Agriculture, Economic Growth and Poverty Reduction

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1. Introduction

Reducing poverty is a primary focus of public policy in most developing countries, a fact that is underscored by the recent emphasis on the formulation of Poverty Reduction Strategy Papers (PRSPs) by African governments, including our own[1]. This apparent rediscovery of poverty as a central policy issue is misleading as it gives the impression that previous national policies were not aimed at reducing poverty. It is actually the case that all previous development efforts in Kenya and other poor countries have had the ultimate goal of reducing poverty. In fact, in Kenya, we could say that Sessional Paper No. 10 of 1965 on *African Socialism and its Application to Planning in Kenya* (Republic of Kenya, 1965) was the first Poverty Reduction Strategy Paper in Kenya. This Sessional Paper outlined fairly elaborate policies to fight "disease, poverty and ignorance" which are at the core of most PRSPs. Nevertheless, this recent emphasis on *poverty reduction* in our policy documents does highlight the seriousness of the problem, and the fact that the last few decades have been marked by a general increase in the extent and severity of poverty in developing countries, particularly those in sub-Saharan Africa.

In this paper, I share my thoughts on this important topic and specifically on the role of agriculture in economic growth and poverty reduction. I will begin by providing a fairly brief discussion of the role of agriculture in economic growth and poverty reduction and then discuss the performance of Kenya's agricultural sector focusing on both the policy and structural constraints that have impacted on agricultural performance. The discussion will highlight some specific policy actions.

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[1] Republic of Kenya, 2000, 2001 are two examples of Poverty Reduction Strategy Papers (PRSPs). They are consultative documents with an aim of reducing poverty. They give the objectives of different sectors of the Kenyan economy and the strategies to achieve these objectives, the implementing agencies, and the timeframe for implementation of the various strategies.

2. Formulating public policy for poverty reduction

In formulating public policy, some basic guiding principles should be taken into account. These include a consideration of the proportion of the population impacted by proposed policy, the welfare implications of the policy particularly in regard to poverty reduction and economic growth, and the secondary effects of such policy, whether intended or unintended. These principles call for not only a careful evaluation of public policy options but also an emphasis on targeting potential beneficiaries. In our current efforts to reduce poverty therefore, it is critically important that we target our poverty reduction efforts to those regions of the country and population groups where poverty is concentrated. These principles are in line with business investment approaches that dictate investment in those activities that have highest return. In the business of poverty reduction, policy actions should be targeted where they result in highest reduction in poverty. In the Kenyan context, this implies focusing efforts on the rural areas, particularly arid and semi-arid areas; women and children; street children; the landless and unemployed; single parents; women in polygamous marriages; and slum residents (Mwabu et al., 2002).

The majority of Kenyans live in rural areas and most of them are engaged in agriculture or agricultural-related activities. About 80 percent of the country's population depends on agriculture for their livelihoods (Republic of Kenya, 2002). It is in the rural areas that we find most of the poor. Some recent work by KIPPRA researchers (Alemayehu et al., 2001; and Mwabu et al., 2002) reveals that it is in the rural areas that we find most of the hardcore poor. The hardcore poor (those who remain food poor even after spending all their income only on food) are often difficult to reach through the standard antipoverty approaches. But then we also find that it is women and children who bear the main burden of poverty. Poverty reduction policies must therefore not only target rural areas but should also specifically target these marginalized population groups. After all, research (Manda et al., 2002) has demonstrated that increases in female earnings have a larger impact in improving family welfare than similar increases in male earnings. Likewise, poverty is more widespread in arid and semi arid areas as compared to other rural areas (Kimalu et al., 2002) and it is therefore necessary to target these regions if poverty reduction efforts are to succeed.

3. Role of the agricultural sector in poverty reduction

There are some who suggest that we can effectively fight poverty indirectly through policies that support the trickle down mechanism of growth. The assumption here is that by investing in urban areas and the industrial sector, benefits will eventually filter down to the rural areas and therefore reach most of the poor. But evidence does not seem to support this view. Benefits of urban-led development do not appear to have trickled down to the rural areas. Recent studies ((Ravallion and Datt, 1996) show that while urban income growth translates into urban poverty reduction, it does not contribute to rural poverty reduction. However, the overwhelming evidence from the experiences of developing countries shows that rural development has important salutary effects on overall development[2]. Improving the quality of life in rural areas necessarily spills over to quality of life in urban areas. A number of recent studies (Bourguignon and Morrison, 1998; Binswanger and Von Brown, 1993; and Ravallion and Datt, 1996) show that in many developing countries, the largest growth in poverty reduction has occurred as a result of agricultural growth. The implication is that

[2]For instance, according to a study by Timmer and Block (1994), growth multipliers from the Kenyan agricultural sector to the whole economy are in the order of two to three times the size of those from the non-agricultural sector. The long-run growth multiplier of the agricultural sector to the GDP is 1.64 while that of the non-agricultural sector is 1.23.

agricultural growth is generally pro-poor. In addition, recent research (Sarris, 2001) shows that improving farm production helps spur non-farm activities in the rural areas. Such non-farm activities are now seen as very crucial to insulating rural families from poverty.

But the concept of poverty reduction must begin with the idea of food security[3]. Achieving food security must be at the core of our development agenda. But food security must be looked at in fairly broad terms and should not be anchored on ability to import food. Achieving food security necessarily calls for specific focus on agriculture. We must take cognizance of the fact that it is not possible to achieve the status of a food secure nation unless we produce more than enough to feed the population. This requires clear focus on issues concerning agricultural production.

I recognize that this point about food self-sufficiency as a condition for eliminating food poverty is highly debatable, especially in the current context of globalization, where nations can obtain food from world markets, according to the principle of comparative advantage. It is the high risk of relying on external food sources over which we have no control that makes me lean towards the policy of self-sufficiency in food production when designing antipoverty measures.

Sustainable poverty reduction must be linked to economic growth. Available evidence[4] suggests that in the past, poverty-reducing growth has primarily originated in agriculture. Since independence, Kenya has

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[3] According to Andersen et al. (1997), food security is achieved when all people at all times have access to sufficient food for health and productive life. Food security has three main components: food availability, food access, and food utilization.

[4] Sarris (2001) gives an example of several countries where development in the nineteenth century occured through a broad-based strategy to improve subsistence-oriented agriculture, a strategy that led to both reduced poverty as well as improved growth. The specific countries include: Japan, India, China, Bangladesh, Malaysia, Costa Rica and Indonesia.

relied heavily on the agriculture sector as the base for economic growth, employment creation and generation of foreign exchange. The sector has also been a major source of the country's food security and a stimulant to off-farm employment. Clearly, there is need to diversify production but industrial production is unlikely to be sustainable unless there is sufficient domestic demand, which essentially calls for rising incomes of the rural population. Furthermore, Kenya's highest potential for industrialization is in agri-based industries. Therefore, even though it is true that industrialization can play a key role in poverty reduction, it is important to keep in mind that such industrialization will necessarily have to be supported by agriculture.

There is now convincing evidence that effective poverty reduction requires that there be significant reduction in income inequality. In other words, poverty reduction calls for policies that meet the characteristics of growth with equity. Currently, Kenya is characterized by an extremely skewed income distribution partly because of a bias against rural areas and also because of the barriers of access to productive assets (particularly land) coupled with the fact that large proportions of the land mass are not conducive to agricultural production. To achieve growth with equity and therefore effectively reduce poverty, there is need to place priority on policies that enhance the incomes of rural households.

The immediate post independence period was characterized by impressive agricultural performance which in turn spilled-over to other sectors of the economy, therefore leading to marked improvement in the well-being of the population. The impressive performance was due to a combination of factors including government policy and the fact that there was an expansion of land under cultivation. There was also extensive involvement of the government in production, distribution and marketing. During these early years of independence, agricultural policies were aimed at achieving equity, employment, and self-sufficiency (Republic of Kenya, 1974). Therefore, the government put in place incentive structures whose goal was to promote production of specific commodities in line with the stated development goals and targets. For example, policies on maize production were aimed at ensuring food self-sufficiency (Republic of Kenya, 1981). In addition, the government played a pivotal role in providing supportive infrastructure and agricultural services. Various institutions complemented agricultural activities in areas of credit, marketing and distribution. Clearly, the impressive agricultural performance recorded in the 1960s and 1970s and the associated poverty reduction was largely the result of complementary policies by the government. Generally, government policies had the role of lowering the transaction costs of engaging in agricultural activities. The evidence also shows that farmers were fairly responsive to the incentive structures put in place.

The result of the good agricultural performance, together with various government interventions in the provision of social services, translated in measurable improvements in the quality of life such as access to education and healthcare. There was, for example, a rapid increase in school enrollments (Republic of Kenya, 1999). Furthermore, there were noticeable improvements in the nutritional status of the population. Clearly, improvements in agricultural production had a positive impact in poverty reduction. Therefore, support of the agricultural sector paid handsome dividends in terms of poverty reduction.

4. Market reforms and agricultural production

Evidently, too much government intervention was not sustainable. The fact that the government was heavily involved in agriculture was in itself costly in terms of the long-term development of the sector due to the market distortions so created and the budgetary implications arising thereof. There was therefore need to implement reforms that involved scaling back on the extent of government intervention in agriculture. The idea was to move closer to the ideal “free market”. Market reforms involved the removal of price controls in the product and input markets and transfer of distribution and marketing roles to the private sector. Likewise, there was a marked reduction in the scope of government intervention in the provision of supportive services such as credit, distribution, marketing, artificial insemination, etc.

The impressive performance was not sustained and instead there were significant declines in agricultural production during the 1980s and 1990s (Republic of Kenya, 1997; Nyoro and Jayne, 2001). It therefore does not appear like the reform programs had their desired effects particularly in terms of increasing agricultural production. To some degree, the poor performance has been the outcome of factors outside the control of government and the farmers, such as bad weather, declining prices of agricultural produce, and increasing prices of agricultural inputs. However, the decline in agricultural performance has to do with the change in transaction costs of engaging in agricultural production following the reforms. In particular, it does appear that an institutional void was created after the reforms. Clearly, there is a need to evaluate the appropriate role of the government in the agricultural sector. While liberalization is generally a good policy, it is not often recognized that the liberalization process involves complex institutional changes that obviously should be instituted with caution.

Many policy makers in developing countries have come to accept the "free market" ideology which advances the idea that our economies will grow much faster when governments do not interfere with markets, since markets will allocate resources efficiently. Here, the interaction of the demand and supply forces of the market is expected to generate market signals such as prices, interest rates and profits that direct resource allocation. The free market so created is presumed to then deliver economic growth and prosperity. This is the simple story that we, who teach rather than practice economics, tell in classrooms, borrowing heavily from the classical liberal tradition. It is the simple story that many idealists in universities, international organizations and development agencies subscribe to. Unfortunately, this unqualified obsession with free markets has misled many policy makers and academics into believing that less government is synonymous with better economic performance. I will argue that we probably need more, not less, government in the agriculture sector. More government here is used to imply quality government actions that lower the transaction costs faced by farmers.

To be sure, markets are key to economic growth. The market is an important institution for economic development because it promotes competition, which motivates more efficient use of resources and encourages innovation. Much of the technological advancement that is responsible for improved standards of living is the result of individuals and firms seeking to improve their competitive position in markets. The profit motive that drives market activity is therefore responsible for improvement in the quality of life. As a matter of fact, there is a strong positive relationship between establishment of market economies and improvement in economic well-being. Therefore, liberalization with a view to creating more efficient agricultural markets was a well-intentioned policy. This is particularly important in the area of pricing. Under a liberalized market, prices more accurately convey pertinent information that farmers can use to make their decisions. More accurate price expectations, for example, improve resource allocation by farmers.

But markets require specific institutional arrangements that permit transactions to be undertaken at low cost. It is important to note that the conditions[5] necessary for "free markets" to function efficiently are rarely approximated and therefore it is not as simple as saying that "let there be a market" and a market emerges. Governments must provide an enabling environment that supports markets, including making sure that

[5]The conditions for free market, according to Reynolds (1988) include: many buyers and sellers, free entry and exit of firms, homogenous products, and a perfect flow of information.

appropriate institutional, legal and regulatory frameworks are in place. Getting the government "off our backs" as many of us like to say may actually create more problems in agriculture. In reality, the free market as generally understood is a fictitious concept that is obviously far from reality. It is a first best outcome of a social system that is rarely achieved. This means that while it is important to rely on markets for resource allocation, it is important that policy making be made under assumption of second best conditions. Realizing that markets are imperfect, and more so the market for agricultural commodities, suggests that markets cannot be left on their own as their outcomes would be imperfect. In this case, the government must take an active market-complementing role. However, I largely concur with the statement that "the best government is one that governs least". The complementary role of government is particularly important in agriculture because agricultural markets are characterized by many factors that hinder the smooth functioning of markets.

As already noted, liberalization of agriculture in Kenya, while well intentioned, did not fully deliver the expected results. There were a number of factors contributing to this outcome. For one, liberalization was fast, far-reaching, poorly sequenced and not synchronized with other policies. Ideally, and in contradiction with shock therapists, such major policy reforms require to be undertaken in phases, beginning with a pilot phase from which lessons can be learnt before undertaking global liberalization. The result of broad and fast-paced liberalization of the agricultural sector tended to confuse farmers as it increased uncertainty in agricultural markets therefore undermining confidence in policies. Furthermore, major institutional changes resulting from the reforms required sufficient capacity to implement change that was grossly lacking within government.

Reforms were associated with a rapid exit of government from provision of various services to farmers, such as credit and marketing services.

The assumption was that the roles played by the government would be successfully taken over by the private sector. Unfortunately, in most cases, the private sector was not ready to take over these functions. In essence, liberalization resulted in an institutional vacuum in the provision of various agricultural services. This was a case of unrealistic expectations that government exit from providing services would be replaced by the private sector almost instantaneously. In short, reduction of the role of the government in agriculture impacted negatively on agricultural production because the speed of the reform was such that it left an institutional vacuum. It is also important to note that the transition to a market-led system poses significant adjustment stress and requires appropriate public policy during and after the transition period.

I have in the past observed that while many developed countries staunchly advocate for the adoption of free market policies, many continue to intervene heavily in support of their domestic agriculture. In fact, it is fair to say that Kenya's agricultural sector is more liberalized than that of the United States of America. Actually, the government of the United States is notorious in its extensive intervention in agriculture, including use of price support policies and the provision of large cash and non-cash benefits to farmers. Likewise, Japan, France and other developed countries continue to intervene in agriculture mainly through provision of subsidies and adoption of protective measures.

Let me make it clear that my observations here are not a justification for a return to interventionist policies. All I am suggesting is that we must realize that transition from government to private provision should be properly sequenced and should take cognizance of the capacity of the private sector to replace government. Furthermore, it is important to emphasize that markets, particularly agricultural markets, are imperfect and therefore it would be irresponsible to leave the market alone. The market imperfections are magnified if a country does not have appropriate institutions to support markets.

5. Constraints in the growth of the agricultural sector

There are various specific constraints that have hampered the growth of the agricultural sector in Kenya, and in Africa generally. These include the low participation of farmers in decision making, especially women; inefficient network of physical infrastructure; over-dependency on rain-fed agriculture; low status of agro-processing industry; poor post harvest systems; poor research and extension linkages; and the increasing prevalence of HIV/AIDS and other diseases.

These constraints can be classified into two categories, namely economic and non-economic constraints. It has been shown that agricultural enterprises respond to both price and non-price incentives. Research has also shown that there exists a high degree of complementarity between policies aimed at improving prices and public investment in public goods such as infrastructural development. The implication here is that even if prices of inputs were lowered or output prices increased, the move will have limited impact if farmers cannot transport their produce to markets because of poor roads. The reverse argument is also true.

An important constraint concerns the fact that only a relatively small proportion of Kenyan land is suitable for agriculture, most of the land being arid or semi-arid. The problem of land scarcity is magnified by episodes of severe regional droughts and consequent food shortages. Given the over-reliance on rain-fed agriculture, droughts severely undermine agricultural productivity.

For a long time, agricultural policies have been designed without the participation of farmers themselves. To a large extent, it is not always clear to farmers the intentions of agricultural policies. Therefore, even if such policies may in fact be good for the farmers, they may not have the desired effect, as there is no ownership by the intended beneficiaries.

It is true that the government has made serious attempts at decentralization. However, these efforts have proved ineffective because of limited participation of the rural communities in decision-making. This has in turn led to poor planning, budgeting, allocation of resources and implementation of development programmes and projects. Local governments still have limited power in decision-making and resource allocation. Some policies such as liberalization and privatization of public services have been hurriedly formulated and implemented with little input from the affected stakeholders. In essence, the farmer is not an active player in the design and formulation of agricultural policy.

Of critical importance is the participation of women in decision-making at household and national levels. Women do the bulk of farm work in Kenya and in other parts of Africa, yet women remain marginalized despite their central role in agricultural production. Compounding this, women are marginalized in their access to educational and health opportunities, and have inadequate access to productive resources such as land and finance. It is clearly unreasonable to expect improvement in agriculture unless there is a clear emphasis on improving the status of women in society. More important, sustainable poverty reduction must focus on improving the productive potential of women. This calls for an evaluation of all social development policies such as those related to health, education, and institutions that are responsible for the distribution of scarce resources in society. In particular, there should be deliberate policies to increase women's access to land, credit and other services.

A serious constraint to improving agricultural production is poor infrastructure. Adequate physical infrastructure in rural areas is a crucial requirement for the rural economy to achieve high rates of growth. The road system facilitates transportation of both food and cash crops from farms to the urban centers, and strengthens linkages with marketing and population centers. The poor state of infrastructure, particularly rural access roads, adds directly to the cost of agricultural production. In some cases, the cost of transporting inputs and agricultural produce is sufficiently high that rational farmers do not produce at all even if other resources are available. Farmers are sometimes not able to transport their products to the market even after investing heavily in production. The impact of poor infrastructure has greatly impacted on the development of the agricultural sector and consequently on poverty.

Kenya has not exploited the investment opportunities for activities that can add value to farm products. Most agricultural products are exported as raw materials. Investment opportunities for value-adding activities through processing and packaging for agricultural commodities have not been exploited to increase farm incomes and off-farm employment. This is despite the fact that value adding to a crop like tea through packaging can fetch up to six times (Nyangito, 2001) more revenue than unpacked tea.

The tax systems are unfavorable to the growth of agricultural sector in Kenya. The high taxes on inputs including machinery, fuel and spare parts make the Kenyan agriculture less competitive internationally. Furthermore, the present local authorities procure cess for tea, coffee, sugar, maize, and livestock products, which is based on gross realizations rather than profits. The cess is punitive and affects the farmers' profitability negatively. There is evidence that there are biases in the national and social policies and that this has directly contributed to rural poverty by excluding the rural poor from the benefits of development. In essence, the taxation policies are not pro-poor. Taxation and policy biases against agriculture include: concentration of public investments in areas of infrastructure and provision of safety nets in towns; direct taxation of agricultural exports and local authority tax; subsidies and tax waivers for capital intensive technologies such as computers and mobile phones instead of reducing costs of agricultural inputs;

development of infrastructure (roads, water, power) in urban areas rather than in rural areas where the infrastructure is needed most; skewed development of social infrastructure in favor of urban areas; weak institutions to support agriculture; and market access and transport costs that are biased against rural development. Finally, input-intensive technologies are neither economical when farmers must pay prices for fertilizers and receive only 30 to 60 percent of the market value for their produce, nor are they economical when extra production simply cannot be transported and sold because of lack of infrastructure.

Agricultural research and technology improvement are important in increasing agricultural productivity and returns to farmers and farm laborers, therefore reducing poverty and meeting food needs at reasonable prices without irreversible degradation of the natural resource base. Accelerated investment in agricultural research is particularly urgent because Kenya will not achieve reasonable economic growth and poverty reduction without increase in agricultural productivity. Recently, the proportion of public resources devoted to research and development has been low and is declining. Expenditure in public-sector agricultural research is around 0.5 percent of the agricultural GDP compared with about two (2) percent in the higher income countries. From this international comparative experience, no notable technology development can be achieved with such a budget. Furthermore, due to poor linkage between research and extension, technology transfer dissemination of messages has been inefficient resulting in low agricultural productivity. Kenya's largest share of the poor resides in areas at high risk of environmental and natural resource degradation. The fact that Kenya has not given high priority to developing appropriate technology for these areas in the past is a major reason for the current rapid degradation of natural resources and high level of poverty. In addition to assuring sufficient research investment in the high-potential areas, much more research must be directed to the development of appropriate technology for marginal areas.

There exists a high degree of complementarity between pricing policies and investment in public goods. Therefore, research and technology alone will not drive agricultural growth; there must be interaction between technology and policy. The full beneficial effects of agricultural research and technology will materialize only if government policies are appropriate. Distortion in input and output markets, asset ownership especially land, and other institutional and market distortions adverse to the poor must be removed. Furthermore, access to productive resources such as land and capital needs to be enhanced. Human resources must be improved through expanded investment in education, healthcare, nutrition and sanitary environments. Rural infrastructure and institutions should be strengthened. The policy environment must be conducive to and supportive of poverty reduction and sustainable management of natural resources.

Agricultural research and development must put farmers in decision-makers' roles. Farmers must be fully informed, through the extension system for example, about their options for improving productivity and reducing risks. It is important for agricultural researchers to recognize that farmers themselves have carried out experiments, adaptation and breeding at the farm level, and welcome active partnership with researchers. In addition to access to inputs and other factors, productivity increase will depend on access to appropriate knowledge, information and technology. Finally, while private sector research will produce some of the knowledge and technology needed by farmers, public-funded research is essential. This is partly because poor farmers do not offer the private sector enough profit-potential to recoup costs of research and development, and partly because much of the knowledge and technology farmers need is of a public nature. Therefore, the current public under-investment in agricultural research must be reversed.

The already declining level of agricultural production is threatened by the HIV/AIDS pandemic. In addition to the direct costs associated with this disease in terms of medical costs, the opportunity cost in terms of forgone production is extremely high. Mortality and morbidity from HIV/AIDS will likely result in labour shortages for both farm and domestic work and decline in agricultural output. Declining food production and increased poverty are bound to follow in the wake of the AIDS scourge. Likewise, other diseases such as malaria have serious negative consequences on agricultural productivity.

Conflict among population groups is critical to agricultural production, economic growth and poverty reduction. While Kenya has largely averted widespread conflicts, we have had our own share of land clashes that have left casualties, displacement and abandonment of productive activities. Although these clashes have been localised, they do have the potential of escalating to whole-scale wars. However, as experience has shown elsewhere, such conflicts are particularly destructive and it is almost impossible to fight poverty under conditions of conflict. The role of government in guaranteed security of property and life is therefore critical in attaining sustained agricultural growth that is pro-poor.

6. Summary and Conclusion

In concluding, I wish to note that to rejuvenate our agricultural sector, we must give due recognition to the role that the agricultural sector plays and its potential to contribute to poverty reduction. This, in my opinion is very important. Clearly, agriculture has not received the attention and recognition it deserves. To appreciate the issue at hand, consider the following "donkey story".

For some time now, I have wanted to write a paper on "the Economics of the Donkey". This is motivated by the fact that my spouse comes from a region of the country where donkeys play an important economic role—particularly in transporting goods to the main roads, a function that has become increasingly important given the deterioration in the state of the infrastructure. Most people from this region agree that the donkey is very crucial to the economy. Without the donkey, the people would not be able to market their milk and their valuable vegetables. Absent the donkey and the contribution by other animals and also the food produced would be of limited market value.

But there are a couple of things that intrigue me about the donkey. Given the importance of this animal to the local economy, I expected that my in-laws would demand that I supply a number of donkeys as part of the dowry. This, however, was not the case. The donkey, not withstanding the very crucial role that it plays, is not considered worth of the marriage transaction. Instead, the transaction included cows and goats. Actually, it turns out that this animal has never been used as part of exchange in land transactions.

The second aspect of the “donkey economy” concerns the punishment that this animal receives. The theory of property rights teaches that where property rights are clearly defined and protected, we can expect optimal use of those rights. In the case of our donkey, we expect that owners will treat it well as the benefits are internalized. But this is not so with the donkey. The animal receives all manner of abuse from caning to neglect in terms of feeding. While farmers spend lots of resources to feed their cows, I have never heard of foods that have been manufactured specifically for donkeys. Actually, the donkey will often be left to feed along the roadside. Therefore, the contribution of the donkey to the economy of this region is undervalued. In addition, the animal seems to violate our expectations in as far as well defined property rights are concerned. Specifically, here is an animal where owners seem to gain utility from imparting punishment rather than from rewarding the animal for good work.

So what does this donkey story have to do with our agriculture sector? It seems to me that our farmers do, on many occasions, receive the donkey treatment from society—they are over-worked, and get little reward for the hard work they do. Most surprisingly, even the impersonal market system sets very low prices for farm produce! If it is true that we accept that farmers play a very significant role in our economy, so does the donkey. Yet, we do not seem to facilitate the farmers such that they can receive the full value for their efforts. We do not seem to provide refuge to our farmers when the weather punishes them. We do not insulate our farmers from adverse effects of international markets; and we do not provide our farmers with the necessary infrastructure. We (and indeed the market) continue to undervalue agriculture and yet it is well documented that this is the sector that will help us to industrialize; it is the sector whose good performance has the highest impact on poverty reduction. Yes, it is true, that farmers are marginalized as compared to the industrialists, professionals, etc., by social institutions, including indeed, the supposedly impersonal market mechanism.

But there is something else about the donkey metaphor that is interesting and seems to have no corollary with our farmers. For one, a donkey will carry as much load as it biologically can. However, it will refuse to carry any load if you make its young offspring carry a load. So after all, the animal has a smart and altruistic principle: make me work as much as possible but make no mistake of working my young one. As I have said, this aspect of the donkey metaphor does not carry over to farmers, for farmers have to work hard with their children on the farms. Many of the children who currently work on farms in Kenya and in other parts of Africa have dropped off from school or attend school irregularly because they have to work. This sad story of increasing child labor in Kenya does not say much about our commitment as a society to poverty reduction. This, to say the least is a social tragedy.

Finally, there is a second donkey metaphor that does not carry over to farmers. We are all aware of the saying that "Asante ya Punda ni Mateke". That is, a donkey will kick back whenever it gets a chance, supposedly even after receiving good treatment. Looking at this case in favor of the donkey, it can be said that this is an animal that has received so much marginalization that it will seek revenge whenever an opportunity presents itself. In game-theoretic terms, opportunistic kicking is the only fallback strategy that a donkey has.

In sharp contrast, farmers do not have a fallback strategy with regard to bad treatments they get from institutions of society, such as agricultural markets or the national extension systems. They continue working in spite of the difficulties they face. In any case, because of the social settings in which they live, farmers find that they have limited organizational capacity to influence public policy even when they want to. They are unable to play, even opportunistically, an effective strategy against unfavorable institutions of society.

The primary message of the metaphor of the "donkey economy" can be summarized as follows. First, we must acknowledge the important role that agriculture plays in poverty reduction. Serious poverty reduction efforts must prioritize ways of improving agricultural productivity. The second, and final message from the metaphor of the "donkey economy" is that, contrary to what proponents of the structural adjustment reforms had thought, free markets on their own would not serve farmers well. Markets for agricultural goods and services are by nature imperfect. Therefore, on their own they would not lead to socially desired outcomes in the agricultural sector. There is therefore need to recognize that farm markets are imperfect and that the role of government is important in complementing market functions. The government, through prudent actions, can avert what is known as market failure. In particular, public policy should focus on actions that reduce the transaction costs of engaging in agricultural activities. In other words, the role of the government may have to be expanded to those activities that reduce transaction costs. However, the metaphor of the donkey at the same time teaches that the government has limitations in solving problems that beset the agricultural sector. Recall that one function of government is to tax agriculture – something farmers do not like. However, even in its good-intentioned interventions, the government is unable to provide efficiency incentives for the sector. The government must therefore choose its interventions in the sector carefully to avoid what is known as policy failures. Policy failures are undesirable consequences of government actions, for example poor production of staple foods because of the low prices set by the government. The government can act prudently in its inventions by largely providing supportive services to the agricultural sector (and the economy generally) such as peace and a stable macroeconomic environment.

From inherent imperfections of markets, and the incentive problems characteristic of government policies, we see that the best way to solve farmers' problems is for the two social institutions (market and government) to work together in a complementary fashion. Such complementarity would avoid problems of policy and market failures. Further, the government, which naturally has the power to co-opt and coordinate other institutions in solving this problem, should do its utmost to make the solution process inclusive and fully participatory. That is, the government should create mechanisms through which all members of society (for example the civil society, professional associations, men and women) can contribute fully in processes of agricultural development and poverty reduction.

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