Resolving property issues as a precondition for growth: access to land in the Pacific islands

Satish Chand and Ron Duncan

The island states in the South Pacific are heavily reliant on their natural resources for output, employment and earnings of foreign exchange. While these countries have had poor growth performance over the past two decades, improvement in access to natural resources is one area where there is potential for significant economic gains. This paper argues that subsistence affluence is non-existent in these countries and that their future prosperity depends on engagement in international trade, including inflows of foreign investment capital. Promotion of land-based investments, such as in agriculture and infrastructure, is one of the preconditions for growth. It is imperative, therefore, that security of access to land currently under communal ownership be enhanced so as to encourage efficient use of this resource and enhance the inflow of technology and capital. A modelling framework is developed which captures the major factors believed to create pressures for change in land tenure.

All of the Pacific island countries are primary commodity dependent, with agriculture being the main source of output and exports. If this pattern of production and trade continues, there will be increasing pressure on land and land-based resources. Customary ownership of land and the role of land as a symbol of cultural heritage makes investigation of issues relating to land both complex and
sensitive. Researchers may have shied away from working on land issues in the island countries because of this sensitivity. We are aware of these concerns and our parameters are drawn so as to confine the discussion to the economics of making more productive use of a factor of production that may be in abundant supply in some, but not all, of these nations.

From an economist's viewpoint, land is just another factor of production, with the peculiarity that it is relatively inelastic in supply. Customary ownership of land may give rise to the possibility of the 'free-rider' problem, an issue that traditional societies may manage via customary laws. However, the absence of individual rights to use of land creates uncertainties with respect to investment, particularly investments that have long gestation periods before providing returns. Such investment includes those involving infrastructure which has external benefits for aggregate output. Insecurity of access to land could reduce private investment in infrastructure which in turn is likely to retard the rate of long-run economic growth.

Globally, countries have moved away from customary ownership towards freehold title or to forms of leasehold which provide long-term security of access for use of the land. These forms of tenure resolve the free-rider problem and provide the security of tenure needed for long-term investment. Ensuring long-term access to land also provides the necessary incentive for sustainable use of the resource. What factors determine that such changes in tenure or access take place? When can we expect to see such changes in the Pacific island countries?

Each of the above issues and questions is treated in turn. Whilst our analysis may not cover all aspects of the land debate, we hope to have covered the salient features of the problem. This chapter first considers support for the view that the Pacific islands have 'subsistence affluence' and have it for the foreseeable future, making changes in land tenure of little importance. The evidence suggests the opposite. The next section reviews land tenure systems in some Pacific islands (the choice of countries discussed is entirely data driven), and subsequently presents a discussion of the factors which may lead to pressure for more secure access to use of land. The final part of this chapter develops a modelling framework which can be utilised to discern the contribution of various factors to increases in the value of land resources.
Is there 'subsistence affluence' in the Pacific islands?

Images of dancing youths in grass skirts, swaying coconut palms, and fish-filled lagoons that appear on tourist brochures support the view that the South Pacific island countries enjoy what has been described as 'subsistence affluence'. However, in recent decades there have been high population growth, rapidly-monetising economies, rural-urban migration, the trading off of future consumption for present consumption and the problems of land degradation. These developments are not at all consistent with economies being at stable but high living standards derived from their immediate environments. If we assume that populations were in equilibrium a century ago and use half of the current population growth rates to back-cast this sustainable subsistence level of population density, the numbers suggest that the current levels are far above a sustainable subsistence level. Under our conservative assumptions, the sustainable subsistence density in Kiribati is 38 people per square kilometre when the current density is two hundred and fifty per cent higher!

<table>
<thead>
<tr>
<th>Country</th>
<th>Per Capita GDP</th>
<th>Agriculture in GDP (%)</th>
<th>Pop. density</th>
<th>Sustainable subsistence density</th>
<th>Growth rate of GDP (%)</th>
<th>Population growth %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>4007</td>
<td>19.6</td>
<td>39.7</td>
<td>17.1</td>
<td>2.6</td>
<td>1.7</td>
</tr>
<tr>
<td>Kiribati</td>
<td>..</td>
<td>24.3</td>
<td>100.0</td>
<td>38.3</td>
<td>-3.5</td>
<td>1.9</td>
</tr>
<tr>
<td>PNG</td>
<td>1425</td>
<td>27.0</td>
<td>8.2</td>
<td>2.5</td>
<td>2.1</td>
<td>2.4</td>
</tr>
<tr>
<td>Solomon Is.</td>
<td>..</td>
<td>44.3</td>
<td>10.6</td>
<td>2.1</td>
<td>6.8</td>
<td>3.3</td>
</tr>
<tr>
<td>Tonga</td>
<td>..</td>
<td>38.6</td>
<td>130.6</td>
<td>105.4</td>
<td>2.0</td>
<td>0.4</td>
</tr>
<tr>
<td>Vanuatu</td>
<td>1677</td>
<td>20.0</td>
<td>11.7</td>
<td>2.8</td>
<td>2.6</td>
<td>2.9</td>
</tr>
<tr>
<td>W. Samoa</td>
<td>2064</td>
<td>39.9</td>
<td>56.0</td>
<td>40.9</td>
<td>0.2</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Notes: a Data are for 1990 and in 1985 US$ (Chain Index). b Data is from Pacific Economic Bulletin 10(1):104. c Density is per square kilometre. Data are for 1989. d Subsistence population density is computed as that of a century ago with the assumption that population then was at a steady state and grew on average at half the reported annual rate, that is \[ S = \frac{D(1989)}{(1 + \frac{g}{2})^{100}} \] where \( d \) is population density in 1989 and \( s \) is the growth rate. e Calculated from data in a. f Annual average from 1970 to 1993 period. Sources: Summers, R. and Heston, A., 1991, The Penn World Tables: an expanded set of international comparisons, Quarterly Journal of Economics CVI:1-45. o, d, and e World Bank, 1992. World Bank World Tables, Washington DC.
Given that the days of subsistence affluence (if any) are past for most Pacific islanders, the feasible economic option for these nations is to grow on the basis of trade and specialisation in areas of their comparative advantage. There is little reason why the future could not be bright for the citizens of these nations. The link between population density and income can be broken via trade and productivity growth. Relative to some wealthy Asian nations such as Singapore, the Pacific island countries are well endowed with natural wealth. Furthermore, as the Pacific island countries lag behind in use of technology, they have strong potential for gains arising out of catch-up growth.

**Landownership and use in the Pacific islands**

Most Pacific island countries have a communal system of landownership. Most of today’s high-income societies began with similar land tenure systems. When communities are self-sufficient, with stable, low-density populations, customary land tenure arrangements are appropriate to their main pursuits—hunting/gathering or land-intensive shifting cultivation. A subsistence economy is basically in a static (no growth), autarkic (no trade) situation, with no surplus to trade and zero or low productivity growth. It appears rational to have communal landownership in a situation where the land requires protection from invasion. Furthermore, in traditional societies, landownership and governance are intertwined: there is little need for separation of landownership and political control over its use.

One problem with communal ownership is that title to a particular piece of land is often not clearly defined. Another is the potential for the free-rider problem associated with global commons. The free-rider problem is not unique to landownership. It appears in situations where there is access to some commonly held property. Consider the case of a fishing pond that belongs to a group of individuals. It is in the interest of the group as a whole to preserve the yield of fish from the pond, but for any individual the incentives are to exploit the resource so long as his/her actions are not detected. If every member of the group follows this strategy, the pond is depleted—an undesirable outcome for the group as a whole. One solution to this problem is cooperation amongst the members so as to maintain the extraction of fish at a sustainable level. Traditional societies typically had rules (‘tabus’) that ensured this cooperation. The clan head was charged with the responsibility of enforcing these rules, and encroachment of these tabus entailed severe punishment. Furthermore, the landowning
groups were generally small, making the costs of cooperation low and the probability of being caught for violation of the tabus high. Non-traditional systems deviate from a number of the conditions that prevailed among such societies. For example, current technology poses fewer constraints on the size of farm plots and far more specialisation in production is possible now due to both international trade and formal types of employment.

The adoption of market-based institutions allows scope for more efficient use of land than under a cooperative system. In the former case, the individual who will use it most efficiently will be able to bid the highest price to gain access. Access to land may be gained either through freehold or leasehold title. However, in order for leasehold title to be as efficient as freehold, the length of lease must be sufficiently long and secure not to inhibit the titleholder to invest in the land. Security of tenure will be assessed in terms of the reliability of the state (in the case of freehold title) and the state or other owners (in the case of leasehold title) in guaranteeing continuation of tenure—what in economic terms is known as the ‘reputation’ effect.

All of the Pacific islands are now essentially market-based economies and democracy exists in all of them except Tonga. Individual freedom is entrenched within their constitutions. Modern technology is available, people are literate and aware of their rights, and per capita output has been on the increase, though at a pace that is much lower than in neighbouring East Asian economies. The creation of central forms of government has led to the breakdown or dilution of the traditional, village-level government together with its controls over use of natural resources. The landownership system in many of these states is still based on the traditional system though the extent of communal ownership of land varies.

Table 2.2 Categories of landownership in Fiji and Papua New Guinea (per cent)

<table>
<thead>
<tr>
<th></th>
<th>Freehold</th>
<th>State-owned</th>
<th>Communal title</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fiji</td>
<td>7</td>
<td>10</td>
<td>83</td>
</tr>
<tr>
<td>Papua New Guinea</td>
<td>–</td>
<td>3</td>
<td>97</td>
</tr>
</tbody>
</table>

There exist a number of impediments to gaining tenure in land by trade. For example, trade in traditional land title is barred by legislation in Fiji, Papua New Guinea and Tonga. Unclear titles to land is another impediment. The practice of ‘handing-back’ land to its traditional owners—which has taken place in Australia and Fiji within the past years—adds further insecurity to usage rights to land. These insecurities pose risks to investment in land. Hence an investor contemplating investing in land is going to factor these insecurities into the decision process. This may not only result in under-investment in land, but also could bias investment away from physical infrastructure, in turn, having a negative impact on long-run economic growth. We take this issue up in more detail in the next section.

**Land as a factor of production**

To an economist, land is a crucial factor of production with the main issue being to ensure efficient use of this resource. Unlike capital and labour, land has a low elasticity of supply. Changes such as terms of trade gains in favour of products that are intensive in land use would raise demand for land. This may bring into use previously marginal land (perhaps reclamation of mangroves) but ultimately the supply of land is finite. Thus, any payment for land can be considered as a pure economic rent and any increased demand for land will increase the rent. Land is a heterogenous factor, differing considerably in terms of fertility and access. For example, agricultural land near an urban centre will command a higher price than land of the same yield some distance away. The difference in land value in this case is pure economic rent resulting from difference in location.

Population growth may also raise demand for land. Population growth may take place as a result of essentially external causes. The introduction of clean water and improved sanitation has reduced infant mortality rates worldwide and led to sharp increases in fertility and population growth rates in most developing countries over the past 40 years. As Boserup (1965) argued, in traditional systems population growth and the resulting increase in population density can lead to higher agricultural productivity through farming becoming more labour-intensive with the fallow period in shifting-cultivation systems becoming shorter. But there has to be accompanying investment, either in the short-term, such as the
incorporation of organic fertiliser or in the longer-term, as in infra-
structure to improve water or soil management. As a result, there is an
increased pressure for greater security of access to land.

But population growth stemming from such external causes is not
likely to be a primary source of growth in agricultural productivity.
Moreover, as Boserup argues, too great a population density can mean
that the necessary investment may not be forthcoming and the effect
on agricultural productivity may be adverse. Boserup’s argument is
that only in some circumstances will the line of causation run from
increased population density to increased agricultural productivity to
increased pressure for greater security of access to the land. The line of
causation mostly runs in the opposite direction. Higher agricultural
productivity and higher incomes lead, in the shorter run, to better
health and increased fertility and life expectancy and therefore to
higher population growth rates. In the longer run, the fertility rates
adjust to the increased life expectancy and the population growth rate
falls. But it could be that in some situations increased population
density is an important trigger for traditional societies to seek changes
in land tenure.

Crocombe (1995) saw demand for land and land tenure changes as
being determined in part by the mobility of the population. For example,
if there is movement of population from rural to urban areas, there
will be increased demand for land to be made available for housing
and for non-agricultural productive purposes. Other forms of land
use, for mining projects, for electricity and telecommunications trans-
mission, and for airports, roads and ports, also create a demand for
better security of access.

A static-equilibrium, subsistence economy may also be disturbed
by becoming open to trade with other economies. Trade may result
from a lowering of transport costs, or of any other transactions costs,
which makes trade more profitable. Feeny (1988) argues that opening
a closed economy to trade breaks the link between population density
and the demand for land. As he sees it, in a closed economy, increasing
population density increases land rents relative to real wages but with
openness to trade, the relevant prices of commodities become those
determined on international markets and not those determined within
the closed economy. ‘Real land rents are now linked to the endow-
ments of land, labor, and capital, to production technology, and to the
external terms of trade’ (Feeny 1988:276).
Introduction of new techniques of agricultural production can also lead to institutional changes in land tenure and security of access for use of the land. In the short run, the existing security of access will affect the kinds of technology which are adopted. If security of access is poor, or short term as with sharecropping, then farmers or other users will tend to adopt only those new technologies from which the benefits can be realised within the period of security of access. For example, improved fertilisers, pesticides, or crop varieties which yield their benefits over the crop production period will be favoured over investments needing greater security of access such as water or soil management infrastructure. Technologies requiring access to large areas of land, such as machinery, will not be adopted if land tenure and access does not allow amalgamation of contiguous land to form large farming areas. In the long term, however, the prospects of productivity gains from adoption of new technologies can be expected to provide pressures for changes in land tenure and security of access. Significant gains in productivity from the ‘green revolution’ are attributed to use of chemical fertilisers, improved plant varieties, and irrigation. The last is an infrastructure investment, one that would be undertaken in a climate where security to access is assured.

Other factors may increase or decrease the pressures for institutional changes in land tenure and access arrangements in Pacific islands countries. The opportunities for earning income from other sources may lessen such pressures. For example, customary landowners who receive income from mining projects or timber harvesting, or remittances from relatives overseas, could presumably see less need to increase production from their land, and therefore generate less pressure to change land tenure arrangements. Conversely, loss of other income earning possibilities could increase the pressure. Since New Zealand reduced its aid transfers to Niue, resulting in the loss of employment by several hundred public servants, their demand for land to allow them to engage in agricultural activities (primarily, growing taro for the New Zealand market) has led to pressure to have local landowners and the many absentee landowners make their land more readily available for use by others.

It is also conceivable, therefore, that the large per capita aid transfers to Pacific islands countries are inhibiting institutional change in land tenure. This could happen due to the aid transfers leading to the appreciation of the exchange rate, thus making land-based export
activities less desirable. Or the ‘rents’ available to the political élite from the aid transfers could have the impact of making them uninterested in pushing through institutional change in land tenure. Availability of other income-earning possibilities from land, such as mining and timber royalties, may alternatively increase the pressure for more secure title to the land—what is at issue is security over rents from the land, whatever the source. Increases in land disputes can therefore be seen as a sign of pressure for change in titling and security of access.

This discussion has concentrated on the possible demand-induced pressures for institutional change in land tenure/access. Supply-side factors—what Feeny has described as ‘the willingness and capability of the fundamental institutions of government to provide new arrangements’ (Feeny 1988:273)—may also be highly. With central governments only of recent origin and generally considered to be ‘weak’ in relation to the powers of clan leaders, governments may in fact face great difficulty in delivering change in land tenure arrangements. Some of the alienation of land from customary ownership under colonial rule in these countries was reversed upon gaining independence. In several cases, customary ownership was recognised in the new constitutions. Sutherland (1984) argues that the creation of the Native Lands Trust Board (NLTB) in Fiji, which controls all land use on behalf of communal landowners, was in fact a monopolisation of power over land use under traditional chiefs and has served to freeze institutional change in land tenure. Prasad and Tisdell (1996) agree that the formation of the Native Land Trust Board ‘provides it with absolute monopoly power in the determination of the land rents and the allocation of leases’ (1996:26). This is a sub-optimal position for efficient land use and, moreover, much of the rent collected from land leases ‘is lost in terms of administrative costs of the NLTB and payments to heads of mataqalis’ (Prasad and Tisdell 1996:25). The case for the NLTB is put by Ratu Mosese Volavola (1995), General Manager of the NLTB, who argues that the NLTB was an institutional response to the perceived ‘chaos’ of the 14,000 landowning units negotiating their lease rents with potential tenants, and that it is an arrangement which makes land more readily available under more secure arrangements for use by non-landowners. Within Papua New Guinea, there is an ongoing struggle between the state and the landowners over the rights to the rents from the land, particularly from mining projects but from timber as well.
Transaction costs of changing land tenure can be very large, as many writers have recognised (for instance, Binswanger et al. 1993). Land surveys and the resolution of the disputes over ownership are necessary before changes can be made. These procedures are usually very involved, time-consuming and costly. As Binswanger et al. also point out, customary landowners have every right to be suspicious of the results of institutional change in landownership as in most cases the better-informed and politically better-connected end up distorting the new system in their favour. The high costs of institutional change and resistance to change because of concern over the results could therefore provide strong reasons for the lack of change in land tenure in the Pacific islands countries.

Which of these several factors is more important in leading to changes in land tenure and/or in developing more secure access for land use?

**Modelling pressures for more secure access**

If the ownership of all land is given to a single institution, this institution will act as a monopolist. If we further assume that the markets of all the other factors of production are perfectly competitive, then the monopolist will extract all the rent from economic activities which use the land. The monopolist could either charge a rental that is equal to the net yield from the land \(Y\) or sell the land at price \(V\), the association between these two variables being given by equation (1) below

\[
V = \frac{Y}{r}
\]  

(1)

where \(r\) is the sector-specific opportunity cost of capital. In this case \(r\) will include the nominal rate of interest, the rate of inflation and any sector-specific risks of investment, i.e.,

\[
r = i - \pi + \rho
\]  

(2)

where \(i\) is the nominal rate of interest, \(\pi\) is the rate of inflation and \(\rho\) is the risk factor associated with investment in land. For simplicity, equation (2) assumes no country-specific risk. \(^2\) Totally differentiating (1) lets us begin to see the possible sources of changes in land value.

\[
dV = \frac{dY}{r} - \frac{Y}{r^2} dr
\]  

(3)
Yield, $y$, can be further decomposed as a product of price and quantity of output. Letting $q$ and $k$ represent per capita output and capital stock, respectively, and $p$ the price of land-intensive products relative to other products, yield per worker is given by

$$y = pq = pAf(k)$$

(4)

where $A$ is an index of technology and $f$ represents the standard neoclassical production function in intensive form. Differentiating (4) and substituting the result in (3) gives

$$dv = \frac{As_k}{r} \dot{k} + \frac{q}{r} \dot{A} + \dot{p} - \frac{y}{r^2} \frac{d}{dr}$$

(5)

where a circumflex denotes the growth of the respective variable and $s_k$ denotes the share of capital in output. The identity in (5) tells us that the value of land increases with an increase in one or a combination of capital intensity, production technology, and the terms of trade in favour of land-intensive products and declines with an increase in $r$. We consider each of these components individually and discuss the potential role of policy in influencing these variables.

Taking account of $k = K/L$ where $K$ and $L$ are stocks of capital and labour, respectively, then

$$\dot{k} = \dot{K} - \dot{L}$$

(6)

Substituting equation (6) into equation (5) and letting $a = As_k/r$, $b = q/r$, and $n$ the population growth rate gives

$$dv = a(sY - n) + b\dot{A} + \dot{p} - \frac{y}{r^2} \frac{d}{dr}$$

(7)

In the case of a completely open economy, the first right-hand side term in equation (7) has no role since complete mobility of either factor is going to be sufficient for factor price equalisation to hold even in the presence of non-tradeables. The other variables will determine changes in the value of land. The rate of technological growth will depend on technological growth in the rest of the world as well as indigenous technological progress. Sectoral terms of trade will be determined by world markets. The final right-hand side variable is a measure of country and sector-specific opportunity cost of capital.

In a completely closed economy, domestic savings and population growth together determine growth in capital intensity. In this economy, high population growth together with low savings will slow growth to the extent that it may be negative.
Realistically, countries will lie somewhere in between being either completely open or completely closed, although economies moving out of subsistence are likely to be nearer to the latter. Capital intensity can be related to scale in terms of land use, as larger farms make use of machines more economical. If the land tenure system does not permit efficient use of machines then adoption of such technology will be inhibited. However, the existence of such technology will create pressures for changes in land tenure.

Given that all of the Pacific island nations lag substantially in terms of the technological frontier, \( \dot{A} \) can rise through catch-up via adoption and adaptation of international best-practice technology. Both the capital intensity and technology variables would be enhanced via freeing up of foreign direct investment and education leading to human capital deepening. The rate of technology growth will also be enhanced by research which adapts foreign technology to local conditions.

As for the terms-of-trade changes, the Pacific island countries have little influence on global prices. The removal of price distortions, including over-valued real exchange rates, against agriculture and other land-based products will provide gains over the transition period. Any economic rents, including foreign aid payments and overseas remittances, will also inflate the real exchange rate and hence constitute a bias against agriculture. Data on effective rates of protection for these countries is unavailable except for Fiji where it is shown that significant bias against agriculture exists (Chand 1996).

The last term in (5) can be influenced by changes in any component of \( r \) as reflected in equation (2) above. Freeing up of capital controls and removal of restrictions on foreign direct investment are both going to lower \( r \). Other country-specific factors such as threats of nationalisation will raise \( r \). Finally, sector-specific risks such as those relating to insecure property rights in the natural resource sector will add a sector-specific risk component. If the value of the resource is to be maximised, then \( r \) has to be kept as close as possible to the world price of capital.

**Conclusion**

Land has been an important resource in the Pacific islands and is likely to remain so for the foreseeable future. Given the relatively poor growth performance of these economies over the past two decades and the desire of the population to improve their living standards,
strategies for more efficient use of available resources have to be adopted. This paper argues that one of the fronts that can be explored is raising the efficiency of land use. Lack of security to land has been an impediment to investment, providing incentives for under-utilisation of the resource. Given that land-based projects have long gestation periods but generate positive externalities for the rest of the economy, security of access to land is crucial for raising efficiency as well as the rate of economic growth. If these states are to attract foreign capital for development, then provision of such security is crucial for economic prosperity.

But providing such enhanced security of tenure does not necessarily imply that the Pacific island countries have to forego customary ownership. As Crocombe (1995) notes, it is the security of access which is crucial. For example, customary ownership with long-term leases would be sufficient for sustainable and efficient use of land.

The modelling framework developed here is amenable to empirical implementation for future research. The challenge is to find suitable proxies for the variables in the model. The estimates from the proposed empirical exercise give some idea of the relative importance of variables which affect the pressures for change in land tenure so as to permit greater investment and faster growth.

Notes

Helpful comments from Ross Garnaut and Neil Vousden on an earlier draft of this chapter are acknowledged.

1. Prasad and Tisdell (1996) point out that sugar farmers in Fiji have become reluctant to invest in long-term farming techniques because the leases to the land expire shortly, with no guarantee that leases will be renewed.
2. Incorporation of a country-specific risk will decompose \( r \) into two components, a sector-specific and a country-specific component.
3. Small letters are used to denote levels of the respective variable in per capita terms.

References


