

## **ECOTIPPING POINTS VIDEO SCRIPT**

### **REVERSING TROPICAL DEFORESTATION: AGROFORESTRY AND COMMUNITY PROTECTION FORESTS IN THAILAND**

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We hear a lot about greenhouse gases these days. The carbon dioxide that we are spewing into the Earth's atmosphere from cars, power plants, and numerous other human activities is changing the Earth's climate, impacting the lives of everyone, and threatening the extinction of thousands of species of plants and animals with which we share this planet. We know there are no easy solutions to this problem. We'll need drastic changes in our lifestyles, as well as dramatic innovations in technology, to reduce carbon dioxide emissions.

And we must also do something about the destruction of tropical rainforests, which is responsible for approximately 17% of global carbon dioxide emissions – more than every car, truck, plane, train, and ship on the planet combined. A growing human population, pursuing ever increasing material consumption, has created powerful economic demands for tropical timber, as well as numerous commodities that come from the same land after a forest is cut down: such as beef, rubber, palm oil, and a multitude of agricultural products. When a forest is cut, all of the carbon in that forest's vegetation moves eventually into the atmosphere. Only a small fraction of that carbon returns to the land when agriculture or livestock grazing replaces the forest. All of the alternative energy, electric cars, and energy conservation we can imagine will not have much impact on global warming unless we also stop tropical deforestation.

Fortunately, ordinary farmers in a remote village in Thailand have found a solution. After almost completely destroying their forests, they found a way to save them. Their success provides lessons for all of us in a way that could impact greenhouse gases, climate change, and the fate of the Planet.

The story begins in the 1950s, when impoverished farmers moved to a new area of forest land recently opened for settlement in Nakhon Sawan province, about 200 kilometers north of Bangkok. The settlers cut down small areas of forest to begin farming; the soil of the newly cut forest was rich; and the crop harvests were bountiful. There were edible plants growing wild near the houses; the fish in the streams were easy to catch; and wildlife such as wild boars, elephants, and tigers roamed nearby. With such abundance at hand, and a cooperative spirit among the people, life was good.

Things began to change in the 1960s when the Thai government decided to speed up the nation's economic growth. Half of Thailand's forests, fisheries and agricultural areas were reoriented to supply overseas markets, and Thailand quickly became one of the fastest growing economies in the world. The government encouraged farmers to modernize and grow cash crops for export. It provided loans for farm equipment, hybrid seeds, chemical fertilizers, and pesticides to grow crops such as rice, maize, a fiber crop known as kenaf, and cassava, a root crop exported to Europe as animal feed. The settlers cut more forest to expand their farmland and also cashed in

by selling off the timber. This initial flush of quick cash sent them on spending sprees for electronic appliances and other consumer goods.

However, crop prices began to decline as many farmers grew the same products. Matters worsened when droughts came and crops started to fail. The farmers were not able to produce as much as before. They went deeper into debt, falling prey to private money lenders charging exorbitant interest. Desperate to make good on their debts, the farmers were forced to cut even more forest to expand their fields, and apply larger quantities of costly chemical fertilizers, to produce as much as possible. Eventually, there were virtually no trees left on the hillsides. The soil on their fields, which had been so fertile, became eroded, and hard. Rainwater just ran off. Streams, on which they depended for water to irrigate their fields, dried up

Crop yields declined further, and the cash that farmers received for the harvest was not covering their basic living expenses. The farmers were spending a lot on food for their families because they were not growing much of their food themselves. And for the first time, as people became so absorbed in their problems, their trust, cooperation, and sense of community began to fall apart. People had to start looking for work in the cities; families were forced to split up and the villagers were rapidly torn from their traditional social norms. Juvenile delinquency, previously unheard of, appeared on the scene.

In less than twenty years, these people had gone from near Eden-like abundance and comfort to a dire existence typified by hunger, poverty, and social disintegration. But fortunately the story does not end there. In 1986, a team from the nonprofit organization Save the Children was sent by the Thai government to this area, which by that time had become one of the nation's poorest. The team began its work in Khao Din village. And instead of providing charitable aid, seen as a temporary solution, Save the Children set out to guide the village through a process of community awareness and action that would turn the villagers and their environmental support system in a positive direction.

At first, the villagers were suspicious of these intrusive strangers. But trust grew slowly. Through long and arduous discussions, team members asked the villagers questions that enabled them to retrace the steps that had degraded their land so disastrously. And the villagers came to some startling realizations. They recognized that it was they who were primarily responsible for bringing about their problems, because of the decisions they had made on how to use and manage their local resources. This shared awareness prompted the villagers to consider what they could do to change the situation, based on their new understanding of the problem and its causes.

The second step came when Save the Children helped Khao Din villagers to formulate an ecologically viable strategy for their community. After considering numerous possibilities – some from their own experience and others suggested by the outsiders – the villagers devised their own solutions. Instead of relying on a few cash crops grown in monocultures, with a single crop filling each field, they designed diversified “agroforestry” systems with a variety of useful trees and crops interspersed on the same fields, resembling in many ways the structure of a natural forest. Agroforestry was not new to these farmers. Actually, their abandoned traditional methods had incorporated many of the same elements.

The diversity of food crops in Khao Din's agroforestry provided everything the villagers needed for a nutritious diet, allowing them to save dramatically on food costs. The agroforestry was also organic, with no costly fertilizers or pesticides. It could function without chemicals because it mimicked a natural forest in a way that allowed nature to do the work of restoring and maintaining soil fertility, just as it happens in natural forests. The agroforestry trees not only bore fruit for the kitchen table and for sale, they also prevented soil erosion, and with their leaf fall, supplied organic fertilizer to replenish the soil. Irrigation ponds on the farms provided fish for home consumption and also for sale. The crop diversity provided natural pest control – and security. If one crop failed, or had a poor price in the market, others would succeed. At first, only those who could afford to try something different were able to set aside some of their land for this change. But what started on eight acres of demonstration plots grew year-by-year as more villagers adopted similar approaches on their own farms.

The people of Khao Din also decided to establish a community forest. To protect the forest, they decided on rules for harvesting its resources. And only Khao Din villagers were allowed. The restored forest now provides fruits, nuts, medicines, building materials – and firewood for cooking. Soil erosion was reversed, and the damaged watershed repaired itself. Streams, and wild animals thought to have disappeared forever, have reemerged.

It is more than 15 years since Save the Children finished its project in Khao Din. Following Khao Din's example, 40 villages in the surrounding area are now pursuing a variety of locally designed forms of agroforestry and sustainable agriculture on land covering thousands of acres. Natural forests, largely devastated by misuse, are regenerating over an even larger area. Migration to cities has declined, along with the socially disruptive trends it created.

Khao Din's village leader sums it up this way: "Most of all, in terms of change, was the change in people's thinking. We are learning together as a community, sharing knowledge with each other. People no longer think we are in trouble, and we can do nothing about it. We know now that with some careful thinking and a lot of shared effort, we can solve our problems, and fix what is broken. We have friends who come to visit and we have enough food for them. We don't have to buy much of anything."

Khao Din's decision to solve its problem by working together as a community, and to use the land in a way that restored it to health instead of tearing it down, was an EcoTipping Point, a lever that set far-reaching changes in motion, changes that overpowered the forces driving decline, setting the landscape and the village on a course of sustainability. Restoration of the forests, and the creation of agriculture that mimics a forest, has returned carbon from the atmosphere to the land. By follow Khao Din's example, farmers throughout the tropics could contribute to reducing greenhouse gases while securing a better life for themselves. The way Khao Din arrived at that solution – by shared community awareness and action – can serve as an example to us all, no matter where we live.

*Details of "Reversing Tropical Deforestation" and dozens of other environmental success stories can be seen at the EcoTipping Points website: [www.ecotippingpoints.org](http://www.ecotippingpoints.org).*