Sustainable management of forests: current international debate

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During the next six months there will be a number of major international meetings discussing sustainable forest management. These include a meeting of Ministers of Forestry convened by the FAO in March and the third session of the UN Commission on Sustainable Development in April. A key item of discussion at these meetings is expected to be the criteria and indicators (C&I) of sustainable management of forests. A number of countries are currently preparing C&I for their forests to be presented to the CSD meeting. The two key groups of partners in this are the Europeans who have formed into the Helsinki Group and the non-European temperate countries, including New Zealand, via the so called Montreal Process, all working toward the same objective. New Zealand has much to gain because of the opportunities it offers to identify our forest management within internationally recognised sustainability criteria.

An important outcome of the UN Conference on Environment and Development (UNCED) in 1992 was the agreement that all forests need to be managed in a sustainable manner. However, the current surge in interest has arisen more from market considerations than through a commitment to the UNCED Forest Principles.

The issue that triggered the current scale of activity for an internationally agreed set of C&I was action taken by some European countries to introduce labelling to identify timber from sustainably managed forests that enter their markets. The measure, when first introduced by Austria in 1992, was strongly objected to by major tropical timber producers, and was subsequently withdrawn. The Netherlands now seem to be moving in a similar direction. There is a growing concern among major timber producers that this trend toward certification is likely to continue and will have a major impact on their trade.

Whatever the reasons, the development of measures of sustainability for all forests is a landmark step in the effort toward stemming centuries of forest exploitation.

The Montreal Process

Over the past 12 months New Zealand has been involved in the Montreal Process to develop criteria and indicators for sustainable management for temperate forests. So far, there have been five major meetings of the group and a sixth one, expected to be the final, was scheduled for February 2-4, 1995 in Santiago, Chile. If agreement is reached, the Montreal C&I document will be forwarded to the April session of the CSD.

The Montreal Group output contains seven criteria and associated indicators of sustainable management. The criteria cover conservation of biological diversity, maintenance of productive capacity of forest ecosystems, maintenance of forest ecosystem health and vitality, conservation and maintenance of soil and water resources, forest contribution to global carbon cycles, maintenance and enhancement of long-term multiple socio-economic benefits of forests, and the existence of an institutional and economic framework.

The following aspects of the C&I are worth noting:

- The C&I are intended to provide a common understanding of what is meant by sustainable management of temperate and boreal forests.
- They provide an international reference for policy makers for the formulation of national policies and a basis for international cooperation, especially in relation to trade in products from sustainably managed forests.
- The set of C&I is intended to apply at country level and not at a sub-national basis.
- No single criterion or indicator taken alone is an indication of sustainability: rather individual C&I should be considered in the context of other C&I.
- It is recognised that each country is unique in terms of quantity, quality and characteristics of forests as well as in relation to other key variables such as forests per capita and ownership.
- It is recognised that while it may be desirable to have quantitative indicators, such indicators alone are insufficient to measure sustainability. Some important indicators may require gathering of new or additional data or even basic research. In cases where there are no reasonable quantitative measures for indicators, qualitative or descriptive indicators are important.
- Concepts of forest management evolve over time, based on new experiences and scientific research. As such, the criteria and indicators also need to be reviewed periodically.

It is significant that the C&I of the Helsinki Group are largely similar to those of the Montreal Process. It is expected that the UN Commission on Sustainable Development will initiate follow up which could lead in the long term to a single set of criteria and indicators which all countries could use. That should help in making valid comparisons of sustainable management between countries. It could also form the basis for a binding forestry convention or a similar international agreement. New Zealand officials have had wide-ranging discussions with the industry and environmental NGOs. These discussions have identified areas of improvement of the C&I.

Importance for New Zealand

New Zealand has taken a different path from most other countries to sustainable management. Its protection of the vast majority of natural forests, reliance on planted forests for virtually all wood needs, the legislative framework relating to natural production forests and voluntary agreements reflect this unique character. The Montreal Group criteria of sustainable management provide us with a useful measurement at country level. They should, however, be seen as the beginning of a process rather than the final word in sustainable management. There is much that needs to be done. Subscribing to the process is futile unless the forest growers, processors and users appreciate the implications. Market opportunities for the future will increasingly be for sustainably managed wood.

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BOOK REVIEWS

Black truffles

"The Black Truffle" by Ian Hall, Gordon Brown and James Byars with the cooperation of Nelson Dimas. 107 p. 2nd edition 1994. ISBN 0-478-04670-7. Price $49.95. Published by New Zealand Institute for Crop & Food Research Ltd, Christchurch.

The authors and publisher must be highly complimented for producing this excellent book. Joint authorship by a research scientist, a journalist and a gourmet chef is most unusual, and has resulted in an unusually satisfying book which must appeal to a wide audience. The quality of the printing is first-class and the subject matter is well illustrated by numerous colour plates. The book sets out to summarise everything known about the Périgord black truffle – a delicacy familiar to those who saw the recent TV programme 'A year in Provence'. That it

succeeds in doing this in just over 100 pages is a remarkable achievement! It does so by succinct writing, and by including an extensive list of references and useful addresses where further information can be obtained.

To foresters, and in particular farm foresters, the exciting message of this book is that Périgord black truffles can not only be grown in New Zealand, but that this 'minor' forest product was recently selling wholesale for $1450 per kilogram (for fresh mushrooms) in London, while cans sold for $3000 per kilogram in Auckland.

The book commences by reviewing the history of truffles from ancient times, and shows that much of *le grande mystique* originally caused by uncertainty as to their nature now has as much to do with income tax evasion as anything else. Although most truffles are still harvested from natural woodland, artificial truffières have been established in France and Italy.

The next 33 pages of the book are devoted to "cooking with truffles" and although such exotica as 'meat loaf of young pigeon with truffles' and 'truffled pâté of foie gras' are included, relatively simple recipes are given for such dishes as 'stuffed fillets of sole' and 'truffled chicken'. The ingredients for the latter recipe consist of one chicken and one truffle. Of course with truffles retailing at around $3000 per kilogram, this is somewhat more expensive than your average Kentucky Fried!

The rest of the book is concerned with the climatic and soil requirements, establishment, maintenance, harvesting and marketing potential of truffières in New Zealand. Black truffles have been successfully produced in this country under the aegis of the NZ Institute for Crop and Food Research. A New Zealand Truffle Association has been established to cater to the interests of truffle growers and potential growers. This body is to set up a company for exporting truffles under the auspices of the New Zealand Horticulture Export Authority.

Much of New Zealand appears to be climatically suitable for the establishment of truffières, although in the north the winters are probably too warm, and in the south the summers too cool. The first black truffles to be grown in the southern hemisphere were harvested near Gisborne in July 1993 but truffières have been established in 22 places between Ohiwa in the Bay of Plenty and Alexandra in Otago. Heavy clay soils are not suitable, and the Périgord black truffle occurs naturally on calcareous soils with a pH greater than 7.5 in France, Italy and Spain. Truffières have however been established in both Europe and New Zealand by applications of lime to soil of relatively low pH.

Infected oak and hazel plants can be bought from the New Zealand Institute for Crop and Food Research Ltd at Invermay. These are usually planted as a mixture. Hazels tend to start producing truffles earlier than oaks (four years as against ten) and can therefore give a useful yield before they are eventually thinned out. Maintenance of a truffière involves providing shelter and some form of irrigation, as well as the usual silvicultural operations. It is too early to make confident predictions of the expected yields in this country but it appears that one could eventually expect around 60 kg per hectare per year. However it is noted that an experimental French truffière produced the equivalent of 300 kg per hectare ($435,000 per year!)

Unfortunately for most commercial foresters, Périgord black truffles have not yet been grown successfully under radiata pine. Oak and hazel species are the name of this game! It might be possible however to persuade even the most single-minded radiata man to try to establish a truffière around the boundaries of his forest. It would certainly improve its amenity value – and might just bring in more money than the wood! As for the farm forester, although one's chickens should never be counted before they hatch, it appears that your chances of winning in this particular lottery are much greater than in Lotto.

Who then should buy this book? Certainly anyone with a suitable patch of land and an interest in tree growing. Most members of the Farm Forestry Association and the Tree Crops Association would find this book essential reading, and I hope many members of the Institute would be equally intrigued by it. If nothing else, it is a cheap, easily read and stimulating coffee table book on a subject that many people will find interesting.

J.D. Allen

The Cork Oaks and Cork

The Cork Oaks and Cork: a New Zealand Perspective by R.S. Macarthur*. Foreword by Hamish Deans. Typeset by Sounds Print and Stationery, Picton, and printed and bound by Blenheim Print, Blenheim, 1994. Price $29.95 + P. & P.

New Zealanders, from earliest times until the present, have placed the emphasis of forestry almost solely on building timber and, latterly, almost all their interest has been centred on one exotic species.

This myopic outlook has only in the last few decades been challenged by the NZ Farm Forestry Association and the NZ Tree Crops Association, which bodies have drawn increasing attention to alternative species for the production of both timber and other tree products such as nuts and fruits, and also the value of trees for stock shelter and shade, for windbreaks to protect crops and grass and to enhance yields, for the marriage of farming and forestry, and for encouraging wildlife and enhancing the landscape.

Into this broadening perspective Ross Macarthur has rightly drawn attention to a neglected species, *Quercus suber*, the cork oak, doing us all a valuable service.

His book is the result of truly heroic sleuthing activities both in New Zealand and around the world. He has ferreted out the bulk of the cork oak plantings in New Zealand, the cultivation of the species in its core lands, the history of trials and introductions in several countries, world trade, the physics and uses of cork, and very much more besides. He has presented this mass of valuable and fascinating information in a well-ordered and concise and readable form, with occasional flashes of the dry humour and irony, as a basis for re-evaluation of the species as a new productive resource in New Zealand.

It is surprising to learn that local interest in this species goes back for well over one hundred years, one notable protagonist being Sir George Grey. Since then curiosity has been sporadic; for instance, the Greenmeadows winery was thinking of planting cork oaks for the production of bottle stoppers some ten years ago.

We learn of the multifarious uses of cork, the value of imports into New Zealand – $NZ 9.5 million in 1992; the annual tonnages we use: all of which information gives an indication that cork oak production could be a viable industry here. At present we import cork products from 21 countries, of which 15 do not themselves grow the crop – such odd corners of the globe as Taiwan, Norway, Belgium, Hong Kong and Britain. Ross asks whether it would not make sense to produce the commodity and manufacture cork articles here, rather than buying odd lots from so many assorted countries. He has a point.

Well Illustrated

The book is a firmly-bound paperback, attractively presented with clear print on fine paper. The colour illustrations are mainly well chosen, although of varying quality; the colour prints are mostly clear and of good quality. There are a number of valuable tables, a hefty list of references, and a full index.

Ross admits that, before growing crops of cork oak, we would need some genetic trials to find the best clones not only for our climates and sites but also for the best quality of bark, but in other respects the book should encourage further planting and evaluation of this species on the basis of a good deal of accurate information.

C.G.R.Chavasse

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