

THE FUTURE — WHICH FUTURE?

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Australia and New Zealand relationships have had a close but chequered history for the almost 200 years of European settlement. The beginnings — whalers, traders, missionaries and escaped convicts from Australia — leading to the reluctant, almost accidental, annexation of New Zealand to New South Wales and eventually the separation of the two colonies, were hardly encouraging. They certainly gave no hint of the very deep relationship that was to develop on Gallipoli and the Western Front in World War 1.

There is no point in reciting a history that you all know well, but I would emphasise that this high point of Australia/New Zealand relationships forged bonds that lasted right through the next generation. They have, I suspect, been a very significant factor in holding the two countries together up to the present time. This is particularly important because the relationship during the last decade has been under severe strain, even to the point of being acrimonious at times, to say the least. But I think that we are all glad to see that in the last year or so it has been realised that more is to be gained by strengthening the bonds than by loosening them. May that feeling continue to grow.

In its small way, this first joint meeting of the professional societies of the foresters of the two countries is a contribution to that further growth, as well as a recognition of the fact that the future might be better if faced together rather than alone. It is that future rather than the past which is the concern of this meeting. However, we should not ignore the past. It is not just relevant, it is critically important, because how we got to where we are (our history) sets very definite limits to what we can do in the future (our policy). So much so that I am tempted to suggest that history is at least as essential as physics and chemistry in a forester's basic education. Unless we do bring this sense of history into our planning we are going to continue proving Hegel's claim that the only thing we learn from history is that we do not learn from history.

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Forestry education, I am afraid, still has a lot to learn. One of the biggest mistakes that it perpetrates and perpetuates is the myth that forestry is a science. Insofar as forestry is the manipulation of forest crops to produce various combinations of x , y , z , etc., then it is a science and biology in its mainspring. On the other hand, what specific combination of x , y and z to aim for has very little to do with biological science, or any other science. But it has a lot to do with the miscalled social sciences. It also happens to have a lot to do with forestry. Forestry education, however, concentrates heavily on the biological aspect. If it treats the social aspect at all, it is, at best, as a sort of optional extra and then little more than a little economics. It is no wonder that foresters were so universally shocked by the strength and vehemence of the environmental rebellion when it did come. It came from areas of which foresters knew little and had no reason to suspect existed, outside ivory towers.

However, all that is rather in the nature of an aside; a necessary one, but still an aside. What is concerning us this week is the future and in particular the future for plantation forestry. For two countries that have staked their futures in forestry so heavily on plantations, it seems a bit late in the day to be asking that question. Are you now having second thoughts? Have values other than wood become so important over the last ten years that your choice of a plantation strategy is now seen to be wrong? Or, are you satisfied that the choice was right but are only wondering how to manage the plantations that you have inherited and the ones you will establish in the future? I suppose that there are many similar questions that one could ask to illustrate the uncertainty that could have prompted the theme.

For a while I was tempted to take this opportunity to tell you the answers. Fortunately, just as I started thinking along that line, my attention was drawn to something that an almost forgotten Roman senator said about 2000 years ago: "When you are young you think that you know everything; when you mature a bit you realize that your knowledge is limited, and when you grow old, you become sadly aware that even the little that you do know is probably wrong." Recalling that, I also remembered that chronologically I was approaching the third stage and it was time to start acting accordingly. Perhaps there might be some advantage in living in Rome, after all.

So, if I am not going to give you my answers to the questions, what am I going to talk about to set the keynote to the conference?

The theme of the meeting — Plantation Forestry: What Future? — implies that there will be a future. Some people suspect that there will not but, of course, there is no question about it. What they are doubting is whether the human species has much of a future. So our concern is really with what sort of a future will it be for mankind and then specifically for forestry? It is a very crucial question; the future for plantation forestry depends largely on what is the future of the future. It is a question we could well consider at the outset of this meeting. Since I did not see it mentioned in the programme, I have taken it as my keynote topic — which future?

There is only one trouble with the question. Crucial as it is, it is virtually unanswerable. One commentator, referring to economic forecasts, has said: "Once we allow for the possibility of new knowledge, unsuspected courses of action or hitherto unconsidered circumstances of nature, it is logically impossible to be confident of predicting the course of events very far ahead." He could easily have been writing about forestry. It is, in fact, a good description of the situation in forestry at any time, and particularly now. The predicament is more commonly, although less precisely, summed up in the platitude that the future is unknowable. The imprecision in the platitude arises from the fact that some events can be predicted quite accurately for quite long periods ahead. For the times of sunrise and sunset, for instance, we can act as if the future were perfectly known and knowable. But even here, as Velikovsky has argued, the unexpected can throw this certainty right off course. For a few others, such as the tides, the future can be predicted with enough certainty for action on a very large scale. These are the exceptions. For almost everything other than the few physical near certainties, the future is guesswork.

So we run immediately into a dilemma. We need to know what we cannot know but we have to act as if we do know. Unfortunately, we cannot do as Winston Churchill is reported to have once said: "I always avoid prophesying the future beforehand because it is much better policy to prophesy after the event has taken place." Perhaps that is a privilege that only Prime Ministers enjoy — it is certainly not one for foresters. We have to prophesy beforehand and usually a very long way beforehand. Fortunately, for the purposes of taking action, a guess is — in fact has to be — as good as knowing, provided people have faith in the guess, the guesser or the organization for which the guesser works. In other words, the test of a good guess, or forecast if you would rather be less

frank, is not whether it eventually turns out to be right but whether it generates enough confidence for it to be taken as the basis for action.

This raises the question, what is it that gives people confidence in a forecast? This is not the moment to explore that interesting question, but I suspect that a very important factor is whether the forecast agrees with what you think is likely to happen; that is, whether the forecast agrees with your own forecast. Or, what amounts to the same thing, whether you like or dislike the picture of the future presented or implied in the forecast. From this point of view it may be useful, therefore, to distinguish two contrasting types of forecasts and audiences — the optimists and the pessimists. This is obviously a dreadful piece of over-simplification, but it is a convenient dichotomy on which to base my ideas. In principle, the future compared to the present can only be better, much the same, or worse. The optimists are those who would choose the first pair, the pessimists the second pair.

The classic expression of what I am calling the pessimistic view of the future is the Club of Rome study *The Limits to Growth*. The picture is essentially one of collapse of the present world economic/social system, more or less within the next century because of the inability of the world's resources to support the increasing population and the continuing economic growth. In marked contrast to this doomsday outlook, we could perhaps take the optimistic picture exemplified by the world future that Herman Kahn sees of an almost golden age for mankind. His book, *World Economic Development 1979 and Beyond*, argues that, by applying current and expected technology to the presently known resources, the world can support a population of ten thousand million forever. Moreover, it can be done while solving at the same time the associated environmental problems. The contrast between this outlook and that of the Club of Rome could hardly be more extreme. In between there are many views which might be classified as either cautious optimism or hopeful pessimism. That is, the future looks rather grim but mankind has the capacity to avoid disaster if it can act together and in time — hopeful pessimism. Or, the future looks reasonably bright if we act in time to make it turn out that way — cautious optimism. Asimov and Coombs are two distinguished examples of the people who make up these intermediate groups.

Asimov, scientist and science fiction writer, is, by his own assessment, a cautious optimist. He believes that "we could destroy civilization as we know it within thirty to fifty years if

we keep going as we are". However, whether things keep going as they are depends on us. So, if we want to avoid that collapse, we could start to rebuild a more enduring and satisfying society for the future. Coombs, the eminent Australian economist, and many other things as well, has, on the other hand, said: "I am not predicting disaster but I doubt our capability to solve the problems I see coming up." With a little exaggeration he might just pass as a hopeful pessimist.

Although Kahn dismisses *The Limits to Growth* for not presenting serious and well-formulated projections, the dismissal seems to be a bit hasty. *Limits to Growth* is, in fact, a projection (a series of highly aggregated projections, actually) of the form that, if things keep going as they are, then this is what will happen. A point that is generally overlooked is that in *The Limits of Growth* consideration is given to what would have to be done to avoid collapse. The changes that are required are essentially of an institutional nature. Now, institutions are entirely human creations. That which man has made can, in principle, be remade by man. Hence, Asimov sees hope in the gloom, but Coombs, perhaps with more experience of institutional inertia, leans the other way. That alone should make us all, at best, cautious optimists since Coombs was speaking only of Australia and only for the coming decade. In other words, his doubts arise from a consideration of a much simpler system than the world in the next century.

Despite the differences in these views of the future, all have one common element. Whether we wish to avoid disaster, or to reach the golden age, or just to survive moderately well, we will have to eliminate a number of dangerous features of contemporary social structure and behaviour. And this has to be done globally as well as nationally.

There is no point going any further analysing this range of possible futures. The main reason for introducing them is because the future for any given sector in any given country will depend on the world situation when that future does arrive. As you can see, even starting with more or less the same basic information vastly different futures are predicted and each can be justified. Which one you adopt in order to plan your future is entirely up to you. However, you should watch out, because these contrasting outlooks could be very important if what you should do now — *i.e.*, your policy — should vary greatly according to the type of future expected. It would be nice to know, therefore, how sensitive policy is to the type of possible future. In other words, would the forest policy we should adopt now in Australia and New Zea-

land in order to be ready for a future of the collapse type be radically different from the one we should adopt for a growth future? I do not know, although I suspect that it would be. Unfortunately, these highly aggregated global outlooks are too general and too vague for the necessary sectorial, national outlooks to be easily derived from them.

Nevertheless, three points well worth making do come out of this quick look at the alternative futures. The first is that the future will be what we make it. Mankind could, if it really wanted, create the sort of future it wants, within the limits of the options still left to it by history. The second, a corollary of the first, is that the future into which present-day plantations will enter on maturity is a highly uncertain parameter. The third makes things worse; it shows that there is no objective basis for choosing one possible future over another or for assigning a higher probability to one than another. Any choice of the type of future for which to plan has to be a purely personal one. In such a situation the sensible thing would be to design plantation policy and management with a great deal of inbuilt flexibility. However, the trouble with flexibility is that it is all too easy to use as an excuse for indecision. I should therefore try to be a bit more specific.

Fortunately, there are one or two points relating directly to the forestry sector that can be drawn from these generalized pictures of the future world. For instance, in both the pessimistic and the optimistic views, the world continues for the next couple of decades along a path of economic growth, although not necessarily at the same rates. For the pessimist it is this very continuation that eventually brings about collapse; for the optimist it lays the foundation for the even better future. Thus, for the next rotation or so the question of whether the policy to be adopted should vary with the type of future foreseen is not all that pressing for the plantation forester. In Australia and New Zealand it can be assumed that growth, or at least macro-economic planning or action aimed at growth, will continue. The more relevant question concerns the rate at which that growth will take place. Again, it is not an easy question since there is plenty of room for widely diverging but equally justifiable opinions on that issue.

The second point, which is part of the answer to the rate of growth question, is that the era of cheap natural oil is over. It is now evident that the two decades (the 1950s to the 1970s) of unprecedented growth of the world economy were fuelled — a word which perhaps should be pronounced as “fooled” — by plentiful, cheap oil. The unprecedented growth is probably un-

repeatable growth. If this is so, then we should be careful about extrapolation of the growth path of the past as guides to the future market for any commodity. Consumption or demand functions based on national income and its variants and derived from time series covering the high growth period of the past, could be dangerous predictors, irrespective of the sophistication of the analyses. Until enough time has elapsed for an adequate set of post-1973 time series to be built up, econometrics, as a tool for long-term forecasting, could be a very dangerous one.

Still, there are some extrapolations that are valid. One leads to the third point that can be drawn from the world pictures. This is that, whatever wood is required in the future, it will have to be produced from less and less land. The main contributing factor to this situation in the industrialised, developed countries will continue to be the transfer of forested land from timber production to environmental services; continuing at least until some environmental objectives start to become expensive luxuries. On the world scale, however, the biggest reduction will occur in the developing countries through the conversion of forest land to agriculture and often, as a result of that, to wasteland. This situation will obtain until the developing countries acquire an economic structure like that of the developed countries whereby a relatively few people grow the food for everybody, rather than almost everybody growing the food for themselves. However, if the collapse type of future is the one that will occur, then the mass of people in developing countries has a better basis for survival in their present structure than the mass of people in the developed countries. So, agricultural policy for developing countries is yet another example of the need to know what we cannot know — the type of future facing mankind.

However, while we cannot know the future, it will be what we make of it. In fact, we are making it now, so why don't we make it what we want? On that score, very few, I imagine, would vote for the collapse type of future, and few would not welcome a sustainable golden age type of future, provided the benefits were universally and equitably distributed. Any decisions relating to forest policy should, it therefore seems to me, err on the side of cautious optimism rather than assume that the situation is already beyond hope. To accept the latter would be to assume that we have no better way of correcting the results of our collective behaviour than the lemmings. That may well turn out to be true, but we should not assume that it is, until we have tried the alternatives and failed.

What sort of future does plantation forestry have in a cautiously optimistic future? First, we should break that future down into, perhaps, three phases. The first phase would be that of continuing growth — that more or less coincidental common path implied in the two extreme views of the future — lasting possibly to the end of the century. The second phase would then be a transitional one moving the world economy to the third phase — a steady-state equilibrium at a level consistent with the sustained yield of renewable resources. The first and second phases are probably of the more immediate concern for our topic. How long the transitional phase would last is rather problematical. It could hardly take less than several decades, but, if it drags out too long, it would run the risk of being overtaken by the collapse conditions. Just for the sake of completeness, let us say it lasts until half way through the 21st century. This gives a long enough planning horizon even for natural management of the indigenous forests.

Then, secondly, that future should be looked at in the light of some of the things that we know cannot be avoided (*i.e.*, have a very high probability of occurring) during the first phase and the early stages of the second. One, the need for timber production forestry to be adapted to a shrinking land base, has already been mentioned. It has a very important corollary — the need to rehabilitate more and more deforested and degraded land, particularly in the tropics. Another is implied by the depletion of the supplies of natural oil. The rising price will force other forms of fuel into greater use both as direct substitutes and eventually as sources of synthesised liquid fuels. Amongst these, wood is already making a comeback as a substitute for fuel oil. This trend should accelerate during the first phase in wood surplus-oil importing countries, and spread to most others during the second, and become a major function of forestry in the third.

In the light of these near certainties, the future for plantation forestry must be quite bright. The productivity of plantations as measured by mean annual increment of wood is, in general experience, higher than that of natural forests on similar sites, so that they are a very effective way of growing more wood on less land. They are also the quickest means of reforesting bare and degraded land, and, provided the deterioration has not gone too far, they make a very effective contribution to land rehabilitation. On top of those, they are the quickest means for making a substantial addition to wood supply for almost any use, as well as

being the quickest and most certain way of providing for reforestation after harvesting.

With that potential there can hardly be any question about an increasing role for plantations relative to natural systems of management. But that says nothing about the role in absolute terms, nor about the proportions of the various categories of roundwood that could be grown, nor about the species that should then be preferred. In short, it tells us nothing about the main questions of what sort of plantations and how to manage them. Still we can get a few hints even from these global pictures.

Consider, for example, the effect of continuing economic growth even at greatly reduced rates compared with the past. Any economic growth at all can only increase the size of the wood deficits which will exist in Western Europe and Japan by the end of the century. So, even if we scale down the consumption forecasts in the studies that already exist, to allow for slower growth, we still find that the deficits are there and that they are likely to be more severe for softwoods than hardwoods. That would then point to continuation of the present plantation policies in both Australia and New Zealand more or less on the same lines as they are now. Admittedly the scale of the programmes may need to be reconsidered in the light of both the smaller deficits that might be expected in the target export markets and the plantation programmes in other countries with their eyes on the same export opportunities.

That brings into play two other points worth mentioning. The first is that more attention needs to be given, particularly in Australia, to the location of plantations with export markets in mind. The second is, in my view, of fundamental importance, yet is always in danger of being completely overlooked. This is that Australian and New Zealand forest policy should take into account much more explicitly the aspirations and prospects of the developing countries in this region. "Beggar your neighbour" is never a good policy in the long run. Australia and New Zealand are slowly learning that with respect to each other. However it applies, for these two relatively economically advanced countries isolated on the edge of Asia, with equal emphasis over a much wider range of countries.

Despite these provisos, the outlook could be taken as confirming the past and present wisdom underlying our plantation policies, but before we go too far in self-congratulation we would do well to consider the effect of the "energy crisis" on those policies. The reversal or dampening of the well-established pre-1973 trend

for fuelwood consumption to fall with rising income could have some bearing on such matters as species selection and management regimes. If yields in energy units are significantly different from yields in volume, you may yet come to regret the emphasis on softwoods which has characterised plantation policy in Australia and New Zealand.

However, that is about as far as we can go in deriving policy conclusions from broad end-use categories and broad pictures of the future. The really interesting technical questions such as whether to manage softwood plantations for maximum clearwood production, as Sutton has argued, or for bulk cellulose, need more detailed study for their resolution. I expect that those sort of questions will surface during your discussions. Nevertheless, I suppose that it is something to know that the future for plantation forestry is a secure one — at least as secure as mankind's future.