

PRESIDENTIAL ADDRESS: PACIFIC FORESTRY

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The Scottish-born landscape architect and writer, Ian McHarg prefaces a chapter in this book *Design with Nature* with a vivid story which I cannot refrain from quoting. Somebody, tormented beyond endurance by over-population, pestilence and pollution, has pressed the button. McHarg writes:

The atomic cataclysm has occurred. The earth is silent, covered by a gray pall. All life has been extinguished save in one deep leaden slit, where, long inured to radiation, persists a small colony of algae. They perceive that all life save theirs has been extinguished and that the entire task of evolution must begin again — some billions of years of life and death, mutation and adaptation, cooperation and competition, all to recover yesterday. They come to an immediate, spontaneous and unanimous conclusion: "Next time, *no brains.*"†

Let us hope it does not come to this. Despite the mess that our brains have got us into, they are all we have to get us out of it; we can only think our way out of our current environmental predicament.

It does not take a very discerning observer to realize that the fundamental environmental dilemma which the world faces is the conflict between *production* to provide us with a good standard of living — meaning *use* of resources — and *protection* of the environment to make living worth while — meaning largely *preservation* of resources. The dilemma is, of course, that these two options are often incompatible.

Up till comparatively recently the influence of the users has been predominant, but now it is being matched, and frequently overpowered, by the preservers. At present the preservers' lobby is strong and successful and their efforts have resulted in many modifications, most of them justifiable, of proposals for forest and forest industry development. Such modifications represent compromise between the two options. This situation pleases many in this Institute because foresters are basically conservationists and, while conservation and preservation are not always the same thing, there is a substantial element of preservation in true conservation.

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For the present, because of the richness of our country and our relative affluence, we are able to lean a long way towards the persuasions of the preservers and so alienate a large segment of our forest resources from wood production. But there are warnings on the horizon that we shall not be able to maintain this stance unchanged for ever. The Club of Rome were basically right, despite all the arguments about their mathematics; our finite resources are being rapidly depleted by a quickly increasing population. Accordingly there are good grounds for the case of the proponents of zero growth, but there is a tendency to overlook the fundamental precondition of zero industrial growth which is zero population growth. And surely only a Mr Micawber would be blind to the current indications that population control on a global scale, if it is to be achieved at all, will be achieved only after a massive increment has been added to the existing population. It seems inevitable that the global resource shoe will pinch the global population foot well before the latter stops growing. And in this respect, New Zealand cannot insulate itself from the rest of the world; it cannot help but be involved globally.

The well-known American wood technologist George Marra came to New Zealand a few months ago with a graphic message about the future exploding demand for wood which is pertinent to these considerations. It is simply that the depleted nonrenewable resources will have to be replaced with resources which are renewable, and that wood is prominent, even pre-eminent, among these. Nowadays people do not laugh, indeed do not even raise their eyebrows, at suggestions that wood could become a prime source of energy to compensate for the growing shortage and increasing cost of fossil fuel.

A pessimistic look into the not-too-distant future could reveal a desperate situation in which civilization struggles for survival, casting around wildly for resources of food, energy and consumable or fabricating materials. Then the call for preservation would elicit a stonier response. The implication for forestry of this prognosis is that no impediment should be placed now in the way of establishing new forest resources or in keeping existing ones available and renewable.

Hopefully this is an unrealistically gloomy picture. Probably the situation that will unfold next century will represent something intermediate between the current golden period of preservation and the fearful forecast I have just mentioned.

Because of the renewability of forest resources, the choice between preservation and use in forestry is less stark. To a certain extent we can have it both ways. We can use and renew the resource and, sometimes with calculated losses in wood

productivity, can preserve, indeed even enhance, environmental values.

There is pressing need, in all the current issues over preservation or use in forestry, for objective analysis of the existing problems and careful forecasting of the consequences of the different options that are open. These undertakings, in which the key requirement is objectivity, present a fitting role for this Institute. We have already been involved in this sort of activity, but our involvement, almost certainly, will increase in the future as more environmental impact reports are referred to us.

We should, I believe, advocate a middle of the road course in these issues and try to prevent potentially harmful, more or less irreversible changes being made. And the middle of the road is not always the safest path because there is a good chance of being run over.

What we should be striving for in all this is the optimal use of the primary resource—land, which phrase begs the question that we know what optimal land use is. Hopefully we shall all be a little better informed and a little more objective about optimal land use after the deliberations of this Conference. But may I suggest at this stage that it could be wrong, and indeed irresponsible, to lean needlessly too far away from production of either agricultural or forest products. We should be prudent and provide for as much productive capacity as possible with least harm to environmental and social values. While hoping for the best in the 21st century we should go a long way in preparing for the worst.

Optimal land use, then, is a subject of paramount importance. It lies very close to the theme of this Conference. The timeliness of the theme "The role of exotic production forestry in good land use" has been highlighted during the recent Forestry Development Conference where, continually, proposals and issues converged on the consideration of the best use of the land to meet economic, environmental and social needs.

However, I hope that in addressing ourselves here to the theme of optimal land use we shall not become so pre-occupied with New Zealand problems that we ignore a larger perspective. We should be aware that New Zealand forestry is but a part of forestry which is practised in and around the rim of the great Pacific Basin. It is about Pacific forestry that I wish now to talk because New Zealand occupies a significantly central position in the Pacific region. And I wish to talk about Pacific forestry in the context of optimal land use because it is a subject of paramount global importance.

If one turns to a map of the Pacific Region based on an equal area projection and joins Santiago in Chile, to Wellington and then projects that distance in a north-west direction from Wellington, the end of the line falls on Tokyo. If this distance is used as a radius with Wellington still the centre, the resultant semi-circle will include Malaysia, Indochina and the Philippines as well as the closer countries of Australia, Papua New Guinea, and those islands forming the complex of Oceania. The extension of the radius a small amount will reach the western forested zones of Canada and the United States. So New Zealand occupies a central, if antipodean, substantial forest resources.

Our geographical centrality is apparent. The political scientist could theorize in a parallel way to claim that New Zealand occupies also something of a political centrality in the region, as our political system falls well short of several of the political extremes which are represented within our notional semi-circle. It seems that our moderate political stance makes us welcome in many of the Pacific countries. But when the attributes of material standard of living and technological development are considered, we cannot claim a position of intermedium; we are situated towards the upper end of the scale. And for all the shortcomings of our land planning and management which may become manifest in the next few days, our technological development in the field of forestry is well ahead of that of many of our Pacific neighbours.

Our greater affluence and our advanced forestry technology place on us the obligation of playing the role of donor to help redress the balance between the developed and developing countries. With the other developed countries we have some obligation in the matter for, as pointed out by the well-known international forester, Jack Westoby, the developing countries are materially poor to a large extent because the developed countries are materially rich. The crux of Westoby's case is that, generally, the developed countries take the raw materials from the developing countries and process them to a refined stage away from those countries. The developing countries are technologically backward, says Westoby, largely because of the policies of the developed countries. It should not be overlooked, as we explore the fine tuning of our own forest management, that many of our Pacific neighbours have little tuning at all in theirs.

The obligation which lies over us is ultimately an ethical one. We are generally beholden to our fellow men to assist them to

manage their forest resources in a more effective way so that they can obtain greater, lasting material and environmental benefit from them. It is pertinent to remark that this Institute has recently adopted a code of ethics; there should be no territorial limit to it. We are beholden to the villagers of Kalimantan and the kampong dwellers in Malaysia as we are to our own people. The only difference is one of priority. New Zealand has already given significant forestry aid to several Pacific countries but the need is still great. In this context it was reassuring to hear the Minister of Forests say, at the Forestry Development Conference last week, that overseas technical aid in forestry will be expanded.

Francis Bacon said that histories make men wise. Perhaps forestry histories will make foresters wise; it is to be hoped so, for there are many important lessons in the recent forestry histories of the developing countries of the Pacific which are germane to their forestry futures. In this age of travel many New Zealand foresters are getting the opportunity of travelling or working in some of the developing countries of the Pacific basin and seeing at first hand the many problems which they face and the historical reasons for them.

It is apparent that in all these countries there has been, or is taking place, a common sequence. This sequence is proceeding at different rates in different countries, is more advanced in some than in others, is telescoped in some and extended in others, but there is a general common unfolding of events which can be summarised in four stages:

First, uncontrolled exploitation of the indigenous forest resources.

Second, a general realization that the forest resources are finite and that conservation is necessary, which culminates in the inception of a positive forestry policy with emphasis on renewal of the resource. It could be added that this realization is frequently due to the efforts of expatriate foresters in a variety of capacities. It could also be added that, for some countries, the realization is too late.

Third, the implementation of programmes of reforestation and afforestation.

Fourth, the development of regional plans of optimal land use and the integration of forestry into such plans to meet regional and national objectives. This is the fine tuning stage which is akin to the theme of our Conference.

Some examples of these stages are exciting, others are frightening. To mention a few:

First, the exploitation stage: The large-scale shifting cultivation on the heavily populated island of Luzon in the Philippines provides a fearful example of what happens in a densely populated country where there are lax forest ordinances, an ineffective forest administration and no other option for the peasants. In northern Luzon, forest on slopes up to 50 degrees is being burnt to waste and replaced with transitory crops — the oldest kind of forest exploitation. The inevitable result is frequent, catastrophic erosion. In timber concessions in East Kalimantan the forest is being cut at rates which make replacement of the resource impossible.

Second, the inception of a positive forestry policy: An interesting example here is the recently enunciated (1973) forest policy of Papua New Guinea. This represents the translation of their National Eight Point Improvement Programme to the field of forestry. As such it conforms well with local conditions and with national aspirations. There cannot be many national forestry policies which provide specifically for increasing opportunities for women.

Third, reforestation and afforestation: It is interesting to observe another fairly common sequence which is associated with renewal of the resource. There has been a trend in reforestation: first based on natural regeneration, then line planting through exploited areas and, later, an intensification of planting to the stage that plantations of exotic species are developing on land formerly covered with dipterocarps and other tropical hardwoods. Recently also there has been quite extensive afforestation of tropical grassland areas with *Pinus caribaea*. The rates of growth of some of the exotic species used are phenomenal.

Fourth, the regional plans of optimal land use: These, the blueprints for the future, are only starting to appear and then only in those of the countries which have made substantial progress. In Pahang State in Malaysia there is an impressive state-wide plan for optimal land use which was produced by Canadian consultants and in which both production and protection forestry are integrated with agriculture. The plan is now being implemented and provides a chance for the rural Malays to get out of their backward kampongs and congregate in new moderate-size towns to secure educational, health and employment advantages. Incipient land-use planning on a regional scale involving forestry is apparent in Papua New Guinea, and it is heartening to know that New Zealand

foresters are involved now in some aspects of this work. However, the amount of work to be done there yet is tremendous.

Cynics say that history teaches only one thing consistently: that men never learn from history; which rather makes nonsense of my advocacy of an historical approach. Nevertheless, it must be conceded that there is a great deal of justification for such cynicism in the tropical Pacific. For the developing countries are still permitting their forest resources to be exploited without adequate replacement.

The inference which can be taken from all this is that effective forestry aid from developed countries should accelerate the inevitable sequence, at least to the stage that the resource is being renewed. It is too late, and quite futile, to preach preservation. The forest resource should be renewed after exploitation; or, where the national interest demands conversion to agriculture, the productive capability of the land should be diverted to this use. The paramount consideration is that the land be kept productive. In many places conversion of suitable exploited forest land to agriculture is the logical imperative in the face of burgeoning and hungry populations.

A common pattern in the developing countries of the Pacific Basin is for a small part of an exploited timber concession to be developed for agriculture and another part, favoured with convenient location and topography, to be planted to exotic timber plantations. But always an area, usually the major part, is left fallow and relatively unproductive. Such sub-optimal use of the land will have serious consequences for the next and subsequent generations who, almost certainly, will be largely dependent on wood as a raw material for industrial processing and will need all they can get. Optimal use of the land really boils down to a matter of ethics because it involves the well-being of the next and subsequent generations.

The implication of what I have said so far about the Pacific countries is simple. It is that, where New Zealand helps developing countries use their forest resources to make economic and social progress, sufficient aid should be made available to replace the forest resource or to ensure that the land is converted to sustained agricultural production. We should not stop half-way. But even this far may not be far enough. Emphasis solely on timber or food production could result in these countries experiencing, in the future, the sort of environmental issues which we ourselves are experiencing at the present time, and for much the same reason: that there has been insufficient consideration of people's environmental requirements.

As it is, the rather unthinking application of western technology to the developing countries has often been a left-handed gift, simply because it was not modified to suit local conditions and local employment situations. We do not want to aggravate this by exporting our own land-use mistakes. The prime objective, after large-scale logging of their virgin tropical forests, should be a resultant pattern of land use that suits the local people and meets their needs, commercial and non-commercial, and those of their children. This means providing not only food crops and timber crops but providing also shelter trees and woodlots for fuel. It means preserving catchment forests for erosion control and good water, and preserving areas for hunting. It means conserving food trees in the forest and reserving areas for public amenity and for scientific purposes. The ultimate forestry needs of these peoples are no less than our own.

The successful establishment of *P. caribaea* on grasslands in Fiji, and also in parts of Malaysia, undoubtedly presages the extensive use of this species in several of the developing countries of the Pacific. But care should be taken lest large areas are established indiscriminately, replacing indigenous forest to the extent that eventually they attract the resentment of the local people who yearn for their former jungle back-drop with all its uses.

The feeling for the indigenous, which is becoming so strong in this country, could be even more compelling in the developing tropical countries. In New Zealand it seems to me to be associated with a growing realization of national identity and seems to run parallel to the development of a distinctively New Zealand literature and other art forms. Such a feeling may become even stronger in the developing countries. In other words, as we assist forestry development in the developing countries we must not neglect, in our pre-occupation with their economic needs, their future environmental needs. There, as here, optimal land use is the only solution. Some of these countries are fortunate in that they still have extensive areas of lowland indigenous production forest which are capable of providing a sustained yield of wood with the application of an extensive form of indigenous silviculture. The operations would be man-power intensive, an approach suited both to the need to provide employment for the large numbers of people and to conserving environmental values in what will be multiple-use forests. But if such forests are to be managed in this way there is urgent need now to develop feasible techniques of inducing regeneration, tending, and

controlling debilitating creeper growth. The rate of exploitation of many of the tropical hardwood tracts is so great that in a matter of decades there will be little to work with if strenuous efforts are not made now to initiate extensive, uneven-age forest management. New Zealand could help in this field.

The conclusion is inescapable. Developing countries need optimal land use as much as we do; they need the fine tuning of planned regional land use and they need it now. The same basic approaches will be required there as in New Zealand: land resource and land capability surveys with differentiation into relatively homogeneous land-use units, the planned use of each unit in accord with human need and land capability, and the resolution of land use conflicts with objective, integrative techniques. Also, as in New Zealand, optimal use must be considered in relation to social and environmental needs as well as economic needs.

If we do not help the developing countries now to reach the fine tuning stage, later conflict over environmental issues will be inevitable for them. When we help these countries to use their forest resources to raise their standards of living we should not stop short of ensuring that the whole productivity of the land is maintained, a process which will include the renewal of some of their forest resources. Nor should we stop short of helping them impose on their regional landscapes, patterns of use which meet all the needs, not only of extant populations but also of future generations. If we really want to help our developing neighbours to the north, we should go the whole aid distance. If we cannot do that, perhaps it would be better for us to give no forestry aid at all.

I have tried to emphasize the importance of optimal land use which can be achieved only with careful appraisal and planning at the regional level. And I have tried to show that such regional planning is needed by our Pacific neighbours as much as by ourselves. We should do our best to see that they get it.