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PERFORMANCE AUDIT REPORT

THAILAND

**LAND REFORM AREAS PROJECT
(LOAN 2198-TH)**

**SECOND LAND TITLING PROJECT
(LOAN 3254-TH)**

June 8, 1998

Operations Evaluation Department

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Currency Equivalents (annual averages)

Currency Unit = Country Currency: Bath (B)

1981	US\$1.00	B23.00
1990	US\$1.00	B25.80
1996	US\$1.00	B25.30

Abbreviations and Acronyms

ALRO	Agricultural Land Reform Office
CVA	Central Valuation Authority
DOL	Department of Lands
ICR	Implementation Completion Report
LRA	Land Reform Area
M&E	Monitoring and Evaluation
NS3K	Certificate of Utilization (based on aerial photography)
NS4	Title Deed or Chanod
OED	Operations Evaluation Department
PAR	Performance Audit Report
PCR	Project Completion Report
RFD	Royal Forestry Department
SAR	Staff Appraisal Report

Fiscal Year

Government: October 1—September 30

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Office of the Director-General
Operations Evaluation

June 8, 1998

MEMORANDUM TO THE EXECUTIVE DIRECTORS AND THE PRESIDENT

SUBJECT: Performance Audit Report on Thailand
Land Reform Areas Project (Loan 2198-TH)
Second Land Titling Project (Loan 3254-TH)

Attached is the Performance Audit report prepared by the Operations Evaluation Department (OED) on the above two projects. The Land Reform Areas Project (Loan 2198-TH for US\$17 million) was approved on September 21, 1982 and closed on September 19, 1989, about nine months behind schedule; an undisbursed balance of US\$7.5 million was canceled. The Second Land Titling Project (Loan 3254-TH) was approved on September 4, 1990 and closed on September 30, 1996, twelve months after the original closing date; US\$0.6 million was canceled at closing. The Australian Agency for International Development co-financed the Second Land Titling Project.

The audit aims to derive lessons from these two separate (and uncoordinated) approaches to land administration in Thailand. In view of the significant differences in the design and objectives of the two projects, the report presents each separately. The discussion of project outcome is organized explicitly around the evaluation concepts of relevance, efficacy and efficiency.

The objective of the **Land Reform Areas Project** was to improve the incomes and livelihoods of 35,000 squatter families located in 192,000 hectares of encroached forest reserve land in central, northern and northeastern Thailand. This was to be achieved by: (a) degazetting the reserves to create nine Land Reform Areas; (b) compensating larger farmers for that part of their holding that would be compulsorily purchased for redistribution to smaller farmers and the landless; (c) issuing farmers with Certificates of Occupancy; (d) building soil conservation and irrigation works; (e) upgrading feeder roads, schools, health posts and drinking water supply; (f) bringing the Land Reform Areas under the jurisdiction of provincial administrations; and (g) strengthening government's capacity to plan and manage projects. The implementing agency was the Agricultural Land Reform Office (ALRO), a dependency of the Ministry of Agriculture founded in 1975. The project's title may mislead: although there was some attempt to redistribute larger holdings, this was an area development rather than a land reform project. Given the relative openness of access to land in Thailand and the lack of property concentration there was very little scope for redistributive land reform.

The project responded to the Bank and the Thai government's concern to reduce rural poverty and natural resource degradation. It was hampered by a weak institutional environment, the lack of appropriate vehicles for project funding, and the limited nature of development alternatives. Notwithstanding these constraints, the designers of the project could have asked

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more probing questions about the **relevance** of the design to the objectives of poverty reduction and environmental conservation. First, regularizing the tenure status of the squatters would not greatly enhance farmers' tenure security, or necessarily lead them to improve their farms, given that squatters' rights were generally uncontested, and the occupancy certificate provided by ALRO was more limited than full title (not allowing farmers to sell their parcels). Second, it was possible that degazetting of the forest reserves would merely increase the incentives for farmers to encroach in other areas with a view to forcing further degazetting. Third, redistribution was not an explicit objective but farmer compensation was expected to absorb 13 percent of project expenditures; the feasibility of this component was doubtful given the low level of ALRO's prescribed ceiling on holding size (8 hectares), the small number of holdings above this ceiling and the general absence of landlessness. Fourth, 28 percent of project expenditures were expected to be used for strengthening government's project management capacity (above and beyond ALRO); but during preparation there were clear signs that ALRO was too marginal a player to coordinate such an initiative.

The project had a mixed record on **efficacy**, attaining its degazetting, titling and infrastructure development objectives but falling short in other respects. Physical targets for roads, schools, health posts and drinking water supply were exceeded. The land distribution component did not disburse. The irrigation component shrank and was poorly implemented. Soil conservation works covered 57 percent of the expected area and were generally rejected by farmers. The institutional development component expanded to absorb 40 percent of project expenditures but had limited impact owing to high dependence on foreign consultants and staff turnover. Provincial governments assumed responsibility for schools and health posts built by the project, but not roads. The project did not achieve its broader goal of raising farm yields; partly because yields were underestimated at appraisal (exaggerating the scope for improvement) and partly because land quality in the project areas was below the average for the respective regions.

The project cost less than expected (US\$19.8 million, not US\$31.0 million) but **efficiency** was hampered by the high cost of issuing occupancy certificates (US\$58 per certificate, compared to US\$32 for full title) and low-cost road construction (US\$8,670/km) at specifications inferior to provincial government norms (helping to explain why these governments failed to assume responsibility for maintenance). The economic rate of return was re-estimated at 2 percent, compared to the PCR estimate of 17 percent: the audit estimate was based on three surveys of household income in the Land Reform Areas, stronger evidence than the PCR was able to adduce.

In view of the weak performance on relevance and efficiency, the audit rates project outcome unsatisfactory. Institutional development impact is rated negligible given the failure to improve ALRO or government's project management capacity. Sustainability is rated unlikely: although schools and health posts are being satisfactorily maintained, road maintenance is erratic and ALRO's future seems uncertain. OED rates borrower and Bank performance unsatisfactory, primarily because the project was poorly identified.

The **Second Land Titling Project** formed part of a 20-year program launched by the government in 1984 and supported by the Bank throughout. The project's main objective was to accelerate the provision of fully-transferable title to privately owned parcels, using a process of systematic adjudication. The project also sought to complete a national cadastre and increase the accuracy of property valuation. Project components included base cadastral mapping, ground surveying (the largest single item, accounting for an estimated 53 percent of project cost), and support to land administration and valuation work, involving technical assistance and training.

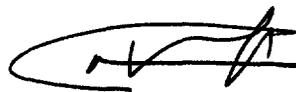
Studies commissioned by the First Land Titling Project demonstrated that titles enhanced access to credit, increased land values and favored higher on-farm investment and input use. These data substantiated the **relevance** of land titling as a means of boosting output and farm incomes, providing compelling support for a second project. Poverty reduction and better natural resource management were not explicit project objectives.

The second project titled about 9 percent of the estimated total of private parcels in Thailand. It met all of its physical targets with one significant exception: the titling target was cut from 3 million to 2 million parcels. This shortfall in project **efficacy** reflected poor information about how many parcels remained to be titled in each province, making target setting very arbitrary; it was also a consequence of uncertainties about boundaries with state lands, inheritance disputes and landowner absenteeism. Also, the valuation objective was not attained because mainly because government failed to pass enabling legislation. On the other hand, the available evidence suggests that the second project enhanced access to commercial bank credit and probably gave as big a boost to off-farm investments as it did to farming itself.

The project scored highly on **efficiency** because, although the total cost (US\$84.7 million) exceeded appraisal estimates by 16 percent, the unit costs of titling (US\$32/deed) were low compared to other Bank projects. The audit estimated an economic rate of return (not calculated by the project) of 34 percent. It is expected that the increased fiscal revenues generated by land transaction fees will more than offset the subsidy applied to the price that landowners pay for title. Efficiency would have been even greater if the database about the area remaining to be titled had been better, and if a ban had been lifted to allow private firms to conduct basic surveys.

Given the project's manifest relevance and efficiency, OED rates project outcome as **satisfactory** (not highly satisfactory because of the weaker performance on efficacy). Institutional development impact is rated as modest, mainly because the Central Valuation Authority was not strengthened as much as intended. The audit rates sustainability as likely. Bank and borrower performance are rated as satisfactory rather than highly satisfactory because institutional weaknesses could have been more fully addressed, coordination with other land administration agencies could have been stronger and, given the long term nature of the program, a more concerted effort could have been made to evaluate poverty and environmental impact.

These projects suggest three lessons. First, neither project was grounded in an overall rural development strategy; without this grounding it was harder to assess titling in relation to other interventions that may have been more effective for reducing poverty and improving natural resource management. However, the government was not interested in a broad program of Bank assistance and there was little leverage. Second, clarifying boundaries between state and private domain is essential in order to define the universe for titling, enable accurate target setting, and make decisions about whether a second sweep of systematic adjudication is justified to fill in the gaps left by the first. Third, there is a case for deregulating much of the remaining one-third of the territory that is nominally under state control, expanding the area eligible for full title. Much of this state domain consists of degraded and heavily encroached forest reserves that are not performing vital environmental services; and which the state does not have the means to protect. The many farmers in these encroached areas are deprived of the benefits—principally, improved access to formal credit—extended by the titling program.



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PRINCIPAL RATINGS

<i>Loan 2198-TH</i>		
	<i>Audit</i>	<i>PCR</i>
Outcome	Unsatisfactory	Satisfactory
Sustainability	Unlikely	Likely
Institutional Development	Negligible	Modest
Bank Performance	Unsatisfactory	Satisfactory
Borrower Performance	Unsatisfactory	Unsatisfactory

<i>Loan 3254-TH</i>		
	<i>Audit</i>	<i>ICR</i>
Outcome	Satisfactory	Highly satisfactory
Sustainability	Likely	Likely
Institutional Development	Modest	Modest
Bank Performance	Satisfactory	Highly satisfactory
Borrower Performance	Satisfactory	Highly satisfactory

KEY STAFF RESPONSIBLE

<i>Loan 2198-TH</i>			
	<i>Task Manager</i>	<i>Division Chief</i>	<i>Country Director</i>
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Completion	C. Choeng	D. Dowsett-Coirolo	C. Madavo

<i>Loan 3254-TH</i>			
	<i>Task Manager</i>	<i>Division Chief</i>	<i>Country Director</i>
Appraisal	Y. Wong	D. Dowsett-Coirolo	C. Madavo
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Preface

This is a Performance Audit Report (PAR) of two projects in Thailand.

- i. The Land Reform Areas Project, for which Loan 2198-TH, in the amount of US\$17 million, was approved in September 1982. The closing date was September 19, 1989, about nine months behind schedule. The final disbursement from the loan was made in September 1989, and the balance of US\$7.5 million was canceled.**
- ii. The Second Land Titling Project, for which Loan 3254-TH, in the amount of US\$30 million, was approved in September 1990. The closing date was September 30, 1996, twelve months later than originally planned. The final disbursement from the loan was made in December 1996, and the balance of US\$0.6 million was canceled.**

The PAR is also based on the Staff Appraisal Report (SAR), President's Report, the legal documents, project files, supervision reports, and the findings of an Operations Evaluation Department (OED) mission that visited Thailand in February 1998 and met with officials of the Government of Thailand, the implementing agencies, and with persons affected by the project. The collaboration of these officials and other persons is gratefully acknowledged.

Following customary procedures, copies of the draft audit report were sent to the relevant government agencies and co-financiers for their review and comments. Comments received from the Land Titling Project Office have been incorporated into the PAR and reproduced as Annex D.

1. Background

1.1 This audit examines two projects that took different approaches to land administration in Thailand, to extract lessons that may be relevant for the preparation of new projects.¹ The Bank's experience with projects bearing on land policy has expanded in recent years but is still very limited compared to other areas of rural development. Further growth of the land portfolio may be expected.² The two projects were implemented consecutively and by different agencies, and analysis of the SARs suggests there was little cross-fertilization. Also, there were significant differences in objectives (Table 1). Therefore, the report discusses each project separately. The discussion of development outcome is organized explicitly according to OED's evaluation principles: were the operation's goals consistent with the country's overall development strategy and the Bank's assistance strategy for that country? ("relevance"); did the operation achieve its stated physical, financial, institutional, or policy-related goals? ("efficacy"); what inputs did it take to achieve these results, and did benefits exceed costs? ("efficiency"). The lessons section highlights the issue of relevance, emphasizing the need for projects to be grounded in an overall rural development strategy.

1.2 The last Bank review of sector strategy in Thailand was conducted in 1980.³ The relative lack of policy dialogue since then is probably related to the successful performance of the agriculture sector (annual growth averaged 4 percent between 1980 and 1990) and the country's limited need for Bank finance.

1.3 The 1980 report contains a substantial section on land policy issues and, in addition to providing relevant background for the two projects under audit, draws a number of conclusions that remain relevant. Key features of the background up to 1980 are as follows. First, land tenure appears to have been relatively secure, based on a homesteading tradition that recognized the right of any Thai citizen to claim up to 4 hectares to provide for his family. Attempts after 1954 to formalize property rights led to a plethora of tenure documents with rights and obligations that government was unable to enforce; even in areas without transferable title (notably, encroached forest reserves) the land market flourished. Second, the distribution of landholding was relatively equal, with no apparent trend toward increasing property concentration: nationwide, the Gini coefficient moved from 47 in 1962 to 43 in 1974, with little variation between regions.⁴ Third, owing to these factors, there was not a large landless population. Fourth, farmer access to credit

1. Stefano Pagiola, of the Bank's Environment Department, participated in the audit mission and was responsible for the economic analysis for the Second Land Titling Project. This analysis will be incorporated as a case study in a manual for task managers of land administration projects, currently under preparation by ESSD's Thematic Team on Land Policy.

2. The Bank's recent strategy report highlights the need "not to be timid" on the "long-ignored issue" of land reform (*Rural Development: From Vision to Action*, World Bank, 1997, p. 18).

3. *Thailand: Agricultural Development Strategy Review*, East Asia and Pacific Regional Office, November 1980, Report No. 3108.

4. In 1974, the distribution of holdings was least equal in the North (Gini: 50) and most equal in the Northeast (Gini: 39) (*ibid.*, p. 10).

was relatively good and getting better, with nearly one-third taking loans from banks and widespread use of informal sources. These trends suggest that there was little scope or justification for a program of land redistribution; and that, while returns to land titling would enhance tenure security and access to formal credit, the gains might well be smaller than in other countries starting from a less favorable base.

Table 1. Salient Features of the Two Projects

	<i>Land Reform Areas Project (LRAs)</i>	<i>Second Land Titling Project</i>
Implementing agency	Agricultural Land Reform Office (ALRO)	Department of Lands
Project Location	North, Northeast and Central provinces	North, Northeast and Central provinces
Implementation period	Approved September 1982 Closed September 1989	Approved September 1990 Closed September 1996
Objectives	(a) Degazette forest lands encroached on by small farmers, creating nine LRAs covering 192,000 ha and containing 35,000 families (b) Improve security of land tenure and intensify agriculture in LRAs (thus reducing incentives for further encroachment on public forest land) (c) Introduce soil conservation measures on sloping land to reduce erosion (d) Upgrade economic and social infrastructure to area and national standards (e) Increase agricultural exports (f) Reduce rural poverty (g) Absorb LRAs within provincial administrations (h) Strengthen government's capacity to plan and manage projects	(a) Grant secure, documented tenure to rural landholders, thereby facilitating their access to institutional credit, improving investments in the land, and increasing agricultural productivity and family incomes (b) Complete an improved national cadastre, to facilitate development planning and land administration (c) Enable more accurate property valuation and tax assessments, to strengthen the fiscal system and increase government revenues, particularly in urban areas
Components, % of base cost (Estimated) (Actual)	(a) Land reform (9) (10) (b) Land compensation (13) (0) (c) Roads (29) (31) (d) Soil conservation (3) (2) (e) Irrigation (9) (1) (f) Water supply (1) (1) (g) Schools (9) (12) (h) Health centers (2) (4) (i) Institutional development (28) (40)	(a) Base cadastral mapping (19) (26) (b) Ground surveying (53) (49) (c) Urban mapping (4) (4) (d) Land administration (8) (10) (e) Land valuation (5) (1) (f) Dept. Land institution building (3) (4) (g) Technical assistance & training (7) (6) (h) Studies (1) (<1)
Total project cost (Estimated) (Actual)	(US\$31.0 million) (US\$19.8 million)	(US\$73 million) (84.7 million)

1.4 From the late 1950s onwards, the Reserved Forest Act and other measures brought no less than half of the national territory into the state domain. "The selection of many of these areas bore little relation either to existing land use or to land suitability data. An analysis of the maps suggests that in 1971 over half of the reserved forest was actually settled agricultural land, and some villages in forest reserves had been established for more than 100 years. Moreover, almost all of the reserved forest that has been settled appears to be suitable for agriculture."⁵ The report makes an implicit case for extensification based on a degazetting of much of the forest reserve. It explicitly argues for a more rational policy of land use management, with better

5. *ibid.*, p. 18.

coordination between the various agencies involved, and stronger policing by the Royal Forestry Department (RFD) of a smaller core area of critical environmental importance.

1.5 There was a limited degazetting after 1975: an area equivalent to about 12 percent of the territory was used to create LRAs (the focus of the first project under review here), providing occupancy rights (not full title) to established farmers (but not the landless). When the Land Titling Program was launched in 1984, large areas of land still remained off limits for titling. This is still the case today: about one-third of all land remains nominally under state control. The size of the state domain does not appear to restrict access to land (owing to government's inability to control settler encroachment), but it denies the benefits of full title to many established farmers. Also, the lack of an adequate resource inventory and the absence of credible data on land degradation ensures that the state's natural resource conservation efforts remain hopelessly overextended. Aerial photos show that, in terms of resources to protect—tree cover, biodiversity—there is sometimes little difference between the forest reserve areas and the area outside. These issues bear on the relevance of the audited projects, suggesting that although they could succeed on their own terms, they were only addressing part of the overall problem of land administration. The scope for reducing rural poverty and improving the management of natural resources was therefore not as great as it might have been.

2. Land Reform Areas Project

Relevance

2.1 When the project was designed there was a concern to address rural poverty issues highlighted in Bank economic reports and by the Resident Representative.⁶ There was pressure to come up with a project that would raise incomes in the poorer rainfed areas (including the Northeast). Integrated rural development ruled in the Bank of the late 1970s; but this approach was not adopted in Thailand until later because projects staff judged that there was no institutional structure to effectively plan and coordinate multidepartmental operations at the local level. This helps to explain why the Bank chose to develop a project with ALRO, a weak agency with little track record.

2.2 The project focused on problems posed by the squatter settlement of gazetted forest. According to the SAR, about 6 out of 26 million hectares of official forest had been encroached by one million farmers. About two-thirds of the encroached area was reckoned to be suitable for agriculture, accounting for over 50 percent of the nation's total output of maize and cassava. Throughout the encroached areas the level of infrastructure and public services was substantially below that in neighboring, legally settled areas, and agricultural productivity was lower, partly because public agencies were reluctant to operate in illegally occupied zones.

2.3 The project proposed to address these issues by building on the efforts of the ALRO (established in 1975), which had jurisdiction over certain tracts of heavily encroached forest that had been degazetted by the RFD to form LRAs. ALRO's main mission was to improve the farming practices and livelihoods of established farmers, providing them with a deed of occupancy: the Certificate 401 allowed for inheritance, but not sale of the parcel, and was contingent on use of the land for farming. The project sought to increase yields and reduce erosion, not only by codifying occupancy but also by financing small-scale irrigation and soil conservation. Complementary investments in roads, schools and health posts were intended to increase access to markets and provide further incentives for occupants to stay put. The project also funded purchase, and redistribution by ALRO, of parcels exceeding the prescribed holding size limit (8 hectares).

2.4 The weak institutional environment severely reduced the options available for Bank support to rural development in Thailand in the early 1980s. This constraint granted, the type of project developed begs a number of questions. First, was the tenure status of the squatters actually insecure? The SAR notes that some of the villages in the LRAs had been "established for more than 100 years." Second, if secure tenure is assumed to be a precondition for sustainable farming, would the provisional certificate of occupancy offered by ALRO lead

6. The Resident Representative reported "...movement of population into previously forested areas, illegal destruction of the forest and a resulting agricultural system, by farmers lacking legal titles to their lands, yielding low incomes and gradual soil destruction. The result may be a population potentially sympathetic to 'insurgents'" (Office Memorandum, Martinusen to van der Heijden, December 23, 1976).

farmers to intensify? The certificate could not be used to secure bank loans, restricting the scope for on-farm investment. In any event, before the project started, farming in the LRAs seemed to have moved beyond shifting, slash-and-burn techniques, raising questions about the scope for incremental gains.⁷ Third, were the squatters significantly poorer than small farmers in areas of legal settlement? The population of the target areas was described as “typically” having an income near the absolute poverty line of US\$148 per capita; no socioeconomic profile was prepared before appraisal and there was no baseline against which project impact could be measured.

2.5 The design was flawed in two respects. First, there was always a possibility that degazetting and improving livelihoods in some areas of the forest reserve would lead to accelerated encroachment on other areas as occupants sought to pressure the government into releasing even more land for development. The project addressed this issue by offering a contingent title. This might have been necessary, but it was not sufficient to reduce encroachment: titling would need to be backed up by policing measures to increase protection of the remaining forest reserve. This possibility was never explored, partly because relations between ALRO and the RFD were strained; RFD did not support the principle of degazetting on which the LRAs were founded.

2.6 Second, there was minimal room for redistributing land in favor of the poor. At the project’s start the poor were defined as 6,700 landless families and the 12,500 families with holdings under 4 hectares. The land targeted for redistribution would be taken from farmers with holdings over 8 hectares: the land in excess of this threshold (potentially 38,000 hectares) would be sold to those with less than the area needed to support a family. However, the SAR indicates that only about 25 percent of the 38,000 hectares would probably be available for sale to the poorest; it anticipated that the other 75 percent would be lost to (untargeted) sales from farmers seeking to preempt ALRO (which would only offer 65 percent of market value for land it purchased). The farmers targeted by ALRO were hardly large operators with substantial tracts of idle land: the average size of their farms was 15 hectares. This was a land reform that sought to transfer land from the small to the even smaller.⁸

2.7 The project’s design was overambitious. It included a component intended to build up government’s project management capacity generally—not just in the area of land reform. ALRO was a small, marginal player in the government arena, with limited project implementation experience. Owing partly to its weak track record, ALRO did not enjoy the confidence of the Prime Minister’s Office when the project was prepared. It was therefore unrealistic for the project’s designers to assume that ALRO could take on the coordinating role presupposed by this component.

7. A Bank mission sent to evaluate the prospects for a project argued that: “Particularly in the better soil areas, many farmers are using relatively advanced technology, e.g. mechanical cultivation, legumes, improved seed, etc., and are highly commercialized. In these circumstances the scope for introducing improved technological packages which will increase production and incomes may be limited” (Back to Office Report, English and Sjamsu to Price, October 18, 1978).

8. World Bank Office Memorandum (Sociological Issues in the Land Reform Areas Project: Review of Yellow Cover, Cernea to Sutherland), July 16, 1981.

Efficacy

2.8 To what extent did the project realize its stated objectives? Progress was very uneven. Owing to a change in the LRAs included, the total project area expanded from 192,000 ha to 200,240 ha; for the same reason, the proportion of the project area with farming potential dropped from 90 percent to 79 percent. The project served 35,713 families, 102 percent of the appraisal target.

2.9 With respect to land titling, the share of project expenditures (10 percent) was roughly the same as forecast at appraisal and a total of 32,982 farmers were issued Certificate 401s: this amounts to 94 percent of the target population in the LRAs. Only 2 percent of farmers receiving 401s were formerly landless, compared to the 15 percent target set at appraisal. The conversion of 401s into fully transferable title deeds (NS4s) was mooted at project completion, but no progress has been made in the period since closing. This is so even for occupants with a legitimate right to full title: about 10 percent of the land in LRAs was occupied before gazetting took place; according to the law these farmers automatically qualify for NS4—but none have received it. Conversion was not one of the original objectives of the project and the Bank had no leverage when the matter was belatedly tabled.

2.10 The land distribution component (which was forecast to absorb 13 percent of project expenditures) remained undisbursed: funds earmarked for purchase of holdings above the size limit were not drawn upon. At appraisal, 22 percent of farmers were reckoned to be occupying holdings larger than the 8-hectare ceiling. But during implementation only 10 percent of farmers transferred land, suggesting either that larger farmers successfully resisted any pressure to sell, or that they managed to sell before project start up (at a price higher than that offered by ALRO).

2.11 The irrigation component shrank because Pichit, the LRA with the largest irrigation potential, was dropped from the project. Actual expenditures on irrigation were only 1 percent of project costs, down from 9 percent at appraisal. Only 53 of the 500 tubewells foreseen at appraisal were actually drilled. Tubewells were located without regard to the amount of the water in the aquifer; many could only be used in the rainy season. Most of the rock weirs that were built were not used by farmers.

2.12 Expenditures on soil conservation (2 percent of project costs) were in line with appraisal expectations, but the area covered was only 57 percent of the target. The diversion ditches and broadbased graded banks proposed by the project took up substantial space on the farmers' small plots and were generally rejected; none were in evidence when the audit was conducted. There was ample indication during the field visit that farmers are ploughing downslope rather than with the contour. However, the slopes were generally moderate and at the sites visited in Chiang Rai and Nakhon Ratchasima there was no sign of gullying. Stubble burning is widespread, a practice that (according to local extension officers) reduces soil fertility.

2.13 Road expenditures (31 percent of project costs) slightly exceeded project estimates: 669 kilometers of village access roads were built, 156 percent of the appraisal target. These roads are unsurfaced, 4 meters wide, and with limited provision for drains. The ones traveled during the field visit were in reasonable condition with little potholing; but drains, if there were any, were heavily overgrown, and there were signs of gullying on steeper gradients. Upkeep of the roads is carried out sporadically by ALRO (sometimes by the central office, sometimes by the local

office). Contrary to original expectations road maintenance has not been transferred to provincial government.

2.14 Expenditures on social infrastructure (schools, health posts, drinking water supply) accounted for 17 percent of project costs, somewhat exceeding appraisal estimates. All the physical targets for this infrastructure were amply exceeded. However, coverage of the population in the LRAs was uneven: health posts benefited 20,000 families, schools, 4,200 families and drinking water systems 3,300 families. The schools and health posts are clean, well maintained and fully staffed. Unlike roads, responsibility for these facilities has been fully assumed by local government.

2.15 Institutional development became the largest component of the project, capturing 40 percent of expenditures (up from 28 percent at appraisal). This does not appear to have resulted in long-term capacity building. First, there was heavy dependence on foreign consultants: expenditures accounted for 53 percent of the institutional development impact component, compared to the 46 percent projected at appraisal. Second, there has been considerable staff turnover at ALRO: few of the senior staff interviewed during the audit mission were with the agency when the project was implemented. Third, the capacity of ALRO's branch offices has not been strengthened: for example, survey work and some road maintenance is still done by the Bangkok office. Fourth, contrary to the project's objectives, the LRAs have not been brought under the jurisdiction of provincial governments: they are still treated as administrative enclaves. For example, local extension agents apparently do not intervene without ALRO oversight ("coordination").

2.16 The scale of the project's incremental benefits appears to have been small. To begin with, the farmers in the LRAs were already installed and producing before project start up. The growth of farm output was contingent almost exclusively on rainfed yield improvements because there was no unused land available for incorporation to farming and little scope for irrigation. The project's designers appear to have underestimated the level of development before the project. Data for 1981-82 indicate that yields for the principal crops were actually 20 to 40 percent higher than the SAR estimate for the project's base year. Between project start up and year 10, yields of staples performed poorly: in 1992-94, the yield of cassava was 32 percent lower than in 1981-82; the yields of rice and mungbean fell by 14 percent and 26 percent, respectively; the maize yield increased by 9 percent, compared to the 31 percent increase forecast in the SAR.

2.17 The yield performance of each LRA was inferior to the average for the region in which it was located: this reflects the poorer-than-average quality of the land in the LRAs and the project's failure to achieve an intensification of farming. (In the North and Northeastern LRAs, the amount of fertilizer applied per hectare is only three-quarters the average for the respective region). A corresponding expansion in the proportion of household income derives from off-farm work. Performance was particularly weak in the Northeast region, which has the poorest soils. In this region, declining yields from cassava have, in the past few years, been partially offset by the returns from tree crop diversification (lychee loganberry).

2.18 Given the failure of the project to bring about a substantial intensification of farming, its primary contribution to reducing poverty rests on the roads, schools and health posts that were

built. The group that may be assumed to be the poorest—the landless—was not served by the project because no land was redistributed. The environmental impact appears to have been equally weak. Farmers failed to adopt soil conservation practices, and encroachment on neighboring areas of reserve forest (much of which are as degraded as the LRAs themselves) continues unabated.

Efficiency

2.19 The project cost US\$19.8 million, not US\$31 million as anticipated. This is mainly because the localities included in the project changed: an area scheduled for major irrigation works was substituted by another (rainfed area) whose development was less expensive. Costs were also reduced by the devaluation of the Thai currency and because ALRO did not redistribute land and therefore did not have to assume compulsory purchase costs.

2.20 Cost efficiency was weak on two counts. First, the cost of issuing an ALRO certificate of occupancy was US\$58, compared to the US\$32 that it cost to issue a title deed under the Second Land Titling Project. Given the doubtful incremental tenure security conferred by the ALRO certificates, their cost seems excessive. Second, mean costs for road construction were only US\$8,670/km, compared to the US\$13,488 forecast at appraisal. Both figures seem very low. In 1995, construction of rural access roads in China was costed at US\$25,000/km, based on labor-intensive techniques. Given that wages are higher in Thailand it is doubtful that a comparable road could have been built for this amount, particularly given that most were constructed on rolling terrain. Owing to ALRO's budget constraints, road maintenance is currently being skimped: in the hilly North region, costs average US\$675/km compared to the US\$3,000/km that is typical for China.

2.21 The economic rate of return was re-estimated at 2 percent, compared to the Project Completion Report (PCR) estimate of 17 percent. This discrepancy reflects the growth of farm income, which appears to have been overestimated in the PCR. The audit estimate is based on farm surveys conducted in each of the project LRAs in 1984, 1987 and 1990.⁹ These surveys show that net farm income grew for each of the LRAs in the North region, fell in the soil-degraded Northeast, and showed mixed performance in the Center. Using the survey data for these three years, the average of the two lowest values was subtracted from the average of the two highest values. The result was then used to derive an annual growth rate of farm income, projected outwards to 1996, which is taken as the year of full development. Incomes were based on adjusted border prices for tradables and surveyed farmgate prices for non-tradables. The growth in farm income was discounted by 10 percent, to allow for the growth that it is assumed would have occurred without the project—a conservative estimate given the vigorous expansion of yields in neighboring areas.

Institutional Development Impact

2.22 Despite the project's avowed focus on institutional development (40 percent of actual project expenditures), its impact in this respect appears to have been very limited. When the

9. The authors of the PCR took their data from the National Rural Development Program, not from actual project beneficiaries.

project was designed ALRO showed severe limitations as an executing agency and its capacity was not significantly strengthened during implementation. Until the end, the agency depended on external assistance for preparing subprojects. At Yellow Cover review it was pointed out that the actual contribution to local capacity building would be quite small because the project proposed to spend three times as much on foreign consultants as it would spend on training national staff. Continuity was weak because staff that were trained by the project generally dispersed afterwards.

2.23 The objective of bringing the LRAs under the administrative control of provincial government (and absorbing the local teams) was not achieved. Also, there was a failure to transfer responsibility for road maintenance to provincial government, preventing ALRO from focusing on its core business of land reform and tenure regularization. The project had little positive impact on institutional development at the beneficiary level. The 89 cooperatives established in the LRAs are not based on farmer initiative. A Bank mission in 1978 reported that the cooperatives were "practically run by government officials," a circumstance that does not seem to have altered. The coops' record on loan repayment is very poor and the majority are insolvent.

Sustainability

2.24 The schools and health posts built by the project are now adequately maintained by provincial government and the benefit they offer will probably be sustained. The benefits generated by access roads seem more precarious given the weak maintenance record. Although anti-erosion works have been abandoned by farmers, the recent diversification into tree crops at Nakhon Ratchasima will, in a modest way, combat soil erosion and raise farm incomes, setting an example that could be followed by other LRAs. Overall, however, there are few specifically on-farm benefits to sustain, given the lack of a substantial yield response. ALRO's farmer credit program is not sustainable; its revolving fund recovers only 60 percent of the loans disbursed to cooperative members.

2.25 ALRO's budget has been severely pruned in the past year or so and there are some doubts about its future. Unlike the (successful) land titling program, the land reform program is not broadly endorsed by government. Although at completion the Bank proposed a follow-on project in other LRAs, this was vetoed by the Prime Minister's Office. ALRO remains out on a limb and unless it is pulled into closer coordination with other government agencies (in particular, the RFD, the various extension agencies, and the Department of Lands [DOL]) it is likely to become increasingly irrelevant.

Performance

(a) Borrower

2.26 During project preparation, the borrower took very few steps to find out what farmers in the LRAs actually wanted (the PCR notes that settlers were "initially hostile"), helping to explain why the erosion control measures and small-scale irrigation works were generally rejected. At appraisal it was intended that farmers would provide free labor for construction works; but hired

labor was ultimately used. Also, the scope for land redistribution was not properly ascertained. During implementation (and since closing), ALRO has continued to adopt a very paternalistic approach to farmers, including futile attempts to restrict diversification into off-farm activities on the grounds that this contravenes the farm vocation of the LRAs. There was only weak coordination between ALRO and other agencies—Department of Agricultural Extension, Department of Land Development, RFD—that were expected to provide complementary services.

2.27 The borrower also neglected monitoring and evaluation. Consultants designed a monitoring and evaluation (M&E) system, but ALRO failed to implement, arguing that it was too complicated. The system was simplified, but the revisions were not adopted. The PCR suggests that there were not enough permanent staff assigned to project monitoring. The borrower wishes that at the start of the project the type of data needed for M&E had been more clearly specified by the Bank.

2.28 A number of issues were left unresolved at completion, most notably the transformation of the occupancy certificates into full land title and the transfer of ALRO's responsibilities in the LRAs to other line agencies. ALRO took few steps to strengthen the capacity of its provincial branch offices and the role of provincial officers was poorly defined: development of a decentralized surveying capacity remained limited.

(b) Bank

2.29 Responding to pressure to address rural poverty in Thailand the Bank was hard put, given the weak institutional framework, to find an appropriate vehicle or implementing agency. However, the Bank must share responsibility with the borrower for a number of design flaws in the project that were ultimately identified. The project was based on a number of poorly argued assumptions about the best way to tackle deforestation and rural poverty, some of which were highlighted at Yellow Cover review. The agricultural potential of the LRAs was overestimated and consultation with farmers was inadequate.

2.30 Supervision was generally satisfactory. The supervision intensity was consistent with regional norms and there was continuity in staffing. The Bank dealt flexibly with the change in areas included in the project and gave good technical guidance. Bank advice led to some improvement in ALRO work procedures, particularly with respect to cadastral survey: between project start and closing the survey capability increased from 32,000 to 400,000 hectares per year. However, support from the resident mission was weak and procurement was substantially delayed by the inability to provide in-country clearance.

Ratings

2.31 In view of the limited relevance of this project to the objectives of sustainable land management and poverty reduction, and the poor economic rate of return, the audit rates the development outcome as unsatisfactory, contrary to the PCR's rating of satisfactory. The PCR rating is based on an overestimate of the project's impact on farm incomes in the LRAs. Institutional development impact is rated negligible because management and planning capacity of the implementing agency was not enhanced by the project, there was no incorporation of

LRA by provincial government and no strengthening of coordination with other rural development agencies. Sustainability is rated unlikely because of dwindling government commitment to land reform and the implementing agency's severe budget constraints. The audit rates borrower and Bank performance as unsatisfactory. This is primarily because both parties performed poorly during the identification and preparation phase, creating a project that responded weakly to the development needs of Thailand.

3. Second Land Titling Project

Relevance

3.1 The project was the second of three operations in support of a 20-year land titling program launched by the government in 1984. The aim of the program was to adopt an accelerated approach to providing full legal title (NS4) to the parcels eligible for private ownership. Government was concerned that the existing approach to land titling was taking too long; more vigorous *systematic* adjudication, involving a government promotion campaign phased by region, was deemed essential to provide timely coverage of all private lands. By 1987, about one-third of private parcels (22 percent of privately owned land) had been issued with NS4. The second project sought to build on the achievements of the first by issuing a further 3 million NS4s (equivalent to roughly 15 percent of all private parcels). The project aimed to improve, first, landholders' living standards (via titling); and second, the planning capacity and revenue base of the government (via cadastral mapping and strengthening of the land valuation authority). The discussion in this section will be limited to the first of these objectives.

3.2 The project was founded on the assumption that granting full title would facilitate landowners' access to institutional credit, increase investments in land, and raise agricultural productivity and incomes, outcomes that were fully consistent with the strategy of the government and of the Bank. Data from surveys carried out in 1984–86, under the auspices of the First Land Titling Project, suggested that these outcomes were indeed being achieved.¹⁰ The findings have been internationally influential and the main points merit quotation in full.

3.3 First, it was found that farmers without title deed enjoyed reasonably high tenure security. Second, depending on the province, titled farmers who provided land as collateral were offered between 52 percent and 521 percent more bank credit than untitled farmers. Third, untitled land was 43 percent to 80 percent less valuable than titled land. Fourth, capital stock and input use were substantially higher for titled land, except in the case of one of the four provinces (Lop Buri) where the results were not statistically significant. Fifth, titled land was more likely to have been improved: the incidence of bunding was 20 percent to 31 percent higher, while stump clearing occurred 9 percent to 14 percent more frequently. Overall, productivity was 12 percent to 27 percent higher on titled land. These positive effects of titling vary substantially in magnitude between provinces; but in no cases did titling have a negative effect.

3.4 These survey results provided powerful evidence in support of the relevance of the land titling program to Thailand's development needs. In addition, the first project had demonstrated that there was a strong demand from landholders for full title and strong commitment by the government to the program, sound reasons for continuing Bank support. There was good reason to believe that the positive development outcome of the first project would be replicated in the

10. The surveys were carried out in 1984-85 in Lop Buri, Nakhon Ratchasima, and Khon Kaen provinces, and in 1985-86 in Chaiyaphum province. The findings are reported in G. Feder, T. Onchan, Y. Chalamwong, and C. Hongladarom, *Land Politics and Farm Productivity in Thailand*, Baltimore: Johns Hopkins University Press, 1988.

second. Although the second project would target other provinces, there was an overlap with regions (North, Northeast) covered by the first project; and it was a reasonable presumption that conditions in the provinces surveyed were representative of the new provinces that would be added. The scope of the second project remained essentially the same as the first, and during preparation there was no attempt to review the importance of land titling in relation to broader land administration issues.

Efficacy¹¹

3.5 By the end of the second project, 53 percent of the estimated total of private parcels in Thailand (20.6 million) had received title deeds: 33 percent had been titled before the program began in 1984, 11 percent were titled under the first project (1984–90) and the remaining 9 percent were titled under the second project (1990–94). Annual production of title deeds averaged 500,000 parcels in the second project, compared to 270,000 in the first project.

3.6 The second project met target for the number of adjudication parties (30) and exceeded its target for the number of branch land offices established (67). All targets for aerial photography and cadastral surveying and mapping were either achieved or exceeded.

3.7 There was one major shortfall in relation to expectations at appraisal. The target for issuance of title deeds was reduced from 3 million to 2 million. This was partly because some of the provinces originally included were found to already have a high proportion of titled land. However, the main issue was the lack of information about the total number and area of parcels making it difficult to set realistic titling targets. A draft of the ICR states that: “Estimates of total provincial parcel numbers are still proving difficult to obtain, with the result that efforts to focus annual title outputs on them have been stalled. Field adjudication teams are still organized around production targets stated in Department of Land regulations. Little attention is paid to the estimated number of parcels in a province.”¹² Without better information about the universe it was dealing with, some questions arise about the basis on which DOL chose between the provinces when it deployed the adjudication teams.

3.8 The Implementation Completion Report (ICR) estimates that 20 percent of the area scheduled for inclusion in the program was left out, listing the following reasons: in areas next to forest reserves and LRAs it was not clear where the boundaries lay; landholders were absent; inheritance claims had not been settled; and banks failed to release existing land certificates that were being used to secure loans. It is not clear how the 20 percent estimate was derived given the lack of information about the land area eligible for titling; interprovincial variation around this mean was probably significant—but presumably difficult to estimate.

11. The audit did not examine the urban component of the Second Land Titling Project, which absorbed only 4 percent of the base cost.

12. ICR draft dated October 7, 1994 (paragraph 5.19).

3.9 There is still no survey evidence available concerning the specific impact of the *second* titling project on credit access, agricultural investment and incomes.¹³ The audit mission attempted to make up for this by using the available secondary data. However, these data are typically aggregated at the provincial level, making it difficult to identify the effects of land titling because there is no way to control for the substantial intra-provincial differences, on the one hand in agroclimatic and socioeconomic conditions, and on the other, the area covered by titles issued during the second project (in Lampang, 70 percent of the area was covered; in neighboring Phrae, only 5 percent). Also, given that there were widespread titling efforts in the North, Northeast and central regions during the first two projects, it was difficult to carry out paired comparisons of titled and untitled areas.¹⁴

3.10 Taking due note of these caveats, the secondary data tend to bear out the findings of the earlier studies with respect to access to credit. Between 1991–92 and 1995–96, for each region, total credit use (formal plus informal) rose faster for those provinces where the second project had operated than for the region as a whole. Average increase in credit use for provinces not included in either the first or second project was 22 percent, compared to 31 percent for second project provinces. Given the possibility of using title to secure loans it might be expected that the project's impact on the use of *bank* credit would be even higher than for credit as a whole. This was indeed the case. The average increase in the use of formal credit was 50 percent in second project provinces compared to 37 percent in provinces outside the titling program. For the period in question, the growth in the use of credit was substantially higher in provinces covered by the first project, compared to those under the second project, suggesting that there may be some lag before the full effects of land titling on credit use are felt.

3.11 Similar attempts were made to use secondary data (on input use and crop yields) to examine the effects of titling on farm production. The results were inconclusive. For example, the yield changes in each province were very sensitive to the definition of initial and final years, even when moving averages were used. In some cases, the expected positive correlation was observed, in others there was either a small or a negative correlation.

3.12 Titling possibly gave as large a boost to non-farm activities as it did to farming itself. The secondary data indicate that, in all regions between 1981 and 1992, the non-farm income of rural households grew faster than farm income. The richest farming region (Center) experienced the highest growth of off-farm income (14 percent per year, compared to 9 percent for farm income), suggesting that a vigorous farm economy will serve as a catalyst for small businesses and, no less important, for investments in real estate (which appreciated sharply between the mid-1980s and mid-1990s). Interviews conducted during the audit mission revealed that one of the main reasons farmers want titles is to help them secure commercial bank loans; these would

13. A socio-economic evaluation was commissioned by the first project and completed during the second project. It compared a 1987 baseline survey with a 1992 follow-up survey for Chiang Mai and Buri Ram, two provinces not covered by the second project (see T. Onchan and S. Aungsumalin, *Socio-Economic Evaluation of the Land Titling Project*, Bangkok: Kasetsart University, 1993). The results of the Evaluation are broadly consistent with the earlier findings by Feder *et al.*, 1988, *op. cit.* A third impact study was commissioned under the second project but the results are not yet available.

14. Attempts to evade this problem by constructing a time line (comparing areas that were titled first with areas that were titled subsequently and using this as a proxy for a "with/without" comparison) were frustrated by the difficulty of pinpointing the moment in time when particular areas were titled.

not necessarily be invested on-farm. However, it is not possible with the available information to assess the relative impact of title on the farm and non-farm incomes of rural households.

(Commercial bank managers are reluctant to talk even in general terms about the use to which farmers put their loans.)

3.13 The land titling program has helped to raise revenue for government in the form of fees generated from land transactions.¹⁵ Revenues have risen mainly because titling has contributed to a rise in the number of land transactions and (to a much lesser extent) because there is now less underevaluation of land. Fees applied to land transactions amount to roughly 10 percent of the sale price, compared to 2 percent in Australia. These high charges may reduce the incentive for buyers to accurately report the price they paid.

3.14 Most of the increase in transactions and the revenue growth actually took place under the first project: the annual number of transactions rose from 5.9 million in 1984 to a peak of 11.7 million in 1990, declining thereafter to around 7 million per year. Owing to this slowdown in the land market, in real terms, revenues remained flat throughout the second project. Nevertheless, even at 7 million, the number of land transactions is very high by international standards (it represents one-third of all private parcels; in Organization for Economic Cooperation and Development (OECD) countries less than one-tenth of properties change hands every year).

Efficiency

3.15 The actual project cost (US\$84.7 million) exceeded appraisal estimates by 16 percent; the largest contributing factor was the higher-than-expected cost of base cadastral mapping and ground survey work (associated vehicle, furniture and equipment costs rose from US\$5 to US\$15 million). This was partly driven by overoptimistic assumptions at appraisal about the scope for reducing ground survey costs by conversion of existing maps.

3.16 Based on expenditures made under the land titling component alone, the cost of each title deed was US\$32 (the same as the appraisal estimate), or US\$34 per hectare.¹⁶ To these costs it is reasonable to add some of the expenditures incurred by other components (institution building, technical assistance and training) because without them the project would probably have been less effective. Adding half these overhead costs results in a cost per title of US\$35 (US\$31 per hectare). This is consistent with alternative estimates (Annex B Table 2), which indicate that costs in Thailand are low by comparison with selected other countries.

3.17 The return to titling was not calculated in the SAR or ICR. The audit estimate is based on two assumptions: (i) that one-quarter of the area titled derives no benefit from titling; and (ii) that the benefits of titling on land which previously had a Certificate of Utilization (NS3K) title¹⁷ are half as great as the benefits of titling on land with lesser or no titles. The net present value of

15. These comprise; a transaction fee (2 percent of the official valuation); stamp duty (0.5 percent of the official valuation); personal income tax (5 percent or more of the income derived from selling the property); and a business tax (3.3 percent of the sale price).

16. Constant 1995 prices. For the first project the cost was US\$24 per title.

17. The NS3K is based on aerial photography alone while the NS4 involves ground surveying, photomap surveying and/or photomap conversion.

the project's incremental benefits is US\$280 million, with an economic rate of return of 34 percent. Even assuming that titling produces minimal or no benefit in some areas, the overall benefits are large enough to justify the total project cost of US\$85 million. The estimated rate of return is robust to changes in assumptions made about input use, yields, overhead costs and the size of the area where titling brings no discernible benefit.

3.18 One question raised by the audit was the justification for subsidizing the cost to the landowner of the NS4: landowners paid under US\$5 for the title deed, about 15 percent of the real cost. Project staff argued that the subsidy was necessary to jump start the program and in order not to deter the poorest farmers. Interviews with farmers suggested that most would have been willing to pay close to the real cost for the title. If it is assumed that the non-poor were more likely to be better informed about the titling program and made up a disproportionately large share of the beneficiaries, it could be argued that the subsidy was not well targeted. On the other hand, there would have been a cost involved in means testing applicants. In any event, the government will recover the subsidy in the long term because titling tends to increase the number of land transactions, increasing the revenue derived from fees (footnote 15).

3.19 A more important consideration is the efficiency with which the titling campaign was conducted. There is some indication that because of inefficiencies in the deployment of survey teams and unevenness in the promotion campaign, the breadth of coverage was suboptimal (certainly, there were large differences between provinces in achieving titling targets). At some point a decision must be made as to whether a second sweep is justified to fill in gaps left by the first attempt at systematic adjudication. The problem is that because targets are set in terms of the number of titles to be issued (which amounts to a guess), there is no incentive to quantify the *area* that remains to be covered, and therefore very little indication of how much work remains to be done. The field visit in Lampang and Kalasin suggested that (partly owing to rotation policies) staff in branch offices have strikingly little knowledge about the geography of the province in which they are working (e.g., they have difficulty in locating LRAs).

3.20 Deciding whether or not to conduct a second sweep should be driven by cost considerations. Costs are difficult to estimate, not only because there is insufficient information about the area left to cover, but also because the real cost of the alternative (sporadic adjudication) is poorly quantified. Data on sporadic adjudication costs is limited partly because there are no private surveyors competing with government: the law bars private firms from conducting basic surveys (they can only perform re-surveys and subdivisions), apparently on the questionable premise that, compared to public servants, private enterprise is more prone to corruption.

3.21 There may also be an efficiency loss resulting from the failure to make full use of the data collected in the course of surveying. Data about the boundaries and characteristics of the parcel and certain characteristics of the landowner are typed onto the title deed. Branch offices could simultaneously enter this information into a database that could be used for planning and property tax assessments. However, data are not being stored in this manner even though the incremental cost in terms of computerization and staff training is probably quite small.

Institutional Development Impact

3.22 Institutional development impact was lower than expected. The opening of new branch offices increased public access to land administration services but there are still substantial delays in carrying out land surveys. Only 22 of the 300 land offices are equipped with computers. There has been substantial improvement in the land database, aided by the introduction of new technology for survey control, aerial photography and cadastral mapping, and by the high quality of technical assistance from the Australian International Development Assistance Bureau. Although staff training targets were met, many of those trained subsequently left the DOL owing to the low salaries and limited career path available; it is not clear how many of the staff who defected subsequently joined the ranks of private surveyors (an area where capacity remains very limited).

3.23 The project objective of strengthening the Central Valuation Authority (CVA) was not realized. The main obstacle was government's failure to adopt a Property Valuation Bill that would allow for expansion and upgrading of CVA, giving it independence of the DOL (which sees its mandate as surveying, titling and registration). Failure to pass this legislation reflects the lack of political will for raising the property tax (assessed at a mere 0.05 percent of rural land value), or for improving the low rates of collection. Given its present status as an orphan of DOL, CVA cannot provide an adequate career path it is difficult for it to hang on to well-trained staff: of 16 staff educated in Australia with funds from the project, only 6 remain in CVA. Valuation data are only partially computerized and hard to manipulate. There is still a substantial lag between changes in the market price of land and updating of property valuation. CVA estimates that valuation data underestimate the sale price by about 20 percent.

Sustainability

3.24 There are good prospects that the project's benefits will be sustained, mainly owing to the long-term nature of efficiency gains in the operation of land markets, in landowners' improved access to formal credit and in the continuing stream of fiscal revenues generated by an active land market. Sustainability has been enhanced by the government's commitment to a 20-year program: the second project was succeeded by a third that is now nearing completion; and a fourth project is mooted. The physical infrastructure built by the second project—both at central and branch level—may be expected to endure. However, because the growth of institutional capacity was limited, this will make only a modest contribution to sustainability. Institutional capacity will be put to the test when Australian technical assistance is withdrawn at the end of the third project.

Performance

(a) Borrower

3.25 Strong government commitment was critical for the success of this project. All loan covenants were complied with in a timely manner. As implementing agency, the DOL carried out its mandate with a high degree of professionalism. DOL performed its core functions well (surveying and titling) but efforts to strengthen the capacity of its ward, the CVA, were less

effective reflecting a certain lack of commitment to the valuation mission. Communication between the various divisions of DOL was insufficient, hampering planning. Neither the creation of a Technical Planning Committee in 1992, nor the introduction of a Project Implementation Plan, appear to have remedied a coordination problem that is inherent within DOL's tradition of vertical reporting. This organizational style also helps to explain the limited coordination with other agencies involved in land administration, particularly the RFD and the ALRO. This contributed to the difficulty of adjudication in areas on the boundary between state and private lands. It was not until the end of the second project that DOL began inviting the RFD to review the maps it was generating.

(b) Bank

3.26 The design of the second project did not vary substantially from the first and this may explain the relatively low commitment of staff time up to appraisal (42 weeks compared to 72 planned). The limited economic analysis for the second project is defensible, given the solid evidence about the positive return to titling that was provided by studies commissioned under the first project. As the first project provided a workable model there was arguably little to be gained from investing more in preparing the second. Linkages to broader poverty and environmental issues could have been explored more thoroughly during preparation. However, it is not clear that the government would have supported a broadening of the agenda, and the Bank had only limited leverage. Moreover, the project succeeded partly because it was relatively simple; adding other components may well have been counterproductive. On the other hand, given the long-term nature of the program, it would have been appropriate for a second project to make a higher investment in impact evaluation: the database for assessing poverty and environmental impacts is still limited. The supervision input (58 staff weeks) was lower than the average for Bank projects but the outcome was generally satisfactory, enhanced by the excellent quality of the relationship between the Bank task managers, staff in the executing agency and the Australian technical advisors.

Ratings

3.27 OED rates outcome as satisfactory rather than highly satisfactory because the project failed to meet its original titling target and also did not grapple with broader land administration issues, notably the unclear boundaries between private and public land. OED concurs with the ICR in rating sustainability as likely and institutional development impact as modest. OED finds Bank performance and borrower performance to have been satisfactory rather than highly satisfactory, because institutional weaknesses could have been more fully addressed, coordination with other land administration agencies could have been stronger, and more provision could have been made for evaluating the impact of land titling on poverty reduction and natural resource management.

4. Lessons

4.1 Land titling and land reform efforts need to be grounded in an overall rural development strategy that weighs the relative cost and likely impact of various alternatives for reducing rural poverty and improving natural resource management. However, this principle was hard to apply in Thailand at the time when the two audited projects were implemented because the government had very little interest in a broad program of Bank assistance and the Bank's leverage was correspondingly low (paragraph 1.2).

4.2 The success of systematic adjudication in Thailand owes much to circumstances that may not apply elsewhere. In other countries, for example, there may be viable forms of communal land management; and, in the absence of an inflation in property values comparable to 1980s Thailand, the demand for titles may be much less.¹⁸ Nevertheless, Thailand demonstrates that systematic adjudication *can* be a cost-efficient strategy with powerful development effects. To maximize efficiency, there should be close coordination between all land administration agencies (paragraph 3.25). Moreover, targets should be established in terms of area covered, not number of titles issued (paragraph 3.27). A focus on area targets will provide titling agencies with an incentive to clarify boundaries between private and state domain and give a clearer sense of the gaps left by a first sweep of systematic adjudication. In the absence of data about the size of these gaps it will be difficult for the government to make an informed decision about whether to conduct a second sweep, or simply to leave the areas uncovered to sporadic adjudication.

4.3 There is a need to provide farmers in the Land Reform Areas with efficient land surveying services leading to full (NS4) title (paragraphs 2.9 and 2.20), define and mark forest boundaries to enable the titling of contiguous lands (paragraph 3.8), and share land information data more effectively between government agencies (paragraph 3.21). All these undertakings are best programmed and implemented within a common policy and institutional framework for land management and administration. In Thailand, such a framework would enhance the coordination of policies and programs undertaken by the various agencies responsible for land reform, land titling and registration, forestry and land conservation, property valuation and property tax assessment.

4.4 The case for freeing up land in state hands should be carefully considered (paragraph 1.5). The return to deregulation, if accompanied by appropriate policing of core reserve areas, will likely generate larger social benefits than titling areas already in the private domain where land rights are not a source of conspicuous conflict. In Thailand, areas in the private domain offered relatively secure tenure to farmers before the titling program. A large number of farmers occupy reserve land that, in many cases, is appropriate for farming; land that does not offer critical environmental services and is, in any case, beyond the means of the government to protect. Farmers on encroached reserve land are deprived of the benefits—principally, improved access to formal credit—extended by the titling program.

18. In Africa, the returns to land titling have so far been weak; here and in many other places, rural credit access is constrained by the high transactions cost of operating in sparsely populated areas; providing land title would do little to relieve the basic constraint.

Basic Data Sheet

LAND REFORM AREAS PROJECT (LOAN 2198-TH)

Key Project Data

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs (US\$ million)	31.0	19.8	64
Loan amount (US\$ million)	17.0	9.5	56
Cancellation (US\$ million)	--	7.5	--
Date physical components completed	03/31/1988	06/01/1990	--
Number of beneficiaries (families)	35,000	35,713	102
Total area in project Land Reform Areas (hectares)	192,000	200,240	104
Farm area in project Land Reform Areas (hectares)	173,000	158,395	92
Farm area covered by Certificate 401 (hectares)	ns	115,480	
N. of farmers receiving Certificate 401	ns*	32,982	--
Cost per Certificate 401 (US\$)	ns*	58	--
Incremental farm output (tonnes)	21,000	34,600	165
Roads and tracks (kilometers)	430	669	156
Soil conservation (hectares covered)	4,480	2,560	57
Irrigation: tubewells (number)	500	53	11
Water supply: dugwells (number)	130	229	176
Schoolrooms (number)	115	160	139
Health posts (number)	10	22	220
Economic rate of return (%)	14	17(ICR)	

*ns = Not specified

Cumulative Estimated and Actual Disbursements

	<i>FY83</i>	<i>FY84</i>	<i>FY85</i>	<i>FY86</i>	<i>FY87</i>	<i>FY88</i>	<i>FY89</i>	<i>FY90</i>
Appraisal estimate (US\$M)	.1	1.3	3.5	7.1	11.3	16.0	17.0	17.0
Actual (US\$M)	--	0.3	1.1	2.1	3.2	5.7	8.7	9.5
Actual as % of appraisal	--	23.1	31.4	29.6	28.3	35.6	51.2	55.9

Date of final disbursement: September 19, 1989.

Project Dates

	<i>Original</i>	<i>Actual</i>
Identification	--	11/76
Preparation	--	9/78
Appraisal	--	3/81
Negotiations	na	7/82
Board Approval	na	9/21/82
Loan Signature	na	9/29/82
Loan Effectiveness	12/82	6/30/83
Loan Closing	12/31/88	9/19/89 ^a
Loan Completion	3/31/88	6/90

a. Loan was prepared by RTG.

na Not Available

Mission Data

	<i>Date (month/year)</i>	<i>No. of persons</i>	<i>Staff days in field</i>	<i>Specializations represented^a</i>	<i>Performance rating^b</i>	<i>Rating trend^c</i>	<i>Types of problems^d</i>
Appraisal	3/81	4	28	FAE, AR	--		
Supervision 1	11/82	1	2	FA	NR ^e		
Supervision 2	6/83	1	4	FA	NR		
Supervision 3	10/83	1	3	FA	1	2	P
Supervision 4	3/84	2	12	2A	2	1	P
Supervision 5	11/84	2	6	2A	2	1	F
Supervision 6	2/85	1	1	A	2	1	F
Supervision 7	8/85	1	3	A	1		
Supervision 8	3/86	2	2	A,R	NR		
Supervision 9	7/86	4	5	2AER	2		
Supervision 10	4/87	3	4	A, 2E	2		
Supervision 11	7/87	1	4	A	NR		
Supervision 12	10/87	1	2	A	NR		
Supervision 13	4/88	2	9	2A	2		
Supervision 14	11/88	3	8	2AF	2		
Supervision 15	6/89	3	10	2AE	2		
Supervision 16	2/90	1	5	A	NR		
Completion	Sep/Oct 91	3	24	E,2S	--		

a. A=Agriculturalist; E=Economist; FA=Financial Analyst; R=Rural Engineer; S=Sociologist.

b. 1=problem-free or minor problems; 2=moderate problems.

c. 1=Improving; 2=stationary.

d. P=Political; F=Financial.

e. NR=Not rated (no Form 590 prepared or Form 590 does not show rating as for Supervision 1).

Staff Inputs (staff weeks)

	<i>FY</i> 78	<i>FY</i> 79	<i>FY</i> 80	<i>FY</i> 81	<i>FY</i> 82	<i>FY</i> 83	<i>FY</i> 84	<i>FY</i> 85	<i>FY</i> 86	<i>FY</i> 87	<i>FY</i> 88	<i>FY</i> 89	<i>FY</i> 90	<i>Total</i>
Through appraisal	0.3	32.6	61.8	36.1										130.9
Appraisal through board approval		0.2		44.0	6.4									50.6
Board approval through effectiveness					5.1	5.7								10.8
Supervision		0.1	3.1	9.5	5.8	12.5	10.9	10.2	4.7	6.8	9.2	10.1	10.8	93.7
Total	0.3	32.9	64.9	89.6	17.3	18.2	10.9	10.2	4.7	6.8	9.2	10.1	10.8	286.0

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

<i>Operation</i>	<i>Loan no.</i>	<i>Amount</i> <i>(US\$ million)</i>	<i>Board date</i>
Land Titling Project	2440	na	06/01/1984
Second Land Titling Project	3254	US\$30m	09/04/1990
Third Land Titling Project	3797	US\$118.1	09/22/1994

Basic Data Sheet

SECOND LAND TITLING PROJECT (LOAN 3254-TH)

Key Project Data

	<i>Appraisal estimate</i>	<i>Actual or current estimate</i>	<i>Actual as % of appraisal estimate</i>
Total project costs	US\$73.0m	US\$84.7m	86
Loan amount	US\$30.0m	US\$29.4m	98
Cofinancing	US\$5.2m	US\$5.4m	96
Cancellation	--	US\$0.6m	--
Date physical components completed	09/30/1994	09/30/1996	--
Title deeds issued	3,000,000/a	2,042,397	68
Branch Land Offices established	62	67	108
Adjudication parties	30	30	100
New officials appointed	509	1,978	389
Overseas training (staff months)	536	346	65
Economic rate of return	Not calculated	X%	--
Cost per title deed issued	US\$20	US\$32	160

a. Revised to 2,096,090

Cumulative Estimated and Actual Disbursements

	<i>FY91</i>	<i>FY92</i>	<i>FY93</i>	<i>FY94</i>	<i>FY95</i>	<i>FY96</i>	<i>FY97</i>
Appraisal estimate (US\$M)	2.4	7.5	15.0	24.0	30.0	30.0	30.0
Actual (US\$M)	0.1	8.6	19.4	26.2	27.7	28.9	29.4
Actual as % of appraisal	4.0	115.0	129.0	109.0	92.0	96.0	98.0

Date of final disbursement: December 9, 1996

Project Dates

	<i>Original</i>	<i>Actual</i>
Identification	n.a.	May/June 1989
Preparation	n.a.	Sep. 4-9, 1989
Initial executive project summary	n.a.	October 1989
Pre-appraisal	n.a.	Nov. 6-22, 1990
Appraisal	n.a.	Feb. 23-Mar. 13, 1990
Negotiations	June 18-20, 1990	June 18-20, 1990
Board presentation		September 4, 1990
Signing		October 12, 1990
Effectiveness		February 7, 1991
Project completion	September 30, 1994	September 30, 1996
Loan closing	September 30, 1995	September 30, 1996

Staff Inputs (staff weeks)

	<i>Planned</i>		<i>Actual</i>	
	<i>Weeks</i>	<i>US\$</i>	<i>Weeks</i>	<i>US\$</i>
Through appraisal	70	n.a.	41.6	88.2
Appraisal—Board	30	n.a.	18.7	45.0
Board—effectiveness	3	n.a.	8.1	19.2
Supervision	52	n.a.	58.2	137.2
ICR	35	n.a.	27.0	5.0
Total	190	n.a.	129.3	294.6

Mission Data

Stage of project cycle	Date (month/year)	No. of persons	Staff days in field	Specializations represented ^a	Performance Rating		Types of problems
					Implement. status	Development objectives	
Through appraisal							
Identification		3	5	A,E,A	n.a.	n.a.	n.a.
Preparation							
mission	9/89	3	5	A,E,LA	—	—	—
Pre-appraisal	11/89	4	16	A,LA,V,FA	—	—	—
Appraisal	2/90	3	18	A,E,L	1	1	—
Pre-negotiation							
mission	12/90	2	1	A,V			
Supervisions							
I	6/91	2	10	A,V			
II	12/91	4	12	A,FA,LA,V	1	1	
III	9/92	3	9	A,V,LA	1	1	
IV	8/93	4	16	A,V,LA,E	1	1	
V	2/94	5	16	A,V,NRE,LA,E	1	1	
VI (ICR)	9/94	4	35	A,E,LA,V,SE	—	—	—
VII	1/95	5	2	SE,E,LA,FA,C	HS	HS	—
VIII	12/95	6	2	SE, E, LA, FA, C,V	HS	HS	—
IX (ICR)	10/96	5	2	SE,E,C,V,LA	HS	HS	—

a. A = Snr Agriculturist; C = Civil Engineer; SE = Snr Economist; E = Economist; FA = Financial Analyst; L = Lawyer; LA = Land Administration and Registration Specialist; NRE = Natural Resources Economist; V = Valuation Specialist.

Other Project Data

Borrower/Executing Agency:

FOLLOW-ON OPERATIONS

<i>Operation</i>	<i>Loan no.</i>	<i>Amount (US\$ million)</i>	<i>Board date</i>
Third Land Titling Project	3797	118.1	09/22/1994

Land Reform Areas Project: Supplementary Tables

Table 1. Expected vs. Actual Growth of Yields

Kgs/Rai	Cassava	Rice	Maize	Mungbean
Expected				
Base year	2,000	250	225	100
Year 10	2,600	320	270	120
Change	30%	28%	20%	20%
Actual				
1982	2,603	305	295	138
1992-94*	1,775	263	321	102
Change	-32%	-14%	9%	-26%

All crops grown under rainfed conditions. "Expected" data are taken from the SAR, Annex 2, Table T5. "Actual" data are the mean for LRAs, averaging data for Central, North and North-East Regions.

*Mean for three years.

Table 2. Yield Trends: LRAs compared with mean for Region in which they are located.

	1981/82		1992/93		% change, 1981-92	
	LRAs	Region	LRAs	Region	LRAs	Region
Center						
Rice	248	344	237	432	-4%	26%
Maize	256	386	313	500	22%	30%
Sugar	8147	7806	6290	6554	-23%	-16%
North						
Rice	399	416	277	379	-31%	-9%
Maize	320	357	395	477	23%	34%
North-East						
Cassava	2043	2120	1414	2204	-31%	4%

Source: ALRO, NESDB

Table 3. Trends in Net Farm Income, LRAs ('000 baht, 1990)

Center	1984	1987	1990	Change, 1984-90
Lop Buri	113,062	73,867	87,741	-25,321
Sara Buri	NA	NA	352,886	NA
North				
Phetchabun	NA	67,797	92,690	24,893
Chiang Rai*	42,841	42,310	57,536	14,695
Uthai Thani	NA	NA	66,210	NA
Nakhon Sawan	28,297	48,321	51,453	23,156
North-East				
Nakhon Ratchasima	45,605	61,561	37,222	-8,383
Si Sa Ket	331,001	173,504	229,815	-101,186

* Includes Wiang Chai and Doi Pui

Source: ALRO

Table 4. Economic Benefits and Costs : PCR vs. Audit Estimate

Year	Net Farm Income (1): PCR =a	Net Farm Income (2): Audit =b	Passenger Vehicle Cost Savings =c	Costs =d	Net Benefits (1): PCR =a+c-d	Net Benefits (2): Audit =b+c-d
1983	--	--	--	2,570	(2,570)	(2,570)
1984	--	--	--	25,230	(25,230)	(25,230)
1985	11,600	5,015	356	56,751	(44,795)	(51,380)
1986	19,000	8,030	3,135	55,424	(33,289)	(44,259)
1987	29,900	11,045	6,023	82,667	(46,744)	(65,599)
1988	34,600	14,060	10,641	84,593	(39,352)	(59,892)
1989	44,100	17,075	11,173	68,825	(13,552)	(40,577)
1990	52,500	20,090	11,732	79,685	(15,453)	(47,863)
1991	60,500	23,105	12,318	16,511	56,307	18,912
1992	68,900	26,120	12,934	16,708	65,126	22,346
1993	77,100	29,135	13,580	26,180	64,500	16,535
1994	85,300	32,150	14,260	42,460	57,100	3,950
1995	94,600	35,165	14,992	59,406	50,186	(9,249)
1996	98,500	38,180	15,721	9,900	108,321	44,001
1997	98,500	38,180	16,507	9,900	109,107	44,787
1998	98,500	38,180	17,333	9,900	105,933	45,613
1999	98,500	38,180	18,200	9,900	106,800	46,480
2000	98,500	38,180	19,109	59,406	58,203	-2,117
2001	98,500	38,180	20,065	9,900	108,665	48,345
2002	98,500	38,180	21,068	9,900	109,668	49,348
2003	98,500	38,180	22,122	9,900	110,722	50,402
2004	98,500	38,180	23,227	9,900	111,827	51,507
2005	98,500	38,180	24,388	59,406	63,482	3,162

Economic Rate of Return = 17% (PCR)

= 2% (Audit estimate)

Finding. Observed farm benefits are not as large as the PCR claims and therefore the audit ERR is substantially lower.

Methodology

1. *Net farm benefits.* PCR estimate refers to cotton, cassava, rice and mungbean. Audit estimate is based on these, plus maize and sugarcane, using adjusted border prices for tradable commodities. The audit data were derived from ALRO farm surveys for each of the LRAs, conducted in 1984, 1987 and 1990. The audit estimate is based on the observed rate of growth between these years, and projecting growth at the same annual rate up to 1996 (full development). Observed incremental benefit was adjusted downward by 10 percent which is the amount by which it is assumed that benefits would have increased without the project.
2. *Passenger vehicle cost savings.* It was assumed at appraisal that, in addition to the positive impact of roads on the farm gate price received by farmers, there would be additional benefits in the form of lower costs for passenger traffic. This assumption was retained in the PCR estimate and the audit estimate. Here some double counting is likely because on village roads passengers and produce often travel together and the cost of depreciation is probably factored into the price that farmers receive for their produce; also on these small roads the amount of passenger traffic is likely to be small and, anyway, difficult to calculate. This is not a trivial point because the PCR assumes that passenger vehicle cost savings will grow by 5 percent per year over the usable life of the investment, so that 23 years after project start-up they account for 38 percent of net benefits.
3. *Costs.* In addition to the project investment costs, costs include road maintenance at B20,000/km (US\$800/km) annually and road rehabilitation at B100,000/km (US\$4,000/km) every five years. These are the assumptions made in the PCR and they were retained in the audit estimate because the data on road maintenance were very patchy. It is assumed that if these expenditures were lower in practice there would be a corresponding reduction in benefits from passenger vehicle cost savings: the net effect would be zero.

Second Land Titling Project: Economic Analysis¹

1. The Second Land Titling Project (LTP2)—in common with the First and Third projects—did not estimate the rate of return to titling. This annex reviews the available evidence on the economic benefits provided by the land titling activities and estimates a rate of return. Only the rural land titling activities are covered in this analysis; neither the much smaller urban land titling activities nor the valuation activities of LTP2 are included.

Costs of Titling

2. Table 1A shows the costs incurred by the project in its land titling activities. Taken alone, these amount to US\$32 per title, or US\$34 per hectare, as shown in Table 1B.² To these costs, it would be reasonable to add at least a portion of the other project costs, such as institution building, technical assistance, and training. Without these overhead expenditures, it is likely that the project would have been less effective. Conversely, it would be inappropriate to charge the entirety of these costs to the current land titling activities, since they are also intended to benefit future titling activities (including the Third Land Titling Project, currently underway).³ Adding half the overhead costs results in a cost per title of US\$36, and a cost per hectare of US\$39.

Table 1

Table 1A: Costs of Titling		Table 1B: Cost per Title and per Hectare			
	(B million)		% of Overhead Cost Included		
			0	50	100
Base Cadastral Mapping	552	Total cost (B million)	1,636	1,859	2,081
Ground Survey (incl NS3K conv)	1,027	Cost per title			
Depreciation of Equipment	57	B/title	801	910	1,019
Total Titling Cost	1,636	US\$/title	32	36	40
Land Administration	209	Cost per hectare			
Institution Building	96	B/ha	860	977	1,094
TA and Training	140	US\$/ha	34.0	38.6	43.2
Total Overhead	445				

1. The author of this section is Stefano Pagiola, Environment Department.

2. The exchange rate at the time of the project's completion, B25.3 = US\$1, is used throughout this report. All prices are in constant 1995 values unless otherwise indicated.

3. The overhead expenses include US\$5.4 million for training and technical assistance. Although this amount was financed by a grant from the Australian International Development Assistance Bureau (AIDAB), it is included in the costs for two reasons: First, it is unlikely that this grant had no opportunity cost; if the funding had not been used for the titling program, it might have been available for other purposes. Second, including the costs of technical assistance provides a better estimate of the returns to titling that might be obtained if the Government of Thailand were to continue the program with its own resources or if another country in the region were to undertake a similar program.

3. At a 10% discount rate, these costs are equivalent to an annuity of US\$3.6 per title or US\$3.9 per hectare. In other words, as a first approximation, an increase in annual net benefits per hectare of about US\$3.9 per hectare is required for titling to break even. This provides an order of magnitude for the benefits estimates, although the actual break-even point will be slightly higher, since costs are borne early in the project and the benefits will be received in future.

Problems in Estimating Benefits of Titling

4. Surveys of selected provinces where LTP2 worked were undertaken before and after the project. However, these surveys have not yet been analyzed. Until the data from these surveys become available, the only way to examine the effects of land titling during the 1990s is to use available secondary data. Unfortunately, such data is only available at relatively aggregated levels, typically at the provincial level. This makes it extremely difficult to identify the effects of land titling. Provinces typically have substantial internal diversity; if data were available for smaller land units, it would be easier to control for differences in agroecologic and socioeconomic conditions. Titling is only one of the factors that affected each province. Moreover, the extent of titling activities varied substantially within provinces. In some provinces, a large proportion of total area was titled. For example, in Lampang province almost 70% of total area was titled under LTP2. In other provinces, such as nearby Phrae, only 5% of total area was titled under the project. Moreover, no data are available on either the initial or the final percentage of area or parcels titled in each province. Where a substantial proportion of a province already had titles prior to the project, one expects a lower impact from titling; likewise, one expects a lower impact where a substantial proportion of a province remains untitled after completion of project activities. Finally, with titling becoming almost universal throughout the North, Northeast, and Central regions, it has become increasingly difficult to carry out paired comparisons of titled and untitled areas. Remaining untitled areas tend to be scattered and often have particular constraints, such as location in areas where forest boundaries are uncertain or the existence of disputes over inheritance, which may make them unrepresentative.

Impact of Titling on Access to Credit

5. Data on household credit use in the 1991/92 and 1995/96 crop years obtained from household surveys carried out by the Office of Agricultural Economics of the Ministry of Agriculture were used to examine whether land titling still had a positive impact on credit, as was found in the earlier studies, during the period of LTP2.⁴ The results show that:

- (a) In every region, total credit use per household increased faster between 1991/92 and 1995/96, on average, in provinces where LTP2 worked than in the region as a whole. In provinces where LTP1 had worked, credit use increased faster still. Overall, the average increase in credit use in non-LTP provinces was 22%. In LTP2 provinces, average credit use increased by 31%; in LTP1 provinces, it increased by 95% (the

4. For the purposes of this analysis, the provinces considered as LTP2 provinces were: Chachoengsao, Chai Nat, Chanthaburi, Chon Buri, Nakhon Sawan, Prachin Buri, Rayong, and Trat in Central Region; Chiang Rai, Lampang, Nan, Phrae, and Uthai Thani in Northern Region; and Kalasin, Maha Sarakham, Mukdahan, Roi Et, Ubon Rathchathani, and Yasothorn in Northeastern Region. The LTP1 provinces were Chiang Mai, Lamphun(*), Mae Hong Son(*), and Phayao(*) in Northern Region and Buri Ram, Nakhon Ratchasima, Si Sa Ket(*), and Surin(*) in Northeastern Region; titling in provinces marked (*) was begun under LTP1 and completed during the first year of LTP2.

average increase for all provinces was 27%). These results, however, mask very considerable disparities within each group.

- (b) On average, the use of formal credit increased in both absolute and relative terms. In absolute terms, use of formal credit increased faster in provinces where titling was undertaken, once again with the increase being greatest in LTP1 provinces. The average increase in formal credit use was 37% in non-LTP provinces, 50% in LTP2 provinces, and 111% in LTP1 provinces. The results in terms of changes in the relative share of formal credit are very mixed, however, because of different initial conditions (in some cases the share of formal credit was already so high that it could not increase much; in LTP2 provinces in the North and Northeast, for example, formal credit already accounted for over 90% of total credit in 1991/92). Again, there are substantial disparities within each group.
- (c) Use of informal credit dropped in relative terms, though not always in absolute terms. Overall, the share of informal credit in total credit dropped fastest in LTP1 provinces.
- (d) Provinces where LTP1 worked had substantially lower than average levels of credit at the beginning of the study period. This is as expected, since an important criterion in selection of provinces for LTP1 was their relative level of poverty. By 1995/96, the difference was still present but smaller.
- (e) The increase in credit use, both overall and in LTP2 provinces, was lowest in Central region provinces. These provinces are among the richest farming regions in the country, and have a much longer history of credit use. Already in 1991/92, they had the highest average credit use (almost twice the national average). These provinces also had the highest share of informal credit use (24% in 1991/92, dropping to 14% in 1995/96). This is consistent with the results in Feder *et al's* study, in which credit use increased least as a result of titling in the Central region study site of Lop Buri, which had high levels of commercialization and a thriving informal credit market to support it.

These results show that the broadly positive impact of titling on credit use found in the earlier studies continued to hold during the period in which LTP2 operated. They also suggest that there is a lag before the full effects of land titling on credit use are felt. Because of the limitations noted previously, however, the available data do not allow a precise estimate of the extent of the impact on credit use.

Other Benefits from Titling

6. Efforts were made to use data on input use and crop yields to examine the effects of titling on production, but the results were mostly inconclusive. The yield changes experienced in each province, for example, were very sensitive to the definition of initial and final years, even when moving averages were used. Because of this, efforts to correlate titling with yield increases were extremely sensitive to model specification. In some cases, the expected positive correlation was observed; in others there was little, or even a negative, correlation. With more disaggregated and more detailed data, it might have been possible to better control for the impact of the multitude of factors other than titling which affected yields. It should also be borne in mind that impact on yields is only one aspect of the possible benefits of titling. Titling might also encourage or allow diversification into other crops or into non-agricultural activities. There is anecdotal evidence, for example, of land titles being used as collateral to finance education, migration, or non-agricultural investments in commerce and transport activities.

7. No data were available on the impact of titling on land values. Anecdotal information from farmers interviewed at random in the Northern and Northeastern regions suggests that land with titles sells for more. Farmers also expressed, and in practice have demonstrated, a willingness to pay fees to obtain titles to their land; since fees for titling are set at a nominal level (currently B110; at the time of LTP2 the fee was B90 or US\$3.6), however, they only provide a lower-bound estimate for the perceived benefits of titling. Farmers interviewed at random generally expressed a willingness to pay higher fees. More concretely, farmers unwilling to wait for the systematic adjudication process to reach their area have been willing to pay higher fees for sporadic adjudication of their land; during the years of the LTP2 project, about 34,000 titles were issued under this process. Although this represents only about 2% of the total titles issued during that period, it demonstrates that some farmers were not only willing to pay for their titles, but were willing to pay a premium to obtain the title a few years sooner than they would otherwise have done.

8. Although the analysis based on available secondary data provided only limited results, it and the more qualitative analysis based on interviews with knowledgeable observers carried out during the audit mission suggest that the results of the earlier studies of the benefits of titling are still broadly applicable in Thailand.

Returns to Titling

9. Table 2 shows the rate of return calculations for LTP2. The estimate of returns is based on the following assumptions:

- (a) Benefits are calculated separately for each region, since the results of the analyses of titling show that regional variations are important. The estimated increases in productivity and input use in each region are based on the results of the studies by Feder and others and by Onchan and Aungsumalin. They are then applied to region-specific production budgets for the major rice crop, which is the main agricultural product in all the regions (paddy accounted for 44% of farm land in Central region, 52% in Northern region, and 65% in Northeastern region).⁵ The costs and yields of several years have been averaged to avoid year-specific variations.
- (b) The estimated benefits are assumed to take 10 years to be fully realized, and to increase linearly beginning with the year in which each plot is titled.
- (c) In some cases, titling may not have any effect on production. For example, in areas where water availability is a limiting constraint, increased access to credit may not increase investment since few investments are likely to be profitable. To allow for this, it is assumed that there will be no benefits on 25% of titled plots. In addition, it is assumed that the benefits of NS3K conversion are smaller than the benefits of replacing lesser documents. The case studies document that NS3Ks already provide substantial benefits (in particular, the study by Feder and others includes NS3K holders in its definition of titled farmers) although the results of the Onchan and Aungsumalin study suggest that the benefits of NS4s are greater. To allow for this, the benefits of NS3K conversion are assumed to be only half as great as the benefits of conversion from lesser titles.⁶ The magnitude of both these adjustments is admittedly arbitrary.
- (d) For each region, the flow of benefits is then projected, based on the actual area titled in each region in each year of the project (and adjusting for the proportion which represents NS3K conversions, as discussed above). The resulting benefit flows are then discounted at 10%.
- (e) The discounted costs of project implementation are then subtracted. The amount and scheduling of expenditures is extracted from the LTP2's Implementation Completion Report. As mentioned earlier, the cost estimates include all of the titling costs (except for urban titling) and 50% of the overhead costs. Neither the titling fee paid by farmers nor the subsequent taxes they pay on any land transactions are included, since these are transfers.

10. Under these assumptions, the Net Present Value of the net benefits of the project is estimated to be about **US\$280 million**, with an Economic Rate of Return of about **34%**.⁷ Even assuming that titling has low or no benefits in some areas, the benefits of titling are sufficiently large in some areas, relative to the costs of titling, to make the overall project be quite beneficial.

5. The estimates of increased productivity are given as increments to the yield changes that would otherwise have happened; no separate adjustment for the without-project case is necessary, therefore.

6. NS3K conversions represented about 30-40% of total titles issued under LTP2, depending on the region.

7. Omitting the costs financed by grants increases the NPV to US\$282 million and the ERR to 35%.

11. Given the number of assumptions and *ad hoc* adjustments that had to be made, sensitivity analysis is very important.

- (a) Reducing the assumed increases in input use and yields by as much as 50% reduces the NPV to \$109 million and the ERR to 21%. A reduction in the assumed increases in input use and productivity of more than 80% is needed before the project becomes unprofitable.
- (b) The assumption that the full benefits of titling would only be experienced after 10 years on any given plot is already quite conservative. For each additional year that full benefits are delayed, the NPV drops by about \$15 million.
- (c) Doubling the proportion of titled area on which it is assumed that no benefits are experienced (to 50% of the area titled) reduces the NPV to \$166 million and the ERR to 26%. The project is estimated as breaking even if as little as 15% of the area titled receives the assumed benefits. Assuming that there is *no* benefit to NS3K conversion reduces the NPV to \$260 million and the ERR to 32%.
- (d) If the entire overhead costs are charged to the titling activities, the NPV falls to \$272 million and the ERR to 31%.

These results show that the conclusion that the LTP2 project was profitable is quite robust to even dramatic changes in the assumptions.



Land Titling Project Office
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 Bangkok, Thailand
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3 June 1998

Dear Sir,

Re : Thailand - Performance Audit Report
Second Land Titling Project (Loan 3254 -TH)

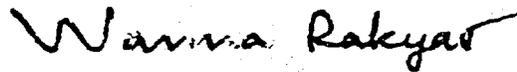
The Operations Evaluation Department has sent the draft Performance Report of the Second Land Titling Project (Loan 3254-TH) for comments, The following are some comments that I would like to make:

1. There is often little difference between the forest reserve and the area outside. (page 10, para. 1.5) The word "often" should be changed into "sometimes"
2. Government was concerned that the existing approach to Land Titling - waiting for Land holders to apply for a deed (sporadic adjudication) was taking too long. (page 25, para. 3.1) The existing approach before the Land Titling Project was that the Department of Lands sent a small number of mobile teams to do systematic adjudication in the field and with that approach it would have taken the Department of Lands 200 years to finish the target of the whole country
3. Fees applied to land transactions amount to roughly 10 percent of the sale price, compared to 2 percent in Australia. (page 30, para. 3.13) The fact is that the fees consist of 4 things; firstly a transaction fee which is 2 percent of the official valuation, secondly, stamp duty which is derived from 0.5 of official valuation, thirdly personal income tax. (income derived from selling property) which has a progressive rate starting from 5 percent and the last one is the business tax which is 3.3 percent of the sale price.
4. NS4 involves ground surveying (page 31, footnote 16) The fact is that NS4 involves 3 methods such as ground survey, photo map survey and photo map conversion.

5. The government will secure the subsidy in the long term because titling tends to increase the number of land transactions, increasing the revenue derived from stamp duties. (page 32, para. 3.18) The revenue derived from stamp duties, fees, and taxes as described in para. 3.13

6. The mandate of DOL (page 34, para 3.23) it should also include registration

Yours Sincerely,



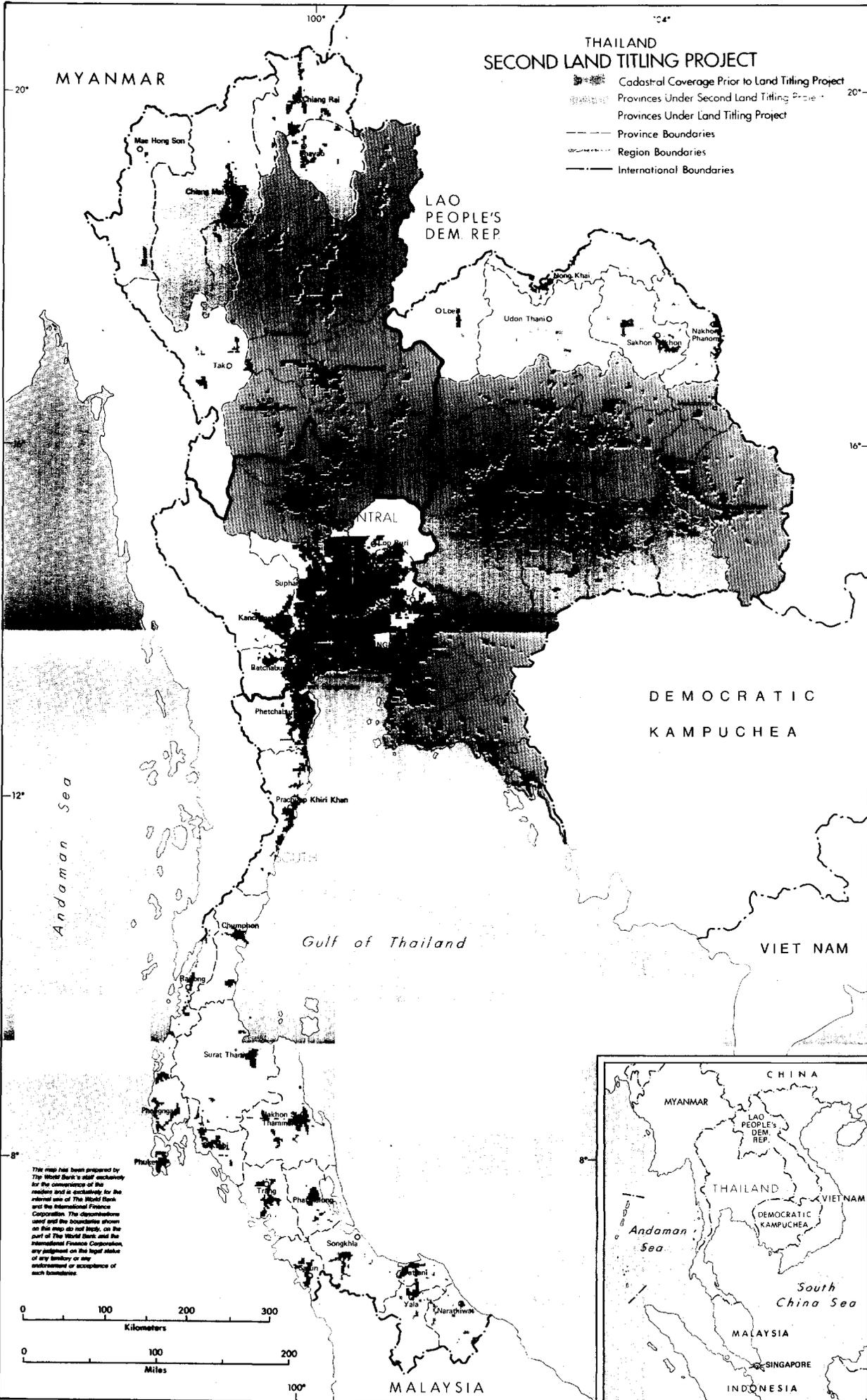
(Miss. Wanna Rakyao)
Land Titling Project Manager
Department of Lands

Mr. Roger Slade
Manager, Sector and Thematic Evaluations Group
Operations Evaluation Department
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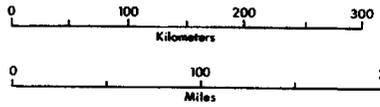
MAP SECTION

THAILAND SECOND LAND TITLING PROJECT

-  Cadastral Coverage Prior to Land Titling Project
-  Provinces Under Second Land Titling Project
-  Provinces Under Land Titling Project
-  Province Boundaries
-  Region Boundaries
-  International Boundaries



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JUNE 1990

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