

AERC Special Call for Proposals

Agriculture, Climate Change and Natural Resource Management

The AERC is pleased to announce a special call for proposals under the theme Agriculture, Climate Change and Natural Resource Management. Researchers whose proposals have been accepted receive a research grant ranging between USD9000-USD12000 as well as intense mentoring by world class researchers with extensive expertise in the areas of Agriculture, Climate Change and Natural Resource Management, macro and microeconometrics, impacts evaluation, and related disciplines. A guide on how to prepare a proposal is attached. AERC encourages female researchers and those from fragile and post-conflict countries to apply. Please register and upload your proposals [here](http://research.aercafrica.org/) (<http://research.aercafrica.org/>). The proposed research themes include, but are not necessarily limited to the following:

Themes	Suggestions on research problems or objectives
<p><i>1. Promoting food and nutrition security and resilience under conflicts and unstable livelihoods in SSA: what options are available to households?</i></p>	<p>After years of increasing global food security, world hunger is rising again, particularly in developing economies affected by poor infrastructure, limited access to necessary inputs, gender inequality in ownership or distribution of production resources, income uncertainties, weather and price shocks and persistent conflict for resource control. In Sub-Saharan Africa, conflict onset at the local level tends to influence farm households' agricultural production due to adverse effects on labor supply, access to land, and access to credit. Yet, the relationship between agricultural production and conflicts is bi-directional. Specific concerns are mechanisms and strategies employed by households, farmers, and various actors along the food chain to live under such a fragile environment, along with the appropriate policy to be put in place to mitigate the challenges and bring about stability in livelihoods and food systems of the different actors. New evidence can be generated regarding smallholder's agricultural livelihood, food and nutrition security, and conflict relationships using subnational data (agricultural production, nutrition, and conflict data) discussing the various empirical strategies to estimate the causal effect and handle the endogeneity that characterizes the coupling between food and nutrition security and conflict.</p>

	<p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>
<p>2. Climate variability, Urbanization, and Agricultural Productivity in Sub-Saharan Africa</p>	<p>In Sub-Saharan Africa, agriculture is the main source of income for rural dwellers, representing 60 percent of employment. In addition, rural farming activities mainly depend on rainwater resources. The adverse impacts of climate variability on the agricultural sector, coupled with farmers' weak adaptive capacity and low investment in adaptation measures might be nourishing climate-induced rural-urban or international migration in search for alternative livelihoods and better employment prospects. Climate induced rural -urban migration is expected to put an additional pressure on urban centers and escalate an already fast urbanization rate in the continent. Within this context, incoming migrants might resort to urban or peri-urban agriculture as an adaption strategy. Yet the evidence on climate triggered migration and its consequences are rather scarce or mixed. While some studies find a direct effect, others find that climatic change have rather an indirect effect on migration through its impacts on agricultural production, and other social, economic, and political factors.</p> <p>This research theme aims to examine the relationships between agriculture, climate change and migration, and their consequences disentangling the transmission channels such as agricultural productivity, conflict, rapid urbanization, etc.</p> <p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>

<p>3. Sustainability of Agriculture, Adaptation to Climate change and Vulnerability to Covid-19</p>	<p>Global value chains and access to markets have been heavily disrupted by the Covid 19 pandemic adding supplemental pressure on food security particularly in developing countries. Questions that arise in Sub-Saharan Africa include, among others: (1) To what extent have the agro-economic and environmental systems been affected by the Covid-19? (2) What are the implications for modelling the agri-environmental systems along with the effects that controllable and uncontrollable factors have on the economic benefits of the systems? (3) What have been the effects on food demand and supply? (4) What are the mechanisms explaining the impact of the pandemic on the agricultural sector? (5) What should we know about the vulnerability of the rural sector and the agriculture economy to the risks of the Covid-19 pandemic as well as other health risks, increased vulnerability of African economies? (6) How can the pandemic be incorporated in analyzing the vulnerability, and the erosion of the gains from effort at fiscal consolidation undertaken before and during the crisis? ...</p>
	<p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>

<p>4. Climate change and Risk Management strategies in Sub-Saharan Africa</p>	<p>The Intergovernmental Panel on Climate Change has determined that between 75 to 250 million people in sub-Saharan African are likely to face water shortages and that rain-fed agriculture is likely to contract by as much as 50% in some countries in the region. Climate change is a major challenge as the people of this region try to extricate themselves from extreme poverty and reduce their vulnerability to the spread of tropical diseases, such as malaria and dengue fever. Households (smallholder agricultural actors) live with risk and uncertainties decision every day that affect their operation. They are frequently exposed to the uncertainties of weather, prices and diseases. Majority of risks are linked to specific stages in the agricultural value chain and can be grouped to weather related and natural risks, biological and environmental risks, logistical and infrastructural risks, market and commercial risks, policy and institutional risk, political and security risks, which are not under the control of smallholder agricultural actors. As part of the effort to realize the aspirations of Agenda 2063, Africans must, inter alia, deal with climate change. This involves mitigation and adaptation to the implied risks. Studies on this theme can help understand how some agricultural actors have developed a way of managing these risks and what policy may be proffered to help them overcome the challenges.</p> <p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>
<p>5. Implications of Population growth, Demographic transition and digitalization on sustainable Agricultural growth and development in Sub-Saharan Africa</p>	<p>Africa is the fastest growing region in the world. Following the FAO (2017), Africa is the only region where the maximum population size will not be reached within this century. Rather, it will expand even beyond, with its 2.2 billion people expected by 2050 and more than 4 billion by 2100. About 70% of that population is aged below 30, a median age of 18.3, and made up with 226 million people aged between 15 and 24, thus making Africa the youngest population in the world. Rural youth in Africa are still primarily engaged in agriculture, while in urban areas most of them are in the informal sector. Several opportunities could be seized by youth if agriculture in the future provides decent and attractive jobs to young people, while fostering rural entrepreneurship with investment in technology, mostly in digitalization. Specific concerns include assessing the implications of a digitalized agricultural system on the demographic trend and growth of youth population in SSA, while paying attention to gender, youths, and most vulnerable groups.</p>

	Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.
6. Land rights and tenure security: implications for agricultural productivity growth and natural resource exploitation in sub-Saharan Africa	Agriculture is Africa's comparative advantage. The continent has an estimated 600 million hectares of uncultivated arable land (about 65% of the global total). However, poorly defined property rights and often difficult to understand land-tenure systems and difficulties in gaining access to land may be hampering the ability of Africans to use agriculture as an effective foundation for economic development. For African countries to achieve food self-sufficiency, as well as engage successfully in other forms of economic transformation, public policy to achieve these and other development goals must be based on research in areas such as: (1) land governance generally; (2) governance of tenure rights; (3) investments in land (e.g., to improve its quality and sustainability); (4) implications of land rights and tenure security for agricultural intensification, productivity and commercialization; (5) implications of land rights for access to financial resources; (6) inclusive land tenure and land rights (gender issues and youth); (7) increased land fragmentation and implications for productivity, intensive farming, and the application of various forms of technology (e.g., irrigation); and (8) various institutional issues affecting access to land, the management of land, preservation of the ecosystem, etc. Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.
7. Natural Resource Exploitation and Impacts on Agricultural productivity in Africa	Natural resources (land, water, soil, plants and animals) extraction plays a crucial and growing role in Sub-Saharan economies, as revealed by the continent's share of natural capital in its aggregate wealth which is the second highest in the world. For instance, oil accounts for 43.5 percent of resource-rich sub-Saharan Africa wealth, whereas land accounts for about 35 percent; metals and minerals account for 27 percent for Zambia, 26 percent for South Africa, and 14 percent for Botswana. Unfortunately, the exploitation of a large component of this endowment is at the expense of agriculture. Yet agricultural productivity growth is a key element for the continent's quest for sustainable development and structural transformation. Evidence on the key interactions, along with the impacts of these interactions on increased productivity in the agricultural sector should contribute to fill the gap on the documentation of the impacts of natural resources on agriculture in Sub-Saharan Africa.

	<p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>
<p>8. How will management of Africa's water resources affect</p>	<p>While it is true that Africa faces a significant number of development problems that call for urgent action at the continental level, <i>the management of the continent's water resources is one of the most important.</i> On the surface,</p>

<p><i>socio-economic development in the years to come in Africa?</i></p>	<p>Africa seems to have abundant water resources as it boasts of many large rivers, big lakes, widespread ground water resources, and abundant rainfall, especially around the equator. Unfortunately, there are both human and natural threats to the continent's water sustainability. The natural threats include (1) multiplicity of transboundary water basins (Africa has 63 transboundary lake and river basins e.g., Nile, Congo, Niger, Zambezi, lake Chad etc.); (2) extreme variability in rainfall, coupled with climate change; (3) growing water scarcity, the shrinking of some water bodies, and desertification (e.g., in the Sahel and the Kalahari); and (4) the emergence of extremely large metropolitan areas (e.g., Lagos, Johannesburg, Cairo) with significant demands for water for household use. Human threats include (1) poor governance and institutional arrangements that actually exacerbate poor water management; (2) the depletion of water resources through pollution, environmental and ecosystem degradation (e.g., Nigeria's Niger Delta); (3) the failure of African countries to invest adequately in assessing the use of their natural resources (including water) and how to protect and develop them; (4) unsustainable financing of investments in water supply, use (both in the household and commercially), and sanitation; and (5) the influx of unscrupulous foreign operators (e.g., Chinese mining interests in Ghana) which are damaging Africa's water resources. Studies on this theme can help the continent or groups of countries (e.g., the 11 countries of the Nile River Basin) design and adopt more effective and sustainable ways to manage this critical resource.</p> <p>Research under this call could help African countries find ways to: (1) improve the efficiency of water use, which specifically include issues of the demand for water (e.g., for household use, especially in urban sectors, as well for use in agriculture and other commercial pursuits), and (2) cooperate efficiently over transboundary waters management. Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>
---	---

<p>9. The Impact of Agricultural Input Subsidies Programs in Africa</p>	<p>Input subsidy programs (ISPs) remain one of the most controversially debated agricultural development policies in SubSaharan Africa. On the one hand, subsidies may induce the adoption of improved inputs and thereby stimulate small farmers' agricultural productivity and food security. On the other hand, many economists argue that input subsidies not only contributed weakly to agricultural productivity growth, food security but also have distortionary effects as they hindered the development of the private input subsidy market. Yet, following the 2003 Maputo Declaration, several countries re-introduced ISPs in the form of what is known as 'Smart Subsidies' designed to correct for earlier programs shortcomings via better and careful targeting as well as the involvement of the private sector in the programs. The purpose of this theme is to generate a synthesis of recent evidence on Input Subsidies Programs in SSA and to specifically evaluate ISP impacts on: (i) Land productivity (agricultural production); (ii) Food security; (iii) Land allocation</p>
	<p>(crop portfolio choice); (iv) Investment in soil and water conservation; (v) Farmers' commercial purchases (crowding out private fertilizers market development). Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>

<p>10. What types of financial innovations can both formal and informal financial institutions provide for the financing of sub-Saharan Africa's agricultural sector?</p>	<p>Traditionally, smallholder farmers depended heavily on informal sources of financing, which include credit from family- or ethnic-based savings associations. Unfortunately, these financing sources are no longer adequate to support the needs of an increasing population. Formal financial institutions (e.g., commercial banks and credit unions) consider smallholder farmers and other agricultural sector-related small operators to be huge business and financial risks. Innovative financing mechanisms from formal and informal financial institutions – saving groups, ICT and mobile banking, risk management schemes -, for example, can deliver necessary financial resources to cash-strapped smallholder farmers. These innovative financing mechanisms should help smallholder farmers manage risk, as well as sustain the agricultural value chain. Generally, these innovations should, among others, (1) address underlying bottlenecks such as land tenure rights and increase food production; (2) lead to increased and effective financing along the value chain; and (3) support the development of the agricultural finance value chain. Of interest will be regional and country cases that showcase innovative financing at the various nodes of the agricultural value chain, which will ultimately be translated into the delivery of high value agricultural products, post-harvest loss reduction, improvements in the availability of, and access to, food, and improved welfare of the various value chain actors.</p> <p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>
<p>11. Contribution of Agriculture to recent African Economic growth and macroeconomic development</p>	<p>A detailed study of the place of agriculture in economic development, interrelations between agricultural and industrial urban development, agricultural employment and unemployment, agricultural policy, agricultural productivity, agricultural finance and investment and economic development, comparative farming systems research and agricultural innovation, as well as large-scale private investment, government's expenditures (level and allocation) in agriculture related public goods, subsidies and tax policy affect agriculture.</p> <p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>

<p>12. Promoting the use of Alternative and 'Big-Data' in Agricultural, Climate Change</p>	<p>One of the challenges in conducting timely and scientifically rigorous research in agriculture, climate change and natural resources areas in Africa is lack of appropriate data. Alternative data sources such as satellite data (nighttime, NDVI imageries), bigdata such as internet search, transaction, shipping, scanner, etc. are among the best source of</p>
<p>and Natural Resources Management Research in Africa.</p>	<p>information in some cases outperforming traditional survey data in terms of quality and timeliness. More importantly, these data are increasingly becoming accessible and open source for research use. However, the use of such alternative data is at infancy or non-existence among African researchers for various reasons, including capacity. This thematic area's aims are encouraging the use of alternative and non-traditional data (satellite and 'big-data') in agricultural, climate change and natural resources management in Africa.</p> <p>Scope: specific in-country case studies, regional studies, cross-country studies with possible comparisons among a few countries.</p>

**Deadline for Application
September 20, 2023**