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The Coevolution of Property Rights Regimes for Land, Man, and Forests in Thailand, 1790-1990

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In Thailand during the nineteenth and twentieth centuries, there was a remarkable coevolution of property rights in land, man, and forests. At the same time, the Thai polity changed very substantially. Steps to create a modern nation-state based on unitary territorial administration were undertaken. In the early and mid-nineteenth century, Thailand was a land-abundant, labor-scarce economy. Property rights in farmland and forests were only loosely defined while there was a well-developed system of property rights in man. By the early twentieth century, a much more formal and detailed system of property rights in land had been created, the system of property rights in man had been dismantled, the fundamental system of governance had been changed from personal to territorial, a more elaborate system of state property rights in forests had been established, and the area under cultivation had grown substantially.

The chapter will focus on the coevolution of these changes in systems of property rights (coevolution in the Hawaiian case is described in Roumasset and La Croix 1988; Binswanger, Deininger, and Feder 1993 describe evolutionary paths for property rights regimes for land; Otsuka, Chuma, and Hayami 1992 describe institutional arrangements for agricultural labor and land). First, some background material on property rights will be reviewed. Second, evidence on the evolution of each system of property rights will be reviewed. Third, the relationships among the

evolving systems of property rights will be considered. Fourth, the importance of these relationships will be assessed by examining counterfactual paths of evolution. Finally, conclusions will be drawn.

NATURE OF PROPERTY RIGHTS IN LAND

In describing any economic system, it is important to describe resource endowments, preferences, technologies, and institutions (Feeny 1987). An important class of institutional arrangements is property rights. In general, "property as a social institution implies a system of relations between individuals. . . . It involves rights, duties, powers, privileges, forbearance, etc., of certain kinds." (Hallowell 1943, 119; for a discussion on the historical evolution of the concept of property, see Schlatter 1951). Property rights are then a bundle of characteristics.

Within this framework, it is important to define the specific concept of property rights for each resource. Providing a definition is more difficult than one might think. For instance for the case of property rights in land, there are a number of important and often overlapping features. Among these are exclusivity, transferability, and alienability (Alchian and Demsetz 1973; Barzel 1989; De Alessi 1980; Demsetz 1967; Feder and Feeny 1991, 1993; Feder and Noronha 1987; Hallowell 1943; North 1981, 1990, 1994; Pejovich 1972; Scott 1983; Scott and Coustalin 1995; and Umbeck 1977). In addition, elements of time, space, use, and enforcement mechanisms are involved. Property rights define the uses which are legitimately viewed as being exclusive and who has these exclusive rights. Uses of land may include hunting, gathering, grazing, cultivation, the mining of minerals, the use of trees, and even the right to destroy the resource. Land rights may further specify the conditions under which the transfer of rights may be effected and the parties to whom such a transfer may be made. Transfer can include bequests. Rights also have a temporal dimension including the present and future. Security of tenure, flexibility in the specification of the rights and duties of tenure, and the extent (by use) to which use rights are divisible are also relevant dimensions of property rights. The institutional arrangements include mechanisms for defining and enforcing rights. These include not only formal procedures but also social custom and the legitimacy and recognition of rights (Hallowell 1943; Taylor 1988). Enforcement depends on a constellation of supporting arrangements and mechanisms including courts, police, financial institutions, the legal profession, land surveys, record keeping systems, and titling agencies in addition to the social legitimacy of property rights in land.

TAXONOMY OF FAMILIES OF PROPERTY RIGHTS IN LAND

As the discussion above indicates, there is great variety in the nature of property rights in land. It is, however, initially useful to classify land rights into one of four basic categories: (1) none (or open access), (2) communal property, (3) private property, and (4) state (or crown) property (Bromley 1986; Demsetz 1967; Feeny et al. 1990; Feeny 1994; Feeny et al. 1996). Under open access, rights are left unassigned. The lack of any exclusivity implies the lack of an incentive to conserve, and therefore often results in degradation for scarce resources. Under communal property, exclusive rights are assigned to a group of individuals (Bromley and Chapagain 1984; Feeny et al. 1990; National Research Council 1986). Under state property, management of the land is under the authority of the public sector. In private property, an individual is assigned the rights.

GENERALIZATIONS ABOUT PROPERTY RIGHTS IN MAN

The economic history literature on pre-industrial Europe and the Americas provides important generalizations about the origins and evolution of property rights in man. First, property rights in humans are associated with land-abundant, labor-scarce economies (Boyd 1991; Boserup 1965: 72-75; Domar 1970; Domar and Machina 1984; Engerman 1973, 1992; Millward 1984; North and Thomas 1973; Patterson 1977). Labor scarcity creates rents; the scarcity of labor makes it relatively valuable. Property rights in humans provide a mechanism for elites to appropriate part of the high value of human labor.

In circumstances of abundant land and scarce labor, labor markets typically are thin—little labor is supplied to the market and employers cannot rely on being able to hire workers. Thin labor markets pose difficulties for the recruitment and retention of labor, again providing incentives to create and maintain human property rights. Human property rights also provide a means with which to coerce migration and settlement in particular locations. Debt can also serve as a means to compel labor input. Thus human property rights may emerge in economies characterized by low population density—low density is a necessary, but not a sufficient, condition for human property rights.

Second, the choice of slavery versus serfdom depends upon the characteristics of the economy. Slavery is more likely to emerge when a well-developed market economy exists, property rights in humans are more

readily enforceable, and there is an economic activity for which the cost of supervision is not prohibitively expensive and for which there may be economies of scale.

Serfdom is more likely to emerge in situations in which markets for products and labor are poorly developed. This seems to imply that the cost of negotiating the consumption bundle for the lord is high, thus enhancing the use of taxes paid in factor services (*corvée*). A system of payment of factor services may be especially attractive when one party has superior information about the production technology, favoring direction by the lord (Fenoaltea 1975a, 1975b, 1976, 1984, 1988).

Finally, Engerman (1973, 1992), Eltis (1987), Eltis and Walvin (1981), Fogel and Engerman (1974: 29–37), Drescher (1977), and North (1987) stress the importance of political factors in accounting for the abolition of property rights in humans. Gradual emancipation was the rule, swift abolition the exception (Klein 1993). Antislavery movements in the nineteenth century were in part a consequence of the rise of a free labor ideology that argued, on both moral and economic-efficiency grounds, for the removal of various forms of serfdom and slavery (Engerman 1992).

These generalizations based on experience in Europe and the Americas are not entirely consistent with evidence from other settings. As Klein (1993) points out, slavery is observed in economies which are not characterized by well-developed markets. In a number of African societies, the category of slave was used for non-indigenous persons such as war captives. Nonetheless the generalizations are useful, and the Thai case to be discussed below is in large part consistent with their broad interpretation. *Corvée* and slavery were found in an economy characterized by an abundance of land and scarcity of labor. Their abolition was largely influenced by political rather than strictly economic motives. The two major forms of property rights in man, however, experienced parallel evolutions over the nineteenth century; slavery did not persist as the economy became more commercialized.

BRIEF REVIEW OF HOW SYSTEMS OF PROPERTY RIGHTS IN LAND EVOLVED IN THAILAND, 1790–1990¹

In the late eighteenth and early nineteenth century in Thailand, in theory all land belonged to the king. In practice there was a system of private usufruct land rights (see Feeny 1982, 1988a, 1988c, 1989, 1993; see also

Table 6.1
Nineteenth- and Twentieth-Century Trends in the Terms of Trade,
Thailand

PERIOD	RATE OF CHANGE (PERCENT PER YEAR) ^a
1865–1867 to 1912	1.41/1.55
1912 to 1925	-3.39/-1.92
1925 to 1939	1.03/1.18
1865–1867 to 1939	0.47/0.85
1865–1867 to 1940	1.52/1.95

Note: a. Export price of rice was divided by import price of white and grey shirting, respectively.

Source: Feeny (1982), 17 and 131.

Table 6.2
Growth of Agricultural Exports and Manufactured Goods Imports,
Thailand

PERIOD	RATE OF CHANGE (PERCENT PER YEAR)		
	QUANTITY OF RICE EXPORTS	VALUE OF RICE EXPORTS	VALUE OF COTTON GOODS IMPORTS
1864 to 1910	4.43	5.64	4.36
1910 to 1925	1.78	4.14	6.10
1925 to 1940	-0.85	-3.80	-3.19
1864 to 1940	2.84	3.41	3.16

Source: Feeny (1982), 127–30.

Table 6.3
Rates of Change in Thailand's Factor Prices: Land and Wages

RATE OF CHANGE IN REAL LAND PRICES (PERCENT PER YEAR)		
PERIOD	LAND PRICE DEFLATED BY PRICE OF RICE	LAND PRICE DEFLATED BY PRICE OF MANUFACTURED GOODS ^a
1915 to 1925	-0.31	-1.09/-0.14
1925 to 1940	2.58	4.17/4.55
1915 to 1940	1.41	2.03/2.65

Note: a. Deflated by price of white and grey shirting, respectively.

Source: Feeny (1982), 20 and 33.

Rate of Change in Real Wages (percent per year)

PERIOD	REAL WAGE IN:		
	KG PRICE	KG WHITE SHIRTING	KG GREY SHIRTING
1864-1901	-0.71	n.a.	n.a.
1865-1901	n.a.	0.49	1.34
1901-1921	-0.47	-2.24	-2.70
1921-1938	1.95	4.01	4.37
1864-1914	-0.60	n.a.	n.a.
1865-1914	n.a.	-0.06	0.10
1914-1938	1.15	1.78	2.58

Note: n.a. not available.

Source: Feeny (1982), 31 and 134.

Engel 1978; Feder, Tongroj, Yongyuth, and Chira 1988b; Kemp 1981; Stifel 1976; Thomson, Feeny, and Oakerson 1992; Yano 1968).² By the time of the early Bangkok period (1782 to the present), individuals were allowed to use the land for cultivation, sell it, and pass it on to their heirs as long as they paid taxes on the land and did not leave it fallow for longer than three consecutive years (although it is unlikely that there was a precise definition of idle). Land was not in general used as collateral; instead there was a well-developed system of property rights in humans, who served as collateral. Favorable terms of trade for rice exports (Table 6.1) underwrote the increasing commercialization of rice production and exporting of rice (Table 6.2).³ In general, land values appreciated (Table 6.3), even though for much of the late nineteenth- and early twentieth-century period the area cultivated per person in fact increased. In contrast there was little trend in real wages (Table 6.3) over much of the mid-nineteenth- to mid-twentieth-century period (nominal and real wage data are presented in Feeny 1982, 132, 134). In particular, real wages declined during the mid-nineteenth- to early twentieth-century period during which the profound changes in property rights systems took place.

The agricultural terms of trade appreciated as international trading opportunities were opened up and transportation costs declined. The result was a rice export boom which induced a rapid expansion in the area under cultivation. The frontier in Thailand has been on the move for most of the period since the late eighteenth century. As land became more valuable and frontier areas were brought under cultivation, land disputes became endemic. The Thai government responded with a series of procedural and administrative changes. Initial responses focused on regularizing administrative procedures and prescribing the use of standardized printed forms. A major new law on land rights was enacted in 1892. Although it provided a more comprehensive framework and more standardization of procedures for documenting landownership rights, the lack of adequate surveys and record keeping continued to inhibit the precise documentation of rights; land disputes continued. In 1896 the government responded by initiating a cadastral survey in an area in which important government officials were also landowners, and in 1901 created a formal system of land titling based on the Torrens system.⁴ Cadastral surveys covering most of the commercialized areas in the Central Plain followed.⁵ Surveys were not, however, vigorously pursued in most other regions or in upland areas. Thai legislation continued to evolve. The result has been a compromise between the traditional practice of allowing citizens to bring unoccupied forest land under cultivation as private property and the requirements of a cadastral survey-based land titling system.

Table 6.4
Major Changes in the Thai System of Property Rights in Land,
1800–1982

PERIOD	INSTITUTIONAL
Early nineteenth century	Usufruct rights, existing system
1811	Survey of landholdings, title deeds based on taxation of land
1836	Removal of tax exemption on rice lands held by nobles
1851–1868	Issue title deeds based on paddy land tax receipts
1861	Edict clarifying private property rights with provision for monarch's right of eminent domain
1867–1868	Title deeds issued based on the area harvested
1882–1883	Title deeds issued based on the area owned
1880s	Standardized forms and procedures prescribed in an effort to reduce land disputes
1892	Comprehensive land law enacted with provision for title deeds and use of land as collateral
1901	Torrens system of land registration instituted and cadastral surveys conducted
1936	1901 law amended to allow for ownership based on registration with the department of claims on unsurveyed lands
1954	New land law enacted providing for variety of documents and levels of security of land rights
1972	Start of use of unrectified aerial photomaps to speed the issuance of certificates of utilization
1982	Increasing the rate of issuance of title deeds made a priority

Sources: Chatthip (1977), 1–3; Feeny (1988c), 285–86; Feeny (1993), 92; Terwiel (1983a), 103–107; Thomson, Feeny, and Oaketson (1992), 146; and Williamson (1983).

These compromises provide for four major levels in the security and documentation of land rights and are embodied in the 1954 legislation which provides the basis for the current system in Thailand. First, occupation certificates are issued by village headmen and commune leaders, and allow the holder to temporarily exclude others from using land as long as it is being developed. Second, reserve licenses issued by district officers also give rights for temporary occupation subject to utilization. Third, exploitation testimonials (again issued by district officers) confirm that utilization of previously reserved land has taken place and confer rights that are transferable and inheritable. Finally, full title deeds determined by cadastral survey and providing for the recording of land transactions are issued by officials in the provincial capital. Greater security in land rights thus comes at the expense of higher transaction cost (both formal and informal). (Under existing law, rights to titled land which is left idle for more than ten consecutive years may be cancelled; for land held under exploitation testimonial, the period is more than five consecutive years.)

In recent decades, the incomplete realization of the private property rights system in land in Thailand, especially in upland areas, has created disincentives that have hindered efforts to intensify cultivation in the face of a rapidly shrinking land frontier. Recent World Bank and other reports (Anan 1987; Anant et al. 1988; Dhira and Suthawan 1988; Kunstader et al. 1978) have pointed to situations in which socially profitable investments in land development are being underexploited and instead cultivators continue to rely on extensive cultivation systems (such as swidden or slash-and-burn agriculture). The reason for the lack of intensification is often not that farmers are unaware of the higher rates of return on more intensive land development but that they lack the means to obtain secure property rights.

The lack of provision of adequate documentation of private property rights in land in Thailand affects more than the choice between swidden cultivation and more permanent forms of settlement. In many areas outside of the Central Plain, the degree of documentation of land rights is insufficient for land to be used legally as collateral on loans. Although the risk of eviction in these areas is generally low (unlike the hill areas described above), the lack of full documentation means that farmers in these permanently settled areas have restricted access to credit. Typically they are able to obtain less credit and at more unfavorable terms (Siamwalla et al. 1990). Feder et al. (see Feder and Tongroj 1987; Feder 1987; Feder, Tongroj, Yongyuth, and Chira 1988a, 1988b; and Yongyuth and Feder 1988; see also Tongroj 1990) demonstrate that farmers with adequate documentation of property rights farm more intensively, use more capital inputs, and achieve

both higher output and productivity. The estimates by Feder et al. also indicate that the private and social benefits of the provision of more fully documented rights exceed the costs.

In response, the Thai government has accelerated the provision of cadastral surveys in areas in which titling was not previously available. The evolution of property rights in land is summarized in Table 6.4.

The current system of land rights in Thailand then was developed in response to the increased benefits of defining property rights in land induced by the commercialization of agriculture and appreciation in the agricultural terms of trade. Government officials, as landowners, shared in the gains from titling and were therefore willing to provide the institutional changes being demanded, especially in localities in which they owned lands. Their motives also reflected the desire to provide mechanisms to resolve land disputes and reduce the incidence of disputes. In addition, the development of land registration and titling systems gave the Thai government a means with which to enforce its decision to prohibit the ownership of land by foreigners (Gehan 1987). Restrictions on land alienation were designed, in part, to avoid disputes that would have given foreign powers an excuse to interfere in local administration. The development and documentation of property rights in land also served the development of territorial government in Thailand. (Sources that discuss the transformation of the Thai system of governance from one based on control of people to a territorial system include Brown 1993; Peluso, Vandergeest, and Potter 1995; Thongchai 1994; Vandergeest and Peluso 1995; and Wilson 1993. Murashima 1988 discusses the related issue of the creation of state ideology.)

PROPERTY RIGHTS IN MAN⁶

Concomitant with the creation of private property rights in crop land, there was a gradual dismantling of property rights in humans in the form of *corvée* and slavery. Over the period from the mid-nineteenth century to 1913, slavery and *corvée* were abolished.

The control of manpower had long been viewed as the key to power in Thai society (Akin 1969, 1975; Brummelhuis 1983; Chatchai 1982; Cruikshank 1975; Evers, Korff, and Pas-Ong 1987; Feeny 1982, 1993; Hong Lysa 1984; Sharp and Hanks 1978; Terwiel 1983a, 1983b, 1984; Turton 1980; Wilson 1970, 1993; Wyatt 1968, 1969, 1984, 1986). Thai society comprised five major categories: the monarch, members of the royal family, the nobility, commoners, and slaves. Officials or nobles, the *nai*,

Table 6.5
Corvée Obligations circa 1800

<i>Phrai luang</i>	Obligation to monarch of 6 months per year or 18–24 baht
<i>Phrai som</i>	Obligation to <i>nai</i> (a noble) 2 months/year; obligation to monarch, 1 month per year or fee of 6 baht
<i>Phrai suai</i>	Obligation payable in kind
Slaves	Obligation of 8 days per year or 1.5 baht

Note: *Corvée* obligations were owed by all males ages 20–60 or until they had three sons at least 20 years of age.

Sources: Akin (1969), 90–96; Chatchai Panananon (1982), 142; Feeny (1993), 89; Terwiel (1983b), 124–25.

were directly responsible for the control of commoners, the *phrai* (Table 6.5). *Phrai* owed labor services or in-kind payments to the king and nobles.

Although the law recognized seven categories of slaves, there were two more basic categories: war captives and debt slaves (Table 6.6). Human beings were a traditional booty of war in mainland Southeast Asia; usually war captives were settled as whole communities, often under the direction and ownership of officials who had played a role in the successful military operations that led to the capture of the slaves. Although prisoner-of-war slaves were mobile at the time of capture, the Thai practice of creating "slave" communities tended to make them immobile once settled.

Changes in the system of property rights in man (Tables 6.7 and 6.8) took place within an evolving economy, domestic polity, and external conditions. The growing importance of international trade broadened and deepened product and factor markets. In particular, the immigration of Chinese labor helped to create a broad and reliable market for labor (Table 6.9). Growing commercialization facilitated the substitution of monetary for in-kind payments for taxes. Increasingly, the government could reliably turn to the labor market for wage workers for the construction of public works. This shift also undercut the nobility's control of labor and was part

Table 6.6
Existing System of Slavery, circa 1800

SEVEN CATEGORIES OF SLAVES	
1.	Slaves in which owner had full title.
2.	Children born of slaves in master's household.
3.	Slaves received as gifts from their parents or inherited.
4.	Slaves received as gifts.
5.	Slaves rescued from peril or legal penalties.
6.	Slaves supported in times of famine.
7.	Slaves acquired through capture in war.
TWO MORE BASIC CATEGORIES:	
A.	War captives
B.	Debt slaves
1.	Non-redeemable, sold for full fixed price
2.	Redeemable, sold for less than full fixed price; work for master
3.	Redeemable, interest-bearing; work independently
FULL-FIXED PRICE FOR SLAVES FROM AYUTHIA PERIOD	
Adult male:	218.75 baht
Adult female:	187.50 baht

Sources: Akin (1969), 90–96; Chatchai Panananon (1982), 142; Feeny (1993), 90; and Terwiel (1983b), 124–25.

of the creation of a centralized territorial system of administration (Bunnag 1968, 1977). In addition, the monarch also had important humanitarian motives for abolishing slavery.

The decline of warfare with neighboring states as they became colonized cut off the traditional source of war captive slaves. The colonial threat to Thai sovereignty also underscored the importance of the abolition of slavery.

Changes in the systems of *corvée* and slavery were implemented gradually. The central edict in the abolition of slavery was proclaimed in 1874. Gradual abolition of slavery blunted the opposition of slave owners, who

Table 6.7
Chronology of Major Changes in Property Rights in Man, 1767–1914: *Corvée*

PERIOD	INSTITUTIONAL CHANGE
1773	Initiate practice of tattooing free men beginning of each reign
1805	Three-Seals laws, codification of laws from Ayuthia period and edicts from Thonburi period and First Reign
1782–1809 (First Reign)	<i>Corvée</i> obligation for Phrai luang lowered from 6 months to 4 months per year or 6 baht per month
1810 (Second Reign)	<i>Corvée</i> obligation for Phrai luang lowered from 4 months to 3 months per year
1870s	Evidence that Phrai luang paid 9–12 baht per year for exemption
1897–1898	Exemption fee lowered to 6 baht per year
1899	Replace <i>corvée</i> with head tax
1900–1910	Replace <i>corvée</i> with a system of conscription; edicts in 1902, 1905
1901	Decree establishing wage payment of 0.5 baht per day for <i>corvée</i> labor unless on local public works
1906	Decree prohibiting <i>corvée</i> during growing season
1909	Decree limiting <i>corvée</i> , paid or unpaid, to maximum of 15 days per year

Sources: Akin (1969), 96–100; Battye (1974), 19, 429, 459; Chatchai Panananon (1982), 134–37, 301; Feeny (1982), 85–98; Feeny (1993), 94; Terwiel (1983a), 214; Terwiel (1983b), 124–30; Wyatt (1984), 155, 210.

were for the most part members of powerful bureaucratic families or the royal family. Concomitant developments in the system of property rights in land created an alternative asset that could supplant people as the major form of collateral in formal credit markets. Legal provisions for personal bankruptcy were also created.

Table 6.8
Chronology of Major Changes in Property Rights in Man,
1767–1914: Slavery

PERIOD	INSTITUTIONAL CHANGE
1805	Rama I sets prices for redemption of war captive slaves Adult male: 64 baht Adult female: 56 baht
Mid-19th	Guesstimates that $\frac{1}{4}$ to $\frac{1}{3}$ of population are slaves
1868	Edict requiring consent of wife before she or her children could be sold into slavery by husband
1874	Edict prescribing declining prices for slaves born after October 1868, who are freed at age 21 and cannot sell themselves once they reach age 21; and proclaiming grand-children of slaves free at birth
1884	Proclamation to eastern provinces ordering children of slaves to be set free, reducing legal value of slaves, and forbidding freed slaves from selling themselves
1890	Law freeing children of redeemable slaves at age 21
1897	Law, no one born after December 16, 1897, can be sold or sell oneself into slavery
1900	Earlier decrees extended to the North
1905	Act to abolish slavery, forbid sales, and cut slave prices by 4 baht per month
1908	Trading in slaves made a criminal offense under 1908 Penal Code
1911–12	Extend geographic coverage of previous legislation
1913	Extend geographic coverage of previous legislation
1915	Abolition to be completed in the provinces

Sources: Chatchai Panananon (1982), 54, 262, 301; Chatthip and Suthy (1977), 57; Feeny (1982), 85–98; Feeny (1993), 96; Terwiel (1983b), 132; Terwiel (1984), 32; Turton (1980), 284; Wilson (1962), 106.

A variety of motivations were important in the dismantling of human property rights in Thailand during the nineteenth century. The commercialization of agriculture and the large influx of Chinese immigrant workers contributed to the development of a reliable market for labor. The rice export boom decreased the attractiveness of institutional arrangements that inhibited labor mobility. In addition to these economic efficiency motives for the abolition of corvée and slavery, there were important domestic and international political motives. The control of manpower had been an important source of power for bureaucratic families in Thailand. As part of the intra-elite struggle between the monarch and nobles for power in Thailand, it was in the interest of the monarch to dismantle the human property rights system in order to reduce the relative power of the nobility. Reduction in the reliance on corvée and shifts to revenue farming, the poll tax, and a conscription were an integral part of the creation of a territorial system of administration (patterned after the one used by the British in India).

There were also important international political motivations for the abolition of slavery. Starting in 1855, Thailand had signed treaties granting extraterritoriality to the Western powers. In order to retain independence in the presence of the very real threat of being colonized, Thailand had to adopt reforms viewed by the Western powers as being legitimate and modern (Hall 1968; Wyatt 1984). In particular to remove extraterritoriality provisions, it was necessary that Thailand abolish slavery. Missionaries in Thailand had long objected to the Thai practice of slavery (Bradley 1981).

FORESTS⁷

In contrast to the creation of private property rights in crop land, the commercialization of forestry was associated with the creation of state property rights in forest lands. De jure state property was often, however, de facto open access. Illegal logging and the expansion of the area under cultivation in response to market opportunities and population growth led to rapid deforestation.

Traditionally in Thailand, forest lands were de jure state property but de facto open access. Local rulers, however, enforced property rights on high-value tree species such as teak (and other valuable forest products). The temporary closure of teak forests in neighboring upper Burma in 1885 led to the entry of foreign logging firms in the teak forests of northern Thailand. Timber stocks were depleted rapidly. At the time northern

Table 6.9
Indirect Evidence on the Development of a Wage Labor Market in
Thailand, 1825–1942

YEAR	PERCENTAGE OF CHINESE IN TOTAL POPULATION	PERIOD	AVERAGE ANNUAL SURPLUS OF ARRIVALS FROM CHINA (ARRIVALS FROM CHINA MINUS DEPARTURES TO CHINA, IN THOUSANDS)
1825	4.8		
1850	5.8		
1860	6.2		
1870	6.6		
1880	7.0	1882–1892	7.1
1890	7.5	1893–1905	14.9
1900	8.3	1906–1917	15.0
1910	9.5		
1917	9.8		
1922	10.5	1918–1931	35.7
1927	11.7		
1932	12.2	1932–1945	6.6
1937	11.8		
1942	11.7		

Source: Skinner (1957), 61, 79, 173, 183.

Thailand was only loosely integrated in the Bangkok-based Thai kingdom and was ruled by local Lao princes. In return for fees, the local rulers granted permission for foreign firms to exploit teak forests. At times permission to exploit the same forest was granted to more than one firm, leading to disputes.

The Bangkok government feared that such disputes would be used as an excuse for colonial intervention. Thai authorities were aware of the fact that a dispute over a fine levied by the Burmese on the Bombay-Burmah Trading Corporation for underreporting teak extractions was the incident that led to the Third Anglo-Burma War in 1885 and annexation of upper

Table 6.10
Evolution of Thai Forest and Conservation Policy

PERIOD	INSTITUTIONAL CHANGE
1885	Closure of upper Burma teak forests; increased exploitation of Thai teak
1896	Creation of Thai Royal Forestry Department
1897	Forest Protection Act and Teak Trees Protection Act, regulation of commercial exploitation of commercial teak
1900	Wildlife Elephant Preservation Act, early example of wildlife preservation legislation
1913–14	Decree establishing reserved (teak and yang) and unreserved species of trees
1936–37	Forest Reservation Act, designation of reserved and protected forests
1941	Forest Act of 1941 (revised in 1948 and 1951)
1947	Forest Industry Organization created
1948	Target of retaining 50% land area in forest proposed by Food and Agriculture Organization (later incorporated into 1962–1966 First Five-Year Plan)
1952	No new leases for exploitation of forests issued to foreign firms
1960	Forest Act of 1960
1960	Wild Animals Reservation and Protection Act of 1960
1961	National Park Act
1964	Major legislation on wildlife preservation
1964	National Reserved Forest Act, enhanced authority to protect forests and watersheds
1977	Ban on exports of logs
1977	Target for proportion of land area to be covered by forests revised to 37%
1985	Target for proportion of land area to be covered by forests revised to 40% (15% of total for watershed and national parks; 25% for economic forests)
1989	Commercial logging ban proclaimed after a series of floods and mudslides in January
1991	40% forest area target incorporated in Seventh Five-Year Plan (1991–1996); conserved forest area target raised from 15% to 25%, economic forest target set at 16%
1992	Conserved forest target area revised to 28%

Sources: Anat et al. (1988), 158–61; Feeny (1988a), 123–27; Kamon and Thomas (1990), 169–77; Sadoff (1992).

Table 6.11
Estimates of the Forest Area and Rates of Change in the Forest Area of Thailand

YEAR	PERCENTAGE OF TOTAL AREA IN FOREST	AREA IN FOREST (THOUSANDS OF HA.)	SOURCE AND COMMENTS
1913	75	38,514	Graham (1924, 347); includes forests, marsh, and jungle
1930	70	35,946.4	Thailand, Ministry of Commerce (1930, 35)
1938	72		Poffenberger (1990, 8)
1947	63		Tsujii (1973, 29); taken from Ministry of Agriculture data
1949	69	32,600	Donner (1978, 71); area in forests and pasture
1955	63	32,129	Sukhum (1955, 8).
1956	58	30,288.3	Pendleton (1962, 134); area in forests and pasture
1959	58	30,010	Chalermrath (1972, 20); official estimate
1961	56	29,000	Donner (1978, 133); estimate from aerial photography survey
1961	52		Chalermrath (1972, 24); estimate of forestry official
1963	53	27,100	Asian Development Bank (1969, 475); estimate based on Food and Agriculture Organization world forest inventory
1965	53	27,300	Donner (1978, 22); author indicates that this estimate, which is based on a land use survey, is probably an overestimate
1965	<40		Chalermrath (1972, 24); estimate of forestry official
1966	51	26,500	Krit (1966, 5)
1969-70	52	26,900	Land Development Department estimates based on aerial photography
1970	39-49	20,000-25,000	Donner (1978, 134); author's estimate

Table 6.11 (continued)
Estimates of the Forest Area and Rates of Change in the Forest Area of Thailand

YEAR	PERCENTAGE OF TOTAL AREA IN FOREST	AREA IN FOREST (THOUSANDS OF HA.)	SOURCE AND COMMENTS
1970	30		Tsujii (1973, 29); estimate of forestry expert
1973	43		Hirsch (1990, 168)
1974	37	19,040	Thailand, National Economic and Social Development Board (NESDB) (1977, 149);
1975	41	21,068	estimate based on satellite imagery
1978	25	13,018	World Bank estimate based on satellite imagery
1980	<30		Wilson (1983, 133); estimate based on satellite imagery
1982	31		Thailand, NESDB (1981, 7)
1985	29		Hirsch (1990, 168)
1990	25		Sadoff (1992, 7)
1991	27		Lynch and Talbott (1995, 12); World Resources Institute estimate
1991	34		Lynch and Talbott (1995, 10); Royal Forestry Department estimate
1992	<27		Lynch and Talbott (1995, 10); Department of Land Development estimate
1992	18		Sadoff (1992, 10); official estimate

Sources: Feeny (1988c), 118-19; Hirsch (1990); Lynch and Talbott (1995); Poffenberger (1990); and Sadoff (1992).

Table 6.11 (continued)
 Estimates of the Forest Area and Rates of Change in the Forest Area
 of Thailand

PERIOD	AVERAGE ANNUAL RATE OF CHANGE IN FOREST AREA (PERCENT)
1930-1974	-1.43
1930-1975	-1.18
1930-1992 ^a	-1.52
1930-1992 ^b	-2.17
1974-1992 ^a	-1.75
1974-1992 ^b	-3.94
1975-1992 ^a	-2.43
1975-1992 ^b	-4.73

Notes: Calculations marked with *a* assume that the area under forest cover in 1992 is 13,865 thousand ha. or 27% of the total area; calculations marked with *b* instead assume the 1992 area is 9,243 thousand ha., 18% of the total area. The total area in Thailand is 51,352,000 ha. (Donner 1978, 907). Data given in Table 6.11 represent a compilation of estimates of the area under forest cover from a wide variety of sources with varying degrees of accuracy. Official estimates are taken from various government publications and may embody both the best evidence available and politically motivated interpretations of that evidence. The same can be said of a number of unofficial estimates. There has been considerable regional variation in the extent of forest cover and rate of deforestation.

Sources: Feeny (1988c), 118-19; Hirsch (1990); Lynch and Talbott (1995); Poffenberger (1990); and Sadoff (1992).

Burma in 1886 (Riggs 1966, 62; Steinberg et al. 1971, 175-76). The Bangkok government intervened in northern Thailand in 1874 by appointing a commissioner to handle disputes between logging firms and the local Lao princes (Brown 1988, 111; see also Anat et al. 1988, 158-61; Riggs 1966, 138; Vandergeest and Peluso 1995). As the level of logging activity and associated disputes increased in the 1880s and 1890s, the government retained H. A. Slade of the Imperial Forest Service in Burma as a consultant. His report in 1896 recommended that the forest ownership be transferred to the central government and that a forestry department be

created (Brown 1988, 114). In 1896 the Thai government created the Royal Forestry Department to regularize the exploitation of teak and shift control of teak forests from local rulers to the central government, and appointed Slade as its first director-general. Colonial Indian civil servants were hired as foreign advisers to help create the Thai forestry department. (The influence of British forestry policy in India on Thai policy was further strengthened when a number of Thai foresters were trained in India.) These British civil servants argued that Thai decision makers had insufficient vision and unduly short time horizons and that as a result private property rights in forest lands were not a viable option. Thus they argued for the creation of state property as the device most capable of fostering adequate conservation of forest resources. With the passage of the Forest Protection Act of 1897, the focus was entirely on the commercial exploitation of teak in which state property rights were declared. By 1899 the government had gained ownership control of all natural forests. A relatively small number of leases for teak were granted to large, foreign timber firms. In a sense by granting long-term leases to these firms, the Thai government gave these firms the incentive to enforce the central government's property rights in forest lands. (Similarly, Lohmann 1991 [14] argues that Royal Forestry Department [RFD] grants of forest lands to private eucalyptus plantations are a mechanism through which the RFD can assert its property rights at the expense of de facto village owners.) Traditional wood cutting and forest clearing were, however, left largely unaffected. Private ownership was allowed for plantations—mainly for rubber, fruit, and oil seed trees.

The recommendation to create state property rights in forests was accepted by elites in the Bangkok regime in part because it served their interest in centralizing control and because it was at least somewhat consistent with traditional concepts of property rights in trees. It is also possible that state property rights were adopted because many of the forest dwellers (who might be viewed as having some legitimate claim to property rights) were not ethnic Thai, often did not practice settled agriculture (instead were swidden cultivators), and were mobile (thus probably were less loyal to the central Thai regime in Bangkok). In more recent times, the RFD has found it convenient to blame swidden cultivators for the degradation of forest resources in Thailand (Kunstadter et al. 1978). The fact that these "hill tribesmen" had relatively little political power made it much easier for Thai regimes to enforce their claim to property rights in trees.

Over time Thai forest policy evolved from a narrow focus on the commercial exploitation of teak to a broader focus on commercial forestry in general. More recently concerns over the preservation of watersheds, water quality, and wildlife have been incorporated into official policy. Thailand

has an extensive system of national parks. (It is estimated that Thailand is home to 174 species of endangered animals [Sadoff 1992, 24.]). The evolution of Thai forest policy is described briefly in Table 6.10. Evidence on the area under forest cover is summarized in Table 6.11.

RELATIONSHIPS AMONG EVOLVING SYSTEMS OF PROPERTY RIGHTS

Free land over which secure private property rights could be established, the "freeing" of people with the concomitant reductions in restrictions on labor mobility, and de facto open access to forest lands interacted to underwrite rapid increases in area under cultivation and the accompanying rapid declines in forest area. Evolution in the systems of property rights for crop land, forests, and people all responded to similar pressures for change resulting from increases in the size and scope both of product and factor markets. The development of these markets was supported by investments in infrastructure carried out by the centralizing regime in Bangkok. (The rapid expansion of the highway network in the post-World War II period, especially during the 1960s and 1970s, helped to underwrite rapid deforestation and conversion of land from forest to agricultural use, especially in the Northeast; see Cropper, Griffiths, and Mani 1999.) Changes in property rights were, however, not solely determined by the forces of commercialization and international trade. Both domestic and international political motives were important. The configuration of evolution of the property rights systems is described briefly in Table 6.12.

The "freeing" of man and establishment of private property rights in crop land were consistent with the "requirements" of a market, export-oriented economy. In a sense the "outlier" in the set of changes in property rights systems was the creation of de jure state property rights in forests. Private property rights in crop land, along with the freeing of man, created a situation in which economic agents had powerful incentives to convert land from low-value to high-value uses. (Market prices did not, of course, transmit information to agents on either positive or negative externalities and thus these externalities, which become increasingly important over time, were largely ignored in resource allocation decisions.) For the most part, the conversion of forest land to crop land can be seen in this context. De jure state property rights in forests should have importantly altered the private incentives for land clearing. In practice, however, state property rights were enforced mainly for a few highly valuable commercial species. Forest lands were traditionally viewed as open-access resources,

Table 6.12
Actual Historical Configuration of Systems of Property Rights, 1790 and 1915 Compared

PERIOD, CIRCA 1790		LAND/FOREST RIGHTS				HUMAN PROPERTY RIGHTS	
		Open access	Communal	Private	State	Corvée/ slave	Free
Crop land	In use			De facto	De jure		
	Not in use	De facto			De jure		
Forests	High value				De facto De jure		
	Other	De facto			De jure		
People					De jure		

PERIOD, CIRCA 1915		LAND/FOREST RIGHTS				HUMAN PROPERTY RIGHTS	
		Open access	Communal	Private	State	Corvée/ slave	Free
Crop land	In use			De jure			
	Not in use	De facto			De jure		
Forests	High value				De facto De jure		
	Other	De facto			De jure		
People							De jure

legitimately available to anyone who invested their labor resources in clearing the land (Hafner 1973; Kunstader et al. 1978). The declaration of state property rights in forests was, in general, not viewed as legitimate. The lack of social legitimacy inhibited the enforceability of the declaration of state property rights in forest lands that might have reduced the extent of socially inappropriate deforestation. Under the traditional system, rights to forest resources were established by exploitation and, in general, were not accompanied by any documentary verification. Under the new system, rights were instead defined by bureaucratic procedures and accompanied by

a written record of their legality. In addition to deforestation through land clearing for agricultural purposes, widespread illegal and extralegal logging (often accompanied by extralegal payments to forestry officials who in turn knowingly tolerated the logging) contributed further to deforestation.

In recent decades the expansion of the highway network subsidized the forestry industry. Commercial loggers would then remove the large, valuable trees. Agricultural settlers would then follow and complete the clearing of the land. Although much of this conversion may well have represented a transfer of land use from lower to higher value use, even when externalities are taken into account the lack of enforcement and enforceability of state property rights in forests meant that logging and land clearing also took place on steep slopes and ridge tops vulnerable to degradation. The lack of enforcement and enforceability also meant that little attention was paid to the conservation of water resources and the preservation of wildlife.

For much of the period from the late nineteenth century until quite recently, it is likely that deforestation for the most part represented a conversion from low- to high-value land use. As population density downstream has increased, forest resources have become more scarce, and forest habitats have disappeared, the social efficiency of deforestation has, however, declined. Viewed from the perspective of the 1990s, it was natural to point to the inefficiency of state property rights in forests in Thailand. From the point of view of policy makers during earlier periods when forest resources were still abundant, however, the efficiency implications of state property rights were more benign.

In addition to these economic efficiency arguments, there were additional motives with respect to state building and national security. The creation of de facto open access in forest lands underwrote the settlement of border frontier areas by ethnic Thai more likely to be loyal to the Bangkok regime and displacement of ethnic minorities who were viewed as less loyal. (A similar argument is made by Allen 1991 concerning the design of the homesteading system in the United States.) Thus, there were also national security motives for the choice of property rights regime for forest lands. By populating border areas, the Thai government could establish and enforce its claims to territorial sovereignty.

How different would Thai economic history have been over the last two centuries if a different configuration of property rights systems had been created? The brief preceding discussion (and more detailed discussions) argues that given the forces shaping the demands for institutional change and the factors shaping the provision of institutional change (for a presentation of the underlying framework, see Feeny 1988b), the

evolutions which occurred for each individual system of property rights make "sense." The evolutions which occurred, however, were not preordained; alternatives were possible and some in fact were seriously considered.

One approach to assessing the importance of the particular configuration of systems of property rights is to perform a counterfactual analysis as a thought experiment. In a sense such counterfactuals have limited usefulness. This type of counterfactual deviates quite substantially from the actual historical record. Thus, even within a carefully specified quantitative analytical framework, the results of such a counterfactual would not be highly reliable. In this context the counterfactual analysis will be conducted in an even cruder fashion, relying on an implicit qualitative framework instead of an explicit quantitative one. It remains to be seen whether the results have sufficient merit to justify the approach.

Counterfactual 1

Counterfactual analysis involves an attempt to answer a "what if" question. What then is a plausible alternative to what actually happened? As alluded to in the preceding discussion, one alternative would have been the creation of de jure private property rights in forests. How different would changes in land use have been if instead of declaring state property rights in forests the Thai government had created private property rights in forest lands? This counterfactual will be labeled as Counterfactual 1 and is summarized in Table 6.13.

Table 6.13
Counterfactual 1 Configuration of Systems of Property Rights:
Private Property Rights in Land and Forests/Free Humans

PERIOD, CIRCA 1990		LAND/FOREST RIGHTS				HUMAN PROPERTY RIGHTS	
		Open access	Communal	Private	State	Corvée/ slave	Free
Crop land	In use			De jure			
	Not in use			De jure			
Forests	High value			De jure			
	Other			De jure			
People						De jure	

Changes in any system of property rights have implications both for efficiency and distribution. The consequences for each depend importantly on the precise nature of the property rights system created. For the first counterfactual, it may be useful to create an alternative that is at least somewhat plausible. Following this approach, the Thai government might have treated forest lands in the late nineteenth century much as they treated crop lands. Thus, the act of exploitation of a tract of forest lands would probably have been sufficient to establish private ownership rights. If in 1897 the government had created private instead of state property rights, it is likely that the original legislation would have included a mechanism for assigning rights in teak and other highly valuable species. Perhaps private rights would have been assigned to local Lao leaders (although this would have been inconsistent with the political motives of officials in Bangkok). Alternatively, private rights may have been auctioned off. (Traditionally, temporary rights to harvest fish or birds' nests in particular localities had often been awarded by auction; more generally, tax farming privileges—the right to collect a certain tax in a specific locality—had often been awarded by auction.) Given the nature of forest lands in general and the dispersed nature of teak in particular, private owners would have experienced difficulties in enforcing their rights. Thus for highly valued species, it is unclear that the outcomes under private property rights would have differed importantly from those under state property rights. It is less than obvious that the state would have expended sufficient resources to enforce private property rights on behalf of private owners.

Alternatively in the actual historical case, one could interpret unofficially sanctioned illegal cutting as *de facto* usufruct private property. Seen in this light, perhaps there would have been a difference for high-value commercial species between the actual state property system and the counterfactual private property rights system. While the actual state property rights system was a *de facto* usufruct private system, the counterfactual system that defined rights in the stock rather than just the flow may have given more incentive for the long-run development of forest resources. The difference between defining rights in the flow (harvest of trees) versus stock (the forest itself) would probably have been negligible in the late nineteenth century. More recently, however, as valuable timber has become scarce, this difference might have become meaningful.

For less valuable species and the conversion of forest lands to crop lands, it is likely that, in one sense, a system of private property rights established through exploitation would have produced outcomes very similar to those in the actual case characterized by *de facto* open access forest lands. There may, however, have been important differences. First, if

private property rights in forest lands had been declared, it is likely that the state would have been drawn extensively into the settlement of land disputes, much in the same manner that it was administratively drawn into disputes over farm lands. Second, the creation of private property rights in land would have provided a mechanism through which private forest land could have been used as collateral to gain access to formal credit markets that have, as economic change has occurred, become more important. Thus although initially private property rights in forest lands might have operated in much the same way as state property rights did, over time with private property rights there may have been more scope for the development of long-run incentives for the management of forests and creation of more elaborate and enforceable private property rights in forests. Private instead of state property rights might realistically have produced at least somewhat different outcomes.

Thus, from an efficiency point of view, the creation of private property rights in forest lands might have had little effect on the outcome. Alternatively, there might have been modest effects through the creation of greater security and enforceability in forest land rights. From a distributional point of view, however, the consequences of creating private property rights in forests might well have been quite important. The assignment of the rights to forests by auction or regularization and legalization of the capture of forest lands by exploitation might have broadened the distribution of benefits from forestry relative to the actual situation in which the economic rents from the initial exploitation of forest resources were captured by a small group of officials and their patrons in the forest industry. In the actual case the benefits from the exploitation of agricultural lands were widely shared. Perhaps private property rights in forests would have produced similar distributional outcomes.

Counterfactual 2

In practice, Thailand has relied upon *de jure* private and state property rights and has made little formal use of communal property rights systems. In many ways this is quite understandable. Historically Thailand, like much of mainland Southeast Asia, was characterized by an abundance of land and scarcity of labor. Before widespread commercialization and more recently rapid growth in population, there was an abundance of most natural resources including agricultural land and forests. When land and forest resources were highly abundant, the benefit of defining property rights for these resources (other than enforcing exclusivity for usufruct purposes) was close to zero. Thus, for the most part, the development of elaborate and costly systems of property rights in land and forests was not worthwhile.

This was also true at the local level. Given the traditional abundance of local forest resources, villagers did not, in general, need to regulate the use of such resources by members of the community. Thus, in general, there were few historical precedents for the development of communal property rights systems. Cultural endowments that accepted highly individualistic behavior probably also served to raise the transaction costs of organizing collective action in Thailand.

There are, of course, a few prominent exceptions to these generalizations. In northern Thailand, characterized by mountains and small river valleys, there were communal irrigation systems. Villagers would work cooperatively each year to construct a temporary weir to divert water onto fields. Traditional institutional arrangements included provisions for the election of an irrigation chief with the authority to tax farmers who received irrigation water and fine those who failed to pay their taxes. Rotating credit societies and peer monitoring of loans by members of groups (typically groups comprise between eight and fifteen members; Siamwalla et al. 1990, 281, 291–93) provide additional evidence that cooperative collective action is feasible when mutual benefits are sufficiently attractive.

Recently a number of commentators on forestry and rural policy in Thailand have advocated the enhancement of local government authority (to produce local public goods and to enhance the management of land, forest, water, and other resources) and the creation of enabling legislation for formal communal property rights (see, for instance, Chusak 1996; Hafner and Yaowalak 1990; Kamon and Thomas 1990, 180–86; Lohmann 1995; Lynch and Talbott 1995). More specifically, there have been proposals advocating the creation of formal communal property rights systems for community forests and village woodlots (Sadoff 1992, 16–17; Mehl 1991; Sukhum 1955). The motives for these suggestions appear to include efficiency (give authority to those with local knowledge and a stake in successful management) and equity (allow local residents to capture the returns).

Would it have been possible to have created some form of communal property rights in forests? Would it have been useful or feasible to have created these institutional arrangements at an earlier date?

As in the case of Counterfactual 1, there are a variety of specifications that could be adopted for the alternative policy. Following the logic of Counterfactual 1, it may be useful to assume that property rights in high-value species would have been treated separately; for purposes of the counterfactual, let us assume that state property rights would have been declared, as in the actual case. Further, let us assume that communal property rights would have been available only for small tracts of forest

Table 6.14
Counterfactual 2 Configuration of Systems of Property Rights: Private Rights in Land/State and Communal Rights in Forests/Free Humans

PERIOD, CIRCA 1990		LAND/FOREST RIGHTS				HUMAN PROPERTY RIGHTS	
		Open access	Communal	Private	State	Corvée/ slave	Free
Crop land	In use			De jure			
	Not in use			De jure			
Forests	High value				De jure		
	Other		De jure				
People							De jure

lands located close to villages. Communal property rights would then have represented a means for the community to exclude others from clearing the forest and to organize and regulate subsistence and small-scale commercial use of the local forest by members of the community. (See Table 6.14.)

It is likely that given the abundance of forests in the late nineteenth and early twentieth centuries, few villages would have judged the benefits of declaring and enforcing communal property rights in local forests sufficient to have offset the cost (even if the government would have been cooperative in formally recognizing such rights). In the post–World War II period, and especially more recently (deforestation was very rapid during the 1970s), the creation of communal rights may well have seemed worthwhile to many villages, especially those outside of the Central Plain.

One can further speculate that the existence and use of this alternative institutional arrangement might have served social efficiency goals to the extent that villagers chose to preserve as community forests environmentally sensitive areas (ridge tops and steep slopes) that were, in general, less attractive as potential farm land. Communal rights would have also broadened the distribution of benefits of forestry relative to the actual case. As in Counterfactual 1, outcomes might have differed modestly both in terms of efficiency and equity.

Counterfactual 3

In the actual case, both domestic and international political motives reinforced the incentives for the monarch to dismantle the system of property rights in man. It is then natural to ask about the relative roles of these two

motives. How different would the coevolution of property rights regimes have been if the case for the abolition of slavery due to foreign pressure and the threats to Thai sovereignty had not been so urgent? Although such a counterfactual is not particularly plausible, it is nonetheless useful to consider it.

De facto Thailand served as a buffer zone between the British (Burma and Malaya) and French (Laos, Cambodia, and Vietnam) Southeast Asian colonial empires. How different would the situation in Thailand have been if the Bowring Treaty of 1855 had been signed by both the United Kingdom and France and had guaranteed the sovereignty of Thailand? In this counterfactual it is assumed that the expansion of the world trading system would have gone on as it did in the actual case. The key difference in Counterfactual 3 then is the absence of a direct threat to Thai sovereignty and therefore the lack of an international political incentive to dismantle slavery.

Given the economic pressures to create an institutional framework within which Thais could exploit the new opportunities for international trade and given the domestic political incentive of the monarch to remove the control of manpower from his rivals among the nobility, it is likely that Thailand would still have been interested in creating a unified, territorially based form of governance. Thus it is likely that the monarch would have taken steps to dismantle slavery and *corvée*. (Economies of scale in rice production are, in general, quite modest—especially for the earlier period before mechanical technologies for rice cultivation were available.) The key difference would have been the timetable for change. With the removal of the imperialist threat to sovereignty, the dismantling of the system of property rights in man might have been more gradual. Formal legislation might have been delayed. In addition, without the threat to sovereignty, the need to bring “outer” provinces under the control of the Bangkok regime would have been less urgent. Therefore, the imposition of centralization might also have been more gradual. Furthermore in the case of forest resources, the Bangkok regime might have been less concerned with removing the control of timber from local leaders. The form of state property rights in trees might have been less centralized than in the actual case. Nonetheless, the overall coevolution of the property rights regimes would likely have occurred in much the same fashion as it did in the actual case but more gradually.

Counterfactual 4

Counterfactuals 1 and 2 were, perhaps, at least somewhat plausible. Like Counterfactual 3, the fourth counterfactual is not (see Table 6.15). It is

Table 6.15
Counterfactual 4 Configuration of Systems of Property Rights:
State Property Rights in All Resources

PERIOD, CIRCA 1915		LAND/FOREST RIGHTS				HUMAN PROPERTY RIGHTS	
		Open access	Communal	Private	State	Corvée/ slave	Free
Crop land	In use				De jure		
	Not in use				De jure		
Forests	High value				De jure		
	Other				De jure		
People					De jure		

chosen not because it might have happened, but instead in order to illustrate the importance of the configuration of systems of property rights. (Because of its implausibility, the date for Counterfactual 4 in Table 6.15 is circa 1915 rather than a more recent period.)

What would have happened if Thailand had retained some form of the system of property rights in humans and the feudal-like system of administration? What if restrictions on labor mobility had been retained? In one sense this counterfactual considerably distorts the actual history. Some of the reforms of the mid- and late nineteenth century have been interpreted as a formalization of practices that were already fairly common (Wilson 1990). Nonetheless it may be useful to speculate on what would have happened if labor had not been free to move to exploit the new commercial opportunities in agriculture and forestry.

How then would production for market have been organized? Perhaps it would have been directed by *nai* who would have used *corvée* obligations to produce output for sale in the market. Under these circumstances, the retention of state property rights in crop and forest lands not in use with private usufruct rights on lands in use, a continuation of earlier property rights regimes for crop and forest lands, might have been a viable alternative. It is, of course, likely that rice and log production would have experienced much more modest rates of output growth than in the actual case. *Corvée* (and slave) laborers typically do not have the same pecuniary incentives as “free” wage labor and owner-operated firms and farms. Indeed it is likely that the outcomes may have been less efficient than in the actual case and further that the benefits would have been less widely shared.

These speculations are not unlike conclusions reached by Domar (1970). Domar examined the political economic basis for serfdom and slavery. He argued that systems of human property rights were often constructed in economies characterized by abundant land and scarce labor as a means by which elites could capture the scarcity rents due to labor. Domar argued that free land, free peasants, and nonworking landowners would not all exist simultaneously.

In Thailand for the case of crop land, the outcome was that for the most part free land and free peasants prevailed and the benefits were widely distributed. Elites participated in the rice export boom as landowners, owners of rice mills, and government officials but were not able to extract most of the rents.

For the case of forests, the state declared its property rights—land was not “free.” In interaction with “free peasants” and the commercial incentives to exploit both forests and crop lands, the result was that the benefits from the initial exploitation of forests were narrowly shared while the benefits of subsequent land clearing and conversion to agricultural use were more widely shared.

CONCLUSION

Not only do property rights systems in particular resources matter, but the overall configuration of property rights systems matters as well. In Thailand given both the market and demographic incentives for increasing the area under cultivation, large-scale deforestation was likely. The incentives to expand the area under cultivation were importantly enhanced both by the creation of private property rights in agricultural land and by the dismantling of the system of property rights in man. The declaration of state property rights in forests was, in this context, problematic. Given the long-standing traditional uses of forests, the unilateral declaration by the state was, in general, not viewed as legitimate. Given the inherent nature of forest resources, enforcement of the state's property rights was problematic. De facto, most forest resources were open access and subject to all the distorting effects of rule of capture. The configuration of property rights gave few incentives for conserving forest resources that might provide for water and soil conservation or the preservation of habitat. Instead the configuration of property rights systems created incentives to accelerate the race to capture rents and convert forest lands from open access (everybody's property) to private agricultural land for which legal and social recognition and enforcement mechanisms were available.

NOTES

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1. This section draws heavily on Thomson, Feeny, and Oakerman (1992) and Feder and Feeny (1991, 1993).

2. Anat et al. 1988 (59) report that at the beginning of the Ayuthia period (1350–1767) all land belonged to the king and private landholding was a privilege. By the end of the Ayuthia period, landownership became absolute and rights were alienable. Documents to certify land rights were not, however, issued.

3. For a fuller discussion of the quality of the quantitative evidence on Thai economic history, see Feeny (1982) and Ingram (1971). In the post-World War II period, there has, in general, been an increase in the quality of the data. Nonetheless discrepancies among sources persist, in part because of underlying difficulties in obtaining accurate information and in part because different agencies and authors have incentives to present estimates favorable to their interests. For the nineteenth and early-to-mid-twentieth-century period, there is reason to believe that while the absolute figures are sometimes less than accurate the data do a reasonable job of capturing accurately the trends.

4. The Torrens system for cadastral surveys and land registration was developed and elaborated in Australia (and New Zealand) in the period from 1857 to 1874 (Kain and Baigent 1992, 317–18) and brought to Thailand by British officials (who had conducted cadastral surveys in India) hired by the Thai government to establish its Royal Survey Department. The Torrens system included title deeds based on a cadastral survey and a central place for record keeping.

5. The Torrens systems of land titling with central provincial land record offices and cadastral surveys was formally adopted in 1901. From 1901 to 1909, eleven land record offices were established. By 1909–10, 539,069 title deeds had been issued in the Central Plain (637,001 for the whole kingdom), and the area surveyed was 1,605,000 ha. (1,671,000 ha for the whole kingdom). The work was carried out by Australian and European experts (mainly on loan from the Indian Civil Service) who, in addition to conducting the survey work, also provided training to the Thai staff.

6. This section draws heavily on Feeny (1989) and (1993).

7. This section draws heavily on Feeny (1988a).

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