



## **SOCIAL FORESTRY NETWORK**



### **THE SUCCESS OF VANUATU'S LOCAL SUPPLY PLANTATION PROGRAMME IN MEETING THE NEEDS OF THE NATION AND ITS COMMUNITIES**

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1. INTRODUCTION

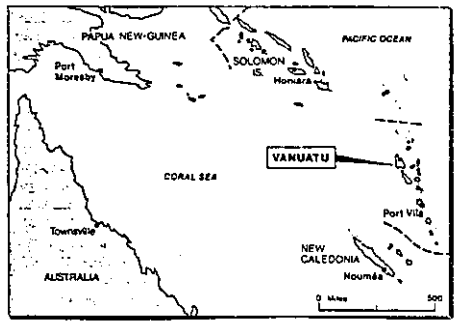
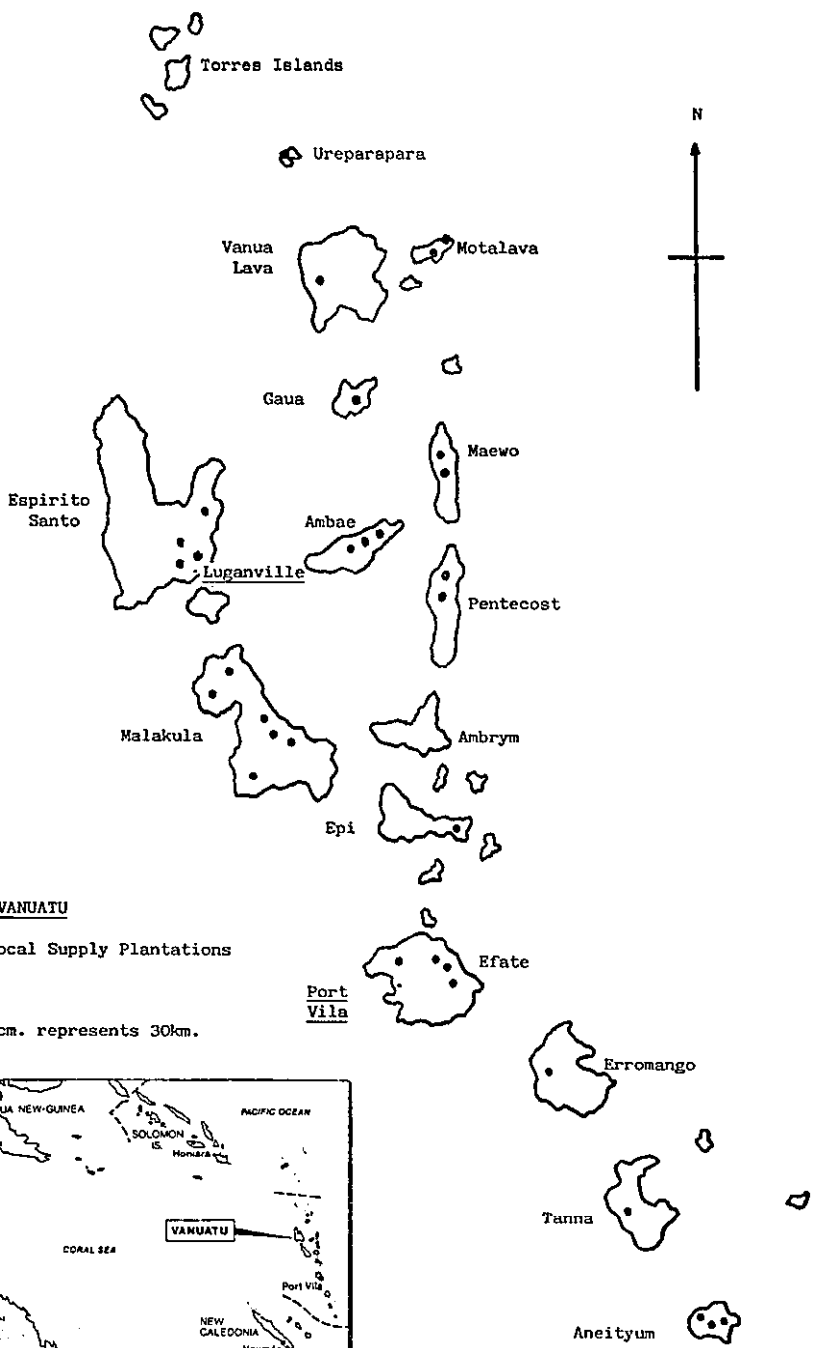
Implicit within the title of this paper is the question 'is Vanuatu's Local Supply Plantation (LSP) programme proving successful in fulfilling its original objective of developing a local supply of sawn timber to the domestic market, in a manner appropriate to the needs of the nation and its communities?'.

To address this question one must consider:-

- (i) The physical, social, economic and political environment in which the programme takes place.
- (ii) The objectives of the LSP programme and policies pursued by the National Forest Service.
- (iii) The needs of the nation and its communities: areas of overlap and exclusiveness.

Vanuatu (formerly the New Hebrides) is a nation of small Pacific Islands lying between 13°-20° south of the equator, 1800km north-east of Brisbane, Australia. There are over 80 islands, aligned north-south, comprising a total land area of approximately 15,000km<sup>2</sup>. Of the current population, estimated in 1983 at 130,000, over 80% are rurally-based and largely dependant on subsistence agriculture. Only Port Vila (14,000) and Luganville (5,000) are urban centres of any significance. Land area per capita was estimated in 1980 at 13.5ha of which arable land constituted 0.87ha.

The relatively low population density coupled with the favourable physical characteristics of the islands presents few constraints to



agricultural development. However there are important local variations in population density both between and within islands. These have been influenced by a variety of forces: depopulation resulting from European contact in the nineteenth century, migration from island interiors to coastal settlements, and yet a relatively strong attachment by individuals to the customary territory of their group. Consequently settlement patterns vary between islands, from those with dominant coastal settlements and uninhabited interiors, to those where villages are scattered throughout the island on ancestral lands.

## 2. LAND ISSUES

Central to an appreciation of life in Vanuatu is an understanding of the primary importance Melanesian society attaches to land. (Alatoa et al., 1984).

### 2.1 Customary Law

Land is seen as linking past, present and future generations. However customary rights are not set once and for all but are differently expressed in different islands at different times. In theory this inherent flexibility provides traditional land tenure systems and social structures with the capacity to respond to changes originating from European colonisation and entry to a modern world. However the present situation is a confused one, and in particular the relationship between land, the individual and the community remains uncertain.

### 2.2. Inheritance rules

In Vanuatu, the nature of landholding groups, the size of their territories, and the rules governing land rights vary slightly from island to island. Individual usufruct rights exist but depend on the individual's position within the group, the location of the land and the group's connection with the land. Land rights are traditionally traced back to a common ancestor, his or her descendants having inalienable rights to use of the land, but never possession of it. 'Big

Men' and Chiefs act as custodians of the land and are responsible for the practical application of the principles governing its allocation within the social group.

### 2.3. External influences

With the arrival of the first settlers from France and England in 1854 land immediately became a marketable commodity and assumed an economic value alien to traditional custom. Land alienation by expatriates continued through the late nineteenth/early twentieth century and achieved legal support under the authority of the condominium government. Subsequently land reform became the rallying cry of New Hebrideans in their quest for independence, finally achieved in 1980, (Beasant, 1984). The new constitution transferred all alienated land to Ni-Vanuatu declaring ownership and use of land and that only indigenous citizens should have perpetual ownership. Whilst the government had authority to acquire land in the public interest, to date it has been reluctant to do so. The Government of Vanuatu regards 'custom' and the traditional ways as a positive force for rural development, and its policies reflect this.

### 2.4. Rural Development

The land is Vanuatu's greatest resource and its development is the key to national and regional economic growth. With an economy based largely on copra, cocoa and beef exports from the plantation sector and still dependent on regular inputs of foreign aid, the objective is to develop and diversify the agricultural base of the country. Efforts are being made to achieve this in two ways. The first is the development of the role of those practising subsistence agriculture (predominately shifting cultivation) through the encouragement of a mix of subsistence and cash cropping. The second concerns the promotion of large scale commercial agricultural projects (eg. cocoa, coffee and beef) as joint ventures involving the government, customary land-owners and private investors. Man's relationship to the land has shaped the political, social and economic development of the nation and will continue to do so. Now more recent phenomena - a population

growth rate of 3.2% and growing concern over urban drift trends - highlight the importance of finding solutions to land development, reconciling the traditional values of Melanesian culture with social justice, and adaptation to a new era. It is within this context that the success of the LSP programme needs to be assessed.

### 3. ESTABLISHMENT OF THE LSP PROGRAMME

Vanuatu's natural forest is generally poor in valuable timber trees and largely unexploitable. The resource is scattered (10-20m<sup>3</sup>/ha), comprised of 10-20 different species with varying qualities, and involves a predominance of large logs, (60-100cm<sup>3</sup> diameter) which are often crooked, overmature and inaccessible. The condominium government recognised the limitations of the native resource in meeting existing and future demands for sawn timber, and in 1970 established a national forest service under the direction of a UK appointed forester to both control logging practices and develop a plantation resource. From a series of early species trials Cordia alliodora emerged as the most promising species for the wetter sites. Whilst Pinus caribaea var. hondurensis proved to be well suited to the drier southern sites. (Neil, 1983).

In 1974 a "Forestry Plantation Scheme for the New Hebrides" (Bennett, 1974) was proposed involving the establishment of a series of privately owned forest plantations (Local Supply Plantations) scattered throughout the islands in order to meet a predicted national demand for sawn timber by the year 2000 of 15,000m<sup>3</sup>. This represented a per capita demand for sawnwood of 0.088m<sup>3</sup>, based on a population growth rate of 2.4% and demand increasing in line with general rises in the standard of living.

#### 3.1. Planting programme

The scheme entailed the establishment of 5618ha of predominantly C. alliodora. Individual island or island group requirements were assessed by multiplying the general sawn timber consumption per capita figure by the predicted population of the island in the year 2000,

thereby establishing an estimated future 'local' market for sawn timber, having made an allowance for loss of volume through cyclone damage and other natural phenomena. Having estimated island requirements this was broken down to plantation units of between 100-200ha, involving annual planting rates of 5-10ha.

Whilst it was acknowledged that the bulk of the demand for sawn timber would come from the urban centres of Vila and Luganville (as is currently the case) the benefits of diverse plantation locations in respect to cyclone risks and the pursuit of balanced regional growth, were thought to off-set any potential disadvantages associated with the distance to markets and increased management costs.

### 3.2. Project Management

A standard silvicultural prescription was proposed for the LSPs involving the cutting of 10m through the natural bush and the poisoning, frillgirding, burning or felling of the remaining unwanted trees to gradually open the canopy. Stumps of C. alliodora were then planted at 2.5m intervals in each line, which were regularly to be weeded (Hudson, 1984). Based on preliminary trial work and Solomons and Fiji growth rates, a mean annual increment of 10m<sup>3</sup>/ha was predicted over a 15 year rotation. It was assumed that thinning to a final crop spacing of 200 stems/ha would produce small volumes of sawn timber and fence posts for sale. The Forest Service undertook to provide direct technical assistance through the appointment of Forest Guards responsible for site management, utilising casual labour employed locally.

### 3.3. Project Financing

To finance LSP direct costs (casual labour) a Forest Fund was established, fed by government revenue accruing from a reforestation tax levied on existing logging operations. This money was then made available to landowners in the form of interest free loans repayable only through future timber revenues arising from the plantation, any



profits remaining with the landowner. Through taxation on LSP produce at harvesting the Fund would eventually become self supporting, thus providing for future planting. Material costs involved in the establishment phase have to date been provided through direct grant aid. The overhead costs of the Forest Service (staff salaries, travel and subsistence, and general administration costs associated with the LSPs), are met by the Vanuatu Government's recurrent budget contribution.

#### 3.4. Project Profitability

A financial appraisal of the programme in 1978 predicted an internal rate of return of 12% (Forest service, 1978). This assumed a direct cost associated with a standard man-day per hectare specification for establishment of C. alliodora of 60 man-days over a three year period<sup>1</sup>, and an overhead cost for the Vanuatu government apportioned to prevalent establishment rates. Material costs were not accounted for. Initial efforts to involve landowners in cutting lines and planting voluntarily, with the Government loaning 'wages' for maintenance only, proved unreliable. Consequently this arrangement was replaced after only one season by the Government undertaking to provide a loan covering wage payments for all establishment operations.

Revenues from final harvest were assessed using a final crop yield figure of 150m<sup>3</sup>/ha sold standing. It was assumed that thinning would be carried out at a small profit through a unit under the control of the Forest Service. No variation in royalty rates was considered for different island/project situations, implying that all timber would be sold locally and harvesting costs would be uniform. The financial analysis predicted projects would run at a profit during the second rotation thus providing for repayment of the government loan.

### 3.5. Legal Arrangements

The programme commenced in 1975 with planting on 3 sites. At that time it was only possible to reach a verbal 'Gentlemen's agreement' with Landowners in the absence of supporting legislation. The Forestry Act of 1982 legally ratified the principal conditions of an agreement. However, to date, no LSP Management Agreements have been signed: a delay largely due to the need to amend the Act to make it compatible with recent land legislation.

Consequently the situation has arisen where, at the end of 1985, 1063ha have been planted on 32 privately owned sites, at a direct cost to the government of 40 million vatu (approximately £300,000). At any time the landowner could fell all the trees planted and the government would have no recourse to law.

#### 4. CUSTOM AND THE LAW: IDENTIFYING THE LEGAL RIGHT TO PLANT

The Forestry Act of 1982 states that the government shall only enter into Forest Plantation Agreements when 'satisfied' that the Landowner signing an agreement is the duly recognised owner of the land.

Prior to independence, ownership could be formally registered under a provision of the condominium government but few Melanesians took advantage of this. They tended to associate the system with land alienation by expatriots, and registration required an expensive ground survey.

Following independence and the dismantling of the old system of land registration, a new procedure for the declaration of customary land ownership has been established under the guardianship of the Department of Lands. This entails a mix of traditional and modern values, using village and area committees composed of Chiefs and Big Men to identify ownership, and the legal system to endorse their decisions and to provide a mechanism for appeal. Whilst this procedure has been successful in some areas, it is very dependent on the support it receives locally, and is vulnerable to the intricacies of local

politics. Furthermore the population movements of the late 19th/early 20th century and the subsequent settlement patterns which arose, complicate the situation as strict adherence to 'custom', (the oral definition of boundaries and land rights) is difficult when groups have become more intermingled residentially.

Starting the LSP programme therefore demanded an extension effort at two levels. Firstly to attract the interest of villagers in establishing forest plantations, and secondly to determine whether their claims to land were valid using any available support from local institutions, legal records and discussions with villagers<sup>2</sup>. In retrospect the extension effort has not been wholly successful. Whilst the objectives of the programme were clear at a national level there were few guidelines directing efforts at village level. The dedication of land occurred rather haphazardly, and although the Forest Service considered basic physical site factors in assessing projects it is suggested that too little attention was paid to examining the social and economic environment of those proposed. Consequently planting on certain islands proceeded at a rate disproportionate to the anticipated future demand.

It is now apparent that people became interested in forestry for a variety of motives: to reinforce their claim to land; for fear of land alienation unless they themselves were party to its development; for employment opportunities within the plantation. It is fair to say that the majority did not gain their interest in forestry because of the attraction of a financial return on the trees themselves.

## 5. FACTORS AFFECTING THE PERFORMANCE OF LSPs 1975-85

### 5.1. Project management

A 100% survey of C. Alliodora plantations in 1983 revealed that LSPs were characterised by poor stocking and tree form, indicating that in the vast majority of cases a target of 200 final crop trees, suitable for saw logs, would not be achieved unless extensive crop rehabilitation work was carried out and maintenance standards dramatically

improved. A re-survey in 1985, based on a 20% sample, clearly showed that improvements have not been forthcoming although a number of sites continue to demonstrate the obvious potential of C. alliodora grown on fertile sites under good management.

In the early days of the programme staff shortages, lack of vehicles and poor communications were reported as being the major handicaps to attaining high standards of site management, (Bennett, personal communication) in particular in ensuring that weeding was carried out regularly and successfully. More recently, investigations by the author showed that labour requirements for the establishment of C. alliodora were highly site specific, and uneven management performance of staff and a general failure to acknowledge the inappropriateness of standard silvicultural prescriptions for varied site conditions<sup>3</sup> were also factors. However, in a broad sense the author attributes continued poor performance to an overall failure to develop the skills and commitment of workers, or responsible attitudes among land-owners.

#### 5.2. Rising Project Costs

On average man-days per hectare required to establish C. alliodora in LSPs has exceeded the original specification of 60 man-days by over fifty percent. In addition, weeding is continuing way beyond the third year, a reflection of the absence of any successful integration of cattle into plantations, and of poor management.

Whilst LSP material costs are still covered through grant aid, overhead costs met by the Vanuatu Government have increased disproportionately to any increase in log values or to the scale of LSP the programme<sup>4</sup> itself.

#### 5.3. Utilisation and marketing of LSPs

In 1984-85 the first LSPs were thinned. This initial experience has demonstrated that, despite earlier optimism, thinning is unlikely to be a commercial proposition for the following reasons:

- (i) High cost of transporting equipment between sites .
- (ii) Poor quality of material removed.
- (iii) High cost of conversion in relation of the scale of operation
- (iv) In-accessibility to markets, and the costs involved producing treated posts and poles.
- (v) Limited demand for both sawn timber and purchased fence posts.

Furthermore tests have shown that whilst Cordia's heartwood is fairly resistant to fungal and termite attack, sapwood, (which constitutes the bulk of younger stems removed in thinning) has a much lower resistance, (Anon., 1983). Consequently the potential for marketing Cordia thinnings as untreated posts and poles is very limited. Although various treatment techniques do produce durable building poles, the operation cannot be carried out economically on sites of the size of a typical LSP. A report by Asian Development Bank consultants (Silviconsult, 1984) suggests that, at final harvest under current management practices, only sawn timber will give a return.

#### 5.4. Uncertainties over the demand for timber

The scale of the LSP programme was originally based on the assumption that demand for sawn timber would rise steadily<sup>5</sup>, reaching a per capita figure of 0.088m<sup>3</sup> by the year 2000. This assumption suggested that a per capita demand of 0.052m<sup>3</sup> would be reached by 1983. The actual figure in that year was estimated at only 0.026m<sup>3</sup> (Forestry Service, 1984) exactly half that predicted. All indications are that demand for sawn timber continues to be heavily concentrated on Vila and Luganville. However, even in these urban areas, locally produced sawn timber faces stiff competition from alternative construction materials including graded timber imports.

In the rural areas the emphasis is still very much on traditional style housing utilising locally gathered leaf material and unprocessed roundwood. This practice is expected to continue, given that these materials remain available to the rural population.

An 'improved' standard of traditional housing can be achieved relatively cheaply by combining a concrete base with traditional walling (utilising roundwood) and iron roofing. Such a design (and its variants), requires little sawn timber, and is cheaper and more popular than 'modern' style timber framed houses<sup>6</sup>. In addition to promoting community self reliance in utilising locally available material, such designs avoid the expense of transporting large quantities of timber and machinery within or between islands. Furthermore, where income levels permit, and modern style housing is being constructed in rural areas, concrete blocks appear to be preferred to a timber frame construction.

#### 5.5 Development of the Industrial Forest Plantation Programme

In response to the excellent growing conditions of Vanuatu and favourable results from trials and LSPs, the potential of a timber industry exporting high value products to the Asia/Pacific region, was recognised during the late 1970s. Subsequently in 1982 the Industrial Forest Plantation (IFP) Programme began, with annual planting rates of up to rates 200ha on one site. For these projects, of which there are currently two (at Aneityum and Erromango)<sup>7</sup> the relationship of the landowners to the projects is fixed through a leasing arrangement whereby the landowners lease the land to a Development Company, who in theory own and run the project. Within the company structure there is provision for the Government, landowners and outside investors to hold shares.

Inevitably the promotion and administration of the IFP Programme, particularly at a senior management level within the Forest Service, has served to detract attention away from LSPs. Whilst IFPs are primarily designed to supply an export market it is considered likely that a proportion of their production, perhaps consisting of lower quality timber, will also supply the domestic market.

In light of the above observations the financial viability of LSPs based on revised expectations and 1985 costs, appears in doubt.

However, financial return is only one of the potential benefits of such plantations and it is necessary to look at the broader picture. This requires an assessment of the needs of the nation and its communities.

## 6. NATIONAL AND COMMUNITY NEEDS

Inevitably there is a degree of overlap between national and community needs. It is the declared policy of the Vanuatu Government to aim for balanced regional growth, providing the basis for sustainable social development particularly in the rural areas

Forestry's role in contributing to national wellbeing is seen by Roche (1977) as being twofold:

- at an industrial level: Large scale heavily capitalised industrial forest projects, largely divorced from agriculture, geographically restricted and with a narrowly based economic objective ie. to maximise the production of wood and wood products at a minimum cost.
- at the community level: Forestry as an instrument for integrated rural development, sustaining and supporting agricultural production through systems designed to yield wood products that can be directly consumed, or easily harvested and marketed by the local community.

As Roche concludes these two approaches are wholly complementary.

It is recognised that at a national level Vanuatu needs to develop a future local supply of sawn timber to meet a growing domestic demand, concentrated in the urban areas. This must be achieved in a cost-effective manner to compete with imports.

Concurrently community needs revolve around the provision of building poles, simple items of furniture and possibly even fuelwood as population pressure increases in certain areas. Some growth in the modest demand for sawn timber in rural areas will also provide limited opportunities for local commercial production.

Irrespective of actual community demands there is a need to promote local self reliance, offering a variety of socio-economic benefits to local communities by bringing forestry to the level of the village. This will require a closer integration of forestry with local smallholder agricultural systems. In the past LSPs have generally been perceived by landowners as government projects, and this is unlikely to change even under formal agreements as the scale and nature of projects are regarded as alien to traditional farming systems.

The Local Supply Planation programme in its present form in fact fails to meet either national or community needs successfully. With respect to both the scale of the plantations and the nature and level of state support it receives, it falls uncomfortably between an industrial project and that of a community forestry programme, justified neither by its financial viability nor by any significant wider social or environment benefits. Its principal defects can be summarised as follows:

- (i) Doubts over future demand for sawn timber especially on the more isolated islands.
- (ii) Poor location of many LSPs relative to potential markets and existing communities.
- (iii) Low standards of crop maintenance and worker productivity.
- (iv) Failure to integrate LSPs into the social and economic life of land owners and communities
- (v) The uncertain financial return to landowners.

An undisputed benefit of LSPs has been the generation of wage employment in rural areas where few alternative opportunities exist, but this should not be overstated. Moreover Vanuatu must reassess the benefits of employing its limited financial and technical resources in fostering rural development through such forestry programmes.

## 7. RATIONALIZATION OF THE LSP PROGRAMME

Rather than terminate support for LSPs it has been recommended that the programme be severely cut back, restricting further expansion to



just eight existing sites, on three of which planting would finish by 1990 (Gayfer, 1985). A further fourteen sites would be confined to care and maintenance regimes whilst an additional four sites would be abandoned<sup>8</sup>. In both 1982 and 1983 the Forest Service reduced LSP planting targets in response to concern over funding and maintenance standards respectively. However current proposals are more radical suggesting that in both the short and long term the development of the programme should be restricted. (Irrespective of available finance or subsequent improvements in plantation management). The reasons for maintaining an interest in particular LSPs are varied. Obviously there are political considerations, but these are overshadowed by a belief that each project should be considered on its own merits as it is felt that in certain instances, by maintaining support but developing the capabilities of the landowner/community, a successful project can ensue.

Consequently a number of criteria have been used to assess individual projects, namely:-

- (i) The Marketing potential of timber, either processed or un-processed.
- (ii) The performance of C. alliodora.
- (iii) Land availability for further planting.
- (iv) Level of landowner or community commitment to the project.

The significance of these criteria varied from island to island as projects also had to be set in the context of what other opportunities, if any, existed for rural development.

#### 8. THE SIGNIFICANCE OF LAND TENURE IN DETERMINING THE SUCCESS OF LSPs

It is suggested that the nature of land ownership is an important influence in determining the success of LSP projects.

In situations where groups occupy traditional territory and group ties remain strong, projects benefit from the mutual support of indivi-

duals. This is based on the idea that although their names may not be on a project agreement, strong ties within the group effectively secure their involvement in determining the project's future, and an ultimate share in its financial rewards. This is reflected in higher maintenance standards and a continuity of labour supply.

Conversely, where population movements have led to the growth of settlements comprised of several social groups, traditional ties are often weak and an atmosphere of suspicion may exist among settlers, particularly with respect to land matters. If the government is seen apparently to support the land claim of one group over the others by establishing an LSP, it aggravates an already difficult and confused situation, and the project will receive little local support.

The problem springs from a misperception of the concept of community in Vanuatu. Whilst land may be referred to locally as belonging to the community or communities, invariably this means land ownership is uncertain and various individuals/groups have designs on the land. Rather than confront a dispute head-on there will be an informal consensus to use the land for gardening, hunting, etc provided that no permanent claims are staked through the planting of perennial crops such as coconut palms and forest plantations.

Custom and English law are not always comfortable partners. A declaration of land ownership only declares the right of an individual to act on behalf of his/her dependents in customary law. The LSP Management Agreement is in accord with this, detailing the understanding between Government and a social group (whether this be a community, kin group, or household unit) represented by certain individuals, without legally defining the benefactors within the group. Consequently all power effectively becomes vested in the group's representatives. In many cases it is felt that the traditional mechanisms by which the benefits of a plantation would be divided between the group may not be as impervious to mistrust and abuse as initially assumed. Furthermore recourse to complicated and expensive

legal arrangements (companies, trusts, partnerships) to guarantee the rights of individuals is incongruous given the small scale of LSPs. Whilst there are no easy answers it is important to observe that as the size of the plantation unit increases so does the likelihood of uncertainty and dissatisfaction within the landowning group. And in an atmosphere of suspicion the success of a project, even under an agreement, cannot be assumed. Where such suspicion and resultant lack of commitment exist, prospects for lasting improvements in project management are poor and advantage cannot be taken of technical advances (improved planting, stock etc).

#### 9. DEVELOPMENT OF A FARM AND COMMUNITY FORESTRY EXTENSION EFFORT

It is argued that both to complete the new LSP programme and for the continued development of IFPs, a new forestry extension effort is required, to provide a technical and financial framework around which communities and individuals could respond in ways appropriate to their needs.

Initially this would demand a survey by the Forest Service of the needs and aspirations of communities/island concerning wood products, an assessment of resources available on a local and regional basis in respect to both the natural forest and established plantations and a greater understanding of the social and cultural factors influencing the design of forestry programmes. The role of forestry in supporting agriculture would be also investigated suggesting a future closer association with the agricultural extension service. Whilst some preliminary research has been carried out by the Forest Service on the integration of C. alliodora with traditional subsistence gardens and cash crops (Neil and Jacovelli, 1985), this occurred in a relatively isolated location thus limiting its demonstration value. There is a need to expand this work on sites closer to villages in areas where population pressure is relatively high and increasing. Even more urgently needed is further research into silvi-pastoral systems mixing trees and cattle in proportions of benefit to both.

General principles around which a farm and community forestry extension programme could be based are as follows:

Where market opportunities for sawn timber are limited

- (i) Efforts should concentrate on the greater utilisation of individual/household land rights (except where group ties are strong), through the integration of tree planting (and/or management of the native resource) with subsistence and cash crop agriculture, either spatially or temporally<sup>9</sup>.
- (ii) Short rotation crops producing building poles and other small dimension products for personal use and local markets (where appropriate), would be encouraged. The non-permanent (between generations) nature of individual land rights is considered complementary to this approach.
- (iii) Government support would centre on technical advice and the provision of planting material at cost price or a subsidised rate, from centralised nurseries. This would be in line with other nursery material currently made available through the agricultural extension service.
- (iv) The individual or group would be responsible for providing and paying any plantation labour required. However in the majority of cases this would not be necessary as planting would be on a scale and of a nature which individuals (family groups) could manage themselves.
- (v) No legal agreement would be required for tree planting to proceed.

Where a large demand for sawn timber and other wood products exist

- (i) On islands or parts of islands where there is an existing (or projected) strong future demand for sawn timber (or other wood products) and communications facilitate easy marketing, the government would encourage both individuals and groups (where appropriate), to consider tree planting on privately owned land as a commercial venture.
- (ii) This would be a long term enterprise of moderate scale which may be integrated with agriculture. In order to promote a future domestic supply of timber in this manner, financial incentives will probably be necessary to encourage tree planting at the expense of known and trusted plantation crops such as coconuts. It is important however that such a subsidy be designed and implemented so as to encourage full landowner participation rather than lead to dependence on the state.
- (iii) Government financial support could include the provision of planting material (at cost or subsidised) and possibly buy-back schemes, involving staggered payments throughout a rotation for well maintained plantations based on an apportioned value of the final crop. Investment from local sawmilling companies might be encouraged, particularly in respect to planting cut-over areas in association with land owners. Other opportunities may arise through the development on certain islands of processing facilities associated with IFPs.
- (iv) Decisions on where to plant and on what scale should be left to landowners, with technical advice from the forestry service and agricultural extension service.

Thus the scale of a plantation would adjust naturally to a size compatible with the prevalent land ownership structure, and tree-planting would take place as appropriate at household, kin-group or community level. This would also promote a closer integration of forestry and agriculture, particularly in the opportunities for grazing animals within plantations.

- (v) The onus would be on the landowner to secure a legal right to plant and manage plantations. This approach would favour groups whose traditional ties to the land and each other remain strong whilst encouraging more heterogenous communities to investigate ways of using their resources of land and labour for common benefit.
- (vi) Legal support required for such a planting programme could operate within the framework of existing forestry legislation, avoiding many of the complexities of the current LSP management agreement.

#### 10. LESSONS LEARNT

An analysis of the first 10 years of the LSP programme has revealed its limitations and identified the opportunities that exist for developing a new role for forestry in integrated rural development. What is now needed is a programme which meets the demands of a growing nation and yet is more closely attuned to local needs - integrating tree planting into community life at a scale commensurate with those communities' peculiar resources, aspirations and needs.

To guide such a development two valuable lessons can be learnt from the LSP experience, the importance of which may concern community forestry projects in general. Firstly the need to create a framework in which people consider the maintenance of planted trees (with or without financial incentive) along with their obvious commitment for

agricultural subsistence and cash crops. Secondly the importance of determining who the forest plantation is for and through which management ownership level this can be best achieved.

Vanuatu's reassessment of its LSP programme is not a unique experience. Recently many countries with community forestry programmes directed towards critical social and economic concerns, have been prompted to re-design their small scale afforestation strategies (Foley and Barnard, 1984) in response to subsequent project evaluation.

It is important the Vanuatu's favourable environmental conditions do not engender an attitude of complacency. Now is the time to recognise the true values of LSPs, through digesting the past and acting positively in order to realise the potential of forestry to contribute to national well-being.

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#### FOOTNOTES

1. Of the 1063 ha, 66ha have been subsequently abandoned and 207 ha established using LSP funding absorbed by the Industrial Forest Plantation (IFF) programme.
2. The Forest Service allowed project proposals from land claimants to "marinate" for at least a year in order to allow disputes to be aired. However new claimants continued to come forward, up to five years after planting.

3. Whilst line planting (10 x 2.5m) is suitable for areas of natural high forest with a high proportion of large trees, establishment in secondary or disturbed forest demand a closer spacing to limit invasion by convolvulaceous climbers.
4. Between 1975-1981 the annual planting rate for the LSP programme was forecast at 140 ha though actual rates only averaged 68 ha. In 1982, Vanuatu's first national Development Plan called for the Programme's planting rate to be increased to 200 ha. To date an average of 124 ha has been achieved.
5. Predicted population annual growth rate 2.4%. Actual rate 3.2%.
6. A recent experience on the island of Vanua Lava appears to support this. Construction on an LSP project of a timber framed house for the Forest Guard produced little reaction from local people. However the building of an adjoining office/storeroom using the traditional "improved" design, attracted considerable interest and comment.
7. A proposed 6,000 ha IFP on Espiritu Santo is scheduled to commence during 1986/87 and further sites are currently under consideration.
8. Six projects from an original 32 referred to earlier, had already been abandoned before 1985 due to a variety of factors including crop failure and land ownership disputes.
9. See Vergara and Nair (1985) for support within the South Pacific region for this approach.



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