THE INTEGRATION OF FOREST INDUSTRIES AND RELATED FOREST MANAGEMENT: CERTAIN FACETS OF INTEGRATION*

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Summary

The author describes certain aspects in the integration of forest management with the forest industries. The basic concept implies unity of objectives, with neither forest management nor industry dictating management policies. Understanding by each of the problems of the other is essential.

Preamble

It appears that a certain word or phrase gains popularity or becomes fashionable at a particular time. How these fashions originate is not always clear. It may be, as I understand is the case with the length of women's skirts, the result of decree from a Paris salon. Or it may be a concise term to express the end point of a particular trend, or of a particular evolutionary stage. Be that as it may, the term fashionable in forestry today is integration. Possibly a good thing too, with so much of world thought preoccupied with nuclear fission and dis-integration! With these preliminary remarks let us pass on to a consideration of the meaning of "integration" and to an examination of its application to forestry and the forest industries.

Integration—its meaning

Definitions of the word according to the dictionary are in the following terms: combination into a whole; making up a whole; completion; restoration; constituting one whole. These have the common theme—unification, or the moulding of individual parts into a whole. And surely, the important implication—that the part becomes subsidiary and subservient to the whole.

Not new to forestry

While current, popular usage of the term "integration" is new, its true meaning is basic to forestry itself. Certainly the development of forestry to the stage where it is recognised as a legitimate and essential form of land use and as such incorporated in overall Government policy, is integration in its widest sense. Again, the combination of trees into stands, of stands into forests, is integration. Indeed, it would be quite proper to say of a young forest that at such an age its trees became integrated, that the trees lost identity as individuals and began to function as a whole, the stand, the forest. Again the recognition of site differences and the choice of species to suit the individual sites, the whole forming the forest complex, is a form of integration. So, too, the multiple use concept, where protection, production, and recreation management are combined in the one forest

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policy. Many other examples could be cited, all unrelated to forest industries.

Current usage of the term

The most frequent usage of the term "integrated" is as applied to industry. Thus we speak of an "integrated industry" or a "fully integrated industry". What do we mean? I can quote no authoritative definition. My own conception of the term is somewhat as follows:

An integrated industry is one in which primary and subsequent processes of manufacture are combined so as to
(a) Utilise raw material with a minimum of waste.
(b) Utilise the waste products from one process as the raw material of another.
(c) Economise in the movement of materials between sections of the industry.
(d) Ensure the regular flow of materials from one section of the industry to the next.
(e) Secure overall low cost manufacture.
(f) Secure uniformity in the standard of products.
(g) Secure a maximum share of a competitive or a lucrative market through a diversity of products.
(h) Operates under a unified management policy.

Probably as good an example of integration as any in its widest sense in this country is the meat industry, particularly the frozen meat industry, with integration not limited to industry but extended to agricultural research worker and to the primary producer. The result—little wasted but the squeal, a product best suited to long distance transport to market and of a standard adequate to secure a share of a strongly competitive market.

Integration in the forest industries

The term used in the title of this symposium is "forest industries". For the purpose of this paper "forest industries" are taken to mean those in which wood in the round is the raw material. Until recent years sawmilling has been the principal forest industry. In the case of the indigenous sawmilling industry it has utilised only part of the roundwood available on each acre of forest and in the form of logs upwards of 12 inches in diameter. In certain cases some approach to integration was made with the operation of a box factory in conjunction with the sawmill, thus assisting in the utilisation and marketing of shorts and lower grade material. In a few cases a veneer plant has been operated in conjunction with the sawmill, in such cases putting the higher grade logs to a more valuable use. The past two decades have seen the development of the pulp and derived products industries, based on roundwood from exotic forests, utilising logs down to smaller minimum sizes and to lower qualities than in the indigenous industries and integrated to a substantial degree. By contrast, it can be said that the indigenous sawmilling industry receives logs of a size and quality comparable with those of past years. Any integration has been away
from, rather than towards the forest—integration with the building industry for example. It should be mentioned, however, that exceptions to this trend have occurred to a limited extent in a few State forests in Nelson, Westland, and Southland conservancies. There some attempt is being made to integrate sustained yield management of the forests with the requirements of the local sawmilling industry.

Forest management and forest industry

In examining the problem of integrating forest management and forest industry three, sharply contrasting, cases can be recognised—first, common ownership of forest and industrial plant; second, separate ownership but with all or the greater part of the forest yield under long term commitment to a particular plant; and third, separate ownership, with the yield from the forest disposed on the open market. Obviously the first two cases lend themselves more readily to integration. Ideally, in these cases combined management should develop along the following lines:

(1) Objects of management of the forest:
   (a) Sustained yield at a level representing at least optimum log input capacity of the industrial plant.
   (b) Production of logs of a quality and species most nearly matching the optimum requirements of the plant.
   (c) Efficiency combined with economy in management.

(2) The objects of management of the industrial plant or plants:
   (a) Development of techniques and manufacturing processes to utilise as wide a range as possible of the products of the forest, with particular reference to material of small dimensions and of inferior quality.
   (b) Development of plant to a size consistent with the sustained yield of the forest.
   (c) Maintenance of raw material requirements at a stable level.
   (d) Efficiency and economy in manufacture.
   (e) Active market research and diversification of markets.

This ideal cannot be attained overnight. Rather, it is the outcome of a long period of development, with compromise required from both forest management and forest industry at all stages, if development progress is to be orderly. Basic, of course, is the intelligent understanding by each, of the problems of the other.

In the third case, separate ownership, with the yield from the forest disposed on the open market, integration of forest management is more loosely knit, and perhaps more flexible in its application. It requires a thorough understanding of the forward needs of the local market and the development of forest management practices to best meet those needs—within the framework of sustained yield management.
Dangers of too early integration

Integration of forest management and forest industries can best be seen in some of the older countries—in Europe, and to an increasing extent in North America; but probably nowhere better than in the large company holdings in Scandinavia. There integration can be seen as a going concern. The common denominator in these older countries is that forest management is dealing with species indigenous to the country, or, if of foreign origin, experience has covered several rotations. In short, the behaviour of the crop is known, and yields can be predicted with some accuracy as to both volume and kind. So too, the forest industries are long established and their requirements stabilised on a basis of proven performance.

The position is very different in New Zealand, where integration is proceeding apace and with exotic species as its basis. Few of our exotic species have been established long enough, or managed in forest formation long enough to predict the quality and kind of yield far into the future. And yet, the dependent industries are being developed on the assumption that future supplies of raw material will be forthcoming in volumes predicated upon the present behaviour of our exotic forests. There would seem to be a very real danger in developing forest industries to a level too near what appears to be the sustained yield of our exotic forests, as calculated from present knowledge. Another danger lies in the imbalance of progress towards integration, with forest industry relatively far in advance of forest management. Under these conditions it is not unlikely that forest industry may dictate short term expedients, with unfavourable effects on sustained yield of the forest, and to the ultimate disadvantage of an optimum return from the combined enterprise. Some of these dangers can be avoided if forest industry takes an intelligent interest in the solution of problems of forest management; perhaps, more than anything else, appreciates the long time lag between cause and effect.

Conclusion

In this brief review aspects of some significance in the development of the integration of management of forest and forest industry, are lightly touched on. A basic concept of integration is recognised—unification of diverse parts to a common management objective, with the management policies of the parts subsidiary and subservient to the management policy of the whole. Certain dangers inherent in premature integration are described. The conclusion is reached that intelligent understanding by forest management of the problems of forest industry, and of forest industry of the problems of forest management is the basic requirement for progress towards integrated management of these two major parts.