

**PROTECTED AREAS:
THEIR ROLE AND FUTURE
IN MALAWI'S LAND BUDGET**

A MEMORANDUM SUBMITTED TO THE
PRESIDENTIAL COMMISSION OF INQUIRY
ON LAND POLICY REFORM

Inter-Agency Working Group
on Protected Areas¹

Lilongwe, August 1997

¹ The views expressed in this memorandum are those of the Working Group, and not necessarily of the institutions represented.

Foreword

The Protected Areas Working Group is a new and still evolving team of individuals who share an interest in Malawi's protected areas. It started initially as an offshoot of the donor coordination committee for environment/natural resource management, but has since been broadened to include representatives of both the principal Government agencies concerned with land, forests and wildlife and also the NGO community. The group represents a considerable diversity of interests and it has not been easy to come to a common position for the purpose of this memorandum. The paper presented here is rather restricted in focus, being confined to the anticipated question "*can any land within the existing protected areas be made available to help relieve the shortage of agricultural land, especially for smallholder farmers?*" It does not deal with the management of protected areas, neither does it explore intermediate land use options in which both forest/wildlife conservation and some forms of agriculture are combined.

The working group is sensitive to the difficulty of the task faced by the Commission and also attaches significance to the fact that its recommendations may well see implementation during the period leading up to the next election. In full awareness of the harm done to the interests of protected areas (and indeed more generally to the management of natural resources) by irresponsible campaigning prior to the 1994 election, the group is anxious to bring to the discussion of protected areas a rational and objective assessment of their contribution to the national good.

Most of the views expressed in this paper are supported by *all* of the membership listed below, and *all* of these views are supported by *some* of the membership. That is about the best we can do at present. It should be repeated that within these limits, such support extends only to the individual members, and not to the institutions they represent. As of July 1997, the Protected Areas Working Group comprises:

Dr. Simon Munthali, Department of National Parks and Wildlife (Chairman)
Mr. John Ngalande, Forestry Department
Mr. Geoffrey Nkhata, Ministry of Lands and Valuation
Mr. Sam Mapila, Fisheries Department
Dr. Zipangani Vokhiwa, Ministry of Research and Environmental Affairs
Mr. Daulos Mauambeta, Wildlife Society of Malawi
Mr. Ted Sneed, Wildlife Society of Malawi
Mr. John Latham, SADC Forestry Sector Technical Coordination Unit
Mr. Steven Machira, USAID
Mr. John Snell, FAO
Mr. Carl Bruessow, UNDP
Mr. Leon Viljoen, South African High Commission; the Wildlife Producers and
Hunters Association of Malawi
Dr. Pickford Sibale, The World Bank
Dr. Tony Seymour, Ministry of Research and Environmental Affairs

Context

1. At eleven million, Malawi's population has doubled in the past two decades and continues to grow at a frightening pace. Even the most optimistic projections forecast a population approaching twenty million by the year 2020 and thirty million by the year 2040. Eighty-five per cent of the population derive their livelihoods from rural occupations, mainly farming, and of these the great majority are smallholders who occupy land administered and allocated by traditional authorities in accordance with customary law. For these people population growth translates directly into increasing pressure on scarce land resources. This pressure is not distributed evenly. The pattern of human settlement has led to concentrations of population in those areas which were either the most fertile or most easily cultivated, and had adequate water supplies. Population density is therefore highest in the Shire Highlands, the plains of Mulanje and Phalombe, and parts of the Shire Valley, the southern lakeshore and the Central Region plateau. Here, the shortage of customary land has been experienced for many decades, leading to out-migration (from rural to urban, from the south to the centre) and, increasingly, to smallholder encroachment on lands under private or state ownership.

2. The problems of land pressure have been exacerbated by the progressive alienation of land from the customary sector into the more recent land tenure categories of private land (freehold and leasehold estates) and public land (mainly protected areas: National Parks, Wildlife and Forest Reserves). Thus, while the rural population has been increasing, the amount of land available to them has been declining. In economic terms, competitive interactions are most intense between smallholders and the estate sector, since both demand land of high agricultural potential. But increasingly there is competition between both the smallholder and estate sectors and the protected areas, particularly where the latter adjoin areas of high rural population density. Protected areas now comprise almost 2 million ha, or 21% of Malawi's total land area. In regional terms this is not exceptional (the proportion of land area protected is 25% in Tanzania and 37% in Botswana), but in Malawi the high density of population means that, *per capita*, the area under protection exceeds that in any other southern African state¹.

3. The boundaries of many of Malawi's protected areas were laid down long before land pressure had become a serious issue, and there has been no systematic attempt to assess their roles or performance for more than fifty years². In this context certain questions are no longer avoidable. What are the benefits of protection, and do they outweigh the benefits of other possible uses of land currently removed from agricultural production? Who are the beneficiaries of protection? Does continued protection in every case serve the best national interest? Conversely, what are the environmental and economic costs of poor land husbandry, and are there areas of customary land which should now be brought under protection? This paper will argue that a reassessment of the functions and future disposition of protected areas is now required as a part of the development of a new land policy, and will suggest a framework for rational decision-making.

¹ Bell, R.H.V, H. Chikoko, H. Kamwendo and K. Stevenson (1997): Community based natural resource management: a strategy for the USAID NATURE Programme, Malawi. Report of a study commissioned under the University of Arizona/USAID Co-operative Agreement, ULG Consultants, March 1997.

² In 1946 a Game and Forest Reserves Commission was established to examine and report on the suitability for retention of all existing protected areas.

Long-term and short-term solutions to the problems of land pressure

Landlessness, land redistribution and agricultural productivity

4. It is essential to realise that land problems cannot be solved by land policy alone. In Malawi the most pressing land problem is experienced and usually presented as a *shortage* of land, particularly of land for smallholder farming, although it could equally well be viewed as a failure to improve the productivity of smallholder agriculture. As is generally the case with shortages, the first line of inquiry has concerned the *supply* of land, and in this context the redistribution of land between the public (state) and customary sectors featured prominently in political campaigning prior to the 1994 elections. Land redistribution, more specifically the assessment of whether or not there is justification for transferring land which is currently protected into the customary pool, is the subject of the remainder of this paper. But in the long term, given the projections for population growth and the finite nature of Malawi's land endowment, landlessness will inevitably be the lot of a growing proportion of the people. The recognition and acceptance of this fact is Government's responsibility and a challenge for economic planners. The alternative, to ignore the problem or to keep it at arm's length by resisting urbanisation, will incur heavy social, political and environmental costs as rural poverty deepens and the resource base declines. Land redistribution should have no place, therefore, outside of a balanced economic development strategy which includes:

- continued efforts to reduce population growth;
- planned urbanisation and, wherever possible, industrial development and the provision of urban workplaces, and, above all,
- agricultural intensification, with particular attention to improved land use, agroforestry, crop and livestock diversification, sustainable rural credit and the increased use of agricultural inputs.

Making more land available to smallholders

5. Despite the high density of smallholder agriculture in Malawi there nevertheless exist tracts of land which to the public view appear idle or inefficiently used. Some cultivable land remains unallocated within the customary sector, but most visible are the areas of natural woodland on estates and in the protected areas, which stand out as islands of forest in a sea of cultivation. The redistribution of under-utilised land from estates or protected areas to the customary sector would seem an obvious way of relieving land pressure, although clearly it will not provide a lasting solution to the problem since population growth will soon absorb any advantage gained. Land redistribution could be viewed as a means of buying a short breathing space while other policies to reduce land pressure are put into effect. The projected duration of this respite depends very much on assumptions made about how much land is currently farmed by smallholders, how much additional land could be made available and the intrinsic rate of increase of the rural population. Annex 1 (page 15), illustrates three scenarios based on recently published estimates of the principal variables, and assuming in each case that the transfer could be effected immediately. In practice, given the regional differentials between land pressure and the availability of "under-utilised land", the transfer of almost one million hectares of land would take many years to put into effect, but the principle illustrated remains valid: *under the most favourable circumstances the transfer into the customary sector of all lands currently believed to be "under-utilised" would accommodate smallholder population growth*

for a maximum of fifteen years. A more realistic estimate would be ten years, after which, unless alternative remedies had been successfully initiated, land pressures would have returned to present levels and would thereafter increase rapidly.

6. However transient the benefits to be derived from a redistribution of land it is clear that Malawi cannot afford inefficiencies in land use: the “transience” argument cannot be used to justify inefficiency. World-wide, redistribution from large land-holders to the land-poor has been much less successful than the transfer of state-owned land, because of the commercial and political resistance to change.³ But the circumstances in Malawi's leasehold estate sector are rather unusual, in that the land identified as “un-utilised” or “under-utilised” is not currently being farmed, merely held for possible future use; moreover, it is retained against a leasehold rent far below its informal market value⁴ or, in many instances, rent-free. An opportunity clearly exists therefore to precipitate the release of unproductive land merely by increasing the rent. Relinquished leasehold land would revert to state ownership, and although the Land Act does provide for the restoration of public land to the customary sector this currently requires the Minister's intervention, and a more streamlined mechanism would be required. We should be cautious, however, in assuming that unfarmed bush on estates serves no present purpose: according to Peters⁵ some estate forests in southern Malawi provide the only source of fuelwood for surrounding villages on customary land, as well as a wide variety of non-wood resources.

7. Redistribution from the Public lands would, from an internal political standpoint, be less problematic. But by far the largest proportion of state-owned land is under protection as National Parks, Wildlife and Forest Reserves. Before the merits of continuing such protection can be properly considered it is necessary first to review the history of the protected areas, the rationale for their creation and the means by which decisions have been made in the past in areas of land use conflict.

The growth of Malawi's protected areas and the rationale for protection

8. The statutory protection of land areas in Malawi from settlement or hunting has a history of one hundred years. In 1897 the Elephant Marsh and Lake Chilwa Game Reserves were created in order to preserve dense concentrations of large game animals found in the Lower Shire valley and on the Phalombe plain. Although neither of these reserves had a long history they were the start of a process of reservation which accelerated rapidly through the early 1920s and continued for the next sixty years (Figure 1). Reference to Figure 2 shows that this process was far from regular, with three periods of more intensive activity during the 1920s-30s, the 1950s and the 1970s. Put another way, the increase in protected areas was interrupted only by the two World Wars, the handover of colonial power to the newly independent Government, and, since the 1980s, by political resistance to change resulting largely from increased land pressure.

³ Gaiha, R., 1993: Design of poverty alleviation strategy in rural areas. FAO Economic and Social Development Paper No. 115. FAO, Rome.

⁴ Smallholders in Mulanje and Mponela were reported to be renting plots of 0.2 to 0.8 ha @ MK625/ha and MK375/ha respectively. Evans, J., 1997: Growth Options Study - rapid assessment of the impact of policy changes on rural livelihoods in Malawi. The World Bank/UNDP. The current leasehold rent is MK50/ha.

⁵ Pauline Peters, 1997, personal communication.

Figure 1. Protected areas in Malawi

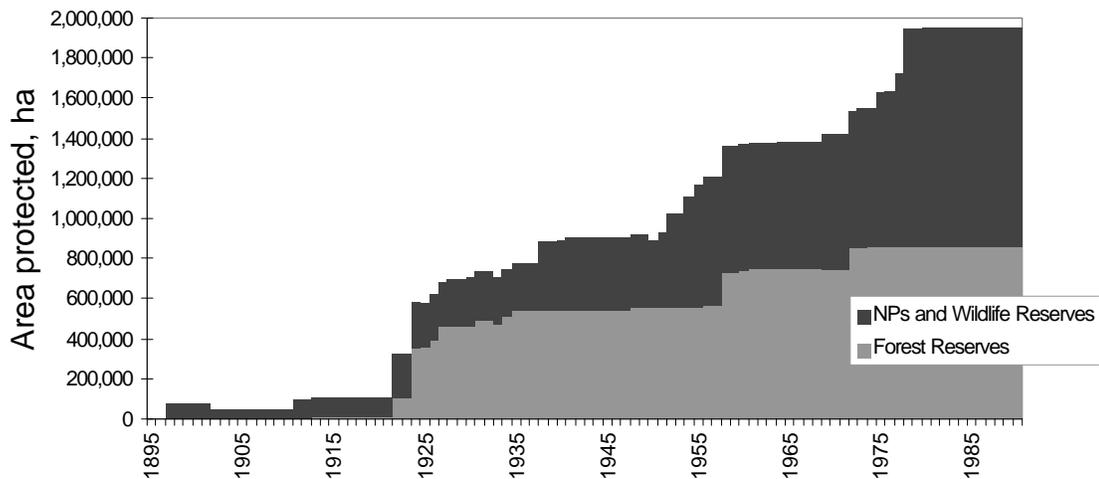
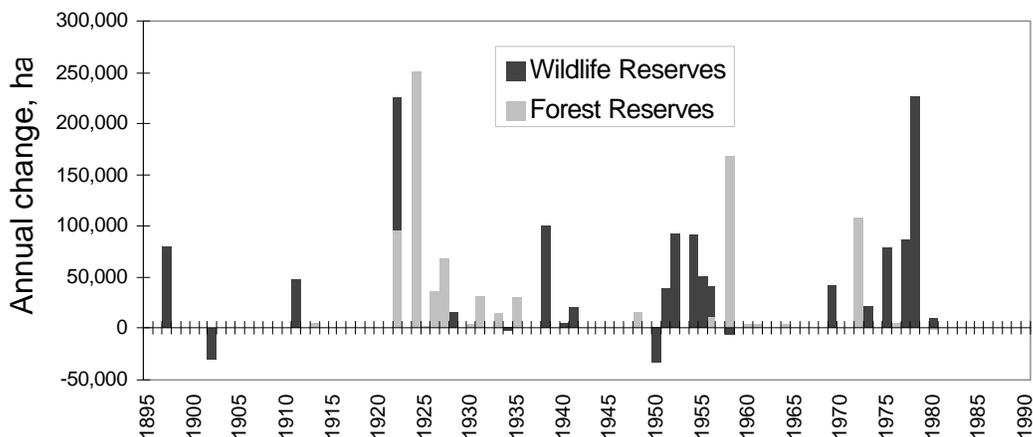


Figure 2. Rates of change in protected area



9. The first Forest Reserve was Dzalanyama, created in 1922 by converting the status of the former Central Angoniland Game Reserve once this area's importance as a water catchment was fully appreciated. Between 1924 and 1935 many more of the nation's larger Forest Reserves were established, mostly on the rift escarpments and mountain areas. These included (in chronological order) Mchinji, Liwonde, Mangochi, Namizimu, Zomba, Mulanje and Matandwe, bringing the total area of Forest Reserves to more than half a million hectares. Since the 1930s the only significant additions to the Forest Reserves were South Viphya, in 1958, and Dwambazi⁶ and Dedza-Salima Escarpment, both in 1972. During the 1970s and 1980s a further 31 forest areas, totalling 150,000 ha, were surveyed with the intention of protecting them as Forest Reserves.

⁶ Dwambazi has not been gazetted as a Forest Reserve, but it has been protected under a Control Order since 1972, and affected communities compensated.

10. The predominant rationale for the creation of Forest Reserves has been the protection of the steep upper catchments of streams and rivers, and of steep slopes in general where it has been considered necessary to retain forest cover in order to prevent serious erosion. Most of the Forest Reserves are therefore situated along the rift escarpments or in mountainous areas. A secondary rationale for protection has been to maintain forests for productive purposes, either through the harvesting of indigenous fuelwood, poles and fine hardwoods or by establishing plantations of exotic species. Only in three cases has protection been accorded primarily for the conservation of biological diversity,⁷ although there are many instances in which protected mountain forests have been particularly valued for the diversity of their evergreen species. A small number of Forest Reserves have been created for their aesthetic or amenity value,⁸ but the total area of these is insignificant.

11. Protected areas in the wildlife sector are in general much larger than Forest Reserves⁹ and are in consequence more varied in landscape. Although the earlier protected areas - Game Reserves and Controlled Shooting Areas - were established primarily to preserve concentrations of game animals, most of the reserves included a proportion of hilly country which would otherwise have been eligible for some other form of catchment or steep slope protection.¹⁰ There were also other reasons for protection. The Majete Non-Hunting Area, for instance, was initially created in 1951 in an attempt to confine the remnant elephant population of the Shire Valley from making depredations on the smallholder farms of Mwanza and Ngabu.

12. A feature of wildlife preservation during the colonial era was that it was always considered subordinate to the needs of development. In general, areas were selected which not only had some wildlife value but were also *not* required for agriculture. Protection tended to centre on areas with low population density or which for one reason or another¹¹ were unsuitable, at the time, for farming. Thus the protection accorded to the Lake Chilwa and Elephant Marsh Game Reserves was removed in 1902 and 1911 respectively when it became clear that these areas would be required for settlement. Similarly, the status of the Nyika grasslands, initially protected as a Controlled Shooting Area in 1952, was upgraded to that of a National Park in 1965 only after a pine plantation project initiated by the Colonial Development Corporation had failed to achieve its targets.

13. During the later part of the colonial era the emphasis changed from preservation to conservation, implying the entry of wildlife utilisation into the policy arena. This was explicitly stated in the independent government's first wildlife policy statement in 1963, in which the priority accorded to economic development remained firm:

"It is the policy of the Malawi Government to afford all the protection in its power to game animals and wild life in general in so far as such protection does not conflict with planned development of other essential resources.

⁷ These reserves were very small: Sambani F.R., 149 ha. and Mangochi Palm F.R., 510 ha, both in Mangochi District, and Masenjere F.R., 276 ha, in Thyolo District.

⁸ eg Soche F.R., 388 ha, Blantyre District; Maleri Islands F.R. (now part of the Lake Malawi National Park), 544 ha, Dedza District.

⁹ The largest National Park, Nyika, (320,000 ha) covers more than twice the area of the largest Forest Reserve, South Viphya (156,000 ha). The mean area of National Parks/Wildlife Reserves (111,000 ha) is almost ten times that of Forest Reserves (12,000 ha).

¹⁰ Nkhotakota Wildlife Reserve, for instance, was initially gazetted as a Forest Reserve for this reason in 1935, but it was re-designated as a Game Reserve in 1954 because of the large number of large mammals found there.

¹¹ poor soils, tsetse infestation

In affording protection to game and wild life the Government has in mind the value of this natural resource as a tourist attraction, as a possible source of food and as a scientific and educational asset of national importance. ...”

14. Catchment conservation has also featured prominently in some of the more recent additions to protected areas in the wildlife sector. The north-western extension to Lengwe National Park (78,000 ha, added in 1975) deliberately included parts of the western rift escarpment of the Shire Valley for this purpose, and the Nyika extension (added in 1978 and, at 227,000 ha, almost equivalent in size to the whole of Kasungu National Park), which comprised the steep escarpments of the plateau sides and the mountains to the immediate north, was created specifically to protect the upper catchments of four of the Northern Region's six major rivers.

15. The current rationale for the protected status of Malawi's Forest and Wildlife Reserves and National Parks may therefore be summarised as follows:

- catchment and steep slope protection;
- the conservation of wildlife and forest resources through managed utilisation, including both consumptive utilisation (the harvesting of fuelwood, timber and non-tree forest products; the hunting of game animals) and non-consumptive utilisation (primarily tourism);
- the conservation of biological diversity, and the preservation of examples of wildland types as a scientific and educational asset, and
- the preservation of wildlands for their aesthetic and amenity values.

Boundary changes: a history of decision-making

16. In 1946 a Game and Forest Reserves Commission was established to examine and report on the suitability for retention of all the existing protected areas. As a result of its findings four small Game Reserves, totalling 38,600 ha, were degazetted and the Department of Game, Fish and Tsetse Control created. This appears to have been the only systematic attempt in Malawi's history to assess the utility of protected areas in the national context. But at the local level pressure from boundary communities, often communities which had been physically displaced from the area under protection, has forced Government to re-examine land use issues and in some cases to revise earlier decisions in order to accommodate local needs.

17. Those areas which were protected before the second World War typically underwent a period of adjustment during their first few years, when boundaries were sometimes re-drawn to reflect the political reality if it became clear that some communities were not prepared to leave. This was usually followed by a period of calm, until such time as land pressure in the surrounding areas precipitated encroachments. Persistent encroachments, or previously undiscovered encroachments of long standing, have in many cases been dealt with by boundary amendments to excise the encroached areas. The following examples illustrate this process in four protected areas adjacent to customary land of high population density:

Thyolo Mountain Forest Reserve (1,347 ha)

This area was proposed and gazetted as a Forest Reserve in 1922 and 1923 respectively. In 1932 its boundaries were revised to exclude all remaining settlement, and the Reserve was re-proclaimed in 1933. The boundary was resurveyed in 1959 to include an extension on the northern side of the

reserve, which was gazetted in 1961. The first encroachment was reported in 1963, and increased in 1964. In 1965 a person believed to have instigated the encroachment was prosecuted and sentenced to one year's imprisonment, but illegal settlement and tree cutting increased in severity until by 1969 about one third of the Reserve area was under encroachment. A boundary revision in 1971 excluded most of the settled area but failed to contain the problem, and it was followed by a new boundary survey in 1972. Encroachments resumed sporadically in the late 1970s, and continue to the present.

Mulanje Forest Reserve (58,331 ha)

Mulanje Mountain was first gazetted as a Forest Reserve in 1927, with the nearby Michesi Mountain added in 1929. Over the next twenty years a number of estates in the Fort Lister area were surrendered, and the Reserve boundaries were adjusted in 1935, 1948 and 1958. The first encroachments were reported near the southern boundary in 1962, and over the next two years several excisions were made. From this time onwards encroachment became increasingly evident as land pressure in the customary sector increased. A Boundary Commission, established in 1978 to help resolve the growing conflict, did not report until 1982, when there was a sudden escalation in encroachment along the southern and eastern outer slopes and in the Fort Lister area, with violent clashes between smallholders and Forestry Department staff. The Commission recommended 11 excisions totalling 812 ha: these were approved and implementation was completed by 1987. In the meantime as much as possible of the encroached land was planted with bluegum in order to minimise erosion risks. The boundary of Mulanje Forest Reserve has in effect been pushed progressively higher onto the midslopes of Mulanje Mountain, now exposing fragile mountain slopes to erosion and flash floods.

Mangochi Forest Reserve (43,537 ha)

This area was first proposed as a Forest Reserve in 1923, including 9 villages within the proposed boundaries. All were moved out except two, Chimposio and Chimwala, which were given conditional permission to remain inside the reserve. The Reserve was gazetted in 1925. In 1929, people of Chimwala's and Minande's villages, which remained inside the reserve (the latter without permission), were reported to be clearing and extending cultivation on stream banks over a wide area. The District Commissioner was requested to move these villages. In 1930, Chimwala village area was excised (GN 59, 1930), and Minande village moved out. After an isolated incident in 1947, when 13 encroachers were prosecuted, no further problems were detected until 1958, when 7 villages were found to have made substantial transgressions into the Reserve. Since these were mostly of long standing, the Reserve boundaries were re-surveyed in 1959 to excise six villages, and one was moved out. During the early 1960s repeated encroachment from several villages (notably Nkumba) resulted in the excision in 1963 of more than 1,000 ha from the Reserve. One of the excised areas was occupied by the expansion of a Greek-owned tobacco estate, in exchange for estate land already settled by squatters, a private arrangement which was not condoned by Government and which resulted in the expulsion of the tobacco farmer in the following year. The size of the encroached area at Nkumba continued to grow, until it was formally excised in 1973. Two tobacco estates were granted leases inside the Forest Reserve in 1969 and 1977, the latter without the knowledge of the Forestry Department. In general, this reserve has experienced one of the highest incidences of encroachment and boundary changes, to the extent that most of the flatter areas have been removed.

Vwaza Wildlife Reserve (93,741 ha)

The Vwaza Wildlife Reserve provides an interesting case study in land tenure interactions. Part of the present Reserve was declared a Controlled Hunting Area in 1956, and subsequently enlarged and upgraded to the status of Game Reserve in 1977. Large areas of customary land in T.A.s Katumbi and Chikulamayembe have been converted to leasehold estates - not "smallholder" estates but mostly medium-scale tobacco enterprises. As the smallholder population expanded it found itself increasingly confined to a mosaic of pockets and corridors between the estates, which themselves remain substantially un-utilised (indeed, it is hard to perceive any sense of land pressure when driving around this area, since so much of it is forested). But pressure there is, and it has resulted in repeated demands, expressed through the Chiefs themselves, for the degazettement of Vwaza WR. The eastern boundary of the Reserve was redefined in the early 1980s to allow more room for smallholder agriculture, but in practice almost all of the flatter land relinquished was allocated for tobacco estates, and many more applications have been made for estate leases on land within the present boundary. The real competition here appears to be between the wildlife and estate agriculture sectors (either directly, or

indirectly as the customary area is progressively reduced by conversion to private land), although the issue has been presented as a fight for smallholders' interests.

18. Since the time of the Game and Forest Reserves Commission therefore, proactive decisions related to the distribution and boundaries of protected areas have been confined to the creation of new Parks and Reserves or extensions to existing ones, representing additions to the system. Decisions to remove areas from protection, or subtractions from the system, have been entirely reactive and made in response to localised boundary pressures. Changes in either direction have been dealt with individually, on their own merits, and decisions made with reference to the local rather than national land use context.

A re-appraisal of the protected areas

19. Protected areas - Forest and Wildlife Reserves, and National Parks - were created for the good reasons of wildlife conservation, the promotion of tourism, and the safeguarding of sensitive catchments or other fragile areas, but decisions to protect were always made in the context of whatever land pressures or alternative land use options prevailed at the time, and in the understanding that shifts in this context would necessitate a re-evaluation of the situation. In order to assess the present contribution of protected areas to the nation's economy and well-being, and to refine or re-define their future roles in the context of a potentially overwhelming increase in the human population, it is suggested that the following step-wise analytical approach be adopted. Much of the information required is already available, or will be available once the current suite of land utilisation studies is completed.

Step 1 (all non-urban land, both protected and unprotected):

assessment of suitability for agriculture

20. The first step in the analytical process is to classify all non-urban land on the basis of its suitability for agriculture and its present protection status. The term "suitability for agriculture" is meaningless without defining the level of agricultural technology to be deployed: even the steepest of slopes can be farmed without undue risk provided a suitably sophisticated farming method is adopted. In 1992 the Land Resources Evaluation Project (LREP: Green and Nanthambwe, 1992)¹² defined two levels of smallholder technology, "traditional management" and "improved traditional management", and four suitability classes: highly suitable, moderately suitable, marginally suitable and not suitable. For the present exercise it should be assumed that "traditional management" is the prevailing system. Land suitability should be simplified into "suitable" (ie the first three of Green and Nanthambwe's four categories) or "unsuitable". The availability of LREP data in digital form would permit an analysis at the national level to be undertaken fairly rapidly.

21. Land which is "unsuitable for agriculture" should not be farmed. The cultivation of unsuitable land will, more often than not, generate off-site costs (both environmental and economic) which exceed the on-site benefits of farming. A good example would be the

¹² Green, R.I., and S.J. Nanthambwe (1992): Land Resources Appraisal of the Agricultural Development Divisions: Methods and Use of Results. Field Document No. 32; MOA/UNDP/FAO, DP/MLW/011, Lilongwe.

settlement of the protected rift escarpment to the west of lake Malawi, where the benefits to new settlers would certainly be outweighed by the costs (loss of surface water supplies, flash-flooding, increased erosion) borne by smallholders on the lakeshore plain below. Land which is unsuitable for agriculture and which is currently protected should be removed at this stage from further analysis: its status should remain unchanged. Serious consideration should be given to according protected status to land which is unsuitable for agriculture but is currently unprotected: this would probably include most of the proposed Forest Reserves.

22. Land within the protected areas which is judged “suitable for agriculture” should be subjected to a further level of analysis: **Step 2**.

Step 2 (land which is currently protected but deemed suitable for agriculture):

Analysis of the relative benefits of agriculture versus continued protection

23. This is by far the most complex stage in the analytical process, since not only is the agricultural sector undergoing a period of rapid change, but so also is the relationship between the protected areas, the communities which border them and the broader economy. Boundary communities already realise substantial benefits from protected areas through the harvesting of fuelwood, poles, thatching grass, honey and a great variety of other non-tree forest products. As a result of policy changes within the wildlife and forestry sectors, altered management regimes applied to protected areas will increase the flow of benefits to such communities to include a share in Park/Reserve revenues and the returns from safari hunting and other tourism-related enterprises. Finally, the natural resources occurring in protected areas are themselves increasing in value as they become depleted on customary lands. Of particular relevance here is fuelwood: Malawi is headed for a fuelwood crisis within the foreseeable future which will transform national price gradients and greatly increase the value of protected forests *to the extent that they can be brought into active production*¹³.

24. The analysis would be performed by constructing for each distinct land block (or group of similar blocks) two or more cost-benefit models based on sets of assumptions about alternative land-use scenarios. The output of these models would be a listing of predicted net benefits for each scenario, accompanied by an analysis of sensitivity to deviations from the base assumptions and, most importantly, an analysis of the distribution of benefits to different sectors of the local, national and international communities. The main groups of assumptions to be discussed and agreed include:

Assumptions about the nature, profitability and net benefits of agriculture:

- The proportion of land to be allocated to estates. While the maximum number of households could be accommodated by converting all land available for redistribution into smallholder settlement, the national interest may be better served by allowing a mix of smallholder and estate development. Government would have the opportunity to plan the distribution and size of the estate sector on redistributed land.

¹³ Annual fuelwood consumption is probably in the region of 12 million m³, while sustainable national production is probably less than half this amount (although there is a lack of consensus on the productivity of natural woodlands). The shortfall is made good by the *unsustainable* harvesting of resources close to centres of demand and the conversion of customary forest to agricultural land. The less accessible forest areas are probably very lightly harvested.

- Density of settlement, holding sizes and cropping patterns. Here, LREP data on suitability for different crops could be utilised, together with information on farming systems and productivity on adjacent customary lands.
- Use of inputs and the availability of credit.
- The medium and long-term environmental and economic costs of agricultural development. At the present level of smallholder technology the cultivation even of land which is “suitable for agriculture” is characterised by declining soil fertility and has a measurable impact on water resources.

Assumptions about the benefits of continued protection:

- Benefits of resource use by boundary communities, both current and projected, taking into account existing plans to increase community access to protected area resources and likely trends in natural resource values.
- Benefits of tourism, both national and local. These should be based on current management plans where these exist, including revenue sharing arrangements, and should take into account the negative impacts of the removal of land on the remaining parts of the protected area. An analysis of tourism would need to consider national as well as site-specific impacts, since the aggregate impact of losses to the protected area system may well exceed the sum of the impacts of individual losses.¹⁴
- Similarly, assessments of the costs of removing land from protection would have to look at ecosystem impacts beyond the boundaries of the block in question.

Step 3 (land which is currently protected but deemed suitable for agriculture and from which the returns to the national good from agricultural use would probably exceed the returns from continued protection):

Investigation of the availability from external sources of compensation for the economic costs of continued protection

25. The Convention on Biological Diversity, ratified by Malawi in 1992, provides for the “*conservation of biological diversity, the sustainable use of its components and the fair ... sharing of the benefits arising out of the utilization of genetic resources ...*” Under Article 20, it is made clear that developed country Parties to the Convention have obligations to provide “*new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention and to benefit from its provisions ...*”

26. The maintenance and management of a system of protected areas clearly serves to conserve biological diversity, and is provided for in some detail in Article 8 of the Convention. There are therefore many kinds of cost associated with the maintenance of protected areas for which Malawi can legitimately seek assistance under the terms of the Convention. At present finance is being made available from several major donors to help support Malawi’s protected

¹⁴ Tour operators rely on the availability of a range of stop-over sites: there is likely to be a threshold level beyond which any further reduction in the range of sites would make the tour non-viable. Thus the loss of, say, a critical National Park, could have a disproportionate effect on tourism in other areas.

areas, mainly the National Parks and Wildlife Reserves, through the development of management plans, the provision of improved infrastructure or the initiation of projects which extend tangible benefits to boundary communities. Indeed the co-option of donor support has been seen as a legitimate means of securing the future of protected areas in the face of mounting political pressure for degazettement.

27. But such donor projects have been designed within sectoral horizons and in isolation from the broader economic and political issues of land use. There have been few attempts to evaluate the merits of continued protection versus other forms of land use¹⁵, and in no case in Malawi has the issue of *compensation for non-development* been raised. Where the economic and social returns to protection are likely to be exceeded by the returns to agriculture, protection may be viewed as under-development. This is a familiar concept in Europe and the United States, where “set-aside” schemes have been initiated to compensate landowners for leaving land undeveloped for ecological reasons. Pressure from the developed world on less-developed nations to persist in under-development (expressed subtly, or even unconsciously, through donor engagement) has been termed “ecological colonialism”¹⁶.

28. **Step 3** would require that a dialogue be established with the international community to seek adequate compensation, on an ongoing basis, for the continued protection of land within the National Parks, Wildlife and Forest Reserves which is deemed suitable for agriculture and from which the returns to the national good are likely to be higher from agricultural use. In instances where adequate compensation is not available, that land should be excised from the protected area and returned to the customary sector unless there are other compelling reasons not to do so (see paragraph 30).

29. Figures 3 and 4 below illustrate the decision-making process following the proposed three-stage analysis.

¹⁵ In more recent years the creation of *new* protected areas has generally been accompanied by detailed land suitability studies, but support to the *existing* protected areas has not questioned the need for continued protection.

¹⁶ The argument runs roughly as follows: The developed world, having for the most part destroyed its own wildlands, is attempting to ensure the survival of wilderness areas in the third world by provision of financial incentives which fall short of actual compensation. Academics and bureaucrats are coopted into a process which is justified by quasi-moral arguments about “global responsibility” and the promise of long-term economic returns to the conservation of biological diversity.

Figure 3. Protected areas: decision pathways for additional or continued protection

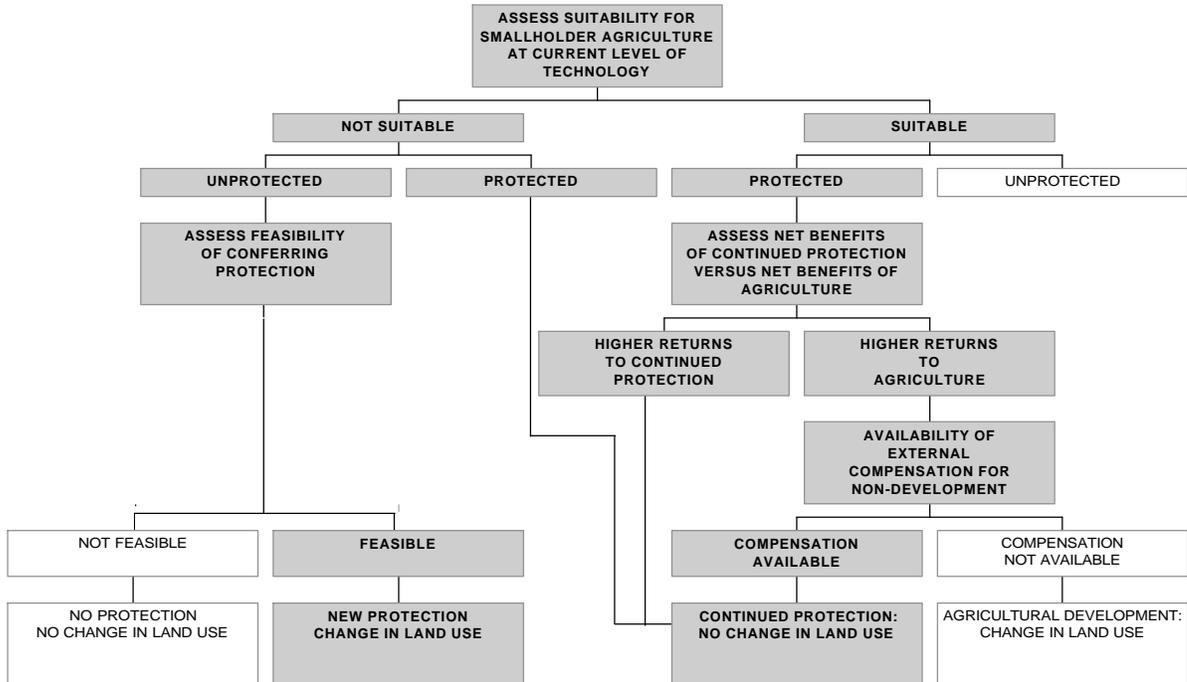
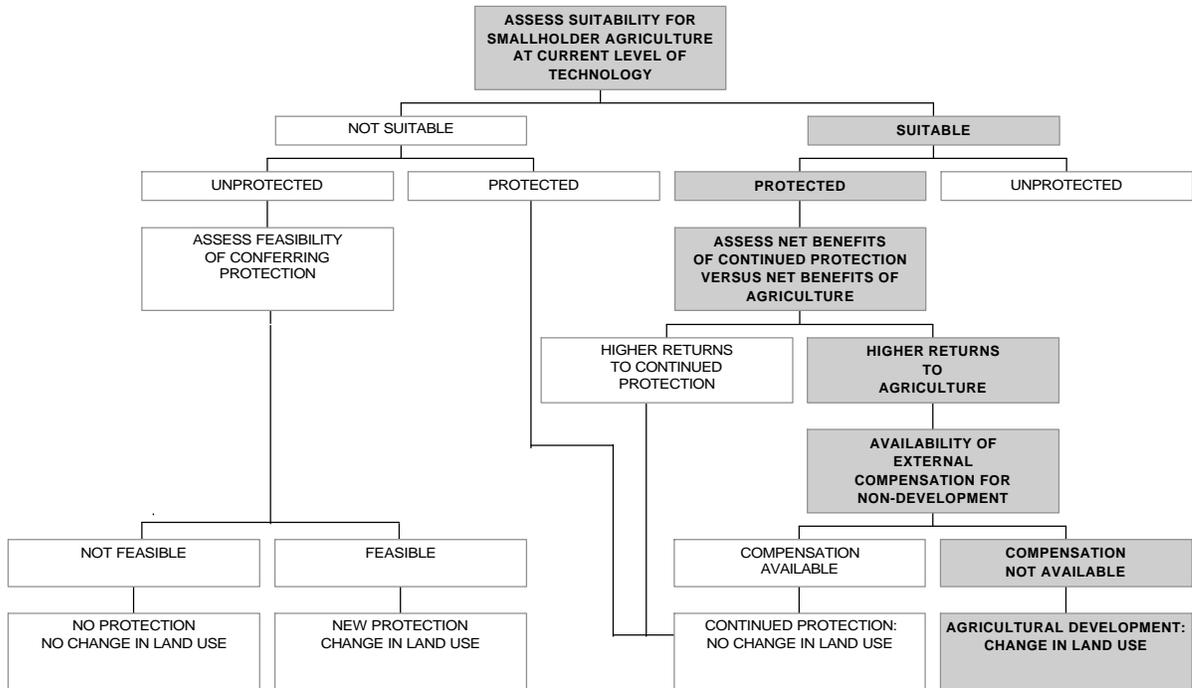


Figure 4. Protected areas: decision pathways for removal of protection



Conclusions

30. The analytical process set out in the section above is guided by the principles of environmental responsibility and economics. It makes no mention of the benefits to Malawi of the educational, aesthetic or scientific values of protected areas which cannot easily be quantified. We do not argue that Malawi, as a poor country, cannot afford to keep potentially productive land idle simply because it looks more attractive in its natural state, or because it supports a unique or well-preserved ecosystem. What we do argue is that Malawi cannot afford to make decisions about how much land to set aside for its educational or aesthetic value in ignorance of the real cost of doing so. An assessment of the “unquantifiable values” of land areas selected on the basis of all other criteria for excision could be added as a final, fourth step to the analysis, but here we should make it clear that we are concerned with values *to Malawians* and not to the global community.

31. The fact is that as the population increases the pressure from the land-poor for access to the potentially arable parts of Malawi’s protected areas will sooner or later be impossible to resist. Our intention is to ensure that any alterations to the protected areas made in the name of the rural poor result from rational decisions, and in full understanding of the extent and distribution of costs and benefits. This will only be achieved if decision-makers and their advisors at technical levels of government adopt an attitude of flexibility and demonstrate a willingness to face political reality. Hard-edged resistance might succeed in deferring change for some years more, but it runs the risk of sudden, more sweeping and more environmentally damaging losses in the longer term.

32. The analysis proposed here comprises a considerable amount of work. None of the relevant Government departments has sufficient surplus professional manpower or financial resources to undertake it unassisted, and donor assistance would be required. The exercise could be guided by the existing Lands Steering Committee, and could be expected to deliver specific recommendations within one year from start-up.

33. How would the proposed reassessment affect the current system of protected areas in Malawi? While it would be wrong here to pre-empt the results of an objective study it is clear from the form of the analysis and the nature of the criteria recommended that certain characteristics of the present protected areas would be retained or encouraged, while others would be lost. Although the extent of change cannot be predicted with confidence, the direction of change is evident. Thus:

- Mountainous areas, steep slopes and fragile catchments would receive continued protection, and this might be extended to include other vulnerable areas which are currently unprotected.
- Flatter, potentially arable areas would be recommended for removal from the system if their economic performance would be significantly improved under agriculture, unless adequate compensation for non-development were to be identified or unless they were shown to have unique unquantifiable values. The retention of protected areas on “unquantifiable” grounds alone would be unlikely to extend to large land areas.
- A premium would therefore be placed on productivity, in one form or another: either directly, through the sustainable supply of resources to boundary communities, or indirectly, via tourism.
- The supply of resources to boundary communities is more closely related to the length of the boundary than to the area of the park or reserve. Small or irregularly-shaped areas,

which have a high degree of “boundary effect”, are likely to have a higher productivity/area ratio than large areas which have a lower degree of “boundary effect”. Large areas with arable potential will therefore come under more pressure than small areas which are otherwise similar.

- Partly for this reason, and partly for their inclusion of a greater proportion of potentially arable land, protected areas in the wildlife sector would be required to demonstrate higher benefits per unit area than protected areas in the forest sector: ie, they would be under more pressure.
- In the longer term one may predict a greater community of interest between the wildlife and forest sectors, with both wildlife conservation and tourism focusing increasingly on the mountains and escarpments currently protected as Forest Reserves.

34. We conclude with a note of caution. Even if consensus on the desirability of excising parcels of land from the protected areas were to result from the process described above, the implementation of a land redistribution programme which really addresses the needs of the land-poor would face many difficulties. The fact is that the most extreme concentrations of land-poor smallholders live in parts of Malawi which are remote from the more likely candidates for excision. The communities surrounding protected areas comprise largely of people who were displaced from them, and until recently have been denied access to the resources they contain (a situation which Government is in the process of reversing). Many, therefore, feel antagonistic towards protected areas, and are unlikely without a great deal of prior negotiation to welcome strangers into the land from which they have been excluded and which they believe to be rightfully theirs. Simply opening up excised lands to the boundary communities is likely to have a much smaller impact on land pressure. The worst scenario of all would be the subversion of the redistribution process by powerful interests for the purpose of securing leaseholds over the best land: this would result in a net cost to the boundary communities (because of the reduced availability of protected area resources) while doing little or nothing to help those most in need.

Annex 1. Estimates of the time to return to current land pressure following the redistribution of land to the customary sector.

	Estimated area of un-utilised land, ha	Assumed baseline extent of smallholder cultivation, ha	Assumed mean rate of rural population growth	Equivalent years' growth requirement ^(a)
Scenario (1) (most favourable)	Estates 287,000 ^(b)	2,100,000 ^(d)	2.5% ^(e)	6
	Public lands 600,000 ^(c)			11
	Total 887,000			15
Scenario (2) (most likely)	Estates 287,000 ^(b)	3,515,000 ^(f)	2.5% ^(e)	3
	Public lands 600,000 ^(c)			7
	Total 887,000			9
Scenario (3) (least favourable)	Estates 225,000 ^(c)	3,515,000 ^(f)	3.2% ^(g)	2
	Public lands 600,000 ^(c)			5
	Total 825,000			7

- Notes:
- (a) years from a 1997 baseline, expressed concurrently. Since population growth accelerates with time the year-equivalents for estate and Public lands cannot be added to give the year-equivalent of the total.
 - (b) derived from data presented in Estate Land Utilization Study Report No. 2, September 1996.
 - (c) Eschweiler, J.A., 1993: Malawi Land Use Issues. Working paper prepared for the World Bank.
 - (d) derived from MoALD Round 1 crop estimates, 1977, assuming that grams, soya and chick peas are grown pure stand but all other pulses are intercrops or follow-on crops, and allowing 6% fallow and 4% built-up (from Customary Land Utilisation Study: Land Use Component Study, Final Report, air photo interpretation).
 - (e) Assumes a gradual decline in fertility (Malawi Population Sector Study, World Bank Report 8513 MAI, May 1992) and that the mean growth rate of 3.2% in 1987 comprised 6.0% (urban) and 2.9% (rural) (NEAP issues paper on Population and Human Settlement, GOM, July 1993).
 - (f) Customary Land Utilisation Study: Land Use Component Study, Final Report. GFA/European Commission/Government of Malawi, February 1997. Estimate includes dimba and wetland cultivation but assumes an error of 9% due to inclusion of estates.
 - (g) 1977-87 national intercensal growth rate excluding Mozambican refugees. Population Census 1987, NSO, Zomba.