

Professor Reuben A. Alabi: Report about completed projects in 2018 and envisaged projects for the years 2019 and 2020. Submitted December 2018 to Professor Karl Wohlmuth, University of Bremen, Supervisor of Research Activities of the Research Group on African Development Perspectives Bremen

The completed projects are:

‘Cassava Production, Processing, Fortification and Acceptability in Nigeria’, Essay for Volume 20 of the African Development Perspectives Yearbook, edited by Karl Wohlmuth et al. in Bremen. In Print.

Abstract

Nigeria is the largest producer of cassava in the world with a current production output of about 55 million tons. In 2014, Nigeria devoted 7.10 million hectares of arable land to cultivate cassava. Cassava is a crop whose by-products have a wide array of uses; cassava is the most important food crop in Nigeria not only by production quantity, but also because of its ability to reduce food insecurity; and cassava is a crop with implications on poverty reduction. It is tolerant to extreme climatic stress conditions and is suitable to the present farming and food systems in Nigeria. However, Nigeria is losing its production competitiveness due to declines of production and productivity over time. Most of the cassava produced in Nigeria is not processed to higher value products. This limits the income generating ability of cassava. Lack of value addition along the value chain also limits cassava marketability and its exportation in the international market. Improvement of cassava processing and utilization techniques would greatly increase labour efficiency, income, and living standard of the cassava farmers. Improvement of cassava along the value chain will enhance its shelf life, facilitate its transportation, increase marketing opportunities, and help to improve human and livestock nutrition. The paper concludes by making recommendations on how to address problems confronting cassava productivity, value addition and its marketability in Nigeria.

IMF Sponsored project on the ‘The pro-poorness of fertilizer subsidy and its implication on Food Security in Nigeria’. Power Point Presentation, Background Paper and Report on the IMF Mission.

Abstract

The fertilizer subsidy in Nigeria aims at making fertilizer price affordable by smallholder farmers in order to increase agricultural productivity and its efficiency; thereby increasing the income of the farmers and reducing poverty and food insecurity in the country. However, the past Nigerian Government fertilizer subsidy programmes have been characterized by high level of policy inconsistencies, ambiguities and instabilities that has led to arguments regarding its basis, application, impacts and sustainability (IDEP (2011), Adesina (2013) pointed out that the old fertilizer scheme used in supplying inputs to the farmers was weak,

inefficient and fraudulent; hence a large proportion of the farmers could not benefit from it. He stressed that the inputs meant for the farmers were diverted by political elites to other countries for personal gains. He concluded that the gains of the old fertilizer subsidy schemes are also not widely spread among the targeted beneficiaries. An attempt to overcome these difficulties led to the introduction of the Growth Enhancement Support Scheme (GESS) and the use of the Electronic Wallet (e-wallet) Approach to distribute fertilizer to the farmers more effectively. It is expedient to ask questions on the scheme's performance based on the objectives of the scheme. The major questions are if the scheme has increased the fertilizer use and the food crop productivity among the participating farmers? These questions are relevant because they will have implications on the sustainability of the scheme and its ability to improve food security situation in Nigeria. Furthermore, the empirical answers to some of these questions and the salient lessons derived from this study will help in re-designing and implementing the scheme and other similar schemes in Nigeria and in other African countries.

This study provides the government with feedback required to adjust the input subsidy policies and the public subsidy spending in Nigeria. Therefore, I examined the impacts of the e-wallet fertilizer subsidy scheme on the quantity of fertilizer use, the food crop output and the yield in Nigeria. The study made use of the Nigeria General Household Survey (NGHS) - Panel Datasets of 2010/2011 and 2012/2013 which contain data on 5,000 farmers in each of the panel. I applied propensity score matching (PSM) to analyse the data. We found that the e-wallet fertilizer scheme was able to register about 70% of the expected number of registered farmers, while the roll out and redemption rates stood at 55% and 48% respectively. Generally, the concentration indices of the fertilizer subsidy before and during the e-wallet fertilizer scheme were 0.0328 and 0.0168 respectively. The estimated concentration index of 0.0168 implies that the share of the small-scale farmers (poor farmers) in the e-wallet fertilizer scheme is lower than the share of the large-scale farmers (non-poor farmers). The study showed further that the share of the rural area in the fertilizer subsidy was about 39% and 41% before and during the e-wallet respectively. The study also revealed that the participating farmers in the e-wallet fertilizer scheme used more fertilizer and had higher output and yield than non-participating farmers. The study concluded that, although the e-wallet fertilizer scheme has achieved the objective of increased fertilizer use and an increase of the food crop productivity, its benefits are concentrated on non-poor farmers. In order to improve the impact of the scheme on food crop productivity and food security, the study recommends how the impact of the scheme can be improved and be made more pro-poor.

‘The Case of Sustainable Management of Waste in Germany and Practical Lessons for Nigeria’. A completed Project Report Sponsored by FENOG Limited, Nigeria. Revised Draft to be Published in 2019.

Abstract

Germany developed a very robust waste management system which ensures efficient waste collection, storage, transportation, and disposal while minimizing the impacts of disposal on the environment. Nigeria and other developing countries can learn from the experience of Germany. This paper therefore identifies the position of Germany regarding the sustainable waste management systems in the context of other European nations. It investigates the trend

in waste generation in the Country State of Bremen in Germany. This study is an exploratory one in which we obtained information from the principal actors in waste management in Bremen. The head of the municipal waste management unit provided relevant information for the study. We also administered a questionnaire to solicit important information along the value chain in waste management in Bremen, but the data refer mostly to the township of Bremen as waste management is an issue of the municipality. However, the municipalities in other Country States in Germany may have quite different Local Waste Management Systems and Laws and quite different financing modalities. The data were analysed using descriptive statistics. The study examines the waste management system in the Country State of Bremen in Germany and confronts it with the Nigerian case, looking at urban agglomerations. It presents the per capita waste production in the Country State of Bremen in Germany and the means of disposing it, and finally reviews the waste management financing model in the Country State of Bremen in Germany. These objectives were implemented with the hope that Nigeria and other developing countries can benefit from sustainable waste management practices pursued in Germany.

The study shows that in Germany, the Federal Ministry of Environment sets priorities, participates in the enactment of laws, oversees strategic planning, information and public relations, and defines requirements for waste facilities. Each Federal State adopts its own waste management act containing supplementary regulations to the Federal law, e.g. concerning regional waste management concepts and rules on requirements for disposal. The German waste management industry consists of various groups of main stakeholders: About 1000 municipal and private waste management companies (from one-man-firms to large concerns) fulfil the tasks of waste collection, recovery and disposal, with municipal companies accounting for a share of 35% and private companies for a share of 65% in domestic waste handling. Waste management in Germany has evolved into a large and powerful economic sector. There are more than 270,000 people working in some 11,000 companies with an annual turnover of around 70 billion euros. More than 15,500 waste management facilities help to conserve resources through recycling and other recovery operations. Germany's high recycling rates of 67 per cent for household waste, around 70 per cent for production and commercial waste, and almost 90 per cent for construction and demolition waste speak for themselves. The volume of waste generation has decreased since 2000 in Germany. The volume decreased from 406.7 million tonnes in 2000 to 351.2 million tonnes in 2015. This translated to about a 14% decline in waste generation in Germany.

However, waste generation decreased by as much as 23% in Bremen. The 23% reduction in waste generation in Bremen in the period of 2004 to 2013 is important; it means that more waste had been prevented, recycled or reused during the period. In 2014, Bremen had 15 waste recycling stations, according to MWMB/Municipal Waste Management Bremen (2014); there was a budget of €6 million (being equivalent to Naira/N1.2 billion). Waste management is capital-intensive in Germany. For example, the municipal waste management authority in Bremen spent more than 55.26 million Euros on waste management in 2014. The 55.26 million Euros spent on waste management in Bremen translates into about 0.20% of the GDP of the Country State of Bremen of 28.58 billion Euros. The essence of fees charged by the waste management authority of Bremen is to fully recover the 55.26 Million Euros spent for waste management during the year, as part of the budget policy of the independent waste management authority. The major activities on which the money is spent are for collection, implementation of the recycling-law in terms of recycling and cleaning, waste management infrastructure, waste consulting, disposal, etc, The waste collection fees charged in Bremen

town are based on, a fixed charge of 43.26 Euros, the volume of containers, the maximum number of the people living in the household, the total number of regular waste collection, and the fee for any extra collection per year. Before being landfilled, organic waste undergoes mechanical-biological or thermal treatment to render it inert and to minimise the release of leachate and landfill gas. The circular economy in Germany therefore focuses consistently on waste prevention and recycling, without jeopardising established high-quality, environmentally sound waste management processes. Up to 68 per cent of typical household waste is already recycled.

The paper concludes by making recommendations on how to improve waste management systems in Nigeria, as based on the findings from the study. The study will be used to inform policymakers in municipalities of Nigeria on lessons to learn from advanced waste management systems in Europe. The study also informs about the structural differences between developed country waste management systems and the rather mixed formal-informal waste management systems prevalent in Africa, like in the municipalities of Nigeria.

‘The Causes and Economic Consequences of Political Conflicts in Nigeria’, A Study Prepared for the Nigerian Community and the Nigerian Embassy in Germany at the occasion of a Public Discussion on Democracy in Nigeria which took place on November 30, 2018. A Publication of the Study is envisaged.

Abstract

Elections are key pillars of democracy and have become the commonly accepted means of legitimizing government. Once elections are flawed, it is an invitation to violence in the State which may snowball into political instability. Political violence, understood as an instrument to propagate and to maintain the status quo in Nigeria, is a historical and a structural phenomenon in nature. An analysis of the Nigeria Watch database for the period between June 2006 and May 2014 revealed 915 fatal incidents related to elections. A total of 3,934 deaths were recorded from these 915 incidents, with the highest prevalence in Plateau State and the lowest in Jigawa State. A regional analysis of the Nigeria Watch database shows that the bloodiest geopolitical zone is the Middle Belt, with 1,463 deaths. The analysis of causes of political violence shows that godfatherism (a form of political corruption in which an influential member of a party assists another person in the climb to leadership) is prevalent and affects more the South-West (386 deaths) and the South-South (644) of Nigeria. The South-East also witnesses political thuggery but records the lowest occurrence of deaths from electoral processes (152). Most electoral violence in northern Nigeria was found to have an ethno-religious background, whereas the southern part of the country is more affected by the high prevalence of criminal gangs. The correlation analysis shows that the correlation coefficient between political violence and literacy rate, unemployment, under-employment and tertiary unemployment rates in Nigeria are -0.1597, 0.5137, 0.5846 and 0.9175 respectively. This suggests that political violence is negatively related to the literacy rate in Nigeria, while the political violence is positively correlated with unemployment, under-employment and tertiary unemployment in Nigeria. The causality tests between political violence, unemployment, under-employment and tertiary unemployment in Nigeria are 9.6974, 9.8477 and 2.6611. This implies that the major causes of political violence in Nigeria

are unemployment, under-employment and tertiary unemployment rates. The study concludes on how to minimise political violence and instability in Nigeria.

Projects to be completed in the period 2019-2020:

‘Impact of State Government Public Expenditure on Yam Productivity and Its implication of Food Security in Nigeria’

Status Report: The project has commenced with the search for relevant literature on agricultural public expenditures. All the relevant data have been collected and the analysis is commencing. The report is slated to be presented on June 3-6, 2019 at the AERC Thematic Research Conference, Nairobi, Kenya. The funding for the project is secured from the African Economic Research Consortium (AERC).

Godwin Abu, from the Institute for Food Security, University of Agriculture, Makurdi, Benue State, Nigeria, is a collaborator also to this project. Benue State is the largest yam-producing state in Nigeria. Godwin Abu has been helpful in gathering data in Nigeria and his local knowledge of the yam-producing activities will be useful for the interpretation of the findings of this study. He is actively linked with the present Federal Minister of Agriculture in Nigeria (Audu Innocent Ogbeh); his political links will be helpful to get the policymakers in the Ministry of Agriculture ready to participate in the policy conference we intend to organize in Nigeria. He will be helpful also in getting the participation of the policymakers from the Ministry of Agriculture. So, he will not only contribute academically to the project but will help in the dissemination of the results of the findings from the study to the policymakers for the purpose of policy implementation. We had a useful collaboration together in a project that was funded by The International Food Policy Research Institute (IFPRI). The project findings were published as: Alabi, Reuben Adeolu, Adams, Oshobugie Ojorand Godwin Abu (2016). Does an inorganic fertilizer subsidy promote the use of organic fertilizer in Nigeria, AGRODEP Working Paper 0036, Washington D.C., International Food Policy Research Institute; access: <http://www.agrodep.org/resource/no-0036-does-inorganic-fertilizer-subsidy-promote-use-organic-fertilizers-nigeria>).

Abstract

Various studies, including the World Development Report on Agriculture (World Bank 2007a), assert that effective resource allocation to the agricultural sector, such as for the delivery of services like extension, credit, research and development, and plant and livestock disease control, are critical to the strong performance of the agricultural sector and agricultural productivity. While the Federal Government expenditure are an important component of total agriculture expenditure in Nigeria, the agricultural expenditures at the lower tiers of the government (States and Local Government Area) are often neglected. In fact, the agriculture expenditures at the States and Local Government Areas are not usually being accounted for when the agriculture expenditure matrix is being discussed in Nigeria. Since the agriculture expenditures are on the concurrent list in Nigeria’s constitution, the public agriculture expenditures in the states and the local government areas should be brought into the equation if we want to measure the impact of public expenditures on agriculture in Nigeria. The role of subnational governmental ministries is potentially large. The share of

subnational agricultural spending in total public agricultural spending across all tiers is high in Nigeria, given the fact that there is a relatively stronger role for state and local governments in agriculture as compared to several other sectors such as energy, defence, or certain types of infrastructure.

The state government share in agricultural public spending in Nigeria is as high as 60%. Olomola et al. (2014) have analytically described how agricultural state government spending should be allocated, realigned and harmonised to derive the best outcome in the agricultural production at sub-national levels in Nigeria. However, there has not been much detailed and robust analysis of the impact of the state public expenditure on agricultural productivity in Nigeria. Nigeria is the largest producer of yam in the world, followed by Ghana, Côte D'Ivoire, Benin, Togo, and Cameroon. Nigeria's yam production accounted for over 66 percent of the world total output in 2014. Yam is currently being exported to Europe and North America where a sizable population of yam consumers are found. However, the productivity of yam in Nigeria has been declining over the years. This poses the danger of eroding the comparative advantage which Nigeria has in yam production. Based on the foregoing discussion, some questions readily come to mind. Firstly, can increases in yam productivity address food insecurity in Nigeria? Secondly, will an increase in state agriculture public expenditures in Nigeria increase and reverse the declining trend in productivity of yam in Nigeria? Thirdly, does state capital agriculture expenditure has more impact on yam productivity than recurrent expenditure for the agriculture sector in Nigeria? Fourthly, which role can agricultural credit play in addressing declined yam productivity in Nigeria? Finally, what are the other factors that must be addressed to improve yam productivity in Nigeria? In order to provide answers to these questions, we require the knowledge about responses of yam productivity to state government expenditures, credit allocations and other associated factors in Nigeria. Therefore, this study intends to measure the impact of state public agriculture expenditures on the yield of yam in Nigeria. The study will also analyse the impact of agricultural credit and of other key determinants on yam yield in Nigeria. Therefore, this study intends to examine how state government expenditure can be used to address the issue of declined yam productivity and to establish its implication on food insecurity in Nigeria. The study will be conducted in seven (7) out of the fourteen (14) major yam producing states in Nigeria. Data on yam yields and on state agriculture expenditures for each of the 7 states will be obtained from ministries of agriculture and finance of each of the states. State rainfall data and data on agricultural credit will be extracted from the Central Bank of Nigeria (CBN) Statistical Bulletin of 2015. We will employ the generalized method of moments (GMM) estimator to obtain consistent parameter estimates of the impact of state agriculture expenditures and of other relevant variables on yam productivity in Nigeria.

‘Addressing Youth Unemployment in Nigeria Using Agricultural and Business Technologies’

Status Report: Deep researches yet to commence. Preliminary researches on youth and agriculture development were done.

Abstract

The African Union Commission (AUC) puts it that about 65% of the total population of Africa is below the age of 35 years and that 10 million youth enter the labour market

annually. Within Africa, more than 61 percent of the entire population is under 25 years of age, representing current and future youth cohorts of a daunting magnitude (Bennell, 2010). In Sub Sahara Africa (SSA), about 85 percent of youth are poor and 70 percent of them live in rural areas (World Bank, 2015). The youth constitute about 60 percent of the more than 160 million people of Nigeria. Nigeria's unemployment rate is projected at over 11 percent compared to the average rate of 9.5 percent in SSA. According to the National Bureau of Statistics (2004), young people aged between 15- and 24-years account for 53 percent of the unemployed people while those aged between 25- and 44-years accounted for 41.1 percent. Therefore, those in the age bracket of 15- and 44-years account for 94.1 percent of the total unemployed persons in Nigeria (Osibanjo, 2006). In fact, unemployed youth numbered about 11.1 million in 2012 in Nigeria and the trend continues unabated.

More than 60% of the unemployed youth live in rural area in Nigeria where agriculture is the main source of livelihood. Most of the Nigeria's food is produced by (ageing) smallholder farmers, but older farmers are less likely to adopt the new technologies needed to sustainably increase agricultural productivity. Young people can bring energy, vitality, and innovation into the workforce. Yet in Nigeria, few young people see a future for themselves in agriculture or in rural areas. Despite the agricultural sector's ample potential to provide income-generating opportunities for rural youth, challenges related specifically to youth participation in this sector and, more importantly, options for overcoming them are not extensively documented. In Nigeria, the agriculture sector possesses significant development potential which, if seized, could generate ample decent and gainful employment opportunities for rural youth. However, it is not only the agricultural sector that possesses untapped potential, but also the youth themselves. Their capacities for creativity and economic innovation are squandered when they are blocked from actively participating in economic activities. As a result, facilitating and incentivizing youth participation in the agriculture sector through improved technology would help drive the innovation and growth needed to reduce rural poverty among youths and adults alike. Unfortunately, many young people do not perceive agriculture as a viable or attractive means of earning a living. The drudgery of low productivity agriculture is simply not attractive to youth. When the youth' willingness to participate in agriculture is matched with opportunity, they can have a transformative impact on agricultural development in Nigeria. However, engaging youth in agriculture requires addressing the constraints that they face when trying to earn a living (FAO, 2014). The questions that readily come to our mind are: What are the constraints that limit Nigerian youths' participation in agriculture and agricultural business? Which agricultural products do have a comparative advantage in producing in terms of productivity, and how is this assessed by youth and youth entrepreneurs? What types of farm, farming and enterprises do they engage in, and how? Do they combine farming with other income generating activities? Which proportion of their farm products are being processed to add value and to earn good income? What are the types of agricultural technologies they prefer? Has the adoption of these new agricultural technologies increased their farm productivity? Does their parental or educational background influence their farming decisions and productivity?

In order to answer the above research questions this study sets the following specific objectives:

Investigating the socio-economic constraints faced by the youth who are involved in agriculture and agricultural businesses in Nigeria. Examining the enterprise combination and crop production diversity of the young farmers in Nigeria. Determining the factors that will increase the probability of engaging youth in agricultural activities in Nigeria. Analysing the

agricultural technologies' adoption behaviour of young farmers in Nigeria. Estimating the economic efficiency of the agricultural production of the young farmers in Nigeria. Making policy recommendation for the ministries of agriculture, youth and the National Directorate for Employment (NDE). The study will be conducted in seven (7) out of the fourteen (14) major yam producing states in Nigeria. The relevant information will be extracted from the Nigeria General Household Survey (NGHS)-Panel Datasets of 2011, 2013 and 2016 which was implemented by the National Bureau of Statistics (NBS). The NGHS-Panel consists of 5,000 farming households. The data in the surveys include information on household agricultural activities, age of the farmers, employment structure, other household income activities, etc. The panel data will be supplemented with questionnaire administration to 100 young farmers and entrepreneurs in each of the seven states to make up a total of 700 (seven hundred) respondents for the in-depth analysis. The socio-economic constraints of the young farmers, their enterprise combination, and the crop production diversity will be analysed using descriptive statistics. The probability of engaging youth in agricultural activities and the analysis of agricultural technologies' adoption behaviour of the young farmers and entrepreneurs will be determined by using the Probit Modelling approach. Technical and cost efficiency of the agricultural production of the young farmers will be analysed by using a Stochastic Frontier Production Function methodology.

'Impact of the Agricultural Credit Guarantee Scheme Fund on the Productivity of Food Crops and Its Implications on Food Security in Nigeria'. A Proposal Prepared for a Collaborative Project on Food Security in Nigeria together with the African Economic Research Consortium (AERC), Nairobi, Kenya.

Status Report: The project has commenced with the search for relevant literature and gathering of secondary data. The funding is yet to be approved by the African Economic Research Consortium (AERC), Nairobi, Kenya.

Abstract

Poor credit accessibility has been attributed to lower yield recorded in agricultural production in Nigeria (Awotide, *et al.*, 2015). Olowu (2011) noted that the problem of access to finance for agriculture is not solely a result of non-availability of finance but could as well be caused by the reluctance of credit providers to give out loans without a certainty of recovering them. In order to alleviate this predicament, the federal government instituted the Agricultural Credit Guarantee Scheme Fund (ACGSF). This study intends to analyse the impact of credit obtained from the ACGSF on cassava and yam productivity in Nigeria. Specifically, the following objectives were set for the study:

- (a) Estimating the response (causality and impulse response) of cassava and yam productivity to food insecurity in Nigeria.
- (b) Investigating the performance of the ACGSF in terms of loan repayment rates, credit arrangements (individual farms versus cooperative farms), and agricultural credit sub-sectoral allocation (roots and tuber versus other agricultural products).
- (c) Analysing the impact of ACGSF credit on cassava and yam productivity in Nigeria.
- (d) Comparing the impact of ACGSF credit on cassava and yam productivity with cereal production in Nigeria.

The study will be carried out at two (2) levels. The data that will be collected at the national level are ACGSF agriculture credit for roots and tuber, grains, livestock, forestry, fishery etc, federal government expenditure on agriculture, cassava and yam yield, annual rainfall and prevalence of undernourishment (%) as an indicator of food insecurity and national agricultural credit. The national data range will be from 1978 to 2016. This is because the ACGSF was established in 1977. The second level of information is from the cassava and yam producing states. At this stage, the focus will be on eight (8) out of fourteen (14) major cassava and yam producing states (Akangbe *et al.*, 2012). The states that will be selected at this stage are Benue, Niger, Cross River, Osun, Ondo, Ekiti, Edo and Ebonyi. We will employ the generalized method of moments (GMM) estimator to obtain consistent parameter estimates of the impact of ACGSF credit on cassava and yam productivity in Nigeria.

‘Financial Inclusion, Innovation and Agricultural Development in Africa’. Proposal Prepared for Volume 22 of African Development Perspectives Yearbook that will be published for the year 2020 with the title: “Sustainable Development Goal 9 (Infrastructure, Industrialization, Innovation) and African Development – Challenges and Opportunities”.

Status Report: The Study has just commenced with the search for literature being relevant to financial inclusion and agricultural development. I will work with Adebowale Bakare, who is the Project Manager for Anglophone (West Africa), Afrika Verein der Deutschen Wirtschaft, Berlin, Germany. We intend to get funding from a Special Alexander von Humboldt Research Funding Programme. Some of our studies that are related to the theme of this study are: Alabi and Adams (2013) and Alabi and Adams (2011).

Abstract

Financial inclusion is needed throughout the agricultural value chain to achieve broad-based economic growth which can raise incomes for low-income households. The effect of financial inclusion on agriculture, however, remains open to question. Various important related issues have not yet been fully examined in the literature. None of the past studies, for example, have addressed whether the usage of financial services has significant impacts on agriculture in Africa (Evans, 2017). It has been proved that there is huge financial exclusion among the adult population in Africa, but the empirical information about the proportion of farmers being in financial exclusion in Africa is scanty (Evans, 2017). Additionally, with the increasing number of initiatives to develop a financially inclusive economy in Africa, it would be worthwhile to assess the impact of financial inclusion on the agriculture sector of the African economy. By situating financial inclusion within the specific context of agriculture, we will be able to provide solid and insightful evidence for policymakers for a more inclusive agriculture growth policy and strategy and for an inclusive economy in Africa. In this study we intend to examine the financial inclusion in Africa across sectors. For example, in Nigeria for the years 1981 and 2010, the share of average bank credit to agriculture ranged between 9% and 10% of the total credit volume, while for the manufacturing sector the share ranged between 32% and 37%. It is necessary to know more about the sectorial financial inclusion rates and then to compare the rates among the economic sectors and among the countries in Africa.

Well-developed innovative financial instruments can be used to incentivize financial inclusion in Africa (AfDB, 2016). The telecom revolution, the digital transformation and other innovations suggest that these changes may allow to leapfrog for some difficult transportation and communication problems that drive up transaction costs and risks, and that restrict financial inclusion for the poor. In fact, the lower percentage of financial exclusion in Kenya and Tanzania has been attributed to a high uptake of mobile money in these two countries (EFInA, 2014). In countries such as Cote d'Ivoire, Ghana, Senegal, Malawi, Zambia and Zimbabwe market players have also implemented innovative financing solutions to the people. Although some studies are available on the spread of such innovations, not much is known about the impacts on productivity and the spread of innovations along the agricultural value chains in Africa. And, not much is known about the policy reaction of governments towards the role of financial inclusion for agricultural transformation

We intend to examine some of these innovative financial instruments across Africa and to assess how they have contributed to financial inclusion or otherwise among the farmers on the continent, looking at the whole agricultural value chain. It will be of interest to know if the farmers' financial inclusion can be improved if they move higher in the value chain or move to higher valued crops, such as in the horticulture and floriculture sectors in Kenya and Ethiopia respectively, in the rice sector in Senegal and Mali, in vertical integration and agro-processing in Morocco, and in cotton production in Burkina Faso. African cereal yields grew by less than 40% between 1990 and 2015. As a result, Africa's yields are only 56% of the international average (World Bank, 2015). We want to know if financial inclusion instruments can be used to address and to reverse the trend of declining yield and productivity in Africa agriculture. Agribusiness activities account for 78% of total value added in all agricultural value chains globally (World Bank, 2013), yet this figure falls to approximately 38% in Africa. In the case of cocoa, Africa exports 70% of the world's raw cocoa beans, but only 20% of grounded cocoa, which is typically worth 2-3 times more per tonne than raw cocoa (AfDB, 2016). Similarly, African countries process on average 56% of the soybean they produce and meet further demand for processed soy through expensive imports (ACET. 2014). More generally, Africa is the only region for which the GDP's contribution from direct agriculture activities is higher than that from agribusiness activities. There is greater value to be captured downstream from raw commodity processing; at the moment Africa is capturing less than its 'fair share' of profits down the value chain (Feed Africa, 2015). Therefore, it will be pertinent for us to relate the financial instruments' utilization and inclusion in Africa to agribusiness activities and value chain development. We shall analyse the financial instruments' accessibility and utilization of the farmers (which proportion of the finance goes into storage, processing, irrigation, marketing, fertilizer, agrochemical, technologies, etc.) in agriculture and agribusiness activities among the countries of the African continent.

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