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COMMENTARY



COVID 19: Lets act now: the urgent need for upscaling agroecology in Uganda (2020)

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ABSTRACT

The COVID 19 pandemic has ravaged most parts of the world leading to multiple negative effects as restrictions in movement have ensued. Uganda as a country has not been spared with such pandemics also known to disrupt food systems. The aim of this paper is to critically reflect and argue for alternative food systems in Uganda like agroecology that are deemed more resilient in times of pandemics like COVID 19. We review and critically analyze the elements of agroecology in this respect and make strong recommendations for upscaling agroecology in Uganda.

KEYWORDS

Agroecology; COVID 19; Uganda

1. Introduction

The world has been hit by the COVID 19 pandemic which was first detected in Wuhan, China. The disease is so infectious it has traversed not only countries but also continents in a timespan of less than 6 months. The high rate of infection is driven by globalization, characterized by significant people movement across borders. As of May, 2020 the USA, Spain and the United Kingdom were the hardest hit countries, with the African continent least impacted so far (Elflein, 2020). The pandemic has resulted in devastating health and secondary economic effects. In essence this has exposed the frailties of a globalized system that focuses more on economic aspects and less on pertinent attributes that contribute to a balanced functionality of the earth's systems which include among others the environment, human and animal welfare.

In response to the pandemic, governments around the world have put restrictions on both in-country and cross-border movement to combat the diseases' rapid spread. The authorities now emphasize localization of human activity which is in tandem with the Agroecology principle of producer – consumer distance shortening in food systems. However, it is judicious

to note that food systems are also vulnerable to such disease related disruptions. For example, in some European countries there was panic buying and stocking of food items in anticipation of future scarcity due to COVID-19. In Uganda, there was a significant drop in the price of eggs due to the disruption in the export channels in the neighboring countries. COVID 19 has exposed the systemic weaknesses in current global driven food systems which may be compounded by climate change in the future (e.g. see IPES, 2020). The increasing risk of a food crisis (Glauber et al., 2020) due to COVID 19 urgently calls for transformation of the world's food systems towards resilience. HLPE (2018) and IPES (2020) elucidate on agroecology's unique capacity to achieve the latter. They argue that agroecology promotes diversity, enhance natural synergies to reduce dependency on external inputs and hence vulnerability to trade disruptions and price shocks. By slowing down habitat destruction, agro ecological food systems reduce the chances of disease outbreaks; reconnect people with easily accessible, healthy, nutritious and affordable food, thereby reducing the diet-related health conditions that make people more susceptible to diseases including COVID 19.

In this paper we argue for agroecology as an urgent and sustainable mitigation / adaptation mechanism for effects of pandemics like COVID 19, using Uganda as a case study. To do this, we first highlight the Agro-ecology (AE) principles we feel are relevant to managing the effects of COVID 19 while exploring why these particular elements can contribute to appropriate strategies to contain effects of the same. We end by summarizing some key arguments for agroecology as a shrewd and urgently needed approach for Uganda (especially in times of crises like COVID 19) as well as providing some recommendations. In the annex we provide testimonies of some of the farmers under Iles de Paix's sustainable agriculture program on agroecology during the COVID 19 pandemic.

2. The nexus: agroecology and solutions to effects of pandemics like COVID 19

FAO (2015) defines agroecology as the application of ecological principles to the design and management of sustainable agroecosystems with emphasis on ecological interactions and minimal use of external inputs. It is based on farmers' knowledge, experiences and participatory research, entails the entire food system and is a social movement with a cultural and political dimension. FAO (n.d.) has delineated 10 elements of agroecology. In this section, we describe only the ones we feel are relevant to this paper's argument in relation to COVID 19 situation in Uganda. We then show how these selected elements are ideal for mitigating / adapting to COVID 19 in Uganda.

- *Efficiency*: agroecology optimizes the use of local renewable resources (solar, atmospheric carbon and nitrogen) while promoting recycling of biomass, nutrients and water. This reduces or eliminates the dependency on external inputs especially synthetic inputs that destroy the environment and increase farm production costs. In the face of COVID 19, the government of Uganda has restricted the movement of people both within the country and abroad. In a situation where farmers rely on inputs that have to be sourced off farm and off their immediate locality, the capacity to produce adequate crop/livestock qualities and quantities in a COVID 19 crisis is automatically diminished. This can have repercussions like increased risk of food insecurity and increased costs of production due to hiking of input prices

by input dealers. All these result into heightened farmer vulnerability. Since agroecological farmers are less reliant on external inputs, they are less prone to such effects in the COVID 19 era. Secondly, unsustainable land management practices have led to land degradation. Over 46% of Uganda's soil is degraded, 10% severely degraded with an estimated loss between 4 and 12% of the country's Gross National Product. This coupled with climate change effects have led to increased disasters in Uganda. For instance, the landslides in Mount Elgon region (Buduuda), Kasese, Ntoroko and Kigezi highlands that have destroyed a number of people's property are linked to the gross abuse of the environment associated with conventional agricultural practices. These include among others; deforestation, extensive cultivation on slopy lands as well as wetland reclamation to set up exotic dairy farms and monocrop plantations. IPES (2020) reports that intensive livestock management can act as a breeding ground for zoonotic viruses similar to COVID 19. Most recent epidemics, including West Nile virus have also been mooted to be of animal origin and attributed to environmental and ecosystem disturbances. Although the origin of the COVID19 outbreak is still inconclusive, it is thought to have occurred through similar pathways (AFSA, 2020). Agroecology that seeks to maintain ecosystem stability therefore indirectly contributes to circumventing pandemics like COVID 19.

- *Synergies*: agroecology pays careful attention to the design of diversified systems that selectively combine annual and perennial crops, livestock and aquatic animals, trees, soils, water and other components on farms and agricultural landscapes to enhance synergies in the context of a rapidly changing climate. By optimizing biological synergies, agroecology enhances ecological functions, leading to greater resource-use efficiency and resilience. In the Ugandan COVID 19 situation, food is becoming more and more important especially in the urban and semi-urban areas. These are areas where most people don't produce food for themselves and are now forced to stay home with no immediate source of income. This prompted the government to offer them food aid yet on the other hand small scale farmers located in rural areas were not given such handouts as they are deemed self-reliant. Agro-ecological food systems seek to create a balance between household food and income needs (farm functional diversity) are

thus more appropriate in crises like COVID 19. A good example is the Fresh Veggies Participatory Guarantee system located in Wakiso district where farmers have maintained both their family farm sales and household food needs despite the COVID 19 crisis.

- *Diversity*: Agro ecological systems optimize species and genetic diversity. For example, agroforestry systems organize crops, shrubs, herbs and trees of different heights and shapes at different levels or strata, increasing vertical diversity. In Uganda, most small scale farmers integrate herbs in their gardens and rear a few livestock. The herbs can be a source of herbal medicine or remedies while livestock can provide animal protein in periods where movement is restricted and resources meager. Diversified production greatly contributes to the much needed household nutrition in times of pandemics, income through sell of surplus and resilience of production systems to natural, climatic and market shocks.
- *Co-creation and sharing of knowledge and innovations (scientific, indigenous & traditional)*: agroecology is knowledge intensive compared to rather capital intensive conventional farming as it provides an opportunity to merge indigenous and scientific knowledge through participatory learning approaches which stimulates innovation and adoption of new knowledge among farming communities. Scientists can use indigenous knowledge to innovate and come up with strategies that can build context specific resilient systems and solve real world problems. For example under the Mpanga super farmers program managed by IDP, the modern scientific knowledge of Rwebitaba Zonal Agriculture Research and Development Institute is being merged with the farmer indigenous knowledge to tackle bean wilting.
- *Resilience*: agroecological food systems have a greater capacity to recover from disturbances including extreme weather events such as drought, floods, pests and diseases. Through diversification and integration, producers reduce their vulnerability should a single crop, livestock species or other commodity fail. Agroecology's contribution to socio economic resilience in the COVID 19 crisis can be two fold. By having an inclusive agricultural sector involving active recognition and participation of small scale farmers rather than few minority sector leaders as is the case in conventional farming, so many small scale farmers can produce using locally available resources, thus cheaply and in an environmentally friendly/ healthy manner primarily targeting local consumers. Secondly, some agroecology practices such as community seed banking ensure that farmers have reliable access to affordable, diverse varieties of locally adapted seeds in a timely manner to ensure continued production amidst pandemics and other stresses.
- *Human and social values*: there have been increased cases of domestic violence during the COVID 19 period in Uganda. Agroecological food systems are better suited to counteract such problems since they place strong emphasis on human and social values, such as dignity, equity, inclusion and gender justice; all contributing to improved livelihoods. Moreover, strong social structures founded on equity, interdependence and respect for all are key for community resilience against pandemics such as COVID 19. Agroecology supports and empowers women who are the major food producers and care givers to equitably access and control production resources such as land and financial services as well as fairly benefit from returns of agriculture production. This therefore contributes to increased productivity and equitable development at household and community level thereby reducing overall social vulnerability in times of pandemics like COVID 19.
- *Culture and food traditions*: By supporting healthy, diversified and culturally appropriate diets, agroecology contributes to food and nutrition security while maintaining the health of agroecosystems. The COVID 19 period has shown that maiden (traditional) food habits still hold a logical place in our lives providing an alternative healthy food source. Conventional land use management practices have contributed to massive destruction of natural ecosystems yet these are important sources of highly nutritious, traditional, neglected, underutilized and wild foods that can provide nourishment to local people especially during periods of famine. Events such as indigenous foods fairs organised by PELUM Uganda and its members/ partners at national and local levels have increased appreciation and utilization of these food types, Agroecology therefore plays an important role in re-balancing tradition and modern food habits, bringing them together in a harmonious way that promotes healthy food production and consumption and supporting the right to adequate food.

Adoption of 'modern' high calorie diets from western cultures have contributed to increased cases of obesity and related non communicable diseases (such as hypertension, diabetes and cancers) which increase susceptibility to the COVID 19 disease. Traditional food crops are less susceptible to pests and diseases since they are more adapted to the local ecological set up. They therefore require little or no synthetic chemicals for their production which inextricably reduces the risks of chemical poisoning to farmers and even consumers. Reducing such health impacts through more healthy approaches like agroecology increases the capacity of any given nation to handle any sudden health pandemics like COVID 19.

- *Responsible governance*: agroecology calls for responsible and effective governance to support the transition to sustainable food and agricultural systems. Transparent, accountable and inclusive governance mechanisms are necessary to create an enabling environment that supports producers to transform their systems towards agroecological concepts and practice. Some examples of enabling mechanisms include enacting market regulations allowing for branding of differentiated agroecological produce and incentives for ecosystem services. During the COVID 19 time, the Ugandan government went on to regulate in a formally presumed open economy by ensuring a 500 gm salt pack remains at 2000 Ug Shs and yet during the non COVID 19 period, maize prices fell below 300 Ug shs / kg and there was no government intervention. The fall in maize prices in 2017 affected numerous small scale farmers a situation exacerbated by an already underfunded agricultural sector. In addition, during the COVID 19 period, the government allocated 284 billion Ug Shs as supplementary funding to support the health, security and local government sectors but ignored the agriculture sector. Yet as agroecology points out, food systems are intrinsically connected to other sectors / systems which reveals a lack of 'agroecological systemic thinking' among Ugandan policy makers / advisors. This is a gap that needs to be addressed if pandemics like COVID 19 are to be comprehensively defeated in Uganda.
- *Circular & solidarity economy*: agroecology seeks to reconnect producers and consumers through a circular and solidarity economy that prioritizes local markets while supporting local economic

development through creation of virtuous cycles. Localized producer-consumer chains increase overall efficiency of food systems while reducing the carbon footprint. Agroecological approaches promote fair solutions based on local needs, resources and capacities, creating more equitable and sustainable markets. Strengthening short food circuits can increase the incomes of food producers, maintain a fair price for consumers and increase general food system resilience. A clear example is the participatory guarantee system that is based on agroecological quality, consumer trust and increased market assurance for family farm produce. In Uganda, after the COVID 19 break-out, all restaurants and fast food points were ordered to close and people had to primarily depend on food they grow themselves or what they buy locally. This is also clear cut evidence for the importance of localized food production and marketing as a resilience strategy during pandemics like COVID 19. On the other hand, the high rate of population growth in Uganda is an opportunity from an agroecology perspective in the COVID 19 crisis. A lot of unemployed youth in rural / semi urban areas can engage in locally based green jobs like apiary, urban gardening, bio-fertilizer production using biodegradable waste generated in urban areas, mason services for biogas and energy efficient stoves as well as biobriquette production which can be home based given the restrictions in movement. Moreover, agroecology promotes a horizontal model of economic development (focus on having several business units that are locally based rather than one big centralized unit) implying the creation of more locally based job opportunities in rural/semi urban areas.

3. Conclusion and recommendations

Agroecology entails sustainable methods of production, processing and marketing of food, environmentally friendliness, health and people focus. Compared to other countries, in particular industrialized countries, Uganda has a big comparative advantage in scaling up agroecology. This is because a big proportion of Ugandan farmers still possess a lot of indigenous knowledge and practice 'near to agroecology'. The country is also blessed with abundant natural resources conducive for farming with little need for external inputs. Agroecology needs urgent

promotion in Uganda given the already robust influence/ lobbying of multinationals promoting chemical intensive agriculture in Africa over the years. The latter will even become more and more aggressive towards African markets now that a variety of their products have been banned in Europe and America (e.g. see Jacob & Cherian, 2013).

The COVID 19 pandemic has shown the need for more locally based sustainable food systems that meet multiple needs beyond productivity and with an extra advantage of not being globally controlled. It is therefore more urgent than ever that policy makers in Uganda integrate agroecology principles & practices in their agriculture and natural resource management related policies, strategies and actions that encompasses healthy food systems, climate change, food and nutrition and disaster management. During the 1st National Agroecology Actors Symposium held in May, 2019 Kampala and attended by over 350 agroecology actors, there was a strong call for an enabling environment to ensure scaling up of agroecology in Uganda (PELUM, 2019). Now, more than ever it's important to fast track the initial efforts for wide multilevel scaling of agroecology. We therefore strongly recommend the following:

- PELUM and its partners should fast track the process of development and implementation of an inclusive National Strategy for Scaling up agroecology in Uganda that is in line with the Global UN-FAO led scaling up agroecology initiative.
- The government should allocate the necessary financial resources within its national budget for the implementation of the aforementioned national strategy for scaling up agroecology. Development partners and UN agencies in support of the scaling up agroecology initiative such as International Fund Agriculture Development (IFAD) should commit sufficient financial resources for scaling up agroecology, including mainstreaming agroecology in their country strategies and make these resources accessible to all countries and agencies (both state and non-state actors).
- All stakeholders should further strengthen collaboration towards scaling up of agroecology in Uganda through operationalization of the National Agroecology Actors Platform (NAAP) and convene the annual agroecology actor's platform symposium to facilitate experience sharing, networking, learning and dialogue for agroecology. Equally so, civil society needs to further support building of a

nationwide bottom up movement of farmers that are able to voice their concerns to decision makers and demand for their rights.

- The Ministry of Agriculture, Animal Industry and Fisheries through the Directorate of Agriculture Extension with support from development agencies and civil society organizations should make deliberate efforts towards mainstreaming agroecology in public agriculture extension services (single spine extension services) to farmers in Uganda. All stakeholders within the agroecology sector should also engage in creating more awareness of agroecology at all levels through harmonizing conceptual clarity and magnifying the potential of the practice to meet the food security, income needs, resilience, social and environmental benefits.
- Research institutes spearheaded by the National Agricultural Research Organisation (NARO), universities and civil society organizations should work towards strengthening agroecology research and development of a robust research agenda that is systematically integrated in their institutional research agendas to better inform decisions, policies and practices for scaling up agroecology in Uganda. In addition, the research consortium should foster applied participatory action research methodologies that enhance knowledge co-creation between indigenous and new ecologically based scientific knowledge to generate locally appropriate agroecological solutions that are responsive to the needs of smallholder family farmers. Platforms for farmer field learning and demonstration of agroecology best practices should be replicated in all regions of Uganda befitting the different agroecological zones and farmers' socio-economic characteristics. This will aid quick adoption of best practices.
- Circular agroecological market development that closely links the farmers to the consumers and contributes to rural economic development should be supported.
- There is need to raise consumer awareness to demand for more ecologically produced food and promote participatory guarantee systems for enhanced quality assurance and better access to markets for smallholder farmers.
- The media should create more awareness on the dangers of using harmful agricultural inputs such as highly hazardous agrochemicals as these have severe negative effects on human health and the environment.

- The existing policy and legal frameworks should be reviewed towards being responsive to the needs of smallholder men and women farmers. Such needs include securing their right to production resource like seed (through promotion of farmer managed seed systems) and land (through more awareness on land rights and more responsive justice and administration systems). More efforts are also needed to recognize and further promote the role of the women in agriculture and design gender responsive interventions for addressing gender inequalities at all levels.
- There is need to design and implement strategies for significantly increasing the involvement of youth throughout multiple agroecological value chains. Strategies may include use of ICT based solutions, schools and colleges agroecology initiatives for learning and school feeding, use of entertainment and promotion of innovative and profitable value chains to interest the youth.
- There is need to promote participatory landscape or community wide approaches that address more than just farm challenges related to land use management for enhanced resilience of the farming systems. Initiatives around sustainable use and management of biodiversity (both in-situ and ex-situ), efficient and cleaner energy technologies, watershed management practices for enhanced water resource management and reduced land degradation, socio-political aspects related to citizen's engagements in planning and monitoring processes of government plans and economic empowerment activities such as engagements in cooperatives and village saving and lending schemes should be widely promoted as part of agroecology.

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Annex. Testimonies on agroecology

Testimony on the agroecological elements of Synergy, recycling & efficiency

In my banana plantation, I constructed trenches for water and soil conservation and this have increased the soil productivity and now I harvest big bunches of matooke than before. I have planted elephant grass on the water trenches of which grass I use to feed my goats. The excreta I get from the goats I

compost them and later are transferred to my banana, kitchen garden and coffee gardens as manure. The kitchen gardens are a source of fresh organic vegetables for my family and this has improved our nutrition/ diet during this COVID 19 time. On my farm, I also do agroforestry to conserve the environment. (Male farmer, 32 years old, Nyakitokoli A village, Nyakitokoli parish, Karangura sub county, Kabarole district, Western Uganda)

Testimony on the agroecological elements of efficiency and resilience

I have planted elephant grass and Calliandra on top of the trenches and these in addition to protecting the soils are also feeds to my goats. When I do this, the fertility of my soil is guaranteed and there is no need to buy synthetic fertilizers. For example, in such a situation we are under lockdown, public transport is closed how and where would I be getting the fertilizers from. Such practices have made my farm to be self-reliant. I learnt how to use organic bio rations and concoctions. I just mix them and use them on my farm. I use them on coffee and the vegetables in the kitchen garden. This has helped me save the money I would be using on chemicals because I use locally available materials to mix these concoctions. These days the

rains are too much and the pests and diseases are affecting many crops around but personally I have not suffered because I move around, collect the bioration materials mix them and spray my crops and right now they are very healthy. (Male farmer, Kibagha B village, Karangura sub county, Kabarole district, Western Uganda)

I no longer buy fertilizers since I started making my own farm yard manure. I apply the manure in my banana plantation, the maize garden and used it when planting the trees received from JESE. Me and my family are not spending money on buying food because we have saved food in a store and in the field. (Female farmer, Kabambiro sub county, Kamwenge district)

Testimony on agroecological elements of culture, food and traditions as well as resilience

'As a family we have put up a kitchen garden around the home. This has ensured a steady supply of vegetables which we eat at home. The money which I would be spending on vegetables is instead saved'. Male farmer, Kibagha B village, Karangura sub county, Kabarole district, Western Uganda.