Declining sorghum yields in Kigezi is alarming

Dear Tingasiga:

Kigyezi (Kigezi) region in southwestern Uganda, a land of breathtakingly beautiful hills, fertile valleys, and industrious farming communities, faces a silent crisis. The yields of sorghum (sorghum bicolor), a marvellous grain that has fed families, fuelled economies, and anchored cultural traditions, are falling.

As a rainy April draws to a close, the tilled fields in this region offer stunted sorghum plants with a sad look that is more than an agricultural concern. It is a matter of food security, threatened cultural identity, and doubtful long-term sustainability of one of Uganda's most densely populated regions.

Sorghum has been cultivated in Kigyezi for generations — perhaps centuries. Its resilience to drought, relatively modest soil requirements, and versatility as both a food grain and a brewing crop made it an ideal fit for the region's highland climate.

Farmers have traditionally relied on sorghum for household consumption, with surplus grain traded in local markets or used to brew *obushera* and *omuramba*, traditional fermented beverages that carry deep social and ceremonial significance.

For smallholder farmers — who make up the majority of agricultural producers in Kigyezi — sorghum has historically served as a reliable buffer against hunger in leaner months. Conversations with multiple peasant farmers are consistent with published research reports that point to a consistent and worrying pattern: average sorghum yields per hectare have declined significantly. Many farmers report harvests that are a fraction of what their parents and grandparents once produced from the same plots of land.

The causes of falling sorghum yields in Kigyezi are multiple, overlapping, and mutually reinforcing. Chief among them is soil degradation. Kigyezi is one of the most densely populated rural regions in sub-Saharan Africa, with population pressure having driven agriculture onto increasingly steep hillside terrain.

Continuous cultivation without adequate fallow periods or organic matter replenishment has exhausted the nutrient base of many soils. Erosion, a chronic challenge on the region's characteristically steep slopes, strips away topsoil with every rainstorm, steadily reducing the productive depth available to crop roots.

Studies conducted in the Lake Bunyonyi catchment and surrounding areas have documented alarming rates of soil loss, with some hillside fields losing several tonnes of topsoil per hectare annually.

Climate change compounds these soil challenges significantly. The highlands of Kigyezi are experiencing increasingly erratic rainfall patterns, including prolonged dry spells during critical growing phases and intense downpours that accelerate erosion and cause water-logging in valley bottoms.

The region's farmers, who have managed their planting calendars according to generationally accumulated knowledge of local weather rhythms, find their wisdom less reliable as seasonal patterns shift. Sorghum, while more drought-tolerant than maize, is not immune to extended dry spells. Yields suffer accordingly.

Pest and disease pressure has also intensified. Sorghum shoot fly, striga weed (sometimes called witchweed), and various fungal diseases have become more prevalent in the region, partly as a consequence of the same continuous cultivation practices that deplete soils. Striga, a parasitic plant that attaches to sorghum roots, is particularly devastating; once established in a field, it is extraordinarily difficult to eradicate. Many farmers in Kigyezi report that striga-infested plots now yield barely enough to justify the labour of planting.

Compounding these biophysical pressures are structural socioeconomic factors. Land fragmentation, driven by population growth and inheritance practices that divide plots among children across generations, has resulted in average farm sizes that are now too small to sustain productive agriculture. Techniques like crop rotation or inter-cropping that might otherwise break pest and disease cycles have become impractical for farmers with very limited land.

> Soil conservation must be placed at the centre of any credible response...

Muniini K. Mulera
Letter to a Kampala Friend

Access to improved sorghum varieties, and affordable inputs such as fertiliser remains limited for most smallholder farmers in the region, partly due to underdeveloped rural input supply chains and the relatively low priority accorded to sorghum by national agricultural investment programmes that have historically favoured export crops.

The human cost of declining sorghum yields is substantial. In a poor region where food purchases now represent a major proportion of household expenditure, and where subsistence farming is the primary occupation of the majority, reduced harvests translate directly into heightened food insecurity and nutritional stress.

Children in Kigyezi face elevated risks of stunting and micronutrient deficiencies when household food production falters.

The decline of sorghum has eroded a source of income and social capital that has long underpinned community life. Farmers who once sold surplus grain at local markets or earned income from brewing now struggle to meet household needs from their own production.

This has contributed to accelerated rural-urban migration, particularly among young people who see little future in farming the exhausted hillside plots of their parents, leading to labour shortages in the agricultural sector and weakening the social fabric of rural communities.

It is probably not too late to reverse the decline of sorghum yields in Kigyezi. However, it demands immediate multi-pronged action driven by local and central government authorities that are willing to offer the necessary leadership.

Soil conservation must be placed at the centre of any credible response: expanded investment in terracing, contour farming, and the integration of nitrogen-fixing trees and cover crops can arrest erosion and begin to rebuild soil fertility over time.

Some government and NGO reports have suggested that farmer-managed natural regeneration and agroforestry techniques can achieve meaningful improvements in soil health within a few growing seasons when adequately supported.

Equally important is the promotion and distribution of improved sorghum varieties bred for local conditions, including those with resistance to striga and key fungal pathogens. Uganda's National Agricultural Research Organisation (Naro) has developed promising improved sorghum lines, but their dissemination to smallholder farmers in Kigyezi seems to be patchy and insufficient.

Adaptation to climate change requires investment in community-level weather information systems and the documentation and revitalisation of indigenous crop management knowledge, combined with guidance on how to adjust planting dates and practices in response to shifting seasonal patterns.

Finally, family planning education and support is more urgent than ever. We simply cannot sustain the current population growth.

The story of sorghum in Kigyezi is ultimately one about resilience — of a crop, of a people, and of a landscape. The challenges are real and deepening, but so too is the potential for recovery if the political will and investment can be marshalled in time.

It is the kind of concern that ought to engage our newly elected parliamentarians who, no doubt, are itching to make their mark on the national stage.

Dr. Mulera is a paediatrician and neonatologist.