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NON-FARM LIVELIHOOD DIVERSIFICATION AND SUB-SAHARAN AFRICA'S RURAL STRUCTURAL TRANSFORMATION: A REVIEW

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ABSTRACT
In the past, rural households' were generally regarded as farmers, foresters or fisher-folk that participate only marginally in non-farm activities, except when they migrate out of rural areas. Nevertheless, despite the common generalization of the rural populace, especially in the developing world, as subsistence farmers, in certain cases a substantial portion of the income that accrue to rural households' emanates from the rural non-farm sector. Hence, while agriculture has traditionally played a key role in the economy of developing countries, of late an increasing participation of farm households in the non-farm sector has been reported. Accordingly, one phenomenon that is gaining traction in the rural development parlance is the promotion of, and support for, non-farm livelihood diversification. A pertinent question to ask is whether this rising interest in the rural non-farm sector suggests that structural transformation away from agriculture has been taking place in Sub-Saharan Africa?

Keywords: Non-Farm, Livelihood Diversification, Sub-Saharan Africa, Structural Transformation

INTRODUCTION

Agriculture is the most important livelihood source for the average rural household in Africa, employing around 92% of the rural households' and comprising up to 69% of total household income (Davis *et al*., 2017). In Sub-Saharan Africa (SSA), agriculture continues to be a predominant feature of rural livelihoods. It has been documented that about 64% of SSA total population lives in rural areas (Jonasson and Helfand, 2010), with up to 90% of the rural households engaged in farming to some extent (Owusu *et al*., 2011; Davis *et al*., 2017). Thus, self-employment in agriculture is still the mainstay of rural livelihoods in SSA, with at least 55% of household income obtained from agriculture (Davis *et al*., 2014; Davis *et al*., 2017).

Although a substantial proportion of rural farm households in SSA rely on agriculture for sustenance as well as for cash income, various studies have revealed that rural households, especially in SSA, diversify their income sources away from sole crop and livestock-based vocations towards non-farm employment, such as non-farm self-employment and off-farm wage-employment (Gautam and Andersen, 2016; Michler, 2020; Akinyemi *et al*., 2021). In that regard, Dimova and Sen (2010), as well as Davis *et al*. (2017) enunciated that participation of smallholder farmers in different activities is a norm rather than an exception. Particularly, the ongoing structural transformation occasioned by globalization, urbanization, emerging industries, income growth and improved physical infrastructure, amongst other factors, have created new opportunities in many rural areas of emerging economies, which has facilitated rural households' engagement in the non-farm sector, and curtail the degree to which the rural populace depend on agriculture (Haggblade *et al*., 2010; Seng, 2015; Imai *et al*., 2015).

In this wise, one phenomenon that is gaining traction in the rural development parlance is the promotion of, and support for, non-farm livelihood diversification. Remarkably, the promotion of non-farm employment has enjoyed popular support across an array of development agencies, ranging from the World Bank to non-governmental organizations. de Janvry and Sadoulet (2001) stated that stimulating the establishment of non-farm income earning opportunities and enhancing the access of the rural poor to same is a particularly important aspect of this nascent approach to rural development.

In spite of the humongous body of work which shows that non-farm work is an important component of rural farm households' livelihood strategy, not much systematic work has been undertaken to understudy Sub-Saharan Africa's non-farm livelihood diversification in relation to its possible link with the rural structural transformation process. To that end, this review draws on past empirical work to inform future research of the rural structural transformation process in SSA. The following questions were addressed in this review. First, what potential does the non-farm economy hold for rural households' in SSA? Second, what does the available empirical literature reveal regarding the nature, size and factors that influence rural households' non-farm livelihood diversification in SSA? Third, is the pattern of non-farm livelihood diversification in SSA indicative of rural structural transformation? Fourth, what inferences can we draw from the answers to the first three questions regarding SSA's rural non-farm livelihood diversification in relation to its structural transformation?

Potentialities of the Rural Non-Farm Economy (RNFE)

The promotion and establishment of non-farm activities in the rural sector of SSA is a key driver for improving livelihoods, and thus one of the viable mediums to break away from the vicious circle of food insecurity that bedevils the region (Barrett *et al*., 2001). Owusu *et al* (2011) enunciated that, in a relative sense, the rural non-farm sector requires less capital or training to put together and are usually labour intensive, thus it can play a significant role in alleviating food insecurity and poverty. In the same vein, Haggblade *et al*. (2010) stated that considering the small scale of many rural non-farm businesses and the attendant low capital requirements, policy makers in poor agrarian countries, such as much of Africa, grappling with rising numbers of marginal farmers and weak agricultural performance, view the non-farm sector as a key stimulator of rural economic growth.

Gladwin *et al*. (2001) posited that although for many African countries a vast majority of the population are domiciled in

rural areas and rely, either directly or indirectly, on agriculture as the main source of their income, agricultural production may not be the rural household's sole source of income. In most cases, in order to be food secure, smallholder farmers usually pursue numerous livelihood strategies. And this is not necessarily a scenario in which people switch from one form of employment or 'own-account' activity to another, rather, it is a dynamic process in which they simultaneously combine a range of different activities so as to meet their various needs at different times (DFID, 1999).

In Africa south of the Sahara, smallholder farmers also double as food processors, petty traders and also engage in both the formal and informal labour markets and in most cases they are in for the long haul. Most often than not, smallholder farmers usually maintain a portfolio of livelihood sources because none of the strategies in and of itself is capable of sustaining them (Gladwin *et al*., 2001; Seng, 2015; Chandrasekhar and Mehrotra, 2016). Stringer *et al*. (2020) posited that the extant practice whereby farm households' cultivate small land units as low-cost, low-risk, 'safety net' enterprises coupled with other non-farm enterprises, thereby contributing significantly to rural livelihoods and food security, is a perfectly reasonable social system and can be relatively sustainable given ample support.

Eshetu and Mekonnen (2O16) evinced that promoting rural non-farm diversification is tantamount to supporting the poor, ameliorating vulnerability and reinforcing resilience to food insecurity and poverty. In all, given the positive association between engagement in the rural non-farm economy (RNFE) and household income, wealth and productivity a number of other studies clearly support the motion that engagement in non-farm activities helps to considerably debase poverty and enhance overall household welfare (Bezu *et al*., 2012; Imai *et al*., 2015; Davis *et al*., 2017); thereby repositioning the poor on a more promising path towards greater livelihood success, particularly in rural areas of SSA where most of the world's poor people reside.

The long and short of it is that, whereas agricultural development is germane for alleviating hunger and poverty in rural areas, non-agricultural growth is equally important (Diao *et al*., 2007; Davis *et al*., 2017). Thus, there is no gainsaying the fact that in most cases, agriculture proves central to rural development efforts, be it as a supporter to the non-farm sector or as the leading sector (Hazell *et al*., 2007). The World Bank (2008) recognised that in as much as the promotion of agriculture is important for reducing poverty and hunger, particularly in SSA, assisting farmers to diversify into the non-farm sector is also one of the important pathways out of poverty. Moreover, the two sectors reinforce each other in the production, consumption and investment processes, throughout the rural economy (Davis *et al*., 2014; Christiaensen, 2017; Davis *et al*., 2017). As Fan (2019) rightly stated, "the world's agri-food systems are increasingly connected across national and regional boundaries, as well as linked to other non-farm sectors and forces." Thus, income from the non-farm sector is an equally significant link between farm households' and the rural economy, at large (van Leeuwen and Dekkers, 2013).

Haggblade *et al*. (2010) attested that given frequently low capital requirements, growing employment and high income shares, policy makers view the rural non-farm sector as a potential pathway out of poverty for the rural poor. Most especially, for countries in Africa south of the Sahara mostly characterized by a predominant rural base; strong population growth; market imperfection; insufficient agricultural resources; and abundant labour per unit of capital, of land and of skills, the potentialities of the rural non-farm sector merits earnest consideration.

Empirical evidence on non-farm income diversification and household welfare

Using a nationally representative panel data from rural households' in Nigeria, Akerele *et al*. (2017) examined the effects of engagement in non-farm enterprises on adequacy of nutrient intake. They discovered that as compared to households participating solely in agriculture-based vocations, households that are engaged in non-farm work have a higher likelihood of meeting their minimum requirements of vitamin B12, phosphorus and calories. Shehu and Sidique (2014) assessed the effects of participation, of rural households' in Nigeria, in non-farm enterprise on household wellbeing. The estimates of the treatment effect obtained from the propensity score matching technique revealed that households which participated in non-farm enterprises have more annual consumption expenditure, on average, and are more food secure than households who depend solely on farm-based livelihoods.

In their study, Sani *et al*. (2014) utilized the General Household Survey-panel data to examine the impact of non-farm work on food security status of rural households' in Nigeria. Study findings revealed that 33.63% of the households' participated in one form of non-farm income generating activity or the other. Independent sample t-test revealed that food security status differ significantly amongst non-participants and participants in the non-farm sector. Further, propensity score matching (PSM) result suggested that households that diversify into the non-farm sector had a higher average food expenditure and are more food secure than those that did not diversify into the non-farm sector. Dedehouanou and McPeak (2020) examined livelihood diversification in rural Nigeria with a specific focus on its linkage with wealth and different food security indicators. They reported that, by and large, rural households' generated their income from a portfolio of sources that includes both agricultural and non-agricultural activities; with roughly 60% of the farm households' also operating a non-farm business and 20% have at least one member that reports some wage employment. Furthermore, they found that while food unavailability was negatively related with income diversification, dietary diversity and per capita food expenditures increased with the level of income diversification.

A study in the Northern Region of Ghana by Owusu *et al*. (2011) assessed the impact of non-farm business on household food security and income among farm households. They reported that engagement in non-farm business exerted a significant positive effect on household food security status and income. Furthermore, in the Upper East and Upper West Regions of Ghana, Osarfo *et al*. (2016) analysed the impact of non-farm activities on income and food security status of rural farm households, using the PSM technique. Study results revealed that participation in non-farm activities exerted a significant positive effect on household income, as well as food security status. In addition, the variables that significantly determine non-farm work participation included basic village group membership, education attainment, road network, number of farms owned, ownership of assets such as mobile phone, truck or motorbike and distance to the nearest health facility.

Zereyesus *et al*. (2017) analysed the impact of participation in non-farm work on the vulnerability of resource poor households to food poverty, in northern Ghana. Results showed that in comparison to households not participating in

non-farm work, the incidence of food poverty is less for households participating in non-farm work. In addition, participation in non-farm work significantly increased the future expected food consumption of households, thereby alleviating their vulnerability to food poverty. Meanwhile, household head's education, ownership of a mobile phone, ownership of a motor bike and locality had a statistically significant influence on households' participation in non-farm work. Another study in the Northern Region of Ghana, by Kuwornu *et al*. (2018), examined the effect of participation in off-farm activities on the food security status of farming households. The study results indicated that, overall, 28.7% of the respondents participated in various off-farm activities. The estimated treatment effects values suggested that engagement in off-farm work had a positive and significant effect on daily calorie consumption and household incomes. Additionally, the results revealed that while household size, educational level of household head, total expenditure on food and building material had a significant positive relationship on off-farm work participation, gender and livestock assets had a negative association with participation. In their paper, Block and Webb (2001) explored the associations between household income diversification and changes in consumption outcomes in Ethiopia. The study findings showed that households that were more diversified in the initial period consequently experienced a relatively greater increase in both calorie intake and income in the latter period. Another study in Ethiopia, by Bezu *et al*. (2012), examined the impact of rural farm households' diversification into non-farm employment on their consumption expenditure, using Kernel-weighted polynomial regression. They discovered that, in contrast to non-participants, households who participated in non-farm employment have higher income levels, higher total expenditures, as well as higher growth in expenditure, with the growth rate increasing as the intensity of participation increases.

Additionally, Eshetu and Mekonnen (2O16) considered the effect of off-farm income diversification on rural poverty and the determinants of household's participation in off-farm activities in Southern Ethiopia. The duo found that participation in off-farm activities significantly reduces the probability of being poor. Their results also showed that education, age, access to infrastructure, credits uses, farm income and livestock ownership were the factors that wield significant influence on households' participation in off-farm activities. Further, Gecho *et al*. (2014) employed logistic regression model to analyse food security status of rural farm households in Wolaita Zone, Ethiopia, as an outcome of a number of variables, including livelihood strategies. The model result specified that access to both non-farm and off-farm activities positively and significantly influence food security status of rural farm households.

Empirical work carried out by Van den Broeck and Kilic (2019) on individual-level off-farm employment engagement rates in SSA with the aid of national panel household survey data from Ethiopia, Malawi, Nigeria, Tanzania and Uganda revealed that a significant proportion of the rural and urban working-age individual population in these countries participate in off-farm employment, with the national level ranging from 34% in Ethiopia to 58% in Malawi and a cross-country weighted participation rate of 44%. Similarly, employing the nationally representative Living Standards Measurement Study–Integrated Surveys on Agriculture (LSMS-ISA) data set covering Ethiopia, Malawi, Niger, Nigeria, Tanzania and Uganda over the period 2005 to 2013, Nagler and Naudé (2017) found that, on average, about 42% of rural households' run a non-farm business.

From the foregoing review, it can be deduced that quite an overwhelming body of work on the theme of non-farm livelihood diversification and household welfare has been undertaken along different lines of research and in quite a number of countries in SSA. An empirical regularity emerging from these litany of studies is that, irrespective of the study area and the analytical technique employed, it is almost incontrovertible that non-farm diversification exerts a significant influence on household welfare, particularly as it pertains to household food security status. Suggesting that the significance of non-farm diversification extends far beyond geographic boundaries.

The rural structural transformation process

Economic development usually follows a pathway of structural transformation, whereby a predominantly agrarian society is consistently transformed and diversified into a budding industrial and urban society (Tomich *et al*., 1995). Generally, the nascent phase of development is characterized by rural agrarian populations operating small farms within a, somewhat, autarkic economic framework; hence what people consume mainly comprise of whatever is, or can be, grown locally (Choudhury and Headey, 2016). Given the subsistence orientation of agriculture, disperse nature of rural populations, the limited transport and communications infrastructure, the prevailing low-input farm technologies and low income levels in rural areas, trade and commerce remain marginal at the early stage of development. Hence, the rural development process usually kicks off with a countryside comprised predominantly of farming households producing, on a subsistence level, most of the agricultural and non-farm goods and services that they need (Haggblade *et al*., 2010).

According to Fan *et al*. (2013), the transformation process involves economic diversification and growth, in addition to increased productivity and commercialization in agriculture. Michler (2020) asserted that "while there has long been vigorous debate regarding the policy implications of structural transformation, there is a fair degree of consensus regarding agriculture's role in the process." Over time, growth in the agricultural sector has been shown to be a key factor in the initial stage of economic transformation in many countries (Démurger *et al*., 2010; Fan *et al*., 2013; Davis *et al*., 2017). This can be attributed to the fact that the agricultural sector as the largest employer of labour in rural areas, the largest income generator and the largest supplier of raw materials, can provide the economy with the impetus needed to finance and fuel growth in the non-farm sector, thereby influencing the size and structure of the rural non-farm economy.

Patently, as the economy experiences an appreciable degree of productivity growth, with a resultant increase in incomes, households diversify their consumption out of foods, channelling an increasing proportion of their income to the purchase of non-farm goods and services (Haggblade *et al*., 2010). That is, agricultural growth brings about growth in the non-farm sector, due in large part to the forward and backward linkages from the agricultural sector (Davis *et al*., 2017). This is accompanied by a corresponding decline in agricultures share of total national output, as well as transfer of capital and labour out of agriculture, which helps to fuel a resultant rise in manufacturing and services (Michler, 2020). Thus, with rising levels of per capita Gross Domestic Product (GDP), the predominance of on-farm sources of income gradually decreases, whilst the share of non-agricultural income increases (Davis *et al*., 2017).

Fan *et al*. (2013) stated that one of the fundamental models of development economics asserted that the development of a dual-sector economy usually takes place through the reallocation of labour from the low-productivity agricultural sector to the higher-productivity industrial and service sectors. That is, as the shares of national output (GDP) generated from the non-agricultural sector, basically industry and services, become larger than agriculture's, there is bound to be a degree of increase in the number of workers employed in these sectors (McGranahan *et al*., 2009). On the one hand, the increasing elasticity of labour might have pulled labour to the non-farm sector, on the other, the increase in productivity per worker might have pushed labour out of agriculture (Michler, 2020). Either way, there is a gradual decline in the reliance on agriculture as a source of employment and income in the structural transformation process, as the contribution of the non-farm sector to total employment and income increases (Rahman and Mishra, 2019). Davis *et al*. (2017) alluded that this is the secular pattern of economic growth followed by the vast majority of the countries now enjoying middle and high-income status.

Haggblade *et al*. (2010) postulated that much of the flow of resources from the agricultural sector to the secondary and tertiary sectors of the economy takes place functionally and spatially through the RNFE. Typically, the extra income that accrue to households due to productivity growth in the agricultural sector can stimulate demand for non-farm goods and services (Démurger *et al*., 2010), while at the same time the growth in non-farm incomes increases the demand for the goods and services that farmers produce (van Leeuwen and Dekkers, 2013); resulting in a virtuous cycle in which agriculture and the RNFE continue to fuel and sustain each other's growth. As a matter of fact, the RNFE has traditionally been considered to be heavily reliant on forward and backward linkages to agriculture (Tomich *et al*., 1995; Davis *et al*., 2017). Accordingly, in regions where the agricultural sector has undergone a rapid growth, the RNFE has also typically grown robustly (Haggblade *et al*., 2010), and vice versa.

Therefore, the nature and performance of agriculture can have significant influence on the growth of the rural non-farm sector, to the degree that the rural non-farm sector is integrated with agriculture. As a result, the non-farm sector grows fastest and most equitably where agriculture is dynamic. That is, where farm output is available for processing and distribution, where there are inputs to be sold and equipment to be repaired and where farm cash incomes are spent on local goods and services (Haggblade *et al*., 2010); all of which is determined by the agricultural product mix.

Implications of the rural structural transformation process for SSA countries

Most of the countries in SSA have been categorised by Fan *et al*. (2013) as agriculture-based economies. That is, countries that derive a significant portion of their GDP from the agricultural sector, with 75–85% of the labour force still employed by the agricultural sector (Gladwin *et al*., 2001). Tomich *et al*. (1995), aptly, term those countries as "Countries with Abundant Rural Labour (CARL)." The duration of time it will take for a CARL to transform and diversify its economic structure, has been referred to by Gladwin *et al*. (2001) as the "structural transformation turning point; defined as the point in time when the absolute size of the agricultural labour force peaks and begins to decline."

According to Tomich *et al*. (1995), the time period it will entail to diversify an economy at the onset of structural transformation, when it is predominantly reliant on agriculture, to one with developed agricultural, manufacturing and service sectors, will be quite long. For instance, for countries with 75–80% of the labour force still engaged in agriculture and annual population growth rates of 3.3%, Tomich *et al*. (1995) estimated the time period required for structural transformation to range from 32 to 58 years, even with the most positive (5–6%) rates of growth of labour absorption from the agricultural into the non-agricultural sectors. In a similar note, Armanda *et al*. (2019) recounted that, according to projections by the Organization for Economic Cooperation and Development (OECD), around 2050, the agricultural population in the West African region would start to decline and the ratio of non-agricultural population to agricultural population will reach 3.5 around the same year.

These estimates are an extremely important piece of information that gives us a sense of the scale of the challenge, especially for African countries, given that their high population growth rates, ranging from 2.5% to 4% per annum, is a major hindrance to their attainment of the structural transformation turning point any time soon (Gladwin *et al*., 2001). Be that as it may, over the past two decades, the context in which African agriculture operates has undergone dramatic changes (Christiaensen, 2017). A recent piece of evidence reveals that structural transformation away from agriculture has been taking place in SSA over the past two decades; the agricultural share of GDP declined from 23% in 1995 to 17% in 2013, likewise the agricultural share of total employment declined by an estimated 10 percentage points (Barrett *et al*., 2017). In like manner, other relatively recent empirical studies also revealed that the share of labour force in SSA engaged in farming has been on a decline, with a resultant rapid expansion of the non-farm sector (Yeboah and Jayne, 2018; Van den Broeck and Kilic, 2019).

No doubt, the expansion of rural non-farm activities and the attendant decline in the relative importance of agriculture are likely features of the structural transformation that typically accompanies the process of economic development. However, with the vast majority of the populace still residing in rural areas and a large share of the population still employed in agriculture, it can be argued that most of the countries in SSA are in the early stages of the structural transformation process. According to Kassie *et al*. (2017), because of rising populations, declining farm sizes and persistent low agricultural productivity, SSA's rural structural transformation appears to move very slowly. In a sense, market forces and voluntary transformations have thus far shown not to deliver fast enough action in most of Africa, which has been described by Davis *et al*. (2017) as "a latecomer to the process of structural transformation."

Although it can be deduced from the foregoing discussions that the exact duration and nature of the structural transformation varies across developing countries, it usually encompass several fundamental and multifaceted changes, which includes the gradual transition to commercial farming from of subsistence farming (agricultural transformation); economic growth and a corresponding reduction in agricultures share of GDP and employment; the emergence of a modern industrial and service economy; convergence of agricultural and non-agricultural earnings; demographic changes that include transitions from older to younger populations, declining fertility rates and age dependency ratios; rapid changes in educational attainment, particularly women and girl child education; and spiralling rural-to-urban migration (Timmer

2009; McGranahan *et al*., 2009; Choudhury and Headey, 2016).

CONCLUSION

Rural economies in SSA are not exclusively agricultural, rather a rising share of farm households' income is obtained from non-farm activities. No doubt this rising interest in the rural non-farm sector suggests that structural transformation away from agriculture has been taking place in Sub-Saharan Africa. However, the appropriate development pathway for rural households' will depend on the level of transformation within a country's economy, given that different countries have different prospects for minerals, manufacturing and agriculture. For countries in SSA that are at the nascent phase of structural transformation, smallholder farmers may require a relatively long adjustment time to fully diversify their sources of income. During this time, they are likely to employ a wide array of livelihood approaches appropriate for their asset endowment, environment, household composition, and the prevailing structures and processes. Therefore, from a policy viewpoint, efforts must be channelled towards creating a business climate that will facilitate rural households' access to extra sources of income, primarily through the rural non-farm sector.

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