer organisations.

Secondly, she will encourage the expansion of output for the domestic market. As stated above, a major prerequisite for this is higher domestic purchasing power through export expansion. Higher demand for domestic foodstuffs creates markets for rural farmers and reduces poverty.

Lastly, subsistence farmers will be encouraged to be more effective. The prime objective is to make them food self sufficient and then grow some surpluses for the domestic market. Others who can, will be drawn into out-grower schemes where they can

gradually improve their cash crop output.

The key steps for boosting agricultural exports is as follows:

- □ Based on the national comparative advantage and existing preferential external trade agreements, Zambia will determine the agricultural or agro-processed products, which have the best prospects for being competitive abroad. Negotiations for new preferential markets will be stepped up.
- ☐ Areas in the country, with the best ecological conditions for growing these products, will be identified.
- ☐ In areas with high potential but with no state land, government will negotiate with traditional leaders for land to form farming blocks, survey it and put feeder roads. Land near existing infrastructure, including resources like rivers will have preference. In such places, the interests of the community will be defined in exchange for the land.
- □ Government will advertise the availability of this land widely to large-scale reputable and capital rich farming enterprises, foreign and local.
- ☐ The investors will be chosen. Preference will be given to those willing to support out grower schemes.
- □ Government will encourage small-scale farmers' to be organised in out-grower schemes around the large-scale export farmers and elsewhere.
- □ Wherever possible encouragement to manufacturing industries like cotton ginnery, fruit and vegetable canning, etc that can process locally produced primary products within the same vicinity will be given.
- □ The export drive requires that producers be competitive in world markets. The requirement for this includes concentrating producers in any area and producing minimum quantity and quality threshold of any given commodity to minimize the costs of logistics. This is why it critical to have estates supporting out grower and other farmers so as to guarantee minimum quantities and quality.

Regarding output for the domestic market, it is necessary to boost domestic demand to achieve growth. Provided exports rise and are labour intensive and have sufficient linkages with the economy, domestic demand will rise, creating better market opportunities for farmers of all levels.

Even with expanded demand however, other interventions like regularly rehabilitated trunk and feeder roads, well-organised farmer organisations like co-operative societies, a responsive legal environment that quickly responds to trade disputes, appropriate credit institutions, etc will be needed. In particular the government will take advantage of the emerging markets created by the expanding tourist and supermarket enterprises (for example, the Livingstone area) to assist farmers to access them.

The PRSP interventions in agriculture are in six categories as follows:

Land Development and Support Services

□ Set up stakeholder task forces involving communities in all provinces to identify suitable land and demarcate it into appropriate blocks through cadastral surveys.

- ☐ High-level water management plans for irrigation dams, canals, etc. in the farm blocks will be developed.
- □ High-level energy provision and management plans (rural electrification) will be developed in the blocks.
- □ Plans to develop and expand the road infrastructure to these areas will be developed.
- Repossession of unutilised land to be enforced more strictly.

Infrastructure Development

- □ Rehabilitate trunk roads to rural areas and re-grading feeder roads regularly.
- ☐ In new farming blocks, rehabilitate existing roads or open new ones
- □ Rehabilitating rural dams and construct new ones

Agri business Promotion and Training

- □ By 2003, possibly earlier in provinces where land preparation will occur fast, advertise the land to credible investors and settle commercial farmers and out grower schemes bearing in mind gender policy guidelines.
- Orient extension and other public support to include skills building for exports.
- □ Encourage private sector financing of input supply and marketing developed;
- □ Strengthen the provision of agricultural services key areas include timely input supply and the support / promotion of rural cooperatives.

Finance and Investment

- □ Supporting the creation of financial infrastructure for rural credit especially in outgrower farmers by contributing to seed capital.
- □ Re-capitalise Development Bank of Zambia with private sector players into a credible source of long-term finance.
- □ Negotiate for soft lending schemes from overseas lenders to fund export-based crops at all levels of production and use DBZ as the lending vehicle.

Technology Development and Dissemination

- □ Promote and encourage simple small-scale irrigation schemes especially in out grower areas for export crops;
- □ Promote and strengthen demand driven research and technology transfer process that will reflect farmers needs and aspirations;
- □ Develop and encourage suitable management practices, conservation farming and improved management practices especially among small scale farmers;
- □ Promote proper crop marketing and storage skills especially among small scale farmers;

Food Security and Diversification

☐ Improve livestock disease monitoring and eradication, especially in disease prone areas.

- □ Promote labour saving devices in farming and other rural livelihood activities.
- □ Promote crop diversification and conservation farming including manure fertilisation
- □ Promote local level seed multiplication system;
- □ Establishment of Support system for vulnerable households;
- □ Establishment of seed grain Banks;

The direction that will be adopted for agriculture is summarised in the following table.

	Agricultural Produce to Process for Exports	Agricultural Produce for Export	Agricultural Produce for Domestic Market	Agricultural Produce for Subsistence
Examples of Produce	Cashew nuts Citrus Fruits Coffee Cotton Forest and timber Products Mangoes Paprika Pine Apples Sugar	Beef Coffee Flowers Groundnuts Paprika Tobacco Vegetables Cotton	Beef Beans Fruits Maize Piggery Poultry Rice Vegetables	Cassava Beef Maize Sorghum Vegetables
General Comments on the Output	Growth in this category is a pre-requisite for sustainable economic growth.	Growth in this category is a pre-requisite for sustainable economic growth.	Market opportunities in this category will be enhanced if exports (agric and non agric) expand.	Primarily intended for food security for rural households
Recommended Class of producers	Large scale corporate (F) Large scale corporate (L) Commercial Farmers (F) Commercial Farmers (L) Small scale under out-grower scheme	Large scale corporate (F) Large scale corporate (L) Commercial Farmers (F) Commercial Farmers (L) Small scale under out-grower scheme	Large scale corporate (F) Large scale corporate (L) Commercial Farmers (F) Commercial Farmers (L) Small scale farmers	Subsistence farmers
Planned impact on Poverty Reduction Key Strategies	 ✓ Income and jobs generally expanded ✓ Multiplier and BOP effects ✓ Higher tax base to fund national social and public investment ✓ Business opportunity for small scale farmers ✓ Rural Development 	 ✓ Income and jobs generally expanded ✓ Multiplier and BOP effects ✓ Higher tax base to fund national social and public investment ✓ Business opportunity for small scale farmers ✓ Rural Development 	 ✓ Income and jobs generally expanded ✓ Higher tax base to fund national social and public investment ✓ Business opportunity for small scale farmers ✓ Rural Development 	Food Security in rural areas

	Agricultural Produce to Process for Exports	Agricultural Produce for Export	Agricultural Produce for Domestic Market	Agricultural Produce for Subsistence
Geographical Areas of production	All parts of the country with products dependent on the ecological suitability	All parts of the country with products dependent on the ecological suitability	All parts of the country with products dependent on the ecological suitability	All parts of the country with products dependent on the ecological suitability
	large enough to support production of minin Identify and approach credible investors Identify and organise out-growers As much as possible, land to be near roa For Zambian investors and out-growers, Carry out HIV/AIDS programs Efficiently implement appropriate incentive	nise it with local communities and MoL. It must be num threshold output for both growing and processing ads, water and power organise credit wes as provided for in various instruments such as centives under the investment certificates, zero	 For all types of commercial farmers the following will be done: Organise a credible credit institution Rehabilitation of infrastructure, especially feeder roads Institute a more efficient land delivery system Introduce Gender sensitivity Efficiently implement appropriate incentives as provided for in various instruments such as lower duty on agriculture related imports, incentives under the investment certificates, zero rates of VAT on inputs and machinery, accelerated tax\a write offs on machinery, etc For small scale farmers, the following additions will be done Development and dissemination of appropriate technology Promote out-grower schemes Efficient extension services Diversification of output away from just to food to include viable cash crops Encourage private sector micro and fnance Promote disease control and surveillance. Promote small scale irrigation systems Promote improved management and conservation farming Strengthening and promotion of farmer organisations Agribusiness support and training 	Development and dissemination of appropriate technology to cover mechanisation Efficient extension services Diversification of output away from just to food to include viable cash crops Encourage private sector micro and finance Promote disease control and surveillance Promote small scale irrigation systems Promote improved management and conservation farming Strengthening and promotion of farmer organisations

Rural Development

Situational Analysis

Poverty is most prevalent in the rural areas although according to the Living Conditions and Monitoring Survey of 1998, some provinces have marginally reduced it. It is suspected that this may be due to the shift towards cash crops.

The causes for the high poverty in rural areas are varied. For example, small scale farming connected with cattle rearing in the Southern, Western and Central provinces attribute cattle disease as one of the major causes of poverty. For most rural areas generally, the failure of agriculture is considered a major contribution to poverty. Most livelihoods in rural areas are agriculture based. Droughts out-breaks in the early 1990s followed by sudden state withdrawal of support to agriculture without adequate private sector response to fill the gap in many instances led to loss in income. On top of that rural areas suffer many deprivations such as poor access to amenities like health services, safer water, quality education and infrastructure.

Also, few rural areas adequately contribute to the generation of resources needed to finance their access to amenities. This is because they lack serious investments and productivity. In the 1970s a policy of taking investment to rural areas was embarked upon which saw factories in places like Chipata (bicycles), Mansa (batteries), Mwinilunga (pine apple canning) and so forth. This contributed to income generation and employment creation and, in some instances provided social amenities. With economic liberalisation and withdrawal of subsidies in certain cases, many of these state owned enterprises folded.

The 1970s and 80s witnessed some important gains in rural Zambia. Amenities like primary and secondary schools expanded. Various colleges were established in many provinces and the same was done for roads and other economic infrastructure such as power and communications. By the beginning of the 1990s, many of these needed rehabilitation but lack of resources prevented this.

PRSP Interventions

The general PRSP interventions in rural development are roads (and canals), education, health, water, sanitation and HIV/AIDS as well as economic empowerment. On top of this there are area specific interventions as defined by stakeholders. For example livestock disease monitoring and eradication in the Central, Southern and Western provinces is important, as is security in areas bordering Angola and Congo.

Roads infrastructure is important for linking outlying areas with the rest of the country. This involves not just the rehabilitation of the major trunk roads but also that of feeder roads. The mechanisms for this intervention will be as set out in ROADSIP. The interventions in education, health, sanitation and HIV/AIDS are as outlined in the respective sections of this report.

Regarding economic empowerment, it is recognised that many parts of rural Zambia are well endowed with resources like land, water, wildlife, forests, - often better Poverty Reduction Strategy Paper - (First Draft)

Page 11 endowed than some urban areas. They remained underdeveloped because they have lacked quality investments to exploit the resources. Where there have been investments such as the Kariba and Kafue hydroelectric schemes in Southern province there has been negligible social and economic linkages with their vicinity.

The immediate potential in most places is in agriculture due to the abundance of land. This does not preclude other areas like tourism, forestry, fishing and mining. In the past Zambia's focus on rural agriculture assumed every rural dweller is a farmer and must be assisted to farm better. In actual fact, many take farming as a way of life rather than business and can be equally happy in a job.

The PRSP strategy continues with efforts to assist rural farmers but by focusing on those who are committed. For the rest government will instead facilitate employment opportunities on commercial farms, large-scale agricultural estates or in agroprocessing industries in rural areas. On these schemes out-grower schemes involving local people will also be encouraged as an extra option. In this way, rural agriculture will become a viable economic activity and rural areas will generate resources that will contribute to their social and economic development.

With only 16 percent of Zambian arable land being utilised (with an even lower percentage when consideration is made of land that could be turned arable through technology) Zambia can afford to encourage rural large-scale agriculture without creating land problems although it will require shifting some people. In most rural Zambia close to 100 percent of land is under traditional authority and in many provinces there is hardly any commercial farm. The result is that the major formal employer is government with the land contributing little. Such areas are condemned to poverty until such a time when there will have been sufficient social transformation to raise rural agricultural productivity. Moreover, leaving this issue unattended to now means that it will be much harder to do it later as human settlements spread with the population increase. Areas not contributing to commercial agriculture by holding land back are burden on other areas, such as Southern, Central and Lusaka provinces, which have already allowed commercial farming and are net positive contributors to the national Treasury.

To facilitate investment all rural areas, especially those with abundant land will be encouraged to demarcate farm blocks for commercial exploitation, out-grower schemes and tourism development. In some of the areas water resources for irrigation are plenty and prosperous farm blocks can be established. Each community will determine the use of the ales proceeds of the land although government will be available to advise and supervise. It is preferable that the blocks are in clusters — meaning several districts or indeed even adjoining provinces can have a common block. This will minimise new required investments in infrastructure. Further, the blocks must wherever possible be near existing infrastructure for the same reasons. It is desirable for the farm blocks to be near rivers and lakes where serious investments in irrigation can be made cost effectively.

Out of desperation for development, some chiefs are giving away large tracks of land to investors. Stakeholders complained that in some cases this is done in none transparent ways and to questionable investors. The government recognises that people want investments and, rather than curtail the process, it will facilitate it so that

it is done orderly, transparently and that the interests of wider communities are protected. The interests include ensuring that the size of farm blocks will not create landlessness in the foreseeable future, the quality of the investor is verified, the communities' participation through out-grower schemes and other arrangements are defined and so on.

The government will work out detailed guidelines on how rural farm blocks and investments will be established before the scheme comes into force. Although most land is currently unproductive, it is the key asset rural communities have. If part of it has to be sold, it must be made more productive and benefit them and, therefore, speculators must be prevented. Already there is a lot of land on title, which is presently grossly under-utilised.

For its part the government will as part of meaningful decentralisation let communities benefit from the commercial exploitation of their land. This will include schemes like shareholding arrangements with investors where possible, out-grower schemes and tax sharing arrangements. Through this strategy, rural people will be empowered to develop themselves.

In summary, the following opportunities will be created in rural Zambia

- 1. Employment opportunities on part-time and full time through large-scale agriculture, agro-processing and tourist ventures
- 2. Self-employment through out-grower schemes
- 3. Small-scale businesses in farming, fishing, carpentry and others resulting from rising purchasing power in rural and urban areas
- 4. Better food security in subsistence farming through the appropriate interventions that were outlined for agriculture.
- 5. Social interventions in education, health, sanitation and road infrastructure as was already mentioned.