

Agroforestry can form an effective, efficient and fair pathway to achieve food security and agricultural sustainability in Africa

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Introduction

The global environmental and developmental agendas are now converging to address the economic, social and environmental dimensions of sustainable development. The past three decades have seen innumerable attempts by governments and societies to intervene within social, economic and environmental dimensions to advance towards sustainable development. These include agreements such as the Agenda 21, the Millennium Development Goals (MDGs), RIO+20, and soon to be redefined as the Sustainable Development Goals (SDGs).

The SDGs build upon and supplement the MDGs creating what is being termed the post-2015 agenda. The emerging development agenda will greatly depend upon achieving environmentally sustainability that reinforces the capacity to achieve associated social and economic dimensions.

It is anticipated that many countries will not be able to achieve their economic and social development goals without modifying practices, policies and investments to fully encompass environmental sustainability. Current agricultural practices cause many negative consequences on existing environmental resources. The emerging SDGs seek to increase efficiency in the use of land, water and agricultural inputs to better contribute to environmental goals while bridging the gap between current yields and the projected requirements to feed the world's growing population.

Improving and sustaining agricultural production in Africa under conditions of increasing climate variability will require additional attention to

environmental sustainability, especially on the crucial neglected roles that trees can play. Agroforestry science guides the integration of trees into crop, livestock and mixed agricultural systems, bringing multiple benefits to both smallholder farms and large agricultural landscapes. This underscores the recognition of the role of trees as key elements to achieving the SDGs.

Against these backgrounds, agroforestry must be viewed as a land use system that seeks to deliver sustainable improvements to food security, through integrating trees with other components of agriculture in multifunctional landscapes.

Challenges and requirements of successful agroforestry systems

Products and services flowing from the integration of trees within farming systems can contribute to food security, farmer livelihoods and environmental resilience. Trees contribute to food security in Africa through a range of environmental benefits, provision of products and social co-benefits such as increased farm income, restoration and maintenance of biomass and diversity. Trees also enable the restoration of biological corridors between protected forests, maintenance of watersheds, improved soil conservation, availability of timber and fuel wood, as well as reduced pressure on natural resources.

Successful agroforestry systems require trees and crops that are respond to local priorities and biophysical conditions, adoption of suitable management practices and integration of those practices into rural livelihood systems.

The recent concept of climate-smart landscapes comes across as a practical way to achieve mitigation, adaptation and agricultural production objectives while ensuring environmental sustainability. In this way, the climate agenda is compatible with the overall sustainable development agenda, as the two cannot be tackled by separate means. It is therefore timely to discuss the landscape approach in the implementation of the SDGs.

The term “Climate-Smart Agriculture” was coined to link agricultural and climate change policy together with a view to reduce the impact of agriculture on climate, while ensuring that agriculture adapts to the effects of changing climate. FAO defines climate-smart agriculture as an agriculture that sustainably increases productivity, resilience (adaptation), reduces/removes greenhouse gases (mitigation) while enhancing the achievement of national food security and development goals.

The inclusion of agroforestry in global initiatives on climate change adaptation and mitigation needs to be explicit. The contribution of agroforestry to mitigation strategies, under conditions where adaptation is the highest priority for farmers, needs to take into consideration the differences between development goals and exclusive climate oriented perspectives. Climate change impacts should be thought-out when making recommendations for tree species, as they are long-lived organisms. Most importantly, trees require appropriate care to realize the full potential of agroforestry. Unmanaged trees will be unproductive and may compete with other elements of the farming system.

Making agroforestry work for the poor

No single approach to food security will be sufficient because of policy failures in controlling demand and supply dynamics of the food system, of which land forms a major component. The success of measures to ensure food security requires a combination of approaches and conditions. It requires the integration of land use systems that improve agriculture and the delivery of ecosystems services. This calls for development practices that integrate and build on the diversity of species and production

systems, the value chains and knowledge systems that are essential for sustainable agriculture.

Agroforestry is a model of an integrated land use approach that can favour increased production using low input technology. However, advance policy actions like governance, gender synergies, secured land tenure, investments and markets need to be in place for agroforestry to deliver sustainable improvements to food security. Policy should also manage the demand side in relation to population growth and changing diets. Although women are involved in value chains, their level of participation is constrained by cultural norms and lack of resources. Mechanisms to engage women in decision-making will help improve the adoption of agroforestry.

Moreover, agroforestry needs to be incorporated with other land management objectives for it to succeed. Addressing biodiversity and sustainable land use within multifunctional landscapes requires integrated policies between the forest and agriculture sectors. One important aspect is to align food security and income generation in sustainability to meet food and cash needs. Market information systems to support product valuation and other aspects such as trade with regional and international markets are key to ensuring efficient interventions through rural collective action.

Agroforestry and the SDGs in Africa

Research and decision-making are still disconnected in Africa, making it difficult for the achievement of sustainability goals. Agroforestry is not included in government statistics, is undocumented in other sources and mainly classified as agriculture or some type of forestry and not as a separate land use. Judging the possible contribution of agroforestry to rural livelihoods will require more efforts into assessing the potential of agroforestry systems to support development needs.

Conclusion

There are no simple solutions to the complex challenges of food security and climate change. Technological approaches are useful but insufficient

to deal with environmental challenges. Agroforestry combines traditional and more recent research-based knowledge and evidence related to optimizing the interaction of trees, crops, livestock, water, soil, social systems and economic systems such as markets and value chain in order to respond sustainably to challenges of development and sustainability.

An integrated landscape approach will provide the means for ensuring that the most appropriate practices and approaches are implemented in the right place for the right reasons to achieve the goals of sustainable development.

Without governance systems that provide the means to integrate decision-making and management across sectors, it has been difficult over the years to achieve integration of social, economic and environmental objectives. The integrated landscape approach, that incorporates agroforestry concepts and practices, enables science, practice and policy to overcome barriers and accelerate action for achieving the SDGs and associated targets, particularly on food security.

References

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