

CHAPTER 5

CONCLUSIONS

Eucalyptus plantations in the northeastern part of Thailand were introduced in the late 1970s by the government and promoted by both the government and private companies from the late 1980s to the early 1990s. Initially, farmers strongly opposed these plantations. When farmers' resistance and negative attitude toward eucalyptus plantations were at a crucial level, the government officially backed out of encouraging the private companies to plant eucalyptus. At the same time, the RFD implemented the reforestation project in the Northeast with the support of JICA, and they have consequently encouraged farmers to plant eucalyptus on their farmlands.

It is often explained that, currently, the area of eucalyptus plantations is increased by local farmers. Furthermore, this current expansion in farmlands is the reason it is said that local farmers have taken the initiative in eucalyptus plantations. However, as is explained in this thesis, it should be expressed rather that farmers are strongly motivated to plant eucalyptus.

The reasons the farmers choose to plant eucalyptus are 1) relatively high profits regardless of weather conditions, 2) the significant drop in price of cassava, 3) the soil degradation after long years of cassava cultivation, 4) the lack of farm labourers as a result of labourer migration from the agricultural sector to the

industrial and service sectors. Among these, the higher profits which eucalyptus can bring rather easily is the most attractive factor for eucalyptus planters. Actually, as it was mentioned in Chapter 2, the planters do not have to invest much for eucalyptus plantations. Currently, eucalyptus seedlings are cheap at 1 baht per tree.* Furthermore, the planters can have seedlings for free from the reforestation project nurseries. Apart from the cost for seedlings in the first year, investment for eucalyptus plantations is not necessary.**

As a result, the planters can expect to make a profit from eucalyptus without any investment every 4 to 5 years for at least 4 times. The annual profits of eucalyptus plantations are estimated at 1,300 baht/rai in the northeastern region.*** Therefore, the planters can expect 1,300 baht/rai of net profits every year for at least 16 years without investing and regardless the weather conditions. Based on this calculation, planting eucalyptus seems quite reasonable and profitable from the shortstanding point of view.

However, from the overall point of view, eucalyptus plantations are not always profitable for local farmers or for their societies. This is because problems such as environmental disadvantages, the

* Seedlings of other species are dealt with at a price of 2 baht per tree. However, those are also distributed for free at the nurseries of the reforestation project.

** As mentioned in Chapter 2, in some cases, the planters invest for plantations.

*** See Chapter 2.

diminution of agricultural activities, and further labour migration from the agricultural sector to the industrial sector may occur.

For instance, considering the nature of eucalyptus, nutrition and water in the soil are worn out after many years of eucalyptus planting as a result of its fast-growth and vital character. The longer eucalyptus is planted, the more the soil solidifies, dries and becomes less nutritive, especially because of the frequent cutting of eucalyptus. In the worst cases, the soil is degraded to the point that it is not possible to plant any kind of tree. In this respect, isn't it rather contradictory to promote eucalyptus in the reforestation project?

Furthermore, even if the planters can have better profits from eucalyptus plantations than from other indigenous crops for certain period, such as 16 years, they have to remove the eucalyptus and plant new seedlings after that time. This is because eucalyptus sprout too many shoots and becomes a shrub after several grow-cut rotations (usually after 4 times). Eucalyptus at this stage can not be traded as raw material for eucalyptus products; therefore, it is no longer useful for the planters. Additionally, in old age, eucalyptus expands its roots to deeply in the ground. Sometimes it expands its roots too deeply to dig out. In that case, the planters must abandon the land. Even in better cases, the planters have to use a tractor to dig out the eucalyptus because it is too hard to do through manpower alone. There are a couple of concerns at this stage. The first is that the planters have to spend more money when they replace the old eucalyptus, because they have to use a tractor. Usually, small scale farmers do not have tractors, and the rental rate of a tractor is 100 baht per rai

excluding the cost of gasoline. The next concern is, as was pointed out in an earlier part of this chapter, the soil is degraded after the long years of eucalyptus planting. As a farmer who has long experience in eucalyptus planting stated, "the planters have to use fertilizer when eucalyptus is dug out, so that they can grow seedlings on the land for another rotation".* However, after several plant-dig rotations, the soil will become too degraded to grow new seedlings. Needless to say, cultivation of other crops will be impossible in such soils.

Furthermore, use of a tractor itself causes damage to the soil. When the tractor digs up the soil, not only the surface of the ground but also the underearth is exposed to the sun. Therefore, the soil becomes drier and more solid, or just like sand. With such soil, even eucalyptus can not survive. Consequently, planters have to give up the cultivation of the land.

Thus, eucalyptus planting may cost the planters the land for cultivation in the future. Or in other words, it may cause the planters to abandon cultivation itself in return for quick and high profits in the short-run. Under such conditions, is eucalyptus really the promising crop for sustainable agriculture?

Moreover, traditionally, farming is a family activity. With the shift towards a market-oriented economy, hired labour has become a part of agricultural activities. With the expansion of the industrial and service sectors which offer higher pay, labour has began migrating to the cities, and less labour is available for the agricultural sector.

* According to an interview at a village in Mahasarakham.

This leads to labour shortages during the planting and harvesting seasons and a rise in wages. Eucalyptus is a useful crop for a family which does not have enough labourers. However, the current rapid expansion of eucalyptus plantations may be worsening the labour shortage.

As is mentioned in Chapter 4, more and more farmers are willing to plant eucalyptus or expand their present plantations. Once they plant eucalyptus, they have a tendency to expand the plantations little by little. At last, they plant eucalyptus even in the paddy fields and diminish their farming activities. When they plant eucalyptus as the main crop, they start to spend more time as wage labourers than as farmers. Especially the younger generation has started to leave their villages for the big cities. Consequently, only the older people and small children are left in the villages, and this causes further diminution of farming activities. In short, eucalyptus itself may cause a lack of labour in the rural society and in farming activities.

Such labour migration from the agricultural sector to the industrial and service sectors is advantageous for proceeding the industrialization of Thailand. A supply of cheap labour for the industrial and service sectors is the key to success of the country's economic growth. However, not only does this cause the diminution of agriculture activities, but also the drift of population away from the rural society, causing a weakening of the society itself. Even if local farmers can become richer as wage labourers than as farmers adopting eucalyptus plantations, and even if Thailand can attain further economic growth through labour migration from the agricultural sector to the industrial and service sectors, when the rural society

deteriorates, how can we say eucalyptus is a crop which helps the Thai society develop?

Besides this, eucalyptus is a cash crop. The more they depend on cash crops cultivation, the more they may be controlled by others. It is because the price of products and their profits all depend on the market system. This means their lives are in the hands of brokers, the government, companies and the foreign market. If we look back to the past, depending on cash crops is sometimes dangerous. Farmers were encouraged to plant cassava before; however, they now have to change to eucalyptus because the market does not need cassava anymore. How can we say that encouraging the growth of cash crops such as eucalyptus is the true way to lift the farmers' status and living standards in the society?

Thus, eucalyptus plantations cause agricultural diminution and further dependency on the monetary system by farmers and the society in return for short-term, higher incomes, or if they do not mind the source of income. This is because, even if they have to abandon agricultural activities, northeastern farmers may be able to earn more as wage labourers than as farmers because they can earn little in agricultural activities because of the environmental conditions in the region. But at what costs has yet to be determined?

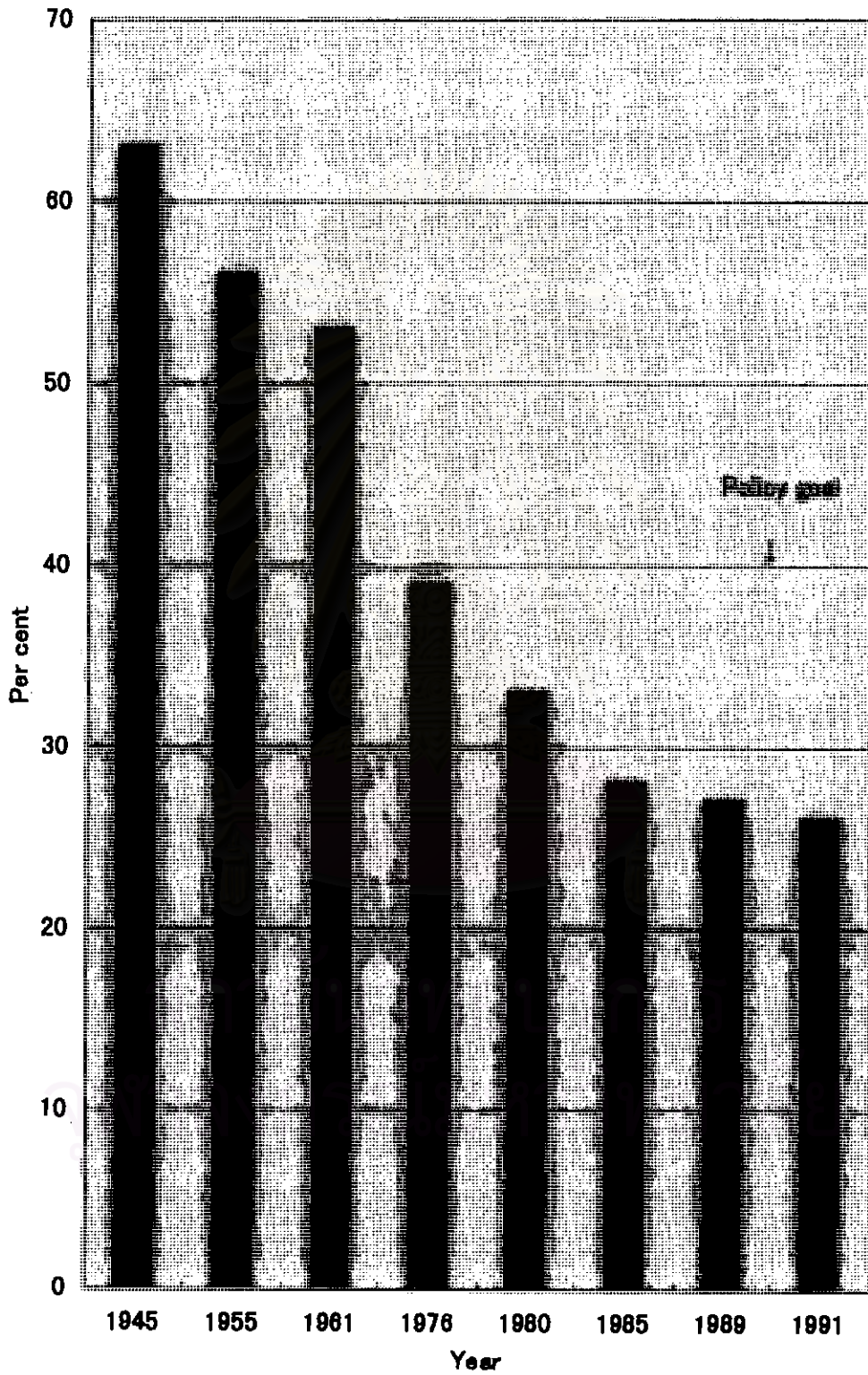
In conclusion, eucalyptus plantations can cause environmental disadvantages, the diminution of agricultural activities, further labour migration from the agricultural sector to the industrial sector, and even more than that, it could cost farmers to lose their traditional way of life in the Thai society.

Despite many issues of concern, eucalyptus plantations have been increased more and more by the farmers' hands with the support of the government as the way to develop the rural societies and to lift up the people's standard of living. If we call all these changes which eucalyptus plantations bring "development", then we have to consider what "development" is, and from whose point of view.



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Figure 1: Forest Cover in Thailand



Source: Forestry Statistics of Thailand (RFD)

Figure 2: Import and Export of Paper & Pulp, and Chipwood in Thailand

Import and Export of Paper and Pulp in Thailand

Year	Export		Import	
	Paper(tons)	Pulp(tons)	Paper(tons)	Pulp(tons)
1990	52,457	1,894	367,986	168,159
1991	48,186	26,522	410,274	249,326
1992	71,666	24,682	465,762	271,438
1993	119,402	38,583	550,568	371,793
1994	183,325	56,889	558,967	389,451

Source; Ministry of Finance

Import and Export of Chipwood and Particle in Thailand

Year	Export(tons)	Import(tons)
1990	52,200	158
1991	41,790	1
1992	122,920	
1993	81,024	35
1994	108,200	272

Source; Ministry of Finance

Amount of Chipwood imported to Japan from Thailand

Year	Amount(tons)
1989	45,010
1990	30,216
1991	37,211

Source; Import and Export Statistics

Figure 3: Chronology of Anti-Eucalyptus Movements in Thailand

1. September, 1985 Si Saket Province
More than 2,000 villagers of Tambon Siew, Uthumpornpisai district began to protest by digging up eucalyptus saplings, burning nurseries, and asking the government to stop the eucalyptus planting concessions in the Nolan Forest.
2. February, 1987 Roi-Et Province
Villagers of Ban Namkam, Tambon Nonsawan, together with eight neighbouring villages, in Pathumrat district of Roi-Et signed a letter submitted to provincial authorities, asking for companies to stop cutting natural forest for eucalyptus plantations.
3. May, 1987 Roi-Et Province
Villagers of Tambon Yangkam, Ponsai Sub-district, requested that officials forbid companies burning natural forest.
4. April, 1987 Ubon ratchathani Province
Villagers of Trakarnpuechpol district protested against the planting of eucalyptus by companies, and requested the government to give them land-use rights.
5. June, 1987 Roi-Et Province
Villagers of Ponsai sub-district requested that officials forbid companies planting eucalyptus and not to evict the villagers from the land.
6. July, 1987 Roi-et Province
Villagers of Ban Tuey, Tambon Thungkula Ronghai held demonstrations and requested the stop of eucalyptus planting on their land.
7. October, 1987 Yasothorn Province
Villagers of eight villages protested at the governor's office and requested their MP to stop planting eucalyptus in the villages. Additionally, they requested land rights.
8. March, 1988 Buri Ram Province
About 4,000 villagers burnt a Forestry Department green house to protest the authorities' attempt to evict them from the reserved forest.
9. June, 1988 Surin Province
Villagers of Ban Nongka, Rattanababuri district dug up eucalyptus trees, arguing that they wanted to plant other kind of crops.

Figure 3 (continued)

10. February, 1988 Surin Province
Villagers of 15 villages of Tha Tum district demonstrated at the provincial office to request land-use rights after the Tambon Council agreed to stop planting eucalyptus.
11. March, 1988 Nongkhai Province
Villagers of Buengkan district protested at the district office against eucalyptus planting companies which offered to buy their lands for plantation. The group of 2,000 villagers received no response from the authorities. Finally some of them cut down 400 eucalyptus in the area and burnt the saplings in the nursery.
12. March, 1988 Buri Ram Province
Villagers set fire to a Forestry Department green house and cut eucalyptus in Dong Yai Forest Reserve to protest authorities' attempts to evict them from their land for reforestation project.
13. June, 1988 Prachinburi Province
More than 3,500 villagers burnt the houses of forestry officials after officials prepared their land for eucalyptus plantations. The villagers said the forestry officials had already started planting eucalyptus trees in 7,000 rai. This case was said to be instigated by communists.
14. June, 1988 Buri Ram Province
Villagers opposed commercial eucalyptus plantations, and destroyed eucalyptus saplings and burnt a nursery in Pa Kham district. Damage was estimated at more than 1.2 million baht. This was the second incident in this place. Villagers opposed eucalyptus plantations which might cause tree cutting in their community forest.
15. August, 1989 Ubon Ratchathani Province
Villagers protested against their MP and the Army because the Green Isan Project by the army caused their eviction from reserved forests. One villager claimed that the project promoted eucalyptus planting on villagers' land and caused damage to their crops. Furthermore, the land was more suitable for other crops than eucalyptus.
16. March, 1990 Surin Province
Villagers of Sungkha district destroyed a

Figure 3 (continued)

17. June, 1990
Sakon Nakhon Province
eucalyptus plantation of Forestry Industry Organization (FIO). They had been evicted from the land six years before.

About 100 villagers raided eucalyptus plantation at a reforestation center in Tao Ngoi sub-district, uprooted and burnt eucalyptus trees and replaced them with fruit trees. They said that they did not want to grow eucalyptus in the area since eucalyptus would negatively impact on the local ecology.

18. June, 1990
Khon Kaen Province

Approximately 4,000 villagers in Mancha Khiri and Muang district rallied in front of the provincial hall to demand the removal of two forestry officials, a halt to eucalyptus planting work and the ownership of the land where they had been for a long time. They said that they had been there before it was declared to be deteriorated forest and set aside by the Forest Department for eucalyptus plantations.

Source; Masaki 1991

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