

# Improving access to finance through land titling: evidence from the Hoskins Smallholder Oil Palm Project

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Analysis of survey data from a group of PNG smallholder oil palm growers with long-term (99-year) leases on state-owned land shows that ownership of land titles *per se* is not sufficient for improving access to finance from commercial financial institutions. The link between land titles and access to finance appears to be determined by the effectiveness of the institutions that define and enforce property rights to the underlying land and the individual land titles and not the ownership of land titles *per se*. Policy emphasis should be on designing land reform programs that lead to improved security of tenure. This aim is achievable when sufficient attention is paid to designing the institutions that identify the underlying land, the links to the individual land titles, and the system of land administration.

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The economics of land titling has been studied from three aspects: theoretical (institutional economics), historical (economic history), and empirical. The theoretical and historical analysis provides conclusive evidence that secure property rights play an important role in propelling economic growth and development. Motivated by this historical and theoretical underpinning, security of property rights is seen as an important policy instrument for alleviating poverty in developing countries.

The World Bank has been promoting land titling initiatives in developing countries for many years, having launched its initial policy in 1975 (World Bank 1975). The focus was on establishing private property rights or individual land titles. However, the success rate in implementing this policy is limited. In 2003, the Bank changed its policy emphasis to achieving security of tenure (World Bank 2003). In other words, individualising land titles is not the only option. Different arrangements



that ultimately provide security of tenure should be encouraged. Having analysed arrangements from various developing countries, Fitzpatrick (2006) concluded that there is no best-practice model. Every country has to design its own framework. But the aim—achieving tenure security—should remain the same because security of tenure provides the incentives for investment and the supply of credit.

The dismal policy outcome motivated more rigorous empirical analysis. The first elaborate empirical framework was by Feder, Onchan, Chamlamwong and Hongladarom (1988). Their conceptual framework suggests that land with title impacts positively on productivity via incentives to invest and access to credit. Improved productivity leads to increases in incomes and land prices. The authors used data from rural Thailand for their econometric tests and found support for this framework. However, the empirical analysis that followed the seminal work by Feder et al. (1988) continues to produce mixed results.

This article uses data from Papua New Guinea, a country in which 97 per cent of the land remains under customary land tenure, past efforts to reform customary land tenure have largely failed, and the 3 per cent of land assumed to be under state ownership appears to be under threat from claims by the new generation of customary landowners. The data used was generated from a purpose-designed questionnaire aimed at empirically testing the predicted link between land title and access to credit.

The analysis suggests that the link between land titles and access to credit may not be direct and/or automatic, as theory seems to suggest. Instead, the link appears to be a function of the effectiveness of the institutions that define and enforce the property rights on the underlying land and the individual land titles. The first is

a function of the legal, social and political system, while the latter is a function of the system of land administration. With respect to policy, the emphasis should be on designing land reform programs that lead to improved security of tenure. This aim is achievable when sufficient attention is paid to designing the institutions that define the underlying land, the links to the individual land titles, and the system of land administration.

## Conceptual framework

Recent economic analysis of land titling has its theoretical origins in institutional economics, largely motivated by the works of economic historians. Property rights are seen as social conventions that define and oversee the distribution of benefits generated by the use of land (World Bank 2003:xxii). Property is therefore not only an asset but also a consensus between people on how the land is held, used and exchanged (de Soto 2000). When the property rights are formalised, these social conventions are 'backed up by the power of the state' (World Bank 2003:22). When they are not formalised, informal institutions oversee the access to and distribution of the benefits from the land. Land titling initiatives are generally about formalising informal property rights.

Land titling initiatives are normally justified on the following grounds. First, land titling reduces the problem of asymmetric information, provide an institutional framework to facilitate land sales, and assure any lender that the borrower has the right to dispose of the land (Binswanger, Deininger and Feder 1995). Second, the documentation of land rights accords land its credibility as collateral, impacts on the willingness of the lender to lend, and promotes efficiency in the credit market



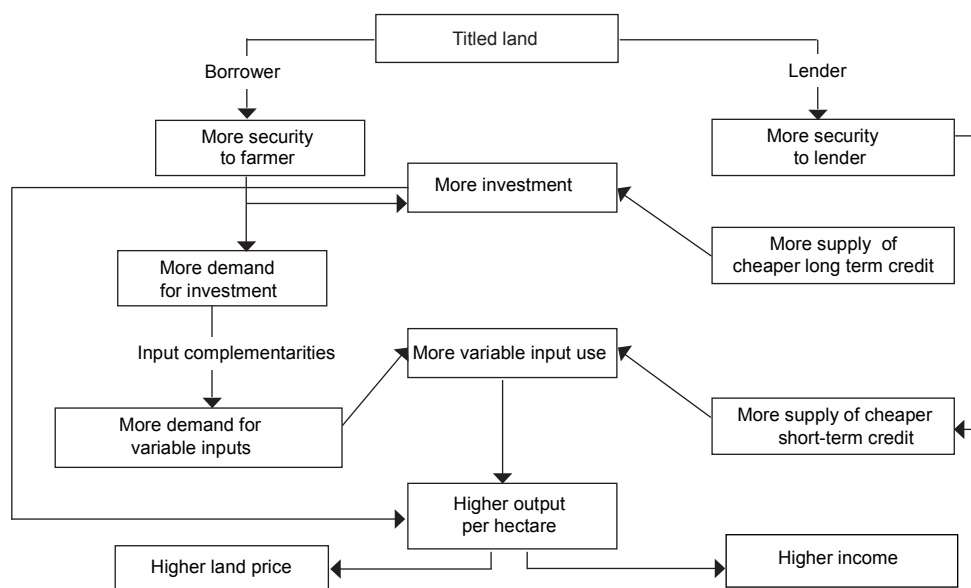
(Feder et al. 1988). Third, the existence of a public registry assures potential buyers or renters that the rights they are about to buy belong to the seller (Binswanger et al. 1995). The lack of land titles, on the other hand, raises the cost of credit to the poor (Feder, Onchan and Raparla 1988) and renders land assets as dead capital (de Soto 2000).

Figure 1 illustrates the initial framework on the economics of land titling, confirmed by econometric results using data from rural Thailand (Feder et al. 1988). The framework depicts land titling impacting on productivity through two different but complementary channels. One is through the borrower's side and the other is through the lender's side. The borrower's link (investment link hereafter) shows title security increasing demand for investment and variable inputs. The supply side (credit link hereafter)

complements this with increased supply of long-term investment and short-term credit. The positive impact on productivity (higher output per hectare) subsequently translates to higher incomes and land prices.<sup>1</sup>

The conceptual framework is based on the premise that credit transactions are inherently risky (Feder and Nisho 1999). Lenders advance the loan against a promise by the borrower to repay the principle with interest. Because the lender has less information than the borrower about the prospects of full and timely repayment, collateral arrangements become important. Collateral improves the information content about borrowers and guarantees loan repayments. Land with title is a fixed asset and therefore important loan collateral—in fact, the most important collateral.<sup>2</sup> Without a title to the land, lenders cannot be assured

Figure 1 Land ownership security and farm productivity: a conceptual framework



Source: Adapted from Feder, G. and Nisho, A., 1999. 'The benefits of land registration and titling: economic and social perspectives', *Land Use Policy*, 15(1):25-43.



that the intended borrower has rights to the land to be mortgaged. For these reasons, presentation of a formal land title is often a precondition for loans from the mainstream financial institutions.

Various rigorous empirical analyses have been applied to this framework using data from developing economies.<sup>3</sup> Studies from Southeast Asian countries and, to an extent, Latin American countries have affirmed that access to land titles impacts positively on access to credit, investment and productivity. However, the evidence from African country studies has been inconclusive.<sup>4</sup> More recent studies have analysed the credit and investment links separately. Carter and Olinto (2003), for instance, investigated the credit link, while Schweigert (2006) analysed the investment link. The focus of this article is on the credit link, while Chand and Yala (2008) use the same data set to investigate productivity through the investment link.

Under certain conditions, formal land titles may have little impact on access to credit. The World Bank identifies four of these conditions as

- where the option for foreclosure is not feasible
- financial infrastructure capable of offering credit is not available
- the profitability of the economic activity of the potential borrowers is low, and
- the transaction costs of lending are high—in particular, the fixed costs related to the screening of applications or foreclosure, which are independent of the loan amount (World Bank 2003:49–50).

Each of these conditions may be important in the context of a developing country such as Papua New Guinea. Analysing the impact of each of these conditions in the context of Papua New Guinea and the Pacific island countries is part of ongoing research. This paper is

concerned with the first condition, that is, where the option of foreclosure is not feasible. Foreclosure is the legal process in which the lender repossesses the collateral in the form of the real property or asset or rights to the asset such as a lease when the borrower has defaulted on the loan secured by the claim on the property or asset. The lender would have to be fully assured of the borrower's rights over the property and that foreclosure is feasible. Certifying this condition is an important aspect of the loan approval process of financial institutions. The option for foreclosure is therefore a prerequisite, if an asset is to be used as collateral. According to Feder, Onchan and Raparla (1988), if land titles cannot be foreclosed, the merits of the collateral and its utilisation would both be diminished.

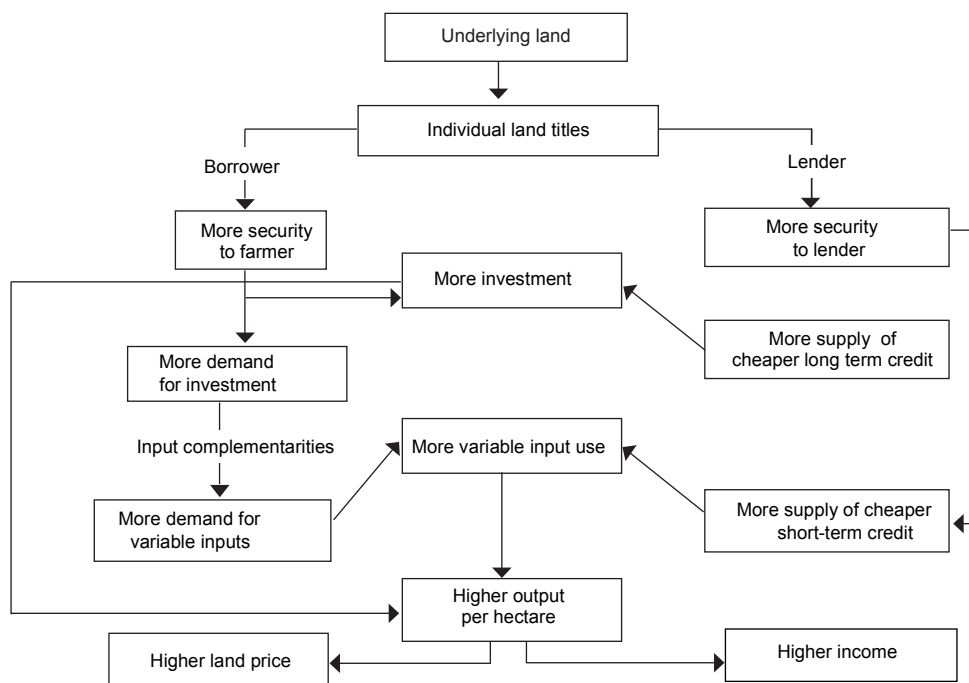
### **Modified version of the conceptual framework**

The initial analytical framework has been redrawn and is illustrated in Figure 2. The framework now begins with the type of 'underlying land' at the top and titled land renamed as 'individual land title'. The rest of the diagram and the interpretations are the same as in Figure 1. Figure 2 makes clear that individual land titles originate from the underlying land. The underlying land could be land owned by the state, private freehold, or customary-owned land. In order for the individual titles to be tradeable, the property rights over the underlying land should be defined, secure and stable, and second, the property rights to the individual titles are defined, secure and stable.<sup>5</sup>

This framework presents two tiers of property rights: underlying land and individual land titles (Figure 2). The two tiers are linked to the extent that individual land titles have their origin in the underlying land. Figure 2 is therefore far more representative of the real world. For instance, in many parts of the western



Figure 2 Land ownership security and farm productivity: a modified conceptual framework



World, the underlying land is largely owned by the state. In contrast, a larger share of land in Africa and the South Pacific islands region is owned by customary owners.

The security of the underlying land is by and large a function of the social, political and legal environment. However, insecure property rights to the underlying land have significant implications for the security of property rights over the individual rights to the land. If property rights to the underlying land are insecure, *all* individual rights are insecure. The expected land title-credit link would have failed right from the beginning. Multiple claimants to the underlying land and weak definition and enforcement of property rights to the underlying land are important factors likely

to undermine the status of the property rights to the underlying land. Land held under pure customary tenure arrangements with multiple claimants is an example of the former. A dispute between the state and customary owners over the ownership of the underlying land is another example. An example of the latter would be the case of weak and dysfunctional states.

The security of the property rights to individual land titles is a function of the formal land administration system. The land administration system is the process of determining, recording, and disseminating information about the tenure, value and use of land (UNECE 1996). These functions are grouped into two: a registry and a cadastre (World Bank 2003:70). The registry holds



all information on land ownership and transactions, while the cadastre contains information on the parcels of land as defined by surveys and recorded on maps, with other relevant information on each parcel. The land administration system is therefore a central depository of the individual property rights. These rights may be purchased or rented by the users. Title transfers, transmissions, and claims over lost or destroyed titles are all integral parts of the land administration system.

The importance of the land administration system is underpinned by the fact that all mainstream commercial financial institutions undertake land title file searches as part of the loan approval process. Their objective is to ensure that the land title offered as collateral is accurate, and registered in the name of the applicant; that no other mortgage is linked to the same title; and that the conditions of leases have not been breached. When the land title is in a different person's name or cannot be verified, or lease conditions breached, a formal lender cannot be assured that the loan applicant is indeed the owner.

The theoretical predictions from the analysis based on Figure 2 are three-fold. First, insecurity of the property rights over the underlying land would result in nullifying the bankability of all land titles. Second, insecurity of the property rights to the individual land titles would make them not bankable. Third, a combination of the two has the potential to render all individual land titles insecure.

Foreclosure would be deemed not feasible when land titles are insecure, thereby diminishing or negating their value as collateral. In that case, both the investment and credit channels would either cease to function or operate at sub-optimal levels, producing sub-optimal outputs. Investments would, by and large, be short-term, small in

size, and funded largely by self-financing, informal financial institutions, and/or state-sponsored financial institutions (subsidised credit).

In the next section, the revised analytical framework is used to explain the credit behaviour of smallholder oil palm growers in Papua New Guinea who hold 99-year agricultural leasehold titles to state land.

### The survey area

The majority of the land in Papua New Guinea is under customary land tenure. The property rights over customary land are defined and governed by customary law, which varies across the many distinct language and ethnic groups. However, the practice of customary law is sanctioned by the Underlying Law Act (2000) and the Papua New Guinea National Constitution.

State-owned land, which constitutes the majority of the 3 per cent of land with formal title was alienated largely prior to independence in 1975. The larger part of the state land is reserved for use by state institutions. The remainder is leased to the private sector under various types of lease covenants, namely, residential, agricultural, commercial, and industrial.<sup>6</sup>

The remainder of the land with formal title is classified as private freehold. The two subclasses of private freehold are freehold on land alienated from customary landowners prior to independence, largely by private companies (mainly for agricultural development) and churches, and freehold on land converted by customary land owners through the application of the Land Tenure Conversion Act (1963). The administration of land with formal titles, state land and freehold land, is defined by the Land Act (1996) and related laws.



### Hoskins Smallholder Oil Palm Project

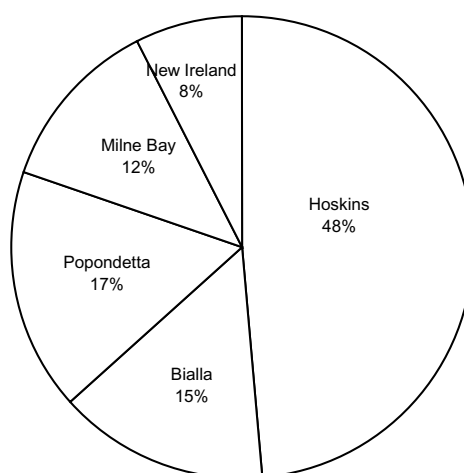
The smallholder oil palm sector is well suited for analysis of the link between land title and credit in the context of Papua New Guinea for several reasons. First, oil palm is cultivated exclusively under the Nucleus Estate (NE) farming system. In the NE farming system, smallholders are linked to an estate sector. The estate sector owns plantations, processing facilities, and the marketing system, and purchases produce from the smallholder sector. Two statutory authorities provide extension and research services to the smallholder sector. The Oil Palm Industry Corporation (OPIC) is the extension service agency while the Oil Palm Research Association (OPRA) is the research service agency. Smallholder oil palm growers are charged a levy to fund the operations of OPIC and OPRA.

Second, the industry has a comprehensive database; something that is non-existent in the other agricultural sectors. Third, the industry has a long history, having been

established in 1964 and expanded over time to become the country's leading agricultural exporter. Fourth, the smallholder oil palm sector operates under three different types of land tenure systems. Two of these are linked to customary land tenure while the third is linked to land owned by the state. Finally, the sector has links to several financial institutions, including two commercial banks into which the income from the sale of the smallholders' produce is deposited. Of the five oil palm projects in the country, the oldest, largest, and most successful project is Hoskins, in the West New Britain Province (Figure 3). The data used in this study was generated from a survey of smallholder oil palm growers from the Hoskins Project.<sup>7</sup>

Three types of smallholder oil palm growers can be found in the Hoskins Project. The first is the Land State Settlement (LSS) schemes growers who have 99-year agricultural leasehold titles on land owned by the state. The second is the Village Oil Palm (VOP) growers cultivating oil

Figure 3 Fresh fruit bunch production, by project, 2003



Source: Ian Orrell, Email Comm, Director OPRA, 1 December 2004.



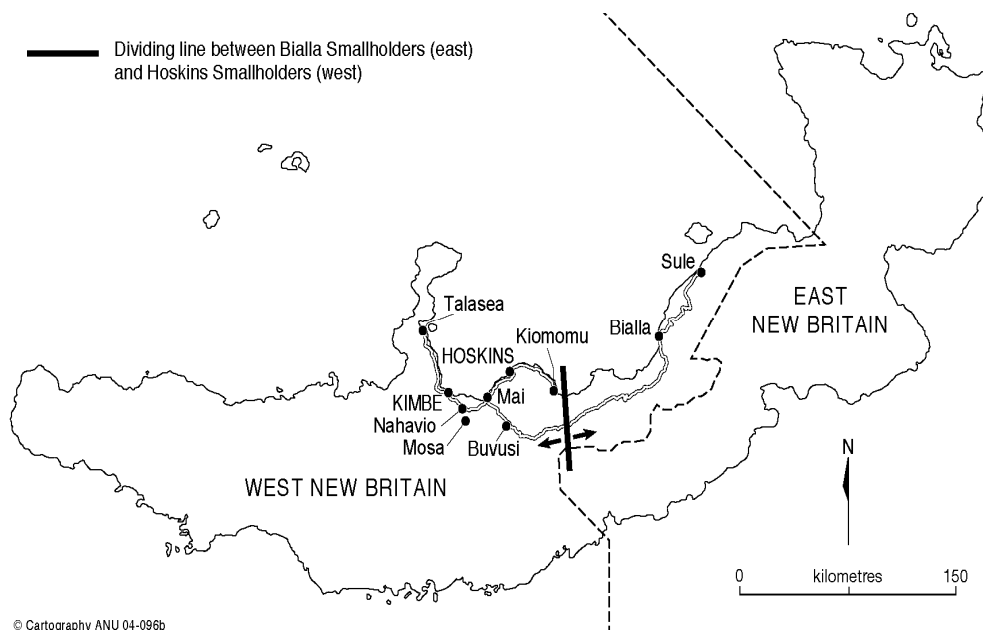
palm on their own customary land. The third is the Customary Purchase (CP) growers cultivating oil palm on land they 'purchased' from customary landowners. CP growers are therefore not from the customary landowning unit, do not have direct cultural relations with them, and are from other parts of the province, or country, or are foreigners. Map 1 provides the location of the Hoskins Smallholder oil palm area. LSS farms can be found between Kimbe town and inland towards Buvusi. CP growers are to be found in the area surrounding Kimbe town; while VOP grower blocks extend outwards towards the coast, both east (Koimomu) and west (Talasea) of Kimbe.

The focus here is on the credit behaviour of LSS farmers, because they have formally

defined 99-year agricultural leasehold titles on land owned by the state. Linking back to the conceptual framework represented in Figure 2, the underlying land for the land farmed by LSS growers is defined as state land.<sup>8</sup> The individual land titles have 99-year agricultural lease status. According to Figure 1, these farmers should not have any difficulties accessing credit because they have land titles. However, with respect to Figure 2, the access to credit would depend on the security of the property rights on the underlying land, the security of the individual land titles, or a combination of the two.

At the time of the survey, there were 1,788 LSS farmers. A diverse range of financial institutions were also found in the Hoskins Project area. These can be grouped

Map 1 Map of West New Britain Province showing the smallholder project areas



Source: Yala, C., 2004. The Cost of Funds and Access to Credit: the case of smallholder oil palm growers in Papua New Guinea, PhD Thesis, The Australian National University, Canberra.





into three clusters: informal, formal, and state-sponsored. Friends and relatives, rotating savings and credit associations, moneylenders, and the in-kind credit scheme sponsored by the Estate Company constitute the informal sector institutions. Through the Estate Company sponsored in-kind credit scheme, farmers obtain seedlings, farming tools, and fertiliser. Repayment is through direct deductions from the income from the sale of the Fresh Fruit Bunch (FFB). Within the formal financial sector category, there were two commercial banks and two Savings and Loan Societies.<sup>9</sup> All

farmers have a direct link with the two commercial banks because payments from the sale of their FFB are deposited into their nominated bank accounts. In contrast, their membership of the two savings and loan societies is voluntary. Government-sponsored financial institutions included a branch of the National Development Bank and a Women's Micro-Credit Scheme. At the time of the survey, the sum of K2.5 million had been allocated by the Government for on-lending to all the smallholder oil palm growers in the country. These loans were available through the National

Table 1 Characteristics of sample households

	Land state settlement	Village oil palm	Customary purchase	Sample size
Sample size	48	48	32	128
Age of principal farmer**				
Oldest	80	74	77	80
Average	45	41	42	43
Youngest	23	23	22	22
Gender				
Male	40 (83)	43 (90)	32 (100)	115 (90)
Female	8 (17)	5 (10)	- (-)	13 (10)
Education (years of schooling)				
Highest	17.4	14.0	15.5	17.4
Average	5.6	7.4	6.9	6.6
Lowest	-	-	-	-
Household size				
Highest	29	15	34	34
Average	12	8	12	11
Lowest	3	1	1	1
Dependents				
Highest	18	10	30	30
Average	6	4	5	5
Lowest	1	-	-	-

**Notes:** Figures in brackets are percentages of the sample total for each category. The principal farmer was the interviewee. The Harvest Card issued by OPIC is in this person's name and OPIC recognises this person as the principal farmer.

**Source:** Author's survey.



Development Bank.<sup>10</sup>

### Sample selection

A detailed database managed by OPIC and the Estate Company provided the sampling frame for classifying farmers into the three land tenure types—LSS, VOP and CP. The database identifies each farmer (by name and a number), farm size, production, income, and credit history. The sample was chosen by random sampling (Deaton 1997:38), stratified by land tenure. The sample of 48 LSS (48 VOP and 32 CP were also selected) was randomly selected for the survey. Thirty extra growers (from each group) were selected as reserves for replacement during the survey. The reserve list was used when the first selected growers were difficult to find, either because they were out of the province, in hospital, or could not be found after making three attempts. The sample size is 3 per cent of the LSS population. Taking into account cost in terms of both time and money, this is considered an appropriate sample size.<sup>11</sup> Table 1 provides a summary of the main characteristics of this farming

community. Looking at the LSS farmers alone, 83 per cent of them were males, with the average education level being primary school, average age of 43 years, and an average of 12 people for every household. The LSS farm size was fixed at the initial time of project establishment at 6 hectares (4 hectares for oil palm and 2 hectares for the development of a homestead and food gardens, because the farmers were brought in from other parts of the country to settle upon and cultivate oil palm).<sup>12</sup>

### Survey results and data analysis

All three types of farms have individual land titles, because there is an individual farmer registered and it is into the bank account belonging to this farmer that the income from the sale of FFB is deposited. The title that LSS farmers have is formal, 99-year agricultural leasehold titles, and therefore should be acceptable as loan collateral. In contrast, VOP and CP land titles are not formal and therefore will not be accepted as loan collateral.

Table 2 Credit activities

Items	Land state settlement	Village oil palm	Customary purchase
Borrowers from in-kind credit scheme	48 (100)	48 (100)	32 (100)
Applicants to the National Development Bank	6 (13)	16 (33)	17 (53)
Successful applicants with the National Development Bank	1 (17)	1 (6)	- (-)
Applicants to commercial banks	2 (4)	4 (8)	2 (6)
Successful applicants with commercial banks	1 (50)	2 (50)	1 (50)

**Note:** Figures in brackets are percentages of the total for each category.

**Source:** Author's survey.



The data presented in Table 2 depict a different picture from what the theoretical framework predicts. The in-kind credit scheme, sponsored by the Estate Company, was the most popular source of credit for all smallholder oil palm growers.<sup>13</sup> This outcome may support the notion that insecure land title is not a deterrent to loans from informal financial institutions (Binswanger et al. 1995). However, the fact that the Estate Company is the monopoly buyer of smallholder produce is an important factor. The two Savings and Loan Societies did not appear to be providing any credit to these growers. The other informal financial institutions were also not a source of loans for investment. With respect to the three banks operating in the area, the National Development Bank received more applications than the two commercial banks combined. This could be explained by the fact that K2.5 million was made available by the government for on-lending to the smallholder oil palm growers at subsidised interest rates during the time of the survey. However, with respect to approvals, the commercial banks approved more loan applications than the National Development Bank. The loan applications and approval data seem to show that the commercial banks attracted quality applicants. In fact, the ownership of a savings account with the commercial bank concerned was an important requirement in applying for a loan.

Overall, however, these results show that the ownership of formal land titles did not have an impact on access to credit. With respect to Figure 1, the predicted land title-credit link appears to have failed. It is not possible to undertake quantitative analysis to establish the underlying factors because the number of successful applicants is too small to provide the degrees of freedom required. But these results provide evidence to support the view that, under certain conditions, formal land titles may have

little impact on access to credit. As stated earlier, analysing the role of each condition is part of ongoing research. In this article, explanations for the survey data results are provided using Figure 2. We rely on qualitative analysis of the survey data to focus on the role that the security of property rights over the underlying land and to individual land titles, or a combination of the two, may have played in undermining the potential link between land titles and access to credit.

### **Security of property rights over the underlying land**

Property rights over state-owned land, 'underlying land', in Papua New Guinea is largely insecure. The land was alienated by the colonial administration and the new generations of customary landowners are reclaiming these lands. Both legal and illegal (unauthorised occupation coupled with violence) claims are prevalent.

With respect to the formal process of claiming what was previously customary land, customary landowners can claim compensation through the National Lands Commission. The Land Registration Act (1981) established the Commission as an independent tribunal to adjudicate over land compensation claims. The purpose behind the establishment of the Commission was 'to give [a] last chance to the people to have some means of fair compensation for transfer of Native Land for public purposes to [the] State' (National Lands Commission 2001:4). The Commission's report in 2001 anticipated more state land claims as people have become more educated about land compensation claims (National Lands Commission 2001:12). In fact, the report listed claims of compensation over land in all major cities and towns in Papua New Guinea. Between 1999 and 2001, some 1,000 claims worth K180 million were awarded (Ruahmaa 2004). In 2002, the government



suspended the work of the National Lands Commission and later began defending these claims and won a case in 2007. The government has introduced amendments that changed the schedule and imposed stricter conditions for land compensation claims (this was done in 2006).

With respect to the security of property rights to land, the presence of the National Lands Commission and the process it administers undermines security over the property rights that define and enforce the rights over the underlying land. Even if the process is legally constituted and justified, the perception of the insecurity of the property rights over the underlying land has great implications for the bankability of individual land titles to the disputed land and other similar types of land. Over time, this process could result in institutionalising insecurity and eroding the status of the property rights over the underlying land, which is claimed to be owned by the state.

A recently completed survey of land within Port Moresby has revealed that squatter settlers have paid customary landowners for land that, officially, is owned by the state (Chand and Yala 2006). This information adds weight to the increasing anecdotal evidence depicting illegal occupation and claims to state land in Papua New Guinea. Furthermore, there is anecdotal evidence of the use of threats of violence to enforce legal challenges.

The Hoskins Smallholder Oil Palm Project is not immune to these problems. Koczberski, Curry and Gibson (2001) provide a good description of the conflict between customary landowners and smallholder oil palm growers in the West New Britain and Oro provinces. In 1991, a landowner uprising in the Kabugara Division on the Talasia peninsula resulted in 177 Hoskins LSS growers being forcefully evicted by traditional landowners (Map 1). The land has since been returned by the state to the

traditional landowners. The LSS farmers were paid less than adequate compensation for the loss of property, which included homesteads, producing oil palms, food gardens, and numerous other small-scale enterprises. The state went a step further by providing funds to the landowners to develop a mini-estate oil palm project on the reclaimed land. This example demonstrates the weakness of the state in providing security over the land it owns and has contributed to the weakening of the security of the property rights over the underlying land on which the Hoskins Smallholder Project has been developed.

An attempt was made to measure the level of insecurity from the perspective of the LSS growers, given the prevalence of land claims by the new generations of customary landowners in Hoskins. The data presented in Table 3 document the implicit payments made by LSS and CP growers and the actual receipts of payments by VOP growers. These implicit payments consist of contributions to major community activities of the customary landowning communities. Marriages, compensation payments, funerals, church buildings, and rituals were the main community activities funded through the implicit payments system. Using these implicit payments as a crude measure of land rentals, there has been a noticeable shift from paying their legal land rents to the state to paying customary landowners. This conclusion is supported by an analysis of the data on land rental arrears (see Table 6).

The preceding analysis depicts multiple claimants—the state and groups of customary land owners—over the underlying land. The state has institutionalised insecurity over state land through the NCL compensation claim process and failed to provide security to property rights over the underlying land against illegal claims, as was in the case of Kabugara. The recently released National

Table 3 **Implicit land rental payments to customary landowners**

Type of grower	Paid implicit rent	Does not pay implicit rent	Not asked	Total
Land state settlement	20 (41)	26 (55)	2 (4)	48 (100)
Village oil palm**	13 (27)	35 (73)	- (-)	48 (100)
Customary purchase	28 (88)	3 (9)	1 (3)	32 (100)
Sample	61 (47)	64 (50)	3 (2)	128 (100)

**Note:** Figures in brackets are percentages of the total for each category. Village oil palm grower respondents were asked if they received such payments.

**Source:** Author's survey.

Land Development Taskforce report has recognised the severity of this problem and has recommended that the future of alienated land be openly debated with a view to establishing a new framework that safeguards the security of the property rights on all the land owned by the state (National Land Development Taskforce 2006:22).

Because the property rights over the underlying land are insecure, the smallholder oil palm growers do not have any incentive

to seek finance from the mainstream financial sector institutions. Consequently, only eight loan applications were submitted to the mainstream financial institutions. In any case, the financial institutions would not have accepted the individual land titles as collateral because they are aware of the problems associated with the security of the property rights over the underlying land. The commercial financial institutions are aware that foreclosure of these land

Table 4 **Status of titles on leased state settlement land**

Item	Farmers (number)	Per cent of total
Deceased father's name	12	25
Father's name	15	31
Interviewee's name	15	31
Title change pending with register of titles	2	4
Brother's name	1	2
Husband's name	2	4
Deceased husband's name	1	2
Total	48	100

**Source:** Author's survey.



titles would not be feasible. This problem alone would have diminished the collateral value of all the individual land titles. Consequently, all LSS land titles in the Hoskins Smallholder Oil Palm Project are deemed insecure and not bankable.

### Security of individual leasehold titles

The National Development Taskforce (2006) has recently concluded that the system of land administration in Papua New Guinea is inefficient and dysfunctional and has recommended a major overhaul of the entire system of land administration. Based on this report's finding, it would be safe to assume that the property rights to the individual land titles for land with formal titles in Papua New Guinea are generally insecure. The survey data was used to analyse the extent to which the ineffectiveness of the national land administration system may have impacted on the security of property rights in the form of the agricultural leasehold titles held by the smallholder oil palm growers.

Three aspects of land administration investigated in the case of the Hoskins Project were

- proof of ownership of land titles
- title transmission
- land rentals.

With respect to the proof of ownership of land titles, data presented in Table 4 show that 69 per cent of the farmers in the sample did not have land titles in their own names. Plausible explanations were that the titles had not been formally transmitted or transferred, or the owner's copy of the land titles may have been lost or destroyed. The Land Act (1996) defines the processes for land title transfers and transmissions, and claiming of lost or destroyed titles. However, the inefficiencies in the system of land administration, which include the questions of accessibility, could explain the fact that the majority (69 per cent) of these farms are being

farmed by farmers other than those whose names are on the land titles.

With respect to transmissions (inheritance), 26 per cent of the survey farms were deceased estates. Although Papua New Guinea has two inheritance systems—the formal inheritance system under the Wills, Probate and Administration Act 1966 and the informal inheritance system, which is governed by the various customary laws of Papua New Guinea and sanctioned by the Customary Recognition Act (2000) and the National Constitution—the transmission of deceased estates with formal land titles is through the application of formal law. The LSS land titles are formal titles and therefore need to be transmitted formally. However, the survey data indicates that a growing proportion (26 per cent) of the deceased estates have been transmitted informally. The informal inheritance system that predominates in the Hoskins project is facilitated through three arrangements with characteristics that resemble traditional inheritance systems

- informal tenancy-in-common: siblings take turns in accessing the farm, the accommodations on the farm, farming equipment and, more importantly, the income from the block for a specified period of time, ranging between 6–12 months
- conversion to common property: siblings take turns to harvest and receive the income for their immediate family use on a monthly rotation system. This practice is referred to as *makim mun* in pidgin English or simply 'harvesting in rotation'. The data show that more than half of the LSS farmers are engaged in this practice (Table 5). Earlier studies also reported this practice in the Biella (Koczberski and Curry 2003), Hoskins and Popondetta projects (Koczberski et al. 2001) and explained its origin to the



growing population pressure on the settlement blocks.<sup>14</sup>

- informal subdivision: a sibling is given the right to harvest a certain area (in most cases 2 hectares) from the block and use the income for their immediate family. OPIC issues a harvest card, classified as the 'C' card, to identify the sibling.<sup>15</sup>

The above analysis shows that the dominance of the informal inheritance system converts land formerly owned by the deceased person into a farm with multiple claimants, deemed to be inheritors by customary law. In addition to the ineffectiveness of the formal land title transmission system, it could also be the case that the formal inheritance system lacks social legitimacy and the farmers prefer informal over formal inheritance. The high population density on these farms, the

restrictions on migration due to the lack of employment opportunities elsewhere, and the possibility of migration to their village of origin being diminished by over population and the loss of contact over generations, are other possible explanations for the lack of interest in formal inheritance.

The land rental payment is an important condition in the lease agreement between the lessor, the state, and the lessee, the farmer. Defaulting on land rentals would imply non-compliance. The state, through the Department of Lands and Physical Planning, has the power to forfeit land titles for non-compliance. LSS farmers, as holders of agricultural leasehold titles, are required to pay an annual land rent, which is set as 5 per cent of the unimproved value of the land. However, data presented in Table 6 shows that 88 per cent of the farmers have

**Table 5 Harvesting in rotation**

Grower type	Rotation harvest	No rotation harvest	Not yet harvested
Lease state settlement	25 (52)	23 (48)	- (-)
Village oil palm	24 (50)	22 (46)	2 (4)
Customary purchase	12 (38)	18 (56)	2 (6)
Total in sample	61 (48)	63 (49)	4 (3)

**Note:** Figures in brackets are percentages of the total for each category of growers in the sample.

**Source:** Author's survey.

**Table 6 Lease state settlement rental arrears**

	In arrears	No arrears	Do not know	Not asked
Number	42 (88)	2 (4)	3 (6)	1 (2)

**Note:** Figures in brackets are percentages of the total LSS growers in the sample (48).

**Source:** Author's survey.



accumulated land rental arrears. At the time of the survey, it was revealed that this has been the case for over ten years. During this period no forfeiture actions have been undertaken.

The survey data confirms common knowledge; that the system of land administration is dysfunctional. Since the majority of these farmers do not have land titles in their own names and have accumulated land rental arrears, they are not in a position to submit a loan application that requires the surrender of a land title as collateral. If loan applications were submitted, the commercial financial institutions would have rejected them because there would be a mismatch between the name on the application and the land titles surrendered as loan collateral; and the accumulated land rental arrears.

Linking the analysis in this section to the conceptual framework (Figure 2), all land titles in the Hoskins smallholder oil palm project are not bankable because the property rights over both the underlying land and the individual land titles are insecure. This is clearly evident when comparing the data presented in Table 3 and 6. While 41 per cent of the LSS growers made implicit rental payments to customary landowners, 88 per cent of them had accumulated debt on land rentals to the state. This result demonstrates that the LSS growers feel insecure and their allegiance is divided between two landowners: customary landowners and the state. The balance appears to be tilting in favour of the customary landowners.

It is no wonder then that only eight (17 per cent) of the LSS farmers submitted a loan application, of which only two (25 per cent) were to a commercial bank. Only two (25 per cent) succeeded: one through the National Development Bank and the other through a commercial bank. Ownership of LSS land titles were not considered as important collateral for loan applications, especially by

the commercial banks. The data in Table 2 demonstrates this when more VOP growers submitted a loan application and obtained a loan from the commercial banks than the LSS farmers. This shows that the LSS land titles, though formal, had no collateral value, similar to the VOP and CP land titles.

## Policy implications

A modified version of the standard conceptual framework linking land title with access to credit was used to analyse the credit behaviour of smallholder oil palm growers with 99-year agricultural lease titles on state land in Papua New Guinea. The survey data revealed that only 17 per cent of the farmers submitted a loan application and only 25 per cent of these applicants were successful. These results reveal a very weak link between land title and access to finance. The detailed analysis revealed that the property rights over both the underlying land and the individual land titles were insecure, thereby making forfeiture not feasible and consequently eroding the collateral value of these land titles.

The security of the property rights over the underlying land has been eroded by the institutionalised process of land compensation claims through the National Lands Commission, the illegal land claims by new generations of customary landowners, and the state's inability to enforce the property rights that define the status of the underlying land. The insecurity with respect to the property rights over the underlying land has nullified the security of property rights over all the individual LSS land titles in the Hoskins project.

The dysfunctional system of land administration, evidenced by the prevalence of farmers without formal land titles, the large number of deceased estates, and the large proportion of farmers accumulating





land rental arrears, has undermined the security of the property rights to individual land titles. As a result, an informal system of land administration, in the form of informal tenancy-in-common, transmission, and subdivision arrangements, has superseded the formal system.

The land titles (LSS) from the Hoskins project are therefore 'dead capital'; not because of the lack of land title as argued by de Soto (2000), but because the property rights that define the status of these titles are insecure. The proper definition and enforcement of the property rights over the underlying land and the individual land titles would improve the collateral value of land titles. While the security of the property rights over the underlying land is a function of the legal, political and social system, the security of the property rights to the individual land titles is a function of the land administration system. Inefficiencies in either or both of these two systems will have the same effect—to render land titles unbankable. Therefore, it is the effectiveness of these institutions that 'breathes life into dead capital' and not land titles *per se*.

## Conclusion

There are significant policy implications from this analysis for Papua New Guinea and other Pacific island countries that are embarking on or contemplating land reform initiatives. The analysis demonstrates that the framework setting out the economic rationale for pursuing land titling initiatives could be oversimplifying reality in developing countries. This is so for Papua New Guinea (and other Pacific island countries) where the system of customary land tenure, claims over state land by new generations of customary landowners, inefficiencies in systems of land administration, and weaknesses in the

state's ability to define and enforce property rights predominate.

The implications are clear. First, defining the property rights to the underlying land and the institutions that administer these property rights is fundamental. Failure to do so renders all land titles unbankable. Second, defining and enforcing property rights over individual land titles and making the system of land administration effective are also important. If the land administration system is ineffective, this will nullify the bankability of individual land titles, even if the property rights over the underlying land is secure.

Applying a modified conceptual framework to the smallholder oil palm sector in the Hoskins Project in Papua New Guinea, it was found that insecurity of the property rights over the underlying land and the ineffectiveness of the land administration system have collectively undermined the collateral value of the 99-year agricultural leasehold land titles owned by the smallholder oil palm growers. The appropriate policy response is for the state to redefine the property rights over the underlying land and substantially improve the system of land administration.

The recently approved national land policy initiative—the National Land Development Program—of the Government of Papua New Guinea aims to address these issues. Failure to successfully implement this land policy agenda would mean that investment, production, income and land prices would remain at sub-optimal levels. Farmers would not have incentives to invest in productivity-enhancing technology as they are restricted to reliance on financing from the informal financial institutions, which generally deal in small amounts with short repayment terms at high interest rates. The key to unlocking the true economic potential of these farms is in providing the appropriate institutional frameworks and systems of land administration that will provide security of land tenure.



## Notes

- <sup>1</sup> Byamugisha (1999) generalised the initial framework to directly link land titles to economic growth and provided empirical support for the framework using data from Thailand.
- <sup>2</sup> The important role that collateral plays in credit allocation is fully discussed in the literature (Barro 1976; Benjamin 1978; Plout 1985). Coco (2000) provides a survey on the pervasive use of collateral in credit markets.
- <sup>3</sup> See Feder and Nisho (1999) and World Bank (2003) for a summary of this literature.
- <sup>4</sup> The existence of a well developed indigenous land rights system, a lower level of agricultural intensification, and the lack of formal credit markets were found to have contributed to the African experience.
- <sup>5</sup> Arrunada (2003) makes an important distinction between property rights and contract rights. This article follows the trend in the economics literature that lumps the two together.
- <sup>6</sup> Over the years, the state has used provisions in the Land Act (1996) to acquire land for development purposes.
- <sup>7</sup> The survey data was generated in 2003 for the author's PhD research.
- <sup>8</sup> In contrast, the underlying land farmed by CP and VOP growers is customary owned. With respect to Figure 2, land in the Hoskins Smallholder Oil Palm area is on two types of underlying land: customary and state-owned land.
- <sup>9</sup> Formal financial institutions are those that come under the supervision of the central bank.
- <sup>10</sup> K1 = US\$0.318 (rates for notes exchange) as reported in *The National*, electronic version available on <http://www.thenational.com.pg> (accessed 30 July 2007).
- <sup>11</sup> See Bartlett, Kotlik, and Higgins (2001) on determining appropriate sample size in survey research.
- <sup>12</sup> See Hulme (1984) and Grieve (1986) for the history.
- <sup>13</sup> The questionnaire asked for investment loans within the past 12 months.
- <sup>14</sup> Because these farms support multiple households, the potential adverse social implications from foreclosure can be high. Formal financial institutions, being mindful of this, may therefore not accept these land titles as collateral. An example of this was reported in the case of Kenya (Atwood 1990).
- <sup>15</sup> Individual farmers are identified through the issuance of a card called the harvest card. It has similar features to a Key Card. The card contains the farmer's details. Produce from the farm is recorded against this card and payments made into a bank account that is consistent with the name on the card.

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