

SUSTAINABLE RURAL DEVELOPMENT: CAN INDUSTRIAL FORESTRY MEET THE CHALLENGE?

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INTRODUCTION

Forest cover in Scotland has grown from under 5% in 1918 to 16% in this decade as a result of an ambitious programme of afforestation. Plantations of fast-growing, non-native species, such as Sitka spruce, lodgepole pine and Japanese larch dominate the forest resource, with management aimed primarily at supplying the fibre and sawlog processing sectors. The state forestry service, the Forestry Commission, has invested heavily in industrial forestry, either directly through planting and management of state forests, or by offering financial incentives to the private sector.

There can be no doubt that the industrial forest model, as pursued by the Forestry Commission and much of the private sector, has been successful in terms of the government's historic aims. Ambitious afforestation and timber production targets have been met, there have been huge inward investments in downstream processing capacity, and outdoor recreation and conservation have been partly integrated with timber production.

However, some serious doubts over the sustainability of industrial forestry remain. First, returns on investment in commercial plantations are currently low or even negative, and, with competition in the world market likely to intensify, there are grave doubts over the industry's long-term viability. Second, the importance of local people to the development process is recognised in international agreements such as Helsinki and Rio, and in the Scottish government's own rural development strategy (Scottish Office 1998),

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Scottish Affairs

yet the benefits rural communities derive from industrial forestry are diminishing. For example, forestry employment in rural areas is falling, timber harvesting and transport to distant processing plants damages the local transport infrastructure, and the closure of local forest offices has exacerbated tensions between forest managers and the local community.

In January 1999, the Scottish Office Land Reform Policy Group, published their final report which outlined recommendations for action on long-standing land reform issues such as feudal tenure, land use and community ownership. The purpose of the Group's work was to improve 'the way the land resource is utilised so as to enhance the lifechances of people living and working in rural areas, and ... asking hard questions about what are the most practicable and cost-effective ways of achieving this' (Scottish Office 1999). Curiously, forestry was not considered by the Group, and there has been little scrutiny of the future role of industrial forestry. The aims of this paper are therefore to scrutinise the capacity of the industrial forest model to contribute to the emerging rural development agenda, and to consider mechanisms by which local communities can enhance their social and economic well-being through the management of woodlands.

The paper is divided into three main sections. The next section describes the development of industrial forestry in Scotland, following the creation of the Forestry Commission in 1919¹. In the third section, the performance of industrial forestry in terms of rural development indicators such as employment, housing, economic viability, and community involvement is scrutinised and specific problems identified. The final section outlines fundamental changes to the ownership and management of state-owned forests, and to the way the Woodland Grant System operates, which would transform industrial forestry into a community-oriented resource managed for sustainable local and national benefits.

INDUSTRIAL FORESTRY

Industrial forestry, where timber production is the dominant objective, accounts for more than 90% of the forest resource in Scotland. Sitka spruce and other high volume, low value crops dominate the forest resource, with over 90% of all timber destined to supply the large-scale fibre and saw-

¹ *Originally the responsibility for regulating the forestry sector and managing the state forests rested with the Forestry Commission. In the early 1990's these responsibilities were divided, with Forest Authority assuming the regulatory role, and the management of state land in the hands of Forest Enterprise.*

Forestry and Sustainable Rural Development

milling processing sectors (FICGB 1998). Annual timber production is expected to rise to over 8 million tonnes by 2020, and in the last 2 years alone the industry has invested over £100 million in new processing capacity, with further investments planned (Forestry Commission 1999).

The origins of industrial forestry lie earlier this century, in the aftermath of World War I, when woodland cover had fallen to below 5%. In 1919 the Forestry Commission was created and subsequently embarked on an ambitious afforestation programme. The objective was straight forward: to create a strategic forest reserve on the grounds that without it Britain, as an island nation, would risk defeat in any future conflict. Although concerns about future world-wide timber shortages, and high rural unemployment were also reflected in subsidiary objectives, the strategic reserve objective was paramount (Mather 1991).

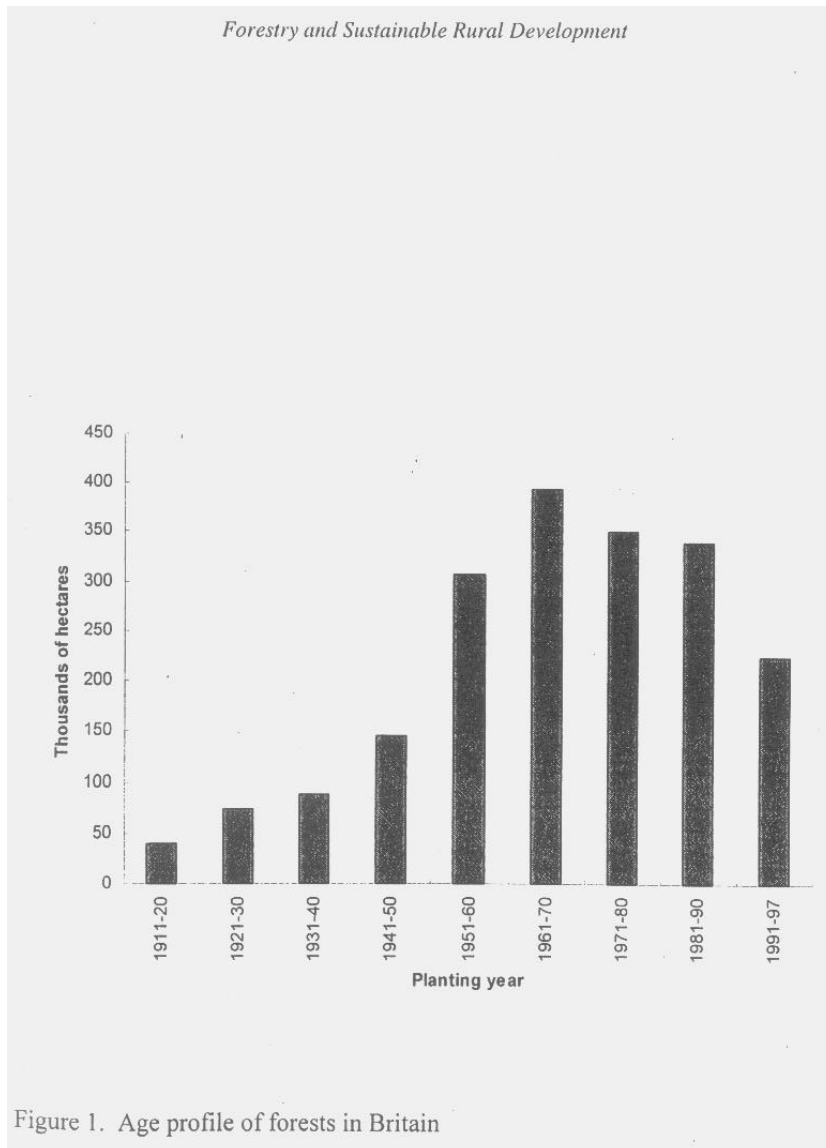
As the threat of nuclear war receded in the 1950's, investment in industrial forestry was increasingly justified in terms of rural employment, and strategic arguments relating to 'trade deficits' and unspecified threats of 'trade-war'. Although the trade arguments had little validity in a world moving towards free-trade and the economic reality of comparative advantage, commercial afforestation with timber at its heart, continued apace (Figure 1). Tax relief and grant incentives, together with the availability of large areas of poorer land, encouraged afforestation on a grand scale by the private sector (Crabtree and Macmillan 1989). Industrial forestry benefited from significant investment in research and development, while professional training at universities and colleges, entrenched the orthodoxy of industrial forest management.

The expansion of industrial forestry was not unopposed. The agricultural community were antagonistic, considering forestry expansion a threat to their way of life and industry. The viability of planting industrial forests was also questioned as far back as 1972 when a UK Treasury study concluded that forestry expansion could not be justified in economic terms by timber alone (HM Treasury 1972). Dark, unwelcoming Sitka spruce forests intimidated ramblers, and as forestry pushed onto poorer ground, conflicts with nature conservation arose, particularly in areas like the Sutherland and Caithness uplands bogs (NCC 1987).

With the help of subtle shifts in policy and management objectives, the state-inspired industrial forestry sector proved resilient. Nature trails and picnic sites were established, with 10% of the woodland area dedicated to broadleaf trees or non-woodland habitats. Indicative Forestry Strategies were developed to guide forestry investment on to preferred areas, and the creation of new

Scottish Affairs

woodlands types was encouraged through the Native Pinewood Scheme, and special incentives for peri-urban recreational forests. Despite



Forestry and Sustainable Rural Development

these changes, timber production, under the banner of 'multi-purpose forestry', remains the central management objective in the vast majority of mature plantations.

Although the dominance of industrial forestry, over say native woodlands, is arguably a reflection of contemporary market forces, state intervention has played, and continues to play, a crucial role. For example, the Forestry Commission is the single largest landowner in Scotland with over 1.5 million acres, and over 90% of restocking by the Commission is achieved with fast-growing coniferous species. Despite the questionable public benefits of Sitka spruce plantations, generous public grants to the private sector also ensure allegiance to the industrial forestry model.

INDUSTRIAL FORESTRY: LIMITS TO SUSTAINABLE RURAL DEVELOPMENT

In 1998 the government launched its review of rural development strategy. The overall aim of government policy for rural Scotland 'is to foster and enable the sustainable development of rural communities' by securing more and better jobs, improving the quality of housing, developing social and cultural infrastructure, and safeguarding the natural heritage'. Community empowerment, land use integration, and entrepreneurial diversity are regarded as the driving forces of development and are to be encouraged (Scottish Office 1998). In this section the limitations of the industrial forestry model in relation to sustainable rural development are scrutinised.

Employment is arguably one of the most important and easily measured yardsticks of rural development. Slee et al (1996), reporting on a community consultation exercise, found that the greatest local benefit was employment. Unfortunately, forestry-related employment in rural areas has been declining for a number of years, even as the forest area has expanded. For example, Evans (1987) found that over a 30 year period in Strathdon, north-east Scotland, local employment in forestry and keeping decreased by over 90% despite a 93% increase in the forest area. In part this is because of increased mechanisation, particularly in harvesting, but it is also a consequence of the switch from permanent local staff to contract workers.

Although employment in the forestry sector is predicted to rise slightly by 2020, these are principally urban-based jobs in downstream processing. Rural jobs in establishment, office work, and harvesting continue to decline (Table 1) as economies of scale are sought to offset worsening trading conditions.

Scottish Affairs

The decline in rural jobs is sharper than indicated by Table 1 because a significant proportion of establishment and harvesting jobs are now carried out by contractors who do not live locally (FICGB 1998). With timber prices falling in real terms over time (Figure 2), and current rates of return already very low, or even negative for many timber plantations (FICGB 1998), future employment prospects are bleak. Home-grown timber production has never been, and will probably never be, profitable. The pursuit of further economies of scale at the expense of rural communities must therefore be questioned. In a global context, a Scottish forestry industry which is overdependant on low-value fibre markets is very vulnerable because it cannot match the fast growth rates, the low opportunity costs, or the potential for achieving significant economies of scale that other trading nations enjoy.

Table 1
Trends in UK forestry employment

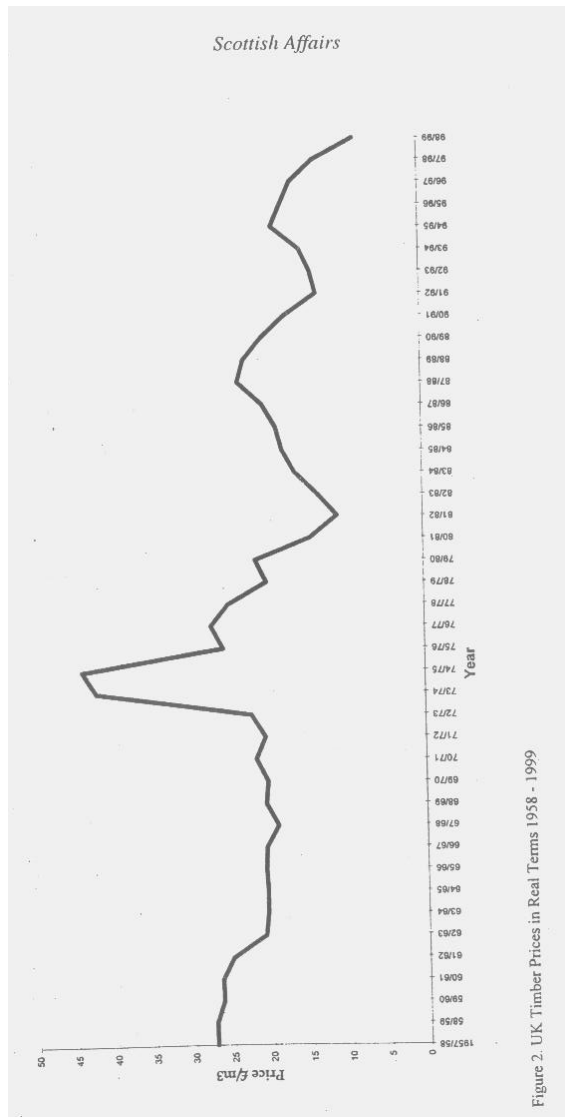
| | 1985-86 | 1988-89 | 1993-94 |
|--------------------|-------------------------------|---------|---------|
| | Predominately rural based | | |
| Establishment | 8950 | 7110 | 7075 |
| Other Forest | 1420 | 1725 | 2365 |
| Harvesting/Haulage | 13325 | 12210 | 9730 |
| Office | 5350 | 5905 | 2790 |
| Sub-total | 29045 | 26950 | 21960 |
| | Predominately non-rural based | | |
| Processing | 10655 | 14100 | 12860 |
| Grand-Total | 39700 | 41050 | 34820 |

Source: FICGB 1998

The economic viability of industrial forestry has been questioned by central government in reports to the Treasury (1972) and the National Audit Office (1986). In their response, the Forestry Commission and the timber industry successfully argued that forestry should be subsidised because it provided the nation with non-market benefits such as informal recreation, landscape enhancement, and wildlife conservation. However, a recent cost-benefit analysis of replanting existing industrial forests in Scotland suggested that,

Forestry and Sustainable Rural Development

even after including monetised benefit estimates for recreation and carbon-storage, almost 50% of industrial forests fail to satisfy the government's 6% rate of return (Macmillan 1993).



Scottish Affairs

The economic argument for industrial forestry would be further diminished if external costs to the environment and to the rural transport infrastructure were included. For example, Hanley and Craig (1991), estimated that the environmental costs of afforestation of the 'Flow-Country', an area important for nature conservation, outweighed projected timber benefits by over £300 per hectare. Damage to roads and bridges by timber lorries are another example of an external cost of industrial forestry. To date these costs have not been borne by the timber industry but by the tax-payer, and with harvesting projected to increase substantially over the next 20 years, these costs will continue to rise.

Adequate housing to supply local needs is another important indicator of sustainable development. Although the Forestry Commission did embark on a number of house-building schemes for their work-force, the programme was modest and was largely abandoned by the 1950s. In other locations, especially remoter areas, family homes that came under forestry ownership were deliberately ruined to avoid local authority rate charges. Today, this policy is difficult to understand, and although it has never been formally acknowledged by the Commission, is probably best explained by a widely-held view among industrial foresters that people simply complicate management.

Due to the speed and scale of the afforestation programme, industrial forestry has faced difficulties integrating with other land uses, and has often been viewed as a threat to more traditional activities such as farming and hunting. For example, large blocks of new coniferous plantations often disrupted livestock and red deer management by restricting access to higher pastures. Opportunities for silvo-pastoralism and other forms of integrated land use have been neglected, and problems with agricultural tenancy conditions have restricted the direct involvement of farmers in tree-planting.

The spirit of entrepreneurialism has failed to flourish at a local level. With ownership concentrated in relatively few hands, and management effort firmly focused on meeting production targets using fast-growing exotic species, there has been little or no opportunity for developing new markets for timber and non-timber outputs, or local processing. Research and development funds are targeted at industrial forestry needs, with new ideas often dismissed as heretical by the defenders of the industrial forest orthodoxy.

To some extent many of the limitations of industrial forestry with respect to development reflect the economic, political and socio-cultural context which prevailed historically. Indeed, it could be argued that, given appropriate

Forestry and Sustainable Rural Development

incentives, the industrial forest manager could successfully respond to the rural development agenda in much the same way as recreational and conservation demands were accommodated. However, there are a number of prevailing institutional and economic pressures that suggest that the capacity of industrial forestry to adopt a rural development role is fundamentally limited.

Efficiency savings have led to the closure of local forest offices and this policy is unlikely to be reversed given the current economic fragility of the forestry sector. Hence, decision-making will become increasingly remote and unaccountable. For example, following the closure of the Balmacara Office, all important forest management decisions on the Isle of Skye are now made in Fort Augustus. Office closure also risk significant diseconomies of scale¹ caused by the alienation of the workforce, and lack of local knowledge. For example, remote management could lead to local development opportunities for niche products being overlooked.

Forest managers were once part of the community where they worked, and community interest could be advanced locally through the workforce or informal networks. By contrast, recent local consultation initiatives by Forest Enterprise have been highly formalised, and are viewed with considerable scepticism by local people. In essence they are attempts to retain power and influence over forests and land by proposing superficial procedures for community involvement that is guided and constrained by institutional rules determined by Forest Enterprise itself. It is, in the words of Andy Wightman (1999), an example of 'classic Gramscian hegemony - the elegant power of the State dressed up as citizen's participation and empowerment'.

As a government agency, the Forestry Commission faces particular constraints on how it can respond to the rural development agenda. First, it has to meet strict revenue-raising targets from the sale of timber and other assets². In the past year, because of lower timber prices, the Commission has had to increase its annual harvest target from 4.5 million to 4.7 million tonnes in order to realise an income of almost £100 million to the Treasury (Forestry Commission 1998). This intensification has also helped to depress timber prices which, in turn, has exacerbated the problems faced by the private sector. Second, most of the Commission's future timber production has been

¹ *A diseconomy of scale is where the cost per unit of output increase as the scale of production increases.*

² *These targets were determined by the UK Treasury in London, but it is not yet apparent if these targets will be adopted by the Scottish Parliament.*

Scottish Affairs

committed to large scale processing sector through long-term supply agreements. Hence, there is little scope for providing timber and other resources to help initiate local entrepreneurial activity.

The Forestry Commission, like most other branches of the civil service, is a highly centralised and hierarchical organisation which relies on top-down management. In stark contrast, sustainable rural development is perceived as a bottom-up process driven endogenously by the community. It is difficult to envisage how these two very different institutional approaches can be reconciled. The centralised nature of the Commission also makes it vulnerable to pressure groups such as the RSPB, and trade organisations such as the Wood Panel Industries Federation. Scattered local communities are relatively powerless in negotiating terms, where power is concentrated at the centre. Hence, national concerns will generally supersede local issues under current institutional arrangements.

FORESTRY FOR RURAL DEVELOPMENT

The case for industrial forestry as a driver of sustainable rural development appears weak. As world economic forces continue to threaten the long-term viability of industrial forestry, and with the increased emphasis on community empowerment and local decision-making in rural policy, the search for alternative forest management systems must intensify. One such alternative is Rural Development Forestry where the emphasis is on locally based activities producing a wider range of wood and forest products, with local people intimately involved in all aspects of forestry planning and management (Inglis and Lussigne 1994).

Forestry with these characteristics is found throughout the developing and developed world, ranging from the forest gardens of south-east Asia to the communes of France and Italy, and the farm forests of Scandinavia. In Scotland, because of a range of historical and institutional reasons, there is no such tradition. Although recent initiatives such as FAPIRA (Forests And People In Rural Areas) have successfully encouraged community involvement in forestry, they have been limited in scope and have not displaced industrial forestry to any significant extent.

Given the poor economic conditions for home-grown timber, one could argue that there are no real alternatives: without industrial forestry there would simply be no jobs and land would be abandoned. Slee et al (1996) calculated that neither conventional industrial forestry nor 'employment-recreation centred' Rural Development Forestry were financially viable. However, this

Forestry and Sustainable Rural Development

takes a narrow view which does not account for the latent potential of alternative woodland systems and ownership patterns. One has to constantly remember that for historic and cultural reasons the spirit of enterprise in rural Scotland has been stifled by inadequate access to land, remote decision-making, and rigid bureaucracy.

It is beyond the scope of this paper to explore the potential for alternative forest enterprises in any detail. This paper, and indeed government policy, is more concerned about the process of development than with specific activities – activities and outcomes will be for the community to decide. However, three general points can be made. First, if Scottish timber production is to become economically viable, more emphasis must be placed on growing, processing and marketing products which, by their very nature, are less easily substituted by cheaper imports. As with organic foods, a price premium could be developed for distinctive local forest products that rely on craftsmanship, and which appeal to the consumer on ecological and cultural grounds. According to Jeremy Peat, Chief Economist at the Royal Bank of Scotland: 'Being cheaper is not the way forward for Scotland. If we were to attempt to move downmarket we would play into the hands of eastern and central European competitors – and the emerging market economies which will re-emerge as fierce competitors before too many years have passed' (Peat and Boyle 1999).

Second, the contribution woodlands could make to the local economy indirectly by providing an attractive landscape for holiday-makers and local businesses, and as a setting for outdoor activities, is not fully recognised in forest planning and policy. For example, a recent study of agriculture in five Scottish Environmentally Sensitive Areas estimated that over 500 Full Time Equivalent jobs could be directly or indirectly attributable to the expenditure of visitors attracted to these areas by sympathetic countryside management.

Third, native woodlands are likely to be a less risky long-term investment than industrial forestry. Although native woodlands grow more slowly than commercial coniferous species, they can be established and managed at a lower cost per hectare, and can provide a more diverse range of direct and indirect benefits at all stages of growth. As experience with industrial forestry development has shown, over reliance on one or two species with a restricted market range represents a considerable risk to the local and national economy.

The rest of the paper is concerned with proposed reforms to state intervention in forestry that would encourage a more community-centred and sustainable

Scottish Affairs

forest sector to emerge. The guiding principles for these proposed reforms are as follows:

- Trust. When considering local development needs, local people should be trusted to know what is best for them.
- Responsibility. Wise decision-making is born from responsibility. Local communities should accept the potential consequences, good or bad, of the power to make decisions.
- Equity. A broad range of households should benefit from the woodland resource.
- Accountability. Decision-makers must be accountable to the local community and, where appropriate, to the national and international communities.
- Diversity. Scotland is a diverse country. Each locality will differ in terms of biophysical capability, and in relation to management priorities and objectives.
- Enterprise. Without fresh ideas and new knowledge rural areas will stagnate. The enterprise spirit must be encouraged, and not suppressed by remote and blinkered management or bureaucracy.

State intervention, directly through ownership of forests, and indirectly through financial incentives to the private sector, has shaped and supported the industrial forestry model. In order to encourage the Rural Development Forestry process, public policy must be fundamentally changed. First, the ownership and management control of state forest land should be transferred to local Forestry Trusts. Each Trust would be legally established as a company limited by guarantee, governed by a constitution which promoted the sustainable use of forest resources for the betterment of current and future members of the community. If Trust ownership proved unsustainable, the forest could revert back to direct management by the State, or be sold to private forestry interests.

Communal ownership of forests through legally constituted bodies such as Trusts are common in other parts of the world and are an effective means to ensure that forest land is managed to benefit the community as a whole. Communal ownership, as opposed to individual or state ownership, would allow forests to be managed efficiently for both local products such as timber, and for the provision of woodland services such as landscape, recreation and wildlife which benefit the wider community. Individual ownership of Forest Enterprise land should also be encouraged where there is no obvious or over-

Forestry and Sustainable Rural Development

riding community interest. For example an outlying area of woodland, remote from any centre of population, could be sold to a local farmer or entrepreneur. This would enhance diversity in ownership and management and hence encourage innovation.

A key pre-condition for Trust ownership would be the submission of a detailed business plan for managing the forest in a manner consistent with good forestry practice, and the principles of sustainable development. The Board of the Trust would consist of democratically elected representatives of the local community (e.g. local councillors), but could also include appointees from government agencies, Non-Governmental Organisations or other groups which were prepared to make a strategic investment in the Trust's activities. The Trust would aspire to combine inventiveness and enterprise, with a strong moral sense of community and compliance with national and international agreements. Forestry and conservation staff, together with other technical and business advisors, would supply the Board with expert guidance and provide training for local people.

Unlike the current situation there would be no single-template for forest-related development, with each Trust governed by different priorities and opportunities. Where forests lie in close proximity to urban areas, management may be directed at outdoor recreation, but in more remote rural areas the emphasis may fall on employment and wealth creation. Slee et al (1996) estimated that employment-centred Rural Development Forestry increased local jobs by almost fourfold compared to industrial forestry, with little impact on profitability. It is also possible that some communities may continue to favour industrial forestry, perhaps as a consequence of location or circumstance. Diversity in ownership and management is likely to stimulate innovation and new forest enterprises, and silvicultural systems, such as continuous cover forestry and silvo-pastoralism, could evolve. Flexible lease agreements would ensure access to the forest resource for a wide range of activities including tourist enterprises, informal recreation, livestock pasture, and, of course, timber production.

An important advantage of transferring ownership from Forest Enterprise would be that local forestry trusts would not be bound to meet Treasury demands on forest revenues, nor fulfil long-term supply contracts with the large-scale downstream processing sector. These obligations have restricted the ability of Forest Enterprise to respond to rural development initiatives. Instead, local trusts would be able to pursue a local strategy that would reflect a fairer balance between local and national economic, environmental and social objectives.

Scottish Affairs

In the interests of the tax-payer, forest land could not simply be given away. One option would be to allow the local community to purchase the forest at a price set by a government appointed valuer, perhaps with the assistance of the government's land fund³. As unstocked forestry land has low or even zero value (Macmillan 1993), a less costly transfer could be achieved after the timber is harvested. In this circumstance, an interim measure could be to relax the Treasury targets so that a proportion of timber revenues (e.g. 15%) is ring-fenced to finance rural development initiatives by the local community. This would help local people develop experience in forestry management and operations and would be no different in principle to the current practice of foregoing 10% of timber revenue to benefit nature conservation and recreation.

Slee et al (1996) report considerable reluctance among people in some communities to take on any responsibility regarding the management of surrounding forest areas. However, it was also noted that in communities where there was previous experience of involvement in forestry, people exhibited a desire for more, rather than less, control. Community reticence regarding involvement and responsibility is therefore more of an indictment of the past, where local people were alienated from the land, rather than an argument for the status quo. To assist the empowerment process government agencies, such as Highlands and Islands Enterprise (HIE), would have a role to play in the provision of technical assistance and local 'animateurs' to kick-start the process.

Public funding is of central importance to all forms of forest management activity and reform of the Woodland Grant Scheme is required if Rural Development Forestry is to prosper. Currently financial assistance to private forestry is channelled through the Scheme which is under the control of the Forestry Commission (with other government agencies such as Scottish Natural Heritage and local authorities acting in an advisory capacity). Although there are a range of grant options available under the Scheme, most grant-aid is in the form of a flat-rate payment based on the area of land planted or restocked, and has generally favoured the expansion of industrial forestry.

The first major reform of the Woodland Grant Scheme would be to replace the flat-rate grant system with a more discretionary and competitive system similar to the Challenge Funding initiative, which would reward woodland management plans in direct proportion to the level of benefits they would

³ As proposed by the Scottish Office (1999) for privately owned land.

Forestry and Sustainable Rural Development

generate locally and nationally. The second, and more fundamental, reform would be to transfer the administration and grant-awarding powers of the Forest Authority to Regional Forestry Boards. Each Board would be empowered to allocate grant-funding under the Woodland Grant Scheme, and other forestry-related schemes, according to regional development priorities.

Regional Board members would be drawn from elected community representatives, and various government agencies such as the Forest Authority, Scottish Natural Heritage and Highlands and Islands Heritage. National and international regulations or priorities would have to be taken into account, but local control would be more in keeping with the principles of rural development, and would encourage a more flexible and targeted approach to forestry funding.

CONCLUSIONS

The industrial forestry model would appear to be ill-suited to the demands of sustainable rural development. Unless trading conditions for industrial forestry improve significantly, further rural job losses are likely, and the economic viability of the sector will be threatened. Also, the remote and centralised management structures that characterise industrial forestry cannot respond to the increasing emphasis of rural policy on community empowerment and local decision-making.

International agreements, and the government's own rural strategy, emphasise the central role of local communities in sustainable development. The transfer of state land to communities through the creation of local Forestry Trusts, and the transfer of decision-making on public subsidies to Regional Forestry Boards, would allow forestry to serve the needs of the local communities in a way which the state-sponsored industrial forestry model never could.

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