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# **Integrating women and youth in climate-smart African agriculture**

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## **Abstract**

A synthesis of gender and age-group disaggregated statistics reveals youth and gender-based constraints in sub-Saharan Africa (SSA), necessitating special targeting of women and youth in climate-smart agriculture. This paper makes a case for transformation of agricultural disciplines to embrace gender-responsive research involving a blend of social and biophysical sciences. A new set of skills and attitudes to tackle complex climate response research problems from new angles, within unconventional inter-disciplinary research teams, is essential. The transformation should be supported by new capacities at institutional and individual levels; hence the need for novel training and capacity-building models.

## **Introduction**

African economies, and livelihoods of the vast majority of the population dependent on agriculture, are facing the dual challenge of climate change and the unprecedented youth bulge. The challenge is exacerbated by gender-based constraints that disadvantage women, who constitute about 50 percent of the African population and play a critical role in household food security, economic survival and climate change adaptation. Women would contribute even more significantly to climate adaptation and mitigation if the widespread gender-based constraints are addressed. Targeting women for effective agricultural development has remained a topical issue, attracting much attention by researchers, funders, national and regional strategies and programmes for decades, yet the problem of the marginalisation of women persists. The increasing impacts of climate change, and the population explosion, further complicate the gender and agriculture problem since both sex and age variously define access to the productive resources necessary for agriculture and climate resilience in SSA. This points to the need to understand better, and raise awareness about, the nature and extent of the recurrent problem of marginalisation based on gender; and to identify actionable interventions suited to the SSA context. This provides the focus of this paper. Citing

evidence from literature, the paper outlines the triple challenge of climate change and variability, gender gaps in agriculture, and the population explosion, which has culminated in the youth bulge. It proposes a re-thinking and reconfiguration of paradigms underpinning agricultural research disciplines, and a model for building capacity to make this happen.

## **Inclusive climate-smart agriculture: the role of women and youth**

SSA is one of the continents most vulnerable to climate change. Climate predictions point to changes in intensity, predictability, and frequency of precipitation; sea level and ground-water rises; as well as temperature increases, with the warming highest in some parts of the Sahara, central and southern Africa (Porter *et al*, 2014). These changes are likely to have far-reaching impacts on farming and food. Climate-smart principles are essential to counter pre-existing vulnerability, by ensuring that farming and agricultural commodity value chains are more resilient to climate shocks. These principles include sustainably increasing agricultural productivity and incomes, and reducing and/or eliminating greenhouse gas emissions.

An effective response to climate threats requires that SSA equips and deploys all of its human capital. Everyone must be able to access and utilise technologies, information and resources to identify and tackle the challenges. This is not the case for women and youth. Women's productivity is adversely affected by gender inequalities. Despite their big contribution to agriculture, compared to men, women continue to have less access and control over both productive resources and services, as well as decision-making within households and the wider community (World Bank, 2014).

Regarding the youth, statistics reveal a demographic dividend for Africa. Africa has the youngest population in the world (about 200 million people aged between 15 and 24). Currently, youth between the ages of 15 and 24 number 1.2 billion of the 7.5 billion global population (Population Reference Bureau, 2017). In some countries such as Uganda, 77 percent of the



population is under 30 (Uganda Bureau of Statistics, 2016). Therefore, the 'youth bulge' provides a unique window of opportunity in which youth can be engaged as a positive resource in creating a more sustainable world. However, in order to tap into the potential of the youth, SSA needs to address prevailing constraints, notably: their inadequate access to production resources and services, high unemployment levels, and negative attitude towards agriculture as a profession, especially in its current low technology, rudimentary nature.

Global statistics show that 91.3 percent of the youth are literate and 13.7 percent are unemployed (World Bank, 2017). Youth unemployment levels stand at 11 percent in SSA, and 23 percent in North Africa (ILOSTAT, 2016). In Uganda for example, a quarter (25.6 percent) of the youth were unemployed in 2015. Of these, females (30.3 percent) represent a higher proportion than males (19.3 percent). In addition, slightly more than one-fifth (20.7 percent) of the youth are not economically active, with a higher share of females (24.6 percent) than males (15.4 percent) (Uganda Bureau of Statistics, 2016). Women and youth must be supported in order to contribute more effectively to agriculture, which most contemporary national and regional development strategies recognise as the most viable pathway out of poverty (AGRA, 2017). Women and youth are among the most vulnerable groups to climate change impacts, coupled with possessing enormous potential for enhancing resilience. The youth represent the next generation which needs to be fully engaged in sustainable paths of development and in the climate change debate.

*"The energy of youth can spark economies ... The future belongs to them and they have a clear vision of the world we need to build together"* (Ban Ki-moon, Former United Nations Secretary-General).

## Why gender matters in African climate-smart agriculture

Most of SSA agriculture is undertaken by smallholder family farms in rural areas, most of which depend on family labour and directly produce agricultural products for their food security. NEPAD (2013) estimated the total number of African smallholder farms to be over 33 million, averaging about 2 hectares each. Smallholder farming is intimately intertwined with the social fabric of society. Culture (or gender) defines how men and women relate within the household, the roles they perform, how they interact with the factors of production, the enterprises they produce, and the benefits enjoyed. The socio-cultural construction of men, women, girls and boys, which varies across space and time, invariably results in constraints that explain the observed gaps between men and women. This system has subordinated women and girls and disadvantaged female youth, undermining their optimal contribution to climate change adaptation. The gender inequalities are social products of unequal gender power relations which cut across social, economic, political and cultural divides (Kabeer & Subramanian, 1996). They are created and sustained by social norms that in turn are reinforced and replicated across key institutions at local,

national, international and household level (Kabeer, 1999).

Across the diverse socio-cultural institutions in SSA, the gender division of roles and responsibilities results in women shouldering a larger share of the burden of unpaid domestic and farm work compared to men. The disproportionately high amount of time spent by women on this kind of work detracts from time they could otherwise devote to activities that build their asset base to enable them to adapt better to the effects of climate change. This is despite the fact that women are predominantly responsible for tasks that will be made more difficult due to climate change. These include water and food provisioning and post-harvest handling, among others. Over 50 percent of households in SSA depend on women to locate, collect and carry the family's water supply. The socio-cultural norms disadvantage women with regard to access to resources and services critical for responding to climate stress, namely: education, information, extension, and insurance among others.

Regarding literacy, evidence shows 62 percent of men enjoy higher literacy levels compared to only 38 percent of women (UNESCO, 2015). Gender gaps in literacy and access to internet and digital technology undermine both women's ability to access timely weather information and to use other climate-smart agricultural technologies. In SSA, the percentage of women and men above 16 years that are using the internet stands at 4 percent and 9 percent respectively. Also, according to a study conducted in 17 African countries, being a woman significantly reduces the probability of either knowing what the internet is, or using the internet and having an email address (Gillwald *et al*, 2010) (Figure 1). Globally, the proportion of women using the internet is 12 percent lower than that of men (ITU, 2017) (Figure 2). For a majority of SSA countries, men spend more hours listening to the radio, with South Africa, Namibia, Kenya and Zambia being the exceptions (Gillwald *et al*, 2010) (Figure 3). These gaps give a glimpse of the missed opportunity for SSA countries to optimally utilise the potential of women to contribute to the welfare of their households and wider communities through well-supported climate adaptation and mitigation.

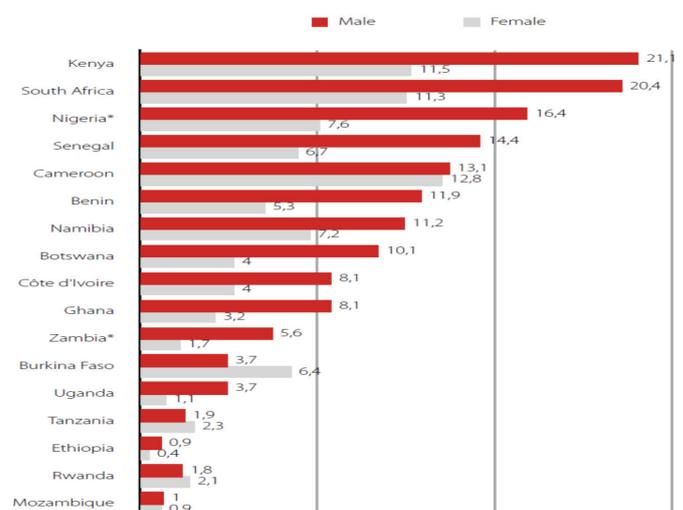


Figure 1. SSA gender gaps in internet usage (Source: Gillwald *et al*, 2010).

Most climate-smart agricultural interventions presume ownership of land. However, Doss *et al* (2015) found that, across many African countries, the pattern that women own

less land than men, regardless of how ownership is conceptualised, is remarkably consistent and in many cases the gender gaps are quite wide.

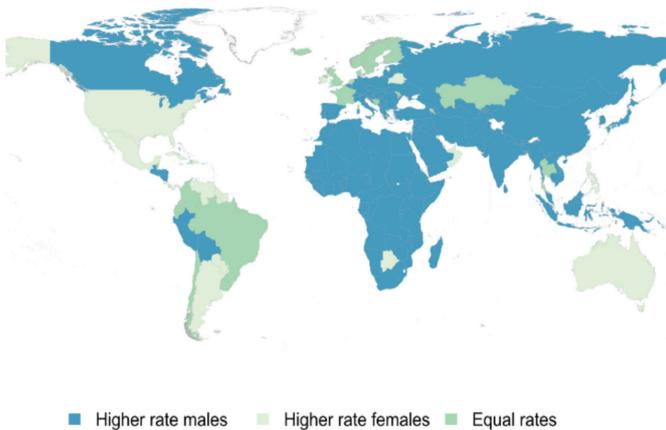


Figure 2. Global gender gaps in internet usage (Source: ITU, 2017).

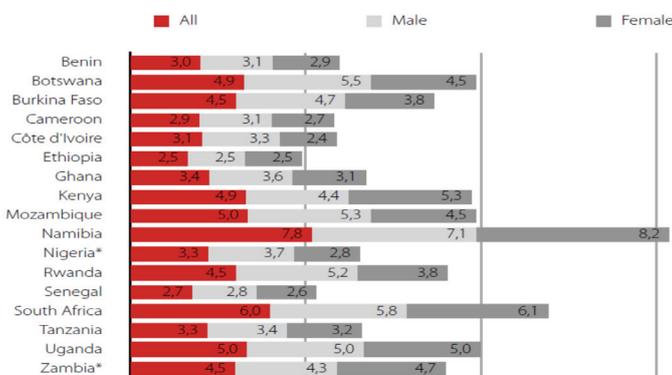


Figure 3. SSA gender gaps among radio listeners: daily average hours of radio listening (Source: Gillwald *et al.*, 2010).

## Integrating women and youth into climate-smart agriculture

Policies, information, and technologies suited to farmers' needs are crucial to meet climate mitigation targets. Research is needed to generate technologies that foster adaptation and mitigation. Additionally, the dissemination of these technologies is needed to take the technologies to scale, and funding streams will be required to provide the needed resources. Finally, policies and institutions to anchor these interventions urgently need to be restructured to respond to the needs of youth and identified gender gaps. Wollenberg (2017) sounded an alarm calling for radical shifts in agriculture to reduce the risk of increasing the cost of mitigation by having to mitigate more in other sectors. She asserts that just tweaking current agricultural intensification will not be enough to achieve the targets set by the United Nations Framework Convention on Climate Change's (UNFCCC) Paris Agreement. More transformational, high-impact technical and policy interventions that embody Low Emission Development (LED) principles are needed, including options that meet the needs of farmers in the developing world (Wollenberg, 2017). Farmer-centred interventions must, of necessity, be sensitive to inherent diversity within the farming community, reflecting principally the constraints affecting women and youth, as well as the opportunity they present for effective climate-smart agriculture.

LED climate-smart agricultural research and extension interventions should therefore be inclusive and explicitly pursue the goal of equitable impact. The only acceptable credible evidence to assess impact should therefore employ gender and age-group disaggregated data which would reveal disparities as well as gender and youth issues. This should be a routine practice in agricultural research and development, rather than the exception. Men and women may grow different crops, or produce the same crops but for different purposes. Consequently, men and women may have differences in indigenous knowledge systems, trait preferences, opportunities for resource access and control, and consequently, may adopt different technology packages. Failure to take such characteristics into account will compromise the attainment of desired results for men and women farmers, and other value chain actors.

There is need for gender-responsive agricultural research which uses social science methods and tools to document and analyse the different needs, priorities, and constraints of men and women in order to design agricultural interventions that meet the needs of men and women, and reduce, rather than exacerbate, any existing gender disparities (Rubin, 2016). This calls for a transformation of researchers' mindsets and paradigms of agricultural disciplines to embrace the value of inter-disciplinary research (gender/social science and agriculture). Building capacity for this kind of research also calls for novel training models that equip researchers with a new set of skills and attitudes to tackle complex inter-sectoral problems from new angles within team configurations that promote inter-disciplinarity. Such capacity-building approaches should promote both a re-thinking of disciplinary paradigms and a tearing-down of disciplinary silos so that bio-physical scientists work with social scientists in a complementary and synergistic manner addressing complex climate response research problems from diverse disciplinary perspectives.

Lessons and best practices from these kinds of training models are still scant, globally. However, a recent initiative by Cornell University, USA, and Makerere University, Uganda, under the Gender Responsive Researchers Equipped for Agricultural Transformation (GREAT) project ([www.greatagriculture.org](http://www.greatagriculture.org)) (2016-2020) is designed to contribute to this capacity need. The GREAT professional development certificate course targets research teams of agricultural scientists and social scientists working together on funded agricultural research projects with the aim of equipping them with skills to undertake gender responsive research. Embedded in the course design are elements to promote inter-disciplinarity and, post-training on-job application. First, participants are recruited as teams working on funded on-going projects providing an opportunity for immediate application of skills acquired. Secondly, training is organised around cohorts of scientists working on the same or related commodities, and each cohort is linked after the course through a community of practice for mutual support and collaboration. Competitive seed grants awarded after the course make it possible for winning teams to undertake publishable gender-responsive research projects. Preliminary results from the project's monitoring, learning and evaluation studies show significant changes in knowledge, skills, and post-training application of gender-responsive research practices.



## Conclusions

A synthesis of gender and age-group disaggregated statistics reveals youth- and gender-based constraints in SSA, pointing to an urgent need to re-align agricultural climate response strategies to target the needs of women and youth. There is therefore a need for new capacities to support this re-alignment within institutions and organisations, agricultural disciplines and at the personal level. Building capacity for this kind of research also calls for novel training models that equip researchers with a new set of skills and attitudes to tackle complex inter-sectoral problems from new angles within team configurations that promote inter-disciplinarity between social and bio-physical agricultural disciplines. It is important that the performance of localised project-based efforts are carefully tracked using gender and age-group disaggregated evidence, gradually refined, and then best practices out-scaled.

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## References

- AGRA, 2017. *Africa Agriculture Status Report: The Business of Smallholder Agriculture in Sub-Saharan Africa* (Issue 5). Nairobi, Kenya: Alliance for a Green Revolution in Africa (AGRA).
- Doss C, Kovarik C, Peterman A, Quisumbing A, Bold M, 2015. Gender inequalities in ownership and control of land in Africa: myth and reality. *Agricultural Economics*, **46**, 403-434.
- Gillwald A, Milek A, Stork C, 2010. Gender Assessment of ICT Access and Usage in Africa [http://www.ictworks.org/sites/default/files/uploaded\\_pics/2009/Gender\\_Paper\\_Sept\\_2010.pdf](http://www.ictworks.org/sites/default/files/uploaded_pics/2009/Gender_Paper_Sept_2010.pdf)
- ITU, 2017. International Telecommunications Union. <http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2017.pdf>
- Kabeer N, 1999. Resources, agency, achievements: reflections on the measurement of women's empowerment. *Development and Change*, **30**, 435-464.
- Kabeer N, Subramanian R, 1996. *Institutions, relations and outcomes: framework and tools for gender-aware planning*. IDS Discussion Paper **357**. Sussex: Institute for Development Studies.
- New Partnership for African Development (NEPAD), 2013. *Agriculture in Africa: transformation and outlook*. Johannesburg, South Africa: NEPAD.
- Population Reference Bureau, 2017. *World Population Data Sheet - with a special focus on youth* [http://www.prb.org/pdf17/2017\\_World\\_Population.pdf](http://www.prb.org/pdf17/2017_World_Population.pdf)
- Porter JR, Xie L, Challinor A, Cochrane K, Howden MM, Lobell D, Travasso MI, 2014. Food security and food production systems. In: *Climate Change 2014: impacts, adaptation and vulnerability*. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. <http://www.ipcc.wg2.gov/>
- Rubin D, 2016. *Qualitative methods for gender research in agricultural development*. IFPRI Discussion Paper **01535**. Washington DC: International Food Policy Research Institute.
- Uganda Bureau of Statistics, 2016. *Statistical Abstract*. Kampala, Uganda: Uganda Bureau of Statistics.

UNESCO, 2015. *Institute for Statistics global databases*. Montreal, Canada: United Nations Education Scientific Cultural Organisation. <https://data.unicef.org/topic/education/literacy/>

USAID, 2014. Youth and agriculture in Uganda: an assessment, combining agriculture improvements and youth development shows promise for both. Accessed on 28<sup>th</sup> February 2015: [http://www.usaid.gov/sites/default/files/documents/1860/Youth\\_and\\_Agriculture\\_in\\_Uganda\\_Assessment-October\\_2014.pdf](http://www.usaid.gov/sites/default/files/documents/1860/Youth_and_Agriculture_in_Uganda_Assessment-October_2014.pdf) and [http://pdf.usaid.gov/pdf\\_docs/Pnady157.pdf](http://pdf.usaid.gov/pdf_docs/Pnady157.pdf)

Wollenberg L, 2017. The mitigation pillar of Climate-Smart Agriculture (CSA): targets and options. *Agriculture for Development*, **30**, 19-22.

World Bank, 2014. Levelling the playing field: improving opportunities for women farmers in Africa <https://openknowledge.worldbank.org/handle/10986/17790?show=full>

World Bank, 2016. <https://data.worldbank.org/indicator/SE.ADT.1524.LT.ZS>

World Bank, 2017. Accessed on 27 January 2018: <https://data.worldbank.org/indicator/SL.UEM.1524.ZS>