

Analog forestry enriches the soil

by Meindert Brouwer

Grassroot organisation CENDEP in Cameroon successfully trains small farmers in analog forestry, a chemical-free way of growing crops. This benefits soil fertility and restores ecosystem services. Food security increases and farmers are getting more prosperous. As a result of analog forestry, farmers can practise sedentary farming instead of having to slash and burn new forest plots again and again. Wirsiy Eric Fondzenyuy and Perry Ndzefemmegho of CENDEP explain.

The land has turned green again. Perry Ndzefemmegho, forest and nature conservation officer at CENDEP.



Plant nursery along the road, Cameroon

What is analog forestry? Wirsiy: 'It is about turning degraded land into a productive, forested area from which people and biodiversity benefit. The word analog is derived from the word analogy and stands for: to make similar, to mimic or to imitate. Therefore, analog forestry is a silviculture method that tends to mimic an existing or

once existing natural forest ecosystem in both vegetation structure and ecological functions.'

Wirsiy explains how you go about: 'You start by restoring the fertility of the degraded farmland. This can be done in many ways, for example by incorporating nitrogen-fixing plants in farmer's fields or through green manuring. Then you plant the trees, shrubs and plants which grew there in the past, if available, or you plant similar ones which may also play a similar role. In between you add food crops and vegetables, which nourish your family, and other plants and trees which provide you with products to sell on the market. These can be forest vegetables such as eru, indigenous fruit trees, and also exotic fruit trees, medicinal plants, flowering plants which attract bees to harvest honey and commodities such as tea, coffee and cacao.'

Wirsiy continues: 'In the first phase or simultaneously with soil fertility restoration activities, you grow sun-loving, short-cycle crops such as maize, cassava and potatoes. After two to four or five years, depending on the area, you stop growing these crops, because shade has arrived since the other plants and trees have grown bigger. Then you focus on these. In this way you follow the principle of ecological succession, which constitutes an important element in the design of an analog forestry landscape. This design gives the landowner control over his/her land resources in terms of the crop types grown (for home consumption and sale) and also contributes to maintaining a resilient ecosystem through increased biodiversity.'

INVESTMENT The investment to set up analog forestry may be perceived as rather high. Wirsiy: 'Being a new farmer, you need money to buy seeds to reforest the area, because collecting these seeds yourself is not easy, but eventually when you get connected with other farmers you can exchange seeds, which is much cheaper. You do not use chemical fertilizers, but compost of fresh and dry plant material and cow dung as well. Compost can be easily made on the farm, but you may need to buy cow dung. Alternatively, you

'200,000 to 300,000 people in the region benefit from an increased supply of water.'

can cultivate nitrogen-fixing plants to enrich your soil and protect it from erosion and fertility loss. Then it takes time to prepare the field for reforestation and cultivation and time is money, but the long term returns are laudable: resilient landscapes with diversified products for the family and local markets. When the terrain has slopes, you have to apply soil conservation techniques such as making terraces and planting vetiver plants against erosion. You can hire someone to do the labour, but then you have to pay him. And it takes time for plants and trees to grow before you can harvest.'

However, a farmer does not have to use 100 % of the land to develop analog forestry. He may set aside a piece to cultivate short-cycle crops. When he does this, he has to grow these in an organic way, without using fertilizers. He should not jeopardize the potential certification of his products from the analog forest. Certification is very important, Perry points out. Perry: 'Certification proves you have grown products organically, in a way that is



Wirsiy Eric Fondzenyuy, knowledge management officer at CENDEP.

SEDENTARY FARMING INSTEAD OF SLASH AND BURN

Could analog forestry reduce or prevent slash and burn practices? If that would be the case, analog forestry could also contribute to reducing deforestation and mitigating climate change. Perry: 'An analog forester does not need fire as a tool. He knows how to stay on the same piece of land without using external inputs and obtain increasing yields. Farmers move from one place to the other because the fertility of their farmland has reduced. Analog forestry helps restore degraded lands making it needless for farmers to move from place to place in search for new farmland. Most of our population is becoming sedentary. Adopting sustainable land-use practices through analog forestry techniques is the only way we can obtain a variety of both food and tree crops from the same piece of land without recourse to slash and burn.'



Organic products from local farmers.





A farmer poses in a multi-crop tea garden at Kitiwum.

good for the environment, without using fertilizers. The trademark of Forest Garden Products adds value to the products, which the farmer can then sell for a premium price. The premium price is the return on investment for the farmer, this is the opportunity.'

Is certification expensive? Perry: 'No, it is not, because it can be a participatory certification. That means that the farmers organize themselves in a cooperative with a board of directors. The cooperative pledges to apply the standards of analog forestry and the farmers monitor each other using a peer review mechanism. That works for the local market. If products would be sold on the international market outside Africa, then third party certification would be necessary.' Is there a local market in Cameroon for certified Analog Forest Garden products since many people are poor? Perry: 'Yes, it has started. In Cameroon there are people who are willing to pay a premium price for a healthy product that has been produced in a natural way. There is also an interest to buy these products in the East and Southern African markets. With the arrival of the corona virus, people are advised to boost their immune systems by eating healthy foods. Healthy foods are free of chemicals and are produced according to organic methods which are used in analog forestry.'

ECOSYSTEM SERVICES Practising Analog Forestry has other major advantages, which should not be underestimated. Reforesting according to the analog forestry method results in the restoration of ecosystem services, such as the supply of water. Now 200 to 250 farmers in and around Kitiwum village in the North West region of Cameroon have been practising analog forestry since 2008.

Wirsiy: 'They are already enjoying a better lifestyle. The greening of the land has resulted in more abundant water in the dry season. Farmers have their own water sources and do not share the same water collection points with cattle as in the past. In the dry season they do not have to take water from only one, perhaps contaminated spot. The degree of water-related diseases such as cholera, diarrhoea and typhoid has decreased in the area. Ten communities are practising analog forestry and 200,000 to 300,000 people in the region benefit from an increased supply of water. You can see that analog forestry has in a way prepared the local people for the unknown. Because of the corona virus people are asked to regularly wash their hands. They wash their hands with water that comes from the forest. Analog forestry helps people to live in harmony with nature, not against nature.'

Photos Both ENDS and CENDEP



ANALOG FORESTRY TRAINING CENTRE

CENDEP trains farmers in Cameroon and across Africa in analog forestry techniques and facilitates their transition from traditional monocrop practices (for example tea) to a multi-crop organic production system. CENDEP further designs tailor-made trainings and practices for farmers and NGOs in agriculture, horticulture and forestry. Different products are harvested from these systems at different times of the year, so farmers always have something to sell or eat. CENDEP runs a training centre in Mbiame village in the Northwest region in Cameroon which covers an area of 11 ha.

The objectives of the training centre are to:

- Train and mentor key actors and stakeholders on the restoration and regeneration of degraded and/or fragile ecosystems to ensure sustainable land, forest and soil management;
- Build local capacity through training and mentorship to promote increased agricultural productivity, entrepreneurship - including the creation of income generation/ diversification activities within the framework of analog forestry, as well as the certification and commercialization of forest garden products;
- Disseminate best practices through communication, exchange, partnerships and networking.

CENDEP and local partner organisations have set up analog forestry demonstration plots in Benin, Ghana, Togo, Uganda and Zimbabwe.

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