In Rwanda, part of Vision 2020, focuses on increasing trees on farm for improving products and services from agroforestry. The target is to establish agroforestry systems on 85% of land with trees on farm and 30% on forestry.

Agroforestry for watershed protection – Gishwati

The Busoro and Matyazo landscapes in North Western Rwanda were greatly affected by landslides which reduced the size of Lake Karago due to sedimentation. Landslides were greatly reduced and arable land recovered only four years after planting Alnus acuminata landslides trees.

Under the Economic Development Poverty Reduction Strategy of Rwanda (RoR, 2013), integration of trees on-farm is one of the options recommended for landscape restoration and improved resilience to climate change.

Fruits and stakes for climbing beans as sources of income and nutrition

The T4FS Project replaced the earlier traditionally used grass species stakes with tree species such as Acacia augustissima, Alnus acuminata and Vernonia amygdalina. These are fast growing, rich in nitrogen, control soil erosion and also when planted on farm reduce distance for famers collecting stakes.

Through the project, the farmers of Kadahenda also report obtaining enough income to purchase medical insurance and are also savings through Savings and Credit Cooperative (SACCO)s. Farmers in Kadahenda also report a high increase in fruit consumption as result of trainings and awareness raising efforts. Statistics of the Karago sector health center show a 20% reduction in child malnutrition program on crop intensification, increasing tree cover.

Going forward

Several approaches have been envisioned to accelerate the adoption of these locally adapted agroforestry technologies beyond the current project areas:

- Using individual and group extension approaches to reach as many farmers as possible including: RRCs, farmer exchange visits, Umugandas and field days
- Addressing bottlenecks within the tree product value chain
- Training of agronomists and extension workers in agroforestry best-practices,
- Undertaking assessments and simulations of tree-crop-water-soil nutrient interactions for more tree species and differing agro-ecological conditions
- Monitoring and evaluating impacts of trees on farm.
Agroforestry makes impact in Rwanda

Rwanda, the country of a thousand hills, faces massive land degradation. Deforestation has led to almost bare hills from where eroded soils destroy water sources and fertile valley bottoms through siltation.

The resulting poor subsoil can hardly support good crop yields leading to food and nutritional insecurity and escalating rural poverty.

T4FS is showing evidence that agroforestry has the potential in reversing this trend and plays vital roles in the provision of products and services for sustainable rural growth.

The project’s first phase started in June 2012 in Gishwati (North western Rwanda) and Bugesera (Eastern Rwanda) and was completed in November 2016.

The second phase started in 2017 to scale up the successes of the first phase and integrate value chain development, introducing better water management technologies and strengthening of local institutions.

Rural Resource Centers (RRC) for learning and quality germplasm supply

To enhance quality availability of tree germplasm:

- Two RRC’s were built and three satellite nurseries established as training and demonstration hubs for agroforestry technologies

Agroforestry addresses the challenge of land degradation and soil erosion and planting of trees along river banks. Current results show that with the correct management the growth rate of indigenous trees can almost be doubled which might play a crucial role in this regard.

Agroforestry improves crop yields

- In Gishwati, application of leaf biomass of Alnus acuminata combined with mineral fertilizers increased bean yield by 38.9%, maize grain by 33% and potatoes yield by 16.7% compared to traditional farmer practices. In Bugesera, green manure showed higher maize grain yield, its effect varied with site, with Rweru recording higher maize grain yield (3.1 to 6.9 t ha-1) than Juru (1.9 to 6.7 t ha-1).
- Since 2014, tree tomatoes (tamarillo) were distributed to farmers in Kadahenda, each tree yielded an average of 20kg (1 kg tamarillo = RWF800 ~ USD1).
- Other leguminous tree species shown to improve crop yields include: Vernonia amygdalina, Gilridicidia sepium, Calliandra calothyrsus and Leuceana diversifolia.

Capacity in agroforestry trees management

- Approximately 1,000 farmers and extension officers were trained on improved agroforestry techniques.
- 4 MSc (3 males, 1 female) and 4 PhD (3 males, 1 female) students were trained in various aspects of agroforestry.
- The project has reached approximately 11,717 farmers through different aspects of agroforestry.

To reduce soil erosion and stabilize river banks, T4FS supported the establishment of hedge rows