Whether that pessimism is justified depends on one's point of view: the Government of the time would argue that the target was not forestry, but an over-blown and constipated public service (of which the Forest Service was just a part) and a national culture of dependence on central government which had plunged New Zealand deeply into debt.

However that may be, the changes were, for foresters, radical in the extreme, going against all their historical experience of public pressure on forested land for settlement and political indifference. Their reception was not helped by the 4th form enthusiasm with which some of the more vocal politicians put down forests and forestry in their pursuit of the green vote.

"Tomorrow's Trees" was published in 1992, when forestry was rising from the ashes of political ridicule and the economist's level playing field, but it would have been written earlier at a much more gloomy time when there was every good reason for pessimism.

Most foresters will remember the early days of the State plantation sale process, put together in such haste and in such a fashion that only the very largest New Zealand companies would have the resources to bid, then finding themselves apparently checkmated by the Commerce Commission.

They will remember also the indifference with which the Government of the day regarded the possible sale overseas of the whole State plantation estate and the real possibility that it might be stripped and abandoned; there was nothing to show that political appreciation of the value of forests had grown over the past 100 years and that forests were not, once again, simply to be a mine of capital to be used to bail the nation out of its economic woes.

But things have turned out better than that, and forest products face a more certain future than almost anything else we grow, though it seems such a short time ago that foresters were arguing in vain on countless land-use committees that trees offered better prospects than alternating rotations of gorse and sheep.

The credit for that improvement ultimately belongs to the people responsible for both the protection of the natural forest in the days when that was not a popular cause and the creation of the plantation resource now coming to fruition just when we need it most.

The authors of "Tomorrow's Trees" are prominent in that group of people, and the book is an excellent and needed record of their efforts and of knowledge and potential otherwise likely to be lost in this age of computer models and the marketing of "product". It is a book of its generation, which some may consider a fault, but the opportunities it describes have not changed, only some of the paths to them.

Get it, read it.

J.R. Purey-Cust

The Taungya forestry system

Taungya. Forest Plantations with agriculture in South-east Asia. Edited: C.F. Jordan, J. Gajaseni, H. Watanabe. CAB International. Sustainable Rural Development Series No 1. 1992. 176pp £27.50. IBSN 085198 8016.

This book, the first in a new series, is based on a symposium at the Vth International Congress of Ecology in Japan. The material in the book is in two parts. The first consists of seven papers that describe the taungya system, its origins, the underlying biology and some socio-economic aspects. Part two covers seven examples from various parts of South-east Asia. The Editors have included an introduction and a conclusion to draw the book together into a coherent whole. In this they have been only partially successful for the individual chapters differ in their treatment depth.

In the introduction the writers argued that taungya was essentially different from agroforestry in that it was aimed at establishing plantations. The crops tended during the first few years were incidental. They argued that agroforestry was much more focused on the production of crops. This argument, I would suggest, is academic as it is more important to focus on how trees and agriculture are interwoven – the difference is only one of degree. I would agree with J. Gajaseni and C.F. Jordan when, in Chapter 7, they state that "taungya" is a type of agroforestry albeit organised to assist forest regeneration.

The overview papers in the first section had several interesting chapters. The historical and socio-economic discussion was interesting in that it stressed how taungya was evolving to meet current needs and to overcome some of its negative aspects. The three chapters on the underlying biology considered the general principles of plant competition, nutrient cycling and soil sustainability. My major impression after reading was that there was little hard scientific data on which to base the practice. For example C.F. Jordan states in chapter 5: "We do not know of any studies on nutrient dynamics during the initial stages of taungya." And in chapter 6 L.A. Bruijnzeel states: "No single study has managed adequately to quantify all gains and losses of nutrients for a complete cycle of tropical forest cleaning, followed by plantation establishment, maturing and harvesting". This review of Bruijnzeel points to the need for fertiliser, at least for some tropical soils, for them to be sustainable over several rotations.

The final chapter of the first part of the book looked at the theoretical basis for taungya and its improvement. It was again light on hard data, but it was good to see the authors (J. Gajaseni and C.F. Jordan) argue for alternative practices on the basis of a better understanding of the system.

The second part of the book looked at taungya in different countries. This part of the book would be a useful introduction to people interested in the application of the system or those wishing to obtain an overview before working in one of the countries. Many variations are discussed and their advantages and limitations are usually spelt out.

Who should purchase this book? It is obviously useful for libraries and those who specialise or work in tropical forestry and agroforestry. It is less useful to forest and other land managers in New Zealand or other developed temperate countries.

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'Managing the World's Forests'

Managing the World's Forests. Looking for Balance Between Conservation and Development (1992). Edited by Narendra P. Sharma. Kendall/Hunt Publishing Co., Iowa, 605pp.

It takes some considerable reading of this tome to discover that, in the main, it is not about the world's forests or seeking a balance between conservation and development, but principally about the state of forests in the developing world and about forestry projects in those countries. Perhaps this is not surprising as the International Bank for Reconstruction and

Development owns the book's copyright and many of the contributing authors are employees of the World Bank.

It is just as well that the editor forewarns the reader that the authors present diverse views on key forestry issues and that some of the chapters present opposing views. Otherwise, one might be tempted to put the book down after Chapter 3 on Deforestation: problems, causes and concerns. The balance to this monetarist philosophy is provided in Chapter 5, by George Woodwell, on the Role of Forests in Climatic Change. He asks: "Is there a way now of managing forests and land to support people without the progressive biotic impoverishment that has marked the advance of civilisation throughout time?" He acknowledges that the issue is highly political as well as technically complex and claims that avarice is inborn, whilst ecology is slowly learned.

Touchy Issue

Like some of the other contributing authors, Woodwell alludes to a touchy issue, spelt out by Kanowski *et al* in Chapter 14 on Plantation Forestry: "Politicians pay lip service to the importance of trees and forestry while becoming wealthy on the illegal proceeds of exploited and often subsequently degraded forests", and "nearly all the constraints relate to people" as "the scientific and technical approaches to plantation forestry are relatively well understood and the problems are not generally difficult to overcome". Though somewhat overstating their case, the general thrust could have been explored more deeply, for corruption at all levels is a major issue. But why does it occur and can it be minimised? What is the role of the First World in all this and what are development agencies doing about it? The sad fact is that billions of dollars of development funds are being thrown at ill-defined forestry (and other) development projects. Whilst we can condemn exploitive and corrupt individuals present in all societies, who is to blame the destitute for helping themselves whilst they can?

The outline presented by Nair (Chapter 15) for the production of multiple outputs, whilst protecting fragile environments through agroforestry is more pointed, as it stresses the importance of socio-cultural values and economic and financial returns. Cernea goes the final step when he advocates putting people at the centre of forestry, whilst discussing social forestry in Chapter 12. This approach "... breaks radically with the stereotypical assumption that forest growth is only the business of professional foresters or of Mother Nature".

The final two chapters of this otherwise provoking book are a bit of a let down as there are a lot of normative statements about the policy changes that are deemed necessary to bring about sustainable development. The question remains: how are we going to get there if we continue to skirt around the real conflict between the present worldview, attitudes and lifestyles of the 'rich' and the need to maintain ecological integrity? This is by no means a mere Third World problem and we in the First World could well apply some of the prescriptions to ourselves.

A.J. Tilling

Ducks in the bedroom, fish on the roof

In the single bedroom of a third-floor apartment in Guilin (in China's Sichuan Province) a government worker keeps 16 white ducks. Nearby, the flat roof of a similar living block has been flooded and sealed to accommodate a shoal of fish. Both are "sideline" production endeavours, highly successful in rural China under reform policies, and subsequently encouraged among members of State work units, even in the cramped living quarters of urban dwellings.

Cramped they are indeed: the living space in various Chinese cities (per capita in sq. m) ranges from 2.22 in Chengdu to 4.91 in Beijing. The absolute poverty rating is 2 m^2 and there are many examples. In rural China, the living areas are bigger (averaging 5.5 m^2) and the "construction area" (including service rooms), 11 m^2. Moreover, peasant farmers own their houses: even at the height of ideological purity in Mao Dzedong's China, no one was foolish enough to confiscate them. Sideline production from (mainly) "private plots" was another matter. In the 1960s there was bitter controversy over the distribution of the proceeds from sales of such production. Because of changing and conflicting policies over these "tails of capitalism", farmers were reluctant to grow other than short-term crops and livestock. If they were allocated land with trees on it, for example, they moved quickly to cut them down in case the policies changed.

At the end of 1978, the leadership reasserted the legitimacy of private plots, "domestic side occupations" and rural free-markets. The response was dramatic – net incomes to peasant farmers from their sidelines increased by 500% in four years. As well, the contract system of net output delivery by households from collectively owned land – the Baogan Daohu – led to the devolution of decision making, the application of market mechanisms to rural industry, land leasing and (limited) inheritance. With the eclipse of the doctrinaire ideologues (who, in the earthy imagery of Deng Xiaoping, "occupy the lavatory but only fart") market socialism had arrived in China.

Sideline production quickly spread to the State sector and threatens to run out of control, with more and more time devoted to marketable goods (the proceeds of which are shared between the enterprise and the individual) than to the formal purpose of the organisation. Forest nurseries grow ginseng and research institutes raise rabbits. The Beijing Zoo operates a high-class restaurant serving meat and poultry from exotic zoo animals and birds; stewed bear paw and pangolin (both protected species) appear on its menu. The Peoples Liberation Army (PLA) cooperates with the Forestry Bureau in North East China to mount high-cost safaris promising a range of trophy wild life: protected species shot "in error" attract previously agreed "fines" which (on a list prepared in 1986) range from $US20,000 for a Manchurian tiger, through $US10,000 for a leopard, to $US5 for a humble wild rabbit. As in other countries, *Cannabis* is grown in National Forests; in State Timber Corporation log yards, edible wood-rotting mushrooms are carefully nurtured.

The opening of China to the outside world (and the hosting of the 11th ASIAD) aroused interest in historic imperial cuisine, and, especially, in ingredients which are rare, expensive and reputedly possessed of mysterious powers in the classical pharmacoepoeia. They are highly prized and ideal for sideline production. Thus, quails and snakes are being farmed in batteries; herbs and medicinal plants are raised in window boxes in city dormitories (and on precarious platforms cantilevered out from balconies to create a little more space in the multi-storey apartment blocks); ducks are herded in bedrooms; there are fishermen on the roofs.

(Continued on Page 44)