

Challenges

Agroforestry can boost outputs and raise the incomes of smallholder farmers across all of Rwanda's agro-ecological zones, but there are still a number of obstacles to the widespread adoption of the practice:

- Lack of a dependable source of quality seed and seedlings
- There is shortage of agroforestry extension services
- Knowledge gaps exist in farmers' understanding of agroforestry
- There is perceived competition for land between trees, crops and animals
- Lack of financial assistance or access to credit for farmers to cover agroforestry start-up costs
- Farming households do not appreciate the contribution of agroforestry hence do not invest much.
- Limited markets for agroforestry products
- The over-utilization of eucalyptus monoculture has drained aquifers and does not allow diversity and quality in forested areas
- Weak institutional capacity for policy implementation at both the central and local government levels
- There are limited policy instruments and budgets at the implementing institutions
- Lack of an appropriate institution with specific focus on agroforestry

Opportunities and strengths

Despite these challenges, the potential for agroforestry to spread across Rwanda is huge:

- There is a high level of political will to support the development of agroforestry.
- Rwanda ranks environmental protection and soil conservation as top national priorities.
- The existence of decentralized civil governance structures and the joint action development forum can facilitate quick implementation of interventions like agroforestry.
- The National Environment and Climate Change Fund (FONERWA) can support the spread of agroforestry.
- The country's growing road network has increased the accessibility of the rural areas to markets for tree based products.
- Agroforestry promotion can be streamlined under several national policies and programs like Zero Grazing Policy, National Tree Day, Land Use Consolidation, etc.

Recommendations

We therefore recommend that the Rwanda Natural Resource Authority be given the mandate for agroforestry and the organization should lead in harmonizing the work done by other stakeholders. Each institution that has responsibilities in regard to agroforestry should contribute to the development of the policy, framework, and implementation plan. Furthermore, Rwanda clearly needs a national action plan to promote the use of agroforestry across the country. These should include the following:

- A clear definition of agroforestry
- Guidance on how agroforestry can be integrated into other government policies e.g. environment, agriculture, forestry, local development, etc.
- An explanation of how responsibilities with regard to agroforestry are shared across MINAGRI, MINIRENA, and other government agencies.
- Guidance on how to establish incentives and regulatory instruments to encourage the private sector to invest in agroforestry.
- Guidance on how to encourage farmers to adopt agroforestry, including through the development of targeted extension services.
- An emphasis on policy research on the role of trees in securing rural livelihoods.
- Guidance on the establishment of a national platform to enhance and sustain synergies and support systems (such as seed systems, nurseries, applied research, and extension services) among agroforestry implementing institutions.

Note

This policy brief is based on a policy review report, "Agroforestry Policy/Governance Assessment in Rwanda," written by Alfred R. Bizoza on behalf of The World Agroforestry Centre (ICRAF).

Other references

Stainback, G., Masozera, M., Mukuralinda, A., & Dwivedi, P. 2012. Smallholder Agroforestry in Rwanda: A SWOT-AHP Analysis. *Small-scale Forestry*, 11(3): 285-300.

Ul Hassan, M. 2011. Analyzing Governance Reforms in Irrigation: Central, South and West Asian Experience. *Irrigation and Drainage*, 60(2): 151-162

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Harnessing the potential of agroforestry to boost yields and strengthen food security in Rwanda



Farmers carry harvested trees for construction and fuelwood. Photo © ICRAF

Introduction

Rwanda's national agricultural policy seeks to promote the transformation of Rwanda's agriculture from subsistence agriculture to market-based agriculture through highly intensified farming systems. However, low productivity of major staple crops on the country's smallholder farms remains a key obstacle in achieving this goal. The country's dense and rapidly growing population (currently at 416 people per km² with an annual growth rate of 2.6 percent), puts pressure on existing land. Strategies to increase land productivity have become imperative.

Agroforestry is a traditional farming practice that integrates trees into farming systems. The Government

has been promoting agroforestry as an option for sustainable agricultural intensification in Rwanda. However, the adoption by farmers has been slow. By integrating trees with their crops, Rwandan farmers can obtain tree products e.g. fuelwood, timber, poles, stakes for climbing beans, fodder, fruits and services like improve the fertility of their soils, control soil erosion, protect biodiversity, diversify their incomes and reduce poverty.

This policy brief is based on a review of Rwanda's policy context with respect to agroforestry and identifies ways and means through which agroforestry adoption can be accelerated on a sustainable level.

Key Points

- Agroforestry can increase farmers' yields, diversify their incomes and deliver environmental benefits.
- The mandate for agroforestry is currently spread across several institutions. These roles need to be consolidated and clarified.
- A number of government policies affect the practice of agroforestry in Rwanda. These policies should be harmonized under a single national agroforestry policy.



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Agroforestry’s history in Rwanda

Rwanda has practiced agroforestry since 1969 when the *Projet Agropastoral de Nyabisindu* a German-funded was launched in Nyanze District in Rwanda’s Southern Province. The project lasted for more than 20 years and served as a model for agroforestry projects across the country and has been described extensively in the literature. Many other initiatives in Rwanda have promoted agroforestry since 1980. These include the Swiss-funded *Projet Pilot Forestier* in Kubyé, the UNDP/FAO *Projet d’Intensification Agricole* in Gikongoro, and the USAID-funded *Farming System Research and Natural Resource Management projects* in Ruhengeri, among others.

Constraints to wide scale adoption of agroforestry

While most agroforestry projects have been successful in Rwanda, agroforestry is yet to pick up on farms throughout the country. The lack of clear institutional arrangement and agroforestry policies, as is the case of agriculture and natural resources has resulted in low penetration rate of agroforestry. Further, agroforestry is scattered across the mandate of various ministries and organizations, hence the approaches deployed by various governmental bodies remain poorly coordinated. In addition, limited human and financial resources negatively affect the scaling up of agroforestry success stories.



Ankole Longhorn cattle grazing in open grassland as charcoal production takes place in the background. Photo © ICRAF

The World Agroforestry Center (ICRAF) opened its office in Rwanda at Rwerere ISAR station in 1988 with the objective to select multipurpose exotic and indigenous agroforestry tree species adapted to the different agro-ecological zones of Rwanda. ICRAF began by defining land use systems, identified the constraints within these systems and potential solution for solving these constraints. The Centre also focused on building local capacity in agroforestry. Currently, ICRAF is leading the Trees for Food Security project in East Africa, which aims to scale up the use of trees on farms in Rwanda, Ethiopia, Uganda and Burundi through the support of the Australian Centre for International Agriculture Research (ACIAR).

Policy & Institutional Context

Though Rwanda lacks an exclusive agroforestry policy, a number of existing policies affect the practice and potential spread of agroforestry-related practices. These include policies related to the agricultural sector (crop productivity), environment, grazing, land use and management and forestry (see Table 1).

At the same time, the institutional arrangements for agroforestry in Rwanda remain scattered, unambiguous and uncoordinated, with a number of ministries and agencies involved in governing, supporting, or promoting agroforestry practice. The most significant are the Rwanda Natural Resources Authority (RNRA) and the Rwanda Environment Management Authority (REMA), which fall under the Ministry of Natural Resources (MINIRENA). Other key institutional players include the Ministry of Local Government (MINILOC) as well as the Ministry of Agriculture and Animal Resources (MINAGRI), which houses the Rwanda Agriculture Board (RAB) and the National Agricultural Export Board (NAEB). The roles of each of these institutions with respect to the relevant policies can be found in Table 1.

Each of these institutional actors plays an important role in promoting agroforestry in Rwanda. However, they are not actively collaborating because the agroforestry sub-sector is not fully integrated in the existing sector-working groups (SWGs) for both MINAGRI and MINIRENA which have mandate in agriculture and natural resources management. Moreover, the instruments, incentives, and other implementation arrangements that they are using could be improved to deliver greater positive impacts on agroforestry practice.

Table 1. Policies and institutions relevant to agroforestry in Rwanda

Policy	Policy objective	Relevance to AF	Implementing institutions	Supportive intentions with respect to AF	Appropriateness of institutional arrangements	Policy instruments favorable for promoting agroforestry	Existence of suitable implementation arrangements	Impact on agroforestry practice
Environment Policy	<ol style="list-style-type: none">1. Improvement of human well-being2. Judicious use of natural resources3. (Protection and rational management of ecosystems for sustainable and fair development	The Environment Policy of 2009 describes agroforestry as key to sustainable environmental management and reducing pressure on natural resources.	REMA, MINIRENA, MINAGRI	+/-	+	+	+/-	+/-
National Agriculture Policy	Create enabling conditions for the sustainable development of agriculture and livestock production in order to ensure national food security, to integrate agriculture and livestock into markets, and to raise farmers’ incomes.	All strategies that have been developed under the National Agriculture Policy call for the use of trees and/or shrubs on farms.	MINAGRI, RNRA, RAB	+	+	+/-	+/-	+/-
Forestry Policy	<ol style="list-style-type: none">1. Forestry becomes one of the bedrocks of the national economy and ecological balance2. Farm forestry produces timber and wood fuel and supplies wood and non-wood forest products	The National Forestry Policy of 2004 created the Rwanda Agroforestry Network and the National Land and Forest Research Centre (LFRIC), which studies forest economics and the marketing of forest products, among other topics.	MINIRENA, RNRA, RAB, PAFOR	+	+/-	+	-	+/-
Zero Grazing Policy	<ol style="list-style-type: none">1. Production and use of animal manure for soil fertility improvement & biogas production for domestic cooking2. On-farm fodder production3. Tree planting on progressive terraces4. Integration of crop-livestock production for smallholder farmers	This policy is favourable to agroforestry because it puts an end to free grazing of cattle, which often disturbs the growth of trees on farms. The policy could bring even greater benefits by facilitating crop intensification and the one-cow-per-poor-family programs.	MINALOC, MINAGRI, RAB	+	+	+	+	+
Land Use Consolidation Policy	<ol style="list-style-type: none">1. Increased access and use of inputs to improve farmer productivity2. Rational use of agricultural land with appropriate production systems	The implementation of the land use consolidation policy offers an excellent opportunity for agroforestry practices on progressive terraces, where land is being consolidated. Moreover, owning land titles gives smallholders the confidence they need to bring the land into consolidation for better use.	MINAGRI, RAB, MINALOC	+	+	+	+	+

* Rwanda Environmental Management Authority (REMA); Ministry of Natural Resources (MINIRENA); Ministry of Agriculture and Animal Resources (MINAGRI); Rwanda Natural Resources Authority (RNRA); Rwanda Agriculture Board (RAB); Ministry of Local Government (MINALOC); *Projet d’appui à l’aménagement des forêts au Rwanda* (PAFOR).