

The Ecoagriculture Snapshots series highlights the work of different organizations around the world to implement ecoagriculture landscape management approaches.

The COMACO Model for Increasing Smallholder Farm Productivity and Decreasing Wildlife Poaching in the Luangwa Valley, Zambia



Farming is the principal source of income for communities in the Luangwa Valley, a mixed woodland landscape dotted with smallholder farms. The main food crops are maize and sorghum, but increasingly farmers rely on cash crops such as cotton and tobacco, which leaves families less able to directly meet their own food security needs. In addition, planting these monoculture crops depletes nutrients in the soil, as does the local practice of burning crop residues, which also contributes to soil erosion. As a result of the soil degradation, farmers are forced to cultivate new land, hastening deforestation in the adjacent national forest and national park, which are rich in wildlife, including wildebeest, waterbuck, eland, hartebeest, roan, kudu, and elephants.

Subsistence farmers have typically relied on poaching wild animals to compensate for their shortage of staple crops. They exchange the illegally hunted meat for food produced by more successful farmers. In areas where wildlife is less abundant, the poorest families may generate extra income to buy food by selling charcoal they make from trees, contributing to forest degradation. Studies conducted several years ago showed that between 20 and 60% of Luangwa Valley residents were not food secure for up to 3 months, with food security being defined as sufficient food to last from one harvest to the next for a given family.

Even so, the extent of poverty in the area is not often visible. Dale Lewis, who has worked in the Luangwa Valley for over 20 years, said that it wasn't until he looked inside farmers' granaries that he understood. "They were empty," he says. "And these were people



Over 40,000 farmers taught conservation farming and composting. Source: Wildlife Conservation Society

I knew, good friends of mine. I had not grasped the extent of the food insecurity they were experiencing on a day-to-day basis."

Lewis works with Community Markets for Conservation (COMACO), a joint initiative of the Wildlife Conservation Society and the World Food Programme, which initiated a community program in the Luangwa Valley 2002 to build commitment to natural resource management and conservation. What differentiates the COMACO project from others is its approach of addressing food insecurity in concert with wildlife conservation. COMACO provides direct food aid for farmers as well as training in sustainable farming technologies and improved land use practices. With the new methods community members learn, they are able to diversify their crop production and gain access to new markets, providing new sources

of income. The COMACO project changes the microeconomic incentives by improving payoffs to farmers, so that it is more profitable for families to farm than to poach.

COMACO focuses in particular on the local farmers with a history of poaching wildlife. COMACO provides them maize for their household use as well as training in zero-tillage farming in exchange for their traps and snares. While maize provides an immediate incentive to hand over their snares, increased production of food crops and ultimately income benefits associated with the farming methods and trade schemes introduced by COMACO help decrease the likelihood that these farmers will have to resort to illegal snaring in the future. From 2001 to 2005 a total of 20,368 snares were surrendered by farmers from COMACO core areas.

COMACO trains farmers in zero-tillage farming, which involves applying home-made fertilizer individually to each plant to help save on fertilizer costs and maximize its effectiveness, and covering the area between rows with the previous year's crop residues – instead of burning them – to suppress weed growth and increase soil moisture. COMACO strategically promotes several agricultural products in the area: paddy rice, which requires little pesticide and produces food without extensive labor inputs; groundnuts, which provide a source of food and income and, as nitrogen fixers, are ideal for crop rotation; poultry, which provides an alternative to game meat; and honey produced in bar or log hives (already dead trees), which provides a good economic incentive to manage forest resources.

Community members trained in conservation farming are organized into producer groups around a local depot that exports products to regional community trading centers where they process, package, and market the goods as “added value” environmentally friendly products. The products are sold under the COMACO brand name *It's Wild!*, and



Regular weeding throughout the farming season reduces labor and improves soils in following years. Source: Wildlife Conservation Society

the profits are shuttled back to the producer groups, providing incentives to sustain farmer compliance of conservation targets. In order to remain within the producers group, farmers must abide by community land use plans and production practices that promote wildlife and watershed conservation.

Preliminary results from a 2006 food survey indicate that household adoption of conservation farming techniques are having a positive impact on food security in the valley community. 84.6% of households practicing conservation farming achieved food security to the 9 month target, as opposed to only 70.1% for non-practicing farmers. As incomes have increased and food sources have diversified, the wildlife population has stabilized and increased slightly since the beginning of the COMACO intervention in 2002.

For more information about COMACO, please visit www.itswild.org.