

The Impact of Forestry on Rural Communities

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Since the foundation of the Forest Service and particularly since the instigation of the expanded forestry programme in the late 1940s, the social functions of forestry have been an objective of afforestation in the Republic of Ireland. The expansion of the forestry programme at that time was based largely on the social advantages of forestry, coupled with the belief in a return being forthcoming on the investment (Durand, 1969). These social advantages of forestry were, in the main, related to the acknowledged employment generating capacity of forestry. More recently, the expansion of the forest estate, coupled with the major changes in agriculture has focused attention once more on the role that forestry plays in rural areas. This paper outlines some of the impacts of forestry on rural communities and will identify means of maximising the positive impacts and minimising the negative ones.

Employment

Employment past and present

Undoubtedly the most important impact that forestry has had on rural communities is employment generation. Indeed, the provision of extra jobs has often been regarded as the most important role of forestry in place of extensive farming in remote areas (Grayson, 1993). Successive Irish governments have acknowledged the attraction that forestry offered in relation to employment (Anon, 1958; Anon, 1964). The fact that it could contribute to employment in areas where other employment opportunities were limited and where emigration was rife made forestry particularly attractive. At its peak, direct (in-forest) employment in State forests was some 5,000, all of which were rural jobs. With an increase in mechanisation and labour productivity coupled with an

increase in the amount of work being done by contract, the number of forest workers employed directly by the State (i.e. by Coillte) has fallen to a present level of 1,000 with a further 1,000 or so employed on a contract basis (Coillte, 1994). The reduction in the number of public employees has coincided with an increase in the number employed by the private sector. However, no official estimates of private sector employment is available.

One of the significant aspects of employment in forestry is that direct employment accounts for only part of that generated from each hectare of forestry (Aldwell and Whyte, 1984). Downstream employment is generated in the timber processing sector as well as in the timber transportation sector. The most recent official estimates indicate that the timber industry employs 3,455 persons (CSO, 1994). Forestry also has strong linkages with

other industries which supply the forest industry with its various inputs. Research has indicated that for every five direct jobs generated in forestry in the west of Ireland, one job is generated in the sectors providing inputs (Psaltopoulos and Thomson, 1994).

Future employment

The employment opportunities that forestry creates vary according to a number of factors. Most important is the influence of the age of the forest, with the employment potential being high during the establishment phase, falling during the post establishment phase and rising again at the harvesting phase. On a national level, forestry is still at a relatively juvenile stage of development with over 50% of the forest area less than 20 years of age. Over the next 20 years or so the large areas of forest that have been planted since the 1960s will be harvested. At the same time the area under forest is increasing by approximately 16,000 hectares per annum. The employment impact of this increasing and maturing forest estate is now examined.

Establishment and management

The increase in planting has generated employment in both the establishment and management sectors. Official figures on the number of jobs in the various forest operations are not published but it is estimated that for every 1,000 hectares of coniferous forest established, 46 jobs are generated (Phillips, Per Comm). If the jobs generated as a result of the recent increase in planting rates are to be sustained, the present high rates of afforestation must continue. The anticipated increase in broadleaf planting will not only benefit biodiversity but may also influence labour requirements. Firstly,

labour requirements for establishing broadleaves, particularly oak and beech, will be higher than those for establishing conifers. At the same time broadleaved woodlands require more intensive management than conifers thus labour requirements during the management phase of the rotation should be greater than those for conifers. Another development which may also impact employment at the pre-harvesting stage is pruning. Concerns about timber quality in fast growing Sitka spruce have fuelled the debate as to whether to prune or not to prune. In addition to the benefits of improved timber quality and timber value, a policy of pruning would also generate employment during a phase of the rotation where employment requirements are low.

Harvesting and transportation

Harvesting and transportation are the most labour intensive phases of the overall timber production cycle. Over the next 10-20 years, the volume being harvested from Irish forests will increase dramatically. The employment opportunities that will arise as a result of this increase in output will depend on how it is harvested. At present approximately 22% of harvesting is carried out mechanically. One major factor encouraging this trend towards mechanisation is the availability of grant-aid for purchasing harvesting machines. Another factor that is encouraging mechanisation is the unavailability of timber cutters. If the maximum employment impact is to be gained from the increase in output from the forest estate, greater emphasis must be placed on making motor-manual felling more competitive and more attractive to the rural work force. Part of the reason for this lack of interest in

motor-manual felling is that it is a physically demanding and poorly paid job. However, the selection of fellers and the subsequent training of these fellers would reduce the physical demands of the job. Selection and training would also make motor manual felling more competitive with mechanised harvesting particularly when the effects of the subsidisation of the machines is removed.

Processing

The impact of the increase in volume production on employment in the processing sector is not clear. The sawmill industry has been going through a process of rationalisation and automation over the past decade and most production is now concentrated in the 10-12 largest sawmills. Thus it would seem unlikely that new large scale sawmills will be established throughout the country. Instead the timber industry will respond to the increase in output by increasing the processing capacity of the existing large mills. At the same time, there has been a large increase in the volume of pulpwood harvested and by the year 2000 pulpwood production is expected to double. Already one community has experienced the benefits of this increase in timber output with the new oriented strand board plant in Waterford expected to generate 125 jobs in the plant and a further 375 jobs in the forest. Within the next twenty years or so another pulpwood processing industry in the west is likely to be established.

Assessing the employment impact

As indicated above the national forest estate is relatively young and is expected to approach the structure of a normal forest in the next 20 years.

Throughout the country however, this national trend varies with a normal age distribution of forests in some counties such as Wicklow while in the west of Ireland much of the forest area is still at pre-harvesting stage. Where forests are more mature, timber processing industries have been established. Communities in which this has occurred have benefited considerably from an employment perspective (Kearney and O'Connor, 1993). In other parts of the country, e.g. Clonmel, Scarriff, and Longford, forestry is a very significant employer. At the same time there are areas where forestry occupies a considerable proportion of the land area and employment in forestry is almost negligible. Thus it is clear that the employment impact of forestry is influenced by the definition of the impact area. Assessing the employment impact at a national level provides a useful indication of the total number of jobs generated from the entire forest estate. When the regional approach is used (either using counties or groups of counties) the national trend in employment can vary significantly. At a case study level, such as that used in the recent ESRI report (Kearney and O'Connor, 1993), the huge disparity between the employment impact of forestry on individual rural communities can be highlighted. A factor that contributes to the variation in forestry employment in communities is that forestry labour is very mobile and transitory. Thus employment from forestry may not bring worthwhile benefits to many individual communities but may instead bring benefits to the rural economy at large (Grundy *et al*, 1989).

While the employment potential of forestry has been appreciated, it has

been noted that some of the argumentation in favour of forestry is as tenuous as that against it from conservationist circles (Grayson, 1993). A critical issue in this regard is whether forestry jobs displace jobs in other sectors (Pearce, 1991). One of the features regarding employment in forestry in Ireland is that much of the employment has been additional. This can be attributed to the high levels of underemployment on farms, particularly on marginal land. As a result many forest workers in the past were small-holders whose main source of income was their forest job but who still continued to farm. These small-holders would have been underemployed and thus would have the capacity to maintain a job in forestry. In other instances, forestry would have employed young men who might have otherwise emigrated. Underemployment on farms remains a pervasive feature in many parts of Ireland, but particularly in areas of marginal farming (Kearney and O'Connor, 1993). Consequently, many of the jobs that are to be created in forestry might serve to reduce underemployment in agriculture rather than creating new jobs. However, for many, the additional income generated from forestry employment will be the necessary incentive to remain in rural areas. Thus a large part of the employment that forestry generates may not equate to the creation of new jobs but will instead play a significant role in stabilising the rural population.

Income and rural development

Concerns about the problems facing rural communities throughout Europe focused attention on the need for integrated rural development programmes. The role that forestry could

play in such programmes was acknowledged as early as 1964 when The Second Programme for Economic Expansion saw part of the solution to low income farming in the development of industry, forestry and tourism (Commings, 1993). More recently the role that forestry can play in rural development was highlighted in The Future of Rural Society, published by the European Commission (Anon 1988). The development of woodlands and timber processing industries were deemed to represent a promising niche for rural development. The role that forestry can play in diversifying rural economies has been an important underlying objective in promoting forestry development both nationally and at EU level. The first scheme of EU funding was introduced as part of an overall package of grants for the less-favoured areas of Ireland, i.e. the Western Package grants scheme. The overall objective of this grant package, which included forestry, was to raise farm incomes in the less favoured areas so as to ensure the continuation of agriculture, thereby maintaining a minimum population level and conserving the countryside (Nugent, 1985). EU funding for forestry under the Forestry Operational Programme has been primarily targeted on providing farmers with an alternative line of production, thus diversifying the rural economy.

The impact of funding for forestry on the development of farm forestry has been quite phenomenal. Planting by the private sector has risen from a mere 300 hectares in 1981 to 11,000 hectares in 1991. It is estimated that 70% of planting in 1991 was carried out by farmers. Converting part of their farm to forestry has provided farmers with an alternative income source, in

the form of the forestry premium. Much of this income has been additional and has not merely replaced part of the farm income from agriculture. This has been possible because many of those who have converted land to forestry have done so without reducing their agricultural output (Gardiner and Ní Dhubháin, 1993). Planting has been carried out on very marginal parts of farms. On this type of land the predominant farming systems were extensive and many of those planting, intensified grazing on the remainder of their land. Thus the forest premium can play a significant role in raising farm incomes and in this way make it financially possible for some farmers to remain in rural areas.

Much of the forestry development since the 1980s has had little impact on agricultural production (duQuesne, 1993). Most of this planting took place on marginal land of which an estimated one million hectares is distributed throughout the country. However, the recent increases in grant-aid for forestry, particularly on non-disadvantaged land, will bring about changes in how farming is influenced by forestry. There is now a greater incentive for farmers of good quality pasture/tillage land to convert some of this land to forestry. At the same time many tillage and dairy farms have pockets of marginal land and it may in fact be these parts of farms that are converted rather than the good agricultural land. From a forestry viewpoint, the forests created on good land will be composed of diverse species and indeed broadleaves in many instances. As EU policy is firmly focused on reducing agricultural production, the main thrust of funding will be directed more and more to afforesting better quality land. Indeed

it may be that one of the measures of success for the new grant programme will be by how much it reduces agricultural production. While planting trees on good quality farmland may not be welcomed by the farming community, forestry is a productive use of the land in comparison to the sterile practice of set-aside. Much of the recent planting has been carried out by land holders who have very little tradition and expertise in forestry. Very few of these landholders had any training and knowledge before they planted. In most cases they remain without training. If the returns from the considerable investment in forestry are to be maximised for both the grower and the nation, the new farm plantations must be well managed. Fostering a knowledge and an appreciation of forestry practice should be encouraged so that it becomes part of the rural culture. This is particularly true in those communities engaged in substantial afforestation programmes where traditional land uses have not heretofore included forestry. One means of encouraging good management of these woods would be to make management requirements a prerequisite to the receipt of the forest premium. Another possibility would be to introduce a scheme similar to that operating in the UK whereby persons who afforest land can apply for management grants which are payable for 5 years from age 10 to age 15. The aim of this scheme is to encourage the improvement and maintenance of woodlands. Yet good management of Irish woodlands will not be achieved without the provision of a comprehensive forestry extension service staffed by forestry professionals. To date the Forest Service has provided the rudiments of such a service but there is now a need

to develop a more comprehensive and independent service. A factor that will make management of farm woodlands difficult is that most are small and isolated. The forest management techniques at present in use were devised for large scale forest management. In the same way most of the harvesting techniques and machinery will not be suitable or cost effective in these small woodlots. Thus devising methods of managing, harvesting and marketing produce from these small woods is one of the most important challenges facing the forest industry.

Social impacts

There are many less tangible and indeed less quantifiable impacts of forests on rural communities. These impacts have been highlighted recently and have received some media attention. Forests are perceived by some to generate a sense of isolation in rural areas. Others have indicated that forestry is perceived as a sinister depopulating force (Gallagher, 1991). There has been a traditional antipathy towards forestry in Ireland, stemming from the time that forestry was associated with large estates and the small farmer "looked enviously across the walls of these estates at the recreation forests" (Gallagher, 1991). In the beginning of the 1980s this antipathy was directed towards commercial private forest development carried out mainly by institutions. Much of this development took place in the north west of the country where competition for marginal land was limited. The primary impact of the increase in institutional interest in forestry was to increase the demand for land and thus the price for land. Indeed it has been estimated that the price of forestry land doubled from 1984 to 1991

(O'Connor and Conlon, 1993). This increase in forestry land prices has had the two pronged effect of providing a higher price for those farmers wishing to sell part or all of their farm and at the same time making land more expensive for farmers wishing to buy land to consolidate their holdings. Gallagher indicates that as a result of farmers not being able to afford to buy land, forestry was perceived as a "sinister depopulating agent, moving across the countryside and removing home-steads in its path". In a recent article on the decline and depopulation in rural Ireland (Shiel, 1994), forestry is described in very emotive and negative terms, e.g. "the insidious onward march of afforestation... empty houses caught fast in the grasping fingers of afforestation". These perceptions of forestry are a reflection of the apprehension of the farming communities regarding the future of agriculture. The past decade has seen major changes in the Common Agricultural Policy and considerable uncertainty surrounds the future of agricultural supports with GATT negotiations recently completed. For many the development of forestry is probably the physical manifestation of the decline of agriculture and criticism of forestry is probably not so much a reflection of traditional antipathy toward forestry but rather a reflection of the concern about the changes in the rural and agricultural way of life. One fact that the statement by Shiel outlined above reveals, when he refers to empty houses being grasped by forestry, is that many of the areas where forestry is developing have already experienced depopulation. An examination of population trends in a number of western counties, e.g. Mayo and Leitrim, clearly shows that rural

decline has been occurring in these counties for over a century (CSO, 1991). Indeed since the 1960s the rate of decline in these two counties has decreased. At the same time much of the afforestation in these counties occurred since 1960. Thus there is no evidence to support the claim that forestry development causes rural depopulation.

Forests because of their size and height have a major impact on the landscape. Irish forests have a particularly large impact on the landscape because they are predominantly monocultures of Sitka spruce located on hills and mountains and in large open spaces. This structure of Irish forests is a consequence of the overriding priority given (for much of this century) to safeguarding fertile land for agricultural production. Forestry was effectively confined to marginal remote areas in the hills and on bogs and only Sitka spruce and lodgepole pine could thrive on these relatively infertile soils and exposed sites. As the emphasis was mainly on economic objectives, planting usually followed the block outline in straight lines. Designing forest plantations to suit the landscape is now an important part of forest management in most EU countries including Ireland. Landscape guidelines have to be complied with if grant-aid for forestry establishment is to be received. While the effects of landscape design might not be felt for another decade or so it is important that foresters should take account of the impact of their actions on the landscape. Proper landscape design will be welcomed by the general public and should make the forestry landscape less alien to those living close to it. One particular aspect regarding the design of forests that has received some nega-

tive comment is the sense of isolation that forests can generate. This impact has been highlighted by farming organisations. The Irish Creamery Milk Suppliers' Association (ICMSA) in one newspaper article (Anon, 1993), claimed that "afforestation is dividing rural communities, the forests are creating barriers and neighbour can no longer see neighbour". While neighbours in rural areas might live some considerable distance apart (and thus are already isolated) forests by their very size and height increase the sense of isolation in these areas. In recognition of this impact the present Forest Service landscape guidelines indicate that planting must be kept a minimum 30 metres from occupied buildings and 10 metres from public roads. It may be necessary to increase this distance even further if it is to be effective.

Over the past decade, society's awareness of environmental issues has increased. Emphasis is now being put on the multi-functional role of forests and there has been increased demand for the recreational opportunities and other non-wood benefits that forests provide. With the expected increase in species diversity as well as proper landscape design, forests are expected to be more attractive for recreation purposes. In this respect forests can play a very important role in attracting tourists to rural areas. They can complement agri-tourism endeavours and can help contribute to the diversification of the rural economy. This role of forests has been recognised and encouraged with the availability of grants for recreation forests. Some rural communities have already taken advantage of the multi-functional role of forests. For example, in Killenkere in Co. Cavan, 80 farmers are afforesting 200 hectares of land as a commu-

nity project. This project has now been expanded so as to exploit the tourist potential of the forests. Walks and picnic areas are being developed in the forests and a wildlife preserve is being created. In addition seven kilometres of an adjacent river is being developed with riverside walks, broadleaf landscaping and fish pools and spawning beds being provided.

Rural communities vary in their attitudes to forestry. This difference in attitude is influenced by the stage of development of forestry and accordingly by the level of employment that it generates. Kearney and O'Connor (1993) showed that, in an area where forests have been part of the landscape for many decades and where there is a considerable level of employment in forestry, there is a much more positive attitude to forestry than in an area where forestry is very much at a juvenile stage and where employment generated is quite low. Another important factor in people's attitude to forestry is that many fail to see the link between the production phase of forestry and the processing phase. One very suitable example of this is in the article by Shiel referred to above on the demise of a community in Mayo. One of the few people left in the community where "grasping afforestation" had occurred was "the carpenter". The fact that such an occupation is solely dependent on the availability of timber seemed to be missed.

Co-operative forestry

Funding for farm forestry under the Western Package Scheme was specifically targeted towards the disadvantaged farmer who was farming small areas of poor quality land. Yet very few small farmers have diversified into forestry. A recent survey of farmers

and forestry confirmed that larger farmers are more likely to get involved in forestry than small farmers. In this survey "lack of land" was the most popular reason for not getting involved in forestry (Ní Dhubháin and Gardiner, 1993). This deterrent, i.e. lack of land, to forestry development has formed part of the impetus to the development of co-operative forestry in Ireland. Co-operative forestry has grown considerably since its beginnings in 1985 with the foundation of the Western Forestry Co-operative. Initially a group of six farmers planted 26 hectares on a co-operative basis. By 1989 this figure had risen to 474 farmers planting over 2,000 hectares. Gallagher (1991) states that the aim of the forestry co-operative movement is "to use forestry as the catalyst for self-help rural community enterprise, to exploit the possibilities of afforestation for the stabilisation of declining rural communities through the provision of jobs in remote rural areas and the improvement of the viability of small farms, and to develop forestry in a way which would enhance the landscape and safeguard the natural environment". Co-operative forestry offers many advantages to those farmers who have small areas of land that they wish to afforest. It groups the suitable forestry land available on adjacent farms into viable units and effects economies of scale in planting, harvesting, etc.

Co-operative forestry has a particularly important role to play in rural development. It allows farmers to become actively involved in forestry and allows them to have a greater input into the development of forestry in their area. It facilitates better landscape planning of forests and makes it possible to design plantations with people in mind. Forestry can also form

the focal point of a far wider community development programme. This aspect of forestry is being promoted by the co-operative movement and already some rural communities have included forestry in a development programme for their locality. The development in Killenkere in Co. Cavan, referred to above, is being carried out on a co-operative basis. In Monasteraden, Co. Sligo a forestry/peat programme has been developed. Work in both aspects is seasonal so that during the summer workers prepare material for a small peat moss factory while in the winter they are deployed in forestry work. Six jobs have been generated as a result.

A recent development in the co-operative forestry movement has been the establishment of farmer forestry producer co-operatives. Twenty such co-operatives, made up of farmer members and the statutory and voluntary bodies representing farmers, have been set up. The functions of these co-operatives include encouraging farmers to plant their marginal land, ensuring that labour requirements, machinery and inputs are available locally and ensuring greater efficiency and better woodland layout. As highlighted above many of the woodlands already established are small and isolated which will make harvesting these woodlands and marketing the output very difficult. For some the value of their woodlands may never be realised. Producer co-operatives will have the potential to address the problems that face these small woodland owners. They will not only facilitate the harvesting of small woodlands but will also give farmers a collective strength

to develop, maintain and market the produce of their plantations. As one of the functions of these co-operatives is to ensure that high quality timber is produced from farm woodlands they provide an ideal mechanism for encouraging farmers to actively manage their woodlands.

Conclusion

Forestry and its related industries are significant employers in rural areas. With production from Irish forests set to rise significantly it is expected that employment opportunities in these essentially rural industries will increase. However, like all other industries, forestry is operating in an increasingly competitive market thus employment opportunities may not be as great as originally anticipated. Nevertheless forestry will offer some of those who might otherwise leave rural areas the necessary incentive, through employment and income generation, to stay. In this way forestry will play an important role in stabilising the rural population. The increase in the forest area represents a major and very obvious change in land use. This amongst other factors has increased public awareness of forestry and has in recent years generated some negative criticism of the way and rate at which the forest estate is developing. It is vital that these negative perceptions and criticisms of forestry be responded to by the forestry profession and some steps have already been taken in this direction. The need to inform and educate the public about forest sector decision making has never been more acute.

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