The impact of a Cluster based approach to rural development forestry

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SUMMARY

The paper considers the evolution and development of the Scottish Forest Industries Cluster, and how it has helped to support and encourage economic development in the rural forestry sector. Though the major focus of the Cluster has been to secure markets for the increasing volumes of timber being produced by Scotland's forests, it was recognised from the start that there were also opportunities to aid the economic development of rural communities.

INTRODUCTION

Clustering as an approach to economic development has developed as a formal discipline over the last 2-3 decades. Clusters are differentiated by their specialization in a particular stage of their field's value chain, by their focus on specific geographic areas, or by targeting selected customer needs or market segments (Ketels, C.H.M 2003).

A cluster is a group of industries whose linkages mutually reinforce and enhance their competitive advantage. They can be each other's customers, competitors, partners, suppliers or research and development sources. Partners in a cluster continue to compete, but they also begin to share the benefits of innovative ideas and practices that each contributes. This makes them more competitive. The cluster approach is not simply about strengthening or developing individual companies or organisations within a particular industry – it is about building that industry as a whole so that it is stronger and fitter and ready to take advantage of what the future brings. This is done through building on links between the component parts of the sector. By developing an agreed strategy for development, the whole sector will be better placed to identify and take advantage of the opportunities that co-operation can bring.

The existing research shows that the evolution of clusters can take many years, often decades. Many clusters have developed without the presence of any dedicated efforts to upgrade them. The inherent economics of proximity have been enough to over time attract increasing numbers of companies and other institutions, leading to a self-reinforcing cycle that was often started by a chance event. But other clusters have developed much faster because of the determined action of regional leaders that had spotted the potential of their region for the cluster (Porter, M.E. 1998).

SFIC BACKGROUND AND RATIONALE

Following a report commissioned by the Forestry Commission in 1998, (Jaakko Pöyry, 1998) a Cluster approach was recommended to address the future of the forest industry in Scotland, and generate demand for the huge volumes of uncommitted timber, which would be coming to the market over the next 20 years. The development of the forest industry strategy and action plan was based on Scottish Enterprise's approach to cluster development, which had already been used with sectors as diverse as the semiconductor and food and drink industries. The overall aim being to ensure that Scotland's small, open economy thrives in an increasingly competitive global economy.

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The development of the Scottish Forest Industries Cluster (SFIC) coincided with the production of Scotland's first Forestry Strategy in 2000, and this provided a strategic context for forming the cluster. Two of the strategy's five key objectives focused on forestry's contribution to sustainable economic development in the medium to long term.

- Maximising the value to the Scottish economy of the wood resource becoming available for harvesting over the next 20 years; and
- Creating a diverse forest resource of high quality that will contribute to the economic needs of Scotland throughout the 21st Century and beyond

Roots for Growth, which mapped the forestry cluster, provided a strategic framework for the industry, and laid out the key priorities for action over the next 5 years was also published in 2000 (SFIC 2000).

SFIC AND RURAL DEVELOPMENT

In essence rural areas face the same types of economic challenges and problems in the emerging global knowledge economy as the rest of Scotland. However, there are a number of circumstances particular to rural areas – sparsity of population, access to markets, critical mass e.g. an insufficient concentration of entrepreneurs, limited job opportunities, labour supply, availability of development sites and limited range of services – that need to be taken into account when intervening in rural economies.

The challenge in many rural areas lies in raising GDP, wage rates and the productivity of rural businesses to the levels seen in other parts of Scotland.

The Cluster Action Plan has close links with the Scottish Enterprise Rural Group development plan. The core remit of the Rural Group for 2006-09 is to ensure that the Scottish Enterprise Network anticipates and develops effective responses to rural issues and opportunities in the context of the overall Network strategy, with a particular emphasis on ensuring that these responses also add value to the priority industry and metro regional agendas and support the contribution of rural Scotland to national economic growth.

The SFIC contains a wide range of types of organisations, many of which are substantially located in rural areas, and therefore naturally contribute greatly to the rural development agenda. All are linked through their connection to the natural resource upon which, to a greater or lesser extent, they all depend. Thus there are important linkages to rural areas and opportunities to create value through developing these. The creation of value is critical to the success of the forest industries and the rural communities through the benefits of employment and wealth that they generate. We identified early on that there was a need to have a specific focus within the Forest Industries Cluster strategy that addresses the needs of rural based industries. This was to ensure that the cluster actions would complement the work being undertaken by other organisations and not duplicate it.

This sits within Scottish Enterprise's Rural Group's long-term aim, which is the development of a strong network of forest related small businesses. The Group's shorter-term aim is to create an appropriate business environment to stimulate development of exemplars. The vision is for a rural economy that:

- Makes a significant contribution to Scotland's overall economic success, as set out in the Scottish Executive's core economic development strategy Smart Successful Scotland.
- Has a recognised and valued role within successful metro regions and thriving key Scottish industries.
- Operates successfully within the context of sustainable development.

This will be delivered by and result in:

- A more diverse, sustainable, rural economy incorporating new sectors alongside 'traditional' businesses.
- Competitive, innovative businesses across new and traditional sectors.
- A transport and ICT infrastructure which enables rural businesses to compete effectively in the global marketplace and individuals to access opportunities.

- The retention/attraction of young people (especially graduates) in the rural economy.
- Rural communities as locations of choice for 'knowledge workers' – young and old.
- An economy underpinned by high levels of cooperation, confidence and leadership.
- High quality places, which encourage an inward flow of businesses, people and ideas to rural areas.
- Sustainable, vibrant small communities.

As a precursor to developing the action plan, which would determine the priorities for delivering these aspirations, the SFIC carried out a SWOT analysis of the rural forestry sector. This identified initial areas for early gains – always an attractive prospect for a development agency, and a sign of rapid progress for industry – and more problematic areas, which would only be addressed by longer term structural or resource intensive interventions.

The analysis in Table 1 was very helpful in identifying the levers which we could use to start the process, and also in determining the barriers which would need to be overcome to establish any interventions as long term sustainable projects, which would eventually become self supporting. It was quite clear that there was no shortage of enthusiasm to see things happening in rural communities, but this was counterbalanced by skills shortages, and often a lack of basic business acumen and knowledge. The policy commitment, which was genuine in its desire to support the rural sector, was often unable to provide resources to individual businesses, and has had to concentrate its efforts on promoting the sector and industry associations. This has had some good success, but would perhaps have been able to do more with a less restrictive remit on business support.

The main initial priorities, which the SFIC has been working on over the last 4-5 years have been raising awareness of rural forestry and the potential opportunities it is creating, assisting the development of the hardwood and the non timber forest products (NTFP) sectors, and improving transport efficiency. We are currently working with colleagues in the tourism sector to identify opportunities for private sector owners, but this will not be dealt with in this paper.

Table 1: SWOT analysis of the rural forestry sector.

	Strengths • Local enthusiasm • Policy commitment • Wide broadband coverage • Positive Scottish brand • Strong focus for hardwood producers	**Weaknesses** • Fragmented groups • Policy commitment richer on rhetoric than cash • Fragmented incentive schemes • Lack of capacity within rural areas
Opportunities • Next round of CAP reform and Rural Development Regulation • Lottery funding • Existing Grant and Government Assistance. • European funding • Drive for more renewable energy	**OS** • Lobbying of decision makers to secure appropriate resources • Disseminate information about policy and available support. • Support development of plans and proposals with advice and technical expertise • Improve and give a forest industry focus to existing business advice from SE Network and Small Business Gateway. • Build on Scottish brand to differentiate products	**OW** • Direct grant assistance to strengthen linkages between groups • Achieve early wins • "Market pull" on existing grant systems • Ensure good examples are marketed • Public sector lead for EU funded projects • Build skills and capacity to improve chances of success
Threats • Lack of early success breeds cynicism • Inter-nationalisation • Currency issues • High wage costs	**TS** • Convert enthusiasm to early wins • Produce high value rather than commodity products • Encourage companies to look outside Scotland for markets	**WT** • Avoid cynicism by developing communications and discussion round real proposals. • Encourage more co-operative working using existing examples a case studies • Improve provision of training to increase quality skills base

The hardwood sector

On the hardwood side, the SFIC has supported the work done by the Scottish Hardwood Timber Development Group, and since its demise, has continued to provide support in conjunction with Forestry Commission Scotland, and the East of Scotland ERDF project. While rural development forestry is about more than the hardwood sector, it is fair to say that engagement by the smaller scale softwood processors with the cluster has been very limited. However, many of the problems faced by the hardwood sawmillers and craftsmen are equally applicable to the small softwood sector. We therefore targeted much of our work at the Small to Medium Enterprise company sector to encompass this group of producers also. Key actions that we have tried to address as part of this work are:

- Networking seminars and workshops at regional locations
- Improving hardwood and softwood forecast volumes
- Encouraging large growers to offer smaller lots of timber
- Production of a buyers guide to homegrown hardwood boards
- Identification of new market opportunities, particularly where home grown timber can have a competitive edge
- Supporting wider dissemination of research results
- Commissioning research into new markets
- Provide support to public events to widen market focus
- Encouraging the use of e-Business to promote and market products, through the use of case studies showing best practise
- Assessment of sectoral business skill requirements, and delivery of training courses to address these
- Support for learning journeys
- Setting up of a workforce development forum
- Encouraging the development of biomass fuelled heat opportunities

Hardwood sawmilling has been one of the encouraging results from the cluster work. The formation of the Association of Scottish Hardwood Sawmillers (ASHS) happened around the same time as the cluster started. The SFIC has been able to provide support for marketing and training initiatives, while the link with Forestry Commission Scotland and the East of Scotland ERDF project has enabled the association to employ a part time coordinator to handle the administration of the association. In common with many SMEs and micro businesses, most of ASHS' members were having to take time out from running their businesses to run the association, which was becoming less and less sustainable for them to do. Events supported by the cluster, such as the Scottish Woodfair and others badged under the Treefest logo have proved to be highly successful in exposing ASHS members to new markets and clientele. The Scottish Woodfair attracts increasing numbers of businesses and visitors each year. Through the cluster e-business initiative we have been able to support the redevelopment of the ASHS website, which has provided members with a professional and highly visible shop window to market their products and services.

More recently, we have provided similar support for the Scottish Furniture Makers Association (SFMA), which already had some links with ASHS through joint members, but is now strengthening those links and looking towards joint marketing and promotion opportunities.

A recent independent survey of the Scottish hardwood sector (Watt, 2003) provided some encouraging trends in the results. This survey has shown that the number of businesses that supply Scottish hardwoods and hardwood products has increased by 50% since 1996. Many are already involved in adding value activities. Over half the businesses have experienced an increase in turnover and profitability in the last 6 years, and 15 have invested over £750,000 during this period in such items as kilns, machinery, buildings and stock. There has been a net increase of 9.5 jobs, excluding other casual and part time work that is offered. In the coming year (2004), 16 businesses said they expected to increase their turnover, 16 plan to make further investments amounting in total to about £550,000 in kilns, machinery, storage areas, stock, and in marketing, and 15 businesses anticipate taking on a total of up to 17 more employees in addition to using more local casual labour, with none of the businesses planning to shed any labour.

Projects for the future include encouraging the growing sector to consider growing quality broadleaves to increase the future supply of suitable timber for the sector as it develops and grows. We are also supportive of an initiative to develop a brand for Scottish grown hardwood timber and products produced from it, which will help to reinforce the high quality and value of the sector's products in a very competitive niche market.

Non Timber Forest Products (NTFPs)

Another area where the cluster has been active has been in encouraging the development of businesses based on non-timber forest products (NTFPs). Several seminars have been supported on the subject, and a range of research work commissioned to increase awareness of the sector and the business opportunities available. Some of the work has been done in community woodlands (Dyke 2003), as these are often places where NTFPs present an attractive additional income. This work has concentrated on developing an inventory methodology for assessing the NTFP resource in an area to allow the owners to gauge the potential for and sustainable level of harvest. Further work in this area was commissioned to look at the potential for Geographic Information Systems to identify suitable areas that might merit further study (Clarkson, 2003).

A report by Dyke and Primrose (2002) identified five potential product areas:

- Edible goods
- Herbal medicines
- Decorative goods
- Pharmaceuticals
- Aromatics and cosmetics

To date most effort has been concentrated on the edible goods area, such as wild mushrooms, drinks, berries, and preserves. However, as the awareness of the opportunities has increased, the range of different products is expanding. The cluster supported the development of the Forestharvest website www.forestharvest.org in 2004 and this has been an invaluable medium for disseminating information about opportunities, while reminding gatherers and others of their rights and responsibilities, and promoting sustainable harvesting of the resource. The focus of current work is on developing a set of guidelines for the sustainable harvesting of moss and bulbs. Both of these product areas are of great potential value, but have also been subject to illegal harvesting, and some areas have been severely damaged as a result. By opening up a debate on the issue, and bringing together landowners and gatherers to develop a common policy for sustainable management, the cluster hopes to be able to address issues such as revenue for owners, and access for commercial gatherers.

e-Business and rural forestry

Several of the issues above have been assisted through the use of e-business. The e-business Forum (EBF) was set up by the SFIC in 2001, and has proved to be a valuable forum for large and small companies to discuss technological solutions to industry problems. In the rural arena, with the now near complete coverage of Scotland by broadband, many opportunities have been identified and seized. The cluster e-business process has had three key threads to its strategy.

- Common data standards are essential to allow companies to trade and do business with each other in a local, national, or international context. The EBF has developed two standards to date for e-trading, and for the transfer of spatial data. Others are being considered. These offer real opportunities for rural based businesses to trade in their markets, while improving cash flow through the much enhanced speed of transaction handling. The spatial transfer standard will also open up new opportunities for rural based management consultancy, inventory, and estate management. The successful early adopters of the standards have now been developed into a series of case studies, which are being used to actively promote the benefits to the rest of the sector.
- Without an understanding of what technology is available, rural businesses can find themselves at a disadvantage. Awareness raising has been a key imperative for SFIC and the EBF, and many more businesses are now

trading and transacting online than two years ago (Parallel56, 2005). Annual e-business seminars have not only helped to raise awareness of e-business issues, but have also served to act as a networking opportunity for businesses, and IT suppliers.

- The last thread, which was used for the first few years, was to run a series of action workshops for businesses. These covered a wide range of subject areas as shown below.
  - 8 Assessment and Action Plans for individual businesses
  - 19 E-Business Workshops
  - 5 Online Marketing Workshops
  - 6 Supply Chain Management Workshops
  - 5 Website Audits for individual businesses

  These resources were taken up enthusiastically by rural based companies, particularly in the hardwood sector, and have resulted in better businesses with greater market presence and access.

Working with communities

The SFIC supported a Forestry Commission Scotland multi agency partnership project, Woods Work, which was set up to examine the impact local involvement in forestry can have on sustainable rural development. The desire of the Scottish Parliament to increase social inclusion, and that of local people to have a greater say about developments in their immediate environment, has resulted in a large number of community woodland groups, which now has its own Community Woodlands Association. The Woods Work project was set up to provide some guidelines for agencies to understand how best to support small woodland groups in rural areas to develop some economic potential from the woodlands they own, manage or lease.

The SFIC commissioned a three-year study into the socio-economic benefits of forestry to rural communities (Slee et al, 2006). The study comprises an investigation into the economic impact of forestry on two rural economies in remote parts of Scotland. It provides an economic baseline for the forest sector in Mid-Argyll and in Caithness and Sutherland, where two very different community forestry projects have been implemented. It also seeks to establish a social and economic benchmark for what might be termed the normal or mainstream forestry sector. In mid-Argyll, the study indicates that forestry generates about £5.5.million per annum of income through forest management and processing. Additionally, it has an income effect of between £3.75 and £13 million through a residential halo effect and up to £50 million through tourism. In Caithness and Sutherland, the younger age of the forest suggests a significantly lower income generation effect from forestry of around £2 million per annum, a modest household halo effect on incomes of c. £1 million and a halo effect on tourism incomes of up to £5 million. This reflects the high significance of tourism in rural highland Scotland, and the importance of forests in providing an infrastructure and backdrop for it.

The results of the Woods Work project are currently being written up, but what appears to be quite clear from the socio economic study is that the intrinsic value of the forests considerably exceeds the direct income that they are able to produce. This is of great interest to policy makers in terms of the value of indigenous forestry in a forest import dominated economy. It also raises some interesting questions about how best to return revenue to the forest owners for the tangible benefits their assets confer on other sectors of the economy.

Biomass and wood fuel

The opportunities for wood fuel and biomass present both a challenge and a new business development sector for forestry. The SFIC has been a key player in the Scottish scene in structuring policy and providing advice to help the wood fuel industry develop and grow. Initial efforts have been targeted at power and electricity schemes, such as the 50 Mw Powergen project currently under construction at Lockerbie, in the south of Scotland. Even with the large volumes of timber coming on stream over the next 20 years, it is unlikely that there will be more than 2-3 projects of this scale. The SFIC has spent a lot of time and effort in trying to focus the debate around wood heat, rather than power, as this has a much more effective conversion rate, and is more suited to smaller scale

developments (Luker, 2006). Wood fuel is attractive also in that it sits alongside agricultural reform and farm diversification, and can assist in bringing farming and forestry interests closer together.

The SFIC will continue to promote the benefits and potential of this new market area, and we are concentrating a lot of effort on creating a cohesive supply chain to feed the anticipated demand from local authorities and commercial premises, as traditional energy supplies become increasingly expensive.

Timber transport

When the costs in the UK forest to mill supply chain are analysed, harvesting and transport account for around 66% of the total. See Figure 1 below.

Although the UK overall costs are competitive, the return to growers and hence their appetite for further investment is low. The cluster has been working with the UK Timber Transport Forum to introduce efficiencies and innovation into the transport sector to address this problem. Specific projects, which the cluster has supported, have been:

- A low ground pressure vehicle trailer to run on forest roads
- Agreed timber transport route maps
- Timber railhead study and proposal
- Non intrusive rail crossovers
- Marine transport
- Timber logistics efficiency pilot project
- Development of a Scottish strategic timber transport fund

These projects are helping to reduce costs, and improve profitability within the timber supply chain. The cluster approach has brought companies together to address structural issues in a way, which does not reduce competition, but improves the ability of all companies in the sector to compete on level terms

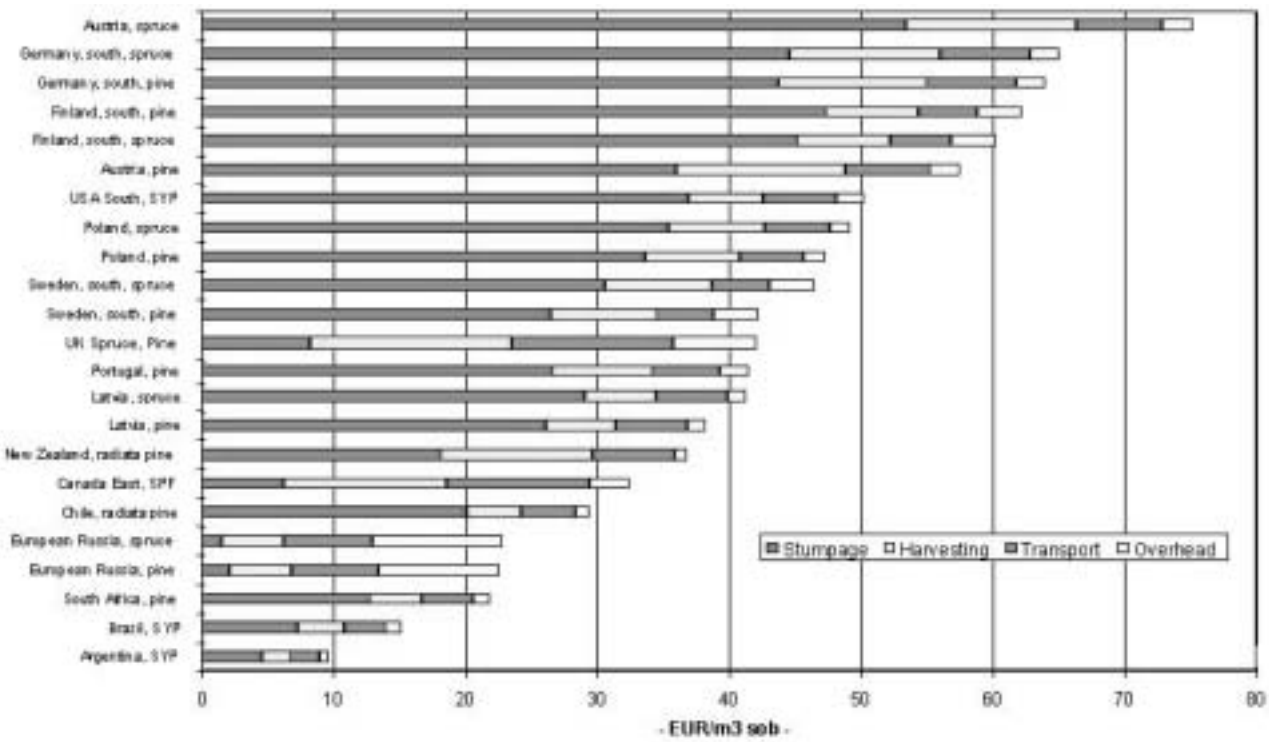

Figure 1: Softwood sawlog cost (Q3 2003) (Jaakko Pöyry, 2003)

CONCLUSIONS

The Cluster approach, through its support from Scottish Enterprise and the Forestry Commission, has opened up resource opportunities, which would not have been made available otherwise. These have enabled some of the niche sectors of the forest industry, such as hardwood sawmilling, and non-timber forest products (NTFPs), to create wider understanding and awareness of what they have to offer society. As a result of collaboration through the formation of ASHS, the Association of Scottish Hardwood Sawmillers has been able to develop a forward looking strategy, which is resulting in greater demand for its members products, and increased employment in the sector. Following several seminars on NTFPs, the need for sustainable harvesting guidelines to support the development of this sector has become apparent.

The benefits of e-business to the rural economy are beginning to become understood and employed more widely within the sector. Without the SFIC and the EBF, the forestry sector would lag even further behind other industry sectors in its adoption of new information technology, than it does today. Though it is still in the lower quartile of industries making use of e-business, rapid progress has been made over the last three years, and will continue to be made in the future.

Tourism and forestry have always been closely related, but the socio economic study has indicated for the areas involved just how much the forest sector supports a thriving and vibrant tourism industry. It may be that for many rural areas, there will be many more opportunities in the future for economic development in the tourism sector than in the forestry sector. However, without the latter, the former would be less likely to occur, and so the cross cutting nature of the relationship needs to be understood better, and appropriate support mechanisms put in place to reflect the contribution that the forest industry makes, but does not benefit from.

The embryonic biomass industry is being supported and encouraged by a cluster-based approach, both at the political level of policy formulation, and at the practical level of ensuring a competitive and capable supply chain to respond to demand. The costs of transporting biomass mean that this is an industry, which is ideally suited to rural locations, via small scale commercial and district heating schemes, which are well matched to the provision of affordable housing.

Without a competitive transport sector, the whole industry will not be able to remain competitive. The cluster's efforts in this respect have been aimed at increasing operational efficiency, and encouraging the key players to see themselves as being mutually dependent on each other. Most timber miles occur in rural areas, and an increasingly vocal rural population is expressing displeasure at the volume of lorries using their local roads. The development of rail and sea transport will help to reduce road miles, and better logistics planning can ensure social and environmental benefits as well as improved efficiency for the sector.

The Scottish Forest Industry Cluster's role in the support of rural development forestry over the last five years has been significant. It has helped to improve networking between rural businesses and their markets, and has increased confidence generally within the sector. It has enabled businesses to grow, develop new skills, and make effective use of new technology. The value of having a major economic development agency with appropriate funding behind the cluster cannot be underestimated. Scottish Enterprise's role in this has been central to the achievements, which the cluster has been able to realise. However, without the enthusiastic support of the forest industry, the resources would not have been as effectively deployed, and the outcomes would have been less successful. Successful clusters rely on a strong partnership between all of the participants, and it is this synergy above all, which has enabled the achievements described above.

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