

Investing in Sustainable Mountain Development

Opportunities, Resources and Benefits

**Sustainable Mountain
Development Series**



Farmers in Woglle planted about 10 000 seedlings in July 2015 (Y. Worku)

€ 4 000 annually. Moreover, BOKU-COS has set aside a € 20 000 back-up for the community fund, in case there are insufficient compensation payments to feed it in future. Ten percent of the total income from the sale of carbon is retained as a risk buffer in the event of unexpected forest fires, drought, termites or forest clearance. It is expected that the project will store approximately 6 700 tonnes of CO₂ in the coming 30 years at a price of € 25 per tonne. This corresponds to the actual project costs of € 167 500 (Table). In addition, 20 percent of the project funds are contributed in-kind by BOKU staff time, including advice on reforestation activities, calculations for carbon compensation and senior project supervision (Figure).

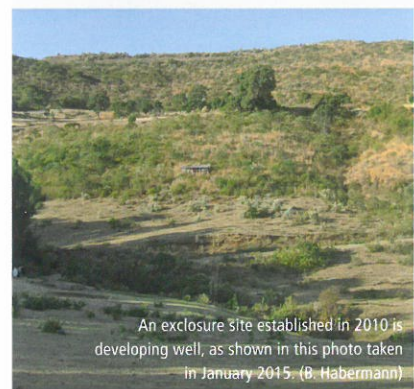
Local people will benefit in various ways: empowerment and improved ownership (from year 2); access to micro-credits from the community fund, improved micro-climate and scenic value, increased wildlife and biodiversity as well as income generated through beekeeping and nursery establishment (from years 3–4); and harvesting branches and foliage as livestock fodder (after year 5).

In Austria, customers appreciate the innovative character of this research-supported CO₂ mitigation project and that there is evidence to demonstrate the social and environmental benefits. As a result, they are willing to pay higher prices per CO₂ certificate than on the open market.

Budget allocation for the project duration (30 years)		
Project year	Budget	Activities
1	€ 12 500	<ul style="list-style-type: none"> Participatory process Tree planting Community fund Administration Guards Training for forest committee members on management issues
2	€ 8 500	
3	€ 4 000	<ul style="list-style-type: none"> Tree planting Monitoring Establishment of community fund Guards
4–30	€ 4 000 annually	<ul style="list-style-type: none"> Community fund: additional tree planting, guards, micro-credits, administrative costs in community Monitoring (after year 3 only max. 2% of project budget)
	€ 20 000	Risk buffer for lower carbon payments
	€ 14 500	Risk buffer for human interference and natural hazards
Total costs over 30 years	€ 167 500	Corresponds to income from carbon sequestration (6 700 t CO ₂ at € 25)

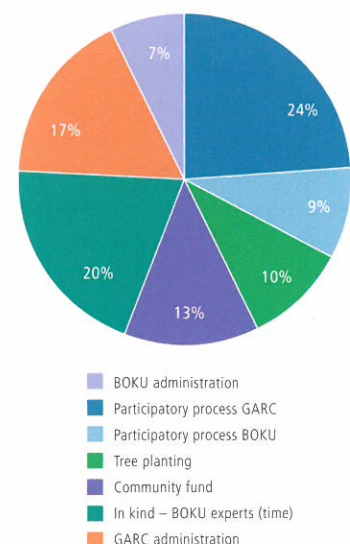
Lessons learned

- Securing continued voluntary payments by clients for carbon offsetting is essential and requires transparent information and trust building, especially during the inception phase, when immediate successes are not yet visible.
- Long-term carbon sequestration through protection and regeneration of local environments to mitigate climate change at the global level needs to provide benefits and a sense of ownership to local people.
- The involvement of a university in a carbon-offsetting scheme results in low transaction costs as well as evidence-based project implementation based on the results from master's theses and doctoral dissertations.



An enclosure site established in 2010 is developing well, as shown in this photo taken in January 2015 (B. Habermann)

Specification of costs (cash and in kind) during the initiation phase (year 1–2)



Benefits of community-based carbon offsetting

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Sustainable carbon offsetting is about more than how best to move money from carbon consumers to carbon sentinels. To a large extent, it is about respect for people's rights and choices. For two villages in northern Ethiopia, the answer to one major question determined whether or not to agree on the establishment of 30 hectares of exclosures for the next 30 years: whose decision counts?

Pits being prepared for planting trees in North Gondar Zone, Ethiopia (Y. Worku)

In 2012, the University of Natural Resources and Life Sciences, Vienna (BOKU) launched a carbon-offset system (BOKU-COS) to compensate the CO₂ emitted through air travel by its students and staff. Participants in this system now increasingly include public institutions, private companies and NGOs. To date, € 120 000 have been collected for the compensation fund, and it is expected that about € 40 000 annually will follow during the next five years.

A first sequestration project started in 2013, in two villages comprising 260 households in the North Gondar Zone of Ethiopia. The area is strongly affected by deforestation, and land use and property rights are often unclear. The project's aim is to reforest parts of the area and develop a sustainable grazing scheme that in the long term benefits the local people as well as the local and global environment. In an 18-month, multi-staged participatory planning process facilitated by BOKU's Centre for Development Research, the local community designated 30 hectares of land to be excluded from grazing and other uses. To manage these exclosures, they agreed on by-laws regulating access and use rights; assignment of a guard; penalties for encroachment; illegal logging and grazing; and the use of the community fund provided by the project as a compensation for the exclosure. A forest committee is in charge of implementing the by-laws. In July 2015, the first trees were planted in the newly established exclosures. This will be repeated annually depending on demand jointly defined by the local forest committee and researchers from the Gondar Agricultural Research Centre (GARC). Carbon inventories will be carried out at five to ten-year intervals to assess tree growth and removal of wood. The activities and use of the community fund will be monitored by GARC in collaboration with local government agents.

The project initiated the offsetting scheme in three years and with a budget of € 25 000, which covered the costs for facilitating the participatory process and support provided by different partners. From year 4 to year 30, the project will receive



"What we like most about working with you is that you accept what we decide. There was a moment when the researchers questioned the boundaries of the exclosure as we had decided it, and we were very disappointed. But finally we could convince them, and our decision counted."

Woynye, meeting with the forest committee in January 2015