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THE LESOTHO WOODLOT PROJECT : PROGRESS, PROBLEMS AND PROSPECTS.

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DEVELOPMENT STUDIES UNIT

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by

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ABSTRACT. *Rural development programmes often confront unexpected environmental constraints which limit their impact. For example, the role of forestry as regards soil/water conservation and the provision of woodland resources is not widely appreciated but assumes vital importance in certain ecological and socio-economic conditions. In rural Lesotho, an afforestation programme is being conducted, seemingly with considerable success, by the Woodlot Project. Since this Project may become a model for implementing similar ventures in other Thrid World settings it deserves close analysis. This paper examines the Project's development, current operations and plans for the future and focuses upon the problems it is facing.*

1. INTRODUCTION

1.1 Rural development and environmental constraints

The most productive shift in recent development theory has been its reorientation towards the rural sector. Development strategies focus increasingly upon the generation of equitable and self-sustained growth within rural and predominantly agricultural communities (Karp, 1976; Mabogunje, 1980; Mohan, 1978; Robinson, 1979). Means of promoting appropriate agricultural technologies (Belshaw, 1977; Brown, 1977), stimulating informal industrial activities (Brown, 1981; Littlefield, 1979; McCarthy, 1982; Taimni, 1981), and implementing vocational educational programmes (Dove, 1980; Kooijman, 1980; Mbilinyi, 1976; Thomas, 1974; van Rensburg, 1978; Vanzetti and Bessell, 1974; Ward, 1972),

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have all attracted considerable debate in the development literature and have encouraged attempts to operationalise an integrated package of development measures in diverse Third World settings (Nsibandze, 1977; Thomas and Boyazoglu, 1978).

However, within this form of development strategy, a number of very serious problems of a pragmatic nature have begun to emerge. The 'integration' of the various components has proved more fragile in application than anticipated (Livingstone, 1979) and social and institutional constraints have surfaced in both agriculture and industry (Briggs, 1980; Kliest, 1980; Lele, 1976; Rogge, 1977). Moreover, in many instances, the development prospectus fails to acknowledge and allow for environmental factors limiting agricultural options and reducing productivity (Bradley, 1980; Briggs, 1980, p. 20; Lovett, 1980, p. 100; Mohan, 1978; Rogge, 1977).

The role of forestry, for example, has undeservedly been accorded very little attention and research in the realm of development studies, although it is clear (at least to the foresters) that, in certain situations, it is of vital importance. Northern Nigeria, for example, suffers from severe deforestation and remedial measures to recover soil fertility are more than two decades overdue (Adoyoju, 1965; Mortimore, 1969; Oyelese, 1971). In central Tanzania, agricultural production has declined primarily in response to accelerating soil erosion, and attempts to rehabilitate affected areas are circumscribed by unplanned settlement and inappropriate land use practices (Mushala, 1982). In Zimbabwe, increasing population

pressure and falling productivity within an essentially subsistence system of land use has led to widespread woodland destruction in both communal rural (Whitlow, 1979, 1980, 1982) and peri-urban (Mazambani, 1980, 1982) locations. The result has been quickened habitat degradation and depletion of woodland resources as a fuel source and as a raw material for implements and utensils. A very similar situation in KwaZulu has been documented by Gandar (1980, 1981).

1.2 Rural development, conservation and the Lesotho Woodlot Project.

In Lesotho, the environmental constraints upon the manufacture of a viable rural economy have been widely documented (Ntsane and Eckert, 1978; Sterkenberg, 1979; Turner, 1978; Wallman, 1972). Ecological deterioriation and soil erosion, developing and entrenching extensive donga networks, are critical problems throughout the country exacerbated by unsuitable methods of grazing and cropping. However, whilst the need for conservation is accepted (Government of Lesotho, 1975, pp. 81-82, 1980, pp. 208-211; Nobe and Seckler, 1979; Schmitz, 1983 forthcoming), there is neither sufficient financial support nor an adequate legislative framework to implement a conservation package on anything but the most limited scale and most glacial pace. The spectacular failure of the large area-based agricultural projects (Garaba, 1980; Nobe and Seckler, 1979, p. 169), which commenced in 1970 (Moody, 1976), has, in fact, led to a reduction of governmental commitment to rural development and conservation policy (Wellings, 1982, pp. 277-283).

Thus, at present in Lesotho, conservation programmes are having little impact upon the fragile ecology of its rural areas. But, leaving aside considerations of scale, the one apparent success has been in terms of afforestation through the Lesotho Woodlot Project (LWP). The LWP commenced in 1973 and was initially planned to run for 12 years. Its principal aim is to provide fuelwood and building poles for the rural population. Despite unfavourable social, economic, geomorphological and climatic conditions, the LWP has shown that plantation establishment with exotic trees is not only possible but eminently suitable for Lesotho.

By fulfilling a compelling domestic need for fuelwood and stabilising donga sidewalls, the LWP has become ostensibly one of the most successful rural development ventures in the country. Split into three districts that cover the entire Western lowlands and with a small budget, the LWP has established over 170 village woodlots with a total area of nearly 3 000 ha. This paper examines the Project's development, its impress upon the rural economy, its problems, and anticipates its direction in the coming years.

1.3 Paper structure.

We begin by reviewing forest history in Lesotho and the origins and objectives of the LWP and proceed to examine funding, organisation and current operations. Progress to date, especially in training, and the implications of recent forestry legislation are all discussed. Finally, before speculating upon future developments, we address ourselves to the problems facing the Project.

Grass-roots conservation education, for example, has been much neglected and severely limits the potential effectiveness of community woodlot programmes. In addition, the land tenure system, where rigidly enforced, precludes woodlot development by prohibiting land acquisition in situations where, with overpopulation, overgrazing and gulley formation, land is already in short supply. And, whilst increasing the supply of fuelwood, there are still problems of accessibility to woodlots and some doubts as to whether these efforts are just simply remedial rather than stimulative of genuine rural development. Furthermore, the anticipated transition from expatriate to local funding and staffing is unlikely to proceed without reaction. Also, since historic free planting in Lesotho has been primarily aimed at erosion control, the LWP has been misguidedly and myopically regarded solely as a branch of the Soil Conservation Division within the Ministry of Agriculture and Marketing (MOAM). This situation has had a negative impact upon LWP's contribution to rural development.

2. ORIGINS AND OBJECTIVES OF THE LESOTHO WOODLOT PROJECT.

Since 1908 many reports have been written about forestry in Lesotho. While the earliest reports were concerned with choosing the right species for donga stabilisation and small scale planting (Heywood, 1908; Heugh, 1916), the later reports concentrate upon policy formulation and the administration of afforestration (Wicht, 1954; Henry, 1964). Prior to 1936, tree planting in Lesotho was small in scale and centred around missions and trading stores, but in that year, planting began as part of the anti-soil erosion campaign

of the Protectorate authorities. This work was directed towards donga control and the reclamation of sheet-eroded areas and, although the area of these plantings which survived never totalled more than 200 to 300 ha. (Long, 1972), they were important in the fight against erosion and have led to the present situation in which forestry is seem primarily as an agent of soil and water conservation.

These areas were never managed in the forestry sense and after a few years were handed over to the villagers who were then responsible for managing the crop. Between 1936 and 1972 some 40 to 60 million trees were planted with an annual peak of two million in the early 1960s. Whilst most of the original areas planted have been destroyed by uncontrolled grazing, cutting and fire (Richardson 1983 forthcoming), the relatively few scattered areas which remain provide evidence of what is possible with exotic tree species in Lesotho. It is pertinent to note that the main reasons given for the failure of these plantings were: a complete lack of basic forestry knowledge, poor management and a lack of overall direction (Long, 1972).

Considering the limited scope and success of these practices and the lack of a central forest authority, the declared Forest Policy in 1948 can only be described as ambitious. This policy emphasized education, fuelwood production, the maintainence of existing forest lands and the control of erosion on degraded mountain slopes (Henry, 1964), but little provision appears to have been made for subsequent implementation. The need for revised policy and a central authority to control all forestry activities was mentioned by numerous visiting

Forest Officers (notably Henry, 1964; Poynton, 1966; and Fenn, 1969), but no significant steps were taken until 1973 when the LWP was created.

The woodlot concept appears to have begun in 1943 with a report by Miller (1943). He ,like later authors, ruled out any large-scale commercial afforestation in Lesotho for climatic and social reasons and instead favoured the idea of small community woodlots of exotic tree species providing fuelwood and building poles (Miller, 1943; see also Wicht, 1954; Poynton, 1966). Similarly, Poynton (1966) considered scattered planting inferior to carefully sited and systematically managed village woodlots in ensuring the supply of fuelwood and breaking the pernicious habit of burning dung for fuel. He further advised that the species employed be one capable of regenerating freely by means of coppice, root suckers or seed to obviate the need for replanting. The need for a central body to control and maintain existing Government plantations and all future plantations was also under review (Henry, 1964). This discussion revolved around three main proposals; the establishment of systematically managed village woodlots, the formation of a central authority, and the implementation of a training programme, a factor which increased in significance after independence in 1966. These proposals subsequently defined the prospectus for LWP's operations.

The objectives of the Project may be divided into short-term and long term. The short term objectives are :

(a) to establish small plantations near villages throughout Lesotho for the provision of firewood and building poles;

(b) to supply trees and grass to the Soil Conservation Division and to the public for soil conservation;

(c) to develop an administrative and technical organisation capable of implementing (a) and (b);

(d) to train Basotho nationals at all levels to assume complete responsibility for the continuing implementation of a soundly based afforestation policy.

The long-term objectives are :

(a) to determine a rational afforestation policy for Lesotho in terms of its economic and ecological needs;

(b) to create a relevant and well-balanced administrative and technical infrastructure for the support and implementation of a continuing afforestation programme.

3. THE CURRENT SITUATION.

3.1 Funding and organisation

The LWP is funded from three sources: the Overseas Development Administration of the British Government (ODA), the Government of Lesotho (GOL), and the Anglo American Corporation (AAC). The ODA contributes about half the LWP's R500 000 annual budget with the other two donors contributing about a quarter each. The British input is in the form of capital expenditure (vehicles, plant, housing and fencing), the supplementation of the Forest Research Officer's

salary and a small proportion of the labour bill. In addition to this, the British Government also funds degree level training of Basotho nationals through British Council Grants. Thus, the main emphasis of British funding is upon the creation of infrastructure necessary for the formation of a Forestry Division. GOL disbursements cover local salaries, maintainence of the vehicle fleet and other local services. These funds and matters concerning the LWP's Basotho personnel are channelled through the office of the Chief Conservation Officer. The main contribution of the AAC is in the form of professional expatriate management and the training of Basotho nationals at a technical level outside Lesotho.

The LWP is divided into three districts which each cover a portion of the Western Lowlands. Headquarters and Central District are based in Maseru; Northern District in Hlotse and Southern District in Mohale's Hoek. Limited operations, mainly on an experimental basis, are undertaken under the auspices of the Canadian Thaba-T'seka Mountain District Development Project. Each District is controlled by a District Forestry Officer (DFO) who possesses professional qualifications. Under him are Foresters who are diplomates from forestry colleges in either Cyprus or the Ciskei, normally Basotho nationals capable of speaking in both the language and the idiom of the local people in order to perform the vital extension work that secures both the land and local support. Under the control of Foresters are Rangers and field supervisors who oversee the day to day operations at the village level. These sub-technical personnel may be attached to a single woodlot for a substantial length of time

although they, like the Foresters, are moved periodically in order to disseminate local experience and specialities throughout the Project.

The LWP has an accounts section headed by an expatriate administration officer based at the Maseru Headquarters. Prior to 1980, administration and accounting were performed entirely by this section, but recent GOL policy has caused the decentralisation of accounting with funds now sub-allocated to the DFOs. This policy, laid down in the Third Development Plan, is aimed at reducing administrative overheads but, more importantly, at fostering greater co-ordination and consultation at District and local levels so that development activities can be more easily assimilated into existing institutional frameworks (Government of Lesotho, 1980). This decentralisation will confer greater autonomy and flexibility on the DFOs and should lead to more involvement of the LWP in District level development.

3.2 Activities and procedures

Current operations of the LWP cover almost the entire range of forestry activities from land acquisition to felling and disposal of forest produce. This range of activities is described below for, although the main emphasis is on establishment and tending of young plantations, exploitation is now proceeding in some of the

older stands that the Project has inherited .

Extension work leading to offers of land by interested villages is first in the sequence of events. Areas of between 10 and 300 ha. may be accepted by the Project depending on local circumstances. The area of land offered is viewed by the DFO and, if suitable in terms of size and quality, an agreement is signed by the residing chief and the LWP. In the near future, following formal boundary surveys and demarcation, the area will be gazetted and formally declared a forest reserve by the MOAM. Although the Forest Act (Act No 11 of 1978) will make this agreement legal and binding, thus removing a chief's power to withdraw the land, it has also increased the sense of responsibility and purpose of all LWP staff to the effect that offers of land instead of decreasing are increasing. The ever increasing pressure for land often dictates that the areas offered to the LWP are of very poor quality. However, the effect of this trend is partially being overcome by the refinement of establishment techniques and species choice made possible by scientific research.

The first material operation is fencing, which has an immediate beneficial effect upon soil and water conservation. Revegetation soon takes place and within as little as five years a plagioclimax, lacking locally extinct species, may be reached (Richardson, 1983 forthcoming). Depending upon the enthusiasm of the local chief, fencing may or may not be necessary. In areas where the chief is strong and interested in protecting his woodlot, illicit grazing

does not take place regardless of whether the woodlot is fenced or not (Davidson, 1980 a). However, the physical presence of a fence, if only as a line of demarcation, is usually very beneficial. Ground preparation prior to planting is either by strip ploughing on level or gently sloping ground, or by construction of a pit on slopes or rocky ground. Both ploughing and pit construction are done in such a way that soil and water retention on the site are not decreased and may even be increased.

Trees raised in the Project nurseries are usually planted on the prepared ground in spring and later summer or autumn, when good rains fall, at between 1000 and 1100 per hectare which is considered optimal for efficient fuelwood production. The principal species planted are members of the genera *Eucalyptus* and *Pinus* (gums and pines) with the main representatives *E. rubida and P. radiata* respectively. The gums are planted on the better ground, usually that which can be ploughed, whilst the pines are favoured for slopes and more rocky or drought-prone sites. Gums have always been the mainstay of the Project's planting programme but as it proceeded each of the factors normally cited in favour of gums have been called into question. Since it is vital that species selection optimalises both output and erosion control, the research component is becoming an increasingly important aspect of the Project's activities.

The ability of gums to coppice, for instance, may be a disadvantage if the wrong species is planted in the first place. An example of

this is the choice of *E. viminalis* which showed great promise until it was attacked by the *Eucalyptus* snout beetle which was present in Lesotho at a low population level prior to the creation of the LWP (Poynton, 1966). Costly operations have since been undertaken to remove *E. viminalis* so that it cannot provide a source of attack for other gums in the vicinity. Furthermore, the LWP does not yet have local experience of coppice management and this may present unforeseen problems. Second, in relation to output, the volume production of certain pines is now known to be higher than gums on sites of poorer quality (Richardson 1981 a). Since these site types constitute a large proportion of the land offered to the LWP, pines are to be favoured more and more. Third, on the question of fuelwood quality, it is known that pinewood tends to spark and produce heavy soot, but little is known about the relative calorific values of the species planted. Whilst research into calorific yields is planned, there seems little doubt that factors such as growth rates are more important in species selection than subjective judgements of fuelwood quality. Another factor in the pine versus gum question is that gums are less effective in controlling soil erosion and on particularly sensitive slopes may actually encourage it. Whereas gums leave a thin layer of friable litter, the pines produce a dense mat of interwoven needles which has a high water retention capacity and is not easily disturbed.

After planting, the cultivated ground around the trees is kept weed free for one or two seasons until the trees have established themselves. This and fire protection throughout the rotation

constitute the only attention that the trees require until they are felled. Should a small proportion of the trees fail due to climatic or biotic factors, it is not necessary to replant provided that they are spread throughout the area. If they are concentrated in distinct pockets, then replanting is necessary in order to maintain adequate stocking levels. Replanting, or consolidation, is vital in ensuring the continued co-operation of the villagers and is a very effective component of extension work. The LWP has recently fallen behind in replanting because of the need to maintain the momentum of new planting but steps are now being taken to redress this balance and in 1980/81 176 ha. were replanted (Davidson 1981 a), mainly in areas that failed in the drought of 1979/80. The need to take into account initial species choice is a prerequisite for successful replanting.

The proportion of a woodlot that is planted each year depends upon the number of years in the rotation; it follows that the same will apply to felling. Ideally, a woodlot managed on a ten-year rotation will have one-tenth of its area felled each year thus ensuring a continuous supply of forest produce characteristic of the "normal forest". Considering the aims of the LWP, this is the only appropriate way of managing the woodlots.

The need for organised research was only belatedly recognised by the Project and a Forest Research Officer was not appointed until 1979, which, with hindsight, is six years later than it should have been. The small but dynamic research section has concentrated on species

and sub-species selection, refinement of silvicultural techniques, especially establishment, and the improvement of nursery efficiency. The amount of money saved by the implementation of research findings undoubtedly exceeds the cost of the research.

3.3 Contribution to rural development.

In terms of physical impact, woodlot establishment eradicates erosion on the site of the woodlot and may reduce erosion lower in the catchment. This leads to improved domestic water supplies and can partially alleviate the effect of drought by prolonging the period of run-off.

Secondly, woodlots provide cheap and relatively accessible fuel which should reduce the need to burn agricultural residues and lead to improved soil fertility. Fuelwood is sold in headloads which equal approximately 30kg and the fee for one is 30c which is about 25% of the price of imported wood. It is also argued that by improving accessibility, the time saved on collecting fuel may then be used more profitably in farm production. However, this has yet to be researched and remains speculative at present.

Thirdly, large numbers of rural inhabitants are employed by the LWP, although generally on a casual and temporary basis, bringing food (in the case of the "Food for Work" programmes) and money directly into the rural economy. In addition, when timber is felled, 20% of the gross revenue is returned to the village development fund.

This, it is hoped, will eventually provide communities with an annual income which should enhance the standard of living by financing many types of village improvements (Richardson, 1983 forthcoming).

Finally, the LWP sponsors training programmes at sub-technical through to professional levels, increasing awareness of forestry's role in development at the village level and disseminating forestry skills throughout Basotho society.

4. PROBLEMS.

To date, short-term objectives have been achieved largely successfully. Planting targets have been regularly exceeded and offers of land continue to be made throughout the country. Trees are supplied to the Soil Conservation Division and the public and the evolution of administrative and technical infrastructure has progressed well. Preliminary investigation suggests that donga sidewall extension and gulley denudation have been effectively controlled, but it is too early to guage the impact of woodlot establishment on water supplies and habitat degradation downstream of them. Training programmes are underway and being extended. Nevertheless, problems are emerging which may adversely affect implementation of the LWP's long-term objectives. As such, they merit further discussion.

4.1 Training.

The training of Basotho nationals at all levels is essential to the final success of the LWP and, while in the past, training has been

concentrated on the technical level, more emphasis is being placed now on the professional and sub-technical levels. At the professional level, Basotho nationals have been recruited at the National University of Lesotho and, through the British Council, arrangements have been made for them to attend a British University to study for a first degree in Forestry. At present there are three Basotho studying at Aberdeen. On their return as graduates, they will become counterparts of the expatriate managers until 1985 whilst gradually assuming full management responsibility.

However, the transition from expatriate to local management is unlikely to be effected without difficulty. Whilst localisation is an accepted element of government policy, there is a tendency for it to proceed in a manner and at a pace detrimental to the project or institution concerned. The replacement of expatriate personnel with over ten years practical forestry experience by graduates with only a two year hand-over overlap will undoubtedly impair the efficiency and continuity of the Project.

Furthermore, the Project's funding will eventually become the sole responsibility of the Lesotho Government. Thus, it is unlikely that the Project's internal auditing section will retain its independence of full ministerial financial control. Given that Lesotho's bureaucracy has become notorious for its inefficiency in accounting (Tarr, 1982), the Project will definitely suffer in this process of assimilation even if, as projected, it gains financial autonomy of the Soil Conservation Division.

At a sub-technical level, two separate training activities are underway. First, a one-year forestry course is being initiated at the Lesotho Agricultural college which will provide graduates capable of filling field supervisor or Ranger posts, many of which are vacant due to the lack of suitable candidates. Second, internal training is being undertaken to provide trained labour specialising in the more skilled operations of planting and, to some extent, exploitation. At present virtually all operations are carried out by labour sponsored by the World Food Programme (WFP). These workers are predominantly women who are remunerated by WFP rations and, if they are required to work overtime, a supplementary cash bonus. However, the productivity of WFP labour is chronically low and, in operations such as planting, the quality of work is often unacceptable. Food payments do not provide much of an incentive for attentive and efficient labour. Since the employment is temporary, there is an understandable tendency to artificially prolong the project as much as possible anyway. In addition, there is very little training given to labourers, so the Project, largely because of budgetary constraints, is unable to establish a mobile, permanent and skilled workforce, but must recruit a different team of workers in each community. In future, it is anticipated that the actual planting will be completed by trained labour, with logistical support from WFP workers, but this policy is a long way from realisation.

4.2 Conservation education

The need for a broadly-based grass roots mode of conservation education has been belatedly recognised in Lesotho (Government of Lesotho, 1980, p. 209). Conservation measures continue to be negated

by inappropriate land use practices particularly overstocking, crop choice and methods of planting. Hence, it is now accepted that the formulation of conservation objectives should proceed in consultation with the people concerned and that the construction, maintenance and efficiency of conservation measures and structures depends to a large extent upon community understanding, support and participation.

At present, a small informal educational programme is being run by the Division of Soil and Water Conservation. Upon designation of a particular project, a Division Officer is appointed to conduct discussion and training on conservation issues. Eventually, the participation of the Division is reduced and the programme continues under the auspices of a village conservation committee. "Village-level training", then, is conducted by members of the community. This most certainly helps in accelerating the process of acceptance since respected village residents are much more likely to find a receptive audience and also because they are familiar with local conditions and agricultural practices. The teaching, although at a basic level, concentrates on three main issues : the importance and meaning of conservation, the construction and maintenance of remedial structures, and the optimal utilisation of land in accordance with its capacity (Wellings and Matsaba, 1983 forthcoming).

Whilst the programme is a significant step in the right direction, particularly in that local people are directly involved from the onset in negotiation, plan development and the training itself, its

major weakness lies in its insufficiency in depth. Moreover, in terms of training methodology, the lack of a demonstrative component limits its impact and it is possible that the conservation message is distorted as it passes from Division to community since feedback is limited and no real procedures exist to monitor performance (Wellings and Matsaba, 1983 forthcoming).

Woodlot projects, while enjoying official local support, have seen little benefit from the education programme so far. It was noted above that site preparation is generally unsatisfactory and, whilst woodlots require little maintenance, ignorance does lead to illicit grazing and overcropping of the wood supply. It is therefore unsatisfactory that conservation education is entrusted primarily to a Division of MOAM and not more broadly based. The programme is in urgent need of expansion to include school age children through the provision of training at primary and post-primary levels within both formal and informal sectors. In addition, conservation education needs to be established as an important component of distance and extra-mural teaching. But, given the current direction in educational innovation in Lesotho, this prospectus seems unlikely to be fulfilled at least in the immediate future.

4.3 Land tenure.

Land tenure in Lesotho is based on the *"philosophy that the land is a national asset to be enjoyed by the nation as a whole"* (Williams, 1972, p.6). Thus, Section 93(1) of the Lesotho Independence Order

of 1966 provides that :

> *... the power to allocate land that is vested in the Basotho nation, to make grants of interests or rights in or over rural land, to revoke or derogate from any allocation or grant that has been made or otherwise to terminate or restrict any interest or right that has been granted is vested in the King in trust for the Basotho nation.*

This provision is also contained in Article 4 of the 1973 Land Act which delegates the power of allocation to the Chieftainship.

According to Article 6 of the Land Act 1973, the Chief is required to consult a Development Committee appointed by central government but, in practice, this is far from the case. Traditionally, an allocation consists of the right to occupy and use land in perpetuity unless that right is revoked by the Chief. The power of the Chieftainship is therefore considerable and so the LWP is restricted to land actually offered to it. There are no provisions for purchasing or expropriating land by official order. Hence, the selection of the site is controlled by the Chief with the result that the Project often has to make do with unfavourably located and inferior quality plots and is frequently denied access to land in need of its services.

Various efforts by central government to modify the inert land tenure system (Government of Lesotho, 1980, p. 120) have been strongly contested by rural Chiefs who see them as attempts to usurp the powers invested in them by the King and annex land under their jurisdiction.

Under the Land Act 1979, for example, authority over land was to pass to committees under the chairmanship of the Chief (Government of Lesotho, 1980, p. 116). Thus, the 1978 and 1979 Land Acts made little impact upon rural tenure and it is not anticipated that the new Act presently going through Parliament will induce significant change in the system either (Wellings, 1983). Moreover, the Forest Act 1978, which legitimises the LWP's 'ownership ' of woodlot sites, has yet to be tested in application. Security of tenure may prove to be more tenuous in practice than in theory.

4.4 Impact upon rural development.

The Woodlot Project was originally conceived as a stimulus of rural development activities by infusing an awareness of conservation and appropriate patterns of land use and by directing capital into the rural economy in addition to its role in conservation and fuelwood production. However, in the absence of a broadly based education programme and development ventures in other sectors, its efforts have become remedial rather than catalytic. Indeed, if local maintenance proves ineffective and unsatisfactory practices continue to abrogate the Project's effectiveness, then the impact of village woodlots may be more temporary than permanent.

There is, as yet, little sign that the increased accessibility and volume of fuelwood has improved agricultural productivity but some evidence to suggest that scavanging for wood and dung burning persist in serviced communities merely because these sources are free of payment. And, food for work programmes do not have any lasting

impact upon the rural economy if they encourage people to neglect their farms. The income accruing to village development committees from timber production is presently inadequate to support development activity.

4.5 Administrative designation.

The success of the LWP in establishing woodlots, undertaking training and creating technical infrastructure led directly to the formulation of the Forest Act 1978 and the subsequent Forest Regulation of 1980. The Act provides for implementation by the Forestry Division of the MOAM and section 20 makes it clear that until the creation of the Forestry Division any references to such a Division shall be construed as references to the LWP. This Act is a very real step in terms of administrative redesignation, but so far its implementation has proceeded sluggishly. Although the Act alludes to the role of the LWP as the Forestry Division, and despite the fact that the ultimate aim of the LWP is to establish this Division, no moves have been made by the MOAM to effect this transformation. The status of the LWP as embryonic Forestry Division has changed little since 1973 even though the need for a central authority to control all forestry activities has never been greater.

The present lack of recognition of the LWP in the role of forest authority seems to stem from a lack of understanding of the role afforestation can play in rural development. This may be largely due to the absence of a varied forestry tradition and the long association of trees with soil conservation which overshadows the full

potential of forestry. The paradoxical nature of this situation is apparent since it is only by extending the scope of systematic forest management that forestry can make the most significant contribution to the fight against erosion. The Third Development Plan is symptomatic of this lack of understanding of the diverse potential of forestry. Not only is the overall case for forestry inadequately represented but the long term objectives of the LWP are omitted altogether. Whilst the Plan goes on to state that woodlots will be established at an average rate of 600 ha. per year, no attempt is made to relate afforestation to the broad aims of the Plan (Government of Lesotho, 1980, pp. 186-187).

These aims include : *"protecting soil and water resources and exploiting them to the fullest possible extent"* and *"increasing domestic employment"*, in both of which forestry has an important part to play. In the longer term, recent legislation and, perhaps more important, the continued support of the rural people indicate a growing understanding of forestry. However, delay in creating the Forestry Division not only restricts the present development and implementation of a sound afforestation policy but may lead to long term detrimental effects in rural development. If the present vacuum continues until 1985, the recently returned graduates will have to simultaneously master their profession in a working environment and negotiate with other divisions in the MOAM. The importance of these first negotiations must not be overlooked as they could permanently determine the role forestry is to play in subsequent rural development in Lesotho (Davidson, 1981 b).

5. FUTURE DIRECTIONS.

The future of the LWP can be discussed under five headings :

(a) continued woodlot establishment with more emphasis on *Pinus* species;

(b) more use of the middle altitudes;

(c) the transformation of the LWP into a Forestry Division;

(d) wider integration of forestry into rural development;

(e) the replacement of expatriate managers by Basotho nationals.

The establishment of village woodlots will continue but with increased emphasis on species choice in relation to site. Considering both past experience and the quality of land being offered to the LWP, the swing from *Eucalyptus* to *Pinus* species will continue. In connection with species selection, research activities will have an increasing impact. On low grade sites, for example, *P. radiata* will replace *E. rubida* as the main species planted; on the poor pine sites, *P. pinaster* may be more widely used because of its particularly low nutrient demand (Richardson, 1981 b). More attention will be paid to trained planting gangs and contractors may be used for ploughing and road construction (Davidson, 1980 b). Despite recent legislative changes in the system of land tenure and the powers of protection conferred upon the LWP by the Forest Act, the support and enthusiasm of the rural population will still be actively pursued. The reasons for this are twofold : first, offers of land by the Chiefs will remain the Project's principal way of acquiring land. Second, the continued enthusiasm of the local population is much more important than legislation in combating illicit grazing, fire and uncontrolled cutting (Long, 1978).

Most of the land offered to the LWP still falls into Category 7 : "Land Unsuitable for Agriculture" as defined in The Land Resources of Lesotho Study (Bawden and Carrol, 1968). More use is likely to be made of the Agricultural Potential Map included in this study in future planning (Henry, 1980). It should be noted that land in Category 7 covers 350 000 ha., which is far in excess of the 16 000 to 20 000 ha. that were estimated by Long (1972) to be necessary to meet domestic fuelwood requirements. With pressure for land increasing most sharply in the lowlands, more use may be made of the middle altitudes (1 180 to 2 400m). This trend could lead to the establishment of larger areas capable of supporting small-scale local industries (Davidson 1980 b). Wider soil and water conservation benefits would then be realised and the potential for agricultural integration would be increased.

The eventual transformation of the LWP into a Forestry Division will lead to increased awareness of the potential applications of forestry in rural development. The advantages of a central forest authority which would then accrue to the GOL are : first, the case for forestry in development would be brought into ministerial deliberations at a policy making level. Second, the GOL would have at its disposal a technically informed organisation capable of co-ordinating forestry development initiatives whilst controlling existing forest areas. In filling a more diverse role in rural development, forestry could become a significant part of the fight against domestic unemployment, particularly as job opportunities in South Africa continue to decline with internalization of the mines' labour force.

Agricultural integration is likely to proceed on two broad fronts. First, in selected development areas that are provided for by the Land Act 1979. Second, on a smaller scale, both communities and individual farmers who have received greater security of land tenure through the Land Act may be more inclined to establish their own woodlots and shelter belts. The LWP is both capable and willing to participate in both of these initiatives through appropriate incentive and extension schemes. Also the decentralisation mentioned earlier should lead to greater co-ordination between the agencies involved in rural development. This should bring a wider appreciation of forestry across a broad spectrum and steps may be taken to promote the multiple use of forest land.

The replacement of expatriate management by Basotho nationals with professional forestry qualifications will mark a significant turning point in the development of forestry in Lesotho. Although problems are anticipated, responsibility will be passed progressively from expatriate to Mosotho until the latter has assimilated some of the practical and operational experience of the former.

Once all these changes are complete Lesotho will be possessed of an indigenous, well-balanced and technically competent Forestry Division. On balance, the prospects appear favourable, but so much depends on the participation of the community and developments in other sectors of the rural economy. At present, the LWP is obliged to operate within a piecemeal policy framework. To make a real impact, it not only has to expand its own activities, but must be incorporated as a

component of an integrated development package. A broadly based, informal educational programme, as emphasised here, is a particularly pressing need but this is only one ingredient in the recipe. If the LWP continues to function in isolation then its contribution may be negligible.

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Note: all unpublished reports on forestry in Lesotho are available from the Lesotho Woodlot Project, Box 774, Maseru, LESOTHO.

DEVELOPMENT STUDIES UNIT

The Development Studies Unit is a multi-disciplinary unit within the Centre for Applied Social Sciences at the University of Natal in Durban. The Development Studies Unit was established at the beginning of 1982 with the purpose of providing a focus for research into the problems of developing areas, with a view to assisting the University to play a meaningful role in the upgrading of the quality of life in the poorer areas surrounding it.

As well as undertaking research in many areas of South Africa, the Unit offers a post-graduate Masters programme in development studies. The Unit has published the following :

Working Papers :

1.	Jill Nattrass	The Dynamics of Black Rural Poverty in South Africa
2.	Jill Nattrass	The Dynamics of Urbanisation in South Africa
3.	Paul Wellings	Modelling Access to a Basic Need: The Provision of Primary Health Care in Rural Lesotho
4.	Paul Wellings	A Case of Mistaken Identity: The Squatters of Lesotho
5.	Ian Powell and Paul Wellings	The Lesotho Woodlot Project: Progress, Problems and Prospects