

Review Article

Improving food security in sub-Saharan Africa: lessons from the Chinese experience

ABSTRACT

Improving (agriculture) agricultural growth and productivity can guarantee the food security and poverty reduction in much of sub-Saharan Africa. However, (to improve agriculture growth) improving agricultural growth and productivity is not an easy task (, which) since it needs the right strategies and a strong commitment from African leaders to invest into agricultural development. The present paper explores on (China's) the agricultural and rural development of China (experience) and draws lessons for Sub-Saharan Africa. After discussing the challenges facing (Africa's agriculture) African agricultural development (,) and the recent efforts to improve growth and productivity, the paper (moves on to look at the way forward based on) concentrates on lessons from (China's) the Chinese experience. The link between the lack of sufficient progress against food insecurity and rural poverty in sub-Saharan Africa and the weakness in local institutional structures mandated to provide services directly to smallholder farmers is the main conclusion of this study. (The main conclusion reached is that the lack of sufficient progress against food insecurity and rural poverty in sub-Saharan Africa is linked to the weakness in local institutional structures, mandated to provide services directly to smallholder farmers.) Feasible solutions revolve around strengthening these institutions (alongside) beside the recent efforts to improve (agriculture) agricultural growth and productivity.

Keywords: food security; (agriculture) agricultural development; institutions

1 INTRODUCTION

The present paper explores on (China's) Chinese experience of agricultural and rural development (experience) and draws lessons for Sub-Saharan Africa (SSA). (Albeit) Despite the relative scarcity of farmland, agriculture has made enormous contributions to food security and poverty reduction in China [1-4]. (But) Unlike China, SSA remains the poorest developing region of the world [5]. (Agriculture) Agricultural productivity in SSA lags considerably behind that of other continents (,) as well as the region's own potential [6]. (But) On the other hand, (the good news is that) the leaders of African Union (AU) (African Union (AU) leaders) have in recent years shown their commitment to improve (agriculture) agricultural growth and productivity as demonstrated by their continuing support and development of the New Partnership for (Africa's) African Development (NEPAD)-Comprehensive Programme of African, Agricultural Development (Africa Agriculture Development Program) (CAADP). In July 2012, the AU Assembly of (Heads) heads of (State) state and (Government) government confirmed their commitment to improve agriculture by declaring the year 2014 as the year of agriculture and food security in Africa [7]. While such commitments and efforts are laudable, past experiences tend to suggest that (,) (the solution to) the lack of sufficient progress against food insecurity and poverty in SSA may not (reside in) be solved by just initiating another development program. (In the last several decades,) Africa has seen no shortage of recipes for promoting development, including agriculture [8] in the last several decades. Therefore, Africa needs to take a closer look at the strategies adopted by other regions that have made great progress from similar situations confronting the continent today. It is generally agreed that (China's) Chinese success against extreme hunger and poverty can be an example for other developing countries [9-12]. Although previous studies have discussed (the) lessons for SSA from (China's) the (development) experience of Chinese development [10, 11], the present paper will attempt

to show that a solution to the (less than satisfactory) unsatisfactory progress against food insecurity and rural poverty in SSA, revolves around strengthening frontline institutions alongside recent efforts to improve agriculture growth and productivity. Subsequent to this introduction, Section 2 describes how the research (was) is conducted. Section 3 presents a brief overview of (China's) Chinese agrarian reform process and the outcomes. Section 4 reviews the role, challenges and the recent progress of (agriculture) agricultural development in SSA. Section 5 discusses the policy lessons for (Africa's) African agriculture and rural development (,which can be gleaned from China's development experiences.- This is a repetition) Finally, section 6 concludes the paper with arguments for strengthening frontline institutions which are involved in the implementation of (agriculture) agricultural and rural development programs in SSA.

2 METHODOLOGY

The paper primarily draws on a selection of peer reviewed publications in English language which are available online in four major academic article databases (,) namely; Elsevier (www.sciencedirect.com), Springer (www.link.springer.com), Wiley Online Library (<http://onlinelibrary.wiley.com/>) and Emerald (<http://www.emeraldinsight.com/>).

Relevant articles were (searched) investigated using the following key (words) phrases '(China) Chinese rural reforms and (agriculture) agricultural productivity growth', 'Impact of Chinese reforms on growth and poverty reduction', 'The success factors of (the China's) Chinese rural reforms', 'Challenges facing African (agriculture) agricultural development', 'Improving African agricultural productivity growth', and 'Contributions of agriculture to food security in Africa'. Recommended articles related to selected papers were also (searched) analyzed and this made a rich contribution to the literature coverage. The Google search engine (<http://google.com.hk>) was used to (source) provide grey literature published by international organizations, a comma such as (:) the United Nations (UN), the World Bank, The UN-Food and (Agriculture) Agricultural Organization (FAO), African Union (AU)/ New Partnership for (Africa's) African Development (NEPAD), the UN –Economic Commission on Africa (UN-ECA), the African Development Bank (AfDB), the Alliance for Green Revolution in Africa (AGRA), Global Development Network (GDN) (,) no comma and the US department of agriculture (USDA). Since (Because) the literature on the process of Chinese rural reform (process) as well as African (agriculture) agricultural development and food security is abundant and fast emerging, this study does not claim to have undertaken an exhaustive coverage of all relevant material. (A Google search on the phrases "China rural reforms" and "African agriculture" produced 36, 400, 000 and 148, 000,000 results respectively on February 13th 2014.- This information is completely unnecessary) We set a criteria for the selection of publications by following a study example [13] as follows: (to be reviewed by following the example of Liu et al., [13] as follows) (1) (the study focused) Focusing on rural reforms and agricultural productivity growth (,) (2) (the study was conducted on) Examining the situation in China after the (1978) reforms in 1978 (,) (3) (the study provided) Providing insights and information about the role of agriculture, challenges and efforts to improve productivity in Africa (4) the full-text article was available for review). Publications on China prior to the (1978) reforms in 1978 were only retrieved for content checks but they were not included in the review. (Also,) In addition, papers that discussed general economic situation and sustainable development processes were excluded from the review.

3 UNDERSTANDING (CHINA'S) RURAL REFORM PROGRAMS of CHINA

The history of Chinese agricultural development (China's agriculture development history) is as old as the civilization processes of the Chinese nation itself [14]. Independent family farms (,) which are typically small and fragmented had been the traditional farming

institution in rural China for thousands of years. Most farmers were landless peasants who rented land at exorbitant rates from individual landlords for cultivation. **(But soon after the birth of the Peoples Republic of China in 1949,)** **On the other hand,** land was confiscated by the government without compensation and redistributed to peasant farmers **soon after the birth of the People's Republic of China in 1949** [15]. **(Afterwards,)** The adoption of communism and heavy industry-oriented development strategy in the mid-1950s pushed the government to switch to the promotion of agricultural collectivization and monopolized the state procurement and marketing policies [9]. **(The wide spread)** **Widespread** food shortages and famine that occurred in the early 1960s **(is)** **are** widely attributed to such policies [16-21]. **(According to Lin [9],)** **(the)** **C**ollective farming system and **(the)** monopolized procurement and marketing policies were so detrimental to work incentives that **(,)** **no comma** **(despite remarkable improvements in technology and increased use of modern farm inputs in the 1960s and 1970s,)** grain production in China could hardly match with **growing** population **(growth)** and increasing demand **despite the remarkable improvements in technology and increased use of modern farm inputs in the 1960s and 1970s.**[9] **As a result, (In order to increase output,)** comprehensive policy reforms were initiated in the late 1970s **in order to increase the output.**

A new paragraph: (On the outcome side,) **On the other hand,** the reforms are widely acclaimed to have been successful **(,though distributional and equity issues have been raised)** **despite the issues of distribution and equity** regarding the extent of benefit to farmers in different parts of the country [2, 15, 22, 23]. Concerning impact on agricultural productivity, very impressive estimates have been reported (See Table1). **(overall,)** Cash crop production (including cotton, oil crops, and fruits) achieved notable success, **(generally exceeding the increase in food grain production,)** **(whilst)** **while** the performance of **(the)** animal and fishery sub-sectors were more impressive than that of the crop sector [15]. **(Further, Huang et al., [2] have reported)** **Furthermore, it is reported** that **the** reforms imposed by **(China's)** **the** accession of **China** to the WTO **(,)** largely favored exportable products which were negatively protected prior to accession. [2]

Apart from the variations in sector specific productivity, poorer regions did not perform well relative to the more endowed regions. For instance, **(Fan and Pardey [15] observed)** the **increase in the** rate of agricultural output **(increase in the northeastern and southern regions to be much)** **was** faster than the national average **in the northeastern and southern regions.** [15] However, the central region as well as the northwestern and southwestern regions showed long-run **growth** rates, **some of which vary from (of growth some)** 8% to 15% below the national average. **(Huang et al., [2] have reported that)** Unlike farmers in the more prosperous eastern and southern provinces that produce more exportable products, average farmers in many **of the** less developed provinces in western and northern parts of China have not gained much from trade liberalization. [2]

3.1 The Sources of Growth

Inspired by the impressive agricultural output following the reforms, scholars on **(the)** Chinese economy have been investigating the sources of productivity growth. In one of such studies, **(McMillan et al., [25] attributes)** about 78% of the farm productivity gains between 1978 and 1984 **were attributed to the** changes in the incentive system **(following the introduction of the household responsibility system and that)** **while** the remaining 22% **(of the gains)** came from the market reforms which gave higher prices to producers.[25] **(Likewise, Lin [18] confirmed)** The positive impact of the institutional reforms on productivity growth **(.According to him,)** **was mentioned in another study where** 46.9% of the change in productivity growth during the 1978–84 period **(s)** was attributable to the institutional changes which brought **(in to being)** the household responsibility system.[18]

Buttressing the vital role of the institutional reforms, (Fan and Pardey [15] have argued that) the increased use of traditional inputs, a comma such as land and labor (though beneficial,) did not contribute much to the gains in agricultural output.[15] (Rather,) Instead the key role of the growth-promoting effects of 'getting markets right' under the market reform programs (were) was significant at the outset. Other studies have highlighted the significant role of exchange rate depreciation subsequent to the reforms which increased the export competitiveness of agricultural products, contributing to (China's) the rapid export growth and robust economic performance of China [2].

Though the impact of the reforms on productivity growth is widely acclaimed, questions have (since) emerged since then among scholars concerning the extent of the impact attributable to the institutional and market policy reforms. (Fan and Pardey [15] have argued) In this connection, the findings of a study reveal that the direct growth promoting consequence of institutional change and market reforms may have been overstated by the earlier studies.[15] (According to them,) since research-induced technical change has accounted for a significant share (20%) of the growth in agricultural output since 1965. More recently, (Fan et al., [29] widened) the scope of investigation is widened by examining the specific role of different types of (government) governmental expenditure on growth and poverty reduction in rural China.[29] (Their) The results show that (government) governmental spending on production-enhancing investments, such as agricultural R&D and irrigation, rural education, and infrastructure (including roads, electricity, and telecommunications) all contributed to agricultural productivity growth and reduced rural poverty. (They however, admit that during the period 1978–84,) However, it is also noted in the study that the institutional and policy reform was the dominant factor both in promoting growth and in reducing rural poverty during the 1978-1984 period. On the other hand, public investment surpassed the institutional and policy reform and became the largest source of production growth and poverty reduction during 1985-2000. (However, from 1985–2000, public investment surpassed institutional and policy reform to become the largest source of production growth and poverty reduction.)

It seems clear (in a number of respect that, China's) that the Chinese experience of agrarian reforms (experience) demonstrates (well) the point of view (that) where institutional factors are critical for economic growth and development [30, 31]. In the subsequent sections, we turn our attention to understanding African agriculture, with respect to its role, the challenges and the way forward.

4 UNDERSTANDING AFRICAN AGRICULTURE

One of the notable features of the 21st century has been the expansion of emerging markets and the acceleration in technology development. The accompanying structural transformation of economies has seen a decline in the share of (agriculture's) agricultural contribution to GDP [32, 33]. Even though there has been a decline in (agriculture's) the contribution of agriculture to economic activity in SSA, its role in this region is still very significant. Table 2 (.) (show) shows that (with the exception of the Republic of South Africa and oil rich Angola,) (agriculture's) the contribution of agriculture to GDP (averaged more) was higher than 20% in the top ten largest economies of SSA from 2010 to 2013 except for the Republic of South Africa and oil-rich Angola [34, 35]. It is worth noting that (because of the predominantly rural population base of many SSA countries,) a vast majority of the (regions) inhabitants in these regions earn their living from agriculture, a comma even in the few countries where (agricultures) the contribution of agriculture to GDP is not so high [6, 36, 37].

Despite having the largest share of its population engaged in agriculture, Africa has been unable to feed itself for many decades now [38, 39]. This state of affairs pertains despite (the)

many years of substantial socio-economic gains in many African countries in the recent past. **(But perhaps more startling) There** are projections **showing** that more SSA inhabitants will suffer from hunger and malnutrition in the foreseeable future [38, 40]. The number of undernourished people in SSA is **(to)** expected swell from 180 million in 1995/97 to 184 million by 2015 [38]. A clear indication that most of SSA is in fact left out of the UN-Millennium Development Goal of halving hunger and poverty by 2015. These developments have left many scholars wondering whether the traditional philosophy of **reaching economic prosperity by agriculture** (agriculture leading the way to economic prosperity) (as recently experienced in China and most other Asian countries) is applicable in the African situation as it is recently experienced in China and most other Asian countries [41].

4.1 Interrogating the Challenges of African Agriculture

(But) Why has African agriculture failed to create wealth and provide enough food for its people? Scholars on African agriculture have been discussing a myriad of reasons believed to be responsible **(for) from** the situation. **(Wiggins [36]) For instance, a study** draws attention to the **(peasantry) peasant** nature and the lack of modernization of African agriculture. **[36]** Despite the availability of large, **suitable but uncultivated land (uncultivated but suitable land)**, the average farm sizes in Africa are small [6, 36]. They are typically less than 3 ha and farm sizes are on the decline as pressure from urbanization and rising population become more intense. Most **(agriculture) agricultural** tools used are basic and hand-held, tractors are rare and purchased external inputs **(-), such as** fertilizer, **(crop protection) chemicals used for crop protection**, improved seeds **are** sparingly used [6, 36]. **The** access to high quality, locally adapted, improved **(seed) seeds** at affordable prices has long been recognized as an essential ingredient to boosting agricultural productivity [6]. When fertilizer is used in combination with improved planting material, yield gaps among (SSA) smallholder farmers **of SSA (reduces) are reduced** significantly [42]. This suggests that adequate and efficient use of fertilizer is critical for achieving food security. **(Yet) The intensity of** fertilizer use **(intensity)** in SSA is **still** very low, averaging just around 10 kg/Ha, whereas it has reached 222 kg/ha in Asia, 160 kg/ha in Oceania and 138 kg/ha in South America [43]

The lack of modernization of African agriculture is not only limited to the use of traditional low yielding varieties and basic farm implements, but also **related to** the reliance on natural rainfall. **(is another source of drawback)** [36, 37, 44, 45]. Despite **(the)** numerous studies **(suggesting that irrigation) on irrigation which (offers) offer** the best opportunity for increasing food production **(,) no comma** and improving rural income and food security [46], only a small fraction of African farmland is irrigated. **(:) In fact, less than 5 million ha, (of which) more than 3 million ha lies in just two countries-Madagascar and the Sudan [44].- What does that sentence mean?** As a result, **a comma** much of African crop production is left to the mercy of **(natures') nature's** rainfall which **(more often than not)** is highly unreliable. These and other natural hazards, **a comma** such as pest and disease attacks as well as poor soils are detrimental to agriculture [36, 37].

While **the** productivity **(in) of** African agriculture lags far behind **that of** the rest of the world [41], population growth rate is **(fast ahead) faster than that of** the rest of the world. **It is intriguing that SSA is projected to lead the world in population growth beyond 2050 [47] even though its population size doubled in the last 30 years [37, 40]. (It is intriguing that despite more than doubling its population size in the last 30 years [37, 40], SSA is projected to lead the world in population growth beyond 2050 [47].)** Such a high population growth rate has left the nature dependent **on** peasant agriculture struggling to provide enough food for the inhabitants of SSA. **(The growing number of mouths looking for food may not be the only problem associated with the high population growth rate of SSA but) Moreover,** there is **(an associated) a** growing disease burden **in the region (,) no**

comma where nearly 1 in every 20 adults (living with) lives with HIV (reside in the region), accounting for 71% of the people living with HIV worldwide [48].

Another major problem (that has been identified in literature) for the lack of progress in the living standards of (the) people (of) in SSA is the inability of farmers (to link) to link up their production to markets. (AGRA [6] has identified) The lack of efficient storage facilities and the non-availability of inventory finance (as limiting) which limit the capacity of rural assemblers to absorb surpluses at harvest are identified. [6] The arbitrary political borders inherited by African countries is another source of drawback; hindering agricultural trade and dampening incentives for farmers and agribusinesses to invest in (Africa's) many of the regional bread-basket zones of Africa [49]. Without sure outlets for (the) marketing (of) their produce, there is little incentive to produce more than what is required for subsistence and a little more for sale to buy basic necessities [50, 51]. (Jayne et al., [52] have noted) Furthermore, there are some recent developments affecting African agriculture (such) like the widespread dissatisfaction among developing countries with the framework for international, a comma agricultural trade agreements.[52] In particular, the access to developed country markets has not been achieved to the promised extent (,) no comma and many developing countries have experienced import surges following trade liberalization.

(Institutional and leadership failures) Failures of the institutions as well as failures of leadership have also contributed (in no small measure) to the (agriculture) agricultural problems in SSA. They have failed to provide the enabling environment in the form of agricultural R&D, (;) rural infrastructure, (;) the access to markets and financial services (;) (and) as well as policy support. Having received much attention from African governments, donors and the international community during the 1960s and 1970s, African agriculture suffered from funding cuts in the 1980s and 1990s [32, 52].

The (over a decade) long neglect and underinvestment for agriculture and agricultural R&D in SSA (has) over a decade have left many African countries with (struggling) the struggle (to catch up whilst) with more challenges, a comma such as declining soil fertility, water scarcity, the ease of spreading plant and animal diseases/pests, large but aging rural populations and climate change. (are emerging) [40].

Without doubt, a comma land is one of the most critical resources for (agriculture) agricultural development. Proper management of land is vital for improved agricultural productivity. As discussed in the Chinese experience, switching from the collective system to the system of household responsibility (system) greatly improved (agriculture) agricultural productivity. The interrelated problems of rural poverty, poor agricultural performance and low levels of economic growth have been attributed to the persistence of farming systems based on customary tenure [1, 6, 53].

Clearly, the list of challenges militating against (Africa's agriculture) African agricultural development is quite long (a very tall one); there (can be no) isn't a simple solution. Rightly, African leaders through NEPAD –CAADP initiative (,) no comma have outlined a complex set of challenges that needs urgent attention (for the attainment of) to attain a productive and profitable agricultural/agro-industrial sector including:

- low domestic (internal effective) demand due to poverty;
- poor and (un-remunerative) unremunerative external markets (with (declining) decreasing and unstable (world) commodity prices and severe competition from the subsidized farm products of industrial countries);
- vagaries of climate and consequent risk that deters investment;
- limited access to technology and low human capacity to adopt new skills;
- low levels of past investments in rural infrastructure (such as roads, markets, storage, rural electrification, etc.) and

- institutional weaknesses for service provision to the entire agricultural chain from farm to market.

4.2 Recent Progress in (SSA's Agriculture) the Agricultural Development of SSA

(Whilst) While acknowledging (the) numerous challenges facing (Sub-Saharan Africa's) the agriculture of SSA, recent trends in some countries (illustrates well enough) illustrate that it is possible to achieve the agricultural growth rate of 6% of NEPAD-CAADP per annum. (NEPAD-CAADP agricultural growth target of 6% per annum.) (Binswanger-Mkhize et al., [50], have outlined a) In this respect, a set of factors (that seem) seems to be working in favor of Africa. [50] (Africa's favor:) (First,) Firstly, price incentives for producers have improved as a result of unified exchange rates, lower industrial protection (,) and sharply reduced export taxation. (Second,) Secondly, higher, international commodity prices (are creating) create growing opportunities for import substitution and regional agricultural trade. (, and lastly,) Lastly, African governments, regional institutions (,) no comma and development partners (are showing) show strong commitment to agricultural and rural development. While some countries appear to have taken advantage of these positive developments and have recorded agricultural growth rates well within the NEPAD-CAADP's target of 6% per annum (Angola, Namibia, Ethiopia, Burkina Faso, Gambia, Guinea-Bissau, Senegal, Tanzania, Mozambique, Sierra Leone, Ghana, Republic of the Congo and Malawi), others (unfortunately the majority of SSA countries) (are showing) show agricultural growth rates far less than the targeted 6 % which is needed to make an impact on poverty and ensure food security (Fig.1). Longstanding factors, a comma such as the persistent HIV/AIDS crisis (,); a comma armed conflicts, (,); the lack of improvement in governance and decentralization, (,); inadequate fiscal commitments to agriculture and rural development by national governments (,); and slow progress in infrastructure linking landlocked countries and remote regions to the centers of demand and harbors have been cited for the less than satisfactory progress in most countries [50, 54].

Despite the slow progress in (SSA's) the agricultural growth of SSA, there is presently no better alternative for improving the welfare of the vast majority of (regions) poor regions [6, 32, 41, 53, 55, 56]. According to (the) FAO ([56]), (in resource poor countries,) a given rate of GDP growth due to agricultural growth reduces poverty five times more than an identical dose of GDP growth due to non-agricultural growth in resource-poor countries. (and in sub-Saharan Africa;) However, this type of agricultural growth is 11 times more effective in sub-Saharan African. [56] Furthermore, emerging trends do not give any hope to (Africa's) African industries (making any) which do not make a meaningful contribution to poverty reduction and food security in the near future. The small and poorly performing industrial sectors (are facing) face increasing competition from large, emerging economies like those of China and India (,) which may undermine any attempts to develop labor-intensive manufacturing sectors [41]. (Ravallion [10] has argued that just as happened in China,) On the other hand, there will be a time when the emphasis in Africa will naturally (shifts) shift to secondary and tertiary sectors just as it happened in China. [10] However, a strategy which is based on agriculture must be at the center of any effective policy to fight with poverty and food insecurity with respect to the poverty levels in SSA. (But with the levels of poverty prevailing in SSA, an agriculture-based strategy must for now be at the center of any effective route out of poverty and food insecurity.)

5 KEY LESSONS FOR AFRICAN (AGRICULTURE) AGRICULTURAL DEVELOPMENT FROM THE CHINESE EXPERIENCE

Given the challenges facing (SSA's agriculture) the agricultural sector of SSA, the renewed commitment from African leaders to fight with poverty and hunger through (agriculture

developmental) agricultural development is refreshing. The Comprehensive Programme of African Agricultural Development (Africa Agriculture Development Program) (CAADP) of the New Partnership for (Africa's) African Development (NEPAD) (is focusing) focuses on investments in (three) four, a comma key "pillars", a comma believed to have a potential of making the earliest difference to (Africa's) the agricultural crisis of Africa. (, plus a fourth long-term pillar for research and technology.) The (three) four pillars are: 1) extending the area under sustainable land management and reliable water control systems (;) 2) improving rural infrastructure and trade-related capacities for market access (,and) 3) increasing food supply and reducing hunger 4) developing research and technology.

While such commitments and efforts are laudable, (Africans) African people cannot afford to ignore valuable lessons from other regions that have made great progress from similar problems confronting them today. The success of (China's) Chinese rural reform(s) programs obviously provides great opportunities for learning. It will surely be strange if the fundamental differences between China and Africa are not recognized. (Surely it will be naive not to recognize the fundamental differences between China and Africa.) Notable among these differences is the fact that China is (one) a big country (;) while Africa is (made of) comprised of several independent countries with different political structures and leadership styles. Certainly, the constraints, a comma such as economic integration and policy coordination in Africa will be different from (that of) those in China [10]. However, a number of policy messages worth considering in an African context can be gleaned from the Chinese experience in fighting with extreme poverty and hunger. (Fan et al., [29]) A study on this issue provides us with the first hint of policy direction. (According to them before the Chinese rural reforms began; the effects of government investment were inhibited by policy and institutional barriers). The effects of governmental investment were inhibited by policy and institutional barriers before the rural reforms of China began. [29] The reforms reduced these barriers, enabling investments to generate tremendous economic growth and poverty reduction. China is noted for (her) the (long) old, established tradition of building and maintaining strong and accountable (government) governmental institutions at all levels. The strong, comma institutional, comma administrative capacities especially in rural areas were very instrumental at the forefront for implementing the crucial rural reforms [10, 11, 58, 59].

A new paragraph: In contrast, (in the decades following independence) many (SSA) governments in SSA have (been more) focused more on building institutional capacities at national level (institutions) to the neglect of (local level) institutions and structures that deliver services directly to farmers at local levels. For example, the first two decades of work done by the African Capacity Building Foundation (ACBF) was focused on core public-sector institutions; (-) notably ministries of finance and planning, central banks, internal revenue authorities, (prime ministers' offices, auditor general's offices,) the offices of prime ministers and auditor generals, courts of accounts, offices of national statistics (offices) and think tanks [60, 61]. As a result, frontline institutions that implement policies and provide services directly to (smallholders) smallholder farmers have remained largely ineffective [50, 62]. This has left smallholder farmers poorly organized with (little) hoarse or no political voice (,) compared to urban dwellers [63]. The consequence is "urban bias" which makes African agriculture to starve for the required fiscal resources. [50,64] (The consequence is "urban bias" in African policy which starves agriculture of the much needed fiscal resources [50, 64].) For example, despite pledges at the 2003 Maputo conference to spend at least 10% of their government budget on agriculture by 2008, the evidence (suggest) suggests that (between 2003 and 2009 as many as) 39 countries either failed to meet that target or experienced a decline in the share of (agriculture) agricultural spending between 2003 and 2009 [63]. Besides, administrative and fiscal decentralization continue to lag far behind

political decentralization in most (SSA) of the Sub-Saharan countries in spite of (the) nearly three decades of decentralization policies [65-68]. On the other hand, resources meant for rural development programs have persistently and largely suffered from mismanagement (largely) because of the weak instructional structures at the local level [69]. To buttress this point, (we recall) a statement made by a newly appointed management board (,) which was tasked to restructure a poorly performing (agriculture) agricultural /rural development institution in Ghana can be recalled: ... *“the institution was basically not built. (No consistent management information systems exist;) A consistent management of information systems did not exist, financial accountability was weak and the size of professional staff (size) was inadequate to deliver on the mandate. The institution (was) simply was not in a position to manage large scale contracts effectively”* [70]. Given Ghana’s international acclaim as a beacon of good governance on the African continent, this state of affairs highlights a critical missing link in Africa’s quest to achieve food security and reduce rural poverty (.) “Institutions rule”[30].

A new paragraph: (Therefore, to effectively promote agriculture and rural development, African governments should not only focus on the ‘three pillars’ plus a fourth long-term pillar for research and technology generation and dissemination as outlined in the NEPDA-CAAD document, but must as well ensure real empowerment of local government agencies, communities, rural and agriculture institutions for their own development through further administrative and fiscal decentralization [71].) Therefore, African governments should not only focus on ‘four pillars’ as outlined in the NEPDA-CAAD document, but also ensure real empowerment of local government agencies, communities, rural and agricultural institutions for their own development through further administrative and fiscal decentralization if they want to promote agricultural and rural development effectively.[71] Merely transferring responsibilities to communities and rural/(agriculture) agricultural institutions without financial delegation is not sufficient for the promotion of rural development [66]. An effective delegation of financial means to support local organizations in a culture of transparency and civic engagement is necessary to assure accountability and efficient service delivery [65-67]. Certainly, it is not a lack of development ideas that has left Africa without much progress against poverty and food insecurity over the last century. Institutional factors are crucial determinants of agricultural productivity growth in several African countries [72]. Overlooking such institutions in the past (,) often led to the promotion of rural/agricultural development policies that are ineffective in resource management and the imposition of inappropriate development policies, both of which have negatively impacted the environment and the people’s livelihoods [73].

Indeed strong institutions are so critical for unlocking Africa’s development that the first African American president of the USA in his first visit to SSA remarked that: “Development depends upon good governance. That is the ingredient which has been missing in far too many places, for far too long’- ‘Africa doesn’t need strongmen, it needs strong institutions” [74]. The capacity of rural and (agriculture) agricultural institutions in Africa to own the process of policy formulation (process) and transparently execute (their) its implementation is particularly crucial for success against food insecurity and rural poverty. (,that) The capacity must be developed alongside other interventions as outlined in the NEPAD- CAADP strategy document (,) if Africa is to expect (any) good results from the new commitment of the leadership to (agriculture) agricultural development. (Going by) When the Chinese experience is taken into account, (then the) NEPAD-CAADP certainly needs another urgent priority pillar (on the development of) for developing the capacities of rural and (agriculture) agricultural institutions at all levels. (Also,) Moreover, administrative and fiscal decentralization which continue to lag far behind political decentralization (needs) need some urgent attention [50]. Institutional weaknesses for service provision to the entire

agricultural chain from farm to market **(has) have** been rightly identified as a challenge in NEPAD- CAADP strategy document requiring urgent action. **(,what) What** is missing in that document is an immediate prioritized action to **(addressing) address** the challenge.

6 CONCLUSIONS

An agriculture-based strategy remains one of the most viable options for achieving food security and rural development in SSA. In this article, we have examined **(China's) Chinese** rural reform(s) programs which began in the late 1970s. We have also discussed the challenges facing African agriculture as well as some efforts being made to **(ameliorate) correct** them and spur growth. There is evidence that the rural /agrarian reforms embarked upon by China **(some)** three decades ago have contributed positively to food security and the structural transformation of the Chinese economy as seen today. In contrast, rural /agricultural development has remained largely sluggish in SSA despite numerous intervention programs since **1950s (the 1950's)**. The success of **(China's) Chinese** rural reforms is largely credited to the availability of strong institutional and administrative capacities at all levels **(,)** which played a **(lead) leading** role in the implementation of the reform programs. (In our view) **The** missing link in SSA is the weak systems, practices, procedures and the general lack of capacity for **(local level) institutions at local levels** that are mandated **to** provide services to smallholder farmers.

Obviously, some scholars **(would) may** want to emphasize **(on)** the role of research and modern input use in improving **(agriculture) agricultural** productivity in the Chinese experience [75-78] **(.Others) while others** have emphasized the larger role of government spending on production-enhancing investments, such as agricultural research and development, irrigation, rural education **(,)** and infrastructure (including roads, electricity, and telecommunications) [29]. Both positions are probably right since different elements in the Chinese economic system contributed diversely to the success of the rural reform programs. Surely, the two components are **(actually)** complementary, not substitutes. However, **comma (in the 21st century,)** capable, reliable **(,)** and transparent institutions are the key to success **in the 21st century** [74]. Indeed, **(China's) Chinese** experience clearly shows that combining pragmatic and evidence-based policies with capable institutions manned by committed leadership is the best strategy to poverty reduction [10, 79]. There is evidence that **(prior to the Chinese rural reforms,)** the effects of government investment were rendered ineffective by policy and institutional barriers **prior to the Chinese rural reforms**. The reforms reduced these barriers, enabling investments to generate tremendous economic growth and poverty reduction. **At the start of the Chinese reforms during the period 1978–84, institutional and policy reforms were dominant factors both in promoting growth and reducing poverty in rural China [15, 18, 25, 29]. However, from 1985–2000, public investment surpassed institutional and policy reform to become the largest source of productivity growth and poverty reduction [29].** While strong local institutions in Africa may not be the panacea for eliminating poverty and hunger in the longer term, it is arguably the most important problem to address at the outset **(,)** and that may well prove to be the ingredient for sustained progress in the long term. Reflecting on the Chinese experience, there is reason to believe that a time will come when the emphasis in Africa will naturally **(shifts away) change direction** from improving rural and **(agriculture) agricultural** institution to production-enhancing investments, such as agricultural research and development, irrigation, rural education **(,)** and infrastructure **(including roads, electricity, and telecommunications.)** For now, the sluggish response of **(agriculture) agricultural** growth to the first decade of NEPAD-CAADP initiative makes the critical role of frontline institutional factors increasingly difficult to ignore. There is also **the** need to emphasize **(on agriculture-industry linkages) the connections between agriculture and industry** in the decentralized

institutional setups advocated, partly because of the limitations of the export market and **its importance** (also because it is important by itself.) (The Chinese philosophy of “walking on two legs”, that is, agriculture and industry is relevant for Africa.) **With respect to the Chinese philosophy of “walking on two legs”, both agriculture and industry are relevant for Africa.** (Without these, we may yet witness a few more walled mansions spring –up in the cities, but meaningful progress against hunger and poverty may elude Africa for a little while.)