# Reducing hunger and food insecurity by supporting small scale farmers

## Introduction

The second of seventeen millennium development goals is to ensure zero hunger. This is through bringing an end to hunger and ensuring access to food for everyone. Zero hunger aims at ending hunger, achieving food security, improving nutrition, and promoting sustainable agriculture. This would positively affect other sustainable development goals like education, economies, gender equality, health, and social development that transform the world. A hungry world is prone to disease and is less productive. Hence, a change in global food and agriculture system is the perceived sustainable solution to avail food to the millions of hungry people worldwide. Almost two of every three people in sub-Saharan Africa live in rural areas, and rely on small-scale agriculture for their livelihood. Supporting small scale farmers therefore remains an accurate strategy for reducing hunger and food security (Bizikova, Jungairt, McDougal & Smaller, 2017; Bremner, 2012).

An estimated 852 million people in the developing nations are undernourished, with 265 million coming from Africa, South of Sahara. Of these, 29% of those under 5 years old are stunted and 18% underweight (Wiggins & Keats, 2013; Wiggins & Leturque, 2010). Though still prevalent, global hunger of the world’s population, estimated at 800 million people has come down from 23% in 1990 to 13% in 2015. This places the statistics of hungry people at 14.7 million in US and Europe, 1.4 million in Oceania, 232.5 million in Africa, 511.7 million in Asia and 34.3 million in Latin America and Caribbean (Vercillo, Kuuire, Armah & Luginaah, 2015).

It was found through various studies that small-scale farming was in crisis, as small scale farmers could still not produce food to sustain themselves and their families. This was the case even after seasons of sufficient rainfall supply, where there was still not enough food to sustain them until the next harvest. Hunger and malnutrition was hence a common occurrence, with notable slow increase in food production in Africa compared to the rest of the world. The poorest population are the most vulnerable to hunger and food insecurity, with the poorest segments in Southern Asia and sub-Saharan Africa representing 80% of extremely poor globally (Vercillo et.al. 2015; Haque et.al, 2017).

Food security, which is a measure for peoples’ development, requires that food is available locally to all, throughout the year, together with the means to acquire it. This could be through growing it or buying it. Developing support for small scale agriculture would enhance food security and as a result, contribute to ensuring job creation, nutrition, income generation and rural development (Msangi, 2014: UNCTAD, 2011).

The challenges of small scale farmers range from culture; land ownership; education status; land size; agricultural patterns; accessibility to information; climatic variability; poverty; unemployment; land degradation; pest and disease outbreaks; size of dependants; cropping patterns; unskilled labor; age of farmers; drainage systems; prioritization of sustainable agriculture; policy changes; needs of farmers; global food market dynamics and support structures from development and financial institutions, to name but a few (Stringer, Twyman & Gibbs, 2008; FAO, 2011; Grewal, Grunfeld & Sheehan, 2012; Curtis, 2014).

## Approaches and Interventions

Canada, globally leading in its support for nutrition and food security, established a strong funding strategy for small-scale farmers, availed for the first three years, focusing on rural women. Women and girls make up 60% of undernourished population indicating gender discrimination with regard to food accessibility. The overall access to food depends on the rural woman comprising of 43% of the agriculture labor force in developing countries. Investing then in women, increases their freedom and benefits the whole society. The woman’s role in ensuring availability, access and utilization of food, also in participating in its production, preparation and distribution is in need of support. Gender biased perception and absence of data hinders the awareness and appreciation of women role in ensuring food security. In addition, poor education and health indicators also are a limitation to their access to opportunities and available resources. Women perform more than half of the agricultural labor, with consistent and compelling evidence confirming that when status of women increase, agricultural productivity increase, and nutrition improves and poverty is reduced. Creating awareness in women, equipping them with information and skills would increase their status and reduce food insecurity and hunger (Asia Development Bank, 2013; Bremner, 2012; Mehra & Rojas, 2008).

Climate change results in intense, longer and frequent events associated with food insecurity in most vulnerable communities, affecting availability and accessibility to food in both quantity and quality of yields. Due to high dependence on rain fed agriculture and climate sensitive patterns, sub-Saharan Africa and Asia are more vulnerable to the impact of extreme weather especially drought and flood. The impact of these is severe losses for 650 million people in Africa who already live in environments with existing or probable cases of water scarcity, recurrent droughts and floods and land degradation. Globally 80% of all agriculture is rain fed and yet water resources are affected by climatic change. In America, we have 90% of agriculture as rain fed and in Africa 95% (Anderson, 2002; FAO, 2008; Wani et.al, 2009; Easterling & Apps, 2005; Regassa, 2011; Yengoh, Armah, Onumah & Odoi, 2010).

In Madagascar, climatic conditions have changed to reports of higher temperatures, lower rainfall and stronger cyclones. This has resulted to pest and disease outbreaks and extreme weather in a country with farmers highly dependent on agriculture. Only a few farmers made changes in their farming practices to adjust to the change and reduce vulnerability to droughts and floods. The most prevalent intervention however was introduction of new crops and new varieties, water management and soil conservation. Subsistence agriculture has been supported as a strategy to solve food insecurity in South Africa, and could be slowly introduced (Harvey et.al.2014; Aliber & Hart, 2009).

Input subsidies were found to enable farmers’ access seeds and fertilizers, which were previously unaffordable. In Malawi and Zambia, fertilizer subsidy programs were incorporated, though they however depended on availability and accessibility of productive assets like, land, machinery and irrigations. The outcome of these subsidies was improved when combined with other interventions like provision of extension services (Bizikova, Jungcurt, McDougal & Smaller, 2017).

Value chain interventions were also used in Malawi and Zambia, and involved educating the farmers for the benefit of development, access to markets, organization and institutions. These services were found to increase the availability and quality of food, contributing to increase in food production and reduction of prices. The outcome of these interventions was further improved with combination of other interventions and the availability of productive assets (Bizikova, Jungcurt, McDougal & Smaller, 2017).

India, a country keen on reducing hunger and food insecurity, has taken on policy implementation, that has led to new initiatives to support farmers. A mission was launched to provide quality high yielding seeds provide improved technology options and knowledge to farmers and provide options for choice. There also exists a farm credit package provided through institutional credit, which has doubled in two years with issuance of 72 million credit cards by banks and cooperatives. There is provision of crop, livestock and weather insurance cover that is constantly expanded offering security to the farmers. All rural districts have farm science centers that connect the farmers to information, knowledge, technology and training. These centers are part of research institutions related to agriculture. Further, investment in agriculture research has been increased and enhanced by the government for five years. Together with this, Indian states are given flexibility to plan, based on their specific agro climatic conditions. Outstanding loans to farmers that had accrued to 710 billion rupees were waived by the government, providing relief to 40 million farmers, making them eligible to new loans from the banks (Acharya, 2009).

Provision of alternative solutions to land scarcity problem, have resulted to implementation of sack gardens, in slums in Kenya and also in small-scale homesteads in Malawi. Cans and trash plastic containers, have also been used for planting in the Philippines. Small beds, tyres and sacks have been used in displacement camps in northern Uganda (FAO, 2008).

## Other Recommended Interventions

In order to get higher value from markets, supply chains ought to be linked into exports, the farmers’ mobile phones and other gadgets are linked to agricultural markets for accessibility. Introducing new agricultural input distribution channels facilitate the farmers ‘accessibility to the product (Scherr, Wallace & Buck, 2010).

Extension services intervention involved provision of necessary information in capacity building, seed choices, storage, technologies and sorting upcoming and prevailing cases. The results were better when concern for the community was a priority, resulting to consideration and interventions of other community challenges like access to credit and decision making (Bizikova, Jungcurt, McDougal & Smaller, 2017).

National level interventions to support small-scale farmers involve a governments’ commitment to move from political statements and promises, to action. It also involves reforming policies in order to create a context that enables. This can be supported by establishing both private and public partnerships to mobilize and finance initiatives on reducing hunger and food insecurity. Decentralization of national policies to levels that are accessible to the rural population, and tailor made for the local farmer’s understanding and relevance is quite necessary. Stakeholder’s consultations should be encouraged to determine priorities and facilitate development of small-scale farmer markets (Scherr, Wallace & Buck, 2010).

Another national or global and effective intervention is the implementation of safety nets and social protection programs enabling small-scale farmers and their households cope with high food prices. This could involve well-researched and targeted cash transfers, feeding programs and emergency programs. Food security funds could also be set up to deal with crisis of hunger and food insecurity to ensure accessibility and supply of food (Asian Development Bank, 2012; Schady & Rosero, 2008; Hoddinott, Berhane, Gillingan, Kumar & Taffesse, 2012).

The agricultural productivity of food insecure farmers can be increased through, improvement of soil management, with more effective fertilizers and organic alternatives. Farmers could practice improved water management including rainwater-harvesting techniques. Use of improved seeds and seedlings for a broader group of crops, grasses and trees is another way to support small scale farmers. Farmers could be supported through implementation of modern technology, including processing and storage to increase efficiency and output. Governments and development institutions could facilitate productivity through providing access to credit to farmers. They could also promote farm co-operatives and train farmers to apply new technologies (Scherr, Wallace & Buck, 2010; Asian Development Bank, 2012).

Rural development is another intervention that could offer support to small-scale farmers. It may include introduction of plants that are less dependent on water and more resilient to weather. Low cost assessment of land and resources could facilitate and ease the restoration of natural resources and access for small-scale farmers. Availing of tools to them will facilitate natural resource management. Rotational grazing will facilitate rangeland restoration and rainwater harvesting will provide a source of water. Diversity into livestock and fish production could be implemented as options and to shift preferences (Asian Development Bank, 2013).

Investment in education is a key support especially maternal education. Studies have reported the association of increased maternal education with lower hunger and food insecurity instances. This has been interpreted that educated females are better equipped, financially independent and have influence on household resources allocation. Women with no education were seen to likely be deprived and characterized with lack of purchasing power leading to lack of access to food and consequently to food insecurity (Haque et.al., 2017).

The United States Administration global food security strategy, supported further by G8 and G20 countries, has its primary focus on agriculture and rural development, facilitated by two principles it contains in order to support small scale farming interventions. These are; pledged support for comprehensive strategies and country owned plans, ensuring further that the global strategy for reducing hunger and food security is implemented. This is in line with intentionality to accomplish the target of accelerated agricultural growth by doubling current levels of productivity by 2025 (Hanrahan & Ho, 2009; Easterling & Apps, 2005).

## Conclusion

From this report, it is conclusive that the new strategy for adoption, which is to support small-scale farmers in low and middle-income countries is critical and urgent. With a two-thirds population reliance on small scale agriculture, their plight is a major concern in need of immediate intervention. Women, comprising of 43% labor force in developing countries and 60% of undernourished world population, need to be sensitized and involved as big players in the implementation of the interventions. The context of the countries is key in determining what specifically to incorporate or choose as an implementation. The climatic conditions in Madagascar for instance, an island could be different from Uganda, a landlocked country hence different weather challenges and interventions. Middle-income countries could be dealing with higher exposure to education, whereas low-income countries may have little to no education as a challenge. Support by the governments is also critical in the implementation of farmer support, where greater and faster results are realized where support for the strategies is given. Political stability in a country is key for this support to work, in order to focus and drive the agenda of reducing hunger and food insecurity, versus possible conflict during instability. Cooperation and support by development organizations and credit institutions, needs to be established as a partnership towards implementation and achieving zero hunger. The basic farmer support interventions to implement, will be based on ending hunger, achieving food security and improving nutrition to support the goal of zero hunger. All these interventions are focused on improving agricultural productivity, on education, on training and research, on protection programs, on social development and on project financing and capital. These when achieved provide a framework for small scale farmer support, as a strategy for reducing hunger and food security.

## References

Acharya, S. S. (2009). Food Security and Indian Agriculture: Policies, Production Performance and Marketing Environment. *Agricultural Economics Research Review 22,*1-19.

Aliber, M. & Hart, T. G. B. (2009). Should Subsistence agriculture be supported as a strategy to address rural food insecurity. *Agrekon 48*(4).

Anderson, C. L. (2002). Gender Matters: Implications for Climate Variability and Climate Change and Disaster Management in the Pacific Islands. *Intercoast Network 41*, 24-25.

Asian Development Bank. (2012). *Food Security and Poverty in Asia and the Pacific. Key Challenges and Policy Issues*. Mandaluyong City, Philippines: Asian Development Bank.

Asian Development Bank. (2013).*Gender equality and food security—women’s empowerment as a tool against hunger*. Mandaluyong City, Philippines: Asian Development Bank.

Bizikova, L., Jungcurt, S., McDougal, K & Smaller, C. (2017). *Investments to Improve Food Security. International Institute for Sustainable Development.* International Institute for Sustainable Development

Bremner, J. (2012). Population & Food Security: Africa’s Challenge. *Population Reference Bureau*. Retrieved from http://www.prb.org/Publications/Reports/2012/population-food-security-africa-part1.aspx

Curtis, M. (2014). *Putting Small-Scale Farming First: Improving the National Agriculture Investment plans of Burkina Faso, Burundi, Ethiopia, Rwanda and Tanzania*. ACORD

Easterling, W. E. & Apps, M. (2005). Assesing the consequences of climate change for food and forest resources: A view from the IPCC. *Climate Change 70*, 165-89.

FAO (2008). *Challenges for Sustainable Land Management (SLM) for Food Security in Africa*. The Regional Conference for Africa, Information Paper no.5. Rome, Italy.

FAO (2008). Knowledge Sharing for Improved Food Security and Better Nutrition*. Global bioenergy*. Retrieved from <http://www.globalbioenergy.org/uploads/media/1001_FAO__Knowledge_sharing_for_improved_food_security_and_better_nutrition_FSN.pdf>.

FAO (2011). *Improving statistics for food security, sustainable agriculture, and rural development action plan to implement the global strategy 11 August*. FAO World Bank in collaboration with United Nations Statistical Commission (UNSC). Draft.

Grewal, B., Grunfeld, H., & Sheehan, P. (2012). The contribution of agricultural growth to poverty reduction*. Australian Centre for International Agricultural Research, Australia.* Retrieved from. http://aciar.gov.au/files/node/14358/ias76\_the\_contribution\_of\_agricultural\_growth\_to\_p\_27524.pdf.

Hanrahan, C. E. & Ho, M. D. (2009). The U. S. Global Food Security Initiative: Issues for Congress. *Congressional Research Service, R40945*, 1-26.

Haque, M.A., Farzana, F. D., Sultana, S., Raihan, M. J., Rahman, A. S., Waid, J. L., Choudhury, N. & Ahman, T. (2017). Factors associated with child hunger among food insecure households in Bangladesh. *BMC Public Health17*, 1-8.

Harvey, C.A., Rakotobe, Z.L., Rao, N.S., Dave, R., Razafimahatratra, H., Rabarijohn, R.H., Rajaofara, H., & MacKinnon, J.L. (2014). Extreme vulnerability of smallholder farmers to agricultural risks and climate change in Madagascar. *Phil. Trans. R. Soc. B 369* . Retrieved from <http://dx.doi.org/10.1098/rstb.2013.0089>

Hoddinott, J., Berhane, G., Gillingan, D. O., Kumar, N., & Taffesse, A. S. (2012). The Impact of Ethiopia’s Productive Safety Net Programme and Related Transfers on Agricultural Productivity. *Journal of African Economies, 21*(5), pp 761-786.

Msangi, J. P. (2014). *Policies and Legislations Governing Marketing and Food Trade: Southern Africa. Food Security Among Small-Scale Agricultural Producers in Southern Africa.* Springer International Publishers, Switzerland

Mehra, R., & Rojas, M. H. (2008). A Significant Shift: Women, Food Security and Agriculture in a Global Marketplace. International Centre for Research on Women. Retrieved from <https://www.icrw.org/wp-content/uploads/2016/10/A-significant-shift-Women-Food>-Security-and-Agriculture-in -a Global-Marketplace.pdf

Oxfam (2011). Growing a better future. Food justice in resource-constrained world. *Oxfam*. Retrieved from www.oxfam.org/grow

Proctor, F. J. & Lucchesi, V. (2012). *Small- scale farming and youth in an era of rapid rural change*. IIED, HIVOS, London, The Hague.

Regassa, N. (2011). Small holder farmers coping strategies to household food insecurity and hunger in Southern Ethiopia. *Ethiopian Journal of Environmental Studies and Management* 4(1), pp 39-48.

Schady, N. & Rosero, J. (2008). Are cash transfers made to women spent like other sources of income? *Economics Letters 101*, Pp 246-48.

Scherr, S. J., Wallace, C., & Buck, L. (2010). *Agricultural Innovation for Food Security and Poverty Reduction in the 21st Century: Issues for Africa and the World.* Retrieved fromhttps://www.google.com/search?q=Agricultural+Innovation+for+Food+Security+and+Poverty+Reduction+in+the+21st+Century%3A+Issues+for+Africa+and+the+World.&rlz=1C1CHBD\_enKE742KE742&oq=Agricultural+Innovation+for+Food+Security+and+Poverty+Reduction+in+the+21st+Century%3A+Issues+for+Africa+and+the+World.&aqs=chrome..69i57.110624515j0j9&sourceid=chrome&ie=UTF-8

Stringer, L. C., Twyman, C. & Gibbs, L. M. (2008). Learning from the South: common challenges and solutions for small –scale farming. *The Geographical Journal 174*(3), pp235-250.

UNCTAD (2011). Sustainable agriculture and food security in LDCs. *UNCTAD Briefs: Least Developed Countries 20*

Vercillo, S., Kuuire, V. Z., Armah, F. A. & Luginaah, I. (2015). Does the New Alliance for Food Security and Nutrition impose biotechnology on smallholder farmers in Africa? *Global Bioethics 26*(1), 1-13. https://doi.org/ 10.1080/11287462.2014.1002294

Wani, S. P., Sreedevi, T. K., Rockstrom, J. & Ramakrishna, Y. S. (2009). *Rainfed agriculture-Past trends and future prospects*. Oxford: CABI

Wiggins, S. & Keats, S. (2013). *Smallholder agricultures contribution to better nutrition.*Retrieved fromhttps://www.odi.org/publications/7317-smallholder-agriculture-s-contribution-better-nutrition

Wiggins, S. & Leturque, H. (2010). Helping Africa to Feed Itself: Promoting Agriculture to Reduce Poverty and Hunger. *Futures Agricultures Consortium* .Retrieved from https://pdfs.semanticscholar.org/5425/3a404ee5f7932581dcff2266b2c9042dfcb3.pdf

Yengoh, G. T., Armah, F. A., Onumah, E. E., & Odoi, J. O. (2010). Trends in Agriculturally-Relevant Rainfall Characteristics for Small – Scale Agriculture in Northern Ghana. *Journal of Agricultural Science 2*(3), pp 3-16.