



POVERTY REDUCTION THROUGH COST EFFECTIVE AGRICULTURE GROWTH OPTIONS

PREAMBLE

With her poverty headcount increasing from 27% (18 million people) in 1980 to 54% (69 million people) in 2004, poverty reduction remains a critical challenge for Nigeria. Concerted effort is therefore needed if Nigeria is to move decisively towards the target of halving poverty by the year 2015. One sector that has a critical role to play in poverty reduction in Nigeria is the agriculture sector. Over 40% of the GDP comes from the sector and it employs about 60 percent of the working population.

However, the agriculture sector has the highest poverty incidence and tackling poverty entails tackling agricultural underdevelopment. Consequently, reducing poverty in the short-term would require increasing the labour and other incomes which farmers obtain from the sector. In the long term, other income increasing measures can be considered as there will be more time for households to learn new ways of earning income diversification into processing, the growing service sector and so on.

Reducing poverty through agriculture would require funds from both the private sector and public sector as the present level of technology, improved varieties, agro-chemicals and other inputs use is low. Unfortunately, most farmers are poor and do not have the funds to increase the level of inputs and technology used. Obviously, the formal private sector and the public sector have to create projects and programmes which would make these necessary production factors and inputs available. Without these

requirements, most farms in the country will continue to be subsistent in nature and employ rudimentary production processes which inevitably lead to low yields and low incomes.

Although the agriculture sector is very important in improving the welfare of the poor and, especially, those in the rural areas, other sectors in the economy play important roles as well. Some of these sectors are actually relied upon by the agriculture sector for its growth. Key examples include the roads sub sector (under the ministry of works), the health sector and the ministry of science and technology. These sectors/ministries improve the lives of people both directly and indirectly by improving outcomes in the agriculture sector. Therefore, in addition to the agriculture sector, other sectors/government ministries are of importance in improving the welfare of people and farmers in particular.

While there are many important sectors/ministries that require funds to improve households' quality of life, government and private funds are limited. This necessitates that sectors/ministries be prioritized and allocated funds accordingly. It is also necessary to ensure that funds are efficiently utilized so as to minimize costs and maximize impacts. Following the same logic, there will also be a need for prioritization and cost minimization within ministries as each ministry has a fixed envelope and many areas where activities are called for. This forms the main focus of this study- the objective is to prioritize agriculture products by their cost effectiveness with respect

to poverty reduction. Due to differences in programme/project costs by agriculture product, some will be cheaper means of reducing poverty compared to others. Specifically, the study ascertained which agriculture products have the least cost for achieving a given level of poverty reduction.

As noted in the report, the Nigerian government has engaged in several programs and projects which typically included technology transfer to farmers. Due to the farmers' income constraints, the government often provided funding (sometimes in form of loans) for the acquisition of technology and inputs. It is important to study the ability of the components of these programs to reduce poverty. This will ensure that the most cost effective programs and technologies are enlarged while less successful ones are redesigned. This will lead to the highest possible poverty reduction for the funds expended on the programs and the new technologies that come with them and ultimately make program expenditures more cost-effective.

ISSUES RAISED

This study raised certain policy issues that must be assessed and addressed by the stakeholders in order to achieve objectives poverty reduction through agricultural practice in a cost effective manner. The issues include:

Poverty-Growth Linkages: Growth is required for poverty reduction as it is easier to redistribute income and create income generating opportunities for the poor from a larger GDP. While growth is essential for poverty reduction, it should be noted that it does not always lead to rapid poverty reduction. Two scenarios can serve to illustrate this. In one scenario, a country grows at 5% p.a. and reduces the poverty rate by 50% after 5 years. In another scenario, the same country can grow at the same 5% p.a. and reduce poverty by 10% in 5 years. The growth in the first scenario is normally said to be more pro-poor because it is more able to reduce poverty. This difference in the poverty outcomes of growth results from the sources of growth in the different scenarios.

Using Nigeria as an example, a 5% growth coming primarily from the oil sector would have much lesser impact on the poverty level compared to the same 5% which comes primarily from the agriculture sector. Where growth comes from sectors that most poor people work in (the agriculture sector in Nigeria's case), poverty is reduced faster.

Cost Effectiveness: Cost effectiveness has been

defined as the achievement of results in the most economical way. This approach assesses efficiency by checking whether resources are being used to produce any given results at the lowest possible cost. Based on this definition, cost effectiveness is one way of measuring efficiency. For the purpose of the study we shall work with this definition and use the terms cost-efficiency and cost-effectiveness interchangeably. It should be noted that the economic outcome/result being focused on in the study is poverty reduction. We are therefore assessing how to reduce poverty in the most cost-effective way. For example rice may be very pro-poor but the cost per yield for rice programmes may be relatively high. It may cost N10 to increase rice yield by 1 tonne while this increase can reduce the national poverty rate by 5%. Reducing poverty through rice would then cost N2 for every 1% reduction. Tomato, on the other hand, for example may cost N3 to increase yield by 1 tonne while this increase would lead to a 3% reduction in poverty. This means that reducing poverty through tomato would cost N1 for every 1% reduction in poverty.

Poverty in Nigeria: There are 36 states, the federal capital territory (Abuja) and 6 geopolitical zones in the country, with each zone having 5-7 states. The zones are Northeast, Northwest, North central, South east, Southwest and South south. Jigawa state is in the Northwest zone while Oyo state is in the South west zone. As at 2004, there was a wide gap between the poverty rates in the northern zones and those in the southern zones. While the highest rate in the south was 43% the highest in the north was 72%.

Between 1980 and 2004, the poverty rates increased in all the zones. However, the case in the north is more problematic. This is because, recently, the poverty rates decreased in the 1996-2004 period in the southern zones but experienced an increase in 2 of the northern zones. This indicates a need to pay more attention to the poverty dynamics in the North especially as it still ends up having much higher poverty rates than the South. Jigawa and Oyo states, our case studies of interest, show an example of this recent trend: the poverty rate in Jigawa state increased from 71% in 1996 to 95% in 2004 while that of Oyo decreased from 59% to 24% in the same period.

Agricultural Production Structure in Nigeria: Nigeria has several agro-ecological zones (AEZs); the humid forest, derived savanna, guinea savanna, sudan savanna and the Sahel savanna with each geo-political

zone falling into more than one agro-ecological zone. The Northwest and North east zones fall into the sahel, sudan and guinea savanna while the Southern zones fall into the derived savanna and humid forest zone. The North central zone falls into the guinea and derived savanna zones.

These AEZs determine the kinds of crops that can grow in each geo-political zone. Cereals are mostly grown in the north where we have the sahel, sudan and guinea savanna while tubers are mostly grown in the south where we have the derived savanna and humid forest. As indicated in the study, rice, maize, millet and sorghum are mostly grown in the north while cassava is mostly grown in the south. Yam appears to be grown as much in the south

as it is in the north. Sorghum and millet are more or less not grown in the south. This is reflected in the land allocation pattern in Oyo and Jigawa state where sorghum, millet and rice have little or no land allocated to them but the reverse is the case in Jigawa state.

POLICY RELEVANCE

The study is well situated in the global concern for agriculture sector growth especially as it relates to achieving the 1st millennium development goal of halving the 1990 proportion of people suffering from poverty and hunger (MDG1). Present government programs indicate possible crops for agriculture investment but give little

Figure 1: Poverty in the different geo-political zones in 2004



Source: Authors

Table 1: Trends in poverty level by zones (1980-2004)

Zone	1980	1985	1992	1996	2004
South South	13.2	45.7	40.8	58.2	35.1
South East	12.9	30.4	41	53.5	26.7
South West	13.4	38.6	43.1	60.9	43
North Central	32.2	50.8	46	64.7	67
North East	35.6	54.9	54	70.1	72.2
North West	37.7	52.1	36.5	77.2	71.2
Jigawa State				71	95.1
Oyo State				58.7	24.1

Source: NBS (2008, 2005)

indication of the costs of choosing the crops as priority crops. There may be cheaper product combinations which can achieve MDG1.

A critical component of many government programs and projects is the transfer of technology and improved varieties to farmers. Where these technologies are focused on products that are relatively more expensive in their ability to reduce poverty, resources will consequently be inefficiently utilized. In such cases, further multi-disciplinary research on how to make a commodity more cost-effective would be needed while technologies associated with more cost-effective products can be disseminated more in the interim.

National and international stakeholders are keenly interested in analysis on how much funds Africa will need to adequately grow the agriculture sector and achieve MDG1. At the same time, national and international funds are limited especially with the recent financial crisis and the consequent decrease in global growth rates.

In Nigeria, there are also country specific sources of funds constraint the fluctuating price of oil, the problems in the Niger delta and others. It is therefore, necessary to seek ways to minimize poverty with limited funds. This analysis will assist in indicating ways to improve public expenditure management in the form of optimizing the use of limited funds for inputs and technology provision among other program components.

The study ranks agriculture commodities according to their cost effectiveness in reducing poverty in each state. Presently, this information appears not to be available or utilized in the planning of agriculture programmes. If available, it would be easier for the Planning, Policy Analysis and Statistics (PPAS) department, the Federal Department of Agriculture (FDA), the National Food Reserve Agency (NFRA) and international organizations involved in planning agriculture sector programmes to get a better sense of how they can make the greatest impacts using their limited funds. The results will ultimately be useful for the agriculture sector medium term sector strategy (MTSS) where detailed plans are made to achieve the targets set out in the 7-point agenda, the Vision 2020 and the 5-point agriculture agenda of the federal government. Where funds are allocated based on cost-effectiveness and effectively utilized, it is expected that the pace of poverty reduction will be faster.

CONCLUSION AND POLICY IMPLICATIONS

The analysis has indicated that the most pro-poor agriculture product may not be the most cost effective. For instance, while maize is the most pro-poor in Oyo state, it appears to require relatively large funds to achieve poverty reduction. In Jigawa state, the most pro-poor crop - rice - was also found to be the most cost-effective. Given budget constraints which public and private institutions are subject to, it would be useful to explore possibilities of skewing the allocation of funds to agriculture products which give the highest reductions in the poverty rate for every Naira spent.

It appears that there is a mismatch between expenditure priorities and poverty reducing ability in the 2 states. The crops which have the highest ability to reduce poverty did not receive the largest amount of funds. In Jigawa state, Rice, which has the best ability to reduce poverty in a cost-effective way, received the third largest share of the budget. Sorghum which has the least ability in this regard received the 2nd largest share. In Oyo state, Yam, which has the best cost-effective poverty reduction ability,

received the least share of the budget. In contrast, Maize, which has the least ability in this regard, received the largest share of the budget. It would be useful to align expenditure shares with the poverty reducing abilities (in a cost-effective way) of the different products.

Lesser funds should be allocated to the least poverty reducing products in order to obtain the largest impacts in terms of poverty reduction for every Naira spent. In Oyo state, for example, it would seem reasonable to emphasize programmes on yam intensification until cheaper means of working with cassava and maize can be found through technological research and on-farm trials. This highlights the need to guide technological research and dissemination on the basis of their ultimate poverty reduction effect. Technologies associated with the best cost-effective poverty reducing agriculture products would appear more useful for dissemination in the short run. Further multi-disciplinary and technological research can focus on creating ways in which agriculture products which are not cost-effective tools for poverty reduction can be made so.

The review of the project reports submitted by participating states in the National Special Programme for Food Security (NSPFS) indicates that most of the programmes do not report expenditure according to the agriculture products. In this study, even though the analysis was intended to have a national coverage, only the states that possessed sufficient data details were eventually included in the analysis. It is instructive that all other states should follow the examples of Oyo and Jigawa states in reporting expenditure by the benefiting agriculture product. This is important as it would enable agriculture planners to carry out budget monitoring and evaluation and benchmark cost-effectiveness in a systematic manner. Results of such analysis will further improve the outcomes of programmes and projects implemented by various agencies. This would lead to achieving greater poverty reduction in a cost-effective manner.

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