

**Revisiting the Role of Agriculture in the Economic Development of the World's
least Developed Countries;
Growth, Poverty Reduction and Structural Transformation**

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Part 1 - Introduction

In 1950 the, perhaps, most ambitious project ever attempted, of spreading progress and prosperity throughout the World, was conceived by the world community with the passing of the United Nations Resolution no. 400. The resolution read:

“to bring progress in the form of social and economic development of under developed countries“, for the growth of the world economy as a whole and the maintenance of international peace and security” (UN 1951: 99).

The resolution, which embodies the idea of universal social and economic development, was devised in the clear recollection of the Second World War, and during the unprecedented development project of the Marshal Plan aiding the reconstruction of Europe. These coinciding events, in particular the status of the Marshal Plan as the most successful development project in history, may have been decisive factors in inspiring such unprecedented ambitions for global social and economic progress (UN 2006: 4; Suliman 1999: 1).

Since this dawn of the international development project which is spearheaded by national governments in developing nations and supported by bilateral donors and the institutions of the United Nations, its relative success and failure has been a source of constant debates. On the one hand proponents can argue that with the development “project” clear improvements, in the standard of living, have been achieved for large parts of the populations in a number of countries as they, on their path of development, have combined economic growth with widespread social development. Brazil, Mexico, China, South Korea and Taiwan to mention all but a few, are some of the often highlighted, success stories supporting this view (Mellor 1995: 3-4, Szirmai 2005: 60).

On the opposing side a camp, less enthusiastic about the track record, argues that there are snakes in paradise. They emphasize that the process of economic and social development has occurred in a highly unequal manner across space and time, and has left many of the poorest nations adrift. This group of countries has recently been named “homes of the bottom billion”. The development path of these nations has not been one characterized by high growth rates, but rather of divergence. For readers to whom the term the bottom billion is unfamiliar, it is a popular term, coined by the economist Paul Collier. It refers to the, approximately, one billion poorest individuals in the World. People who live in countries which instead of economic growth have experienced economic stagnation, and fallen behind, instead of catching up with the richer nations (See appendix 1 figure 1)(Collier 2007: 3, O’Brien 2007: 1). As a result these countries are lagging behind not only

in regards to creating economic growth, but also on reaching the globally supported benchmarks of the Millennium Development Goals (MDG), a number of goals and indicators for social and economic development. Through commitment to the MDG's the world's governments, among other goals, commit to halve the proportion of people living in extreme poverty, defined as less than one dollar a day; reduce the number of people suffering from hunger by 50 percent; achieve universal primary education, combat child mortality and promote gender equality (Mikkelsen 2005: 221).

Finding solutions to the situation of the bottom billion is one of the key obstacles to the global development project, as the World's poorest nations despite massive investments over decades still fall short of achieving economic growth and reaching the MDG's (Collier 2007: 10, Sacks 2005: 29). The actual effects of this divergence, at ground level, and how to address resulting need for growth and poverty reduction is the question at the heart of this thesis which, in geographical terms focuses its attention primarily on the region in which it is most visible; Sub-Saharan Africa.

Currently, nearly half of the population in Sub-Saharan Africa lives in absolute poverty, earning less than a dollar a day. This is roughly the same percentage as in 1980 and in absolute numbers the share of poor in the region rose from 200 million in 1980 to 380 million in 2005 (World Bank in Braimah 2009). Looking beyond the numbers they hide a divergence which acerbates poverty and increases inequality in at least two dimensions that are both equally alarming. Firstly, on an international level the disparity between rich and poor countries, measured in GDP pr. Capita has grown. Secondly, income inequality between urban and rural areas has increased, poverty being far more prevalent in rural settings (Collier 2009: 10, Salverda et. al. 2009: 620). The nature of the divergence in Africa and elsewhere is comprised by a mix of different processes which will be discussed in detail in the latter parts of this thesis. Involved are interlinked problems of economic stagnation, expanding poverty and food insecurity due to low agricultural productivity, all of which are often exacerbated by high population growth (Johnston & Mellor 1984: 549, Sacks 2005: 56). Addressing these problems and reversing the trends is the key to significantly reducing the number of people living in poverty and reaching the Millennium Development Goals. The remedy, at least in part, is growth, and the challenge at hand is to identify with which means it is best created and converted into poverty reduction and improved standards of living for the rural poor. (Rosling 2007, Sacks 2005:66, Withfield 2009: 9)

Proponents of the Millennium Development Goals may argue that goals for development in the form of indicators for, health, education, nutrition, or gender equality should be of primary

importance. However, the argument that growth is equally, if not more important because economic growth is what pays for the former aims of social development is hard to dismiss (Shorrocks 2004: 251, Lipton 1979: 239) Unfortunately, the notion of economic growth as a goal for development has, over the past decades, earned a reputation of being a proxy for development hostile neo-liberal agendas that stand in contrast to social development. The skepticism has emerged as neoliberal promises arguing that any growth is good growth, and setting the expectation that prosperity would eventually trickle down to alleviate poverty has in large parts remained elusive (UN 2010:30). The newly published UN report with the Title Combating Poverty and Inequality draws following conclusion on the alignment between the policy environment and structural change.

The employment-centered policies that successfully eradicated poverty in late industrializing countries are incompatible with neoliberal development strategies more recently adopted by most countries. Successful countries invested substantially in infrastructure; channeled credit to specific productive activities; and pursued well-managed industrial and agricultural policies, as well as active social policies that improved the skill levels and welfare of the population. (UN 2010: 32)

This thesis advances the view that in order to find long-term solutions to stop the economic and social divergence of the poorest nations the position advancing the social agenda of the MDG and the position advancing the emphasis on growth as an aim development should be combined. It argues that the approach applied must operate the process of structural change as, an integrated part of the foundation for efficient development strategies, to achieve the hopes of growth and economic development on the massive scale needed. To laymen of development economics, structural transformation refers to the long-term process by which a nation's economy moves from being characterized by low productivity agriculture towards being dominated by high productivity industry and manufacturing and generating economic growth in the process (Johnston & Mellor 1961: 2, Szirmai 2005: 255, Timmer 2008: 4). The process of structural transformation involves a complex web of qualitative changes in the structure of production, employment, education and other economic and social indicators, amounting to an overall improvement of the standard of living. The empirical record show all countries which have successfully achieved high levels of development have with very few exceptions followed a path of structural transformation during their course of development. This suggests that structural transformation, although the paths may differ slightly from country to country, is a prerequisite for economic development (Norton 2010: 18, Timmer 2007: 7, Szirmai 2005: 262). In the light of this, what is necessary in order to reverse

the divergence of the bottom billion is to achieve rapid growth and poverty reduction while and at the same time creating the preconditions and supportive policy environment required for the long-term process of structural transformation to occur.

At heart of the debate surrounding the bottom billion are complex questions of growth and redistribution, in particular regarding strategies for rural areas and agriculture, and how these are prioritized at the local, national and levels of development strategies. The agricultural sector will play a lead role in attaining sustained growth and poverty reduction. Firstly, the relative size of the sector in developing nations combined with the dependence on agriculture of the majority of their population; of who most live in rural areas makes agriculture a key to poverty reduction. Secondly, increases in agricultural productivity usually precedes sustained economic growth and structural change as agriculture supplies labor, capital and other resources for industrialization. (Szirmai: 2005: 256, Norton: 2010: 19) To put these generalized facts into perspective; World Bank estimates conclude that three fourths of the 1.2 billion people living on less than 2 dollar a day in the developing world depend directly or indirectly on agriculture (Timmer 2007: 7, World Bank 2008: 1). Further supporting the call for raises in agricultural productivity Consultative Group on International Agricultural Research (CGIAR) in a report published in 2005 wrote:

“Agricultural growth is critical to achieve the MDG’s. As a vast majority of potential beneficiaries of the MDG’s depend on agriculture for a living, higher agricultural productivity is a precondition for achieving the goal of eradicating poverty and hunger” (CGIAR: 2005: 1)

However, an emphasis on economic growth and structural change, alone, is not enough. Often, redistributive measures are needed to convert overall growth into economic and social development for the poorest (Timmer 2008: 1, Shorrocks 2004: 9, UN 2010: 10). The question arising is: how is the process of pro-poor growth is best managed through national development strategies and at a policy level how are growth enhancing and redistributive policies best combined in order to reduce poverty in rural areas while facilitating growth and structural change? As the above introduction has already partly revealed the reasoning for giving urgency to investigating this question is multi faceted, but centrality of development strategies is important to emphasize. Development strategies are, according to the definition by Johnston and Kilby & Johnston 1975 as “a mix of policies and programs that influences the pattern as well as the rate of growth” (Kilby & Johnston & Johnston 1975: 129, Norton 2010: 122)

The design and implementation of development strategies and national development policy, particularly those elements aimed at developing agriculture, is critical to contemporary and future development efforts in at least three ways. Firstly, they are a key to reversing the divergence described above, and finding adequate response to global poverty, which implies asking and answering crucial questions about the relationship between agriculture, growth and inequality. Secondly, it is important address the problem of agriculture becoming a bottleneck to development caused by decades of inadequate policies and funding and a historical tendency to underestimate the role of agriculture, in supporting growth and structural transformation. (Withfield 2010: 10, IFAD 2008: 2). Lastly, partly as a result of historical misconceptions about agricultural policies current development strategies are accused promoting priorities not up to speed with theoretical and empirical evidence (Kaliba 2008: 1, UN 2010: 32)

The debate regarding the growth and poverty reduction outcomes of agricultural and industrial policies in the process of structural change is as such not new. Rather it is the continuation of decade long debates. In particular the theoretical positions of neoclassical and Marxian economics and their policy counterparts Neoliberal development policies and the adversary the school of agrarian change is of interest. They have due to radically different entry points to questions of growth and poverty reduction waged longstanding debates which this thesis revisits (Bernstein 2001: 30, Biggs 2001: 2, Lipton 1977, Saturnino 2009: 13 Toye 1987.1).

Problem Formulation

Summing up, the context of this thesis is the divergence of the poorest nations in term of inadequate growth and widespread poverty in particular in rural areas. The challenge answered in this thesis is addressing the problem of divergence and treating its main causes with growth, poverty reduction and social development through efficient policies in interventions for economic development. Towards this aim the thesis proposes Peter C. Timmer (2008), quite eloquently, summed up the challenge at the heart of this problem in the following quote:

“Making sure the poor are connected to both structural transformation and to the policy initiatives designed to ameliorate the distributional consequences of rapid transformation has turned out to be a major challenge to policy makers over the past half century. There are successes and failures and the historical record illuminates what works and what does not.” (Timmer 2008: 1)

The proposed road ahead is revisiting the historical track record of national development strategies in search for development strategies combining growth and redistribution with a particular emphasis on the rural areas and the role of agriculture in these strategies (Withfield 2010, Rosling 2007). This leads this thesis to seek answer to the following question:

If rethinking the contemporary development project; what would be the elements of national strategies for economic development which support the process of structural transformation and combine elements of economic growth and poverty reduction, in particular in the agricultural sector?

To arrive at a full and comprehensive answer to this problem statement, there are a number of propositions in the form of sub questions which must be investigated. The propositions which deal with investigating the relationships between different elements of the problems statement serve as working questions, or sub-questions which provide a part of the answer to the problem statement and guide the direction of the investigation (Yin 2003: 22) . The propositions include:

- 1) What is the relationship between structural transformation, growth and poverty reduction?
- 2) Which are the characteristics and drivers of the process of structural transformation?
- 3) What are the typical elements of effective agricultural strategies in developing countries?
- 4) Which policy choices exist for effectively managing the process of structural transformation in the sense of maximizing social and economic development and achieving both growth and poverty reduction?

Additionally, it is useful to reflect on the findings and their future implications by asking:

- 5) How do the identified policy choices differ from those currently applied in developing countries, and what does this imply in terms of future policy changes?

Aim of the Thesis

With the focus of identifying concrete growth strategies achieving economic growth and poverty reduction and supporting structural transformation this thesis enters the arena of a critical debate surrounding contemporary development policy, led by developing countries and supported by donors from the international community. The debate challenges current development policy on the grounds that developing countries are rather preoccupied with achieving Millennium Development

Goals, there amidst, poverty reduction, and has lost sight of the critical role of economic growth and structural transformation, and the role of agricultural and industrial policies of supporting the as part of lasting economic development (CGIAR 2005, United Nation 2010: 32, Whitfield 2009: 34). A renewed focus on these factors would be of major importance to the contemporary development project, seen the light that the poorest developing countries must achieve both higher growth rates and increased redistribution of existing wealth and the proceeds of growth if they are to stand a chance against poverty (Shorrocks 2004: 121). This translates into two principal aims pursued in the thesis.

Firstly, the aim is to develop an analytical framework for designing and evaluating development strategies and policy designs in the worlds least developed countries. Towards this end the thesis carries out a review of dominant theoretical debates and historical development experiences of the past 30 years in regards to managing growth and structural transformation. At the theoretical level the investigation will in particular focus on theoretical debates between Neoclassical and Marxian economics towards the role of agriculture in economic growth. In policy terms the review will investigate their policy counterparts of Neoliberal policies build on the former strain of economics thought and the agrarian change movement founded on a Marxian legacy. The aim is review is will compare the two opposing approaches to economic development, represented by This is done by (A) Contrasting the two school's theory of economic and development, (B) Identifying the policy recommendations advocated by each school for successful structural change, in the context of national growth and poverty reduction and (C) evaluating the extent of disagreement and consensus on policy choices and their consequences on growth and poverty reduction in economic development. The ultimate aim of the review synthesis of the two schools culminating in a framework for policy analysis which can be used to asses current development strategies and design future strategies to support structural transformation, generate growth and reduce poverty.

Secondly the study moves on to apply the developed framework to identify barriers to growth and poverty reduction in a case study of the agricultural development of Tanzania. The aim is to provide concrete input for improvement of current policies based on the strategies and policies established by the preceding review. This may also provide an indication of the effectiveness contemporary policies in meeting goals of growth, poverty reduction and structural transformation. The hope is that identifying areas for improvement may give a valuable contribution to the crucial

debate about the national policy packages for economic development, and the consequences of specific policies on structural transformation, growth and poverty reduction.

Thesis Delimitation

Beyond defining the problem statement and the aims of the study, it is useful to further limit the area of study by identifying its boundaries and discussing some restrictions in scope. The boundaries of inquiry in this section refer to implicit choices regarding what is considered relevant to the area of study, as well as the grounds on which alternatives are excluded (Cline 2000: 1)

The thesis frames the development problem, primarily, in terms of insufficient economic growth, and unequal distribution of wealth, in the shape of the divergence of the poorest nations. With this focus the principal aims of development are long term economic growth in terms of increases in capital and per capita incomes along with a reduction of poverty and maintaining low inequality. Critics may argue that the thesis through this focus excludes many social and political development indicators which are at center stage in the mainstream rights based approach to development and the MDG's. The economic framing of development is an intentional attempt to reintroduce concerns of growth and structural transformation in the development debate. The aim of giving prevalence to economic considerations of development in this volume is not to challenge the soundness of the rights based development approach and the MDG's which emphasize education and health, food security, and environmental sustainability as means and ends of development. Rather the thesis seeks to is to critically engage and support them by advancing the academic and political stance that economic growth and poverty alleviation must, if not proceed then, at least, constitute a strong supplement social development goals, because attaining economic growth and growth in income is what will allow developing countries to pay for the former (Naschold in Shorrocks 2004: 118, Lipton 1977: 239, Norton 2010 14, Rosling 2007, Sacks 2005: 56).

A further delimitation in the scope is the limitation emerging from the emphasis on agriculture. This focus has been explicitly chosen due to the relative size of the sector, its historical importance and its current status as a bottleneck to development. The thesis thus does not aim to address overall national development in its entirety, but rather a specific bottleneck thereto namely agricultural development strategies. As a further result of this focus, the industrial sector or the service sector will receive relatively less attention compared to the agricultural sector and the analyses will only a part of the overall national development strategy. That being said it seeks to adopt an inter-sectoral approach placing emphasis on linkages and synergies between agricultural and industrial sectors in line with idea of balance growth in both sectors of the economy is optimal

for development as advocated by (Timmer 2008, Szirmai 2005, Norton 2010: 118). This entails drawing connections between the roles of different sectors and policy areas when ever applicable. With this scope the thesis focuses on the dynamic relationship between the agricultural and industrial sectors of the national economy during the process of structural transformation.

The study design is intended to be historical in nature with the aim of leaning from past successes and failures, when it comes to policy aspects of development, in order to improve current and future actions as suggested by (Cypher 1997: 2, Timmer 2008: 4). This provides certain advantages as describes above, however, this is not meant to suggest that taking the best from past policies will be sufficient for solving the divergence of the poorest nations. In this respect there are two restrictions worth noting. Firstly meet future challenges learning from past experiences must be combined with the latest knowledge, technology and practices of sustainable development. The historical nature of the study presents a bias underestimating the role of the newest technologies and innovations. Secondly, the historical focus to some extent fails to take into account effects recent phenomena affecting nation's development paths. Such phenomena could be globalization, climate change, or population growth which, all of which may have consequences for the effectiveness of historically effective strategies and policies. (Meijerink, & Roza 2007: 10) In this light this thesis takes only the first step in rethinking development; determining what until now has been successful agricultural strategies for meeting the dual goal of growth and redistribution. It does not have ambitions for speculating for the future by e.g. considering the potential impact of cutting edge technology, the latest practices within development work or determining how to adjust agricultural strategies to new problems of climate change and the global food crisis.

Key Definitions and Terminology

A few terms and definition, which has already been used in the introduction, deserve clarification to discard of any confusion or ambiguity. Further the terms below will used continuously throughout the remainder of the report.

The Bottom Billion and Least Developed Countries

Until now thesis has in its problem formulation used the term the bottom billion as reference to the world's poor a term which has gained popularity after its initial introduction by economist Paul Collier (2007). The bottom billion refers to an approximate 58 nations which are homes to 920 million of the World's poorest people. Its reference strongly situates the thesis within a contemporary debate on growth and poverty reduction, and the divergence of the poorest countries (Collier 2007: 3). However, the term also has disadvantages in use due to its ambiguous nature. The

ambiguity arises because different development institutions use different definitions, the bottom billion being merely one of them (O'Brien 2007).

This thesis the term is used purely as reference to the problem of divergence consisting of negative economic growth and poorer performance development indicators such as poverty rates, compared to other developing countries (O'Brien 2007). The term "the bottom billion" mainly serves as reference to a specific group of countries and particular international debate and a set of specific problems which restricts its usefulness compared to a more broadly accepted term such as "least developed countries LDC used throughout the remainder of the thesis". This is a broader definition agreed to by the United Nations Economic and Social Council, to which the countries of the bottom also belongs (UN 2009: 2).

Structural Transformation and Economic Development

The term "structural transformation" or "structural change" refers to set of six processes through which society, during the course of economic development as observed and defined in a theory of structural transformation, largely conceived by economist Simon Kuznets in the 1960's, and later further developed by others. The theory describes the process by which societies, over time, move from one state characterized by a low level technology and dominance of traditional subsistence farming toward industrialization. In the process the economy of a nation generates economic growth, and changes in the structure of production and employment driven primarily through increased specialization and increases in productivity (Kilby & Johnston 1975: 34, Nobel Foundation 1971, Szirmai 2005: 255).

Due to the specific nature of structural transformation the reader will also find the term economic development used to define general qualitative changes in a country's economy e.g. as a result of technological and social progress in instances where the term structural transformation is too narrow in scope (WB: 2010).

Neoclassical and Marxian Economic Theory

The thesis operates around two opposing theoretical traditions within development economics. Neoclassical economics is a strain of economic theory, which has been dominating economics in particular since the early 1980s. It is characterized by a point of departure in classical economic theory from Adam Smith, and David Ricardo among others. It emphasizes the role of supply and demand and the central role of markets. It is characterized by a reductionist thinking, operating from implicit rules about human behavior and views the economics as a system as explainable through a number of causal relations (Wolf 1987: 16, Mikkelsen 2005: 159)

Marxian economics on the other refers to a theoretical tradition which emerges as a critique of classical economics. It views the capitalist system and the markets as being characterized by a class struggle in which the owners of the means of production exploit workers by extracting surplus value. The theory views the economic system as a complex class processes which over determine each other making it impossible to reduce explanations of economics to a number of causal relationships (Wolf 1987: 16, Mikkelsen 2005: 159). Reference in this thesis to Marxian and Neoclassical debates thus refers to theoretical discussions between two opposing theoretical traditions. Complementing neoclassical and economic theory are references to Neoliberalism and agrarianism as the political philosophies the theories have given birth to.

Neoliberalism versus Agrarianism

Related to the theoretical divide between Marxian and Neoclassical economics the thesis often refer to neoliberal and agrarian approaches to agricultural development. These are the political philosophies which draw on Neoclassical and Marxian theories respectively, in their approach to economics of agricultural development. Neoliberalism represents a largely market driven approach to agricultural development inspired by neoclassical economics. Agrarians on the other hand is an approach critical of the neoliberal approach which to stronger or lesser extent seeks to incorporate Marxian inspired ideas into their policies and strategies for agricultural development (Saturnino 2009: 1, Biggs 2001: 2, Kay 2009: 104)

Part 2 - Methodology

Studying National Strategies for Growth and Poverty Reduction

The central object of analysis in this thesis is the national strategies for growth and poverty reduction, and the policy options within them. The justification for choosing this as the primary object of study is that the design of development strategies and policy is a critical component of successful development. The study of both development strategy and policy at the level of design and implementation is in the case of long term growth and poverty reduction, critical to managing the process of structural transformation, and a potentially very important source of knowledge (Mikkelsen 2005: 132, Timmer 2008: 4). Cypher & Dietz 1997 notes:

“Economic development does not happen on its own, and never has. Good public policy is at the core of the process of economic development. Such policy, however, operates along a knife-edge working with the limits and constraints of the present ever mindful of the past which have shaped the economy and society and its initial endowments”. (Cypher & Dietz 1997: 2)

National strategies and policies are in the broadest sense blueprints for efficient utilization of a nation's resources towards short-term and long-term goals for development, amongst these, economic growth, poverty reduction and structural transformation. A development strategy and the policies within it aim for obtaining maximum output in the form of development goals from a given input of resources working under various resource constraints (Norton 2010: 118, Kilby & Johnston 1975: 127)

Defining Aggregate Levels of National Strategies

The analytical framework is aimed at placing a particular emphasis on measures developing the agricultural sector, and it applies a sector approach to the study of national growth and poverty reduction, dividing the development strategies into a number of aggregate levels aligned to the structure of the national economy. In policy terms these levels span from National Development Strategies and policy, spanning the entire economy at the broadest level, to sector and subsector strategies and policy (Szirmai 2005: 260).

To perform a targeted analysis of strategies and policies for agricultural development according to their impact on growth, poverty reduction and structural transformation, it is necessary to define and demarcate individual policy levels existing within the national economy. How they are

defined? Which strategies and policies are central to each level? And how do the different levels relate to and influence one another?

National Strategy Level

On the overall level concept of a national growth strategy for growth and poverty reduction is referring to a series of political decisions regarding growth strategies for the use of a nation's productive resources (land, labor and capital among others) towards capitalizing on sources of economic growth, and a number of redistributive strategies, taxation, subsidies, transfer payments as means of managing the distribution of wealth (Shorrocks 2005: 127). These complementary strategies are merely a part of the broad considerations put into the design of an overall national development strategy. Looking at the full package, Norton 2010 offers the following definition of a development strategy:

“The concept of a development strategy implies a long term roadmap that encompasses a series of fundamental decisions with respect to sector emphasis (agriculture versus industry) factor use (capital led versus employment led growth), international market orientation (inward versus outward) concerns for growth versus redistribution, and the roles of private versus public sector. Many of these decisions present conflicting choices that countries must make when designing their development strategies” (Norton 2010: 122)

Many of the choices made regarding strategies at the macro level such as monetary, fiscal and exchange rate policy or pricing policies of great importance at the macro level and their effects cut across all economic sectors, making them potentially important variables regardless of which sector is studied. Other examples of such cross cutting strategies could be strategies for competitive advantage, public versus private ownership models and many more. This means that even if an analysis is aimed at a specific sector of the economy, the national level must always be considered as the policies and strategies may have implications in all sectors (Norton 2010 366).

Sub-Sector Strategy Level

On the level below the national strategy for growth and poverty reduction this thesis adopts a sector division of the economy into an industrial, an agricultural and a service sector (Szirmai 2005: 258, Norton 2010: 126). At the sector level this thesis particularly concerns itself with the subset of policies with particular emphasis on developing the agricultural sector. An agricultural strategy

which addresses specifically the structure and the rate of development in the agricultural sector is by Kilby & Johnston 1975 defined in the following overall terms:

“Any strategy for agricultural development will embrace some combination of (a) programs of institution building related to such as agricultural research and rural education and farmers training, (b) programs of investment in infrastructure, including irrigation and drainage facilities and rural roads, (c) Programs to improved product marketing and the distribution of inputs, and (d) policies related to prices, taxation and land tenure” (Kilby & Johnston 1975: 129).

The sector distinction, beyond the fact that it is convenient for narrowing the focus of the analysis to the agricultural sector, is critical as for two reasons. Firstly as described by the theory of structural transformation, each sector plays their individual part in the process of structural transformation contributes to growth economic development, and is treated as such within the national strategy frameworks. Each sector has its own characteristics, and a unique role to play in economic development, not to mention that strategies and policies in agriculture and industry are often treated as separate research areas advised by each their separate models and theories (Szirmai 2005: Ch. 8 and 9, Rostow 1990: 332).

An example illustrating this is the separate roles of agriculture and industry in structural change (A simplified example, for details see the theory section). The role of the industrial sector in economic growth and structural change is as the engine if growth, as it by far outperforms the agricultural sector in terms of productivity, this leads to higher growth rates and more capital for future development. Agriculture, on the other hand, is indispensable at the early stages because of its relative size and weight in the national economy and its role as provider of resources, labor and capital for expansion of the industrial sector. (Kilby & Johnston 1975: 64, Szirmai 2005: 263, Norton 2010: 122)

The second reason for using an analytical framework of multiple sectors the challenge that the effects of the same strategy or policy will vary from sector to sector due to their different roles and characteristics. Consider the following example: The policy of leading an overvalued exchange rate is generally beneficial to the development of industry. Industry relies on import of goods and machinery from abroad and thus “pays less” than the actual value of the imported materials in the currency is overvalued. However an overvalued exchange rate it is considered very harmful for agriculture which lives of the sales of cash crops and depends on exports and will

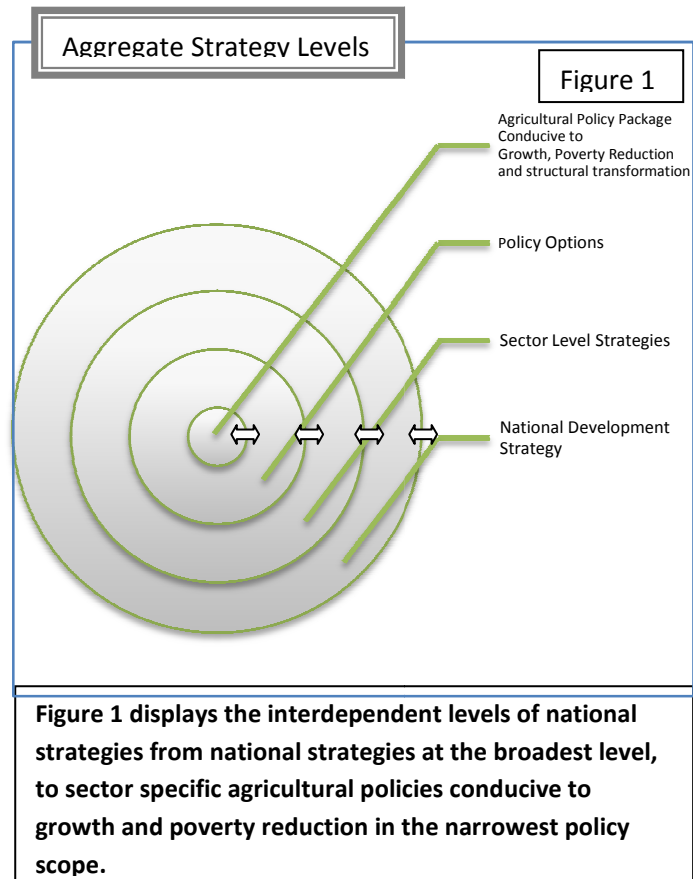
receive less money for the exported crops than it is actually worth (Norton 2010: 308, Lipton 1975 308).

Interconnectedness between Sectors and Strategies and Policies

The distinctions between national and sector strategies or industrial versus agricultural sectors can never be completely separated from one another, but must be seen as interdependent of a system. The specific agricultural strategies, listed above, work interdependent of other national strategies in the sense that they work under the conditions imposed by the national strategies and resource constraints.

The close interdependence between the different policy levels, national and sector level strategies calls for a holistic research design which stresses processes relationships, connections and interdependencies among the different strategy components, different sectors and levels

within the national strategies. (Denscombe in Mikkelsen: 2005:125) As a result of the complementarities between different parts of the economy such sector division is as an analytical tool very useful. It allows for separate treatment of each sector taking into consideration separate structural characteristics, resource constraints and individual obstacles to growth and poverty reduction (Szirmai 2005: 258, Norton: 366). This is where theory and research design complements each other as the theory of structural transformation with its emphasis on structural changes across and within sectors of a national economy uses sector distinctions and the notion of sector linkages as an integral part of its theoretical framework. Thus the thesis in line with structural transformation theory in general adopts a sector approach and subcategorizing the national economy into, agriculture, industry and service sectors, placing particular emphasis on the complementary roles of the former two (Szirmai 2005: 258, Kilby & Johnston 1975 Ch 7) .



Establishing Causality between Policy Analysis and Development Impact

In this thesis strategies are policies are seen the enablers of planned and designed economic development as they transform strategy into action as they are implemented. The validity of this causality between policy and impact can be explained with a simple example of land reform.

Imagine that a nation's strategy for growth and poverty reduction states, as one of its objectives, an aim of achieving a more equal distribution of land through a land reform. Then the plan and strategy of land reform only, takes physical form, if and when policies for land titling, property rights and policies providing subsidies for poor farmers wishing to buy land are implemented and enforced. As a result of the enforced policy a number of intended or unintended changes occur taking the nation closer to or longer away from the desired objective (Mikkelsen 2005: 32, Shorrocks 2004: 125)

This relationship between strategy, policy and development makes the study of the impact of policy, a way of studying social, economic or political change, determine the shorter way from implemented policy to a desired social, political or economic outcome. E.g. studying different types of land reform policy to determine which policies lead to the largest reduction in poverty or the largest growth?

Policy analysis is however is not without challenges as working with policy involves bringing into consideration not only the policies and the outcomes, but also the theoretical frameworks underpinning the policy. A policy's theoretical point of departure is the implicit or explicit logic and explaining the relationship between policy design and policy outcome and making it possible to anticipate outcomes of specific designs. Different theories represent different logics and different with different logics they will advise different policy actions to reach the same policy outcome (Evans 2004, Mikkelsen 2005: 142). This is what you could call the political philosophies of development strategy and policy. In the next section we turn to the different theoretical approaches to agricultural strategies in the context of the earlier mentioned debates over development strategies and policy design waged between agrarian and neoliberal approaches to agricultural development.

Different Political Philosophies of Agricultural Strategy and Policy

The disputes between neoliberal and agrarian approaches to development is a debate which has over the years has taken many forms and has been given various names; "the counterrevolution of development economics", "the neoclassicist and agrarianist traditions on rural development", etc (Bernstein 2001: 30, Biggs 2001: 2, Tøye 1987: 1, Saturnino 2009: 13). Based on Marxian and

Neoclassical theories and value judgments respectively, the opposing political philosophies have radically different entry points to issues of redistributions and growth they can reach quite different conclusions regarding strategy and policy recommendations, in particular concerning the roles of the state and the market (Wolf 1987: 247). On the ground these discussions have been matched by experimentation with policy and strategy mixes spanning across the political and economic specter, from capitalist market driven models, to socialist central planning or from large scale industrialization to small farm based rural development. The, often, contradictory strategies have for most part have been tried implemented by different nations, in one shape of the other, over the past half century, with varying degrees of success. (Timmer 2008: 1, Saturnino 2009: 14, Teye 1987: 1, Bernstein and Byrnes 2001: 30) This diverse range of theoretical debates combined with their experimentation with different policies in developing countries makes a historical review of the agreements and disagreements amongst the two schools of thought an excellent laboratory for determining what works and what does not (Timmer 2008: 1).

Opposing Theories; Neoclassical and Marxian Positions

A brief comparison of the logic and assumptions of neoclassical and Marxian economic theory respectively and how these differences manifest in conflicting interpretations and policy recommendations illustrates their differences.

Neoclassical theory build the foundation of capitalism on the establishment of two social institution, free and competitive markets, characterized by, complete information, free movement of labor and capital and full competition where no single actor has control, and legally enforced private property rights. According to neoclassical theory the establishment of the above leads to efficient allocation of resources and maximization of wealth for all. In neoclassical thinking inequality is a result of an individual choice of the poor to be poor, by not putting their productive resources to work at the market and preferring leisure over hard work or current consumption over accumulation of capital (Wolf 1987: 247, Rosser 2004: 25)

The Marxian school on the other hand is a theory based on the idea of class struggle emerging as owner of capital exploit workers to appropriate their surplus value thus engaging in exploitation to accumulate capital. In Marxian terminology the market forces are hence as much of the problem as a part of the solution to poverty. This is also founded in deeply differences in the conceptualization of the market. Marxian theory oppose the neoclassical concept of the “free market” and do not conceive markets as being self-regulating institutions characterized free

movement of labor and capital, complete information. Rather they consider markets to be arenas of political and economic power struggles (Wolf: 1987 347, O'Laughlin in Saturnino 2009: 13).

As a result of these theoretical differences the neoclassical approach relies on emphasizing free markets as the means of growth, and not giving consideration to issues of inequality and redistribution, the latter placing emphasis on the role of historical class struggles emphasize the endemic tendency to inequality and works to find means of explaining and reducing it Bernstein 2009 explains

The former [Neoclassical School] is based on the belief that of poverty of the rural poor is their being excluded from the market and its benefits; the solution is to bring the market to the rural poor, or the rural poor to the market. The latter [Marxian School] is founded on the belief that the cause of poverty is the very terms of poor people's insertion into particular patterns of social relations; the solutions therefore are transformative policies and political processes that restructure social relations" (Bernstein in Saturnino 2009: 14)

The interest this thesis pays to the prospects of combining the two approaches are justified from both a theoretical and pragmatic standpoint to which we will return shortly. However first note on the ontological and epistemological questions this raises is required.

A Note on Ontology and Epistemology

To illustrate the implications of researchers ontological and epistemological position let this section commence with a quote by Stoker 2002, he notes:

"a researcher's epistemological position is reflected in what is studied, how it is studied and the status the researcher gives to their findings" because the position a scientist belongs to is reflected in what is studied, how it is studied and the status the researcher assigns to their findings". (Stoker 2002: 21)

When looking at the theories at the heart of this thesis, Neoclassical and Marxian Economics are both based on foundationalist ontological traditions. Essentially, this means they both acknowledge the existence of a physical world exists independently from our knowledge of it (Stoker 2002: 18).

The shared ground foundationalist principles, and their recognition of the existence of an objective truth, is a precondition for comparing and merging the two opposite strains of thought. Suppose that the thesis was to combine an anti-foundationalist theory which, believes that

phenomena are socially constructed and generalization and causality problematic with a foundationalist theory which believes in objective measurement of evidence and the existence of some causal relationship allowing for generalization then combining them would be impossible. In other words, the scientific familiarity of the two strains of thought in terms of ideals about what constitutes evidence and the existence of causal relations between phenomena that can form the basis for generalization is what allows for some compatibility between them. However, despite the shared ontology they do not agree which degree observation can be applied as a principle for science, this is the perhaps biggest challenge in synthesizing the two positions. In general most neoclassical belong to a positivist epistemological position whereas Marxians are realists. Stoker elaborates:

“Positivists adhere to foundationalist ontology and are concerned to establish causal relationships between phenomena, thus developing explanatory and indeed predictive models. The realist is also foundationalist in ontological terms. However realists, unlike positivists, do not privilege direct observation. The realist believes that there are deep structural relationships between social phenomena which cannot be directly observed, but which are crucial for any explanation of behavior” (Stoker 2002: 20)

Synthesizing Neoliberal and Agrarian Approaches to Agricultural Development

Their differences imply that some disagreement on what constitutes evidence and how it is interpreted is inevitable which complicates the task of reconciling them. The divide between the Marxian and Neoclassical schools does not mean that the ideas of both can be combined in a pragmatic manner. There is both a theoretical and practical argument for using this approach. Firstly in theoretical terms the objective of contrasting the two theories is not an attempt to refute either of by attacking them on rationalist or empiricist grounds.

The aim of the analysis is not to giving one theory priority over another by seeking to disprove either. Rather the analytical framework applied seeks to combine them by studying though a non-absolutist position learning from both by studying their consequences of each in the real world of policy implementation. In a non-absolutist epistemology different truth exists parallel to different theories and from this perspective they can in theory both be right even if they faced with the same evidence reach different we conclusions because, as Wolf notes, “ as there are different theories, there are different ways to establish what the truth is (Wolf: 1987: 266).

In this view what determines the “correctness or success” of a policy is not if the outcome matches the one predicted by the theory, but rather if the evidence suggests that the policy

achieved the wanted outcome. In practice this means that neoclassical theory is superior in explaining and designing certain policies whereas Marxian theory may be superior in others.

Furthermore from a more pragmatic and operational and perspective the nature of policy making discussed above suggests that a combination of neoclassical and Marxian elements in policy is possible. The process of policy formulation and implementation frequently involves combining different political viewpoints and combining approaches from different theoretical schools of thought. The sum of a given policy agenda is rarely a purebred version of one theoretical position, rather a patchwork where different theories and strategies complement each other (Wolf 1989: 265, Mikkelsen 2005 158). In terms of the position of the thesis itself it adopts a realist approach which considers structural characteristics of the economy, land distribution, sector characteristics etc. as potentially constraining, but not determining, the course of growth and equality in the national path for economic development. (Stoker 2002: 31) The thesis adopts a dialectical approach meaning that the agency of policy affects the structure of the economy in the same way that structure also affects the design of strategies and policies however it is not always possible to establish direct causal relation between policy design and policy outcome (Stoker 2002: 279, Kilby & Johnston 1975: Ch 4, Timmer 2008: 4)

Policies and Strategies Combining Social and Economic Aims

The interest in combining the two positions thus stems from both theoretical and pragmatic reasons the theoretical reasons accounted for above. In practical terms such synthesis opens up for a fascinating alternative to the past decades was characterized of the dominance of neoclassical theories and their neoliberal political agendas which gave spread to the perception that high growth rates without redistribution was sufficient to combat poverty.

Recent research concludes that the pure bread neoliberal approach has resulted in rising inequality in many developing countries in particular through its emphasis on market led reforms and its stray jacket on state spending decreased the social foods provided by the state of (UN 2010: 60, El Ghonemy 1990 in FAO 2003). A recent UN report concludes:

“employment-centred policies that successfully eradicated poverty in late industrializing countries are incompatible with neoliberal development strategies more recently adopted by most countries. Successful countries invested substantially in infrastructure; channeled credit to specific productive activities; and pursued well-managed industrial and agricultural policies, as well as active social policies that improved the skill levels and welfare of the population” (UN 2010: 30)

Thus a combination of strategies policies emphasizing growth and structural change and agrarian policies emphasizing social and economic development of rural areas and redistribution and cohesion is a way forward, and combining neoliberal and agrarian approaches to development may do just that.

Measuring Growth and Poverty Effects of National Policies

To accurately evaluate national development strategies and policies on the basis of their contribution to growth and poverty reduction, it is necessary to clearly define the variables under investigation. Thus the following section discusses growth and poverty reduction in terms of they are defined, how to identify their sources (causes), and how they can be observed and measured as part of the later policy analysis. There is a general problem of measurement connected to measuring the effects of policies. The process of structural change is in itself a cause of growth and poverty reduction, separate of the effects of policies. This dual role of structural change as both cause and effects of growth makes it is problematic to determine if the growth and poverty reducing observed are the result of structural change, the effects of specific policy induced means of growth an redistribution or caused by other factors (Syrquin in Timmer 2007: 7, Szirmai 2005: 263). As a result no exact qualitative measure can be found but assessment of the growth and poverty effects of policies is still valuable even if it represents approximations.

Defining and Measuring Sources of Economic Growth

Traditionally economic growth is in defined as a productivity increase which results in growth in output of production of goods and services. It is usually measured in Gross Domestic Product (GDP) which represents the total value of the goods and services calculated either as the total value added, or total expenditure over a given time period (Andolfatto 2005: 15, Szirmai 2005 13). The GDP can be calculated on several levels of the economy and provide a measure for growth of economy at large, within specific sectors, or the relative growth in GDP per capita (Andolfatto 2005: 13, Szirmai 2005: 69)

In line with the theoretical framework and the theory of structural transformation the analysis operates from three primary sources of growth in the agricultural sector all of which can be influenced by national strategies and policies. These are; increased quantity and quality of input, increased efficiency in factor use, and increase in human capital (Norton 2010: 100, Szirmai 2005: 69). Each primary sources of growth can be represented by a range of intermediate measures of growth. In this line of thinking an increase in employment represents a change in quantity and quality of input which effects growth. Similarly, efficiency can be measured as increase in yield

pr. hectare, or increase in yield per agricultural worker and human capital could be increases in literacy, life expectancy or other intermediate indicators (OECD 2001: 13).

Measuring growth always becomes problematic when intermediate measures of growth are used in explaining or measuring the effects of a policy on growth. This has to do with problems of comparability between different types of indicators. How do you for instance compare the contribution of 10% increase in the efficiency of maize production to a doubling of the number of students receiving university degrees? To solve this problem the value of produced goods and services (GDP) or aggregate measures such as total factor productivity, serve as the basis of comparison (OECD 2001: 13). However, the use of GDP as a measurement of growth is not unproblematic for instance conventional methods never include value added outside the formal sector, e.g. in informal jobs, subsistence production or households. These are outside the reach of normal methods of measurement. To avoid problems of comparability and inaccuracy of data in this thesis constant attention will be paid to the comparability of different types of data used the grounds for comparison and problem of comparability will be made explicit.

Defining and Measuring Poverty Reduction

The second variable under investigation is the distribution of income and poverty prevalence. In contrast to the optimization of growth which essentially is a quantitative matter of higher productivity which in turn can be measured, redistribution has normative element and a political dimension. In other words, the act of redistribution builds on a social ideal of reducing poverty and achieving a minimum standard of income (Schorrocks 2001: 147, Norton 125, Salverda et al 2009: 666). Traditionally the predominant measure of poverty has been the level of income either defined as GDP/Capita or daily income (Sen 1981: 14, Maxwell 1999: 2) An alternative measure which focuses more on inequality by measuring the difference in income distribution which is most frequently measured one of two ways. Inequality is measured by estimating the relative difference value of income between the bottom 10-20% of a community and the rest of the population, whereas a poverty rate is found by measuring the number of poor which fall below a defined poverty line (Sen 1981: 14, ODI 1999: 1) Thus a distinction is made in this thesis between poverty and inequality although the phenomena overlap. The distinction is critical, because reducing inequality does not necessarily mean reducing poverty. Consider an example

A decrease in the economic inequality by transfer of the top quintile of an economy to the poorest 10-20 % may reduce poverty, but could also leave it relatively unchanged. On the same token changes in income which leave measures of inequality unchanged may cause poverty (Sen

1981: 15) In this thesis where the focus rests on identifying the distributional effects of specific policies the most useful measure are the effects of policies on relative or absolute numbers of poor defined as people living for less than two dollars a day. Using this measure is both a matter of the 2 dollar per day measure as an accurate indicator of absolute poverty which is widely used due to the ease of access to data and making comparison (Salverda 2009. 668, Maxwell 1998: 4).

Looking at the means for the redistribution of wealth is potentially extensive however overall there thesis operates with two overall ways of reducing poverty. The first relates to utilizing the poverty reducing effects of economic growth itself in the form of rising cash incomes, increased number of jobs etc. The second source of poverty reduction is redistribution of existing wealth (Dağdeviren in Shorrocks 2001: 125). In the latter category the thesis in line with (Dağdeviren in Shorrocks 2004) lists seven categories of redistributive instruments of significance at the national level, which also apply to agriculture. The lists policy options for Progressive taxation, transfer payments, consumer subsidies, public employment schemes, land reform, education and health programs or public provision of infrastructure (Shorrocks 2004 147).

As with the Case of Using GDP as a measure for growth, there are problems associated with measuring poverty reduction. Most notably such indicator such as the 2 dollar poverty line is an oversimplification, because it does not measure the degree to which people fall below the line and hence it does not distinguish between different degrees of poverty. Considerable progress in incomes of the poorest group of people could hence occur without being reflected in poverty numbers as long as no one moved beyond the poverty line (Sen 1981: 11) Furthermore, even within such a simple measure there can be a great discrepancy in data due to differences in sampling and level of analysis. Is poverty for instance best measured starting from households or individuals? (ODI 1999: 2) However considering the benefits of the broad application of the 2 dollar a day poverty line and the advantages it holds in comparison no other measure is a viable alternative measure exists.

From the discussion above on the definition and measurement of growth and redistribution listed

above, two separate, but intersecting clusters policy aims for investigation in the theory section emerge. The two categories contain sources of growth on the one

Sources of Growth	Means of Redistribution
<ul style="list-style-type: none"> • Increases in Inputs • Increases in Efficiency • Human Capital Increase 	<ul style="list-style-type: none"> • Progressive Taxation • Transfer Payments • Consumer Subsidies • Public Employment Schemes • Land Reform • Education and Health Programs • Public Infrastructure

(Sources; Szirmai 2005: 69, Shorrocks 2004: 147)

hand and types of redistributive strategies on the other.

Conducting a Holistic Pilot Case Study

Once the review past research on agricultural development and structural transformation theory has shed light to the role of agriculture in the process of economic development and led to the identification of the policies which most effectively meet the criteria for growth and poverty reduction the findings form the basis for a case study.

The aim is through comparison with a case country to identify to which extent the policy elements identified differs from those currently applied in developing countries. This provides the opportunity to assess the coherence of current policies but also what, potential discrepancies may imply in terms of future policy changes. Furthermore, from a methodological standpoint, the case study feed well into the overall research design by accommodating need for a holistic approach. An approach which considers the fact that the design and impact of agricultural strategies to a very large degree depends on variables that vary from country to country. The effectiveness of various strategies and the individual policies all to some extent depend on socioeconomic characteristics, economic structures, restrictions and other country specific variables, which makes generalization and cross country comparison difficult (Norton 122, Kilby & Johnston 2010: 437, 262, Shorrocks 2001: 147)

Further, the holistic nature of the case study methodology supports the task of policy analysis in the context of structural transformation. Structural change as a phenomenon also works best with the holistic research design mentioned earlier, due to the interconnectedness between different policy levels and different economic sectors which makes it difficult to determine where the borders between where the phenomena's studied begin and end. Yin 2003; note

“A case study is an empirical enquiry that investigates a contemporary phenomenon within its real life context, especially when the boundaries between phenomena and context are not clearly evident” (Yin 2003: 13

However, aside from the strengths of applying the case study it also has notable weaknesses in particular in relation to the validity and applicability of findings. The results of a single case study are not adequate for making inferences and making any form of generalization of the results. For generalization a design using multiple case studies are required (Yin 2003: 32). Nonetheless, despite this conducting a single case study can offer a significant contribution to knowledge

generation (Yin 2003: 41, Shorrocks 2001: 122). Is in this it is used for gaining new knowledge about the common place divergence of the bottom billion.

Tanzania; a Case Study Representative of African States

The pilot case study selected for analysis is the Democratic Republic of Tanzania. The case has been deliberately chosen in the light of two primary attributes which seen as a whole form a bit of a paradox. Firstly Tanzania is both in terms of structural features of the economy, resource endowments and historical track record of development strategies to a large extent representative of African Development as a whole (Lapere 2001, Noord 2009:2). The second qualifier is that despite the similarity to other African nations Tanzania has economically performed relatively better the past 20 years compared to other African nations.

Tanzania has managed thus despite a similar starting point to that of other African states attained growth and modest poverty reduction not to mention slow signs of structural change (Noord et al 2009: 65, HDR 2007: 4). The similarity to other African nations combined with better performance and readily availability of data makes it an interesting case. Lapere (2001) sums up the features the nation shares with other African economies making it a representative case. He notes:

“Common features of African development include the lack of industrial heritage, the overwhelming importance of the agricultural sector in the post war period, dependence on primary exports and a very small share of manufacturing in GDP and employment. In policy and development thinking industrialization was, and often still is, seen as the key to economic development. The fiery enthusiasm for industrialization was coupled with distrust of free market forces, which were negatively associated with colonial experiences Thus irrespective of the precise shading of ideology – state interventionism, state planning and state ownership of industrial enterprises increased all over Africa”. (Lapere 2001: 1)

Naturally, there are also unique elements where Tanzania has performed relatively better or worse than other African nations and elements speaking against considering it representative of the development experience of other African nations.

Among the exceptions could be mentioned the fact that it has had a comparatively peaceful history, not having been engaged in war except for brief military intervention in Uganda in 1979. Furthermore, despite ethnic and cultural diversity Tanzania appears relatively homogenous compared to many African nations, not the least due to the strong emphasis of late president Julius

Nyerere and his Ujamaa philosophy of African socialism on building national unity through education and the use of Swahili as common a language for the nation (Potts 2008: 5, Noord: 3).

However, despite what one might highlight as unique features of Tanzanian development, its structural, economic and historical experience resembles that of other African nations, making it good an excellent case study.

Tanzania; Well Performing or Falling Behind?

Aside from the representative nature of the country what further substantiates the selection of Tanzania is the paradox of a successful structural reform, over the past 20 years. In late years it appears than Tanzania undergoes slow, but consistent structural transformation. These developments have been documented by a number of previous case studies (Noord 2009, UNHDR 2009, USAID 2005, Potts 2005).

These studies highlight exemplary results in terms of high growth rates, in particular during the past decade. Beyond growth the country see the initial signs of a reduction of the number of poor and other positive developments including modest signs of structural change. Yet despite the country's status being characterized as a prime example of successful reform, sustained growth and modest structural change by IMF and UNDP among others, other studies determine that it despite of the good economic indicators it still looks to fall short of reaching the Millennium Development Goals in year 2015 as are many other African Nations (Policy Forum 2009: 1, HDR: 2009: 12). Thus the challenge of managing structural change mentioned as a prime motivation for this thesis, seems evident in the Case of Tanzania. Learning from the successes and failures of Tanzanian development the past 20 years is a valuable opportunity to learn more about the link between specific policy mixes, economic growth, poverty reduction and structural change.

Data Selection, Accessibility and Credibility

In terms of data there are two primary sources useful for studying development strategies in practice. Firstly one can study the development strategies themselves, as they appear in strategy documents such as national strategy papers and other planning documents thus looking at the "blueprint" itself. The second option is to study the outcome of plans by using data associated to the implementation of the plans, and tracing their physical manifestation, Lapere 2001 Notes:

"There are numerous reasons why gaps between policy plans and policy implementation exist in developing countries. For instance development plans are at times used for obtaining local and international support leading to the propaganda documents rather than Implementable plans. Furthermore, the unstable economic

and political situation of LDC's forces governments to implement ad hoc policies rather than carefully spelled out plans. Finally on the African continent policies mentioned in plans are often subverted in the process of implementation" (Lapere 2001: 14).

The discrepancy between development plans and their outcomes after implementation relates among other factors to the political economy of policy making discussed earlier (page 19). Due to the political nature of policy making and the fact certain policies involves choices of resource allocation, favoring some groups and creating unfavorable conditions for others. In short the implementation stage of any development strategy involve issues of political power, persuasion and social resistance and tension (Timmer 2008: 3, Kilby & Johnston 1975: 153, Bresser-Pereira 2006: 1) To avoid the pitfalls created by the gap between policy plans and their implementation the emphasis in this thesis is on assessing policy implementation. Evaluating policy outcomes of different policy choices offers a unique opportunity to generate knowledge about the interrelations between policy design and their social and economic impact along variables of growth, poverty reduction and structural change and such knowledge may be of utmost value for future policy design.

Case Study Data Selection and Sequencing

With a point of departure in the above considerations in terms of the identification of a representative case, and access and reliability of data the case study focuses its attention on development strategies in Tanzania of the 19 year period 1991-2010. The particular period is chosen because it represents latest chapter of the countries development starting with the implementation of a far reaching reform program started in 1985-86. Reform program was running for a few years before the first significant effects on the economy could be observed starting from 1990 inwards. (Lapere 2001: 47, Noord 2009: 4) These reforms have since has provided the conditions for the development strategy and formed the backbone of the country's development the past 20 years. The case study thus draws on micro and macro level data from this period on the economy at large, and the agricultural sector in particular.

The data comes primarily from key economic indicators statistics, household surveys, strategy progress reports as well as past studies of relevance. Unfortunately older statistical data for comparison is in some cases either scarce or associated with significant problems accuracy of measurement methods and reliability of sources. Household level data for instance is not available

until 1990 onwards and the earliest available evaluation of the country's development strategy is from 1999 (HDR 1999).

Defense of Applied Theories

An inherent strength of the theory is that structural transformation has, since its inception by seminal writers such as Colin Clarke and Simon Kuznets, dealt with questions of similar nature related to growth, redistribution and poverty reduction.

Broad agreement exists among scholars across different research fields and ontological and epistemological traditions, as to the nature and characteristics of structural transformation. The process and its role as a key feature of economic development is well tested empirically in a number of country and cross country studies using a wide range of methods. In fact searching for sources growth and poverty reduction on the massive scale required it is difficult if not impossible to identify alternatives to structural transformation.

The theory provides a firm theoretical and conceptual framework together with a vast base of knowledge and data. This serves as the base for the study of agriculture's role economic development, and assessing the effects of various strategies on growth and poverty reduction. Adding to the strength of structural transformation theory the theory since its inception 30 years ago, despite a massive body of critical research testing of its hypothesis, they still stands undisputed, strengthened and elaborated over the years (Syrquin in Szirmai 2005: 262, Johnston 1961, Kilby & Johnston 1975, Mellor 1984, Timmer 2007)

Within the broad field of research on structural transformation the thesis as discussed in length earlier theory and practice by among others neoclassical and Marxian economists. Whereas the two positions to a very large degree agree to the preconditions for structural change and the broad contours of the policies needed they disagree partially on the means with which they are created? In discussions over the roles and boundaries of the state and the market including what the ideal balance between growth and redistributive policies is are examples of two areas where disagreements between the neoclassical and Marxian economics are particularly pronounced.

The neoclassical school as mentioned earlier earns significance due to the immense dominance the neoliberal ideas achieved in development thinking and practice since the early eighties within development theory and practice. Neoliberal policy agendas as much as they in some respects furthered development with an emphasis of growth and maximizing the utilization of resources they also presents an obstacle to poverty reduction because it is not compatible with employment centered policy packages that have led to structural change and development in the

past (UN 2010: 30) This is where the Agrarianist position gains relevance due to its forceful critique of the neoliberal orthodoxy in development be it during the era of modernization in the and 60s, and early 70s or the neoliberal doctrines of the 1980s (Biggs & Ellis 2001: 438, Teye 1987: 1) Among other debates the agrarians challenged the former on its, inability to of explaining and solving problems of poverty and inequality (Peet 1999: 63, O'Laughlin in Saturnino 2009: 13)

Part 3- Theory Section:

Introduction

The reasons why some nations become rich while others stay poor have puzzled economists for centuries. The classical texts of economics, such as the works by Adam Smiths, who wrote “the wealth of nations” or the contributions of David Ricardo and John Stuart Mills have left a legacy which still holds influence today. The legacy of economic theory carries over into society and its ideas penetrates many aspects of everyday life for example facilitating the exchange of goods or enabling savings. On the ideational and theoretical level economics play a critical role in theorizing about and solving some of the world’s most enduring problems, environmental degradation, poverty etc. Thus economic theory and society is connected and constantly influenced by each other and one cannot seek to alter the one without considering the other (Wolf 1987: 3, Szirmai 2005: 70). In this spirit this thesis operates within the following section investigates how development economics and in particular theory on structural change can address the divergence of the bottom billion.

Structuralist Theories: Explaining Economic Growth and Development

There is no single theory which can deliver comprehensive recipe of economic development, and advice nations how to act and which strategies to pursue. Rather a whole body economic growth theory exists, which has been built the last half century. These theories provide the theoretical and empirical foundation for explaining and designing successful economic development. The main theorists surrounding the process of structural transformation, to mention but few of them, included C. Clark 1940 (“*The Conditions of Economic Development*”) P. Rosenstein-Rodan 1943; (*Problems of industrialization of East and South East Europe*), Arthur Lewis: 1954 (“*Economic Development with Unlimited Supplies of Labor*”) and Simon Kuznets: 1955 (“*Economic Growth and Income inequality*”) and Harrod-Domar (“*on the edge of abyss*”).

These studies form a solid foundation for today’s investigation of economic growth, structural transformation and poverty reduction, and each theory has its distinct contribution to undemanding

of economic development. The relevance of development economics and the structuralist tradition to the design of development strategies is highlighted by Peet (1999) who describes the discipline in the following words:

“In general structural development economics attempt to identify specific rigidities, lags and other characteristics of the structure of developing economies that affect economic adjustments and the choice of development policy” (Meier in Peet 1999; 43)

Among the objectives of early development economics, and central to this thesis, was to explain the process of long-term economic growth and structural change. The principal aim of much of the literature was to understand and solve the problems of economic stagnation and poverty in developing countries at the level of the national economy and its sub sectors (Andolfatto 2005: 13, Peet 1999: 44, Szirmai 2005: 2, Toye 1987: 29).

Through the study of past experiences of developed and developing nations they sought to understand and describe the processes, patterns and preconditions of economic development. Conceptually they used the framework of dual sector models, studying national economic system as consisting of different economic sectors, industry and agriculture (Rostow 1990: 354, Peet: 43 Dewbre 2010: 3, Szirmai 2005: 258; Timmer 2008: 4). Within this framework, the characteristics of the different economic sectors their interconnectedness and their contribution to the process of economic development and structural transformation was studied, and findings made a major impact on the design growth and development strategies.

Early Debates over the Role Agriculture in Economic Development

Within the structuralist tradition the theoretical spectrum of structuralist theories can historically, according to Kay (2009) be roughly divided into two opposing camps concerning the role of agriculture in the process of economic development. The two opposing lines of thought, whom Kay (2009) named, an industrialist and an “agrarian” position. Kay Note:

“While agrarianisms tend to neglect industry’s development and hence the role that agriculture can play in industrialization, the industrializers tend to neglect agricultures development and hence the role that industry can perform in the process of agricultural development” (Kay 2009: 104)

The disagreements and discussions between them can be traced back to the 1960’s and 1970’s, among other reasons, due to radically different views the role of agriculture in growth and poverty reduction in development theory and in policy practice (Kilby & Johnston 1975: 127, Peet 1999:

44). The following traces the contours of the industrialist position and the critique waged against it by the agrarian position which led to a more balanced view on the role of agriculture in development and an emerging consensus on the main features of structural change.

The Industrialist Position

The industrialist, position which in policy terms was considered established orthodoxy within development economics in the early decades after the Second World War, found the theoretical support for their policies in the neoclassical models of Arthur Lewis, Rosenstein-Rodan and Harrod-Domar. These models placed a particular emphasis on the industry and favored large scale industrialization, over agricultural development as the principal tool for economic growth and development. The problem of development was framed by these theories as being primarily caused by the lack of capital, and in their view development could only be realized through heavy investments in large scale industrialization within a short period of time. (Szirmai 2005: 319, Peet 1999: 44, Rostow 1990: 355 & 391). In contrast, these models assigned a relatively negligible role for agriculture. The agricultural sector was seen as a backward and largely unproductive sector, with the main role of being squeezed of resources for industrialization e.g. taxation and tariffs to finance industry. (Szirmai 2005: 269, & 318, Lipton 1977,: 283, Toye 1987: 30)

In policy terms the theories at the heart of these models, emphasized complementarities in industrial activities and large scale government investments and central planning in the industrial sector was favored. Developing countries in the 50s and 60s used these models together with at the time success of a Soviet model of large scale industrialization as their blueprint for development. Szirmai 2005 sums up the attributes of the Industrialist approach.

“The orthodox industrialization strategies had a number of characteristics in common: large scale emphasis on capital as the scarce factor in development, priority of industry over agriculture, faith in government planning and regulation, and protection of the domestic market.” (Szirmai 2005: 319)

The dominance of these models in the 1950s and 1960s was a contributing factor to a severe neglect of agriculture in many nations during this period (Peet: 1999: 31)

On the opposite side of the theoretical divide were the “agrarianist position” which had a different take on the role of industry and agriculture respectively, and was backed by the work of economists such as Shultz, Clarke and Kuznets. The agrarian position although it had come to existence

decades earlier gained momentum in policy debates in the 1960s as the “modernization strategies” described above began to show signs of poor performance. In developing countries the strategies of, crash industrialization, import substitution and central planning not to mention the squeeze of the agricultural sector resulted in grave inefficiency. Gladwin explains the common failures of the modernization model.

“The combination of overvalued exchange rates, government monopolies of export crop marketing often through inefficient and high cost crop marketing parastatal, and price controls on domestic food crops designed to hold down the cost of living of the urban worker are negative incentives for farmers. These more than offset the positive incentive effects of subsidized inputs such as fertilizer and credit.” (Gladwin 1991: 32)

The Agrarian Critique

The agrarian position, justified partly in the failure of the modernization policies, promoted a much more optimistic and dynamic role of the agricultural in the process of economic growth. Their view was that the growth process rather than being dependent on larger increases of capital in the industrial sector relied on productivity increase in all sectors of the economy, although the individual contribution of the different sectors may vary in size (Rostow 1990: 41).

This strain of work challenged the orthodox view for instance through Theodore Schultz’s groundbreaking work on the economic efficiency of small farms. His work in particular challenged the perception of agriculture as an unproductive sector arguing that traditional farmer were rational efficient profit maximizers who allocate their resources optimally (Peet 1999: 48, Szirmai 2005: 378). The agrarians were in open opposition to the models of large scale industrialization as the principal means of development. Kay 2009 explains:

“According to the agrarianist, development strategy in LDCs should have prioritized agriculture given that the majority of the population was rural, labor productivity was low and rural poverty levels were high. Adherents of this argument, as well as neoclassical economists, pointed out that LDCs enjoyed comparative advantages in agriculture and other primary commodities and advocated that they should continue to specialize in the export of these commodities and import the necessary industrial products from the DCs.”

The more extreme proponents of the agrarian position went even further in their arguments for the support of agriculture by arguing that a general bias existed against agriculture. Michael Lipton, for

example was much acclaimed for his urban bias theory. In this he argued that industry was favored over agriculture due to ideological, political and economic control exerted by the urban class over the state. According to Lipton the urban classes public resources such as health and education services was allocated primarily to rural residents leaving poorer rural areas behind. Further he argued that prize twists, exchange rates, taxation, subsidy and credit policies deliberately moved resources from rural to urban areas (Lipton 1975: 44, Kay 110)

Thus the theoretical and ideological fault lines were sharply drawn regarding the role assigned to agriculture in the 1950s and 1960s. The extreme agrarians were speaking in favor of agricultural development at the cost of industry and the extreme industrialists advocating industrialization at the expense of agriculture. With this focus they both missed critical complementarities between sectors in the form of sector linkages and advantages in simultaneous growth in both sectors during structural transformation (Timmer 2008: 5).

Neoclassical Vs Agrarian Economics: Towards Balanced Growth and Structural Change

From within these early debates emerged a new line of literature representing a more balanced development strategy in which both agriculture and industry. Key contributors to this debate of which many serve as key sources in the theoretical chapter of this thesis are Johnston 1961; (*The Role of Agriculture in Economic Development*) Kilby & Johnston 1975; (*"Agriculture and Structural Transformation: Economic strategies in late developing countries"*) Mellor 1965 (*"The role of agriculture in economic development"*)

The broad debate changed gradually during the 1970s towards a debate within the confines of structural transformation as a process in which both agriculture and industry partakes. Within it a debate between Marxian inspired agrarianists and more neoclassical economists.

The debate that emerged and continues to this day concerns the design of specific strategies for industrialization and their impact on growth and income distribution. In particular disagreements exist between the two positions regarding the causes for poverty the, roles of the market and the state in solving it and disagreements over the particular types of policy that can solve the poverty problem in the process of development. (Wolf 1987: 233, Toye 1987: 69). The two positions can be briefly summed up:

The neoliberal approach to economic development worked from three premises. Firstly it stressed the separation between state and market in economic matters and roll back of state regulations in the market. Secondly it promoted the efficiency of the market in resource allocation and an inherent

inefficiency. Lastly the neoliberal position emphasized the distorting effects of state intervention in the form of rent seeking and poor resource allocation (Oya 2004: 3) It translated into a policy approach stressing the creation of free competitive markets, reducing the role of the state to maintain peace and macroeconomic stability together with very basic public goods and leaving to the market all matters of resource allocation and distribution.

The agrarian position on the other hand with as earlier mentioned regarded the market, although a necessity, as a source of inequality and advocated for certain degrees of state intervention, in particular to address market failures. Further they argued against the roll back of the state and for a critical role of the state in coordinating market activities and providing public goods such as health, education, and a strategic use of subsidies and significant investments in public research (Headley 2006: 4, Skarstein 2005,: 359). This is not to say that they could not agree on anything. Across the neoliberal/agrarian divides the theories agreed to the basic principles of economic development and much of the theory behind structural change the need for balanced growth between agriculture and industry and they formed consensus regarding the critical role of inter-sectoral linkages, complementarities between agriculture and industry, comparative advantage and small farm focus for structural change. (Kilby & Johnston 1975 Ch 7, Mellor 1995: 11, Norton 2010: 136) Before turning to investigating the particular lessons from the debate over policy choices within the Neoclassical versus Marxian perspectives the following section provides an introduction to the theoretical domain of the process of structural transformation, its characteristics and the driving forces behind it.

Structural Transformation Theory

Broadly speaking the structuralist theory of structural transformation outlines how a society, during the course of economic development, through specialization moves from a level of development dominated by low technology and traditional subsistence farming towards industrialization and technological advancement. The process of structural change is the cause for and effects of increasing productivity in the economy which results in economic growth which in turn can be invested in further development (Kilby & Johnston 1975: 34, Szirmai 2005: 255)

The transformation from predominantly a primarily agricultural based economy to one based on industry, which takes place as specialization in industry which causes higher productivity draws capital and labor from agriculture into the industrial sector. This is marked by two major shifts changes in the structure of production and employment. Firstly, the relative contributions of

industry in both share of employment and contribution to the GDP rises at the expense of agriculture's share.

The above shifts can be seen by comparing data on the structure of employment and production from 10 developing nations over the period 1950-2000. During structural transformation the structure and means of production are transformed driven forward by an observable transfer of resources from the less productive sector of agriculture to the more productive industrial sector. Notice in the data set share of agriculture to the national GDP falling (Appendix 2 figure 1) and the share of the population employed in agriculture decreasing (Appendix 1 figure 2). Secondly as (Appendix 3 figure 1) illustrates associated to this shift in the structure of production and employment more and more people move from rural to urban settings for employment in the industrial sector. Additionally, follows a demographic transition caused by lower child mortality and longer life expectancy which leads to temporary population increase.

Thus far agreement exists in line with the evidence presented regarding the main features structural change. Summed up, they constitute four primary processes at level of societal change: **a)** a falling share of agriculture in economic output and employment **b)** rising share of urban economic activity in industry and modern services **c)** migration of rural workers to urban settings **d)** and a demographic transition in birth and death rates that always leads to a spurt in population growth before a new equilibrium is reached (Norton 2010: 89, Szirmai 2005: 261, Timmer 2007: 7, Kilby & Johnston 1975: 34) some authors also include changed attitudes and behaviors in the population necessary for industrialization to take place (Szirmai 2005: 263, Kilby & Johnston 1975)

Structural Transformation, Growth and Poverty Reduction

What makes the structural transformation a unique feature of economic development, and the reason that it has become a pillar in theories and political projects of social and economic development, is the proven relation between structural change and economic growth. The empirical connection can be made by ranking developing and developed countries according to the percentage of their GDP added by industry and then comparing their GDP per Capita (See Appendix 4). What appears is a positive relationship between the level of industrialization and the standard of living. The higher the percentage of GDP contributed by industry the higher the standard of living measured in GDP/Capita (Szirmai 2005: 264, Kilby & Johnston 1975: 36).

If we now take a moment linking back to the introduction of the thesis and argument presented that economic growth is a precondition to development both in terms of rising GDP, but also improving

social development indicators such as those included in the Millenium Development Goals because it pays for the latter, the creation and maximization of structural change becomes a critical goal for the development project (Withfield 2009: 9, Rosling 2007). However, structural change and growth alone is insufficient as aims of economic development. It has been recognized, since the 1970s that the process of structural transformation itself is not a homogenous process leading to equal opportunity for growth and poverty reduction. Due to the higher productivity in the industrial sector and the transfer of resources out of the agricultural this sector grows much faster than agriculture. The result is that the process of structural transformation, although it leads to growth and long-term increases in the standards of living, is the cause of increased inequality in the early stages of development (Timmer 2008: 4, UN 2010: 59)

This means that the effective management of the structural transformation beyond the increase in productivity an important role in managing the structural change process is to mitigate negative impact of structural change. According to a new UN Report the main sources causing inequality in differences in productivity between agriculture and industry include both structural dynamics and a range of policy induced conditions created by the resent dominance of neoliberal and neoclassical development policies: On causes related to the more structural aspects related to the productivity gap between agriculture and industry, the report notes:

causes of rising inequality include disparities in educational attainment, technological change and employment policies that widen wage gaps between skilled and unskilled workers; rural-urban wage differentials in the process of structural change; inequality in asset ownership (including land); and unequal access to credit and basic production inputs, particularly in the agricultural sector.(UN 2010: 59)

The report complements the above structural sources of inequality with the following policy induced conditions acerbating inequality.

“Increases in inequality are linked to a range of economic policies that have dominated the development agenda in recent decades. These include financial liberalization, regressive taxation, privatization in the context of weak regulation, public expenditure policies that fail to protect the poor during crisis or adjustment periods, and labor market policies that lead to precarious forms of

flexibility, in formalization and an erosion of minimum wages and union bargaining power” (UN 2010: 59)

As the above illustrates the challenge of capitalizing on structural change not only stresses the need for facilitating growth, but also the need to assess agricultural strategies on the basis of their poverty reducing effects. Further it indicates that policy design matters, and not all types of growth are equally good, even if they happen as part of structural change. In the shorter run some types of growth possibly are better than others especially if combined with different means of redistribution (UN 2010: 59, Timmer 2008: 4). To understand the causes and potential solutions to the Growth/Poverty dichotomy of structural change the next we turn to is to understand the complementary roles of the agricultural and industrial sectors in the process.

The Complementary Roles of Agriculture and Industry

In order to make policy conducive to the process of structural change and potentially harness its effects for social and economic gains one has to understand what forces drive the process forward and which complementary roles are played by the different sectors of the economy. Judging from the evidence presented so far (in appendix 1) , it seems evident that the industrial and manufacturing sector is the primary source of growth and higher standard of living as it in terms of productivity and hence growth far outperforms agriculture (Szirmai 2005: 263) Further as can be seen from (Appendix 2 figure 1) it follows from the transfer of labor and capital from agriculture to industry that the relative contribution of agriculture in percent of GDP to economic growth declines as the level of development increases (Kilby & Johnston 1975: 35, Szirmai 2005: 111-112).

On the basis of, the higher productivity gains and growth prospects of industry, compared to agriculture and industrialization as the effect of structural change one could be led to believe that the development of industry should be main priority for development. Such conclusion however would be misguided. Although productivity, and hence the growth potential, in the agricultural sector is significantly less than in industry and industry contributes proportionally more to growth several factors make the development of the agricultural sector indispensable to structural transformation growth and poverty reduction.

The structural characteristic of late developing countries in which most of the population, often as much as 80% are employed in or depend on the agricultural sector makes it pivotal to development. Firstly the weight of agriculture in the GDP of these countries at the early stage often makes it the only source of resources, capital and labor for industrialization (Mellor

1995: 7, Szirmai 2005: 267). For agriculture to perform this role, productivity in the sector needs to increase in order to allow the accumulation of surplus capital and excess labor which then can be transferred to the industrial sector at an acceptable cost and without starving off the agricultural sector in the process (Kilby & Johnston 1975: 134. Szirmai 2005: 270, Norton 2010: Kay 2009: 106) Further productivity increase is critical as a precondition for an increase in cash incomes and foreign exchange earnings, a significant contributor to poverty reduction and a growing demand for manufactured goods (Mellor 1961: 572, Szirmai 2005: 272) Kilby & Johnston 134 Writes

“The growth of marketable surplus of farm products, expansion of foreign exchange earnings, and the increased availability of resources for capital accumulation are necessary conditions for the development of a diversified modern economy At the same time the growth of farm cash income associated with the structural transformation means increased rural demand for inputs and consumer goods that can provide important stimulus to domestic industry” (Kilby & Johnston 1975: 134)

In sum agriculture has further five main functions which stimulate the process of structural transformation in the form of resource transfers. These five are (1) agriculture as provider of food to the increasing rural population. (2) Agriculture as source of surplus labor for the growing industrial sector. (3) Agriculture as source of capital, in the form of savings. (4) Agriculture as a market for manufactured goods as consumption shifts from food to non-food items with rising incomes and last but not least agricultural exports as a primary source of foreign exchange earnings needed for import of knowledge, technology and goods for industrialization (Szirmai 2005: 274)

The structural change process is driven forward by productivity increase in agriculture which put four supply and demand factors driving structural change into motion. Their importance to the process of structural change should not be understated. Only through making these drivers work for development by raising the productivity of labor can structural change be achieved. Further only if structural change is created and maintained can nations capitalize on the spillover effect of the process of growth. Further identifying the correct appropriate policies for growth and poverty reduction requires understanding the drivers of change, and the limitation under which agriculture operated. Only then will it be possible to outline policies contributing to growth and poverty reduction and anticipating potential synergies between individual policy choices and structural change (Norton 2010: 91).

Supply and Demand Side Factors Driving Structural Change

Rising Rural Incomes

As productivity in agriculture increase agricultural incomes grow either through sales of own produce or part time wage labor. This rise in income results in a gradual shift in demand from food toward non-food produce. The main reason for this is that the income elasticity of food is less than 1.0, which means that for every percentage increase in income there will be progressively lower amounts spent on food, and demand for manufactured goods tend to increase. This causality often referred to as Engels Law results in larger and larger labor inputs and capital investments being dedicated to non-farm activities. In this process markets are created for manufactured goods as structural transformation, and economic growth, progress. (Norton 2010: 91, Szirmai 2005: 265, Kilby & Johnston 1975: 42)

Limited Food Demand

A second demand side factor which drives structural transformation, also related to the low income elasticity of food, is the demand restriction on food. As specialization occurs in agriculture the output rises whereas the demand in the market remains more or less constant. This in turn results in decreasing returns to investment in farm production making it more profitable to invest in non-farm activities (Norton 2010: 92). Another implication of these demand limitations on agriculture is that it puts a ceiling as to how many resources can be transferred from agriculture to other sectors of the economy. (Kilby & Johnston 1975: 64) The latter constraint is less pronounced for economies following an outward oriented growth path by use of export oriented farming as global demands for food vastly outweighs national demand, but it will not completely mitigate the constraints a point we will return to at a later stage.

Specialization

Another significant driver of increasing productivity is the process of specialization. During economic growth and structural transformation, the availability of capital and market opportunities may allow people to focus on what they do best and trade with others for the commodities they need. As a result farmers rely less and less on self sufficiency and no longer produce all their own food, clothes, tools and other goods. In general specialization is closely connected to the emergence of market not only for commodities but also, labor, land, and financial markets. The spread of technology, naturally also play a decisive role in specialization and increased efficiency (Kilby &

Johnston 1975: 48, Norton 2010: 92). The process of specialization will be discussed in the context of national growth strategies in the next section and out of the four it is according to Kuznets it is by far the most important contributor to the change process (Kuznets in Kilby & Johnston 1975: 48).

Fixed Supply of Land

The last driver of productivity increase is the fixed supply of land. Because the supply of land is fixed and other types of capital growing people will at some point reach a situation where they find fewer and fewer opportunities for investing in resources for farm production. Hence they will eventually move towards investing more and more capital in non-farm activities where productivity is higher. (Norton 2010: 92)

Historical Trends in Agricultural Productivity

The paradoxical role of agriculture the percentile contribution of agriculture to GDP decreases agricultural output usually continues to increase throughout the course of structural transformation as a result of productivity increase in the agricultural sector can be observed empirically on a global scale. Figure 2 seen below illustrates how the productivity of agriculture, measured in kilos of cereals per hectare has increased while at the same time the contribution as measured in percentage of GDP has decreased in the period 1965-2000 (Meijerink, & Roza 2007: 3) The empirical record suggests that structural change is a significant cause of economic growth and increased standards of

living are closely linked the regions having seen the highest gains in standards of living e.g East Asia and South America also having enjoyed the highest increase in productivity. On the same token, historical changes in agricultural productivity increase presents a clear picture of the lack of

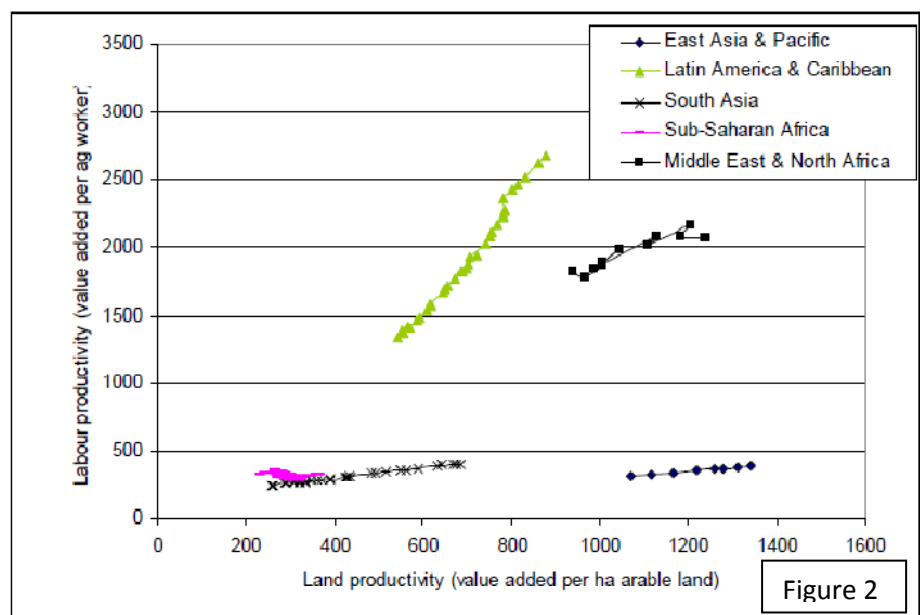


Figure 2

Source: Meijerink, G. & P. Roza 2007: 4

productivity as the bottle neck for economic development especially in Sub-Saharan Africa and

South Asia. This is the cause for lacking structural change, growth and reduction in poverty (CGIAR 2005, Meijerink, & Roza 2010, 104).

The above evidence indicates that to deliberately use structural transformation as a strategy out of poverty will require determining how development strategies and policy can create the precondition for structural change by removing barriers restricting the processes at the heart of structural change. The critical role of agricultural strategies in the light of the structural transformation process thus becomes facilitating the optimization of the processes driving structural transformation forward in particular agricultural productivity while mitigating potential negative effects of the growth.

Sources of Agricultural Growth from Farm Level to National Economy

Overall there are two possible ways of increasing the productivity of agriculture in the pursuit of economic growth. The first approach is to increase the land area under cultivation per farm worker, and the second is to increase the yield per cultivated area (Kilby & Johnston 1975: 391) The task of understand the economic principles behind agricultural growth, according to Kilby & Johnston 1975, starts at the farm level and the available factors of production he elaborates:

“The starting point is the traditional farmer. The resources at his command are his land, the labor power of his household, and a modest range of manmade inputs. These latter “produced factors of production” encompass such land production structures, tools, fertilizer, livestock and the seeds as can be produced or reared on the basis of the community’s accumulated knowledge.” (Kilby & Johnston 1975: 392)

The source of productivity growth in agriculture can be traced back to three sources. **A)** increasing in the quantity and quality of external inputs, **B)** changes in the ways people uses its factors of production, and **C)** Increased human capital. Which of these sources of growth that holds the most promise, will depend on the level of development and structural features of a nation and will to some extent vary from country to country. Kilby & Johnston 1975: writes:

“The most promising means of increasing farm productivity and output in a particular country will depend on (a) its resource endowment and land/man ratio (b) the technologies available and in prospect (c) its infrastructure (d) factors influencing the readiness and ability of farmers to adopt and (e) existing institutions and administrative capabilities (Kilby & Johnston 1975: 437)

Increasing Quantity and Quality of Input

At the macro level changes in the availability of input is driven by three possible sources of growth; population growth affecting the supply of labor, natural resource discovery increasing the stock of land, minerals, lumber or other natural resources, and capital accumulation. Of particular importance to capital accumulation is increasing in the quantity and quality of external inputs (above referred to as “produced factors of production”). With these the farmers existing means of production, primarily land and labor, can be enhanced by applying inputs such as improved seeds, fertilizer, tools, other capital items productivity is raised (Kilby & Johnston 1975: 390, Norton 2010: 95, Szirmai 2005: 361)

Increased Efficiency in Factor Use

The second source of growth is changes in the ways people use its factors of production thus producing more from the producing more output by the same amount of input. Such change in the structure of production can overall be realized in three ways; firstly it can come from increases in scale of production whereby the *economies of scale* result in lower costs pr. unit produced. Secondly it can be reached through *specialization* in which the division of labor is used to increase the production pr worker. Specialization, is however dependent on the creation and extension of markets for consumer goods and services, farming implements and inputs, labor, land and capital (Kilby & Johnston 1975: 41) Lastly increases in efficiency can be achieved through *technological change* allowing people to adopt new technologies (Norton 2010: 102, Meijerink, & Roza 2007:10). To realize the full potential of the former two the development of markets for factors of production and for commodities. Further this depends on the development, distribution and adoption of new technologies in which publicly financed agricultural research and extension services are vital.

Increase in Human Capital

Finally growth can be achieved through increased human capital, which increases the productivity of the workforce e.g. through health and education services or improvements in social organization of production (Norton 2010: 102, Kilby & Johnston 1975: 389 Szirmai 2005: 65, Meijerink, & Roza 2007: 10) Thus any successful agricultural strategy will be based also on some system of education and health programs. For education this could be publicly provided primary education, vocational training programs, and agricultural extension services aiding the spread of new technology and production methods (Kilby & Johnston 1975: 147, Norton 2010: 222). In regards to health services publicly provided health services in particular in rural areas as well as public

programs for child nutrition, prevention of infectious diseases such as malaria or HIV and many other public goods (Kilby & Johnston 1975: 136, Meijerink, & Roza 2010: 8).

Poverty reducing effects of Growth

Moving on to the issue the role of agriculture in poverty reduction there are essentially two main sources of poverty reduction; firstly, poverty reduction through growth, and secondly, poverty reduction through redistributing existing wealth (Shorrocks: 2004: 125)

There are many potential means of reducing poverty through an agricultural strategy. In an earlier section this thesis highlighted a number of policies suited for this exact purpose. However before going into detail with these as grounds for poverty reduction it is important to highlight three principal sources of poverty reduction achieved directly through the process of growth and structural change itself. Firstly, growth opens up opportunities for wage employment inside the agricultural sector and in industry. The number of jobs grows as surplus capital from agriculture realized through agricultural growth is invested in industry and manufacturing driven by the limited supply of land and higher productivity in industry. As a further result the demand for labor increases in agriculture increases as demand for food rises and labor is again used for increasing output per hectare and the area of land under cultivation to meet demand. In total contribution employment is thus the single most important source of income and plays a key part in both growth and poverty reduction as most people finance their lives either through participation in the labor market or as members of households supported by wage income (UN 2010: 31)

The extent of the poverty reducing effect of income particularly depends on the choice of technology and the extent to which new production uses labor intensive rather than technology driven means of production. Hence growth strategies based on labor intensive production methods, and production of commodities favoring developing nations comparative advantage in labor intensive production such as agriculture, mining, or processing of primary products allow countries to replace capital for labor and are highly effective in the early stages of development (Johnston & Kilby & Johnston 1975: 307, Valdes in Dewbre 2010: 4).

A second source of poverty reduction is the direct increase of on farm cash receipts as agricultural output increases beyond subsistence level and can be sold in urban or international markets. The size of the cash incomes depend on domestic and international prices on agricultural products. The relative size of cash income depends on farmer's ability to adopt new technologies that become available but also on a nations production mix. Countries following an export oriented strategy, rely on cash crops and can earn more foreign exchange and cash incomes than countries

with a more inward strategy focused mainly on food production. The former model partly offsets the growth limitations imposed by the demand restrictions on food, and is by most considered an indispensable part of agricultural strategies today. (Norton 2010: 8, Szirmai 2005 281, Meijerink, & Roza 2010: 7). However, the export oriented model is not without problems. Firstly farmers depending on export crops are extremely vulnerable to external price shocks of the global market and are subject to unfavorable terms of trade with developed countries. Secondly, dependence on cash crops have at times resulted in food shortage and have made farmers dependent on cash income for buying food (UN 2010: 50, Meijerink, & Roza 2010: 7).

The third and last factor contributing to poverty reduction is the tendency of food prices to fall as agricultural production increases. The reduction of food prices have particularly effects on poverty reduction due to the high proportion of their income poor people spend on it. The positive effects in food prices can as described above be offset if the increase in farm productivity is primarily directed towards the production of cash crops (Meijerink, & Roza 2007:11, See also the Case Study in Section 5).

Poverty Reduction through Measures of Redistribution

Aside from the poverty reducing effects of growth itself, described above, governments in developing countries have several policy options for redistributing wealth from richer to poorer parts of the populations in efforts to distribute wealth more equally and reduce poverty. In a cross country study Dagdeviren evaluated feasibility of when to use the most common sources of redistributive policies based on their effectiveness in reducing poverty, and considering the costs associated with them. He specifically aimed at identifying policies aimed specifically at achieving growth, policies effective for distributing existing wealth and policies meeting the dual goal of growth and redistribution. In total, he placed 7 policy choices under investigation. Dagdeviren found that the effectiveness of the different measures of redistribution will depend on the resource endowments, level of development and structural features of the particular countries. In the next pages a brief discussion of each type of redistributive policy and the scope for its application is undertaken.

1	Progressive Taxation <i>Using tax and tariff policies as means to redistribute wealth to poorer segments of the economy. Collecting higher taxes from high incomes, placing tariffs on luxury goods etc.</i>
2	Transfer Payments <i>Providing Minimum wage or public support such as unemployment compensation, pensions, child</i>

	<i>benefits. Etc</i>
3	Consumer Subsidies <i>Introducing subsidies for basic goods and services in high demand with the poorer segments of the population: fuel, food, fertilizer, high quality seeds etc.</i>
4	Public Employment Schemes <i>Government hiring excess labour to work on state projects eg. roadworks, construction etc.</i>
5	Land Reform <i>Redistributing land more equally, insuring property rights, effective markets for land etc.</i>
6	Education and Health Programs <i>Offering free primary education, basic health services and other social programs</i>
7	Infrastructure <i>Building infrastructure for public fund; roads, irrigation, marketing channels, in particular in rural areas</i>

Progressive Taxation

The feasibility of using progressive taxation to redistribute wealth depends first of all on the effectiveness of the tax system in developing countries. In most low income countries the tax system is only capable of collecting as little 15-25 percent of total taxes, and the administrative costs of doing so is quite high. In terms of enforcing taxes it is easier to tax people in urban areas compared to rural residents due to the more developed infrastructure and close proximity to tax authorities. Certain types of taxes are easier to administrate than others e.g. taxes on exports or vat are far more easily implemented than taxing real estate or incomes. Finally looking at taxes from the perspective of poverty reduction who is taxed and how, is a question of critical importance to poverty reduction. Export taxes, for instance, have largely the negative effect that it mainly targets agriculture, and deprives the sector of resources needed for agricultural growth whereas Taxes on imported consumer goods are generally in favor of the poor. (Dagdeviren in Shorrocks 2004: 147).

Transfer Payments

Also transfer payments such as pensions, minimum wages, wage subsidies and so on are potentially useful means of reducing poverty. However to low income countries, in the category dealt with here, measures such as a legally binding minimum wages are quite difficult to enforce due to the abundance of labor, and transfer payments such as pensions often expensive to implement at least at a scale where it has a significant impact. To middle income countries, however payments such as pensions have proven a quite effective way of reduce poverty (Dagdeviren in Shorrocks 2004: 145).

Consumer Subsidies

Another much used means for redistributing wealth is consumer subsidies. In particular subsidies on everyday consumer goods in high demand in poorer segments of society, petroleum, food staples

etc have proven a highly way to redistribute wealth and improve conditions for the poor (Mellor 1984: 543). However, overly reliance on food subsidies, can on the other hand can cause a backlash by creating a disincentive for food production, which in turn will increase food prices and make the subsidies counter-productive (Sziamai 2005: 371)

In general opinions on the topic of subsidies have been so over the last decades. During the neoclassical era of structural adjustment subsidies were removed on grounds of reducing public spending and the market distorting effects (Dagdeviren in Shorrocks 2004: 145, UN 2010: 32). On the other hand history testifies that many countries have successfully used subsidies on basic commodities such as food or agricultural input are easy to manage and have frequently been used for protecting the poor against price shocks and to support poverty reduction programs. Subsidies are effective if they are well designed, to avoid distortion of local markets and place to heavy a fiscal strain on government budgets. In particular subsidized credit, seeds fertilizer are highly effective ways expand farm efficiency, however they may over the long run incentivize overconsumption and unsustainable use (Norton 2010: 174). Hence there is growing agreement that subsidizing inputs and technology is best used as a temporary solution e.g. for incentivizing the adoption of new technologies and farming practices (Norton 2010: 287, Kilby & Johnston 1975: Schive in Mellor 1995: 59)

Public Works Projects

In many cases public works projects in which the state hires excess labor for working on various projects related to construction or production financed through public investments can be an efficient way for expanding wage incomes for the poor segments of society. Public works programs can address many different means also conducive to structural change via increased government spending, development infrastructure, health program, education etc (Kilby & Johnston 1975: 136). During the neoliberal wave however such programs were often cut in the process of reducing government spending (UN 2010: 30,).

Land Reform

It is broadly, recognized that, land reform is a particularly important redistributive measure in economies characterized by high inequality, and where the poor segment of society which depends primarily on land (UN 2010: 60). Most literature agrees that land reform in most cases can have positive effects on both growth and poverty reduction although it is also acknowledged that it under certain conditions may have neutral or negative in effects. The common argument in favor is that gains from land reform both in terms of growth and poverty reduction can be substantial as a

successful land reform usually leads to intensified farming spurs growth (Kilby & Johnston 1975: 169, Norton). The redistribution effects of land reform in most cases rely on functioning markets for land and credit. Beyond efforts of redistribution agricultural policies must create enforceable policies for property rights, among other functions enabling farmers to use land for collateral in the credit market and this make investments in improved inputs or other capital goods thus raising their productivity

Recent studies indicates that a wave of market led land reforms, performed after a willing buyer willing seller principle, undertaken in the 1980s and early 1990s had reverse effects acerbating poverty and inequality due to poor farmers and landless residents having problems providing collateral and thus accessing the capital needed for purchasing land.(El-Ghonemy 2003: 38, Saturnino 2009: 20) Further worth noting when considering the feasibility of land reform is, that the challenges involved in undertaking land reform, private or state led are considerable. The problems involved are among other things finding political support for reform in the first place and latter as the reform is under way, raising the capital needed to compensations to the groups giving up land (Kilby & Johnston 1975: 153, Norton 2010 269).

Education and Health Services

Less problematic to implement as part of strategies for poverty reduction are education and health Services. As Dagdeviren notes, unlike asset or income redistribution education and health services are not as hard to justify politically and are relatively easy to implement even in poorer nations (Dagdeviren 2001: 147). Health services and education, be it primary school, vocational training or higher education increases the productivity. Health services, free or subsidized, provide a social and economic safety net helping poor people by protecting them against loosing income due to illness or having to sell belonging to medical treatment. Education even at the basic level of literacy enabling people to read, read write and hold accounts significantly improves their productivity, in combination with the specialization attained from vocational training or higher education. All of the above enable people to earn higher incomes and potentially move out of poverty (Szirmai 2005: 216, Norton 2010: 186)

Investment in Infrastructure

Lastly, investment in infrastructure particularly in rural areas has a highly positive impact on poverty rates. Infrastructure such as transportation, roads, electricity, communication, is critical for the process of growth and transformation itself as mentioned in the previous section in particular the functioning of markets and the ability of poor in rural areas to capitalize on them. Further,

infrastructure such as electricity, irrigation, storage facilities and so on can significantly improve access to input and increase productivity small farmers.

Typical Strategies and Policy Elements of Agricultural Strategies

To find the right combination of sources of growth and means of redistribution in the pursuit of attaining the best possible mix of policies with maximum effect is the primary role of national growth strategies. As mentioned earlier there is no universal blueprint for such strategy as its design aimed at creating a particular pattern of agricultural development and optimizes the pace and effects of structural change will depend on the resource endowments, demographic characteristics and agrarian structure of the nation. However, through a literature review and the above discussion of the primary processes for growth and poverty reduction it is possible to identify key strategy choices and key policy choices, that support growth poverty reduction and structural change, which will apply in most if not all cases.

Small Farm Focus of Agricultural Development

According to Kilby & Johnston and Johnston 1975 developing nations despite intra-country differences face a basic choice between a bimodal or uni-modal agricultural strategy.

“Because of their structural and demographic characteristics, late developing countries face a fundamental choice between a strategy aimed at the progressive modernization of the entire agricultural sector [unimodal strategy] and a crash modernization strategy that concentrates resources into a highly commercialized subsector [bimodal strategy]” (Kilby & Johnston 1975: 127)

The argument for following design strategies that support the development of small farms is based on small farm efficiency paradigm by Theodore Shultz. It dictates that the former strategy aimed at developing an agricultural sector of relative homogeneous farm sector composed of small farms offered significant advantages for both the growth objectives and equity concerns of developing countries. Biggs (2001) notes:

“A crucial attribute of the narrative (Small Farm Focus) is that both growth and equity goals appear to be satisfied simultaneously via the emphasis on small farm agriculture” (Biggs 2001: 442)

The basic premises of the small farm first paradigm as the most efficient mode of agricultural development can be traced back to two arguments; Firstly, that a model supporting the development of small farms as efficient and profit maximizing units will propel growth in the agricultural sector

faster and broader than a model based on large scale capital intensive farming in a small subsector of estates, plantations and other forms of large scale farming (Norton 2010: 135, Kilby 1974 Chapter 4) This is backed by empirical evidence. In terms of total factor productivity it has been proven that an inverse relation between the size of land holding and output per hectare exists which speaks in favor of the organization of a nations agricultural sector into small operational units (Kilby & Johnston 1975: 127 Norton 269) Further adding to the profitability, many studies conclude, that in labor intensive production small farms a 20-40% lower production cost as a result of savings on management overheads and smaller administration costs and higher incentives for improving productivity for self employed farmers (Meijerink, & Roza 2010: 21).

The second part of the argument in favor of a small farm focus is that it ensures that effect from farm based growth is broad based. It achieves this by ensuring that as large a share of farmers as possible gets access to the sources of growth in the form of cash incomes, access to investment resources and access to new knowledge and technology (Kilby & Johnston 1975: 133) Furthermore this model ensures the inclusion of the farm population in the economy, primarily comprised of small farmers, as increased cash incomes stimulate production linkages and the transfer of resources from agriculture to industry, thus speeding up industrialization (Kilby & Johnston 1975: 299, Tacoli 2004: 11).

The implementation of a uni-modal strategy depends is first of all preconditioned by the creation of optimal land distribution through land reform, creating institutions for land ownership. Further, the functioning of small farms is as mentioned easing access to high value inputs and product markets by developing markets and infrastructure. Finally it rests on an appropriate strategy for development and adaptation of technology, suited for the conditions under which small farm operate, through public and private research and farmers education (Kilby & Johnston 1975: 276)

There are however resent arguments speaking against this mode of production although. The small farm paradigm may however be jeopardized in certain types of agricultural production. As Meijerink, & Roza 2007 notes:

The case for efficiency of small holder farming may be under pressure where globalization intrudes, non-traditional crops are promoted and agricultural modernization involving increasing use of capital (Meijerink, & Roza: 19)

An example could be types of horticulture or flowers for foreign markets which has recently gained popularity in many developing countries due to the high value of the crops. In such lines of production the increasing quality standards, enforcement of codes of conduct, contractual constraints and need for a significant increase in applied technology excludes the small farmer in a traditional sense from the markets and cause deteriorating working conditions for agricultural workers by a transition to temporary contract employment (Kritzing 2004: 1, Roza 2007: 7, Tacoli 2004: 11). In spite of this it is not that the small farm focus will be invalid or outdated firstly because traditional food crops and export crops requiring low technology input will still make out the majority of agricultural production. Secondly, the exclusion of small farmers from participation in such international supply chains may be enabled and social benefits of employment secured through national regulation and legislation and creation of private or public institutions providing the needed research and technology for small farmers and support services for their participation in global markets (Meijerink, & Roza 2010: 7, Africa Commission 2009: 22) Determining the full implications of changes in the structure of international markets and its impact on agricultural strategies herein the small farm paradigm and export orientation is outside the scope of the thesis but is undoubtedly an increasing debate in particular between Marxian and Neoclassical economists.

Strengthening Growth Linkages for Growth and Poverty Reduction

A particularly aspect of maximizing the effects of growth, (increases in cash earned from growing agricultural output, higher incomes, creation of jobs and falling food prices) is the proper management of production and consumption linkages between the agricultural and industrial sectors. The linkages represent resource flows between the agricultural and the non agricultural sectors of an economy (industry and service sectors) and the strength of these linkages have great effect on the size and distribution of growth.

Historically, the influence of these linkages has been underestimated, but it has become a permanent part of the economics of agricultural development in the last two decades. The basic explanation for the significance of growth linkages is in short that the increased incomes in the agricultural sectors causes rising demand for goods, services and production inputs such as labor, land and capital, in the local rural economy which again causes the local service and manufacturing sectors to grow (Kilby & Johnston 1975: 299, Meijerink, & Roza 2007: 17). Roza 2007 explains:

Positive effects on the rural economy are achieved by creation of more jobs in agriculture and the food chain. These include production links both “upstream” from the farm in demand for inputs and services for agriculture as well as “downstream” from the farm in the demand for processing, storage, and transport of produce. But there are also consumption links as farmers and farm laborers spend their increased incomes on goods and services in the local (rural) economy. (Meijerink, & Roza 2007: 17)

Beyond the direct flow of commodities for consumption, produced inputs for production and the flow of labor, linkages also cover the flow of information between urban areas and rural areas and financial flows. Information flows could be knowledge on prices, consumer preferences employment opportunities etc and financial flow include access to credit, transfer payments such as pensions or remittances (Tacoli 2004: 2) According to Meijerink, & Roza 2007 and Tacoli 2004 the strengthening of production and consumption linkages, if supported by the right policies and investments, leads to a virtuous cycle of production, consumption and growth in rural economies. Tacoli 2004: Tacoli elaborates:

- *rural households earn higher incomes from production of agricultural goods for non-local markets, and increase their demand for consumer goods*
- *this leads to the creation of non-farm jobs and employment diversification, especially in small towns close to agricultural production areas*
- *which in turn absorbs surplus rural labour, raises demand for agricultural produce and again boosts agricultural productivity and rural incomes. (Tacoli 2004: 4)*

However the establishment of strong linkages requires the establishment of a number of social and economic preconditions addressed by agricultural strategies. These include equitable distribution of and access to land; provision of infrastructure, credit facilities for small and medium-sized producers, and basic social services education, health, water and sanitation and the existence of well functioning markets (Tacoli 2004: 14).

Export Based Growth Strategies

A last overall choice which significantly influences the design of a national agricultural strategy is the degree to which a nation's growth is based on an export oriented agricultural strategy. Such strategy in broad terms is build around the idea of driving development through exploiting a nation's comparative advantage (Szirmai 2005: 276, Norton 238). The argument in favour of

exploiting comparative advantage prescribes that from exports are conducive to growth because it allows nations to utilize its means of production more efficiently through specialization and economies of scale. The export oriented growth models are based on the rationale of classical theories of Ricardo and Smith which emphasize specialization in the production of good in which a nation holds comparative advantage. Through export of these goods developing nations can thus finance their development via earnings from international trade.

Foreign exchange earnings from mining and agriculture are besides foreign direct investments the only source of financing the import of foreign goods and technology for industrialization, and thus export is needed to some extent regardless of which development strategy is followed. In export oriented models in the least developed countries agriculture and mineral extraction play lead roles, as their economies which are marked by abundance of labor and restricted by scarce capital have comparative advantage in labor the intensive processes of growing crops and extracting minerals (Szirmai 2005: 124, Norton 2010: 124)

The relative strength the export oriented development strategies, compared to models emphasizing growth driven by producing goods for the domestic market, has been highly debated in recent years. Opponents argue that reliance on a nation's comparative advantage in the long run reinforces existing patterns of production and specialization. Thus if a country holds comparative advantage in a limited amount of primary products it may forever depend on them. (Szirmai 2005: 278) Furthermore, market forces limit the degree to which poorer countries can develop through trade with richer countries. Because many developing countries attempt to enlarge farm incomes and foreign exchange earnings the producing countries frequently experience deterioration in terms of trade (Kilby & Johnston 1966, Szirmai 2005: 284, Norton 2010: 119) Such external shocks caused by fluctuations in prices of primary goods hit poor peasant in export based economies particularly hard because of their dependence on cash earnings from export crops to buy food and other basic commodities. Lastly adding to the list of arguments are the above mentioned changes in the international structure of production into global value chains which may seem to jeopardize the small farmers (Meijerink, & Roza 2007: 20).

Critical Policy Elements of Effective Agricultural Strategies

The pursuit of the above strategies of small farm focus, export orientation and the strengthening can be translated into a particular mix of specific policies that are required to create the preconditions for agricultural development in a pattern that leads to growth poverty reduction and structural transformation.

A: Policies for Macro Economic Stability

Among the objectives for macroeconomic stability are; keeping inflation low to moderate (5-10%), disagreement exists regarding the exact rate. High inflation will have high economic costs, but a complete squeeze on inflation will on the other hand not be advised, as this will limit employment in the short term and growth in the long term (Spiegel 2007: 7). Keeping inflation too low will additionally limit the government's ability to invest in key areas for social development. Complementing the fiscal policy are goals for keeping government spending under control in particular in relation to the balance of trade and ensuring the creation of foreign exchange reserves (Spiegel 2007: 8, HDT 2009). Further of importance in particular in relation to agriculture is the exchange rate policy where a devaluation of the real exchange rate tends to favor farmers who are net exporters while industries, who are net importers, pay the prize. (Spiegel 2007: 15, UN 2010: 30)

B: Policies for Institution Building and Farmers Education

Secondly an agricultural strategy has to put in place institutions for agricultural research and development. The primary role of such institution is to conduct research in new crop varieties, farming techniques or technology which can assist in raising the productivity of agriculture. Due to the relative ease of copying the innovations such type of research performed in agricultural research stations is not likely to be profitable to private institution, and often relies on state funding. Further, a second area related to the former is agricultural extension services which can assist in dissemination of information and aid the adoption of new innovations e.g. through farmers education. Among such initiatives could as an example be farmer cooperatives, self help groups or government run training programs (Norton 2010: 186,).

C: Policies Development of Rural Infrastructure

The development of rural infrastructure is, as mentioned above vital for the operation of markets and connecting farmers to them. It includes markets for, labor and capital, produced inputs such as fertilizer, seed and pesticides not to mention markets for selling crops and buying goods and services. Beyond market access infrastructure also matters when it comes to increasing farm productivity e.g. by the provision of electricity, irrigation and storage facilities for produce. Beyond the physical infrastructure it also includes the flow of information for instance between buyers and sellers, prices or between farmers and extension services. (Kilby & Johnston 1975: Meijerink, & Roza 2007: 11, Tacoli 2004: 14, Timmer 2007: 40)

D: Policies for Creating access to Markets and Resources

The creation of functioning markets is a critical precondition for specialization. Overall markets serve three tasks. According to Kilby & Johnston 1975 they firstly draw into productive use land labor and entrepreneurship, Secondly, competitive pricing in markets creates incentives for all participants to allocate resources to sectors with the highest return thus facilitating efficient resource allocation and lastly the operation of financial markets enable a more rapid increase in capital stock making productivity rise faster than had been the case without access to financial markets (Kilby & Johnston 1975: 48, Norton 2010: 146). The creation of markets presupposes the development of infrastructure in particular in rural areas (see above). Beyond infrastructure, well functioning markets require that public bodies perform basic coordinating, supervising and controlling functions such as enforcing measurement or quality standards and collecting and disseminating market relevant information (Kilby & Johnston 1975: 53).

E: Policies on Land Allocation, Taxation and Pricing

Lastly an effective agricultural policy includes a range of policies on the division, trade and ownership of land. As mentioned earlier in the section of redistributive policies land reform is an important policy in countries where agriculture dominates. The means of land reform range from redistribute land on market conditions via sales at market prices, subsidizing land for poor farmers or coercive measures (Norton 2010: 261, Kilby & Johnston 1975). The mechanism behind the land reform has its outset in the small farm efficiency the division of land into suitable size plots for small scale farming leads to both productivity increase and poverty reduction (Szirmai 2005: 415).

Tax and pricing policies; have already been dealt with in part above in relation to tax as means of redistribution. In general these are the primary policy means for governments to reallocate resources from more productive to less productive sectors of the economy or for addressing various types of market failures. The area in general is highly debated, not least between, neoclassical and neoliberal economists and general advice on the choice of policy is hard to formulate. In relation to agriculture the main concern is the establishment of tax regimes that are bias against agriculture. Past experiences illustrate how taxing exports are biased by taxing farmers who are net exporters. The pressure on farmers is further increased if this is coupled with import tariffs and taxes on fertilizer or pesticides. On the other hand taxation of farming is inevitable as it constitutes one of the primary mechanisms for the transfer of agricultural surplus from agriculture to industry. Historically, tariffs were used as a means to protect domestic industry, but such protection is not considered a sustainable solution but rather one that leads to reduced

competitiveness and inefficiency. Last significant means of effecting pricing is the use of subsidies. In general governments can subsidize goods important to the development of the farm sector such as pesticides, fertilizer or new farming technologies to increasing the profitability of their use at a farm level. Emerging consensus forms that these are useful, but only as temporary measures to assist the adoption of new innovations and technologies (Norton 2010: 287, Kilby & Johnston 1975: Schive in Mellor 1995: 59).

Part 4 - Case Study: Agricultural Policies in Tanzania

The United Democratic Republic of Tanzania in East Africa bordering the Indian Ocean to the east and Kenya and Uganda to the North. On its southern border it has Mozambique and Malawi and to the West the neighboring countries of The Democratic Republic of Congo, Uganda, Burundi and Rwanda. The nation is a federal republic between Mainland Tanzania and the Island Zanzibar. The total area is 942.799 Square kilometers and a total population of 41 million people (2009) The average GDP/Capita is 440 USD (2006), making Tanzania one of the 15 poorest nations in the world (Britannica 2009).

Brief Economic History from Independence to 1985

Tanzania industrial history began in wake of World War II when Tanzania was still under British colonial rule. The initial industry emerging in Tanzania was mainly focused on processing agricultural products grown domestically such as sisal, cotton, coffee and tobacco. The manufacturing sector at the time of independence comprised 3.6 percent of GDP in 1962 and many of the nation's industries were underutilized due to lack of demand, inadequate infrastructure, inefficient use of resources, break downs, or lack of skilled labor (Lapere 2001: 13).

From 1967 Tanzania embarked on a socialist path of self reliance, and part of this strategy included nationalizing all larger industry, and using the state as the main driver of national development. For agriculture this meant the nationalization of a number of large plantations estates and agro based industries such as milling or sisal processing. With this nationalization the number of parastatal organizations increased from 40 in the 1960s to more than 400 in the early 80s (World Bank 2000: 6). The sale of export crops was centralization in state marketing boards. The nation followed a classical import substitution strategy, and put heavy protections in place to protect its industrial sector such as high tariffs in imported goods, import licensing and undervaluation of the exchange rate to spur domestic production. An overvalued exchange rate combined with price control and exploitative taxation of farmers meant unfavorable conditions for agriculture, in particular export cropping. As a result critical earnings of foreign exchange declined from the late 1960s onwards (Lapere 2001: 19). As a result of the import substitution policies, Tanzania was by the early 1980s in the middle of a severe economic crisis characterized by a 30% inflation, unsustainable fiscal and external deficit, shortage of basic consumer goods, dependence on aid, collapse of agricultural exports and shrinking GDP (World Bank 2000: xiii) This dire situation was exacerbated a number of external shocks such as the oil crisis of the 1970s, and a debt crisis due to

earlier decades reliance on external loans, which with rising inflation, decreasing GDP and a rise in international interest rates became impossible to service (Potts 2008: 18, Norton 2010: 382).

Economic and Structural Reforms since 1985

By 1985 the crisis led the government of Tanzania to abandon the socialist model and the import substitution strategies as means of industrialization and it embarked on a massive macroeconomic reform program to establish a market economy, under the supervision of the International Monetary Fund (IMF). The structural reform program rested on three pillars consisting of; large scale privatization, market liberalization and deregulation and the implementation of policies aimed at re-establishing macroeconomic stability (Noord 2009: 4),

Through the privatization all nationally owned with a few exceptions were privatized starting in 1992, and agricultural marketing systems were dissolved by transferring the task of marketing agricultural products to private traders (UN 2000, 142: Noord 2009: 4).

Further market liberalization led to domestic price controls on hundreds of products being lifted, leaving petrol and fertilizer as the only items which prizes are government controlled (Lapere et al 2001: 26). Government restrictions on import and export significantly reduced, and the currency exchange market was liberalized allowing the exchange rate to follow market prices, removing the overvaluation and thus increasing export earnings for agriculture and removing part of the bias against agriculture. Lastly, the reforms led to the introduction of tight fiscal and monetary policies by reducing government deficits and cutting public expenditure and thus bringing inflation under control (Lapere et al 2001: 26, Noord 2009: 4, UN 2000).

These structural reforms set the preconditions for the present development strategies including strategies for the development of its agricultural sector.

Present Structure and Performance of Tanzanian Economy

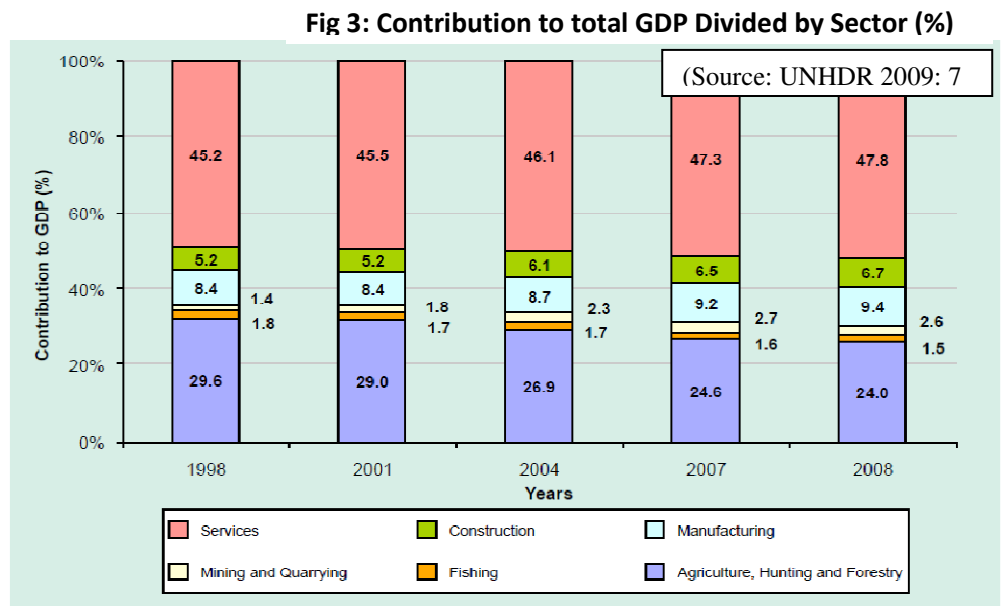
A cross section of the Tanzanian economy according to

Figure 2 Employment by Sector 2000

employment, reveals a country in which most of the population depends on agriculture. In total 76 % of the workforce in Tanzania are employed in the agricultural sector (UNHDR 2007: 14, SADC 2008: 2) Industry and manufacturing in the table named “other private” accounts for approx. 10 percent of employment.

Sector / Share of Employment %	2000/2001	2005/2006
Central Local Government	2.2	2.4
Parastatal Organizations	0.5	0.4
Informal Sector	5.7	9.3
Other Private	4.4	8.0
Agriculture	84.2	76.5
Household Duties	3.1	3.5

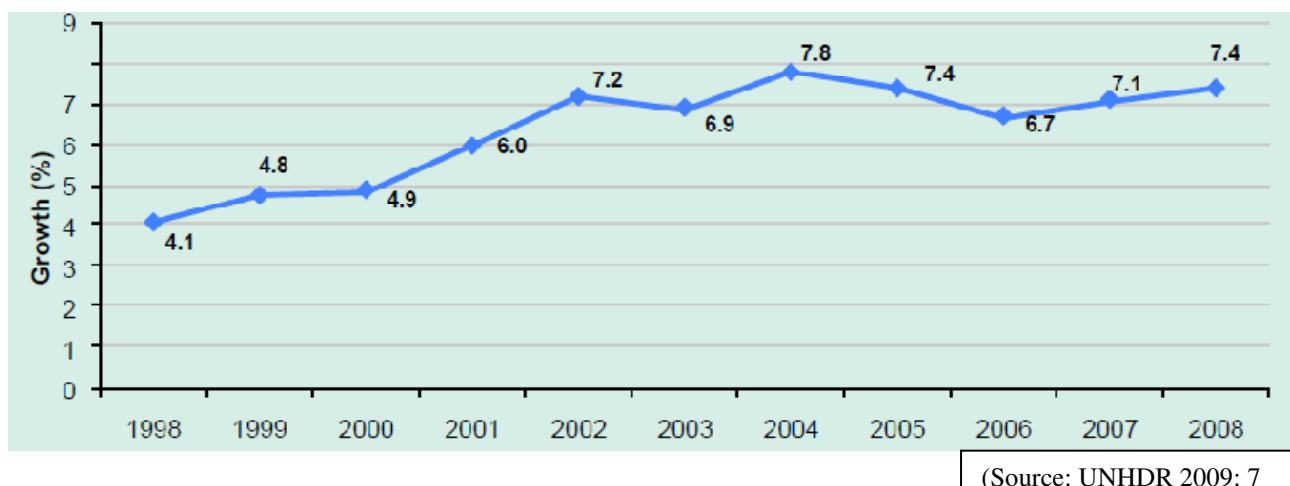
Looking at the contribution of the different sectors to the GDP over the past decade it can be seen that the service sector is by far the largest contributor to the economy, accounting for 47% of the GDP. Agriculture follows as



the second largest contributor with a quarter (24%) of the national GDP. Manufacturing on the other hand only accounts for 8 percent. These numbers display an economy that has seen practically no structural change since independence.

On a positive note looking at the trend over the past 10 years (Figure 3) the decreasing share of agriculture in GDP combined with a slight increase in manufacturing it can be seen as modest structural change. Also the overall growth rate has increased steadily over the period to around 7,5 percent, although it is expected to slightly decrease in the years 2008 and 2009 to around 6% as a result of the global financial crisis (HDR 2009: 4). The average growth rates for agriculture in the past 10 years have been 4.4 % against an average of the industrial sector of an average 8 % pr. Year and the service sector has shown an impressive average growth of 7,5% since 2000 (HDR 2009: xxi). Overall these numbers witness of a relatively modest growth rates in agriculture which need to be raised if structural change shall accelerate.

Fig. 4: Total GDP Growth Tanzania 1998 - 2009



Poverty Reducing Effects of Growth

Turning to Tanzania's performance in regards to poverty reduction in the past 19 year period the statistics show that some progress has been made. Overall the percentage of the population living below the poverty line has dropped by 5 % from 38.6% to 33.4%. However, most of this growth can be explained from improvements in urban

areas, and does not have effects on the rural poor (Policy Forum 2009: 1, HDR 2009: 11).

Along with this development inequality, measured using the Gini Coefficient, has risen slightly between urban and rural areas

Figure 5: Poverty Rates Tanzania

	1991	2001	2007
Dar es Salaam	28.1	17.6	16.0
Other urban	28.7	25.8	24.2
Rural	40.8	38.6	37.4
Tanzania Mainland	38.6	35.6	33.4

Source: National Bureau of Statistics 2001 & 2007

(Source: UNHDR 2009: 11)

(HDR 2009: 11). The immediate reading of the data on growth and poverty reduction suggests that the growth in the agricultural sector over the past decade has only caused very modest reductions in poverty. The data seems to indicate two things. Firstly, it suggests that Tanzania may follow the earlier established pattern of increasing inequality between rural and urban areas as a part of their structural change, and secondly, that the growth rates in agriculture are too modest to alone cause a significant reduction in poverty. The challenge for Tanzania is to raise the productivity of agriculture and support structural transformation while taking the edge of rural poverty through agricultural growth and redistributive policies.

Analysis of Tanzania's Agricultural Strategy

With this outset of the overall status of Tanzanian development we turn to addressing firstly if policies for the development of the agricultural sector meet the objectives for growth and redistribution, and secondly if there are specific points for improvement, according to earlier described critical strategies and policies for agricultural development.

Small Farm Based Agricultural Strategy and Policy in Tanzania

As mentioned above, nearly 80% of the farms in Tanzania are small farms with an average landholding of 2.0 hectares. However, there are regional variations with Shinyanga Region utilizing around 3.4 ha pr household compared to Kilimanjaro with only 1 ha pr household (Sample Cencus 2003: 14, SADC 2009: 2). The total area allocated for farming which amount to 11.999.071 hectares has not changed drastically in 10 years.

What has changed is the average share of their farmland that each farmer has under cultivation. As a result the possibilities for extending the cultivated area are diminishing significantly and Tanzania

begins to experience a shortage of farmland. This shortage is experienced despite estimates indicating that merely 23 % of arable land is currently under cultivation in Tanzania (SADC 2008: 2). This opens up for significant growth potential through increasing the area of land cultivated per agricultural worker if putting more land under cultivation. The 80% small hold farmers are characterized by underdeveloped smallholder primary agricultural production depending on small scale cultivation and reliance upon traditional rain fed cropping. The farming practices are characterized by use of hand tools. 70% of the land is farmed with hand hoe, 20 % by ox plough and merely 10% by tractor (HDR 2007: 14, SADC 2008: 2). With this land distribution and the mode of farming Tanzania is closely aligned to the principles of small farm focused agricultural strategies.

Export Orientation and Comparative Advantage

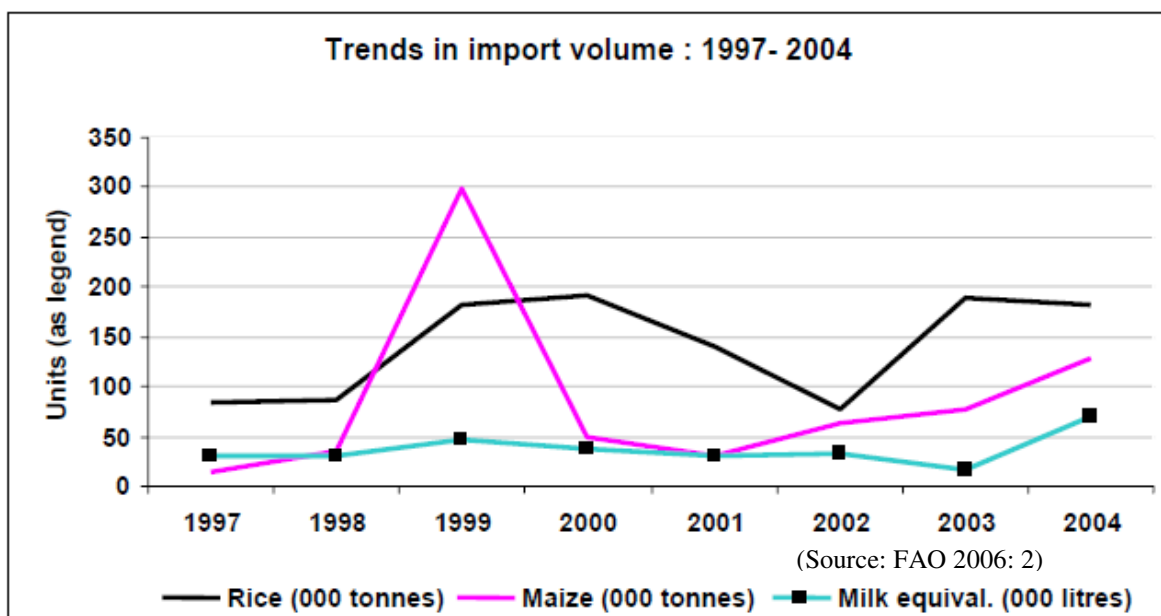
As a primarily agrarian economy with an abundance of labor and scarcity of capital Tanzania has a significant comparative advantage in the production of traditional food and cash crops (UN 2000: 150, HDR 2007: 97). Of other non agricultural sectors short term comparative advantage also exists in the extraction of minerals in the mining industry as well as in transportation due to Tanzania's role as a main transportation corridor and access to the sea for 6-7 landlocked states in central eastern Africa. Transport and mining will however never compete with agriculture in importance however due to their relatively low employment numbers. Thus crop exports are vital for Tanzanian economy, as the single most important source of foreign exchange earnings making out nearly 75% of all national exports, and agriculture's role as primary sector of employment critical (HDR 2007: 93, SADC 2008: 3) The relative export orientation of agriculture can be found by studying the cultivated area according to crop type at the time of the last agricultural sample survey in 2003 (Appendix 5).

The table reveals that traditional food crops such as maize, rice, cassava, beans and other account for more than 90% of the cultivated area, which in real value amounts to 36% of GDP (SADC 2009). Of the 10% remaining in crop production, the cash crops in Tanzania, tea, tobacco, coffee, sisal sugar and cashew nuts account for the 5 % and the rest going to oil seeds and other crops. Tanzania could potentially export surplus of tradable food crops in particular maize and rice should however Tanzania has a ban on food exports. Despite the large agricultural sector and the predominance of traditional crops, still is a net importer of food e.g. maize, rice and milk. The need for food import is particularly large in times when drought affects Tanzania's own food production.

The figures demonstrate that food production is an Achilles heel for Tanzania and becoming self sufficient in food production might be an important objective of the agricultural strategy.

The continuous reliance on imports is symptomatic of the state of Tanzanian agriculture and the problem

Figure 6: Trends in Food Imports Tanzania 1997-2004



Clues to the cause for the low food production can be illustrated by studying the case of Maize. Maize accounts for 44% of the area planted with crops, and 33% of total agricultural production shows. The maize production has the past 5 years faced falling productivity. This drop in productivity is caused by dramatic decrease in the use of fertilizer, caused by the liberalization of markets for agricultural products and the removal of government subsidies on key inputs. With removal of the subsidies and a simultaneous devaluation of the Tanzanian Shilling the prices of fertilizer increased by factor 2.5 to 3.9 from 1991-1997 (World Bank 2000 xiv, Skarstein 2005: 338) The price increase removed the profitability of applying fertilizer in production of food staples a trend observable across crop types. The data below illustrates how the profitability of fertilizer use has been cut by half in important food crops and as much as 74% for Maize causing incentive for small farmers to make use of it to nearly disappear (World Bank 2000: 46).

Figure 7 :Ratios of average crop producer's prices to farm gate fertilizer prices 1985-1998

	1985-89	1990-94	1995-98	1998	% change from 1985-89 to 1998
Maize	1.40	0.83	0.37	0.36	-74.3
Paddy	2.23	1.39	0.56	0.60	-73.1
Wheat	1.58	1.87	0.92	0.84	-46.8
Millet/sorghum	1.05	1.15	0.85	0.54	-48.6

Source: World Bank (2000, 46).

In contrast fertilizer use still remains profitable in the production of high value cash crops such as tobacco, cotton etc which sells for higher profit margins in international markets. This discrepancy causes growth in low value crops to seize and created a de facto bias towards cash crops where productivity increase pays off (Kaliba 2009: 1, Skarstein: 2005 359). On the ground this bias manifests in at least two developments. Firstly, the pattern of production is changing as farmers move out of food production and into cash crops, causing the production of cash crops to grow faster than food crops. Secondly, due to the profitability of using fertilizer in cash crops their income increases proportionally more than producers of food crops. Equally or more important causes are high marketing and transportation costs carry the heaviest burden for poor farmers, in particular food producers (UN 2000 xiv).

To fully understand the dynamics influencing the total productivity of agriculture and the derived benefits in terms of growth and poverty reduction of food production and cash crops the analysis must take a closer look at market access for smallholders, and the condition of the forward and backward linkages between agriculture and other sectors of the Tanzanian economy.

Market Access and the Strength of Backward Growth Linkages

Although the condition of physical infrastructure in Tanzania has improved in recent years it is overall in poor condition. In rural areas, away the main roads which connecting the larger cities most roads are dirt roads, and many of these are for at least parts of the year in a poor state (HDR 2007: 66 HDR 2009: 21). Further, only a fraction of the households in Tanzania (approx 2%) are connected to the electricity grid and a large part of rural households use unprotected water sources of poor quality and gathered far from the household.

For agriculture, the lack of basic infrastructure presents a significant restraint on growth. This includes problems of scarce storage facilities for both high-quality input such as fertilizer, seeds and pesticides, and for harvested crops waiting to be sold. If looking at the backward production linkages determining the access to and use of high quality input in production from data collected at the last agricultural census survey from 2003 the restraint is apparent. (SADC 2008: 2). It shows that less than 20% of farmers have adopted regular use of

Figure 8 :Access to Selected Inputs for Agriculture

Type of Input	Households with Access to Inputs		Households without Access to Inputs	
	Number	%	Number	%
Farm yard manure	1,253,312	26	3,507,277	74
Improved seed	877,308	18	3,885,281	82
Fungicides	794,372	17	3,968,911	83
Inorganic Fertilizers	552,953	12	4,209,636	88
Compost	281,678	6	4,480,911	94
Herbicides	76,202	2	4,686,388	98

Source: Tanzania Agriculture Sample Census 2003 (Vol. II Crop Sector)

(Source: SADC 2008: 2)

fertilizer, improved seeds or pesticides. The lack of infrastructure is a significant cause for the low use of inputs as lack of infrastructure decrease availability and increases the prices. It is however not the only explanation, already mentioned lack of profitability or lack of information and knowledge on their use also play an important role.

Strengthening the vicious cycle of low input use are problems of low demand, high transportation costs and lack of access credit on reasonable interest rates. The latter restricts the ability of poor farmers to invest in productivity enhancing measures that could increase their income. The financial sector survey conducted in 2006 showed that the percentage of people with access to credit facilities is as low as 8.5% in rural areas (HDR 2007: 15, FSDT: 2006).

Strength of Forward Growth Linkages

Moving from the backward linkages to the forward linkages the same effects of lacking infrastructure and access to markets apply. In relation to the forward linkages an important indication of the growth and poverty reduction effects can be obtained by investigating the spillover growth effects that the production of any given product or service creates further up the value chain when it creates demand for further processing, distribution, servicing and other value adding activities. To assess the strength of these linkages and align the focus of policies to capitalize on the strongest growth linkages nations use a set of indicators called economic multipliers.

Economic Multipliers

The calculation of economic multipliers is used to measure of the relative importance of different types of Production and their accumulated growth effects. A multiplier is, simply, used to summarize the economic benefit, measured in value, from an increase in a particular type economic output (Maize Production, Dairy Processing, Milling). taking into accounts the multiplying effects if different linkages in the local economy (The virtuous growth cycle, page 53) An example illustrates:

As an example if the multiplier for meat and dairy in Tanzania is 3.12. this means that producing 1000 Tanzanian Shillings (Tsh) worth of meat will create indirect effects created 3120 Tsh worth of added value to the local economy. This effect arises from a demand for inputs in processing valued at 888 Tsh. (Meat and Milk) The increase in production further labor and workers will have an increased income to spend in the local economy on buying goods and services, again stimulates demand in those sectors. Thus in total of the 1000 Tsh worth of meat produced in its indirect effects created 3120 Tsh worth of added value if considering the impact of other sectors.

Source: Kaliba 2008: 1

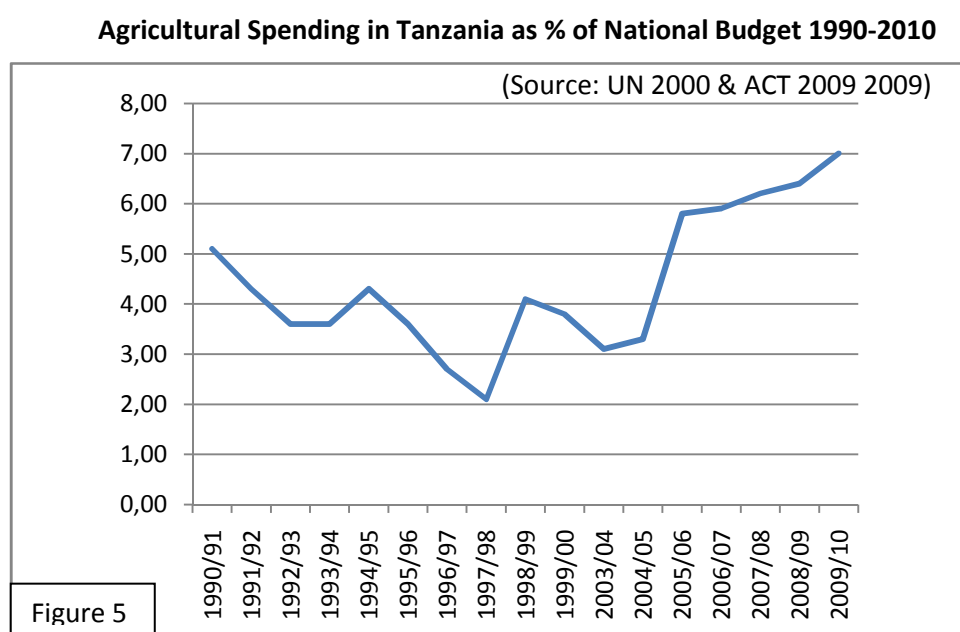
From the most recent calculation of economic multipliers in Tanzania, (appendix 6) it can be seen that the highest gains for the economy in terms of value added is in the production and further processing of food (maize, cassava, beans etc), rearing cattle and fishing. In contrast cash crop

production have nearly no multiplying effects and thus creates no rural growth and income beyond its contribution to foreign exchange earnings. The reason is that cash crops, almost entirely, relies on imported inputs and that they are exported in their 'raw' forms, creating little or no stimulus to the local economy through growth linkages (Kaliba 2008: 5, Tacoli 2004: 13)

The implication of high multiplier effects on food crops suggests that there is a large potential growth potential in producing and processing traditional food crops. This potential could be realized by supporting the production of traditional crops, and the development of related agro processing industries that can add value to these crops (Kaliba 2008: 5, Temu 2009). Further it raises doubt in regards to the benefits of a mainly export oriented growth strategy.

Public Spending on Agriculture

Before moving to the individual policy areas, a measure that can give an overall indication of the focus of Tanzania development strategy is the resource allocation to different policy areas measured as the percentage share of the national budget. Agriculture has the past decades suffered from a lack of funding, but to implement effective policies and develop agriculture e.g through agricultural research, education, reforms or other initiatives requites investments. Historically, the share of the national budget allocated to agricultures in Tanzania has not been impressive, mostly ranging between 3-5 % of the total budget (UN 2000 & ACT 2009 2009). However, the past 10 years public spending on agriculture has seen an upwards trend to a level reaching 7% of GDP in 2010. This indicates that focus is directed towards the sector which is a positive sign, however it is still a relatively low share compared to the size and economic importance of the sector.



Assessing Priorities and Performance of the Critical Agricultural Policy Areas

Policies for Macro Economic Stability

The government of Tanzania has in general managed the past decade to lead a macroeconomic policy which supports growth and structural transformation. Inflation has been kept under control at a moderate level of between 5 and 7 %, although it rose last year to 10.5 % due to rising food and oil prices. An inflation rate of 5-10 percent is, substantially higher than IMF recommendations which dictate a goal of 3-5 %. Inflation in this range is not as such harmful to growth as such in Tanzania (Spiegel 2007: 8, HDT 2009:1). On the contrary critics argue that it may give the government room to make critical investments in social development necessary to boost structural change. A part of the explanation for the rising inflation is a negative balance of trade and a fiscal deficit has increased the past years to 4.7% in 2008/2009. From a moderate standpoint, it is to stay on track important in the coming years to ensure that government spending does not increase, and that investment is directed as efficiently as possible towards productivity increasing investments and keep inflation rate at 5-10% (HDR 2009, HDT 2009:1)

Policies for Institution Building and Farmers Education

Agricultural Research in Tanzania is run under national agricultural research system program (NARS). The research is handled through a range of public, parastatal and private research institutions (SADC 2008: 10). The research program involves research in the key cash crops, tea, coffee, and tobacco, but important crops such as cotton are not active part of the research program. Additionally, research in food crops largely neglected (SADC 2008). However, on a positive note investments in agricultural research have doubled from 15 to 30 billion shillings since 2005 (ASTI 2010). This has resulted in a increase in both the number of researchers and the number of new types of crops in the program, but much still needs to be done (SADC 2008: ASTI 2010).

In the area of farmer's education for the dissemination and adoption of new technology relies mainly on semi formal famers unions or informal farmer's savings association (SACCOS). These serve a critical role in rural areas where, credit, market information and farmers training disseminated by NGO's, private companies or government institutions find it hard to reach. There are approximately 3500 SACCO's and the same amount of farmers associations, but together they service less than 3% of the population with an approximate 2 million members (FSDT 2010, FANRPAN 2006: 13). These associations are characterized by low managerial skill level, poor coordination and they spread only slowly due to lack of funding and a somewhat negative

reputation (Duursma 2004: 19-20). Recent policies e.g. aimed at increasing the spread of financial services and markets have the past 3 years begun utilizing and building the capacity and spreading the reach of the rural institutions, but it is too early to form judgment on the results. In general, not much funding and effort has been committed to this area (FSDT 2010, NSGRP 2005: 40).

Policies for Development of Rural Infrastructure

As mentioned earlier in the case study, the development of infrastructure is critical for increasing market access and the adoption of productivity increasing inputs in rural areas. Infrastructure development is a bottleneck to growth although it does also rank highly on Tanzania's priorities, comprising a total of 9% of the national budget. The road network has been a priority the past years and has as mentioned earlier seen improvements. However, only about 55% of national and regional roads under national supervision labeled in good condition in the latest human development report and even fewer on a local level (HDR 2009: 21, ACID 2010). The largest infrastructural challenges in Tanzania are within the power sector and the area of water management, where the access to clean water has fallen significantly in both rural and urban areas since 2000. The latter in particular puts a restraint on the use of irrigation in agriculture (AICD 2010, HDR 2005). On the positive side Tanzania is making immense progress with the spread of GSM networks and the use of wireless technology (HDR 2009: 145). Mobile communications are one of the fastest growing subsectors in services with an annual growth of 14%, and most competitive sectors of the Tanzanian economy. This fast spread of mobile technology offers completely new possibilities for disseminating market information and access to credit and financial services via mobile banking (HDR 2009: 8 USAID 2005: 18)

Policies for Creating access to Markets and Resources

The investments in infrastructure outlined above are one of the principal requirements for market access but infrastructure does not necessarily suffice. At the national level basic education teaching people to read and write is critical. Tanzania is doing well on both accounts with an overall literacy rate of 74% and a nearly 100% enrolment rate in primary school. However many of these advances have been achieved the past decade and there is a need for programs for adult literacy to allow the part of the population who have not benefitted from these improvements to catch up (HDR 2009: 40). Further literacy is higher with men where 80% can read and write whereas the same number is merely 66% so there is a need to promote gender equality in education.

Looking beyond the access to local and national markets, the international markets are setting increasing demands to the developing nations. In particular the emergence of international value chains has caused a rapid increase in quality standards, tight deadlines and requirements to the production and sales of exports products which small farmers cannot meet singlehandedly (Meijerink, & Roza 2010: 7) To address this Tanzania has since year 2000 aimed at developing private and public agricultural extension services, stimulate investment in agro businesses (Temu 2009, HDR 2009: 25) In particular there is an ongoing effort to set up integrated supply chain initiatives in which extension services and private agribusinesses help farmers manage all parts of the value chain. The initiatives include accessing quality input such as fertilizer or seeds, meeting international quality standards and marketing and selling products to foreign or domestic buyers and consumers (Temu 2009, HDR 2009: 23, Meijerink, & Roza 2007: 6). Single projects in selected cash crops, tea, cashew nuts and have proven very successful in raising both the productivity and profitability of small scale farming through such initiatives, but the scale, at present, remains limited and must be expanded through public and not the least private investment in agro businesses and agriculture at large (HDR 2007: 101).

Policies on Land Allocation, Taxation and Pricing

The final area for review relates to government policies on land allocation, taxation and pricing. As already established land allocation in Tanzania, in terms of distribution, is to a large extent in line with the principles of small scale driven growth, (See page 62). The biggest hurdle in this the issue of landownership where Tanzania has a customary property right where all land is held in trust by the president and people obtain the right to land on 5 - 99 year leases (Land Act 1999: 81, Sundet 2005: 3) The result is that it is that the market for land is not open and competitive. A further consequence is that and is not fully accepted as collateral for loans, leaving farmers cut off from capitalizing on their most productive asset (Sundet 2005: 5). Revising the legislation for land however does not seem to be on the political agenda.

Moving to the tax policy the Tanzanian tax system has undergone many reforms the past decades however a large bias remains against agriculture in particular in the regional tax regimes where taxes aimed at agriculture vary greatly (HDR 2009). As example taxation according to the turnover of farms take 5 % of the turnover 17 times higher than the same tax mechanism for industry. According to Agricultural Council of Tanzania this has particularly harmful consequences for small scale farmers who can end up paying taxes on their turnover even if they are operating

with a deficit (ATC 2007: 1). Tax reforms, already undertaken, in favor of agriculture are noticeable and in 2010 further provisions in the form of tax exceptions in agriculture have been undertaken in order to stimulate investment in agriculture.

Lastly, on pricing policies: In general, all price controls except for petrol and fertilizer have been removed. The latter two present a significant aid to poor people who spend a significant amount of their income on these products. However as mentioned earlier in relation to access to inputs the government may consider implementing temporary subsidies on selected inputs such as improved seeds, fertilizer and irrigation systems to incentivize adoption of productivity increasing high quality input for food production and broad adoption of new technology.

Case Conclusion

This case study had the aim of investigating to what extent agricultural policies in Tanzania follow the key strategies and policies which the earlier literature review, in part three of this thesis, identified as supportive of growth poverty reduction and structural transformation. Establishing this could provide critical knowledge about the effectiveness of new policies in meeting the challenges of the bottom billion for combining growth and social development and potentially identify points for improvement.

If looking at the three overall strategies of the small farm focus, export oriented growth strategies and a focus on strengthening of forward and backward linkages between agriculture and industry, Tanzania displays an overall alignment. The small average plot size and use of predominantly traditional farming practices in broad terms provides the optimal conditions for a strategy for a model of agricultural development which emphasizes small scale farming and utilizing the efficiency gains from small farm based agricultural strategies.

The mode of Tanzania's agricultural strategy in terms of export orientation appears to be aligned to the thinking of comparative advantage. Tanzania holds comparative advantage in most important cash and food crops and emphasis should thus be on utilizing this to earn foreign exchange through exports which can then finance further development. The bias towards cash crops seems to be completely with what theory prescribes; that import of food is optimal as long as comparative advantage in cash crops is maintained. However, in reality this may be too simple a conclusion considering the strong growth effects of food production in other sectors of the economy (Kaliba: 2008: 1) The cash crop bias is concerning in the case of Tanzania because the country is a net importer of food and frequently experience food shortages in some regions. Increasing food production and processing would strengthen both forwards and backward linkages in the economy,

and stimulate significant growth effects in other sectors of the economy which are not realized by cash crop production. Thus simultaneous increase in food and cash crop production should be the focus not a bias towards one or the other type of production.

A critical factor of success for such strategy is that the strategy is supported by a range of policies supporting the strengthening of forward and backward linkages between agriculture and industry. This in particular means establishing an agricultural strategy which emphasizes increased investment in extension services and farmer's education, rural infrastructure and aligns pricing policies to best support smallholder farming. It is evident if looking at the resources allocated to agricultural development that these are now the preconditions the government of Tanzania aims to provide with a significant increase in funding for agriculture. However, certain areas in particular within development of infrastructure, such as access to water irrigation and electricity suffers from decades of neglect, and present a significant obstacle to development. Further adverse effects from the reform process where subsidies on fertilizer and other high quality inputs were removed create a bias against cash crops. This could be countered through temporary subsidies to incentivize the adoption of these inputs and access to credit to incentivize food production. A further possibility is to further reform taxation of agriculture, which still has a relative bias against agriculture, in order to increase on farm incomes and provide room for investment.

Part 5 – Thesis Conclusion

In the beginning of this thesis it was proposed that a rethinking of current development strategies is required to find solutions that can create sustained growth and poverty reduction in the world's poorest nations. The findings of this thesis indicate that solution to the divergence they face is to adopt strategies that aim to foster growth and poverty reduction while facilitating the process of structural change. This thesis has demonstrated that a clear relationship between structural transformation and economic growth exists. Further the process of structural change can lead to significant reductions in poverty. In particular the spin-off effects of increased cash incomes of farmers as they raise above subsistence level, increase in employment as a result of strengthened forward and backward linkages, and falling food prices spur assist in rural poverty reduction.

However at the same time the structural transformation process also has as an inherent tendency for rising inequality at the early stages of the process, due to a productivity gap between the agricultural and industrial sectors, which means that structural change and the associated growth does not necessarily lead to poverty reduction. Ensuring that growth is transformed into poverty reduction requires investment in policies for agricultural development which ensure broad and equal distribution of the positive effects of growth and mitigates increases in inequality. Overall the thesis concludes that finding the right mix of development strategies depends on a nation's level of dev and demographic characteristics, but an effective agricultural strategy with the aim of increasing the productivity of the agricultural sector should as a minimum embrace three principles.

Firstly it must take a point of departure in broad based agricultural development focused on the development of smallholder farmers. This focus enables the development to have effect on the majority of the rural population rather than a selected few and to some degree secures that they are connected to the benefits of growth. Secondly, an effective strategy for agricultural development must utilize a nation's comparative advantage in particular in agriculture as many developing nations due to the abundance of land and labor have significant advantages in the production of food and cash crops for exports. This decision is often seen as a tradeoff between the production of high value cash crops and food production in which cash crops win due to their importance in earning foreign exchange. However, food staples on which poor people rely for their nutrition are equally important as they to a larger extent than cash crops support the strengthening of linkages between agriculture and industry. Food production beyond reducing the price of food and at the same time support the virtuous growth cycle of increased rural incomes, increased demand for goods and services and job creation and higher demand for agricultural produce.

To capitalize on growth linkages developing nations should design strategies that strengthen the growth linkages between the agricultural and industrial sector of the economy e.g. through the development of agro industries for input production, value adding crop processing and marketing of products domestically and internationally further supported by investing in infrastructure.

At the policy level the above strategies translates into a policy mix which as a minimum includes; policies for maintaining macroeconomic stability, programs for agricultural research and development, the provision of farmer's education and extension services, investments in rural infrastructure, the development of markets and market access and policies for land allocation taxation and pricing. These policies can be further supported by policies aimed at increasing the degree of redistribution. The policies which have proven most effective as means of wealth redistribution include the use of socially inclusive taxation or subsidies on commodities on which the poor spend a large part of their incomes. Governments can also make use of transfer payments, public education and health programs, and investments in infrastructure in particular in rural areas to reduce poverty in rural areas.

The pilot case study conducted indicated that the strategies applied in Tanzania to a very large extent follows the recommended strategies for achieving growth poverty reduction and structural transformation. However, when assessing the progress made within key policy areas for creating the preconditions for sustained productivity growth in agriculture it shows that there is still a far way to go. Agricultural investment has only increased in recent years and key areas such as infrastructure development, market access, the creation of agro related industries and other areas suffer from a long period of inadequate funding. As the on the ground effects have only recently begun to appear and it may take a decade or more of sustained investment in the current policy framework before structural change, growth and poverty reduction is at a self sustained level.

The analysis revealed a bias towards cash crop production which should be reconsidered and a need for further tax reforms bringing the level of taxation in agriculture at level with the tax imposed on industry. On a positive note it seems that these are some of the issues currently being addressed by the government of Tanzania. Looking ahead a more in-depth analysis of the Tanzanian agricultural policy and its effects on growth and poverty reduction in combination with studies of other developing nations may prove highly valuable source of learning. Unfortunately, only a limited study was feasible within the scope of this thesis.

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Appendix 1: Trends of Divergence of the Bottom Billion

Figure 1: Growth Divergence of the Bottom Billion

	Top billion		Middle 4 billion		Bottom billion 54 countries composite list		Bottom half-billion (World Bank) 35 fragile states	
	annual \$ % growth		annual \$ %		annual \$ %		annual \$ % growth	
1980	16,587		2,190		1,423		1,398	
1990	20,062	1.9%	3,086	3.5%	1,572	1.0%	1,290	-0.8%
2000	24,143	1.9%	4,025	2.7%	1,605	0.2%	1,153	-1.1%
2005	25,975	1.5%	5,190	5.2%	1,834	2.7%	1,294	2.3%
2005 as multiple of 1980	1.57		2.37		1.29		0.93	
Annual % growth, 25 years		1.8%		3.5%		1.0%		-0.3%

Figure 1 illustrates the relative divergence of the 54 countries home to the billion poorest of the world population. Over a period of 25 years these countries have an average growth rate 2.5 to 3.5 % less than other developing nations. Additionally it shows stagnant or even negative growth which accumulated over years lead to severe social and economic problems

(Source: O'Brien 2007)

Figure 2: Divergence of the poorest nations in achieving the Millennium Development Goals

Indicator	Total in developing countries (million)	Total in fragile states (million)	Fragile states per cent share
Total population (2004)	5,427	485	9%
MDG1 - Poverty (2004)			
Extreme poverty	985	261	26%
Malnourished children	143	22.7	16%
MDG2 - Universal education			
Children of relevant age that did not complete primary school in 2005	13.8	4	29%
MDG4 - Under five mortality			
Children born in 2005 and expected not to survive to age five	10.5	3.3	31%
MDG5 - Maternal health			
Unattended births	48.7	8.9	18%
MDG6 - Diseases			
TB deaths	1.7	0.34	20%
HIV+	29.8	7.2	24%
MDG7 - Environmental sustainability			
Lack of access to improved water	1,083	209	19%
Lack of access to improved sanitation	2,626	286	11%

Figure 2 shows the relative overrepresentation of the bottom half billion, in UN terminology, representing fragile states, poverty incidence, lack of education, child death rates etc. In these countries which represent 9 % of world population, live 26% of the World's poor, 29% of children without education etc.

(Source: O'Brien 2007)

Appendix 2: Changes in the Structure of Production and Employment (1950 – 2000)

Figure 1: Structure of Production by Sector 1950-2000 (% of GDP)

	1950-1960				1990-2000		
	Agriculture	Industry	Services		Agriculture	Industry	Services
China	39	38	23		16	49	34
India	51	21	28		27	27	46
South Korea	46	15	39		5	44	51
Malaysia	37	18	45		12	40	48
Taiwan	32	21	46		4	39	57
Turkey	46	15	39		16	25	59
Brazil	23	30	47		9	32	59
Colombia	38	22	40		15	29	56
Peru	35	23	41		8	38	55
Tanzania					45	15	40
Avg. Asia	44	20	36		16	35	49
Avg. Latin America	22	30	49		8	34	58
Avg Africa	44	18	38		29	24	47
Avg 16 OECD	15	41	44		2	27	71

(Source: Szirmai 2005: 112)

Figure 2: Structure of Employment by Sector 1950-2000 (% of labour force)

	1950-1960				1990-2000		
	Agriculture	Industry	Services		Agriculture	Industry	Services
China	77	7	16		48	22	13
India	72	10	18		67	13	20
South Korea	73	3	24		11	28	61
Malaysia	53	12	25		18	32	50
Taiwan	57	16	27		10	29	62
Turkey	77	8	15		46	21	34
Brazil	60	18	22		23	20	57
Colombia	57	18	25		34	24	42
Peru	58	20	22		40	18	42
Tanzania					84	4	12
Avg. Asia	71	9	20		40	20	36
Avg. Latin America	50	22	28		22	24	54
Avg Africa					57	10	26
Avg 16 OECD	25	36	39		4	26	70

(Source: Szirmai 2005: 111)

Appendix 3 (Global Rural/Urban movement of Labor in 1960-2030)

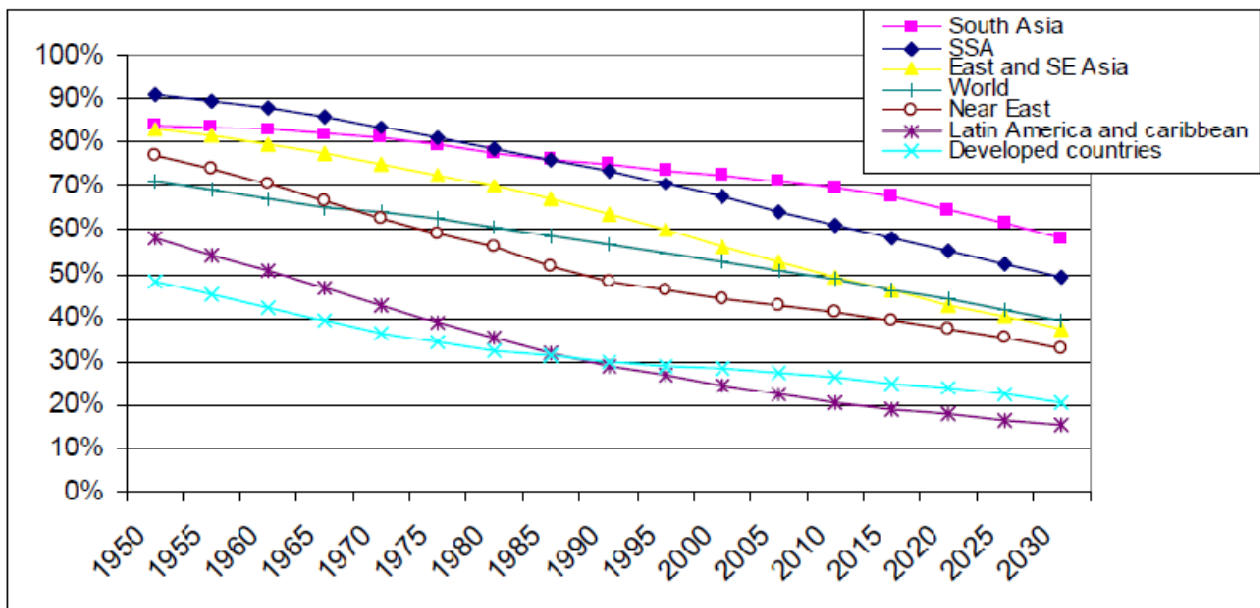


Figure 1 illustrates how the share of the population in the worlds regions living in urban areas has declined over the past 50 years. The shift occurs as rising productivity in agriculture and the creation of urban jobs in new industry draws people from the country side to the cities during structural transformation.

Source: Meijerink, G. & P. Roza 2007: 3

Appendix 4: Level of Industrialization and Gross Domestic Product

	Share of Manufacturing in total commodity production		GNP per Capita (2000 USD)	
	%	Ranking	USD	Ranking
Switzerland	72	2	38.140	1
Japan	64	11	35.620	2
Norway	26	40	34.530	3
USA	63	14	34.100	4
Denmark	60	17	32.280	5
Sweden	66	9	27.140	6
Austria	60	16	25.220	7
Finland	66	8	25.130	8
Germany	72	3	25.120	9
Netherlands	58	18	24.970	10
Belgium	69	4	24.540	11
UK	60	15	24.430	12
France	65	10	24.090	13
Canada	56	20	21.130	14
Australia	45	25	20.240	15
Italy	66	7	20.160	16
Taiwan	77	1	14.188	17
South Korea	66	6	8.910	18
Argentina	55	22	7.460	19
Mexico	63	12	5.070	20
Chile	36	32	4.590	21
Venezuela	35	34	4.310	22
Brazil	67	5	3.580	23
Malaysia	58	19	3.380	24
Turkey	36	30	3.100	25
South Africa	55	21	3.020	26
Peru	41	26	2.080	27
Colombia	31	36	2.020	28
Thailand	63	13	2.000	29
Egypt	38	29	1.490	30
Nigeria	38	28	1.180	31
Philippines	48	24	1.040	32
Sri Lanka	36	33	850	33
China	52	23	840	34
Cote d'Ivoire	36	31	600	35
Indonesia	41	27	570	36
India	31	38	450	37
Pakistan	31	37	440	38
Bangladesh	30	39	370	39
Kenya	34	35	350	40
Ghana	15	42	340	41
Zambia	25	41	300	42
Tanzania	12	43	270	43
Morocco	5	45	260	44
Congo, DR	6	44	100	45

(Source Szirmai 2005: 264)

Appendix 5: Crop Production in Tanzania according to type of Crop (2003)

Crop types according to share of cultivated area

Crop Type	Area Planted (ha)	% of Total
Cereals	4,798,071	61
Roots and Tubers	1,071,089	14
Pulses	942,053	12
Oil Seeds	534,710	7
Cash Crops	398,456	5
Fruit and vegetables	74,259	1
Total	7,818,638	100

Source: Tanzania Agriculture Sample Census 2003 (Vol. II Crop Sector)

Production trends of Main Food Crops in Tanzania 2006-2009

Crop	2007	2008	2009	% change 2008/09
Maize	3,302	3,555	3,324.2	-6.5
Rice	872	875	885.61	1.2
Wheat flour	83	92	93.69	1.8
Millet/sorghum	1,165	1,064	203.58	-80.9
Cassava	1,733	1,797	1,758.79	-2.1
Beans/	1,156	1,125	1,183.88	5.2
Banana	1,027	982	990.54	0.9
Sweet Potato	1,322	1,379	1,381.12	0.2

Source: Ministry of Agriculture and Cooperatives.

Production trends of Main Cash Crops in Tanzania 2006-2009

Crop	2006	2007	2008	2009	Changes (%) 2008/09
Cotton	130,565	199,954	200,662	267,004	33.06
Tobacco	50,617	50,784	55,356	60,900	10.02
Sugar	290,863	279,494	276,605	279,850	1.17
Tea	31,348	34,763	34,770	33,160	-4.63
Pyrethrum	2,046	1,000	1,500	3,320	121.3
Coffee	45,534	33,708	58,052	40,000	-31.1
Sisal	30,847	33,039	33,000	26,363	-20.11
Cashewnuts	88,213	92,573	99,107	74,169	-25.16

Source: Ministry of Agriculture and Cooperatives.

Appendix 6: Economic Multipliers Tanzania

Rank	Sectors	Total	Direct	Indirect	Induced
1	Processing of meat and dairy products	3.11	1.00	0.89	1.22
2	Processed food	3.10	1.00	0.88	1.22
3	Grain milling	3.09	1.00	0.89	1.20
4	Growing of cassava	3.02	1.00	0.88	1.14
5	Growing of fruits and vegetables	3.01	1.00	0.84	1.17
6	Textile and leather products	2.98	1.00	0.86	1.12
7	Fishing and fish farms	2.96	1.00	0.85	1.12
8	Growing of other roots and tubers	2.96	1.00	0.83	1.14
9	Manufacturer of basic and industrial chemicals	2.95	1.00	0.84	1.11
10	Hunting and forestry	2.93	1.00	0.79	1.14
11	Beverage and tobacco products	2.89	1.00	0.80	1.09
12	Growing of beans	2.89	1.00	0.81	1.08
13	Growing of oil seeds	2.86	1.00	0.79	1.07
14	Petroleum refineries	2.78	1.00	0.76	1.03
15	Growing of other crops	2.74	1.00	0.75	0.99
16	Hotels and restaurant	2.66	1.00	0.70	0.97
17	Operation of poultry and livestock	2.53	1.00	0.66	0.87
18	Growing of tea	2.53	1.00	0.65	0.89
19	Growing of maize	2.51	1.00	0.65	0.86
20	Rubber plastic and other manufacturing	2.47	1.00	0.63	0.85
21	Growing of sorghum and millet	2.33	1.00	0.59	0.74
22	Utilities	2.12	1.00	0.48	0.64
23	Growing of wheat	1.91	1.00	0.35	0.56
24	Iron steel and metal products	1.91	1.00	0.39	0.51
25	Growing of paddy	1.83	1.00	0.36	0.48
26	Business and other services	1.82	1.00	0.34	0.48
27	Wholesale and retail trade'	1.80	1.00	0.51	0.29
28	Growing of other cereals	1.70	1.00	0.30	0.41
29	Wood paper printing	1.63	1.00	0.26	0.36
30	Transport and communication	1.62	1.00	0.26	0.37
31	Glass and cement	1.57	1.00	0.25	0.32
32	Growing of sugar cane	1.51	1.00	0.22	0.29
33	Manufacture all equipment	1.24	1.00	0.10	0.14
34	Public administration health and education	1.22	1.00	0.09	0.13
35	Real estate	1.09	1.00	0.04	0.05
36	Growing of coffee	1.07	1.00	0.03	0.04
37	Growing of cotton	1.00	1.00	0.00	0.00
38	Growing of Tobacco	1.00	1.00	0.00	0.00
39	Growing of cashew nuts	1.00	1.00	0.00	0.00
40	Growing of sisal fiber	1.00	1.00	0.00	0.00
41	Mining and quarrying	1.00	1.00	0.00	0.00
42	Manufacturer of fertilizer and pesticides	1.00	1.00	0.00	0.00
43	Construction	1.00	1.00	0.00	0.00

(Source: Kaliba 2008: 5)