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Linking Agency to Food and Nutrition Security (FNS): The Role of Agroecology

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Introduction

Report on the State of Food and Nutrition Security (FNS) in the world shows that about 9% of the world population, around 821 million people are now hungry and more than 150 million children stunted (FAO, 2018). Each year, the figures appear to be above earlier reports which continues to signal that the level of hunger and malnutrition globally is growing. Conversely, in developing nations such as Nigeria, while food security has consistently declined, food production has steadily increased. We, therefore, question the narrative that increasing food production will lead to food security. Hence the need to rethink how we conceptualize, analyze, and grapple with the challenge of food security.

Research, especially in the field of agroecology and sustainable food systems, has shown how structural drivers other than production can institutionalize hegemonic influences that ultimately lead to food insecurity. These include variabilities in economic and material capabilities (winners and losers in market relationships), networks and power structures (the way individuals organize themselves into groups), and social norms (people's ideologies) (Elina & Sara, 2012; Kapstein, 2000; Khadse, 2017; Pimbert, 2017). These are what the High-Level Panel of Experts in Food and Nutrition Security (HLPE) (2019) alludes to shape rural households' agency for food and nutrition security. According to HLPE (2019), agency is the capacity of farmers to define their desired food system and to make strategic life choices in securing these outcomes.

The concept of agency has therefore received so much attention but surprisingly limited empirical investigation. This is because limited strategic guideline exists on what constitutes agency for food and nutrition security and how it can be supported.

This study therefore asks

- i. What constitutes agency for food and nutrition security?
- ii. How does agency shape this agency among rural households?

Material and Methods

Following Arksey & O'Malley (2005), we adopted a scoping review methodology. We assessed literature on Agroecology, food security, and agency from 1996 when the concept of food sovereignty was first brought to the public domain at the world food summit till now. During the review process, we made a keyword search for journal articles in Agroecology and sustainable food system journal as the journal's scope focuses on the link between agroecology, food security, and the social well-being of all people. To further include an article that might not be

included in this journal, we also searched the ISI Web of Knowledge. The web of knowledge was used as it is described as the largest and most comprehensive literature database (Porter et al., 2014). In total, we used six keyword combinations which include:

- Agroecology or Food sovereignty or sustainable agriculture
- Food agency and food and nutritional security;
- Capacity and food and nutritional security;
- Food sovereignty and food and nutritional security;
- Food and nutritional security or sustainable food system;
- Food access or availab* or Utili* or stab* and sustainable or smallholder farming

The first step we adopted was to skim through the title and abstracts of all the identified literature. One thousand nine hundred and sixty-two documents were returned. Once the identified articles were imported into the Mendeley software, we applied the inclusion and exclusion criteria (see Table 1 for a summary of the literature inclusion and exclusion criteria). Fifty-three agroecology and food and nutrition security analysis papers were retained. These retained studies were selected for further review.

Results and Discussion

We posed two core questions corresponding to the research objectives: (i) what constitutes agency for FNS among rural households? (ii) how does agroecology shape agency for FNS? Using the information retrieved from the literature we provided series of emergent themes that answer these questions.

What constitutes agency for FNS among rural households?

The first step in understanding what constitutes smallholder farmers' agency is to first investigate what these farmers value and where those values come from (Gasson, 2008). Our literature review indicates that these values are deeply rooted in cultures, they are dynamic and vary widely between and within societies. Our review demonstrates, in line with the capability approach, that rural farmers do not only value monetary income and productive activities alone, but social reproduction goals that are linked to various indicators of well-being, prestige, and life satisfaction. They value the freedom to act on behalf of what matters to them beyond financial goals (De Snoo et al., 2013). Summarily, we categorize the factors that represent the state of agency among smallholder farmers into two main features: farm production diversity and level of commercialization. To a great extent, these factors are not only indicative of the level of freedom a farmer possesses but also reflective of the level of their capacity to choose their goals and pursue their desired goals.

How does agroecology shape agency for FNS?

From our review, we distill three agency enabling structures of agroecology that reinforce smallholder farmers' capability in promoting or achieving the functioning they value. These structures depict the pathways and innovative strategies (Figure 1) through which agroecology farmers enhance their natural resource use (relationship with nature), relationship with one another, and relationships to market. These agency structures will be discussed in this section.

- ***Relationship with nature (resources use efficiency)***

Literature on agroecology over the last two decades has provided substantial evidence on how agroecology farmers achieve efficiency and sustainable crop production without reliance on external inputs and genetically modified products. Through recycling, resource use efficiency, and optimization of the diversity of crop and animal species, agroecology farmers ensure food and nutrition security while preserving natural resources. Agroecology farmers also engage in other cultural practices including mixed farming, crop rotation, and mixed cropping which were found to have a positive and significant effect on the dietary diversity of households (Kissoly et al., 2020). According to Kissoly et al., (2020) this effect is more prominent among households

who are less commercialized with high production diversity. Assessed literature points to the fact that these innovative agroecological practices gradually disappear with increased commercialization and monotonous cropping pattern. Beyond food and nutritional outcomes, through agroecology farmers also strengthen their relationships with their natural environment by reinforcing deep religious experiences that create value for nature and the need for environmental stewardship. In general, by living in harmony with their natural world, agroecology farmers can improve their income and health status through efficiency and diversity.

- **Relationship with peers (network and resilience)**

Beyond the field level, our review also showed that agroecology farmers with strong association and network among themselves build social capital for food and nutrition security. Agroecology farmers use social capital to improve their livelihoods in two ways. First, through peer-to-peer activities and movements, agroecology farmers engage in co-creation of knowledge and indigenous knowledge dissimilation. The conventional ways of agri-technologies dissemination hardly benefit a large majority of the smallholder farmers due to high farmers to extension workers ratio in the developing nations, neither are small-scale farmers capable of paying for independent advisory services. Agroecology farmers, therefore, leverage their social capital to build knowledge networks to enhance their farming knowledge. The social process involved is also critical as it is embedded in cultural and dynamic multidirectional process of knowledge transfer. In general, we observe that through social interactions, agroecology farmers build networks that encourage peer to peer education.

- **Relationship with market (market access)**

Agroecology farmers use social capital to access alternative agroecology markets. Because small-scale farmers are not first interested in profits and blind growth, they are less armed to effectively compete in the current food regime, in terms of access and market competitions. Agroecology markets emerged as a territory less influenced by political-economic and market factors. These are markets that are rooted in the principles of responsible production and consumption and based on the ideologies of solidarity economy (Nicholls & Altieri, 2018).

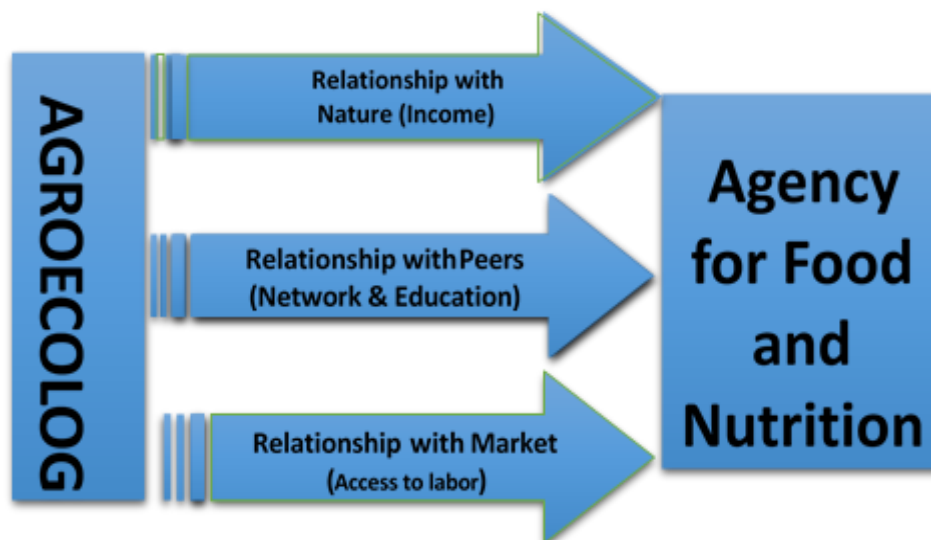


Figure 1: Agroecology – Agency pathways

Conclusions and Outlook

The awareness of the role of smallholder agriculture to food and nutrition security among scenarios of global pandemics, changing climate, and energy crisis, birthed the idea of agency and agroecology food system especially among the developing economy. Drawing insights from 18 high-quality empirical papers found, we showed i) how level of production diversity and

resource allocation decisions can be quantitatively used as proxies for agency. ii) how having a close relationship with nature, peers and alternative market system can improve smallholder farmers' agency for FNS. We further suggested analytical strategies for adapting these concepts in empirical research. We showed not only the possible connections and pathways through which agroecology can enhance food security and reduce hunger, but also the factors that can enhance these pathways. We advance, through this paper, a nascent scholarship on 'agency' for food and nutrition security thinking, which squarely focused, not on production of global welfare, but on smallholder farmers independence from the dominant corporate food regime expressed in gaining control over productive resources and production decisions by producing agroecologically and using agroecological market systems.

The mainstream perspective focuses a lot on either commercialization in agriculture and large-scale agribusiness. Although there is nothing wrong with this perspective, the big agribusinesses do not exist in isolation. We need to create an ecosystem where the smallholder farmers can be carried along. Policymakers, therefore, need to pay attention to policies that will help the small farmers, as they are often not taken into consideration, haven kept in what we may consider as "policy blind spots" in most developing economies. Policies should be framed to blend modern agricultural science with indigenous knowledge systems, spear-headed by smallholder farmers.

To attain such hybridization of food systems, we put forward the following recommendations: First, to strengthen the agroecological production pattern and relationship with nature, there is a need to develop agroecology markets. There exists a strong relationship between market demand and production system (Ruiz-Pérez et al., 2004). Policies that create and preserve market territories (Physical and non-physical) can be effective in boosting smallholder farmers' freedom in making production and market choices. Second, accessing market for agroecology farmers will require product differentiation and some form of certification. This will not only boost agroecology farmers' access to available markets but will also create demand for sustainable production systems driven by agroecology. However, to enable farmers' agency in the process, the farmers themselves must retain full ownership of the certification process and the control over monitoring systems to ensure quality management over the long-term and to adapt standards to their conditions. Because the smallholder farmers understand their consumers' preferences relative to large farmers, they find it easy to develop differentiated products that will serve their customers' needs. Policies that can enable farmers to develop brands can be effective in enabling their access. Third, because smallholder farmers operate within agroecological zones, it is easy for them to diffuse knowledge among themselves. Extension agents and services should be organized within agroecological zones and not national or state levels and extension contents developed together with farmers. In other words, the role of extension service in rural areas should be more of coordination – finding ways of bringing farmers together for knowledge creation and sharing. Fourth, because women are usually excluding in cooperatives and financial access, policies should be directed at facilitating women groups. This will give the large population of women in agriculture the opportunity to contribute to decision making in issues that directly affect them. They can also influence decisions and gain a voice when they come together and organize. Rather than searching for agrarian revolutions that would be transferred to smallholder farmers at a large scale, it would be more effective to assist these set of farmers to develop and treasure their solutions.

References

- Arksey, H., & O'Malley, L. (2005). Scoping studies: towards a methodological framework. *International Journal of Social Research Methodology*, 8(1), 19–32. <https://doi.org/10.1080/1364557032000119616>
- De Snoo, G. R., Herzon, I., Staats, H., Burton, R. J. F., Schindler, S., van Dijk, J., Lokhorst, A. M., Bullock, J. M., Lobley, M., Wrba, T., Schwarz, G., & Musters, C. J. M. (2013). Toward effective nature conservation on farmland: Making farmers matter. *Conservation Letters*, 6(1), 66–72. <https://doi.org/10.1111/j.1755-263X.2012.00296.x>
- Elina, A., & Sara, G. (2012). Because of poverty, we had to come together': collective action for improved food security in rural Kenya and Uganda. *International Journal of Agricultural Sustainability*, 10(3), 245–262. <https://doi.org/10.1080/14735903.2012.666029>
- FAO. (2018). Global hunger continues to rise, new UN report says. United Nations Report.
- Gasson, R. (2008). Goals and Values of Farmers. *Journal of Agricultural Economics*, 24, 521–542. <https://doi.org/10.1111/j.1477-9552.1973.tb00952.x>
- HLPE. (2019). Agroecological and other innovative approaches for sustainable agriculture and food systems that enhance food security and nutrition. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security. The High Level Panel of Experts on Food Security and Nutrition, July, 1–162.
- Kapstein, E. (2000). Winners and Losers in the Global Economy. *International Organization*, 54(2), 359–384. <https://doi.org/www.jstor.org/stable/2601301>
- Khadse, A. (2017). Women, Agroecology & Gender Equality - Focus on the Global South. Rosa Luxemburg Stiftung, South Asia Centre for International Co-Operation. <https://focusweb.org/publications/women-agroecology-gender-equality/>
- Kissoly, L., Karki, S., & Grote, U. (2020). Diversity in Farm Production and Household Diets: Comparing Evidence From Smallholders in Kenya and Tanzania. *Frontiers In Sustainable Food Systems*. <https://doi.org/10.3389/fsufs.2020.00077>
- Nicholls, C. I., & Altieri, M. A. (2018). Pathways for the amplification of agroecology. *Agroecology and Sustainable Food Systems*, 42(10), 1170–1193. <https://doi.org/https://www.tandfonline.com/doi/abs/10.1080/21683565.2018.1499578>
- Porter, J. J., Dessai, S., & Tompkins, E. L. (2014). What do we know about UK household adaptation to climate change? A systematic review. *Climatic Change*, 127(2), 371–379. <https://doi.org/10.1007/s10584-014-1252-7>
- Ruiz-Pérez, M., Belcher, B., Achdiawan, R., Alexiades, M., Aubertin, C., Caballero, J., & De Foresta, H. (2004). Markets drive the specialization strategies of forest peoples. *Ecology and Society*, 9(2). <https://doi.org/https://www.jstor.org/stable/26267665>