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**The Decoupling of Economic Growth,
Agriculture Growth and Poverty
Reduction in Tanzania:
Lessons from China**

Li Xiaoyun, Wang Haimin and Paolo Zacchia

China's Agricultural and Rural Development: Lessons for African Countries

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Abstract: China's remarkable success in economic growth and poverty reduction, triggered by small farmer-based agricultural and rural development, has profoundly impacted the global economy and shaped the development context of other later developers, such as SSA countries. With the growing interest from African countries to learn from China, China's experiences in agricultural and rural development provide valuable lessons for the transformation of African agriculture. This paper highlights three key elements in China's agricultural and rural development experiences relevant to SSA countries. First of all, grain production for food security and the improvement of productivity should be the top priorities of agricultural development. Secondly, the upgrading of the agricultural value chain and the flourishing of the non-farm economy should be triggered by SSA's agricultural renewal. Thirdly, the evidence-based policy-making and learning process should be positioned at the centre of the home-grown development approach in SSA development trajectories.

Keywords: Africa, China, agriculture, poverty reduction, development

Introduction

This paper highlights the key elements of China's agricultural and rural development strategy credited with the unprecedented scale of poverty reduction and overall economic growth over the past decades, and explores how the Chinese experience could inform Africa's strategy to transform its lagging agricultural sector and reduce poverty. It starts by depicting agriculture and rural development performance since the reform, followed by an analysis of China's agriculture-led development strategies and policies, which underpin its inspiring performance. Finally, the paper concludes with a reflection on the lessons of China's experiences for African

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countries in agricultural development and poverty reduction.

The place of agriculture in China's post-1978 economic transformation

China's success in economic development and poverty alleviation since the economic reform and 'going out' policy initiated by Deng Xiaoping at the end of the 1970s has been startling. Robust economic growth averaging about 10 percent per year has been consistently maintained for the past three decades. This phenomenal growth has enabled China to lift millions of people out of poverty and hunger, and to position itself as the second biggest economy in the world (World Bank 2001; Hu et al. 2006; Huang 2007). The share of the population living below US\$1.25 a day decreased impressively from 84 percent in 1981 to 16 percent in 2005 (Chen and Ravallion 2008).

The achievement in agricultural growth, food security and rural development are considered to be one of the contributing factors to the aforementioned economic miracle in China (McMillan et al. 1989; Fan et al. 1999, 2010; World Bank 2008: 6; Huang et al. 2008; China-DAC Study Group [CDSG] 2011b:32). Indeed, China's agricultural growth is estimated to have contributed four times more to poverty reduction compared to growth in both manufacturing and in services (Ravallion and Chen 2007; Ravallion 2009). It mirrors what Johnston and Mellor (1961) argue about the intrinsic albeit intricate link between agriculture and economic development, noting agriculture stimulated growth in non-agricultural sectors, contributed to the reduction of poverty and hunger, and supported overall economic well-being.

It must be said at the outset that prior to Deng Xiaoping's decision to transform the Chinese economy, Chinese agriculture also gained some development, though less significant compared with the performance in post-reform period, to maintain the minimum food security with a mono-agricultural strategy concentrating on food crops, one interrupted by the natural disasters and political struggles of the 1950-70s. The Land Reform Act of P.R.China was passed in 1950 to distribute arable land to all peasants in private ownership. The land reform was also accompanied by a series of policies which saw the establishment of agricultural universities, the development of national and local research institutions and the development of agro-input industries. These initiatives led to a dramatic increase in agricultural production, particularly in food crops (Li et al., 2012). The output of food crops increased from 113.18 million tons to 197.65 million tons during 1949-58 and average output of food crops per capita went from 208kg to 299kg in the same period (State Statistical Bureau [SSB], 2009:161,637).

However, radical shifts and reversals in policies, such as *Great Leap Forward* campaign that forcefully organized farmers into communes and outlawed the private production of

agricultural crops. During that period of time, capital accumulated from agriculture had been mobilised for heavy industry, while critical means of production, such as land and labor, was under state control and private initiatives were not permitted. This misguided policy contributed to the great Chinese famine of 1958-1962, the problem was also compounded by drought and poor weather condition. The *Cultural Revolution* of 1966-76 that followed further deflected national attention from addressing the productivity decline in agriculture and the overall stagnation of the Chinese economy. Investment in research and development, new technology and rural infrastructure had been neglected and degraded during 1957-1978 than that of 1952-1957 (Maddison 2008:77-78). These misadventures, which resulted in a huge misdirection of scarce national resources and energy, were some of the critical factors that influenced Deng Xiaoping to put China in a different path, with the death of Mao Zedong in 1976. However, with the gradual liberalization of economic policy since 1978, the production potential in agriculture was unleashed.

The poor state of African agriculture and the prevalence of food insecurity in many parts of the continent are not exceptional. The so-called emerging countries of today, such as China, India and Brazil, experienced long periods of chronic hunger and food insecurity as a result of the underdevelopment of their agricultural sector. Over the past thirty years, however, these countries were able to introduce radical economic and political reforms that enabled them, not only to transform the agricultural sector, but to build up a dynamic industrial sector and to position themselves to become important players in the global economy.

Based on the experience of these successful emerging countries, the situation in Africa is not hopeless. With the right policies and strong political leadership, African countries can also be able to transform their agricultural sector successfully and to leapfrog into industrialization. Similarly, the African continent as a whole has lagged behind other developing regions after the prolonged stagnation beginning in the 1970s, despite recent notable progress on its economic resume. Poverty and hunger still plague the vast continent, concentrating in the rural areas particularly (World Bank 2008:21). The poverty incidence in SSA remained virtually constant at 50 percent during 1981-2005, with the number of poor even doubling (Chen and Ravallion 2008). Africa's impressive economic growth over the past ten years has not been accompanied with job creation and in the reduction of inequalities, indicating that structural transformation has yet to occur (UNECA and AUC 2012:8-15). Much of the recent growth is accounted by increased receipts from commodities; growth has not been broad-based and inclusive.

Nevertheless, a consensus has been recently reached on the importance of agriculture and rural development as a powerful engine of broad-based growth and poverty reduction in SSA (Christiansen and Demery 2007; Ravallion 2009; Fan et al. 2010; CDSG 2011b:34-61). The

emergence of continental and regional policy-making machinery, alongside national policies, provides institutional architecture for various initiatives to enhance agricultural production and productivity in Africa (CDSG 2011a:40). The revival of the focus on agricultural development in Africa is also believed to be a silver lining to the multiple global crises of food, climate change, and finance (Juma 2011:11-22; Fan et al. 2010; CDSG 2011b:34-61).

Within the context, the pathway of China's agricultural growth and poverty reduction can serve as a reference to the on-going efforts to catalyse the agricultural transformation in SSA countries (Fan et. al. 2010; CDSG 2011b:34-61; Li et al. 2012). This type of China-Africa link for knowledge exchange, particularly in agriculture, among others, is timely in light of the recent strengthening of China and Africa's economic cooperation, which offers new development opportunities to African states and local farmers (Kragelund 2008; Bräutigam and Tang 2009; Bräutigam 2010; Fan et al. 2010); it also, however, brings challenges labelled as neo-colonialist vocabularies such as land grab, resource exploitation, influx of Chinese labours, environmental pollution, hindering democracy and support for tyranny (Zafar 2007; Fisher 2011). For many observers and policy makers, '*it is perhaps in agriculture where China may have a significant impact on the continent's future*' (Chaponniere et al. 2010).

Section I: The performance of agricultural and rural development in China since the reform era

How China managed to bring about structural transformation in its agriculture and the economy in general will be discussed in detail in Section II. In a nutshell, the policies pursued by the Chinese Communist Party since 1978 included: (a) institutional innovations; (b) technological change; (c) market development and trade liberalization in goods; and (d) rapid expansion of the development of rural infrastructure. All in all, the key elements underpinning the institutional and policy shifts are the strong commitment of leading party to agricultural development and sound pro-agriculture institutional architecture, along with gradual and learning-based policy making and implementation principle which expands agriculture-based reform to a broader social and economic transformation, and thus creates synergies of the State, market and farmers.

This section, however, will focus on three key elements of productivity growth and transformation in Chinese agriculture: (a) grain production and food security, (b) diversification of agricultural structure, and (c) the development of a non-farm economy and urbanised society, that were the foundations for the overall economic growth and poverty reduction in China.

[A] Grain production and food security

After the reform, grain production boomed markedly, particularly in the early stages. Now China grows sufficient food to meet the needs of a fifth of the world's population from less than a tenth of the world's arable land and a fourth of its global water resources. Grain output per capita was 288kg in 1952, 319kg in 1978 and over 400kg in 2010² (SSB 2009:17; SSB 2011) (see Figure 1). According to FAO estimates, the number of undernourished people decreased from 304 million in 1979-1981 to 123 million in 2003-2005, and the share of undernourished people decreased from 30 percent to 9 percent of the population in this period.

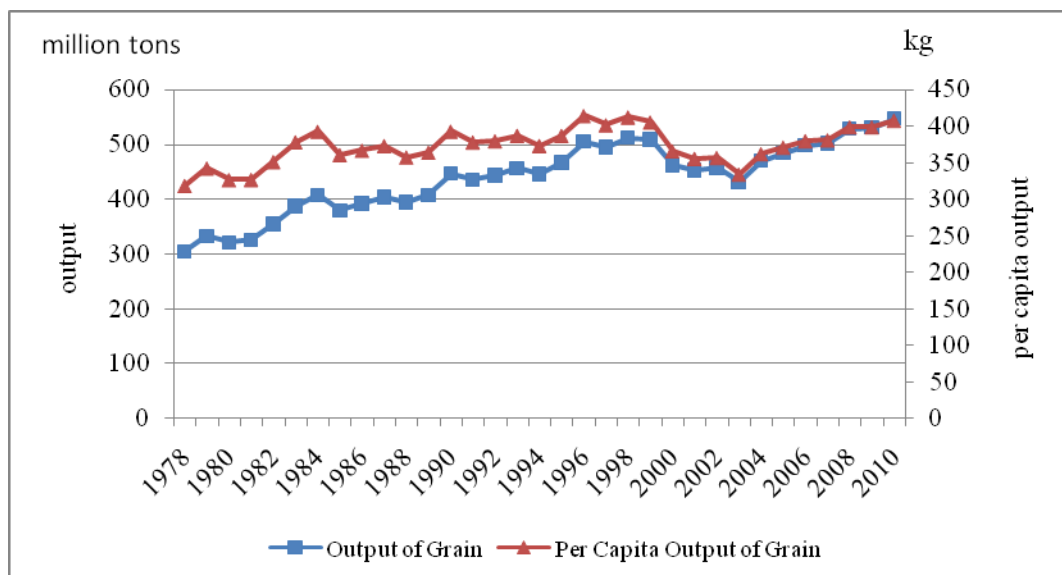


Figure 1: Grain growth in China since 1978

Source: SSB (2009):17; SSB (2011)

Fluctuations can be clearly observed in the growth rates of grain production throughout the post-reform period. The grain production has increased by 4.7 percent per year during 1978-1984, in contrast to 2.8 percent during 1970-1978 (Huang and Rozelle 2009); this prominent growth speed soon slowed down to 1.7 percent and even lower, to 0.03 percent, during 1985-1995 and 1996-2000 respectively (Huang et al. 2008). After the peak harvest in 1996 of 500 million tonnes (SSB 2009:161), a sharp downturn in production gave rise to a substantial supply deficit. Between 2000 and 2003 China suffered a cumulative shortfall of some 245 million tons of grain (Ash 2010). Falling grain growth records have been reversed

² The basis of a per capita requirement of 400kg is a crude benchmark considered sufficient to meet the needs of the Chinese population, as well as the feed and seed requirements of farmers, given the current food consumption patterns.

somewhat since 2004. Thereafter, an inspiring new output was harvested in 2008 with a peak yield of 4950kg per hectare (SSB 2009:161).

Comprehensive drivers, such as institutional change, technological development, price and market liberalization, irrigation system construction, and agro-input industry flourish, contributed to the growth of grain production in China in the post-reform period (Lin 1998; Li et al. 2012). The productivity of both land and labour has witnessed enhancement since the reform (Ash 2010; Maddison 2008:75-77). The rise in yields, outstripping the rate of expansion of sown areas since 1978, provides the firmest foundation for continued output growth, given the increasing land constraints faced by China. With the intensification of land and labour, small farmers' production has also been characterised by the rising multiple cropping index from 117.2 percent in 1996 to 126.1 percent in 2007 (Ash 2010).

The increasing surplus of grain laid a solid base for broad-based economic growth and poverty reduction in meeting the basic food needs of China's population, allowing more possible active transformation to higher value-added farming activities or the off-farm economy. Moreover grain production is changing: the waxing of the sown area of maize, China's main feed grains, and the waning of rice and wheat, are correlated with the rapid expansion of the nation's livestock production (Huang and Rozelle 2009). Additionally, with grain production being fairly enhanced, the price of food decreased, as did the share of food in the total consumption expenditures of both rural and urban populations (Huang et al. 2008), which reduced the cost of the labour for manufacture and services.

In stark contrast to China, SSA countries remain seriously food insecure, with food self-sufficiency less than 50 percent in most African countries. According to FAO (2011:65-66), the highest prevalence of undernourishment is found in SSA, with 30 percent of the total population undernourished in 2005-2007.³ Africa, as a whole, is currently the only continent with net import of food, even though it is comprised of a majority of 'Agricultural Based Countries' (World Bank 2008:1), dependent on agriculture as a major component of their development trajectories with 62.5 percent of rural dwellers and 58.4 percent of employment in agriculture (FAO 2011:90, 111).

The link in SSA between severe hunger and weak grain production, dominated by coarse grains, has continued self-perpetuating, particularly since the 1970s. Over the last 30 years, grain production in SSA has plummeted, with its low productivity even less than half of the world's average level (Li et al. 2010: 1-20). Grain production per capita in 1970 was 176kg, dropping to 146kg in 1979 and continuingly down to less than 125kg in 1983. It is still lower than in

³ It is the latest period with complete information by country.

the 1970s'; for example, it reached 141 kg in 2005 despite its recovery in the new century (ibid.), which was only a half of the China's lowest level in 1952.

The pessimistic performance of grain production in SSA, along with the stagnant agricultural growth, resulted mainly from low productivity, thanks to the unfavourable policy conditions for agricultural production. Agriculture has not been prioritized in country's development strategy. Little investment was made by African governments (i.e. research, technological modernization and rural infrastructure) to stimulate agricultural production. Instead, they penalized the sector through benign and sometimes deliberate neglect. Only four percent of Africa's crop area is irrigated, compared with nearly 50 percent in China (Li et al. 2010:121; SSB 2010: 55). The poorly passable roads translate to formidably high market access costs for remotely located farmers. The low and mismatched investment in the modern innovation system, including agricultural research, extension and education system, along with urban-biased and cash-crop-biased agricultural policies, deteriorated the situation further.

[B] Diversification of agricultural structure: beyond grain

The landscape of China's agricultural production has changed significantly during the last 30 years, shifting from low-value and land-intensive cereal cultivation to higher-value and labour-intensive activities, such as fishing, livestock husbandry, poultry rearing, and fruit and vegetable farming. The dramatic diversification process of the agricultural economy has taken place alongside the growth of grain output and yield, thanks to rapid economic growth, urbanisation and market development (Huang and Bouis 1996; Huang and Rozelle 1998). The trend marked the success of China's agricultural development toward a pattern of farm production that more closely accorded with the principle of comparative advantage (Ash 2010), which would confer more benefits and contribute more to poverty reduction and inclusive development.

Within crop cultivation, cash crops such as vegetables, edible oil, sugar and tobacco have expanded rapidly after the reform, breaking down the prior dominance of the mono-production of grain sector. In the 1970s, vegetables accounted for 2 percent of the total crop area; by 2007, the share had increased six-fold (Huang and Rozelle 2009). Fruit experienced similar rates of expansion, and the area devoted to edible oil grew two-fold (ibid.).

Beyond crop farming, the growth of other sectors in agriculture has even been greater and steadier than that of crop cultivation throughout the post-reform period. The growth rate of animal husbandry reached 9.6 percent during 1978-1984, and 10.0 percent during 1984-1995, surpassing the growth of crop cultivation during the same two periods, which was 7.3 percent and 3.8 percent respectively (Ash 2010). The fisheries also expanded very strongly,

particularly during 1984-1995. The growth rate even jumped to 15.1 percent, although it dropped to 7.2 percent during 1995-2007 (ibid.). Today China produces 70 percent of the world's farmed fish and other aquaculture products (ibid.).

The rapid growth of sectors other than crop farming has stimulated the profound changes in the agricultural production structure since 1978. It is concluded that the share of crop farming in agricultural gross value output has fallen dramatically from 76 percent in 1980 to 53 percent since 2010 (SSB 2011), and the downward trend still continues. Meanwhile, the proportion of both animal husbandry and fishing has increased significantly. The share of animal husbandry was only 18 percent in 1980, but expanded to 30 percent in 2010. The proportion of aquatic products rose even faster and stronger, from 2 percent in 1980 to the peak level of 11 in 2000 (ibid.) (see Figure 2).

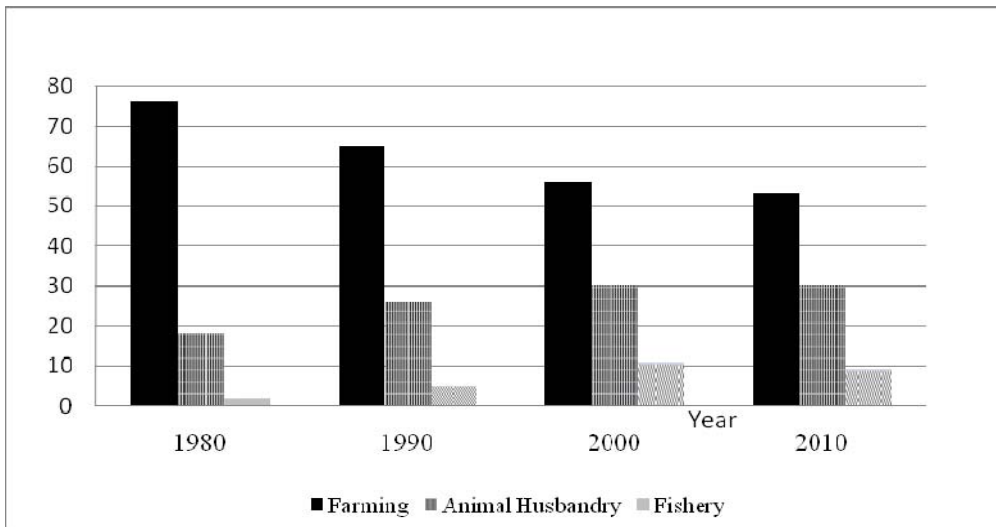


Figure 2 Share of Gross Output Value by Sector in Different Periods (%)

Source: SSB (2011)

The diversification of agricultural production in SSA countries presents different dynamics from that of China's. First of all, based on the legacy of colonialism, most African countries have a cash-crop oriented agriculture, with coffee, cocoa, tea, cotton, tobacco, groundnuts and cashewnuts attracting the most favourable land, water and other inputs, whereas grain production is fairly neglected. This type of structure, persisting until today, is quite vulnerable to the international market; it fails to ensure food security due to over-reliance on grain import, and to enhance the country's industrialisation, especially when the price of cash crops has plummeted with the increasingly severe competition recently emerging from other regions.

Secondly, contrary to the trend of China's consistent upgrading in the value chain, the proportion of cereals against high value agricultural products in SSA countries such as meats, vegetable and fruits has been quite stable since the 1970s. According to FAOSTAT, in 1979-1981 cereal output accounted for 50 percent of total agricultural output, while the meats for 5 percent, and the vegetables and fruits for 45 percent. The share remains almost the same in the 21st century, though 1-2 percent variations are witnessed in some years.

The low yield of agricultural production, whether cereal or high value products, contrasts markedly to China; it is the inadequate land productivity in particular that best expresses the divergent performance of China and Africa in agricultural development (Li et al. 2010:1-20). The insufficient growth and export-oriented structure of agriculture have weakened agriculture's contribution to poverty alleviation in Africa.

[C] Development of a non-farm economy and urbanised society: beyond agriculture.

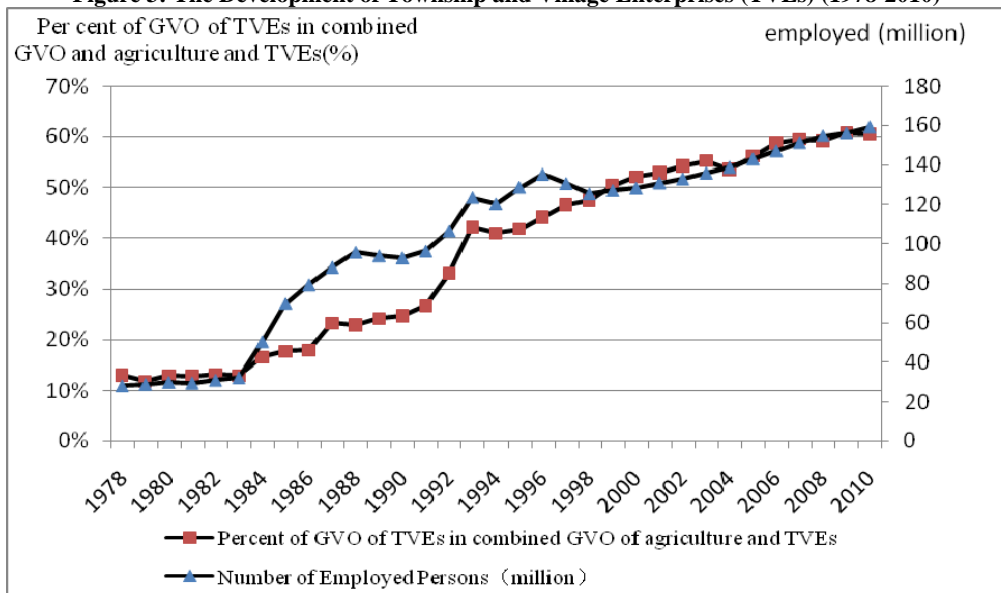
China today is a much less a rural society than it was in 1978. In 1978, as high as 82 percent of the total population was registered as 'rural'; 30 years later, the rural share of the population fell to just 53.4 percent in 2009 (SSB 2010:29). Evidently, the number officially tied to the rural sector in China is still staggeringly large: at the end of 2008 China's rural population totalled 721.35 million, equivalent to 11 percent of the entire world's population (Population Reference Bureau 2008). However, many rural citizens have migrated from the countryside to cities to make a living (Zhang et al. 2004). The urbanisation rate in China has been enhanced to almost 50 percent recently on the basis of 18 percent in 1978. The expanded trend of urbanisation is likely to be maintained into the foreseeable future.

Currently, agriculture can no longer be regarded as a driver of economic growth, which lies in the labour intensive manufacturing and export sectors. Thanks to increased regional and global integration, productivity growth was mainly driven by the economy of scale and specialization in the coastal and urban centres (CDSG 2011b:34-61). Ironically, the importance of agriculture in the overall economy over the past three decades has been gradually declining due to its success in the transformation. The average annual growth rate of agricultural output throughout the post-reform period has reached as high as around 5 percent, yet was surpassed by that of other sectors, i.e., industrial and service sectors, as well as the overall economic growth, by 1-2 times higher, particularly since 1985 (Huang and Rozelle 2009). Thus, the share of agriculture in overall GDP decreased sharply, from 30 percent in 1980 to 10 percent in 2009 (World Bank 2012:398).

This diminishing role of agriculture has been accompanied by a rapid increase of the rural

non-farm economy and the manufacturing sector. The rural economy has meanwhile become much more diversified, with significantly increased output in the township and village enterprises (TVEs). Agricultural GDP grew, on average, by 12.1 percent annually during 1978-2007, while the gross output value (GVO) of TVEs rose by 24 percent per year in the same time. In 2010, TVEs accounted for 61 percent of the combined GVO of agriculture and TVEs, compared with only 13 percent in 1978 (SSB 2009:49-51, SSB 2011) (see Figure 3). TVEs have been regarded as one of the major successes of the country's reforming socialist economy (Jefferson 1993; Unger and Chan 1999)..

Figure 3: The Development of Township and Village Enterprises (TVEs) (1978-2010)



Source: SSB (2009): 49, 51; SSB (2011); GVO of TVEs in 2010 is from http://www.moa.gov.cn/fwllm/jjps/201102/t20110201_1815659.htm; GVO of agriculture is from <http://219.235.129.58/indicatorYearQuery.do>

The employment changes in different sectors indicate the same trends of agricultural contraction and non-farm expansion. Agricultural sector employment accounted for 81 percent in 1970, while the share dropped to less than 50 percent in 2000s owing to the fast growing industrial and service sectors. Meanwhile, employment in TVEs increased from 28 million in 1978 to 159 million in 2010 (SSB 2011) (see Figure 3). 150 million migrant labourers were engaged in non-farm activities by 1995, with the number increasing to over 200 million by 2011. Accordingly, at the household level, farmers' incomes have become more dependent on non-farm sources, with their proportion rising from 18 percent in 1985 to around 41 percent in 2010 (SSB 2011).

China's experience is in sharp contrast to African countries where the link between agricultural

development, overall economic growth, and poverty reduction has been regrettably missing. The contribution of agriculture to industrialisation has been quite limited, except for a small proportion of the agricultural sector that produces cash crop to generate the foreign exchange needed by governments. The share of GDP from value added agriculture has kept quite stable for a long time, at around 25 percent since 1980, and had a mild increase to 30 percent in 2009 (World Bank 2012:399).

At the micro level, non-farm activities have deeply penetrated the farmers' livelihood strategies, which can be traced back to colonial times. Seasonal or long-term migrating work or self-employed vending activities assisted farmers to alleviate the high levels of material uncertainty in export crop production. Secondly, while China experienced 'urbanization with development' as a result of simultaneously pursuing a successful agrarian transformation along with industrialization, rapid urbanization in Africa has not been accompanied by a similar outcome. The African experience is one of 'urbanization without development'—an expression of rural exodus from the dreary of subsistence farming (Bryceson 2002) and poor system of property relations that work against the interest of small farmers (Havenvick 2007).

To sum up, in stark contrast to the pessimistic performance of agriculture in SSA countries, China's efforts to shift towards a more urbanised society and a higher value-added economy are bearing fruit now, although meanwhile it strongly holds on to the most fundamental function of agriculture, namely, to generate an increasing surplus of food despite land constraints. The modernisation process in China, triggered by agricultural development, has gradually transferred and moved forward beyond agriculture. However, in 2011 agriculture still accounted for over 40 percent of the workforce, and it still plays an important role in providing livelihoods for the majority of the population. This is especially the case in the poverty-stricken central and western regions of the country, where the extent and scale of urbanisation and economic modernisation have been less marked, and a much higher proportion of farmers is reliant on low-return crop cultivation, above all, on grain farming (Ash 2010). Therefore, the current government's preoccupation with 'farmers, agriculture and the rural development' (*san nong*) is not the paradox it may seem with the juxtaposition of national agricultural contraction and its dominance in poor regions.

Section II: China's broad-based agricultural development strategies

Smallholder agriculture drove China's agricultural revolution, which provided the basis for China's dramatic economic transformation and poverty reduction in the last 30 years. Various factors have been attributed as the secrets of this success, including institutional innovations, particularly the Household Responsibility System [HRS] in the early reform years (McMillan et al. 1989; Fan 1991; Lin 1992); technological change (Huang and Rozelle 1996; Fan and

Pardey 1997; Jin et al. 2002); infrastructure, in particular irrigation (Wang 2000); as well as market development and trade liberalisation (Park et al. 2002; de Brauw et al. 2004). This section, however, tries to broadly capture the comprehensive picture of the ‘developmental state’ in China by paying particular attention to the various roles of the government, market and small farmers, and their interaction in shaping China’s agricultural development trajectory.

[1] ‘Agriculture is the foundation of the economy’: strong political commitment and sound institutional architecture

(a) Strong political commitment

Agricultural development has always been given the highest political priority and strong public leadership in China, a vast country with a huge population but increasing resource constraints. Food shortage was at the root of many of the dynastic changes that have marked its history and the famine during 1959-61 begot social turbulence. Hence, agriculture, and food security in particular are deemed to construct the basis for social harmony and political stability. The rationale for China’s concept of food security, with the principle of ‘basic’⁴ food self-sufficiency, is best illustrated in an old Chinese adage, i.e., ‘*With food in our hands, our hearts can be at peace*’.

The political commitment to agricultural development, alongside the slogan ‘*agriculture is the foundation of the economy*’, which was coined in the Maoist era, has been passed down to today. Jiang Zemin reiterated the same theme in 1993 by emphasising, ‘...*carry out the policy of taking agriculture as the foundation of the economy, and we must give agriculture top priority in our economic work*’. The current fourth generation of leaders are also at pains to highlight the two major challenges ahead, i.e., to achieve adequate farm output and to improve farmers’ income. A new strategy to ‘*build a new socialist countryside*’ was therefore proclaimed in the new era⁵. A trinity of issues – agriculture, farmers and rural development (*san nong*) – has been in place to better position the development of the agricultural sector within a broader-based social and economic rural development context.

(b) Sound institutional framework for driving the reform agenda

A delicate public institutional architecture was also established to ensure the strong political commitment to agricultural development was translated to effective pro-poor agricultural policy-making and implementation. The prioritisation of the agricultural development agenda

⁴ In Chinese parlance, ‘basic’ means the provision of at least 95 percent of China’s basic food (i.e. grain) needs from domestic sources.

⁵ This point was also illustrated by Ash (2010).

in the five-year National Development Plans is one part of the architecture, which guarantees the fiscal funding and public investment channelled to agriculture (Tang et al. 2011). Sector-wide development planning, such as technological long-term strategic development planning, also consists of agricultural components, orienting the priority, goals and key tasks of agricultural technological development.

The party and administrative organisation system dedicated to agricultural policy consultation, making, funding, implementation, monitoring and adjustment is another impressive part of the institutional architecture. Within the Chinese Communist Party's Central Committee (CCPCC), the Leading Group Office for Rural Work (LGORW) makes all key agricultural strategies and policies. It also acts as the coordination body, integrating different sector policies and guiding resource allocations (Li et al. 2012). For example, by 2012, 11 *Number One Documents* were developed by LGORW, with various focuses such as HRS, market and price, infrastructure and extension. Parallel to the party's agricultural policy development process, the government's agricultural institutions, spanning various ministries, have also developed throughout all levels, which is detailed below.

(c) Evidence-based policymaking: the institutional arrangement

One key element of China's evidence-based policy-making is the advisory role played by various party and government research bodies, such as the Policy Research Department of the Chinese Communist Party's Central Committee, the Research Department of the State Council, plus the research institutes pertaining to the State Council, i.e., the Development Research Centre of the State Council, as well as the Agricultural Policy Research Centre of the Ministry of Agriculture (Ravallion 2009; Li et al. 2012). These are further supported by research institutes outside the party and government, e.g., research resources based at universities. The policy development and advisory networks are fully financed by the government and staffed by well-trained professionals to provide timely recommendations, which is highlighted as the scientific dimension in the policy-making process. Besides, the democratic dimension in the policy development process is normally embodied in a series of consultations, including a wide range of consultations with farmers.

(d) Effective Implementation organs

To implement the agricultural strategies and policies, different ministries related to agriculture also develop their own sector plans for financing and other inputs accordingly, coordinated by the National Development and Reform Commission under the overall orientation of the LGORW. The Ministry of Finance follows the plans to draft budgets, and then all plans and budgets are submitted to the People's Congress for final approval (Li et al. 2012). At the

local level, each province replicates a similar structure at the central level, designing and implementing its own development strategies and policies tailored to local circumstances, yet following the priorities or principles set at the national level. This vertical structure throughout all levels from central to local, as well as the horizontal structure spanning different line agencies constructs China's agricultural policy system, ensuring that strategies and policies are developed and implemented in a consistent, adjustable, and adaptive way (ibid.).

(e) Enhancing human capacity for implementation

Besides institutional building, individual capacity has also been enhanced to improve the performance of the system, which has actually been embedded in China's traditional administrative practices. College or university graduates are promoted to work for the aforementioned system. Overseas training or on-the-job training broadens the staff members' horizons and sharpens their insights in continuous learning. All senior leaders, such as the vice governor of a province or county senior officials, have to attend full-time training for agricultural development at a university or college for at least six months to one year (ibid.). The nationwide training is extended to these policy implementing leaders once a new strategy or policy is initiated nationally. Additionally, different awards and job promotions based on work performance provide incentives for the employee at the grassroots level, promoting close interaction between the frontier workers and farmers. Successful implementation is also reinforced by party discipline requiring most staff who are members of the party to follow policy guidelines (ibid.).

[2] '*Seeking truth from facts*': expanding the agriculture-based reforms through interaction and learning

The famously dubbed process of 'feeling our way across the river', coupled with 'the intellectual approach of seeking truth from facts', indicated no blueprint available for the coming reform in the initial stage. However, after over 30 years of exploration, an expanding reform process has been clearly exhibited, starting from land reform, price liberalisation and market fostering, moving on to off-farm economy booming, and finally to industrial and service development outside agriculture, promoted by a pragmatic approach via continual learning from trial and error. There are roughly four stages of the reform (Fan et al. 2010; CDSG 2011b:34-61), which are outlined below.

(a) Land reform

Firstly, from 1978-1984, the major reform was to dismantle the rural collective system via land reform, moving from collective land management to a household-based system, i.e. HRS.

The reform started spontaneously by small farmers in Fengyang County of Anhui Province in late 1978, seeking to end their food shortage. HRS offered long-term leases to farmers for a period of 15 to 30 years. Farmers were also allowed greater autonomy in their planting decisions, which unleashed farmers' incentives in agricultural production. Consequently, rural income doubled between 1978 and 1984 (Fan et al. 2002), and the HRS was estimated to contribute 60 percent of the growth in the early 1980s (Lin 1992). Nearly half of the total rural poverty reduction happened in this early stage of reform (Lin 1992; Ravallion and Chen 2007).

(b) Domestic Market Reform

Secondly, from 1985-1993, the policy shifted to domestic market reform and structural adjustment. Farmers' role as the main body of the market economy was further enhanced from the fertilizer market liberalisation, and when the procurement system transformation from a mandatory-quota system to a contract system was carried out. Prior to the reform, the 'dual price' system was pervasive in the economy, and farmers were guided by both market and planning price signals, with the latter higher than the former. Thus, increasing procurement prices for some goods – although these measures were not originally intended to foster the emergence of markets – greatly benefited the farmers. During the 1980s, quota restrictions were loosened, and government contract purchasing encouraged the formation of nascent markets. During the process, the government played a crucial role in building a future market for food grains (CDSG 2011:36-41).

(c) Linking agriculture to rural industrialization

Meanwhile, additional reforms created incentives for local officials, banks and businesses to encourage the growth of rural industries; these were characterised by the emergence of TVEs to absorb the surplus of labour and capital released by the former agricultural reforms and open the door for China's social and economic transformation. Additional liberalisation of prices and quotas favoured entrepreneurial farmers, who began to open small businesses using surplus earnings. What merits highlighting is the dynamism of TVEs and other non-state enterprises to exert pressure on the State-owned Enterprises (SOEs) and trigger the restructuring of the SOEs in the competition.

(d) Openness to international market

Thirdly, from 1994-2001, the reform focused on gradual external openness prior to China's accession to the WTO, and further government liberalisation, particularly in grain procurement after the boost in agriculture and non-farm rural economy development. The monopoly of

agricultural trade by state agencies ended, and agricultural trade was opened up to non-state enterprises. The reform resulted in increased market access. The domestic market has been more integrated and by 2001 its linkage to the international market was also being promoted. The creation of special economic zones and the liberalisation of foreign direct investment (FDI) were introduced in this period.

(e) Grain market reform

Fourthly, from 2002-present, confronted with stagnating labour productivity in agriculture and a widening rural-urban divide, the reform shifted its focus on raising farmers' income in a broad context of building a harmonious society nationally and internationally. The grain market reforms were accelerated and the procurement system was abolished in 2004, making the grain market fully liberalised. Social policies supporting education, medical services, and pension support in rural areas have been put in place since 2002. A new pro-farm package of policies, including the extension of direct subsidies to grain farmers and strengthening measures to control arable land use and reduce illegal land requisitions, was initiated in 2004. In 2006 the Rural Land Contract Law (RLCL) was issued to increase the rights of rural families over their cultivated land. Additionally, in the same year, agricultural taxation was eliminated, marking the end of a 2,600-year tradition of taxing agriculture.

(f) Investment in public goods

Throughout the entire reform era, the government has played a catalytic role in intensification of its investment in public goods for agricultural and rural development, later complemented by co-financing from all levels of government, public service units and farmers themselves (CDSG 2011:36-41). The farmers' contribution in the forms of voluntary labour and cash, mobilised by the government even though the collective production system shifted to HRS, has been quite impressive (Yang 2010). Agricultural research, development, and extension services have also been key areas attracting significant funding support from the government over the last 30 years. Investment has been particularly intensified since China's WTO accession, making its rise in research higher than any other country in the world since 2000.

[3] *'Development is a process of learning'*: creating synergies of the state, market and farmers

China's sweeping reform process since the end of the 1970s has been largely an incremental learning process. Firstly, agricultural strategy and policy, despite the reform, have been consistent with previous policy in that agriculture is the base for the national economy and the grain crop is the central component of agriculture for a secure food supply. Secondly, market

reform for agricultural products has never been radical, but based on the experiences and lessons gained from policy experiments at specific sites in various regions to bring a small scale of success to a larger scale of application. For example, as the grain market moved towards a free market system it took more than 20 years to put all the regulations and infrastructure in place. Thirdly, agricultural development has been well integrated with non-agricultural sector development through the encouragement of agricultural diversification and rural enterprise development (Li et al. 2012).

The reform process, to an extent, is a fostering process of both the market and micro economic actors such as farmers and enterprises, as well as facilitating the interaction among state, market and farmers in a collective learning process. The farmers have been facilitated, with more freedom, to respond delicately to market signals, with government control and command retreating gradually and breaking down institutions such as the land collectively managed in the commune system, the price and quota controlled by the SOEs monopoly, and the rural labours and capital restricted within the agricultural sector under the residential registration policy (*hu kou*). With the claiming rights of farmers to the production surplus greatly advanced, farmers developed their capabilities to participate in China's renascent markets, which in return promoted the market's incremental maturation, albeit faltering sometimes, during the mutual and networking interaction process.

The reform in China showed that the free market can serve the interests of poor people. However, China's success was not just a matter of letting markets do their work, but accompanied the facilitation of strong state institutions to implement supportive policies and public investment (Ravallion 2009). Both the state and the market spurred on China's agricultural revolution, triggered by the increasing incentives for family farming under public investment and policies. Overall, the state led, market-driven and farmer-based model has been the central element in the success of China's agricultural and rural development (Li et al. 2012).

Conclusions: The lessons for Africa countries in agricultural development

China's remarkable success in economic growth and poverty reduction, triggered by small farmer-based agricultural and rural development, has profoundly impacted the global economy and shaped the development context of other later developers, such as SSA countries. Meanwhile, China is now playing a critical role in African development, particularly in agricultural cooperation and poverty reduction as an economic and development partner (CDSG 2011:36-41). With the growing interest from African countries to learn from China, China's experiences in agricultural and rural development provide valuable lessons for the transformation of African agriculture, despite the vast diversity in terms of their natural

endowments, and their demographic, socio-economic, ethnic, political, historical and cultural conditions. This section will highlight three key elements in China's agricultural and rural development experiences relevant to SSA countries.

First of all, **grain production for food security** and **the improvement of productivity** should be the top priorities of agricultural development in SSA to break the deadlock of low-equilibrium development and poverty reduction. China's strategic stress on the importance of a high grain self-sufficiency target consistently provides the necessary foundation for relatively stable and self-oriented development approaches, besides being directly conducive to poverty alleviation. Whereas in SSA countries, agricultural sectors have been mainly deemed as a key source of foreign exchange earnings, and therefore the production of export-oriented cash crops has been overwhelmingly enhanced, leaving grain self-sufficiency at a very low level; this ultimately leads to high dependence on imports from the international grain market, or receiving foreign food aid to meet the grain demand. The dependence, on the one hand, of such strategic resources as grain on the international market or aid, with the limited and vulnerable foreign exchange earnings reliant on cash crops on the other hand, naturally locks SSA countries into an external-oriented trajectory. To solve the puzzle, grain production to ensure food self-sufficiency should be in mind, just as the president of Malawi echoed: *'Enough is enough. I am not going to go on my knees to beg for food. Let us grow the food ourselves'* (Juma 2011:3).

The difference in productivity, particularly land productivity, best expresses the divergent performance of China and Africa in agricultural development. China has established a high-investment and high-yield agricultural production system, while Africa is still trapped in a low-investment and low-yield cycle (Li et al. 2010:236). Productivity matters both to enhance grain production to ensure food security, as well as to increase the cash-crop yield to advance international competitiveness. Clearly, there is considerable potential for agricultural development in SSA in terms of its abundance of land, water and other natural resources, as well as its scope of technological, policy and input improvement. The extension type of agricultural development in the last three decades should be transferred to intensive cultivation, combining traditional practices with modern technologies, contributing to employment generation and reducing the green-house gas emissions resulting from deforestation in the land expansion.

Secondly, **the upgrading of the agricultural value chain** and **the flourishing of the non-farm economy** should be triggered by SSA's agricultural renewal. The stark contrast between China and SSA's economic performance and poverty reduction indicates the importance of agricultural flourishing in a broad-based development process, particularly when the vast bulk of the poor still remains in rural areas. However, it becomes more evident that

once basic grain output and food security have been achieved, the surplus of labour, land and capital will be released to naturally spur the agricultural structure adjustment and non-farm economy generation, which in return ultimately reinforce the upgrading of agriculture in the value chain and thus boost farmers' incomes.

In Africa, despite the existence of some high-yielding and export-oriented modern agricultural enterprises, the continent as a whole, dominated by countless small farmers, has been trapped in low value-added activities for self-subsistence. Although both the agricultural diversification and non-farm activities in SSA countries have been developed since colonial independence, the dynamics of the adjustment for an upward trend have not yet been witnessed. The structure has been persistently stable, and the incentives for fundamental change have not yet been invigorating. For many farmers, the scramble in Africa and deagrarianisation is more an imperative than an option. China's pro-poor and pro-market policies should be taken into account in triggering the upgrading process.

Thirdly, **the evidence-based policy-making and learning process** should be positioned at the centre of **the home-grown development approach** in SSA development trajectories. Despite negative effects such as rural-urban dualism, wealth disparity, and resource degradation, it is fair to proclaim that the Chinese government has adopted a consistent series of strategies, policies and measures, characterised as pragmatic and '*learning from trial and error*', to leverage market forces and farmers' engagement to advance agricultural development and overall growth. It proves that the increasing output will stimulate their dramatic response to newly unleashed market incentives once the countless small farmers are facilitated by the state as the initial economic agents of change. The synergies among the state, market and small farmers have been soundly advanced.

However, in SSA countries, the agricultural development strategies and policies have been either externally or regionally (Africa) initiated, with the same being poorly implemented at the country level. Agricultural policies have barely reached dispersed small farmers to support their capacities to improve productivity, and it is difficult to stimulate their incentives to respond to market opportunities for agricultural enhancement. In strong contrast to the sound administrative hierarchy and policy system in China, which is historically inherited and deeply entrenched, SSA governments' capacity to reform and determine strategy, and then adjust agricultural policies through critical feedback loops, has been for the most part missing (Li et al. 2010:45-82). It is time to strengthen the current system via capacity building as proclaimed in the fostering of the 'developmental state' in SSA countries, rather than dismantle it under the 'good governance' aid criteria, only deeming it as a major institutional constraint blocking development.

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The Decoupling of Economic Growth, Agriculture Growth and Poverty Reduction in Tanzania: Lessons from China⁶

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Abstract: Between 1998 and 2008, Tanzania almost doubled its annual GDP growth while also achieving a higher agricultural growth rate; however, the national poverty headcount fell by just 2.1% during the same period. It is apparent that the high economic growth and even greater agricultural growth witnessed in Tanzania has hardly affected poverty. In contrast, China has employed an agricultural development-led pro-growth model, which has contributed to significant poverty reduction. This paper concluded that the isolated growth patterns of the economy and the agricultural sector likely contributed to the decoupling of growth and poverty reduction in Tanzania.

Keywords: Tanzania, China, growth, agriculture, poverty reduction

1. Introduction

Despite its poor performance during the 1990s, the annual GDP growth of Tanzania almost doubled over the last decade from 4.1% in 1998 to 7.4% in 2008 (Tanzania Poverty and Human Development Report, 2009). At the same time, the country's agricultural GDP was reported to have grown by 4.4% between 1998 and 2008 (MAFSC, 2008). Tanzania's high economic growth has hardly affected poverty, however, between 2000 and 2007, the national poverty headcount fell by only 2.1% (from 35.7% in 2000/2001 to 33.6% in 2007), with an equally modest decline in rural and urban areas (Hoogeveen, 2009). Over a longer time span, food poverty dropped from 21.6% in 1991/92 to 16.6% in 2007/08 – a reduction of just 5% in 15 years - while basic needs poverty showed a similarly slight decrease (from 38.6% to 33.6%) during the same period (Tanzania Poverty and Human Development Report, 2009). Given high population growth of around 3% per year, these modest reductions in poverty levels in fact represent an increase in the absolute number of Tanzanians living under the poverty line (around one million during 2001-07).

Tanzania's poverty-growth elasticity reached 0.76 during the 2001-07 period, meaning that 1% of growth could only bring about a 0.76% decline in poverty. Not only has the income poverty

⁶ This article is based on the study financed by DFID Trust Fund managed by the World Bank. The study was sponsored by the World Bank Tanzania Office and the International Poverty Reduction Center in China.

and nutritional status of households not improved substantially, but the share of the population with insufficient calorie consumption declined only marginally from 25.0% to 23.5% during 2001-07 (World Bank, 2009). These meagre outcomes raise concerns about why rapid economic growth has not been translated into much greater improvements in poverty reduction. The weak poverty-growth elasticity and inconsistency among growth, poverty and nutrition trends underline the decoupling of growth and poverty reduction (Pauw et al., 2010).

In contrast to the Tanzanian experience, China's rapid economic growth since 1978 has always been closely associated with poverty reduction. The consumption poverty incidence (as measured by the World Bank's US\$ 1.25 PPP) has fallen from about 84% in 1981 to 15.6% in 2005 (Chen et al., 2008), while the annual poverty rate has dropped by about 5.7% over the last few decades. Based on China's national income poverty line, poverty-growth elasticity has remained around 2.7% from the 1980s until the year 2008 (Li, 2010a). Every 1% of economic growth has led to an almost 2.7% decrease in the incidence of poverty in China over the last 30 years, which makes China's growth model uniquely pro-poor. It is therefore useful to understand why China's growth has led to rapid poverty reduction while Tanzania's has not. This article analyzes the possible reasons of the decoupling between growth and poverty reduction in Tanzania with reference to China's pro-poor growth model in order to suggest ways in which the former might be able achieve its goal of becoming a middle-income country by 2025.

2. Growth, poverty reduction and population dynamics in Tanzania and China

This section compares data showed in Figure 1 and Figure 2 with data from China for the period 1978-84 and data from Tanzania for 1998-2008, coinciding with the most significant phases of economic growth in these countries' recent histories. Tanzania's annual GDP growth almost doubled during this period (from 4.1% in 1998 to 7.4% in 2008), with an annual average of around 7%, while agriculture GDP growth increased at an average rate of 4.4%⁷ (Figure 1). Nevertheless, with 2.9% population growth during the same period, Tanzania only managed about 4.1% net per capita growth and 1.5% net per capita agricultural growth.

⁷ Agricultural GDP data for Tanzania are not particularly accurate. They are especially weak at accounting for the impact of droughts, which became more frequent from 2004 onwards. As a result, the average growth rate of agriculture may be somewhat lower than the reported 4.4% (IFPRI/World Bank, 2000).

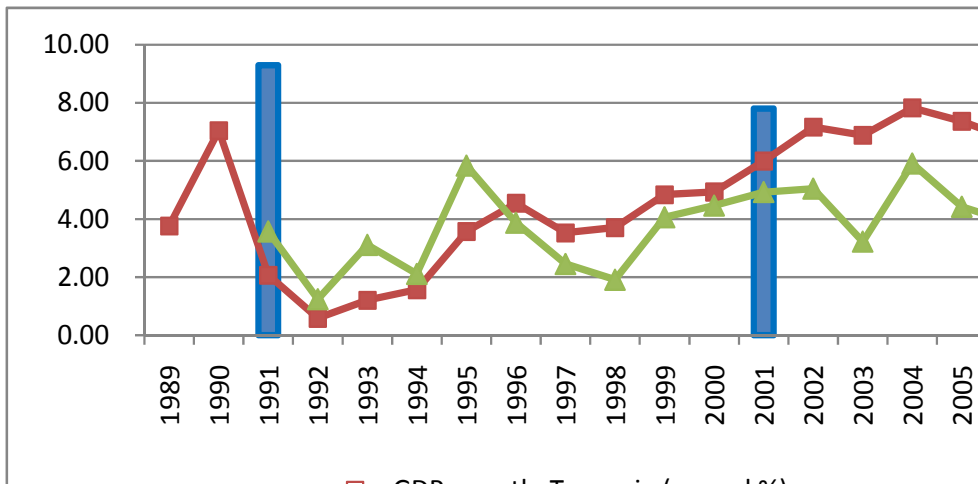


Figure 1 Annual GDP growth rate, annual agricultural growth rate and poverty headcount ratio at national poverty line, Tanzania (mainland)

China's GDP growth per annum increased from 11.7% in 1978 to 13.5% in 1984, while agriculture grew from 4.1% in 1978 to 12.9% in 1984 at an average rate of 8% (Huang, 2008). The rural poverty incidence, measured according to China's national poverty line, declined from 30.7% in 1978 to 15.1% in 1984, representing a reduction of almost 50% in rural poverty, while farmer income increased annually by 16.5% (Huang, 2008). The poverty-agricultural sector growth elasticity in China was 2.7% after the 1980s and remained at 1.5% from 2000 to 2008 (Li, 2010b), which is much higher than the 0.75% recorded in Tanzania for the period 2001-07.

Many factors explain these different development outcomes. Population growth is certainly the part of the story; with an increase of just 1% at the time, China created much higher net agriculture growth (Figure 2) than Tanzania (7% and 1.5% respectively). Assuming that Tanzania can maintain its current 7% economic growth and reaches its target of 5% agricultural growth, with the current rate of population increase Tanzania would only achieve a 2.1% per capita agricultural growth rate, which is much lower than the 7% growth recorded in China. Indeed, Tanzania's higher agricultural labour growth rate of 3.8% suggests that the country needs both much higher economic and agricultural growth in order to offset rapid population growth and produce a surplus to stimulate effective growth.

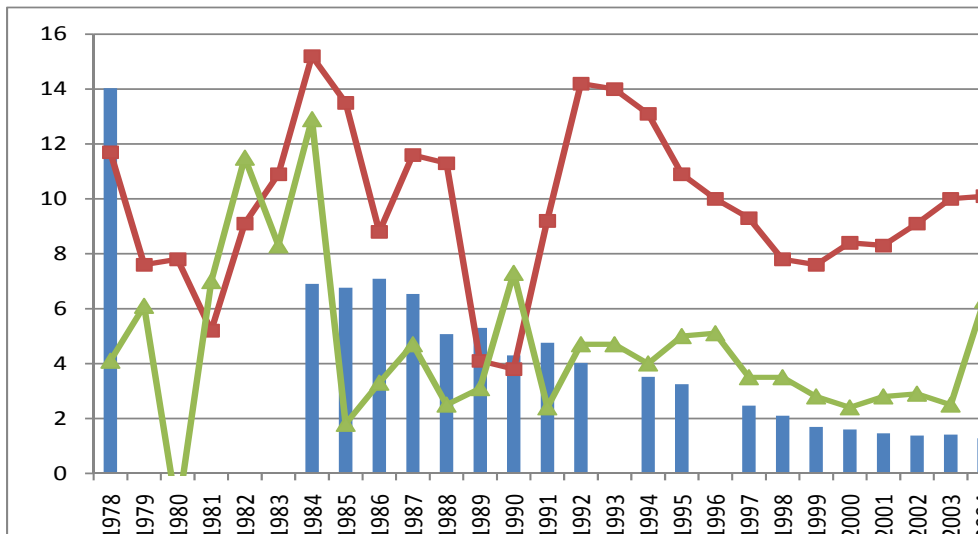


Figure 2 Annual GDP growth rate, annual agricultural growth rate and poverty headcount ratio at national absolute poverty line in China

Source: NBS, China.

Note: the poverty line was readjusted in 2008 from 785 CNY to 1196 CNY. No official data are available for the years 1979-83 and 1993-96.

3. The importance of economic structure and growth patterns for poverty reduction

In addition to the effects of population growth, the different growth patterns followed by China and Tanzania largely explain the relationships between growth and poverty in these two countries. Although poverty could theoretically be reduced through either pro-poor growth or the distribution of benefits from overall growth, growth is clearly more effective for poverty reduction when it is pro-poor. For the latter to occur, the sector that employs the majority of the poor should make a significant contribution to growth. China's remarkable poverty reduction was accompanied by high economic and agricultural growth, particularly at the per capita level. Employing the national poverty standard, the incidence of rural poverty dropped from 30.7% in 1978 to 15.1% in 1984 and to just 2.8% in 2010. About 50% of the rural poor were out of poverty during 1978-84. This period experienced the highest economic and agricultural growth and the most rapid poverty reduction ever witnessed in China. The agricultural sector contributed significantly to the GDP growth rate accounting for 35% during this time.

Although industry in China grew rapidly and contributed to a large percentage of the entire economic growth rate, a substantial part of the industrial growth rate originated from agriculture. Agriculture has provided labour force and raw materials for agriculture-based rural enterprises that indirectly contributed to industrial growth. The contribution of total production

value from rural enterprises to total industrial production value expanded from less than 9.1% in 1979 to 20% in 1985, and farmer net income increased 132% during these six years (Huang, 2008). This broad-based growth pattern confirms that countries where the rural population is dominant, such as China and Tanzania, must focus on effective agricultural growth and whole economic transformation to reduce poverty. This has also been the case for countries such as Vietnam and, to some extent, Indonesia (OECD, 2010).

In the period of analysis, Tanzania experienced a high average economic growth of 7%, leaping from 4.1% in 1998 to 7.4% in 2008, along with incipient structural change that was accompanied by only a small change in poverty (MFEA, 2009). The agricultural growth rate, however, averaged just 4.4% and contributed only 16% of the total economic growth rate during 2001-08 (Table 1), which was much lower than the 35% contribution that China's agricultural growth rate made during its period of highest economic growth.

Table 1 Average growth rate and growth contribution by main economic sectors, Tanzania 2001-2008

Economic Activity 2001 prices	Growth rate 2001-08	Contribution to total growth 2001-08
Agriculture, Hunting and Forestry	4.4%	16.0%
Crops	4.8%	13.1%
Industry and Construction	9.7%	26.2%
Mining and quarrying	13.5%	4.0%
Manufacturing	8.9%	10.9%
Construction	11.2%	9.1%
Services	8.0%	51.4%
Trade and repairs	8.5%	16.0%
Hotels and restaurants	4.6%	1.6%
Transport	6.4%	4.6%
Communications	17.4%	4.1%
Financial intermediation	10.5%	2.5%
Public administration	9.1%	9.4%
Gross Domestic Product at 2001 market prices	7.2%	100.0%

Source: Government of Tanzania and Authors' calculations.

Although overall growth rates after 2001 were much higher than in the 1990s, from 1986 to the end of 1990s agriculture in Tanzania only grew from 3.3% to 4%, which shows a weak relationship between economic growth and agricultural development (World Bank, 2000). Over the past 10 years, the country's agricultural sector, which employs more than 75% of the total labour force, has not grown enough to contribute to the overall growth rate, providing just 35%

of new jobs (World Bank, 2009). Usually, economic structural transformation can lead poverty reduction, for instance in China, the provinces exhibiting slow changes in economic structure usually had a lower poverty reduction rate (World Bank, 2001). Agriculture's share in GDP in Tanzania only declined from about 29% in 1998 to 24% in 2008 (MFEA, 2009), and the decline has not been accompanied by agricultural productivity improvement.

The growth in agriculture in Tanzania is substantially limited by its forward and backward linkages. Lack of agricultural supplies, food processing capacity, transport bottlenecks in both short and long range traffic and other rural services make it difficult for agriculture to grow rapidly, even without the additional challenges posed by population growth. At the same time, the country's economy is dominated by the services sector, which accounts for more than 45% of GDP. Since 2000, the sector has grown at an annual average of 7.6%, which is higher than agricultural growth and close to the level of overall economic growth. With the exception of tourism, however, the services sector has not created significant employment for low-skilled labour. The largest growth in employment outside agriculture from 2001 to 2006 has been in public administration and other services (530,000 jobs), while the sector likely employs low skilled labour such as trade, restaurants and hotels only created 20,000 jobs. Overall, the pattern of growth has not created significant employment opportunities for rural people, either directly in agriculture or indirectly as rural migrants.

The industrial sector's contribution to GDP has grown slowly from 25.2% in 1998 to 28.2% in 2008. Mining has been the most dynamic sub-sector, expanding rapidly at an average annual growth rate of 15% between 2000 and 2007. However, the links between the mining sector and local supply chains that could create employment opportunities have been weak (MFEA, 2009). Manufacturing has experienced very limited growth (from 8.4% in 1998 to 9.4% in 2008), which is insufficient to create a large number of jobs. The construction sector also grew and might have contributed to employment; however, its small scale in comparison with the overall economy has been an obstacle in this regard.

Those sectors with a high growth rate, such as the rapidly growing service sector (7.6% annually), have not contributed to a substantial reduction in poverty levels, because sub-sectors like communications, which are not labour-intensive and employ no low-skilled workers, also failed to generate sufficient employment opportunities for the poor. Even those sectors that provided employment to low-skilled workers, such as tourism and construction, which have been among the most dynamic, have not significantly affected poverty because their share of the overall economy remained relatively small.

Thus, the sectors that exhibited higher growth rates during the recent period of rapid economic growth in Tanzania happened to be those that were unable to generate significant employment

for the rural population. In contrast, the growth of the agricultural sector, which employs a large part of the labour force, was largely offset by increases in population and the number of available rural labour force.

Over the last 10 years, Tanzania has created employment for an average of 630,000 people per year, but employment has been primarily in small informal businesses, which typically have low earnings and productivity (MFEA, 2009). For the urban youth, 45% of new jobs were in unpaid family work (World Bank, 2009). A rapid field study by the authors in Mbeya, Iringa, and Morogoro indicates that significant rural-urban migration has not occurred over the last 10 years (Table 2). The farmers interviewed said that they could earn about TSH 40,000 per month in the city, but there was nothing left to save. The poverty assessment for the country shows that the slight income growth for the rural poor had a large effect on overall poverty in Tanzania. The movement of households out of agriculture has also played a major role in poverty reduction; acceleration of national poverty reduction can be achieved only through an accelerated decline in poverty in rural areas (Hoogeveen et al., 2009).

Table 2 Non-agricultural labour in three villages in Mbeya and Iringa, Tanzania

Location	Total labour force	Non-agricultural labour force	Non-agricultural labour (%)
Mbeya			
Nsongwi Mantangi village	402	35	8.7
Nsongwi Juu village	730	78	10.7
Iringa			
Kiwale village	462	0	0

Source: Field visits, 2010.

It is clear that between 1978 and 1984, China's rapid economic growth was largely based on agriculture and agriculture-related sectors, while national poverty reduction was predicated on poverty reduction in rural areas. In contrast, Tanzania's relatively high economic growth from 1998 to 2008 was obviously disconnected from agricultural growth, and poverty reduction in urban areas such as Dar es Salaam had only a limited effect on national poverty reduction due to the relatively small size of the urban population. This leads one to question whether the efforts made by the Tanzanian Government to reduce poverty during the last decades were on the right track, and whether the plan to develop agriculture as an engine of growth and economic development was effective.

In addition to the factors mentioned above, China and Tanzania began their periods of rapid economic growth with different level of income distributions, which also affected poverty reduction efforts. When Tanzania's economy began to grow rapidly after 2000, its Gini coefficient was already 0.35. This provided Tanzania with much less space for rapid growth

than had been had by China, which had a Gini coefficient of about 0.1 at the end of the 1970s. Positively, however, the inequality in Tanzania remained unchanged over the last seven years, with its Gini coefficient remaining at 0.35 during 2000-07 (MFAE, 2009), which provides a good basis for the country's future growth. This is reflected in the fact that despite the much larger increase in inequality in Dar es Salaam, poor households here gained more income than in other areas where the increase in inequality was more modest (Hoogeveen et al., 2009).

4. Agricultural structure and growth patterns also matter

No country in the world has succeeded in developing an economy with a large agricultural population without first developing its agricultural sector. Although agriculture cannot be relied upon to develop the entire economy and bring about structural transformation, it is nonetheless essential to focus on agricultural development for a time, ideally at the beginning of a country's economic takeoff. To develop the agricultural sector, particularly smallholder-based agriculture like that found in China and Tanzania, growth patterns affecting agricultural development and poverty reduction must firstly be given attention to.

Seventy-four percent of Chinese farmers are engaged in farming and livestock production; food crops have long been the major focus of smallholders, with rearing livestock an important secondary livelihood. Fishing is also a source of income for farmers, while forestry is mainly undertaken by the state. The total value of crop production is much higher than that of livestock, fishing and forestry (Figure 3). Within the agricultural sector, the value of crops and livestock has grown much more than other sub-sectors over the last 30 years.

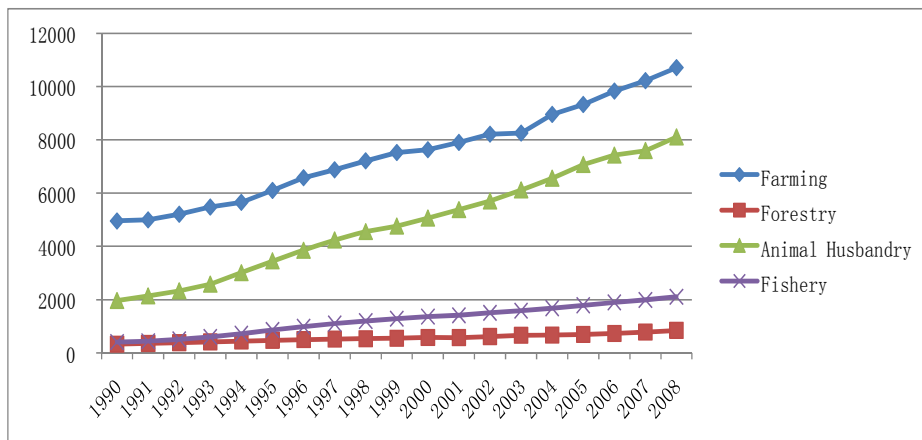


Figure 3 Production value of cropping, forestry, livestock and fishery in China (at constant 1990 price, unit: 100 million CNY)

Note: by definition in national statistics of China, the agricultural sector comprises cropping, forestry, livestock and fishery subsectors.

Source: Calculated based on data from NBS, China.

In Tanzania, farmers mainly engage in crop production and livestock rearing; forestry and fishing are usually managed by large corporations, although the latter is often the primary livelihood for people in coastal and lake areas. Thirty-seven percent of households in Tanzania keep livestock. The value of crop production in Tanzania far exceeds that of livestock, forestry and fishing (Figure 4).

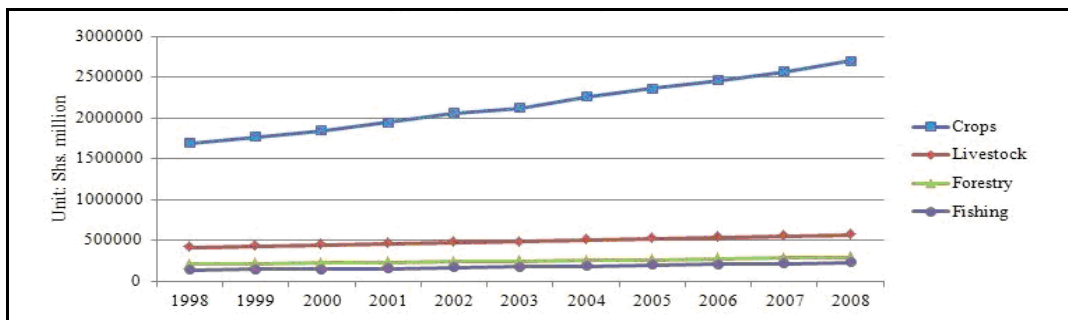


Figure 4 Gross domestic products by types of economic activity in Tanzania (at constant 2001 prices)

Source: NBS, Tanzania.

In the context of crop production, rice and wheat are the most important sub-sectors for Chinese farmers, with rice found mainly in southern parts of the country and wheat grown mostly in the north. Cotton is only grown in northern areas of China, while maize is produced in relative small quantities throughout the country. Large-scale crop production is dominated by rural family farms, as the planting area available on large state farms is limited.

Over the last few decades, particularly after the 1978-84 period, the output of rice, wheat and maize has expanded significantly in China (Figure 5). Among the major food crops, rice grew by 4.5%, wheat 8.2%, maize 2.2%, annually during 1978-84 and both were major drivers of the increase in food crop production in China. Rice production, too, increased significantly, though not to the same degree as wheat. The growth of both wheat and rice has implications for household income because both were grown widely by the rural poor during the 1978-84 period. Cash crop production also increased, with cotton and oil seeds growing at 11.4% and 20.3% respectively; this had a high poverty impact, though this was limited by the crops' narrow geographical distribution. During 1978-84, fruit production grew at 10% with wide distribution across the country, though the benefits were mainly accrued by relatively wealthy farmers (Table 3). During the China's rapid economic growth period, agricultural growth was broad-based but driven by different sub-sectors, which led to differential effect on poverty. Wheat and rice were central in linking the growth of food crop production with poverty reduction.

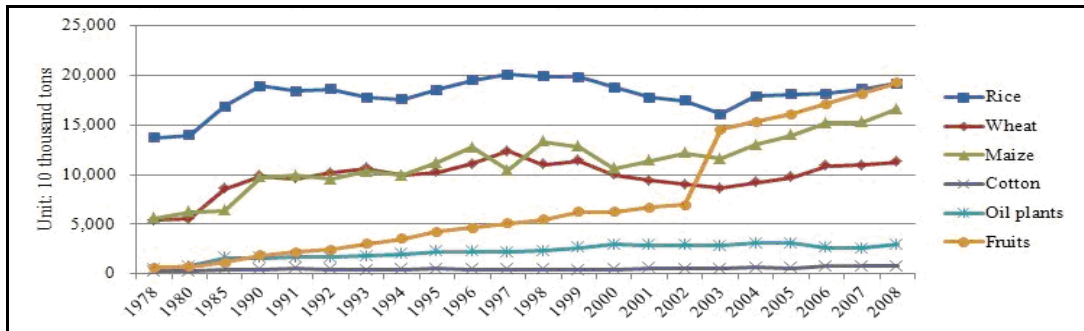


Figure 5 Output of rice, wheat, maize, cotton, oil plants and fruit in China during 1978-2008

Source: NBS, China.

Table 3 Average annual growth rate of main crops in China (%)

Period	Rice	Wheat	Maize	Tubers	Cotton	Oil plants	Fruit
1978-1984	4.5	8.1	2.2	-0.24	11.4	20.3	10.0

Source: Author's calculations, based on NBS, China

Between 1998 and 2008, food crop production in Tanzania increased at an average of around 4% per year. During this period, cassava was the largest contributor to production quantities (32%), followed by maize (18%), potatoes (17%), bananas (16%), paddy (6%) and pulses (5%) (MAFC, 2008). It should be noted that more than half of the total harvested area in Tanzania is allocated to cereals, of which maize is the country's dominant staple food crop (Pauw et al. 2010).

Maize production accounted for 36% of the total food crop planting area and involved over 80% of Tanzanian farmers, whereas wheat was produced almost exclusively by large-scale commercial farms in the Northern Zone. Rice was becoming an important crop for smallholders in the Western and Lake Zones (Pauw et al., 2010), but comprised a smaller percentage of production quantities and planting area. During 1998-2008, the production of all food crops had expanded, but at different rates. The highest growing sub-sectors were potatoes, wheat and pulses, while farming of cassava and maize grew more slowly (Table 4).

Table 4 Production trends: Average annual growth in food crop production in Tanzania (%)

Maize	Potatoes	Wheat	Pulses	Cassava
4.2	11.2	9.9	9.8	1.0

Source: MAFC, 2008

From 1998 to 2008, the main drivers of growth in food crop production were potatoes, wheat and pulses. A similarly high rate of growth was seen for all major cash crops, including cotton (11%), sugar and tobacco (9%) and cashew (7%) (MAFC, 2008). These crops are highly concentrated in specific regions, however; both cotton and tobacco are smallholder crops (but limited in some regions), while sugar is mostly produced by large-scale commercial farmers (Pauw et al., 2010). With this growth pattern, the sub-sectors that include a majority of smallholders have been largely excluded from high growth. Thus, the growth of crop production benefits certain regions or groups at the expense of the others, namely, the smallholders who make up the majority of Tanzania's population.

Above all, during the initial stage of economic growth in China in 1978-84, agricultural growth and particularly the output value of crop production were highly favourable for smallholders. The country's high economic growth rate was accompanied by high growth rates for agriculture, food crop production, particularly wheat, rice along with a high rate of poverty reduction. Tanzania has maintained an economic growth rate of more than 6% since 2000; however, poverty reduction has not exceeded 2% during this period. The economic growth rate has not been accompanied by the necessary growth rate for agriculture, crop production and dominant crops such as maize. Indeed, the sectors that grew rapidly did not result in effective employment increases, and the agricultural sub-sectors that expanded did not benefit the smallholders who comprise the majority of the country's population. Therefore, the country's low poverty-growth elasticity can be regarded primarily as a result of the current structure of agricultural growth, which favours large-scale production of rice, wheat and traditional crops as opposed to crops whose production would benefit the largest number of smallholders, such as maize and cassava (Pauw et al., 2010).

5. Importance of structural changes

Sustained pro-poor growth requires continuous structural transformation. China's rapid poverty reduction has followed three steps of structural changes that provide a powerful engine for continuous poverty reduction over time. First, during 1978-84, China experienced rapid increases in production of food crops, cash crops and livestock. The system of agriculture began to change from one centred on only food crops to one focused on food crops, cash crops and livestock production. The share of crop production value in total agricultural production value dropped from 80% in 1978 to 69% in 1985, while livestock increased from 15% in 1978 to 22% in 1985. Within crop production, cotton, oil seeds, sugar, vegetables and fruit all experienced a rapid increase in planting area and yield. Food crop production increases mainly from productivity increases and not from area expansion. The period 1978-85 experienced the highest growth rate in farmer income in real terms (Table 5 and Figure 6).

Table 5 Changes in agricultural structure in China, 1978-2006
(% of total agriculture production value)

Year	Crops	Forestry	Livestock	Fisheries	Net income increase in farmer income (%)
1978	80	3.4	15	1.6	19
1980	75.6	4.2	18.4	1.7	16
1984	69.2	5.2	22.1	3.5	13.
2006	50.8	3.8	32.2	10.4	7.4

Source: Song (2008: 209)

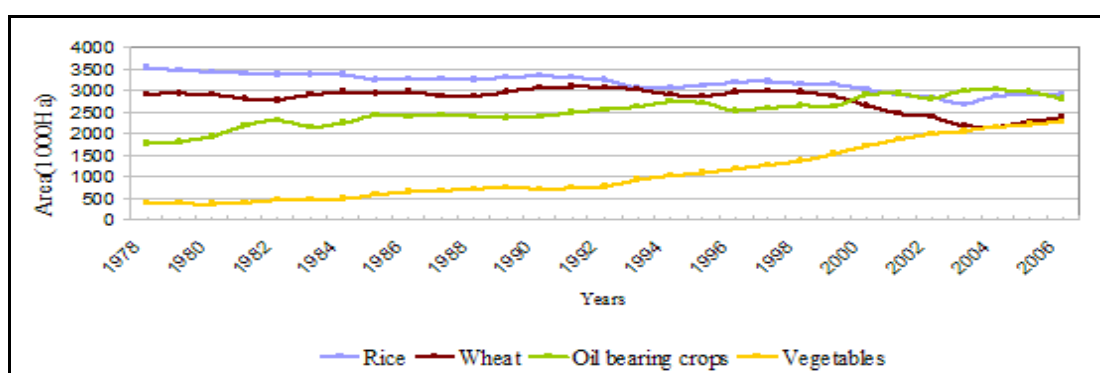


Figure 6 Changes in planting area for rice, wheat, oil-bearing crops and vegetables in China, 1978-2006

Source: Author's calculation, based on FAO, 2009.

Second, from 1984 to 1988, the area available for production of non-food crops continued to expand, and this was accompanied by productivity improvements for major staple crops. Third, after 1984, the entire rural economy began to be transformed. Rural township enterprises became engines for economic growth, attracting 146 million labourers from the surrounding areas, while farmer income from rural enterprises increased from 11 CNY per capita in 1984 (8.2% of farmer income) to 1666 CNY in 2006 (46%). Indeed, in recent years, such enterprises have become the major source of farmer income in rural China (Song, 2008).

Between 1985 and 2008, Tanzanian agriculture did not undergo a significant transformation despite the incipient economic structural changes introduced during the second half of this period. The contribution of crops to total production value has not changed (Table 6); food staples continue to dominate land allocation (increasing in area from about 64% to 68% of total planting area, while their output value share has declined (from about 67% to 64%) (Bingswanger et al., 2008). As a consequence, the income of the majority farmers has not changed (Table 7).

Table 6 Sector share of total agricultural income (%)

Sector	1985-89	2002-06	2004-08
Crops	76.4	70.5	70.9
Livestock	10.6	15.8	15.4
Forestry	7.6	8.0	7.8
Fishing	5.4	5.8	5.9

Source: Bingswanger et al., 2009

Table 7 Farmer perceptions about income changes over the last five years in two villages in the Morogoro Region, Tanzania

Village (farmers)	Unit: % of farmers			
	Decreased	Unchanged	Increased	Much increased
Village 1 (n=25)	23	41	17	19
Village 2 (n=19)	27	44	14	15

Source: field study by the first author (2010).

The changes in China's agricultural and rural economic structure suggest that to reduce poverty in countries with a large population engaged in agriculture requires the deployment of a broad-based development strategy. A structural change within agriculture is a fundamental step in transforming the entire economy so as to overcome the 'growth island' effect and thus promote pro-poor growth.

6. Policy determinants

It is important to try to relate the differences in agricultural development in China and Tanzania to differences in policies and economic reforms in the sector. In a sense, both countries started in similar positions, characterized by: (i) a system that had undergone collectivization of land and state marketing; (ii) a low level of productivity; and (iii) a smallholder structure of agricultural production. Both countries also adopted broadly similar reform strategies, involving: (i) decollectivization of land; (ii) an opening-up to market liberalisation; and (iii) closed international trade for staple goods. Yet there remain important differences between agricultural development in China and Tanzania, reflecting variations in: (i) investment in basic rural infrastructure; (ii) consistency and credibility of marketing reforms; and (iii) domestic capacity to elaborate and implement policies.

China's investment in rural roads provided a strong foundation for agricultural reforms. By early 2000, rural road density in China was around 150m per sq. km. In Tanzania, meanwhile, tertiary roads had an extension of around 56,000km in 2008; around 25% of the network was

not passable by motorized vehicle, implying a density of just 47m per sq. km. A further 35-50% of the network was not passable during the rainy season, while 82% was earth-surfaced, 16% was gravel and only 1.4% was sealed (URT 2008). As a consequence, transportation costs are very high in Tanzania. The World Bank (2009) estimates that transportation costs for maize in the country account for more of 80% of total marketing costs, equivalent to more than 40% of the farm gate price.

Once initiated, marketing reforms in China were staunchly sustained by the leadership, even in the face of internal pressures. As recalled by Deng Xiaoping in one of his 1992 ‘Southern Tour’ speeches:

“In the initial stage of the rural reform, there emerged in Anhui Province the issue of the ‘Fool’s Sunflower Seed’. Many people felt uncomfortable with this man who had made a profit of 1 million CNY. They called for action to be taken against him. I said that no action should be taken, because that would make people think we had changed our policies, and the loss would outweigh the gain. There are many problems like this one, and if we don’t handle them properly, our policies could easily be undermined and overall reform affected. The basic policies for urban and rural reform must be kept stable for a long time to come. ”

In Tanzania, liberalization of agricultural market began in 1986 and came into real effect during the early 1990s. But already in the early part of this century, a set of new laws reinstated widespread power to the State Crops Boards for cash crops. This new legislation drew no distinction between the Board’s regulatory role and their right to enter the market as commercial actors; they set out with a disposition to control almost all aspects of crop development, with the criminalization of unauthorized activities as the ultimate sanction, and determined the composition of the Board so as to give a majority of voting rights to government appointees as opposed to representatives of producers or commercial interests (Cooksey, 2011). According to Cooksey, the unambiguous statist thrust in the three Bills reflected a consensus among the political class by the end of 1990s that market liberalization was no longer a viable policy option.

Finally, China developed its agricultural reform through a national system of design, piloting and scaling-up of reforms, with close central monitoring of implementation by lower tiers of government. This allowed for strong policy ownership, visible demonstration effects, policy learning and adjustments and fast and effective scaling-up. Foreign assistance was relegated to a secondary role, where both foreign policy advice and financial resources were accepted, but in a subsidiary role with respect to the primary national policy process. Policy development in Tanzania has lacked the strong institutional underpinnings found in China and remained

heavily influenced by development partners' paradigms, with only partial ownership of the reforms and little adaptation to local circumstances.

7. Conclusions

Descriptive comparison of the relationship between economic, agricultural growth and poverty reduction in Tanzania and China suggests that the remarkable poverty alleviation witnessed in the latter has been facilitated by the existence of an agriculture-based economic structure with backward and forward links and a pro-poor growth pattern. In Tanzania, on the other hand, the economic structure and growth patterns prevent the poor from benefiting from growth. Experience in both countries suggests that growth should bring significant structural transformation, without which poverty will not be reduced effectively. Sectors within the economy should be connected in order to avoid isolated growth islands, otherwise growth will be substantially limited and employment will not be improved significantly. For rapidly growing sectors to have an impact on poverty, strategy should promote either those sectors that have already employed large numbers of people or those that can attract a large-scale labour force. Finally, generating a growth chain rather than a growth island is essential for linking growth and poverty reduction. To do this, it is necessary to create links within the economic structure to fully utilize local resources and create employment opportunities.

To adjust the economic structure, it is important to promote the right growth pattern. A consistent relationship between growth and poverty happens only under the following conditions:

- With a large population engaged in agriculture, a very high agricultural growth rate that produces a surplus must be promoted so that the surplus over consumption can be traded to either domestic or international markets. (China satisfies the first requirement, while Tanzania could exploit both markets given its high potential in agriculture and relatively low domestic demand.) At the same time, lower food prices for consumers will reduce the cost for industrial- and service-sector development, as lower wages could be maintained in urban and industrial sectors.
- There should be business opportunities resulted from agricultural surplus for manufacturing or other sectors that would be able to absorb surplus labourers from agriculture.
- Countries like Tanzania (and previously China) generally have insufficient domestic capital for their economies to advance a take-off; thus, foreign investment can provide

an important stimulus. Tanzania's economy has been growing in isolated islands, while the level of agricultural growth has been too low to produce a meaningful surplus (given the rapid population growth). Therefore, the country's growth plan must focus on agriculture; unless this is linked with other sectors, poverty will not be significantly reduced.

For agriculture to be relevant to poverty reduction, it needs to include the following components:

- The food crops grown by the majority of smallholders need to be developed rapidly in terms of both quantity and growth rate in order to provide food security and generate a surplus for income generation.
- Where smallholders are unable to create a large-scale specialized farm, crops grown on family plots should be diversified to include mixed food and cash crops, thereby increasing farmer income.
- The agricultural structure needs to be further developed, moving from cropping-oriented farming systems into more diversified ones including agro-forestry, livestock and aquaculture. This should lead to an increase in farmer income, as exemplified in China, where it increased from 133 CNY in 1978 to 355 CNY in 1984 (Huang, 2008).
- A substantial increase in farmer income requires transformation of the whole economy so that it can provide labour-intensive sectors to absorb surplus workers from agriculture. This process was clearly observed in China, where the labour force engaged in agriculture dropped from 97% in 1980 to 82% in 1985 and to 59% in 2005 (Huang, 2008).

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从上世纪90年代末期开始，中心的业务开始由国际发展咨询逐步扩展为国际发展教育和国际发展研究，其发展教育功能演化成为我国第一所农村发展学院，而后成为了今天的人文与发展学院。其国际发展的研究工作延续成为今天的国际发展研究中心的职能。

基于长期从事发展实践和发展教育的经验，特别是对国际发展合作体系、运作模式、项目计划和监测评价等方面长期的实践，更为重要的是，随着中国的不断发展和壮大，国际发展研究更加成为中国国际发展研究中重要的战略组成部分，中国农业大学国际发展研究中心凭借其特有的实力，致力于在中国对外发展合作的方式、政策，中国的非洲发展研究，以及中国的发展中国家发展研究、国际发展研究等方面做出新的贡献。

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