Life in the mountains of Laos: A story of change and continuity

ラオスの山の生活—変わっていくこと変わらずにいること

NAGOYA UNIVERSITY · JAPAN
To people living in the mountains of Laos

ラオスの山で暮らすみなさんへ
A look at swidden agriculture

Some people say that swidden agriculture is destroying the environment. Yet it is supposed to be a method that is suitable for the natural environment. It provides us with rice, as well as many other fruits of nature. Swidden agriculture is a way of life.

焼畠を見直す
焼畠は環境を破壊するという人もいます。でも本当に、自然にあった優れた農法です。
お米だけでなくさまざまな農業を私たちに与えられれます。
焼畠は生活そのものです。

Cambodian swidden agriculture

Some people say that swidden agriculture is destroying the environment. Yet it is supposed to be a method that is suitable for the natural environment. It provides us with rice, as well as many other fruits of nature. Swidden agriculture is a way of life.
Growing para rubber trees

These days, more and more people are giving up swidden agriculture to instead plant para rubber trees. Once rubber trees are planted, however, it becomes difficult to restore the land to its previous state. Let’s think about the positive and negative aspects of planting para rubber trees.

パラゴムを植えるということ

最近焼畑をやめてパラゴムを植える人が増えています。でも、一度パラゴムを植えてしまうと畑は元に戻りません。パラゴムを植えることのよい面と悪い面を考えてみましょう。
Growing maize

More and more people these days are also growing maize and other cash crops in swidden agriculture areas. Once these are planted continuously, however, the soil is neglected. Let’s think about the positive and negative aspects of planting cash crops.
Which one is safe?
Vegetables grown without pesticides become worm-eaten and don’t look very nice. Which one would you prefer to eat?

安心なのどっち？
農薬を使わずに育てた野菜は虫食いだらけで見た目も悪いです。食べるのどちらでしょう。
Swidden fields and cattle

As more cash crops like maize are planted, it becomes harder and harder to feed livestock, such as cattle and water buffalos. What do cattle then do?

燒燬と牛

トウモロコシなどの高収益作物を植えると、牛や水牛などの家畜を飼いにくくなってしまいます。牛や水牛はどうしたらよいでしょうか。

Cattle and water buffaloes grazing the cash crop fields.

They sometimes even drink water that is laden with pesticides.

牛や水牛は自己免疫の限界を示します。

農薬を含んだ水を（牛や水牛が）飲んでしまうこともあります。

With swidden agriculture, cattle and water buffalo can graze freely in the fallow fields.

発展の休耕期では、牛や水牛を自由に飼うことができます。
The importance of cattle

Livestock such as cattle and water buffalos contribute to life in various ways.

牛の役割

牛や水牛などの家畜は生活の中で様々な役割があります。
The blessings of the forest

Hunting is also a necessary part of life. To protect valuable species, however, capturing certain animals is prohibited and some hunting methods cannot be used. This is because all living things are interlinked, and if one species ceases to exist, others are affected. Protecting the forest means protecting all living things.

森の恵み

生活のためには狩猟も必要です。でも、貴重な種を守るために、捕ってはいけない動物と使ってはいけない猟法があります。なぜなら生き物はつながっていて、貴重な種がなくなるとほかの生き物にも影響を与えかかるからです。森を守るということは生き物を守るということです
The blessings of the river

The river also provides us with many blessings. Let’s think about what we can do to continue to receive these blessings in the future.

川の恵み

川もまた、さまざまな恵みを与えてしまいます。いつまでも恵みを受けるためにできることを考えてみましょう。
We truly respect this environment, so abundant with wisdom and harmony.

わかりたちは、知恵と調和に満ちたこの風景をとても尊敬しています。
The Future of Swidden Agriculture

The argument that swidden agriculture causes environmental degradation focuses solely on the slashing and burning of trees for reclamation of farmland and ignores the value of the 10- or more years of swidden fallow that enables forest recovery. Farmland and fallow land are considered completely separate entities. Many researchers, policy-makers and environmental activists see only the function of the transitory farmland, and compare its productivity with a rice paddy field of the same size.

In order to understand swidden agriculture correctly, we must do away with ‘classification’ concepts. Swidden agriculture is best characterized by ‘continuity’, not ‘classification’. The necessity of perceiving a swidden field and fallow land as the same space at different points in time is also evident from the plant use by swidden farmers. If we re-examine swidden agriculture from the standpoint of resource use and forest ecology, taking ‘continuity’ as a keyword, swidden land can be considered an ‘agricultural field’ for purposes of food production in the first year after slashing and burning. However, over the long fallow period that follows, it returns to being a biologically diverse “forest” after repeated natural cycles of invasion and succession of vegetation. Swidden land functions as both field and forest, and is inappropriate to consider swidden agriculture an environmentally destructive practice. Furthermore, if we consider swidden agriculture from the standpoint of livelihood activities, it can be seen that the same land, after being employed for food production, is used for stable grazing of cattle, and further utilized as a source of plants and insects, and even for hunting. Thus, swidden agriculture is characterized by ‘continuity’, not only in terms of ecology but also livelihood.

At present, swidden agriculture generally is experiencing shorter fallow periods and increased invasion by herbaceous plants as a result of population growth and the impacts of government forest policies that promote a shift to permanent agricultural fields. Swidden agriculture is thus on a path headed for extinction. It is evident that, in order for swidden agriculture to survive, numerous environmental, social and economic problems must be addressed. However, reconsidering swidden agriculture from the standpoint of ‘continuity’ may launch this process by bringing to light benefits of the practice that have not conventionally been recognized.

Present Viewpoint of Swidden Agriculture by Outsiders

- Most important issue of rice farming in developing countries is to increase agricultural productivity.
- Swiddeners are always compared with paddy rice fields, as farmland. This wrong comparison has swiddeners accused of low yields, high labour inputs and vulnerability to climatic stress.

Actual Farmers’ Practices and the Functions of Swidden

- Swidden fields that have been fallowed for differing periods create the space for gathering useful plants, as the forest recovers.
- All swidden fallows function as livelihood space for swiddeners and play an important role in income generation.

Subsistence Activities in the Space of Swidden Agriculture

- Swiddeners practice agriculture, livestock raising, NTFP gathering and wild animal hunting, in same place.
- Swidden agriculture is characterized by ‘continuity’ not only in terms of ecology but also livelihood.

Upland rice cultivation (swidden field)
Cattle grazing (1-year of fallowed swidden)
NTFP gathering (fallowed swidden)
Wild animal hunting (both field and fallows)
燃焼の将来

燃焼は、エネルギーを生み出すための一つにあたり、工業生産、エネルギー供給、日常生活において重要である。しかし、燃焼は同時に二酸化炭素や暖化ガスを排出する原因としても知られている。

理論的には、燃焼の効率を高め、排出ガスを削減するためには、燃料の選択、燃焼の方法、燃焼の条件を最適化することが求められる。さらに、新たなエネルギー源の開発や、再生可能エネルギーの利用も重要である。

将来の燃焼技術は、エネルギー効率の向上、環境負荷の低減、安定供給の確保を目的として、様々な研究が進んでいる。未来の燃焼技術は、環境対策とエネルギー供給の両立を実現する重要な一環である。
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