



## Editorial

### Agricultural Research for Development in Africa: Selected case studies

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#### ABSTRACT

This Issue 7 (3) of African Journal of Rural Development (AFJRD) has nine papers that address largely six themes: Climate change and its associated impacts on livelihoods across Africa; sustainable agricultural intensification and associated effect of land expansion; environment effect of artisanal mining in Ghana ; agricultural value chain analysis in terms of gender role and participation; food value addition; and lastly socio-economic issues related to farmer preferred traits in cooked cassava, trade in common beans in Kenya and efforts at transforming rural livelihoods- the case in Lesotho. The paper by Sebuliba *et al.* (this Issue) discusses the related issue of effect of inorganic fertilizer application on greenhouse gas emission and microbial activity in shaded coffee trees in Uganda. These papers provide insights into some of the work especially in terms of responding to climate change challenges, declining land availability for agriculture due to increasing population pressure and the broader issue of strengthening livelihood opportunities in Africa. The papers provide a synopsis on some of the research work being done across Africa and allude to the need to strengthen Research for Development activities in Africa.

Key words: Africa, Agriculture intensification, Agro-pastoralism, Artisan mining, Cassava cooking quality, climate change impacts

#### RÉSUMÉ

Ce numéro 7 (3) du Journal Africain de Développement Rural (AFJRD) contient neuf articles qui abordent principalement six thèmes : le changement climatique et ses impacts associés sur les moyens de subsistance à travers l'Afrique ; l'intensification agricole durable et l'effet associé de l'expansion des terres ; l'effet environnemental de l'exploitation minière artisanale au Ghana ; l'analyse de la chaîne de valeur agricole en termes de rôle et de participation des genres ; la valorisation des produits alimentaires ; et enfin les questions socio-économiques liées aux caractéristiques préférées par les agriculteurs dans le manioc cuit, le commerce des haricots communs au Kenya et les efforts de transformation des moyens de subsistance ruraux - le cas au Lesotho. L'article de Sebuliba *et al.* (ce numéro) discute de la question connexe de l'effet de l'application d'engrais inorganiques sur l'émission de gaz à effet de serre et l'activité microbienne dans les caféiers ombragés en Ouganda. Ces articles fournissent des aperçus de certains travaux, en particulier en termes de réponse aux défis du changement climatique, de la diminution de la disponibilité des terres pour l'agriculture en raison de la pression démographique croissante et de la question plus large du renforcement des opportunités de subsistance en Afrique. Les articles offrent un synopsis de certains travaux de recherche menés à travers l'Afrique et font allusion à la nécessité de renforcer les activités de Recherche pour le Développement en Afrique.

Mots-clés: Afrique, Intensification de l'agriculture, Agro-pastoralisme, Exploitation minière artisanale, Qualité de cuisson du manioc, impacts du changement climatique

Globally, and in Africa in particular, Climate Change is grossly affecting livelihoods and economies of the world, with the rural poor being the most affected. As such a Key theme addressed in this Issue 7 (3) of African Journal of Rural Development (AFJRD) is Climate Change Impact and adaptation strategies in Africa. The first paper in this Issue by Badji *et al.* (2022) provides an elaborate analysis of selected cases studies covering Central, Eastern, Southern and West Africa. The studies highlight widespread occurrence of droughts especially in the Sahel and Southern Africa, shifts in rainfall patterns such as in Eastern and central Africa, in some areas devastating effects of floods (southern Africa) and widening coastal erosions in West Africa, amongst others. The net result has been worsening food insecurity across the continent, coupled with increased incidence of diseases (animal and human) pandemics. As such various mitigation and adaptation measures are needed including enhancing farmers adaptive capacities as being done in Ethiopia (Addis and Abirdew, 2021). The other paper by Mbazira *et al.* (2022) provides insights into how drought is affecting agropastoral communities in the Cattle corridor in Uganda, which is likely the case in other agropastoral communities across Africa. The related paper by Sebuliba *et al.* (this Issue) discusses the related issue of greenhouse gas emission and how this is affected by land use practices, and points to possible options of managing effect of inorganic fertilizer application on greenhouse gas emission and microbial activity in shaded coffee trees in Uganda.

The second theme addressed in Issue 7 (3) is sustainable agricultural intensification and associated effect of land expansion. According to Sebuliba *et al.* (2022) and others such as Kopittke *et al.* (2019) the need to increase agricultural production to meet the increased food demand as a result of the rapid and rising human population, has led to expansion of cultivation even on marginal lands as well as reduced land due to infrastructure development in Africa. Invariably there is increased use

of unsustainable land management practice resulting in widespread land degradation and increased greenhouse gas emission (Sebuliba *et al.*, 2022). Four papers accordingly address this issue including the one by Sebuliba *et al.* (2022). For example, Hamazakaza *et al.* (2022) discusses the causal effect of Sustainable Agricultural Intensification adoption on agricultural land expansion in Katete District of Zambia. In terms of land degradation and environment health (Theme Three), Seiba and Franklin (2022) discuss how Artisan small-scale mining has caused harmful effects on natural resources in Ghana. This is the case in several countries including DR Congo and Uganda for example. There are other practices that lead to unsustainable land use and often environment health concerns. These often require socio-economic interventions including how best to cope up with the rapidly growing human population growth and widespread youth unemployment.

Kavoi *et al.* (2022) contributes to Agricultural value chain analysis in terms of gender role and participation (Theme Four in this Issue). The paper examined household determinants of Common bean production and marketing in Kenya. Beans are largely produced by smallholder farmers, both male and female, with females providing most of the labour. Education level influence income earned with more educated farmers gaining more income. Similarly, Rusawo *et al.* (2022) paper on a gendered approach to the goat value chain analysis: A case study of Mbire District, Zimbabwe. The implication of the findings of the two studies is that gender sensitive interventions are needed to improve productivity and distribution of incomes at household level. This applies to different value chains.

Wembabazi *et al.* (2022) paper provides insight on how plant breeders are responding to develop diverse germplasm to meet consumer demand. Their paper on Consumer preferred boiled cassava cooking qualities in white and

yellow fleshed advanced breeding populations in Uganda highlight a collaborative approach to develop new consumer preferred cassava varieties, an important food staple in several African and Latin America countries. This is a necessary step to respond to changing eating habits and to add value to cassava foods. This is also required for other food staples. Theme Five, on food value addition is important across several food value chains and should also involve making new food products from African indigenous foods including fruits and vegetables. African Journal of Rural Development 7 (3):

Finally, Musi and Mathosi (2022) examines the prospects and challenges of transforming rural livelihoods at Mantšonyane, Lesotho (Theme Six). The paper gives insights not only on the efforts but an approach to create rural transformation, an important issue especially for the agrarian economies typical of most rural Africa. This is an issue that requires policy rethink and sustained commitment, flexibility and commitment to make change happen as done by Indira Gandhi in India. Certainly science will be a key facilitator for such processes and actors in the agricultural development landscape need to explore various possibilities.

This AFJRD Issue 7 (3) therefore provides insights into some of the key development challenges and indeed opportunities that the continent researchers are addressing. Climate Change will remain a Key challenge impeding negatively development landscape in Africa and globally. As such considerable investment and global partnerships will be vital for building mitigation and adaptation capacity. The current efforts towards a Green economy is a step in the right direction. Basic and applied research are also needed to enhance sustainable agricultural productivity and resilience of Africa's Agri-food Systems across various landscape ecologies in the continent. At the same time efforts need to be put in place to strengthen capacities of

local communities, especially rural farming communities, and others such as those involved in artisan mining so as to ensure not only better earnings but also sustainable resource use and environment health.

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