



Forestry as a commercial activity

Sir,

May I refer to the paper by R. Proctor (Vol. 31(30), p.29) which deals with Government's forest policy.

Many of the underlying assumptions are grounded in the never-was land conjured up by Adam Smith out of his vivid imagination. The fact that the "market-based approach appears to be increasingly adopted by Governments of all political colours throughout the world" doesn't make it any less dubious. Its effects are becoming all too obvious in the USA, Britain, Peru, Mexico, Chile and several other countries.

I will, however, not pursue that question, as I wish to draw attention to Mr Proctor's obviously ambivalent attitude to forestry as a commercial activity producing wood. He states (p. 31) that "there is nothing special about forestry as a commercial activity" but then (p.32) contradicts himself by stating that "the peculiar thing about forestry is the long time between the initial investment and the receipt of cash revenues from that investment." He can't have it both ways; either forestry is like any other investment or it is peculiar.

Moreover (p.32) if an investor makes an investment for 30 years and gets credit for the nominal sum invested at the end of that period it is a very different thing from an investor who invests one-thirtieth of the same sum each year for 30 years, especially if that investor can recoup his expenses against annual sales of produce.

I have for many years been led to believe that economists are incapable of simple mathematics; this paper confirms that view!

C.G.R. Chavasse

Is D.O.C. Director needed?

Sir,

I read with interest that the new Department of Conservation is advertising for a "Director, Advocacy and Extension", in which "total familiarity with the conservation debate is needed". In the position specification, I read: "This functional area will also be the point of contact for . . . special interest and other groups and members of the general public". Responsibilities include "to provide for the interests of the department and conservation . . ." and "to establish and maintain effective mechanisms to foster public and departmental awareness of special conservation needs . . ." and "to provide for effective relationships with and use of the media".

The nature of this position appears to contrast with the directives issued by S.S.C. to the Forest Service last year. Forest Service staff were in effect "muzzled" and prohibited from defending the interests of their department and profession in the public arena.

I suggest that there is little need for a "Director, Advocacy and Extension" in the Department of Conservation, because the citizen interest groups are already fulfilling this role admirably. On the other hand, there is a desperate requirement for such a position in the Ministry of Forestry. I write this letter in the hope that some reader may be in the position to take this matter further.

Piers Maclaren

Discount rates and forestry decisions — a reply

Sir,

Jeanette Fitzsimons (1986) does the discipline of economics a disservice in her critique of cost-benefit analysis in relation to forestry decision making. This arises from a narrow interpretation of economics, and attributing to cost-benefit analysis a stature it should never pretend to attain. In what follows I will attempt to address only some of the more serious errors and misunderstandings. This in no way endorses non-criticized sections of Fitzsimons' article, which include many more deficiencies and errors and show a serious misunderstanding of cost-benefit analysis.

Assumptions of Economics

Fitzsimons lists a set of assumptions which economists are claimed to accept as true. The first of these is that price reflects value to society. By claiming that "This is now rarely true . . ." it is implied that it once was. This has never been the case. The role given to prices in a perfect market is as a measure of what other goods individuals are willing to give up to obtain the thing in question. Since market price is determined by aggregate willingness to pay, which is dependent upon wealth distribution within society, perfect market prices are only an indicator of value if it is accepted that:

- wealth distribution is optimal
- social welfare is the unweighted sum of individual welfare, as measured by willingness to pay.

It is on these very strong assumptions that the conclusion that price is a measure of value is founded. Whether we accept them or not is a value judgement.

In claiming that economics assumes everything has a replacement price Fitzsimons has misunderstood the nature of economics. While some resources do not have a "replacement price" because we are unable to replicate them, they do have an opportunity cost. Retaining a resource in any particular use, including its natural state,

precludes its use for other things. In our finite world we must compare the value of these uses (the opportunity costs) to determine the best use of a resource. Thus we are forced into comparing values of such "fundamental sources" as food, liberty, and natural environments. Such comparisons are an integral part of any decision — they are not exclusively economic or part of cost-benefit analysis.

Contrary to Fitzsimons' assertion, welfare economics, which is that part of the discipline concerned with this type of analysis, does not "assume the reason for forestry is to make money for the investors rather than to ensure a supply of appropriate timbers for the future". Fitzsimons fails to understand the difference between economic and financial analysis; consequently economists do not need a "broader definition of wealth". Economics is concerned with allocating scarce resources in a way which maximizes social welfare. It is recognized that there are many values which are not captured by markets, either when markets do not exist (non-market goods) or some values are not part of the market transaction (externalities). Even when market prices exist they are not necessarily used as estimates of value. Since maximizing social welfare is the objective, social benefit and social cost are used as measures of value. These may have no relationship with prices. It is true that economists look at how investors would behave to maximize their profits. This is, however, in a positive sense to determine how market outcomes will differ from some normatively optimal outcome. The claim of neglecting to supply "appropriate timbers for the future" is erroneous. Many economists are concerned with predicting future demands for raw materials from many industries. The problem is one of determining what we will 'need' in the future — how much boxing or sideboards, newspapers or telegraph poles? Predicting future relative prices is one way of summarizing future demands for different types of wood. Economists, especially those with an eye for profit, have every incentive to get these estimates right.

Cost-benefit analysis

Fitzsimons claims that cost-benefit analysis (she calls it NPV analysis) is "too simplistic to make long-term decisions". This statement is not strong enough. Cost-benefit analysis is unable to make any decisions. Because of the underlying assumptions already mentioned cost-benefit analysis can only be a means of presenting information to assist decision making. It does help indicate efficient decisions, given the assumptions made, but if these are not acceptable the outcomes will carry little weight. However, even if we agree with the assumptions, cost-benefit analysis will not provide definitive answers. For example, net present values and internal rates of return, which are both indicators of project benefits obtained from applying cost-benefit analysis, will not rank projects consistently. Therefore cost-benefit analysis is unable to identify "the best" project. We cannot avoid making decisions by appealing to methods such as cost-benefit analysis; the usefulness of the method is in providing information to those charged with making those decisions. The value judgements about the actual values of future costs and prices, the effects of which can be explored by adequate sensitivity analysis, are therefore minor in relation to the more fundamental value judgements upon which cost-benefit analysis rests.

The alternative decision making frameworks offered by Fitzsimons fare no better. Her

"common-sense" approach is simply a restatement of cost-benefit analysis. The three steps identified are:

- forecast future domestic demands — or relative prices — for timber products;
- forecast export demands for different timber products;
- determine non-market benefits associated with forestry.

However, no means is suggested to make these things commensurable, to determine their relative importance, or to identify how they might be used in policy formation. These are massive tasks for our "infinitely complex computers" (commonsense) to achieve. It is precisely because we have difficulties in these tasks that frameworks to guide the examination of decisions, such as cost-benefit analysis, have evolved.

The "ecological or environmental perspective", like cost-benefit analysis, is founded on value judgements. It espouses sustainable use levels for renewable resources and minimal use of non-renewable resources. Examples of questions left unanswered are:

- which sustainable use level?
- what is minimal use?

Both of these raise some interesting problems because they force us into making real trade-offs. To ensure minimal use of metals, fossil fuels, and other non-renewable resources we could decide not to have ambulances or hospitals. This would incur costs in the form of human lives lost, and may not be socially desirable, but the perspective does not recognize these tradeoffs. The same criticism can be made of the "spiritual and cultural perspective". To what extent are we willing to trade-off cultural identity, and variety in landscape, for other things?

It is apparent that all of the approaches outlined are reliant upon value judgements and so each will have its proponents. Therefore they will have a place in informing decision makers, but none is capable of making the decisions. We, or our elected decision makers, must therefore remain responsible for making the value judgements involved in social decision making.

Discounting

The main thrust of Fitzsimons' attack on cost-benefit analysis is directed at the discounting procedure used to commensurate values occurring at different times. Just as we must evaluate the effect of individual welfare, however that is measured, on social welfare we must also consider the value of the welfare of different generations when making resource use decisions. Discounting is the procedure used by cost-benefit analysis to accomplish this. Not discounting implies that we weight the welfare of each generation in a particular way, depending upon whether we are concerned with individual or social welfare, consumption, utility, or anything else. This is just as much a value judgement as choosing some non-zero discount rate.

Three major elements enter the argument for choosing a discount rate — the basic human desire to have benefits now rather than later, our ability to invest resources to produce more later, and our moral obligation to future generations. The discount rate chosen is therefore a value judgement depending on how strongly we weight these factors. Fitzsimons' assertion that "interest rates are expressions of social expectations so we should relate the discount rate to them" can therefore be seen to be incomplete. Market interest rates are expressions of individual choices. Whether they are socially appropriate is a value judgement. Because of financial market imperfections it may not even be possible to use cur-

rent interest rates as an estimate of either individual rates of time preference, or the marginal efficiency of capital.

While it is common to say that social time preference is longer sighted than for the individual (the social discount rate is less than individual rates), the fact that people save to benefit their children does not contradict this as Fitzsimons implies. Simply illustrating that individuals gain **some** benefits from the welfare of future generations shows nothing about the **relationship** of social benefits to individual benefits. The arguments for a negative discount rate (p 24) do not stand scrutiny either. The argument that things will be scarcer, or more highly valued, in the future suggests that we may be using the wrong prices to value costs and benefits, but says nothing about the discount rate. Similarly the fact that we store crops for winter says something about both values and discount rates, but nothing specific about either. People who discounted the future very heavily (positive rate) would still find it in their interest to store some crops for winter, losing some in the process, if the value of surviving was high relative to having a feast.

Conclusion

Fitzsimons has set up a straw man. By claiming that cost-benefit analysis is capable of making decisions in a precise manner she has given it a task for which it was never designed and is therefore unable to achieve. Cost-benefit analysis, like the other decision making frameworks suggested, is no more than a means of presenting information which relies on an underlying set of value judgements. The argument about the sign and size of discount rates is erroneous and sheds no light on the appropriate rate to be used in social decision making. Fitzsimons' article does nothing to reduce the validity of using economics, and in particular cost-benefit analysis, to better understand the implications of resource use decisions. It has, however, served to remind us that cost-benefit analysis is **not** a precise decision-making tool, but simply a means of summarizing information on some aspects of social welfare.

Reference

Fitzsimons, J., 1986. Discount rates and forestry decisions. *New Zealand Forestry* 31(2): 22-25

G.N. Kerr

Editor's note:

Geoff Kerr is a resource economist at the Centre for Resource Management, University of Canterbury and Lincoln College. His research is currently focused on the economics of outdoor recreation and economic approaches to the valuation of environmental amenities.

J. Fitzsimons' paper was refereed by two economists!

Need for other approaches

Sir,

I wish economists did limit their claims for Cost Benefit Analysis to the role that Geoff Kerr describes for it — "a means of presenting information which relies on an underlying set of value judgements". Mostly the value judgements are not explicit and the information is presented as more reliable and valuable than other sorts of information because it is quantified in

very precise numbers. In my experience economists often retreat to the position Geoff Kerr has outlined when confronted with the arguments in my paper, but unfortunately before long they are again behaving as though Cost Benefit Analysis is the way to determine the most appropriate investment of the community's resources.

My paper was delivered to a 1982 seminar for economists and foresters at which it was stated that if Cost Benefit Analysis showed a greater return from 25 one-year projects than from one 25-year project, then *society is always better off* investing in the 25 quick returns. None of the economists dissented.

Forestry decisions are uniquely susceptible to our assumptions about time. To the uncertainty of markets far in the future must be added the uncertainties of nature. Forestry profitability (on paper) is critically determined by the price of the product and by the discount rate, and the higher the discount rate the less the final price matters. I know of no unsubsidized forestry projects in New Zealand (other than mining what was already here) which is profitable at a 10% discount rate. *Yet many rational people are still planting forests.*

Economics could be a very valuable tool in explaining (and therefore predicting) some aspects of human behaviour. As an explanation for the resource management choices people are making on their land at present, Cost Benefit Analysis seems to have failed dismally. This is why we need other approaches such as those I suggested. "Common sense" does not fail because it cannot make market and non-market values "commensurable" — rather economics fails to the extent that it attempts such a foolish task. Chalk and cheese should remain just that.

Jeanette Fitzsimons

Birds and National Forest Survey

Sir,

It was with great interest that I read in a recent *Forest and Bird* Brian Reid's account of his involvement with the National Forest Survey (Reid, 1983). I had not before realized that he had taken the opportunity then offering to record ornithological data over large areas of virgin North Island forest, even if the records were only diary entries. I wonder how many others did the same.

What an opportunity it was. The National Forestry Survey covered all or nearly all the indigenous lowland forests of both islands. The sampling pattern consisted of a series of plots 400m or 800m apart along lines 3.2 or 6.4km apart, the intensity of sampling depending on the nature of the forest. This means that even at its most extensive the sampling pattern entailed field parties visiting every 518 ha block of lowland forest throughout NZ and there making systematic records.