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“Can agroecological farming feed the world?  
Farmers’ and academia’s views”

## The role of agroecological systems (agroforestry and intercropping) and innovations in increasing crop production in a sustainable environment

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### Abstract

Agriculture must meet the persistent challenges of hunger, malnutrition and diet related diseases in this 21<sup>st</sup> century - under increased population, loss of natural resources, soil degradation and climate change issues. While past agricultural systems focused on producing more food for the population, today’s challenges include factors such as climate change, environmental degradation and human health issues that typically demand new approaches and systems.

In many countries, current innovation approaches are promoted by agribusinesses and biotechnology industry that intend to produce more output for high revenues while neglecting their effects on the environment and humans most especially vulnerable populations such as refugees and displaced people. These approaches impede rural communities to produce and access health foods in sustainable environment. Unless the efforts are increased, the world will not achieve SDGs 1&2 of “Ending poverty and zero hunger respectively.

There is a need for a paradigm shift to more sustainable agricultural systems – Food and crop systems that are able to produce more but have less on the environment. In many instances agriculture has been portrayed as the main cause to the environmental degradation, but of recent many researchers have recognised that it is possible to have agroecological systems that do not harm the environment.

Agroecological farming approaches such as agroforestry, intercropping, no tillage put into consideration the effects agricultural activities on the environment. They also emphasise the importance of local knowledge and prioritises farmers’ ideas to policy makers and other stakeholders. Agroecology farming will play a fundamental role in increasing food production and enhancing food security and nutrition, building resilience at the same time restoring biodiversity that is vital for sustainable agricultural production. Several studies indicate that, over time, agroecological food systems attain more stable levels of total yield per acre at a low cost of productions than other systems that focus on use of high inputs levels that prove costly.

However, for an agroecological farming systems to be economically, politically, socially and environmentally acceptable there is a need to invest public funds and design inclusive public policies and also fulfil these criteria a) environmental and b) social-economic dimensions.

**Keywords:** Agroecological farming, biodiversity, climate change, health issues, innovation approaches, malnutrition, paradigm shift, public policies, sustainable agricultural systems

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