The Native Sawmilling Industry and Irish Forestry[1]

Sawmilling and the Economy

FRANK J. CONVERY

Economic and Social Research Institute,
Burlington Road, Dublin 4.

VOLUMES AVAILABLE FROM STATE FORESTS

The Irish people have invested heavily over the past 50 years in the creation of a forest estate. The results of their sacrifices are now coming to fruition in the form of increasing volumes of wood coming on the market. The volumes in Table 1 will be available for harvest in the coming decades.

It can be seen that between 1980 and 1990 the availability of sawlogs (down to 20 centimetres top diameter) from State forests will increase by 283 per cent. The average annual compound growth rate in the availability of sawlogs and pulpwood combined will amount to 9.7 per cent over the 10-year period.

Lumber (by which I mean sawlogs and boxwood) in 1980 will comprise 54 per cent of the wood available from State forests, and this will increase to 57 per cent in 1990 and 68 per cent by the year 2000. Thus lumber is already the largest component, by volume, of wood available from State forests, and this predominance will increase.

More recent projections of wood availability have the effect of increasing the volume available in earlier years, and reducing the amount in later years.

1 An earlier version of this paper was presented at the Annual General Meeting of the Irish Home Grown Timber Merchants Association, Dublin, December 11, 1980.

IRISH FORESTRY, 1981, Vol. 38, No. 2: 78-91

Table 1: Wood Harvest Projections, State Forests, Ireland.

Year	Volume (000s M^3) Sawlog	Boxwood	Sawlog and Boxwood	Pulpwood	Total
1979 (Actual)	60	172	232	86	318
1980	185	182	367	311	678
1985	289	275	564	523	1086
1990	524	405	929	694	1623
1995	675	577	1252	836	2088
2000	1237	814	2051	974	3026
2010	1707	1109	2816	1136	3952

Note: These are more conservative in the early years than more recent projections prepared in 1979.

Source: Irish Forestry Policy; NESC Report No. 46; Govt. Publications, Dublin, 1979, p. 214.

State Revenue Implications

The market for all types of wood raw material, including lumber, is at present depressed, due primarily to the impacts of the recession. Prices in 1980 for standing timber-based on timber merchants' estimates — seem to be about £17.5/M^3 and £10.5/M^3 for sawlog and boxwood respectively; if we assume that these will apply in the future we can project the following gross revenues:

	Gross State Revenue (000s 1980 £) Sawlog	Boxwood	Total
1985	5057	2887	7944
1990	9170	4252	13422
1995	11813	6058	17871
2000	21648	8547	30195

Thus, in 20 years time lumber sales will be yielding more than £30 million (1980 £) to the State treasury.

Employment

It is notoriously difficult to make employment projections in any area which is exhibiting dramatic growth. Making some rather crude assumptions regarding output increases per cubic metre per worker per year, I estimate that the following employment will

be generated by the harvest, transport and processing of sawlogs and boxwood from State Forests (Table 2).

There will be, in addition, at least 35,000 M^3 of sawlog size coniferous material available from private lands, which will, using the employment intensities noted above, add 118, 91 and 63 jobs respectively in 1980, 1990 and the year 2000.

Table 2: Employment Projections Generated by Sawlogs and Boxwood from State Forests.

Year		Harvest	Transport	Mill	Total Employment
	M^3/Worker/Yr.	833	6250	500	
1980	Volume (000s M^3)	367	367	367	
	Employment	441	59	734	1234
	M^3/Worker/Yr.	1200	7000	720	
1990	Volume (000s M^3)	929	929	929	
	Employment	1000	133	1290	2423
	M^3/Worker/Yr.	1500	7500	1000	
2000	Volume (000s M^3)	2051	2051	2051	
	Employment	1367	273	2051	3691

Sources: *Irish Forestry Policy,* NESC Report No. 46, and Industry Sources.

Balance of Payments

It is interesting to look at the pattern of coniferous sawnwood imports (Division 24321 pre 1978 and div 24821 post 1978 in the Trade Statistics) since 1973 (Table 3). We can see that, after the 1974 peak, the real (net of inflation) average price dropped sharply over the next five years and is still below the 1973 level (Fig. 1).

In 1980 sawn coniferous imports accounted for 0.75 per cent of total imports in recent years (Table 4). Sweden's share held fairly steady at about 30 per cent of total imports in 1977, '78 and '79, but fell back to 24 per cent in 1980 and 23 per cent in 1981. Finland increases its share from 30 per cent in 1977 to 43 per cent, 40 per cent and 41 per cent in 1978, 1979 and 1980, but fell back to 35 per cent in the first four months of 1981. Canada's share fell from 30 per cent in 1977 to 15-21 per cent in 1978-'80, but this increased to 29 per cent in early 1981.

Table 3: Imports of Coniferous Sawnwood, 1973-1981

Year	Quantity (Metric Tons)	Value (Current £)	Value/M.T. (Current £)	CPI (1968=100)	Value/M.T. Constant (1968 £)
		('000)			
1973	168,766	12,761	76	150.8	50
1974	232,492	26,511	114	176.4	65
1975	121,793	14,334	118	213.2	55
1976	190,242	23,239	122	251.6	48
1977	190,629	27,377	144	285.9	50
1978	223,113	30,214	135	307.7	44
1979	270,423	42,844	158	348.4	45
1980	211,662	40,500	191	411.9	46
1981[1]	57,753	12,513	217	461.6	47

1 January-April.
Note: 1 metric ton=1.85 M^3 of sawnwood.
Source: *Trade Statistics of Ireland,* successive December issues, and issue for April 1981.

The sharp fall in the price of Finnish timber from 1977 to 1979 relative to Swedish imports may explain in part the growth in Finland's market share over the 1977-80 period. The widening price advantage which Canadian wood has been showing contributes to its recent increase in the share of the Irish import market (Fig. 2).

Since Irish and Canadian wood compete to some extent in the same markets, the fact that in early 1981 Canadian lumber, at £37 per metre tonne (1968 £) was at its lowest level in the 1977-'81 period, is indicative of the difficult market conditions now being faced by Irish sawmills.

The overall picture is now clear: a rapid increase in the availability of sawlog size wood raw material will allow expansion in domestic output, at a compound annual average growth rate of almost 10 per cent over the coming decade; this in turn will allow employment to increase to 2400 by 1990 and approach 4000 in the year 2000. Annual State revenues (1980 £) from sawlog and boxwood sales can grow from £7.9 million in 1985 to £30.2 million in the year 2000. However, to achieve this level of output will require that Irish timber be able to initially capture a predominant share of the domestic market and then export successfully.

Table 4: Major Sources of Sawn Coniferous Imports, by Volume and Value (1968 £), 1977-1981.

		Sweden	Finland	USSR	Canada	Total	Grand Total
	Volume (M.T.)	57513	57777	10663	57685	183638	190614
	Value (000s £)	8424	9147	1690	6766	26027	27370
1977	Value/M.T. (current £)	146	158	158	117	142	144
CPI=285.9	Value/M.T. (1968 £)	51	55	55	41	50	50
	Percentage of Grand Total (by volume)	30	30	6	30	96	
	Volume (M.T.)	68229	95351	13535	33435	210550	222450
	Value (000s £)	9948	12577	1652	3946	28123	30103
1978	Value/M.T. (current £)	146	132	122	118	134	135
CPI=307.7	Value/M.T. (1968 £)	47	43	40	38	44	44
	Percentage of Grand Total (by volume)	31	43	6	15	95	
	Volume (M.T.)	74906	107157	15406	53762	251231	270423
	Value (000s £)	12680	15900	2425	7476	38481	42844
1979	Value/M.T. (current £)	169	148	157	139	153	158
CPI=348.4	Value/M.T. (1968 £)	49	42	45	40	44	45
	Percentage of Grand Total (by volume)	28	40	6	20	93	
	Volume (M.T.)	50870	86483	12565	46108	196026	211662
	Value (000s £)	10650	15754	2708	7602	36714	40500
1980	Value/M.T. (current £)	209	182	216	165	187	191
CPI=411.9	Value/M.T. (1968 £)	51	44	52	40	45	46
	Percentage of Grand Total (by volume)	24	41	6	22	93	
	Volume (M.T.)	13390	20343	1845	16590	52168	577513
	Value (000s £)	3275	4654	463	2833	11225	12513
1971[1]	Value/M.T. (current £)	245	229	251	171	215	217
CPI=461.6	Value/M.T. (1968 £)	53	50	54	37	47	47
	Percentage of Grand Total (by volume)	23	35	3	29	90	

1 January to April.
Note: 1 Metric Ton=1.85 M^3 of sawnwood.
Source: Successive December issues of *Trade Statistics of Ireland* and the April 1981 issue.

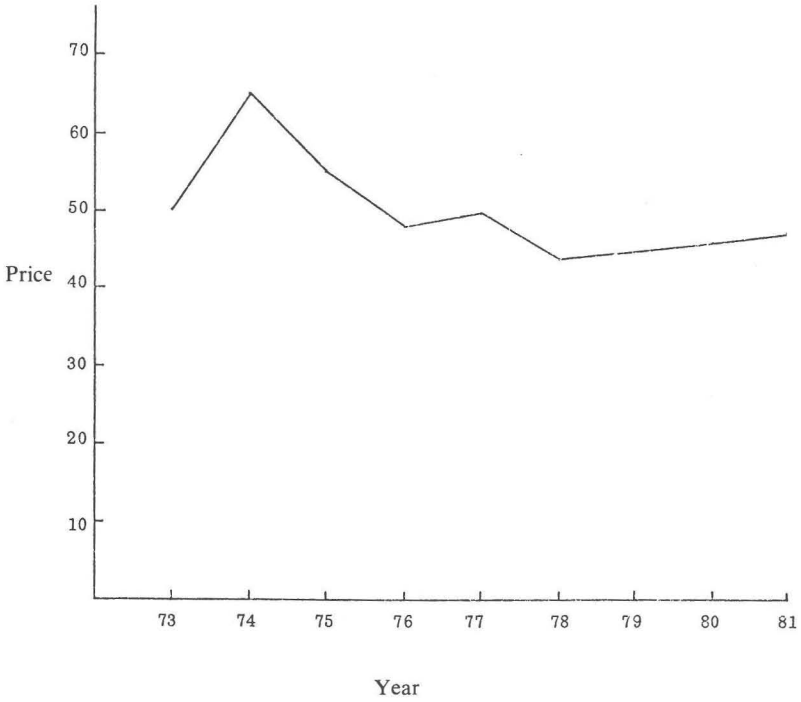

Fig 1 Average Price per Tonne of Imported Sawwood. (Constant 1968 £).

Source: Table 3.

FUTURE MARKETS

For 1979, multiplying metric tons of imports from Table 3 by 1.85 yields M^3 of sawnwood; multiplying this in turn by 2 will yield a crude estimate of volume of roundwood equivalent in M^3. Adding State sales of 232,000 M^3 to an estimated 35,000 M^3 from private lands results in the following (Table 5).

It is not known how much of the 1.1 million M^3 (roundwood equivalent) is technically substitutable by Irish wood. If we make the (probably conservative) assumption that 70 per cent of this market could be met by Irish wood, we can see that there exists domestically a 700,000 M^3 (roundwood equivalent) market for Irish timber, based on 1979 consumption levels. The joint IIRS/Forest and Wildlife Service study of the sawmilling industry provides a

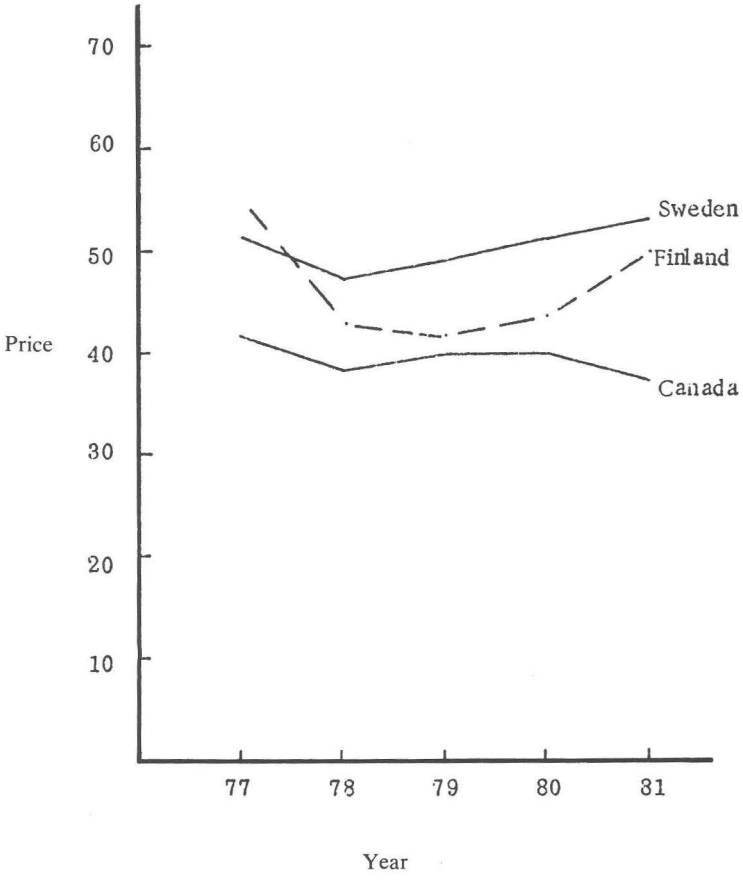

Fig 2 Average Price per Tonne of Imported Sawwood from Sweden, Finland and Canada. (Constant 1968 £).

Source: Table 4.

much more detailed review of the markets for 1977 (Table 6). It is clear that the best opportunity for expansion is in the construction sector, and the IIRS/FWS projected a 20 per cent annual growth rate in the penetration of native timber in this market, with sales to this sector growing from 97,000 M^3 (roundwood equivalent) in 1977 to 420,000 M^3 in 1985.

We are now in a position to make a few observations on the symbiotic relationship between the sawmilling sector and forestry.

Table 5: Apparent Softwood Lumber Consumption, Imports and Domestic Production, 1979.

	Apparent Lumber Consumption 1979	
	Roundwood Volume, 000s M^3	% of Total
Imports	1001	79
Domestic		
State	232	18
Private	35	3
Total	267	21
Grand Total	1268	100

Source: Tables 1 and 3.

Table 6: Irish Market for Sawn Softwood Timber, 1977 000s M^3 of Roundwood Equivalent.[1]

End Use	Total Apparent Consumption	% of Total	Native Timber Quantity	% of Total	Share of Market held by Native Timber
Construction	725	72.5	97	44	13
Pallets & Packaging	67	6.7	53	24	79
Fencing	62	6.2	48	22	78
Furniture	39	3.9	2	1	6
DIY	25	2.5	2	1	9
Miscellaneous	82	8.2	18	8	21
Total	1000	100	220	100	22

1 The original IIRS/FWS data are converted to roundwood equivalents by multiplying by 2; this is misleading for some end-uses, but facilitates comparison with data in Table 5.

Source: Institute for Industrial Research and Standards and Forest and Wildlife Service Study of the Irish Sawmilling Industry.

SAWMILLING AND FORESTRY

1. The sawmills now provide outlets for more than half of the output of our forests and this proportion will grow over time.
2. Sawmills provide the bulk of the revenues to both the State and private forests.
3. Employment per unit of wood processed will typically be greater in sawmills than in other processing units.
4. Sawn wood has a large domestic-substitution market, mainly in construction.

It is clear that the profitability of the State forestry enterprise in Ireland depends crucially on a thriving sawmilling sector. We can anticipate that the industry will be able to achieve economies of scale and possibly reduce log haulage distance as a result of the rapid increase in wood raw material availability. The interesting questions are; will the industry be able to capture the bulk of the domestic construction and other markets and thereafter export successfully into the highly competitive British market? On a closely related theme, will the Forest and Wildlife Service transfer the wood to the industry in the quantities and in a manner that will ensure a prosperous sawmilling sector, and at the same time protect the interests of the resource owners (the taxpayers)? The future of Irish Forestry depends on how we in the forestry community act on these issues.

FOREST PRODUCTS DEVELOPMENT BOARD

With regard to the first, in my NESC study I suggested the formation of a Forest Products Development Board (FPDB) which would have on its staff people with expertise in wood marketing, harvesting, forest products, industrial processes, product development and marketing. The Board would have responsibility for developing and implementing wood utilisation plans, for deciding on the wood sale methods, for sponsoring product research and development and for market development. Clearly, many of these functions are being, or could be, undertaken already by the Forest and Wildlife Service, the Institute for Industrial Research and Standards, the Industrial Development Authority, and Coras Trachtala. However, I feel that there would be a real payoff to concentrating responsibility for these assignments in one organisation which is given sufficient resources and freedom to do the job on a continuing basis. This unit could draw on skills in other Government and private agencies as required. In the NESC report I

discuss various means of linking the Forest Products Development Board with the Forest and Wildlife Service.

I feel that the real competition in the lumber scene is about to begin. We're facing long-standing experienced producers in a very competitive environment, and we've simply got to take full advantage of every opportunity to give ourselves a competitive edge. It might well be asked, why should Government intervene? Will the market not guide sawmillers and others to the most efficient allocation of resources? I envisage the Forest Products Development Board as a complement to market forces, not in any sense as a means of thwarting them. In market efficiency terms the case for the Board can be made as follows:

(i) The State in a real sense makes the market for stumpage (standing trees); within wide limits the Forest and Wildlife Service can move this stumpage price up (and down) by contracting (expanding) the volume of wood on offer. (This circumstance where one seller faces several buyers is called monopsony in economics parlance). Since the Government is one of the primary determiners of market price, it behoves it to know and be capable of evaluating the full implications for downstream activity of its marketing choices.

(ii) The price of standing wood is a residual — what is left after the costs of processing, transport and harvesting have been netted out of the product sale price. It follows that it is in the State's immediate (commercial) interest to encourage the achievement of both premium prices for mill output and reductions in cost of harvesting and processing; much of the benefit resulting therefrom will be reflected in stumpage price.

(iii) The competition — Sweden, Finland and Canada — all have the benefit of strong experienced marketing organisations, backed by a base of State-supported research (basic and applied) and development work. This also applies to a lesser extent to domestic substitutes for wood. The *Roadstone Book of House Design* provides a very attractive and sophisticated vehicle for selling the use of various materials in house construction; native timber does not feature prominently therein.

Stumpage Marketing

Two separate issues arise regarding the disposal of State-owned stumpage — the quantities which are to be put on the market, and

the manner in which these are sold. Taking each of these in turn:

Quantity: As noted earlier, the State, with a near monopoly of wood supply, is, withing wide limits, a market price setter. If it sees the price falling below "target", it can contract supplies and move the price upwards; likewise the upward movement of price can be dampened by increasing the volume of wood placed on the market. The ceiling price is set of course by the competition from imports for the end products. What should be the appropriate role of forestry policy in this situation? It seems to me that it is appropriate for Government to play a countercyclical role, but within clearly specified limits. Thus the *range* of stumpage within which the quantity made available annually will fall should be established; except in exceptional circumstances, the volume offered should be within this range.

It is interesting to compare projected availability in 1979 with actual sales (000s M^3).

	Projected Volume[1]	Actual Sales	Difference	Difference as % of Actual
Sawlogs	192	60	132	220
Boxwood	190	172	18	10
Total	382	232	150	65

1 This is a much more conservative projection than that prepared in 1979, which estimated an availability of 344,000 and 215,000 cubic metres of sawlogs and boxwood respectively in 1979.

Overall, projected exceeded actual volume sold by 65 per cent; the excess was a dramatic 232 per cent for sawlogs, but only 10 per cent for boxwood.*

I want to emphasise that no large policy conclusions can be drawn by examining one year's data. All kinds of good reasons could explain the difference, such as, for example, the collapse of the pulpwood market, which would reduce the volume of associated sawnwood being sold.

* Sales in 1980 amounted to 120,000 M^3 and 151,000 M^3 of boxwood and sawlogs respectively. Projections for 1980 were 182,000 M^3 and 185,000 M^3, so that projected sales of boxwood and sawlogs exceeded actual by 52% and 23% respectively.

Furthermore, when the current stumpage price estimates provided by timber merchants are compared with those obtaining in July-December 1977, we don't find evidence to support the hypotesis that the State is capturing real price increases by restricting supply.

	Sawlogs Price/M^3		Boxwood Price/M^3		CPI
	Current	Constant (1968 £)	Current	Constant (1968 £)	
1977	15.99	5.49	6.83	2.35	291.25
1980	17.50	4.15	10.50	2.49	421.8

We can see that over the period real sawlog price has declined, while boxwood price shows a slight increase. I emphasise that too much should not be made of the apparent implications of selectively chosen statistics of this nature. What I do want to stress is that we need to devote far more attention than heretofore to developing policy concerning the *quantity* of stumpage to be placed on the market by the State over time, and the price implications thereof. I turn now to stumpage sale methods.

Stumpage Sale Methods: Given that the State has decided to dispose of x thousand cubic metres of stumpage annually, how should this material be allocated among prospective users? It is well to recognise that the interests of the general taxpayers and the individual mill can be antagonistic. The mill wants the wood as cheaply as possible; the taxpayers are trying to maximise the return on their investment by getting the best price.

We have, up to now, depended almost exclusively on price to allocate wood among competing users; this has been effected by the use of sealed bids. I am strongly in favour of continuing to use price as the primary allocation mechanism; the user who can pay the most for the material should generally get it. However, I recognise that there is sometimes a balance to be struck between maximising net benefits in the short and the long run and that there can be in addition non-market considerations involved. The large increases in volume becoming available provide an opportunity to test alternative wood disposal mechanisms. In my NESC report I discuss a number of alternative approaches. I recommend that these be tested carefully so as to yield information on the most satisfactory mix of marketing strategies to adopt.

Summary and Conclusions

The softwood sawmilling industry has the potential for becoming one of the most dynamic sectors in the economy over the next two decades. Sawlog and boxwood volumes becoming available from State forests will increase from 232,000 M^3 in 1979 to 929,000 in 1990 and 2,051,000 in the year 2000.

State stumpage revenues will increase (applying 1980 prices) to £13.4 million in 1990 and £30.2 million in the year 2000 (1980 £). Employment in harvesting, transport and processing can be expected to grow from about 1200 in 1980 to close to 4000 in the year 2000.

In 1979 softwood lumber imports amounted in value and quantity to £42.8 million and approximately 1 million cubic metres of roundwood equivalent respectively; it was estimated conservatively that native timber could technically substitute for about 70 per cent of these imports. However, with over 2 million cubic metres of sawlog and boxwood available by the year 2000, it is clear that over the next two decades Ireland will have become a major sawnwood exporter, unless there is a sharp increase in domestic consumption.

Finland, Canada and Sweden are now our major suppliers. In the 1977-80 period Finland increased market share in part by a fall in price. In early 1971 Canadian lumber, much of which competes directly with native supplies, appeared to be doing likewise. The increasing volumes of wood becoming available should help the industry achieve economies of scale in production and reduction in log haulage distances.

To help the industry take full advantage of the opportunities before it, I recommend:

(i) The establishment of a Forest Products Development Board, with responsibility authority and resources to support the industry by preparing and then implementing wood utilisation plans, by sponsoring or undertaking product research and development, and developing wood markets. This can be justified on the part of the State because most of the net value added to wood product price will recrue to the wood owner (the State), and our competition has comparable back-up services.

(ii) A policy on the range within which the quantity offered for sale will typically fall from year to year.

(iii) Carefully monitored experimentation of alternative sale

methods, with a view to arriving at the optimum sales method mix.

The Irish sawmilling industry is on the threshold of great things. I believe that the kind of steps which I have outlined can help ensure that the entire forestry business, from growing the trees to marketing the final product, will prosper.