

5. GOVERNMENT POLICIES AND PROGRAMS

5.1 Commonwealth and State governments are pursuing land degradation prevention objectives through a variety of policies and programs. Many of these approaches are having a significant impact but the overall impression is that more needs to be done and that existing programs could be improved. The Committee examined programs in the light of the factors that are contributing to land degradation or restricting the introduction of sustainable agriculture and identified a number of measures which could be taken to improve the development and application of existing policies and programs.

5.2 The main program the Commonwealth uses to directly influence land degradation is the National Soil Conservation Program. This and a number of other Commonwealth policies and programs that have impacts on land degradation are discussed below. A commonly expressed view was that the overall level of resources contributed by the Commonwealth was too low, especially in view of the magnitude and seriousness of the problem. The comment by the United Farmers and Stockowners of South Australia that "... the amount of money made available from Federal Government revenue for soil conservation projects is far too low..." was typical of many comments received by the Committee.¹ The scope for the Commonwealth to generally increase its contributions to programs relevant to land degradation is discussed in the final chapter.

5.3 The Commonwealth has modified the National Soil Conservation Program and increased the level of funding but the Committee considers that an increase in funding to the level that would result in all the work identified as required in the 1978 Commonwealth - State Collaborative study is both unattainable and not guaranteed to result in the elimination of land degradation. It is therefore necessary to examine this program and others to ensure that they are having the maximum possible impact. In this regard not only is the level of funding a matter for consideration but also aspects such as the objectives of the programs, the administrative arrangements and the relevance of the programs to rural landowners also need to be considered.

An Evaluation of Current Commonwealth Programs

a) The National Soil Conservation Program

5.4 The National Soil Conservation Program was established in 1983 in recognition of the serious land degradation problems and of the need to stimulate increased efforts by the States. Funding is now made available under the Soil Conservation (Financial Assistance) Act 1985 which provides for the payment of financial assistance for soil conservation projects and the establishment of the National Soil Conservation Program

1. United Farmers and Stockowners, submission p.2.

Fund and the Soil Conservation Advisory Committee. The program provides financial assistance for the conduct of research, public education, documentation and program development projects relating directly to the achievement of the Program's goals, which are:

- a) that all lands in Australia be used within their capability;
- b) that soil conservation activity and land use decisions be based on whole catchment/regional land management planning concepts;
- c) that all users and levels of Government meet their respective responsibilities in achieving soil conservation;
- d) that effective co-operation and co-ordination occur between all sectors of the community, disciplines and agencies in the use and management of land and water resources; and
- e) that the whole community adopt a land conservation ethic.

5.5 According to the Department of Primary Industries and Energy the strategy that has been followed by the National Soil Conservation Program has been to direct funds to provide maximum stimulus to national efforts to control land degradation.² This has involved complementing existing activities of other bodies, catalysing the involvement of additional resources, and raising the public profile for soil conservation. The Program has provided an increase in the overall base level of soil conservation activity, but importantly, it has also retained flexibility to cover priority areas chosen by their appropriateness for Commonwealth involvement and the need to fill gaps in existing activities.

5.6 Financial assistance to governments and other organisations has provided support for implementing various policy support measures. These have included education, training, demonstration, research, publicity, construction of works, technical assistance and advice. Funds have been provided for projects in all these broad areas of activity and across the spectrum of land degradation problems; salinity, waterlogging, structural decline, weed invasion, acidification, landslides, as well as the more easily recognised forms of land degradation caused by wind and water erosion.

5.7 The level of funding the program has received since 1983 is detailed in Table 5.1.

2. Department of Primary Industries and Energy, Submission p 22.

TABLE 5.1
FUNDING - NATIONAL SOIL CONSERVATION PROGRAM

Year	Expenditure (\$ million)
1983-84	1.00
1984-85	4.00
1985-86	4.65
1986-87	5.50
1987-88	6.00
1988-89	11.58
1989-90	23.20*

* budget estimate

5.8 From 1983 there were two components to the National Soil Conservation Program:

- . a States' Component, through which funds were provided to State agencies to boost their activities and assist them to implement high priority projects; and
- . a National Component, under which assistance was given to organisations other than those covered by the States' Component to undertake projects which have special significance or broad application across Australia such projects may have had research, education, demonstration or program development functions.

5.9 Since the introduction of the National Soil Conservation Program it was accepted practice for State and Territory soil conservation agencies to make application for States' Component funding by submitting projects in priority order on behalf of their respective States. Projects were then assessed by the Commonwealth in relation to the Program objectives, cost effectiveness, conformity with project guidelines and desirability of priority order.

5.10 In the past, priority areas for National Component projects were nominated at the time of calling for applications in order to target attention to perceived gaps in the national effort to control land degradation.

5.11 In March 1988 the Soil Conservation Advisory Committee presented the government with a review of the National Soil Conservation Program. That Committee found that the program had been very successful and, that its broad thrust had been both appropriate and cost effective but there was scope for a change in direction. The Committee believed that the scope for change had been brought about by changing circumstances which had

resulted, to a large extent, from the influence of the National Soil Conservation Program itself. The Committee recommended to the Minister for Resources that:

- . the existing five broad goals of the National Soil Conservation Program were appropriate and that they be retained as the goals for a revised program; and
- . that the Program move from 'project-based' to 'program-based' funding and in so doing eliminate the existing distinction between States' and National Components of the Program.

5.12 In May 1988 the Minister for Primary Industries and Energy announced an expansion and a redirection of the National Soil Conservation Program with soil conservation aspects of other programs (such as the Federal Water Resources Assistance Program and the National Afforestation Program) being integrated.

5.13 In April 1989 the Government announced that the National Soil Conservation Program would be modified with the emphasis given to community based soil conservation groups. From 1989/90 funding will be made available under the four sub-programs of Community Landcare Support, Public Awareness and Education, Research and Major Program Support. At the same time it was announced that the level of funding would be increased. The major change to the structure of the program was the introduction of a specific category of support for Landcare groups.

5.14 The projects to be funded under the Community Landcare Scheme and the other components of the National Soil Conservation Program in 1989-90 were identified in the government statement. It appeared that there was considerable differences between the States in terms of the projects funded. For example in Victoria funding was to be disbursed to at least 14 separate projects as well as supporting regional or state wide efforts. However in Western Australia, Queensland and South Australia separate projects were not identified and the funds appeared to be retained by State authorities.

5.15 The Department of Primary Industries and Energy advised the Committee that 90 per cent of the funds expended in 1988/89 were allocated to government agencies.³ Some of this funding was passed on to individuals and community groups or was used in the development of infrastructure in the States to promote and support Landcare groups. The Department suggested that in the future the proportion going to community groups will increase.

5.16 Each of the States has established various procedures for allocating National Soil Conservation Program funds to various uses. In Victoria, for example the State government has established committees with government agencies, community representatives and academics to assess all bids for funding from

3. The Department of Primary Industries and Energy, letter to the Committee 23 May 1989.

community groups, government departments and research organisations. These committees allocate priorities and ensure some co-ordination.

5.17 In evidence a representative of the Department of Primary Industries and Energy told the Committee that:

"... it is not a bad thing necessarily for the programs to be administered differently in each State if they have different arrangements to cater for ... the differences ... are more a reflection of the different stages of evolution in the State departments with land care in individual States. Victoria has had land care groups running for a number of years and when the applications were called for they were in a position to put in for individual projects. Some of the other States are further back in that process so their real need was to have co-ordinators to be able to encourage the development of groups. In Queensland one of their early tasks has been to prepare articles for incorporation and various material like that so that the land care groups have something to work to.⁴

5.18 The National Soil Conservation Program appears to have been a successful program, as far as it has gone, and has generally been well received by the State governments. The Victorian State government, for example, stated in its submission that funding from the Commonwealth under this program was equivalent to five per cent of the State's soil conservation budget but as "add-on" capital it has had a disproportionately large and beneficial effect.⁵ The program was evaluated as having an identifiable effect in relation to using land within its capability, through the Land Capability Project and on promoting community adoption of a conservation ethic through the Schools Education and National Soil Conservation Program publicity projects. It had enabled innovative and developmental inventory, research and demonstration projects of substantial catalytic value through funding of projects such as:

- . plant water use research;
- . conservation cropping;
- . soil management;
- . inventory of soil conservation needs;
- . direct seeding;
- . lucerne studies;
- . soil acidification studies;
- . "best bet" salinity demonstrations;
- . intensively cropped soils management;
- . agroforestry; and
- . Mallee sands management

4. Evidence, p.634.

5. Victorian government submission, p 8

5.19 The Victorian government was also strongly supportive of the most recent changes to the the National Soil Conservation Program. A government representative told the Committee that:

"As the program is now envisaged, it has a particular focus on community action and community groups which we strongly support... The more Commonwealth money that comes in to encouraging the system and helping set up and facilitate these groups, the greater the subsequent need or requirement on the land-holder to get on with soil conservation measures. Unless that is reinforced by some sort of incentive scheme, the rate of progress with land protection is always going to be less than it should. We feel that there will be every benefit for Victoria's land protection incentive scheme to be reinforced by the Commonwealth through the National Soil Conservation Program."⁶

5.20 Representatives of the Western Australian government also expressed general satisfaction with the National Soil Conservation Program but indicated that there were some teething problems with the recent changes.⁷ There were other criticisms of the program, some of which were raised in discussion by landholders and members of local soil conservation boards and project groups during the Committee's field inspections. One of the main concerns was repeated by the representatives of the Western Australian government when they stated that:

"... continuity of programs is ... something that worries us ... At some point you have to make a decision on whether a program is finished. This is a particularly difficult decision to make in terms of land resource management programs because the programs are of an ongoing nature. The best we hope to do with land management programs is to establish to program - to establish the monitoring network - and then hand it over to the local community to continue with that program with our input greatly reduced. This is exactly what is happening in the Mallee Road area on the south coast where the farmers there are now taking the responsibility for maintaining that program and for monitoring it."⁸

5.21 The Committee also heard some criticism that funding was not provided at times that related to the agricultural cycle of activities or that funds were provided at times when they could not be usefully expended. The Committee considers that it would be inappropriate for the Commonwealth to provide open-ended funding for indefinite periods under the National Soil

6. Evidence, p.354.

7. Evidence, p.454.

8. Evidence, p.455.

Conservation Program. The Committee is concerned however that the length of time for which funding is provided and the unwillingness to extend funding beyond the original life of funded projects may mean that in some cases much of the benefit of projects may be lost. The Department of Primary Industries and Energy stated that:

"... we have recognised that in relation to research there is a need for flexibility and, indeed, a number of projects have been extended because of things like seasonal conditions and they were not able to get trial plot results and things like that. So we are quite amenable to that. We do not broadcast it too widely because we want people to be efficient in their planning, as to what they are going to achieve in a certain length of time. When it comes to land care groups, we have a lower degree of expectation of being able to stick to the strict planning schedules and so on, so there will be a degree more flexibility in that as well. We have suggested to the States that they hold a contingency fund for particular expenses arising outside of the budgetary cycle. That will just become a normal part of the operation - that a group may suddenly realise that it should have asked for this or that and so there will be scope for it.⁹

5.22 The Committee believes that the approach now being adopted by the Department of Primary Industries and Energy is appropriate and that the States should also manage their allocations with flexibility and with some capacity to deal with contingencies. The Committee recommends that:

- . the Commonwealth require the States to set aside part of the funding they receive under the National Soil Conservation Program for contingencies so that their management of project funding can be flexible; and
- . the Commonwealth set aside some of the funds that it provides to individuals and groups, under the National Soil Conservation Program, for contingency purposes.

5.23 Another problem related to the management of funding was that the provisions for salaries and expenses of project co-ordinators, who in many cases were seen as essential for the success of projects, was limited to one or two years and did not

9. Evidence, p.642.

provide a sufficient period of employment to allow co-ordinators to commit themselves to the life of their projects. The Department of Primary Industries and Energy's view was that:

"...the Commonwealth is not there to fund co-ordinators right across Australia. If we are trying to encourage a process of self help, then some day the local community has to pick up all this. So we do not want to go in there and create the impression of widespread Commonwealth funding of co-ordinators. Indeed, for many groups, co-ordinators may not be the best investment. But for others ... a co-ordinator is a key person. So the length of the time that we fund for has been set at three years initially with the potential to extend, if that is shown to be of paramount importance to that particular group. We want to have that provision there to eventually wean groups off on to their own resources."¹⁰

5.24 The Committee considers that the Department's approach is appropriate provided that the provision to extend the commitment is retained and that, where necessary, is used before the services of the co-ordinators are lost. The standard period of three years is something that may have to be reviewed with more experience of the new Landcare provisions, particularly if it is found that it is difficult to recruit and retain co-ordinators for shorter periods.

5.25 There was some criticism of the process involved in making bids for funding and the limits on the type of projects that can be funded. The national manager of Greening Australia told the the Committee that in relation to the various funding programs, including the National Soil Conservation Program, community groups often found that there were too many strings attached or that the application process was very difficult. The most recent guidelines for applicants published by The Department of Primary Industries and Energy is a very lengthy document which appears more difficult to deal with than it really is but as Greening Australia pointed out "... it is to scare most community groups off from applying ..."¹¹ The Committee found that this view was expressed on a number of occasions during its field inspections and discussions with community groups.

5.26 The representatives of Greening Australia (South Australia) also expressed concerns about the accessibility of funds and told the Committee that:

"In national soil conservation projects we have applied every year in recent times, and the only ones we have ever been funded for have been joint projects with the Department of Agriculture on demonstrable salt redressing

10. Evidence, p.642.

11. Evidence p 582

projects ... It appears that much of the funding for the national soil conservation projects is directed through government departments ... If those government departments do not have a charter or an organisation that is approaching the problem that we are attempting to approach, then it is just not done. It is just not handled."12

5.27 Despite these criticisms the Committee concludes that overall the National Soil Conservation Program has been very beneficial and well received. The Committee inspected a number of current projects and was greatly heartened by the positive attitude and enthusiasm that was being generated by the groups who were using the programs funds. It cannot be said that the National Soil Conservation Program has made major strides towards achieving its stated objectives, which must be regarded as optimistic, but it is clear that it is starting to work and is a program that warrants continued support and even further increased funding.

5.28 The changes made to the administration of the program and its structure have both increased its value and shown that it is capable of being modified and developed in the light of experience. The Committee is concerned about the criticisms that have been made but notes that the most recent changes have not been operating for a full budgetary cycle and it is too early to make judgements. There will be scope for the program to be reviewed, particularly in relation to its success in providing assistance to the community groups to which it is, in part, targeted. The Committee recommends that:

the National Soil Conservation Program be reviewed at the end of the 1990/91 financial year to assess if it is achieving its goals and is effectively and efficiently delivering project funds to community groups of landholders.

5.29 If this review is to properly take account of practical experience and reflect any concerns of the rural community there will need to be some mechanism for community groups involved in projects to be directly represented in the review process. The Committee recommends that:

a panel including community representation drawn at least in part, from groups with direct experience of the National Soil Conservation Program be involved in the proposed review of the Program.

12. Evidence, p.336.

5.30 The *Soil Conservation (Financial Assistance) Act 1985* provides for the establishment of a Soil Conservation Advisory Committee comprised of:

- . two persons nominated by the Australian Soil Conservation Council;
- . one person to represent the Department of Primary Industries and Energy; and
- . at least two, and not more than four, other persons with experience in, special knowledge of, or educational qualifications relevant to soil conservation.

5.31 Committee members, with the exception of the member representing the Department of Primary Industries and Energy, are appointed for a period not exceeding three years. The Department of Primary Industries and Energy representative is appointed at the Minister's discretion.

5.32 The functions of the Soil Conservation Advisory Committee are to make recommendations to the Minister with respect to:

- . priorities and strategies for activities by the Commonwealth relating to soil conservation;
- . proposed agreements and arrangements under the Act; and
- . the operation of the Act, and agreements and arrangements made under the Act.

5.33 The first function is an ongoing activity which requires the Committee to consider Commonwealth activities and policies that could impinge on soil conservation in addition to its direct activity through the National Soil Conservation Program. The second function involves the assessment of project applications and the identification of projects to be recommended to the Minister for funding under the National Component of the National Soil Conservation Program. The third function involves reviewing past and current projects to ensure that they are working within the terms and conditions specified and that National Soil Conservation Program objectives are being realised.¹³

5.34 The membership of the Advisory Committee is limited both in numbers and the extent of its representation and its functions have effectively been confined to reviewing what was previously called the National component of the National Soil Conservation Program. With the recent changes to the Program the need for the Advisory Committee to become more representative and effective has increased. Given that it has already been effective in proposing modifications to the Program, the Committee considers that the Advisory Committee could be given the responsibility of conducting the review recommended above in conjunction with the

13. Soil Conservation Advisory Committee, Annual Report 1987-88, Department of Primary Industries and Energy, AGPS 1988.

community representative panel also proposed by the Committee. The Department of Primary Industries and Energy advised the Committee that additional members have been informally appointed to the Advisory Committee and that the legislation is to be amended to formally allow an increase in membership. The functions of the Advisory Committee are to remain unchanged.

5.35 The proposed expansion of the Soil Conservation Advisory Committee may make it a more effective body at the Commonwealth level. The Committee is concerned however that at the State level there remains a potential for government agencies to continue to direct funding to their own purposes or to projects identified as priorities without consultation. There is therefore a need for committees in the States to exercise an ongoing review, advisory and consultative function. The Committee recommends that:

the Commonwealth require that consultative bodies like the Soil Conservation Advisory Committee be appointed in each State as a prerequisite for continued funding under the National Soil Conservation Program.

b) Other Commonwealth Conservation Programs

5.36 A number of other Commonwealth programs, not necessarily developed as soil or land conservation programs, have contributed to soil conservation. The National Tree Program, which from July 1988 was administered for the Commonwealth by Greening Australia, has made a significant contribution. During the 1988/89 financial year National Tree Program funds were used for several projects related to land conservation including a whole farm planning demonstration project in Tasmania; development of land care and farm tree groups in co-operation with farmer organisations in Queensland, New South Wales, South Australia and Victoria, and the Ribbons of Green projects in Western Australia. The administrative savings resulting from the merger of the National Tree Program and Greening Australia enabled more funds to be allocated to projects in 1988-89. Approximately \$292,000 was allocated to the States and Territories for project support. The National Tree Program was used to generally support tree establishment activities by farmers, community groups and government. National awards were also conducted under an information program to raise awareness and understanding of the value of trees in the Australian environment.

5.37 The objective of the National Tree Program is to redress the adverse effects of tree decline on the environment and rural production by facilitating the conservation and establishment of trees and associated vegetation throughout Australia and by increasing public awareness of the value of trees. The Program commenced in 1982 with the co-operation of all State and Territory governments.

5.38 A major goal of the National Tree Program is to foster and support community action through Greening Australia. The agreement with the Commonwealth for Greening Australia to administer the Program on behalf of the Commonwealth Government involved the abolition of the national and state/territory co-ordination committees but increased support for non-government programs. The arrangement removed the overlap that existed between the two programs. It also had the effect of generating more local community interest in the National Tree Program and removing public confusion. The national manager of Greening Australia told the Committee that:

"From its very beginning with the tree program, one of its objectives was to establish a very strong non-government movement. There were two primary reasons for that, one was that a non-government movement is far more likely to be able to secure corporate sponsorship and have the general community support, than is a government body. Secondly, there was a need for an organisation to work in parallel with government to inspire people, and government programs do not always inspire; they may very well be good at being administered and they may achieve their objectives, but they do not tend to inspire ... "14

5.39 The Committee was also told that:

"...the first thing (the agreement) has done is to eliminate the confusion in the community about Greening Australia and the National Tree Program. Depending on where you went and who has been doing what, people were not quite sure whether they were dealing with a government body or a non-government body and certainly that has hampered the efforts in getting corporate sponsorship because our dealings with the corporate sector are that they are quite happy to support a community organisation, but they are not prepared to top up a government program. Eliminating that confusion has certainly assisted with our fund raising and we are at the moment negotiating with three major companies..."15

5.40 The National Tree Program is from 1989/90 to be supplemented by the One Billion Trees program with the aim, as announced by the Prime Minister in his statement on the environment on 20 July 1989, of planting one billion trees by the

14. Evidence, p.577.

15. Evidence, p.578.

end of the century.¹⁶ This program will have the following two elements:

- . A Community Tree Planting Program to plant over 400 million trees. This program will include;
 - financial assistance for community groups and landholders to implement tree projects on farms and in towns and cities
 - a schools nursery project to provide a hands-on learning experience for young people, and
 - major projects involving participation by community, corporate and government organisations.
- . a Natural Regeneration and Direct Seeding Program to establish over 600 million trees in open areas of Australia;
 - this program will start with trials and demonstrations across the country to improve the methods of growing trees and to encourage wide scale action by landholders.

5.41 Negotiations were held with Greening Australia for them to continue their involvement in the expanded National Tree Program/One Billion Trees Program. It appears that their role as manager is to continue and that they are to develop guidelines for the administration of the Program to take account of the new directions. The Committee considers that given the success that Greening Australia has already achieved it is highly desirable that they continue to be involved and the Committee recommends that:

the Commonwealth government continue to use Greening Australia to manage and administer the National Tree Program/One Billion Trees Program.

5.42 The Committee also considers that the land degradation amelioration aspects of the National Tree Program were a valuable part of that Program and should be continued in the new program. The Committee recommends that;

program guidelines be adopted for the One Billion Trees Program which will ensure that special emphasis is given to tree planting projects that are specifically designed to prevent or repair land degradation.

5.43 In 1987 the Commonwealth established the National Afforestation Program providing \$15 million over 3 years to stimulate investment by the States and the private sector in

16. The Hon. R.J.L. Hawke, *Our Country Our Future* Statement on the environment, AGPS July 1989.

plantation forestry to increase productivity, ameliorate land degradation and ultimately to reduce demands on native forests. The aim was to stimulate more investment in the development of hardwood plantations and in rehabilitation of degraded land through commercially based afforestation.

5.44 The program has three components: Broadacre Plantations; Land Rehabilitation and Degradation Control; and Research and Demonstration. Major participants are expected to be State governments and companies undertaking broadacre forestry, but provision has also been made for Commonwealth agencies, local government bodies, community groups and individual landholders to receive assistance. Commonwealth expenditure on the National Afforestation Program is through grants for projects to which the grantee is also committed. There is no predetermined break up of funding between Program components, among States, or between the public and private sectors.

5.45 It appears that when the National Afforestation Program commenced there was some confusion about how it would operate in relation to the National Tree Program. The National Manager of Greening Australia told the Committee that:

"... there has been some confusion over the years since the National Afforestation Program was first developed... It was there primarily to look at commercial plantation species, whether they were small or large. When it became a reality it had a land degradation component which certainly overlapped somewhat with interests of the national tree program and Greening Australia, but more importantly, it overlapped with the National Soil Conservation Program ... that has all changed and it is looking solely at commercial operations involving tree projects. That is probably its rightful place; there needs to be program. But our view is that it still is not being administered in the correct fashion, in the sense of achieving its broad objective, because it does not have any community input or farmer input into the decision making process."¹⁷

5.46 In May 1988 the Commonwealth announced that a new Natural Resources Management policy would be developed to co-ordinate activities on soil erosion, water and salinity management and reafforestation. This was to result in the soil conservation aspects of the National Afforestation Program being integrated with the National Soil Conservation Program and this move probably helped to reduce any confusion about the purpose of the program. The Department of Primary Industries and Energy has

17. Evidence, p.581.

also announced that the program is to continue in a modified form which will emphasise the environmental aspects of hardwood plantation establishment.¹⁸

5.47 The other main Commonwealth funded project which contributes to land degradation prevention and repair is the Federal Water Resources Assistance Program. In 1988/89 \$34.8 million was provided to the States and Northern Territory under this Program for a range of Commonwealth initiatives and projects aimed at:

- more effective management of urban, rural, industrial and agricultural water through equitable and more economic water pricing structures;
- the provision of water of adequate quantity and quality to small communities throughout New South Wales;
- increasing co-ordination efforts by the States in planning and managing water, land and environmental resources;
- reducing the areas subject to flooding through the introduction of mitigation works and measures;
- reducing flood damage by encouraging the implementation of planning and policy measures preventing inappropriate development on flood plains;
- restoration of land degraded by salinity;
- more efficient use of existing water supplies through the introduction of conservation measures; and
- an increase in the level and capability of water resources research.

5.48 The Federal Water Resources Assistance Program was not developed as a land degradation initiative although some elements of the program are important to the prevention of land degradation, particularly salinity associated with irrigation. The Victorian government, although critical of the low level of funding provided to the State under the Program, stated that it has produced important tangible results in Victoria. However the program was criticised on the grounds that it was not sufficiently integrated with land management programs.¹⁹ The government's representatives told the Committee:

"...the reduction in funding has had an adverse effect. However, I think probably as important as the level of funding is the structure of the program itself. The Australian Water Resources Council has recently adopted the principles of integrated

18. The Department of Primary Industries and Energy, Portfolio explanatory notes - 1989/90 Budget papers.

19. Victorian government, submission p 10

catchment management which flowed from the National Workshop on Integrated Catchment Management. Amongst those principles were that integrated catchment management ought to be a principal criteria. As the FWRAP program is currently structured, there is not as much scope as perhaps there should be for assistance to programs which focus on integration of land and water management. The Federal government, and clearly the State government, have recognised that significant advances in addressing land and water degradation problems will now depend on an integrated approach to those problems involving a whole of catchment approach. There is a need to look at the structure and the criteria of FWRAP to see whether better opportunities can be provided for assistance to on-ground projects which involve local communities working with government departments in addressing problems. Central to the Victorian approach towards integrated catchment management is the need to get local ownership and commitment to tackling catchment management problems. I think there would be considerable benefits to be gained from the FWRAP program taking on structures which would facilitate assistance to these sorts of activities."²⁰

5.49 The Commonwealth's moves to integrate land degradation and water policies may offset the problems identified by the Victorian government but it remains to be seen if the Commonwealth can develop programs which complement moves towards integrated whole catchment management in the States. There are other elements of the Commonwealth's water policies which are also relevant to general land management and land degradation and which will also need to be integrated. These include:

- . participation in the Australian Water Resources Council which is the peak forum for the Australian water industry and provides for consultation, co-operation, liaison and the development of policy approaches by the Commonwealth, State and Territory Governments to significant water resource issues;
- . involvement in the integrated management of the natural resources of the Murray-Darling Basin through the Murray-Darling Basin Ministerial Council and the River Murray Waters Agreement;
- . the provision of direct financial assistance for research, technology transfer, studies and investigation activities; and

20. Evidence, p.381.

- assistance to primary producers through income tax concessions for works designed to improve water use efficiency and to prevent or control land degradation including salinity.

5.50 The Committee does not have sufficient evidence to evaluate these activities but notes them as examples of the number and variety of ways the Commonwealth is involved in programs relevant to land degradation

c) Drought Assistance

5.51 The Committee found that there was considerable concern about the role that drought relief policies had played in encouraging land owners to use their land beyond its capability resulting in land degradation. For example, the National Farmers' Federation told the Committee that "...the people who have benefited from drought policy in the past have basically been the people who have flogged their country the most ..."21 This problem was particularly raised in relation to grazing in the arid and semi-arid areas of Australia. The Tropical Grassland Society of Australia, for example, submitted that in many cases drought subsidies had been used to prolong inappropriate management and stocking rates and may have hastened the degradation of productive pasture.²² The Central Australian Conservation Council in its submission called for the phasing out of drought subsidies and stated:

"...In general, such subsidies only prop up and reward the poorer managers, who are the first to feel the pinch of dry times - the better managers do not need support. Managers who cannot manage within the capability of their country and climate clearly should not be managing these areas..."²³

5.52 The then Bureau of Rural Science (now the Bureau of Rural Resources) submitted that a more appropriate approach to drought assistance would be to encourage early de-stocking and replace in-drought assistance with post-drought recovery mechanisms, such as provision of a re-stocking freight subsidy to farmers who de-stock due to drought. This should only be payable on demonstration that the vegetation has recovered sufficiently to support stock. Such post-drought assistance would do more to prevent land degradation during droughts because it would help remove farmers' fear of re-stocking difficulties and so encourage them to destock early.²⁴

5.53 In August 1988 the Department of Primary Industries and Energy published the report of a working party established by the Australian Soil Conservation Council to investigate the effects of drought assistance measures and policies on land degradation. The working party found that in many instances, land was being

21. Evidence p 567

22. Tropical Grasslands Society of Australia, submission p 3

23. Central Australian Conservation Council, submission p.8.

24. Bureau of Rural Science, submission p.3.

utilised continuously beyond its capability, with consequent resource degradation. The drought declaration procedures supported this level of utilisation by, ultimately, providing on-going economic assistance. Due to the time lag involved in implementing drought relief management much damage was done before pressure was taken off the land. Good land managers reduced stock numbers quickly to conserve the land resource but the majority waited as long as possible, particularly if assistance was expected. The working party reported that in arid and semi-arid areas particularly, the use of stock condition and mortality as an indicator of drought was an unsuitable measure of stress on the land resource. By the time significant loss of condition was noted and deaths occurred, land had been under severe stress for a considerable period and may have already suffered serious degradation, particularly of pastures.

5.54 The working party considered the possible effects of abolishing drought assistance and found that the perceived effect was uncertain. There was some support for this option among some landholders and government officers, the former often being the perceived better managers who prepared for drought. These operators demonstrated that properly established and managed enterprises did not need support during drought. It appeared that less eroded properties were better able to withstand the effects of drought, although the relationship between the level of financial reserve and management ability was not clear. However, it seemed that financially successful managers were also good land managers.

5.55 On the other hand, those not established financially and those operating marginal enterprises in climatically risky areas were more likely to be 'pushing the system' in order to become established or merely to survive. A severe drought could 'break' such an enterprise, probably with consequent land degradation, since preparatory and management options would be reduced or absent. The effect of drought assistance measures on these operators was unclear.

5.56 It was concluded that, in the long term, cessation of drought assistance would assist rural adjustment and encourage adoption of the better land management strategies which are necessary to remain in business. However, in the long process leading to this, considerable financial hardship and, most likely, land degradation would occur. Therefore there should be a phasing out of those in-drought assistance measures, and an increase in incentives for restructuring and improved management. A need for soil conservation orders to be exercised in cases of neglect of the land resource was also seen.

5.57 The Commonwealth has removed drought subsidies from the Natural Disaster Relief Arrangements from 1 July 1989. As an interim measure the Commonwealth is to provide drought assistance in severe cases under the Rural Adjustment Scheme. This interim measure was recommended by a Drought Policy Review Task Force.

This Task Force is to report to the government by March 1990 on options for the Commonwealth to assist primary producers during periods of extreme drought. In an interim report the Task Force stated that it was conscious that a range of national interest considerations need to be taken into account, including the need to encourage sustainable agricultural production, to maintain and improve the efficiency and international competitiveness of Australian agriculture and to ensure the long-term sustainability of Australia's natural resources.

5.58 With these considerations in mind, the Task Force identified three national policy objectives with respect to drought:

- . to encourage primary producers and other segments of rural Australia to adopt self-reliant approaches to the management of drought;
- . to facilitate the maintenance and protection of the environmental and agricultural resource base during periods of drought; and
- . to facilitate recovery of post-drought production in rural industries, consistent with long-term sustainable levels.²⁵

5.59 The Committee does not propose to discuss the drought subsidy issue further other than to acknowledge that the Task Force review presents the Commonwealth with an opportunity to ensure that one of its policies is consistent with the need to place Australian land use on a sustainable basis. The Committee recommends that:

in considering the findings of the Drought Policy Review Task Force the Commonwealth government adopt an approach consistent with the "sustainable land use by 2 000" policy and seek to integrate drought assistance programs with the Natural Resource Management Program.

d) Taxation Provisions and other Fiscal Measures

5.60 A number of taxation and other fiscal provisions have been designed to encourage land holders to undertake soil erosion works or which, according to some of the submissions received by the Committee, be used for this purpose. The Committee also found that there was confusion and a lack of information in the community about these provisions particularly in relation to the deductibility of land clearing expenses where the land is being cleared of regrowth, the provisions related to deduction of tree establishment or maintenance costs and the eligibility of works undertaken to prevent soil degradation problems developing.

25. Drought Policy Review Task Force *Managing for drought* AGPS July 1989.

5.61 The Department of Primary Industries and Energy advised the Committee that some of the expenses that are fully deductible under section 75D of the Income Tax Assessment Act include:

- . establishing plant cover on eroded areas;
- . earthworks, such as banks and drains, to reduce water erosion;
- . fencing out wind eroded areas to exclude stock;
- . constructing dams for the primary purpose of flood mitigation or reducing water erosion;
- . fencing to exclude stock from saline degraded or fragile areas;
- . fencing to exclude stock from recharge areas where tree planting or special agronomic practices are to be implemented to reduce salinity;
- . realigning fences to avoid or overcome land degradation where exclusion of stock is central to the solution;
- . drainage to reduce waterlogging;
- . deep drainage to alleviate soil salinity;
- . culverts and earthworks associated with surface drainage facility or waterlogging control; and
- . a range of activities associated with tree planting.

5.62 The tree planting deductibility provisions fall into four categories:

- . trees planted in association with water erosion control programs, such as trees on contours and trees in and around active gullies;
- . trees planted as windbreaks to prevent wind erosion;
- . trees for salinity control; and
- . regeneration of native vegetation.

5.63 There is insufficient information available to assess the impact of these provisions and what information is available is confusing. The Department of Primary Industries and Energy

replied in response to a question about the amount allowed as deductions against these provisions that the answer:

"...is complicated because 75(D) and 75(B) are for water and other aspects as well. The only information we have been able to get from Taxation was that in 1985 something of the order of \$35m to \$40m was claimed under that provision, as relating to soil ... (the year to year trend was unknown because) ... we cannot get that sort of information from the Taxation Office."²⁶

5.64 In a similar fashion the Department of the Arts, Sport, the Environment, Tourism and Territories submitted that the best known Commonwealth taxation provision relating to soil conservation is Section 75D of the Income Tax Assessment Act, which provides that capital expenditure (other than on fencing) to prevent or combat land degradation is deductible in the year of expenditure, as is expenditure on fencing for the purpose of limiting or preventing any extension or aggravation of existing degradation or assisting in its reclamation. The Department stated that cost of this provision was not accurately known, but the Australian Treasury had estimated the total cost resulting from sections 75A to 75D was \$43m in 1984-85 and \$32m in 1985-86 and that if a significant proportion of these sums arises from application of Section 75D provisions, it represented the major Commonwealth expenditure on prevention of land degradation.

5.65 The Department of Primary Industries and Energy advised the Committee in relation to land clearing that accelerated depreciation incentives for the initial clearing of land were removed from the provisions of the Income Tax Assessment Act in 1983. It appears that when these amendments were made to the Act the eligibility of deductibility for such expenditure as a normal property improvement expense also disappeared. Instead of being included in the form of a depreciation rate that reflected the true economic life of the improvement under another section of the Act, it dropped out altogether. Scrub regrowth is a major problem for primary producers in a number of areas and the Department saw a genuine case for including expenditure on such clearance for the purpose of increasing farm income within the provisions of the Income Tax Assessment Act.

5.66 In reviewing its Tax policy in 1985 the Commonwealth expanded the provisions of Section 75D of the Income Tax Assessment Act to include expenditure on activities for land degradation control (as distinct from erosion and salinity control previously) and retained full deductibility for this expenditure in the year of expenditure. Provision was made for expenditure on the destruction of weed or plant growth detrimental to land to be deductible. The Department of Primary Industries and Energy regarded invasion by woody weeds such as turpentine bush as a form of land degradation, and also included

26. Evidence, p.657.

scrub regrowth in this interpretation, although it pointed out that this was not an agreed government position. The Department considered that expenditure on control of scrub regrowth should be an allowable deduction under either Section 51 or Section 75D of the Income Tax Assessment Act. Clarification of this interpretation was sought from the Commissioner of Taxation following the rejection of a claim for regrowth clearing in Queensland.²⁷ The Commissioner responded to the Department by indicating that the Act authorised deductions for expenditure necessarily incurred in the carrying on of a business for the purpose of gaining or producing assessable income. Recurring business expenditure by primary producers such as clearing of regrowth would qualify under section 51 as an out-right deduction against income. The deduction would be allowed in the year of income in which the expenditure was incurred. However, the Commissioner pointed out that the expense of clearing woody timber to bring virgin land into use in a business of primary production is a capital outlay and would not be an allowable deduction. The Commissioner also replied that section 75D applies to a taxpayer who carries on a primary production business and incurs capital expenditure in an operation primarily and principally for the purpose of preventing or combating land degradation. He indicated that deductibility for clearing of scrub regrowth under this section would need to be assessed on the merits of each case.

5.67 A paper on the National Farmers' Federation's approach to soil conservation called for a range of financial incentives to encourage farmers to shift to more profitable, sustainable management practices. The incentives called for included tax deductions, tax credits, grants and co-operative funding arrangements.²⁸ The joint National Farmers' Federation and Australian Conservation Foundation submission to the Commonwealth government calls for a tax rebate or credit of 30 per cent to be introduced for the costs of works undertaken by landholders as part of approved district plans.

5.68 The Committee heard calls for other provisions to encourage a range of activities, for example, the Whittington Interceptor Salt Affected Land Treatment Society proposed a 150 per cent tax deductibility for innovative farmers to undertake research projects on their own properties without going through a registered research agency.²⁹ The Tropical Grassland Society of Australia suggested provisions of tax incentives for regeneration of degraded land by cultivation, broadcasting of fertiliser and introduction of grasses and legumes.³⁰

27. The Department of Primary Industries and Energy, letter to the Committee 23/11/1988.

28. National Farmers' Federation *NFFS' APPROACH TO SOIL CONSERVATION* paper presented to the Soil Conservation Task Force Seminar, Canberra 9/11/1988.

29. Whittington Interceptor Salt Affected Land Affected Treatment Society Inc., submission p 3.

30. Tropical Grasslands Society of Australia, submission p 3

5.69 The evidence relating to taxation incentives was not all positive. The Victorian government told the Committee that it had found that tax relief had been beneficial but too non-specific and that the State government had introduced a land protection incentives scheme which gives a percentage allocation of funds to land holders for approved conservation works and measures.³¹ The Representatives of Greening Australia's South Australian division criticised the tax provision applicable to tree planting on the grounds that they were too limited:

"...there should be more assistance in terms of fencing ... (and) ... if the fencing is undertaken by the landholder himself, he does not get a tax rebate. It has to be undertaken by someone else for him to get tax relief, which is a most unusual circumstance ... The problem here though is to plant trees and for it to become tax deductible under the provisions of 75D(1) of the Income Tax Assessment Act ... it has to meet three criteria: firstly, you have got to be a primary producer; of 16,000 landholders in South Australia there are only 11,000 who claim to be primary producers. You have got to pay tax; only 42 per cent of rural landholders pay tax. If you meet those two criteria you then have the means, if you engage a contractor to both plant trees or fence, of claiming those as tax deductible."³²

5.70 The Western Australian Farmers Federation suggested that assistance should take account of the differing circumstances in which farmers can find themselves. They differentiated between two basic groups - those that are established and have financial reserves and those that are developing or consolidating their properties and have cash shortages. Depending on the circumstances the Federation saw a role for long term loans at reduced interest rates and taxation incentives. They opposed calls for the introduction of 150 per cent deductibility for soil conservation expenditure but supported retention of the present provisions, with an extension to incorporate all conservation related activities. This includes the purchase of plant used exclusively for degradation control and the installation of alternative watering points in pastoral areas to relieve pressure on land around existing facilities. The Federation opposed higher deduction rates on the grounds that:

"...the incentives for degradation control work should be three-fold. There should be a taxation incentive for those who are paying higher rates of taxation; a conservation loans scheme for those who are not in a taxation position, but who can borrow money to do the work; and a direct grant ... if too much

31. Evidence p 353

32. Evidence, p.334.

emphasis is put on any one aspect, we have to take resources from the other areas. It is a cost to government, whether it allows 150 per cent deductibility or gives an interest subsidy on loans. We thought in order to get a more equitable three-way spread, the cost to government of a 100 per cent deductibility should be maximum."³³

5.71 Despite these criticisms the Committee found that the use of existing tax provisions for land degradation control purposes was well supported and there were calls for the extension of these provisions. However, as pointed out by the Department of the Arts, Sport, the Environment, Tourism and Territories, there are also some negative aspects that need to be considered, for example:

- . as a transfer payment from the community to landholders, taxation concessions are contrary to the polluter pays principle;
- . they discourage immediate preventive management (such as reduction of stocking rates in droughts) in favour of later remedial works, because remedial works attract a deduction and can be postponed to a high income year;
- . they do not assist landholders who are in a poverty trap - who cannot afford to take present action which will protect their future income and the capital value of their property;
- . they are a windfall payment to those, generally on higher incomes, or companies who would have taken the action anyway, whether for land protection or other purposes, and could afford to do so;
- . they do not address the problem of landholders not recognising that land degradation affects their land, so expenditure is likely to take place only when degradation has reached an advanced stage; for example, the provisions of section 75D(1)(f) appear to only allow deduction of expenditure on fencing when there is already existing land degradation, and does not allow deduction of fencing as a purely preventive measure;
- . concessions make degraded properties relatively more attractive to purchasers with high incomes who would be able to claim deductions for remedial work, thereby increasing the relative capital value of degraded properties and distorting the economic signals to landholders who allow their land to degrade;
- . the taxation expenditure has a low multiplier effect in the community, unlike, for example, direct subsidies for

33. Evidence, p.470.

demonstration projects made on the condition that the results will be well publicised; and

the provisions have no application to non-taxpaying landholders, including government bodies.³⁴

5.72 The role of tax provisions and the most appropriate form of taxation incentive to apply to land degradation problems has already been reviewed by the the Australian Bureau of Agricultural and Resource Economics and its predecessor, particularly in the 1985 report on Taxation Measures and Soil Conservation by the then Bureau of Agricultural Economics. The issue was also discussed in a 1986 report by the House of Representatives Standing Committee on Environment and Conservation on Fiscal Measures and the Achievement of Environmental Objectives in the 34th Parliament. That Committee made several recommendations calling for urgent and detailed review of taxation provisions relating to land conservation, tree planting and private forestry. (See appendix 5) In response to that report the Commonwealth stated that:

"There is now clear recognition that all sectors of an economy are closely linked, and that advantages or penalties in one area will spread through the economy and affect other industries. For this reason, an economy wide approach to fiscal policy reform must be adopted. The specific taxation measures proposed by the committee will be subject to ongoing consideration in the context of the general approach adopted by the Government in its tax reforms, of minimising the degree to which the taxation system interferes with the underlying rewards of alternative activities. Introducing new tax incentives would, in the absence of an overwhelming case for a particular concession, be at odds with this approach...(and)...in its latest tax reforms, the Government has retained generous deductibility arrangements for soil and water conservation measures by primary producers. A tax-linked Income Equalisation Deposits Scheme for primary producers will be introduced from 1 July 1989. Details of the scheme are yet to be decided, but it should reduce financial pressures on primary producers to over use their land in low income years."

5.73 The present Committee strongly endorses the recommendations in the report on Fiscal Measures and the Achievement of Environmental Objectives and is disappointed with the Government's response, particularly in the light of the evidence which shows how important the taxation provisions are in encouraging land holders to undertake land protection works. The

34. Department of the Arts, Sport, the Environment, Tourism and Territories, submission p.15.

Commonwealth has recently taken a more positive approach and now appears to have accepted the recommendations of the previous Committee. It has commenced a major review of taxation arrangements relating to the prevention and treatment of land degradation. This review is to be conducted by the Department of Primary Industries and Energy in conjunction with other agencies and will involve the calling for submissions from the public.

5.74 The terms of reference of the review appear to ensure that conservation requirements will be given full consideration and the Committee welcomes this initiative. The Committee remains concerned however at the lack of information about the impact of tax provisions on land degradation and considers that the development of analytical reporting procedures by the Department of the Treasury should be required as a priority in conjunction with the government's review so that such information can be provided on a regular basis. In this regard the Committee considers that it is worth noting that apparently little progress has been made in implementing the findings of the 1986 review by the Economic Planning and Advisory Council into Tax Expenditures in Australia. This review suggested that to assist in a comparable evaluation of tax expenditures and direct outlays, data on tax expenditures should be available on a regular basis by functional classification.³⁵ The paper argued that there is a need for greater transparency of tax expenditure in terms of estimated cost and overall effectiveness. This should assist efforts to rationalise public sector resources, to review and improve public sector programs and to help achieve an appropriate balance between the public and private sectors. The Committee recommends that:

the Department of the Treasury, in conjunction with the Department of Primary Industries and Energy, urgently develop procedures to regularly identify, on a timely basis, the level of expenditure claimed as deductions under tax provisions related to land degradation and the cost to the Commonwealth in terms of tax expenditures.

5.75 It also concerns the Committee that the proposed review of taxation provisions and land degradation has come about only after some delay and that regardless of its findings there may be a further delay before any amendments are made to the taxation provisions. The Department of Primary Industries and Energy stated in relation to a proposed study of taxation provisions that the decisions will be made by the taxation policy officials within the Treasury.³⁶ This may delay developments and the Committee recommends;

the Commonwealth government commit itself to urgently implementing the findings of the review of tax provisions and land degradation by the Department of Primary Industries and Energy without further recourse to another detailed review.

35. Economic Planning Advisory Council *Tax Expenditures in Australia* Council Paper No.13, 1986.

36. Evidence, p.656.

e) Rural Policies

5.76 Although tax provisions are seen as potentially powerful tools at the disposal of the government to encourage land managers to take up land conservation measures, they are limited and other policies may be more relevant, particularly for land owners who do not pay tax. The Department of Primary Industries and Energy outlined the impact of some general rural policies including those which could also be used to provide assistance and incentives.³⁷ They discussed fertiliser subsidies, the Rural Adjustment Scheme, tariff policy on agricultural inputs and Income Equalisation Deposits among other programs.

5.77 It was suggested that the provision of fertiliser subsidies in the past has made it more profitable for landholders to substitute fertilisers for soil nutrients lost through erosion, rather than to undertake soil conservation measures. The subsidy is now a minor proportion of the unit price of fertiliser and its impact in this regard is now less pronounced. Nevertheless over-use of fertilisers contributes to acidification of soils and eutrophication of water resources and the Committee considers that general fertiliser subsidies should not be available.

5.78 The Rural Adjustment Scheme includes financial support for concessional loan schemes which have the capacity to improve farm viability through increased farm size or through improvements. It also provides grants to landholders suffering hardship to assist them to leave the rural industry and re-establish elsewhere. The Department stated that although empirical evidence is not available, it has frequently been suggested that financial difficulties and/or small farm size results in excessive pressure on the land. The Scheme therefore has some potential to alleviate land degradation according to the Department.

5.79 In relation to tariffs the Department said that conservation farming practices usually include the use of chemicals and machinery but the tariffs on these goods add to farmer costs which therefore affects their ability to invest in conservation management. This is a disincentive to the usage of herbicides, which are used to replace cultivation and bare fallow practices.

5.80 The Department advised that originally the Income Equalisation Deposits were tax deductible and were only regarded as taxable income during the year of withdrawal. In 1983 tax deductibility on these deposits was removed, but interest rates were raised to two percentage points above the short-term bank rate. This scheme provided a means of evening out farm incomes, allowing farmers to extend their planning horizons. With greater income certainty, their commitment to soil conservation measures was, according to the Department, presumably enhanced. The

37. The Department of Primary Industries and Energy, submission p 10

revised scheme to apply from 1989/90 may be useful in relieving some of the pressures which contribute to land degradation.

5.81 The South Australian government and the Queensland Cattlemen's Union both saw potential for the Income Equalisation Scheme to be used as a land degradation measure. Representatives of the South Australian government suggested Income Equalisation Deposits could be put away for soil conservation works.³⁸ The discussion paper on a proposal to establish land care programs for Australian agriculture circulated by the Queensland Cattlemen's Union in 1988 suggested that the assistance measures which are in place now should be expanded to include Income Equalisation Deposits and tax credits. The paper stated that the Income Equalisation Deposits in their original form were a very useful tool for rural producers to stabilise incomes and to allow for fluctuations caused by vagaries of seasons and markets. The importance of enabling producers to plan in the long term for their land care programs and expenditures was also recognised and the use of Income Equalisation Deposits was seen as facilitating farm planning.³⁹

5.82 The United Farmers and Stockowners Association of South Australia identified the Rural Adjustment Scheme as another program that could potentially be used as a land degradation measure. The Association suggested that the Scheme could be broadened so that special finance might be available to farmers undertaking projects deemed to be in the public interest including soil conservation and reclamation work. The potential of the scheme to be used to provide modified drought assistance, at least as an interim measure, has already been recognised by the Drought Policy Review Task Force.

5.83 It appears that both the Income Equalisation Deposit provisions and the Rural Adjustment Scheme could, with appropriate modification, be used to encourage land holders to adopt more conservative agriculture and undertake soil protection and rehabilitation works. The potential of these programs requires further investigation in the same way that the Department of Primary Industries and Energy is currently reviewing the taxation provisions in relation to land degradation. When the Department completes the current review and reports to the Minister it should then be able to undertake a further review of these other two programs. The Committee therefore recommends that:

the Department of Primary Industries and Energy undertake a detailed review of the provisions of the Rural Adjustment Scheme and the Income Equalisation Deposits Scheme in relation to land degradation with a view to using these programs, modified where necessary, to provide incentives to land owners to carry out soil conservation and rehabilitation projects;

38. Evidence p 245

39. Queensland Cattlemen's Union, *A proposal to establish land care programmes for Australian Agriculture discussion paper* March 1988.

- . this review be carried out in the same way and with similar terms of reference to the review of taxation provisions; and
- . the Commonwealth government commit itself to implementing the findings of the Departmental review as a matter of urgency.

State Programs

5.84 Each of the States has a range of policies and programs in place to deal with the particular problems they confront. Unlike the Commonwealth which is able to frame its programs in a more general way the States, as the level of government most directly involved in land management, are required to develop specific programs. In some cases these programs are sub-units developed under the auspices of broad policies. One of the most structured approaches is that adopted by the Victorian government which described eight Key Strategies, two general state approaches to land protection underpinned by two incentive schemes, and eight specific land protection programs. All of these elements to the Victorian approach are listed in Table 5.1.

5.85 The two general Victorian approaches to land protection are LandCare and Catchment Management. The purpose of the LandCare program is to encourage self-managed groups of landholders to co-operate in carrying out the locally applicable range of land protection measures. The approach has received strong support from landowners, government and the Victorian Farmers' Federation and approximately 40 groups had been formed. The catchment management approach seeks to integrate under a Catchment Co-ordination Group the activities of River Management Authorities, landholders and land protection agencies to achieve co-ordinated river and land management.

5.86 The underpinning incentives schemes are the Land Protection Incentive Scheme and the River Management Grant. The Land Protection Incentive Scheme offers incentives to landholders to undertake a range of land protection measures. Incentives are available both to LandCare group members and to individual landholders. Approximately \$1m of grants were approved in 1987-88. The Rivers Management Grants are available to assist river management authorities and additional funds are available to municipalities, and landholders working in association with those authorities.

TABLE 5.1

VICTORIAN GOVERNMENT LAND PROTECTION PROGRAMS

Key Strategies	State Conservation Strategy State Salinity Strategy State Waterway Management Timber Industry Strategy Flora and Fauna Guarantee Wetlands Program Regional Water Management Strategies Murray Darling Basin Salinity and Drainage Strategy
General State Programs	LandCare - Land Protection Incentive Scheme Catchment Management - Rivers Management Grants
Specific State Programs	Soil Conservation Salinity Tree Growing Habitat/Landscape Acidification, Compaction River erosion Water Quality Pest Plant and Animal Control

5.87 The other States operate similar programs to Victoria and these are variously developed under broad principles and policies. With the exception of Tasmania, the States also operate specific legislation to deal with aspects of land degradation. The South Australian government, for example, discussed four pieces of State legislation in its submission:

- . the Soil Conservation Act;
- . the Pastoral Act;
- . the Native Vegetation Act; and
- . the Planning Act.

5.88 The Victorian programs and the South Australian legislation exemplify the range of legislation, policies and programs that can be in force in the States at any one time. All of the States and Territories which made submissions to the Committee, either listed several such programs or discussed the different roles played by the different agencies involved in administering land degradation management policies. The States

and Territories found that they need procedures to facilitate the development of priorities and to provide for co-operation and co-ordination. The requirement is particularly evident in New South Wales where there is a division of responsibilities between the Department of Agriculture and a separate Soil Conservation Service. This separation of responsibility is, according to the Soil Conservation Service, most beneficial and the Service submitted that:

"...the effectiveness of many policies, programs and practices is at a high level in New South Wales, due mainly to the existence of an autonomous Soil Conservation Service to promote and implement them..."⁴⁰

5.89 The Soil Conservation Service pointed out however that one of the factors which tended to dilute the effectiveness of the State's programs was the "... need to integrate activities of many departments and organisations." Representatives of the Victorian government discussed the experience in that State where departments had been amalgamated and stated that:

"...there are pluses and minuses in that system ... (of a separate soil conservation Service)... At one time I might have said yes, a separate soil conservation authority gives you that clear focus on matters to do with erosion control; it is less clear on matters such as acidification and soil compaction, but at least it gives you that clear focus on matters to do with soil. I think two factors have become more apparent with amalgamation. One has been the amalgamation, within a particular department, ... of soil interests and a range of public land interests. The second is that over the period that amalgamation has taken place, there has been a far greater interaction between departments in Victoria - natural resource departments certainly - than has happened previously ... a separate soil organisation might give you a clearer focus on matters to do with soil but ... what really is important is this question of interaction. The land care process emphasises that approach, in that it ties together all the matters of soil, vermin and noxious weeds, tree planting, habitats, productivity and water - you have to look at things together."⁴¹

5.90 The Committee did not consider the arguments about the alternative administrative arrangements available to the States nor does it consider that it should specifically evaluate and compare the State programs. However, it does consider that the

40. Evidence, p.360.

41. Evidence, p.360.

array of legislation, programs and administering agencies in the States means that the question of integration and co-ordination needs to be examined especially where the Commonwealth's actions impose another layer of complexity.

Co-ordination and integration

5.91 The Department of Primary Industries and Energy stated that soil conservation had suffered through inadequate co-ordination between the dozen or more land management departments in each government.⁴² The National Farmers' Federation was also concerned about the lack of co-ordination, particularly between the Commonwealth and the States and said in evidence that:

"...there quite obviously has been lack of co-ordination between the Commonwealth and the States. The States have been apprehensive about the Commonwealth coming in over the top. The issue of States' rights has been a difficult one ... there has been jealousy, occasionally amounting to internecine warfare, between various Federal departments and State departments. For instance, we can see it at the moment in the tensions which exist between the Department of Primary Industries and Energy and the Department of the Environment. ...There has been lack of co-ordination also at State level between the various departments of agriculture, the departments of lands where they exist, the departments of the environment, where they exist; so it has been a hodgepodge of people all making very constructive efforts but not coming together for a co-ordinated push."⁴³

5.92 Greening Australia identified specific problems associated with this lack of co-ordination and commented that:

"The programs the Commonwealth has going, of course are complemented by the ones in the States. There are various State programs... in Victoria there is now a Landcare program, a salinity program, a tree Victoria program - all operating in much the same area. But the lack of co-ordination between them allows people to jump from one program to another and double up on them. ... We now have a new Commonwealth land care program which does not involve Greening Australia at all, despite our efforts and our offers to assist in the development and implementation of it... All of these programs are built around a group of departments or a group of public servants who

42. The Department of Primary Industries and Energy, submission p 18

43. Evidence, p.554.

have their own little empires that they wish to maintain. That is a severe barrier because it means that we have a multitude of programs... The problem we had with Greening Australia and the NTP was that there were two streams, both under-resourced, but both being effective. Pooling the resource eliminated confusion and made them more effective. It seems to me that there is a lot more scope for merging some of the programs, between the States and the Commonwealth. By pooling the resources the confusion should be eliminated, as should the paperwork for the individual farmers or groups, making them more effective."⁴⁴

5.93 Potential for similar confusion and duplication was seen in Tasmania as described by Professor Ferguson of Melbourne University when he stated:

"I can give you a particular example there that I have had some contact with in recent times in Tasmania, in conducting a review of private forestry for the private forestry council. It became apparent that there are at least two programs of grants available - highly desirable programs. One is the soil management assistance scheme, which is administered by the Department of Agriculture; the other is the amenity forestry assistance scheme which is administered by the Forestry Commission. There is a risk that those two operating independently are going to result in double dipping or confusion. Having them operating independently does not seem particularly sensible."⁴⁵

5.94 Professor Ferguson recommended in his review that applicants for assistance be required to prepare whole farm plans so that there could be some co-ordination across the lines of funding. The suggestion that certain preconditions, such as a whole farm planning exercise, be required for participation in government funded programs is discussed in the next chapter. In most of the evidence before the Committee this question of cross compliance was raised as a means of achieving soil conservation goals generally. The Committee agrees with Professor Ferguson that it might also be useful in encouraging co-ordination.

5.95 The Commonwealth's programs were criticised by the Victorian State government as being too narrow in focus and contrary to the approach that recognises that land conservation

44. Evidence, p.584.

45. Evidence, p.413.

programs are multi-disciplinary, the governments representatives observed that:

"...there is a tendency within the Commonwealth and within the State to look at the separate lines of endeavour rather than to look at them jointly. So where programs such as a national soil conservation program advertise the availability of funds for particular purposes, the first tendency is to think along the direct line with regard to a specific purpose rather than with regard to its interactions. I think the majority of the projects that get up are probably a result of that process, thinking along that one line, rather than looking at how we can best use that money in interaction in a particular location."⁴⁶

5.96 The specific problems the Victorian government had with Commonwealth programs were outlined in their submission as follows.

- . Individually funded projects provide substantial technical and capital assistance. They have considerable catalytic, innovative and motivational value. However a striking feature is the relative dissociation of one program from another.
- . Current projects are generally a reaction to individual needs rather than a response to a grand plan or overall strategy.
- . The degree to which some projects, for example of a research nature, are duplicated between States can be questioned.
- . Current projects are biased towards technical rather than social or administrative solutions.
- . The programs are insufficiently broad in scope, as they do not address aspects of land degradation, such as deterioration of habitat and landscape values or the presence of incursive factors such as rabbit and weed infestation.
- . By default of a long term plan, they may be insufficiently forward looking in that they do not address the prospects of increasing atmospheric change such as the depletion of the ozone layer and the "greenhouse effect."

46. Evidence, p.385.

5.97 The range of programs also makes it difficult to evaluate the overall adequacy of the effort that is being made and the Australian Conservation Council observed:

"...There definitely needs to be a review of the way the programs are funded at the moment. It is very confusing. it is very difficult to see how much money is given to land degradation across a whole variety of programs. I tried to get that sort of information and found it extremely difficult. I do not know whether that would be solved by bringing them under one program but I think a more co-ordinated approach is necessary. I am not convinced that, say, bringing it all under a national soil conservation or Landcare program would be that effective. Probably they need to be still separate but much more co-ordinated, and information needs to be exchanged much more readily than it is at the moment."⁴⁷

5.98 The Commonwealth has taken steps to improve co-ordination of its programs by integrating the administration of land degradation policies within the Department of Primary Industries and Energy and the Prime Minister has announced that a Landcare Liaison Group will be established. The Department advised the Committee that the Landcare Liaison Group will be composed of representatives of CSIRO, the Department of Primary Industries and Energy and the Department of Arts, Sport, the Environment, Tourism and Territories, to ensure co-ordinated policies and programs. The Group's terms of reference and membership were being developed and it was expected that they would be submitted to Ministers for consideration late in October, with the first meeting to be convened in November 1989.

5.99 The Committee considers that the Commonwealth's proposed Landcare Liaison Group may help integrate Commonwealth activities but it remains concerned that there is confusion, duplication, competing objectives and a need for much more co-ordination and integration to make the land conservation programs both more effective and efficient. This need is a priority given the magnitude of the problem and the comparatively scarce resources that are available to governments. Other inquiries have unsuccessfully called for the development of a national land use policy and a national inter-governmental land use consultative council which would facilitate this co-ordination. The large number of agencies involved in land management and the constitutional allocation of powers has mitigated against these

47. Evidence, p.398.

developments. The Committee considers that the place to begin increased co-ordination, without diminishing the responsibilities of any of the agencies or levels of government involved, would be multilateral discussion. The Committee recommends that:

The Commonwealth government, early in the Decade of Soil Conservation, convene a conference of all levels of government, representatives of primary producers and the conservation movement to discuss the co-ordination and integration of all programs which impact on land degradation prevention and repair.

5.100 One way to increase co-ordination and integration of programs would be to expand the scope of the National Soil Conservation Program which has mainly been used to fund projects and research related to only a part of the range of land degradation problems. The National Soil Conservation Program could be further developed as a National Land Conservation Program incorporating most, if not all, Commonwealth programs related to land degradation. The administrative unit within the Department of Primary Industries and Energy, which manages soil conservation policies and programs, could also be correspondingly expanded with the necessary inputs from other Commonwealth policy areas provided through the Landcare Liaison Group. The Committee recommends that:

the Commonwealth consider expanding the National Soil Conservation Program to become the National Land Conservation Program with the objective of integrating all Commonwealth land degradation policies and programs.

6. ESSENTIAL ELEMENTS OF A COMPREHENSIVE APPROACH TO LAND DEGRADATION

Important principles underlying program development

6.1 The Committee believes that the recommendations it has made in the preceding chapters will, if implemented, enhance the effectiveness and efficiency of programs to overcome land degradation. The Committee found from the evidence available to it, and from its inspections and informal discussions around the country that there are a number of important principles which need to be considered when programs are being developed and implemented. It is the view of the Committee that if these principles are taken into account the programs are more likely to be successful particularly when those programs have goals such as ensuring that all land is used within its long term sustainable capacity.

6.2 The need to ensure that land use does not exceed the capability of the land is one of the most important principles and cannot be over emphasised (the need for land capability assessment has already been discussed in Chapter 4 above). The need for this restraint on land use was stressed in the submission made by the Soil and Water Conservation Association of Australia which emphasised the importance of ecological principles;

"The decision to use and manage land in a particular way should be based on what is economically worthwhile, socially acceptable and ecologically sustainable. While an integration of these choices is necessary in solving land use problems the fundamental choice must be the ecological one, so that a particular type of land use will not result in destruction, irreversibility or non-sustainability. The use of land in an ecologically responsible way is synonymous with using it within its capability ... This may mean taking some lands out of existing use because they are not capable of sustainable productivity/utility. Using land within its capability involves use of rational land management practices, soil conservation structural measures where necessary, and retention, regeneration and re-planting of trees"¹

1. Soil and Water Conservation Association of Australia, Submission p.3.

6.3 Any successful initiative directed at using land within its capability will, in the words of the Australian Society of Soil Science

"... require conscious voluntary action by a large number of individual landholders and land users, so that motivation of communities to act in concert for individual and community benefit is likely to be the most effective means."²

6.4 A second principle which the Committee believes is basic to the solution to land degradation problems is that the success of any program will ultimately depend on the actions of individual land owners. The strategy that the Department of Primary Industries and Energy is developing is based on the premise that whether land management leads either to an improvement in the land or further degradation depends to a large extent on the decisions of the individual land-holders.³ This principle is also recognised by the States and in Western Australia is evidenced by attempts to move towards the establishment of soil conservation district committees in all districts by the end of the decade. This approach has also been adopted in South Australia where:

"... the (Soil Conservation Act) ... originally set up very much a community approach towards soil conservation throughout soil conservation boards. The soil conservation board numbers have expanded in the last year ... that has provided very much a community-based approach towards soil conservation because it is really the people on the ground that we need to influence, the land managers, to make any changes if we are going to make more progress in soil conservation. In some of those areas, which were first established for wind and water erosion, quite a significant change has occurred since the 1930's by the introduction of that legislation and that approach."⁴

6.5 Although the Committee agrees that significant local "ownership" of programs is required it does not consider that this can be used as an argument for reduced government involvement. The Soil and Water Conservation Association of Australia suggested that:

"While land users have the responsibility of preventing land degradation, the community generally, including government, is responsible to ensure that both control and

2. Australian Society of Soil Science, Submission, p.4.

3. Evidence, p.628.

4. Evidence, p.241.

prevention of land degradation are undertaken and achieved effectively and economically. Nation-wide actions, initiatives and policies are required, including incentives and disincentives..."⁵

6.6 Such involvement is necessary to provide the assistance and incentives which are required if land owners are to tackle the enormous land degradation problems which Australia faces and to ensure that the community's requirements are met. This places a particular demand on governments as outlined by the chairman of the Western Australian Soil Conservation Advisory Committee:

"...community involvement, although it is an efficient and effective way to tackle land degradation, requires significant resources in terms of co-ordination, training and technical support."⁶

6.7 The Victorian government saw a refinement in terms of general government support and criticised Commonwealth programs for failing to accept the principle of direct incentives to land managers.⁷ They argued that in considering programs, such as the National Soil Conservation Program, due balance must be made in Commonwealth assistance between the funds put into persuading land managers to do works and in providing direct assistance which actually enables them to do those works.

6.8 Another question which was raised with the Committee was whether it was better to use incentives or regulation to either encourage or require land holders to change their management. Most States have regulations and legislation which provide penalties for land owners who act contrary to certain land degradation prevention standards. In general the submissions made to the Committee did not call for these penalties to be extended or increased, although some submissions did refer to the detrimental consequences of inadequate enforcement of these provisions.

6.9 During its inspections the Committee saw several examples where land owners, either individually or in local groups, sought information, assistance and support to introduce soil conservation measures and they had done so with little or no encouragement. One of the most powerful forces operating in rural communities appears to be peer group pressure which, if combined with the undoubtedly growing awareness and concern about land degradation, can be a significant factor for change. The Committee considers that it is much less likely that change in attitudes and land management practices will occur if a heavy handed regulatory approach is adopted. Such an approach might yield some results in the short term but in the long run it will

5. Soil and Water Conservation Association, Submission, p.3.
6. Soil Conservation Advisory Committee (WA), Submission p.3.
7. Evidence p 351

be more efficient and effective if there is a fundamental change in approach brought about through better awareness and understanding. Legislation is also more likely to be effective if it emphasises programs of positive action and establishes assistance schemes rather than relying on standards with penalties for non compliance.

6.10 There are problems associated with soil conservation legislation because it is difficult to measure rates of land degradation objectively, particularly in its early stages and in its more insidious forms. Where degradation can be measured, it is difficult in many cases to attribute it to a particular person on whom obligations can be imposed. In practice legislation has aimed at reducing the rate or extent of land degradation indirectly by prohibiting practices which were likely to lead to degradation rather than directly prohibiting high rates of soil loss or degradation as such. The Department of the Arts, Sport, the Environment, Tourism and Territories suggested that if legislation imposing more general obligations on landholders was thought to be warranted, then one approach would be to set out the desired result as clearly as possible and require landholders to adopt the best practical means to achieve it. Such legislation should provide for civil actions and remedies to be available to interested parties so that communities themselves could be responsible for enforcing the legislated standard, rather than relying on official government action.⁸

6.11 There may be a need for legislation in only a few extreme cases. The Department of Primary Industries and Energy suggested that:

"...recalcitrant or unwilling landholders are only a tiny minority. The law is inappropriate for those who are willing but unable to change."⁹

6.12 The National Farmers' Federation also doubted the need for the frequent application of legislation and suggested that:

"...there is going to be more than enough work to do for the next five, six, seven, eight years. I think it is going to take that long before the States and the Commonwealth can even keep up with the demand for services. So, within that time period, there is more than enough work to do with people who want to co-operate - and my estimation would be that probably 80 or 90 per cent of farmers want to co-operate. The other 10 per cent or 5 per cent or 3 per cent, or however much it might be, who are initially reluctant will be drawn in over a period of time for three reasons: firstly, because they will not be able to get the incentives; secondly, because of a degree

8. Department of the Arts, Sport, the Environment, Tourism and Territories, Submission, p.12.

9. Department of Primary Industries and Energy, p.7.

of peer group pressure - and we have seen that work very effectively, for instance, in the TB and brucellosis eradication campaign; and, thirdly, because the benefits will be discernible from the work that their neighbours have done. That is why I have some problems with people who say, 'How do you coerce people in the first instance into co-operation?'. I do not think that coercion is either practical or, indeed, will be necessary, because we are looking a time scale - five to 10 years down the track - before we will even be able to keep up with the demand."¹⁰

6.13 The need for regulation and legislative back up to land degradation will remain, and the States may have to be more active in the enforcement of this legislation, particularly in the near future, until the need for land use based on land capability is universally accepted. This view was put by the Soil and Water Conservation Association of Australia:

"Until such time as the whole community accepts the need for stewardship and adopts a land conservation ethic - a utopian objective regrettably not likely to be achieved in the short term - it is necessary to use the "stick", where the "carrot" doesn't work. Where government services are available, such as the extension and advisory services currently provided by all States and Territories, it is essential that they are backed up by legislation.

Existing legislation needs to be continually updated and strengthened to ensure that all types of land degradation are controlled and prevented regardless of the type of land use. Traditionally legislation has been aimed at land degradation associated with primary production, and has mostly covered soil erosion, without consideration of other forms of degradation. For example, regulations are essential universally to prevent tree destruction on lands incapable of sustainable productivity/utility if cleared, or if such clearing would cause salinity problems further down in the catchment area."¹¹

6.14 The Committee agrees that it will be necessary for the States to give continuing attention to their legislation and regulations. It also believes that, if the currently prevailing mood of apparent optimism and awareness of the need to finally come to grips with our land degradation problem does not

10. Evidence, p.563.

11. Soil and Water Conservation Association of Australia, Submission p.5.

translate into tangible progress, then it may become necessary for the States to adopt a more stringent attitude towards the enforcement of legislative measures. Towards the end of the proposed Decade of Soil Conservation would be a good time to take stock of the matter. In the meantime the Committee considers that the principle of land owner participation in land degradation projects will be advanced most if legislative sanctions are used as a measure of last resort.

6.15 A positive way to proceed would be for the State authorities to develop codes of practice for the various land uses in the regions under their jurisdiction, in consultation with farmers' associations and the conservation movement. The Committee sees this as primarily a task for the States but the Commonwealth could assist the process through its involvement in public awareness and research programs. The Commonwealth itself could adopt standards which it requires to be met before it contributes funds to a project, or it could require the States to adopt codes of practice as a prerequisite to receiving Commonwealth assistance. Such requirements would take time to implement but would be a logical development following the adoption of the National Soil Conservation Strategy. The Committee recommends that:

- . the Commonwealth initiate discussion through the Australian Soil Conservation Council and the Australian Agricultural Council on the development and adoption of land use codes of practice commensurate with the National Soil Conservation Strategy; and
- . that compliance with these codes be a requirement for Commonwealth involvement in any project.

6.16 With the principles discussed in this section in mind the Committee considers that there are several approaches which are essential ingredients of any overall future program and additional to the measures discussed in preceding chapters. These elements are discussed in the remainder of this chapter.

Additional elements required for a comprehensive program

a) The role of trees

6.17 One of the major mechanisms that has contributed to the degradation of Australian landscapes has been the clearing of native vegetation cover, particularly trees. According to the Institute of Foresters of Australia tree loss has been at the core of almost every aspect of land degradation in Australia and tree replacement will be essential if we are to redevelop the

fertility of many of our degraded soils and maintain sustainable systems of agriculture. The reason why trees are so important is that they play a vital role in the formation of Australian soils and influence soil erosion, fertility decline, salting and acidity.¹² The Institute's explanation of the role of trees is reproduced in Appendix 7.

6.18 The recent discussion paper on " Regreening Australia " by Dr Eckersley of the CSIRO proposed a most ambitious tree planting and reforestation program. The primary objective of the proposed program:

"...is to halt and reverse land degradation and so contribute to the development of sustainable farming systems in Australia. Apart from reducing soil erosion and salinity, and improving soil structure and fertility, 'regreening Australia' through large-scale revegetation and reforestation would also provide a public focus for a broader land restoration campaign that embraced a range of other necessary programs, including changes to farm management and land use. A national program based on this concept would also help to promote greater public awareness of the value of the substantial, although fragmented and still inadequate, efforts that are already being made to counter degradation of our land and water."¹³

6.19 Dr Eckersley acknowledges that his proposal is very costly but given the benefits including the potential direct economic returns he sees a role for private commercial funding for at least part of his proposal. The Commonwealth has already recognised the importance of reforestation and tree planting on a large scale and has initiated the One Billion Tree Program. The Committee believes that Dr Eckersley's proposal contains the breadth and depth of vision necessary to provide solutions to Australia's land degradation problems and therefore considers that a serious effort should be made to bring this plan into being. The One Billion Trees Program could be the spring board to achieving this and the Committee recommends:

the Commonwealth convene a reforestation working group to evaluate the CSIRO paper on Regreening Australia and to identify ways in which the reforestation program proposed in the paper can be implemented.

6.20 The Committee considers that the working party should be broadly based with representatives of the Department of Primary Industries and Energy, the Department of the Arts, Sport, the Environment, Tourism and Territories, CSIRO, the Institute of Foresters of Australia, farming and conservation groups and the

12. Institute of Foresters of Australia, Submission, p.10.

13. Eckersley, p.v.

States. If this arrangement proves unworkable then the Department of Primary Industries and Energy should bring together a representative and expert core group to work under the general direction of the larger group acting as a steering committee.

6.21 The Institute of Foresters proposed that agroforestry should be investigated and encouraged in certain areas. The Institute was referring to a form of forestry, called agroforestry, which combines agriculture and forestry in different ways. It is a type of farming in which trees are grown in combination with agricultural crops and domestic animals. The Institute considered that it is an essential concept in developing a new and sustainable system of agriculture. The term 'agroforestry' has been interpreted in various ways in different parts of Australia. While the term is sometimes used in a narrow sense as the simultaneous cropping of trees and grass on a finite unit of land, the Institute discusses it in a broader sense and sees it as the use of trees in land management to achieve a number of objectives. Trees might be planted and managed:

- . to provide shade and shelter from wind;
- . to prevent soil erosion or stabilise earthworks designed to conserve soils;
- . to cycle nutrients and thereby rebuild soil fertility or limit soil acidification;
- . to provide crops for energy production;
- . to maintain habitat for wildlife; and
- . to provide commercial wood production.

6.22 Under an agroforestry system, tree establishment might be designed to meet as many of these objectives as the landowners require and to maintain an appropriate balance between trees, grass, agricultural crops and grazing animals. There is no inference that agroforestry means that all rural land be covered with trees but this special form of forestry does call for a new way of looking at rural land, including ways which will assist rural landholders to solve Australia's land degradation problems.

6.23 The Institute suggests that in general terms landholders adopting forestry can benefit in many tangible ways - ranging from short term economic gain to long term capital and conservation returns. Farmers can achieve substantial income, capital and conservation gains by placing large areas of their farms under trees (from 10 to 25 per cent). These benefits may be derived from shade and shelter belt plantings, wind breaks, woodlots and specialised plantations, intercropping of trees and grass, fodder tree plantings, and planting for aesthetic and conservation purposes such as lane ways and wildlife corridors.

Through forestry, farmers can attain sustainable agricultural systems that are stable and cyclic such as exist in natural ecosystems. Such systems must be productive yet conservative in resource use. Whole-farm planning to include trees is fundamental in achieving this aim.

6.24 The short term gains (5-7 years) which, according to the Institute, are already proven include:

- . increased livestock production on farmland where up to 10 per cent of grazing land has been devoted to windbreaks and shelterbelts;
- . availability of an additional 50 per cent of usable fodder on the same area through supplementary grazing of palatable tree species, this will be particularly useful when made available during stress periods such as late winter or late summer; and
- . up to 25 per cent increased crop production on arable land and increased vegetable and fruit production.

6.25 In the medium term (10-15 years) there are:

- . good economic returns from coppiced fire wood, farm income from thinning woodlots, and greatly improved capital values; and
- . good returns from ground water draw down, increased soil fertility, reduced loss of surface soil, reduced pest attacks resulting from pest predator build up in shelter belts designed for wildlife conservation.

6.26 In the long term there are substantial capital gains to be made from investments in trees, these are:

- . improved capital valuations on properties;
- . commercial timber harvesting of both common and specialised timber;
- . reduction in soil acidification, increased soil fertility and reduced fertiliser costs;
- . reduced costs of erosion control; and
- . declining water tables in saline areas.

6.27 The Institute considers that agroforestry may not be readily accepted and there is a need to convince landholders that forestry will help sustain agricultural production for the long term. If this is to be done agroforestry systems must be devised which will either be profitable or can be implemented at comparatively low cost. The onus of proof that land

rehabilitation can be achieved through the application of forestry systems lies not with landholders but with government. If government fails in that task yet another generation of landholders will have been forced to continue with their present treeless agricultural practices. It is the view of the Institute of Foresters of Australia that neither punitive nor encouraging legislation is likely to be successful in the attack on land degradation. Rather the answer lies, in large measure, in the acceptance of agroforestry systems by landholders, and strategies for surmounting barriers to its implementation. Communication, research education and extension will be at the heart of these strategies.

6.28 While the Institute of Foresters recognises that attitudes to current land management have been changing slowly in Australia, it believes much more must be done to create a social environment within which the seriousness of the problem and the magnitude of the task can be addressed. The Institute recognises that the National Soil Conservation Program, the National Tree Program, the National Afforestation Program, Greening Australia, whole-farm planning and the work of many landholders throughout the country, have begun to develop new directions in rural land management. However the Institute considered that new initiatives by governments and communities are now needed to build upon this base. The Institute of Foresters saw the most important needs being met by:

- . projecting and evaluating the role of trees in land rehabilitation;
- . researching tree-based land management systems; and
- . educating a new generation of land managers.

6.29 There is a particular need for research into agroforestry but this is one of the areas identified by Professor Ferguson as at risk of being over looked because it was essentially multi-disciplinary in nature and out side of the normally single discipline funding channels. (see the discussion in Chapter 4) The need for such research was also supported by the Institute for Tropical Rainforest Studies who suggested:

"larger and more commercial tracts of land could be devoted on the wet tropical coast to agroforestry without completely excluding farming activities, whilst at the same time protecting and ameliorating the previously degraded environment ... however ... we do not know at this stage what are the quantitative impacts of such rehabilitation measures on the biophysical aspects of the environment, for example, runoff, erosion, improvement in soil

condition, improvement in forest or crop productivity and recovery of wildlife. These are the issues that this Institute has recognised as urgent priorities in research"

6.30 The Committee sees merit in the Institute of Foresters of Australia's proposal and considers that agroforestry could have significant land degradation benefits in particular applications. This matter requires further investigation and much more widespread field testing but, as discussed in Chapter four, there are problems involved in funding agroforestry research. Therefore there needs to be more promotion of the concept and the Committee recommends that:

the proposed reforestation working party as a priority task investigate and develop ways to promote agroforestry.

b) Whole farm planning

6.31 The practical outcome of land degradation programs should be changes in the land use practices of individual land managers. This should be reflected in the preparation and implementation of farm plans incorporating conservation farming principles and land protection measures. A whole farm approach to farm planning provides the opportunity to bring together many of the various aspects that can contribute to sustainable farming. Early attempts in Victoria by the Potter Farmland Plan Project, to demonstrate how land degradation could be tackled through farm planning and appropriate land management, revealed that the information available to assist farm planning was fragmented and incomplete. According to Professor Ferguson this reflected the relatively recent recognition of the pervasive distribution and severity of land degradation problems, rather than intrinsic weakness in past research. Substantial gaps were identified in the knowledge of the inter-relationships involved between conventional farming practices and measures to combat land degradation, and of the benefits to be derived from those counter-measures.

6.32 Farm planning is not a new technique in Australia and the New South Wales Soil Conservation Commission has operated a farm planning scheme since 1957. This scheme, which is similar to those operated by government agencies in other States and to commercial services available from agricultural consultants and advisory bureaux, involves the preparation of plans by an experienced soil conservation officer in consultation with the land owner. The plans provide guidance for the planning of capital investments, including soil conservation earthworks, paddock subdivision, water supply, roads, yards and routine farm

operations. Further, the plans assist in farm management decisions such as crop rotations, fertiliser usage, grazing management and fodder conservation practices, thereby becoming an aid to farm budgeting.¹⁴

6.33 A review of the impact of the New South Wales Soil Conservation scheme concluded that only 40 per cent of the earthworks planned had been completed and that 17 per cent of the farms planned had not carried out any of the planned works. Of the farms which had undertaken earthworks significant variations to the works planned occurred in 35 per cent of cases. Financial constraints were the principal reason for landholders not implementing planned works. A further reason which was ranked high was the lack of follow up by the soil conservationists to arrange, survey or implement earthworks to ensure a more satisfactory level of adoption. Generally landholders demonstrated a poor understanding of the farm planning concept. There was a strong need to provide follow-up liaison with the landholder to maintain continued interest and adequate progress with implementation of the plan. The review suggested that farm planning needed to be developed with a greater level of participation and involvement by landholders to achieve better understanding and 'ownership' of the plan. It was found that farm plans needed to be developed in a way that encouraged additional inputs from other disciplines such as agronomists, foresters, wildlife authorities, economists or accountants. The study also found that additional information requested by land owners included more advice on windbreaks, shelterbelts and tree planting.¹⁵

6.34 The joint National Farmers' Federation and Australian Conservation Council submission to the Commonwealth on a National Land Management Program proposed that:

"There is a need to develop individual property plans for each agricultural property. Past and present planning activity must be reviewed in order to arrive at a suitable definition of a plan and approval criteria.

- (i) Property plans have already been developed in some areas. Priority areas in this initiative should be identified by the States.
- (ii) The cost of each plan will vary. NSW experience suggests the cost will be in the range of \$1,000 to \$2,000 per property. However, experience in Victoria suggests plans can be developed more cheaply through short courses for groups of farmers and other innovative approaches.

14. Bob Junor, 1987, *30 years of Farm Planning, Trees and Natural Resources* 29(4), p.2.

15. Junor 1987, p.4.

- (iii) Public and private expertise will be utilised in drawing up plans, but landholders are to be heavily involved to develop a sense of ownership. The initial demand for plans will probably exceed available resources, so priority areas may need to be selected by the States. Planning resources can be expected to expand in response to demand and funding.
- (iv) Each plan is to be consistent with catchment/district guidelines set by the States. Plans are to be approved by the States and to be consistent with the goals of the National Soil Conservation Program.
- (v) There will need to be direct Commonwealth contribution of \$500 towards each plan. Farmers will meet costs which exceed this amount."

6.35 Professor Ferguson and Greening Australia (Tasmania) also specifically called for incentives to encourage and assist farmers to prepare and implement whole farm plans. Given the New South Wales experience, with the low level of application of the provisions of farm plans, the Committee considers that some new approaches to planning and encouraging farmers to make use of their plans is required, before the Commonwealth should commit itself to funding farm planning on a general scale as proposed by the National Farmers' Federation and the Australian Conservation Council.

6.36 The Potter Farmland Plan Project in Victoria aimed to develop and demonstrate whole farm planning. The purpose of the plan was:

- . to show through demonstration farms, the way in which operating farms could be laid out and managed in harmony with the ecology of the land in order to improve production and redress land degradation;
- . to demonstrate a whole farm planning process whereby a farmer could develop an understanding of the social and ecological factors which would enable him to take responsibility for the management of his land for maximum production within the limits of the sustainability of the land; and
- . to demonstrate how the farmer could take responsibility for the decisions involved in the process so that he had a real sense of ownership of the operation.

6.37 This project had what were described as a number of unique features including:

- . the holistic approach to the sustainability of the land which involved the ecological and sociological factors which impinge on the management of farmland;
- . the use of a 'process' rather than a program to ensure that the project was farmer driven;
- . the integration of conservation and production in the pursuit of economically sustainable farming; and
- . the use of locally understandable and appropriate techniques.

6.38 The Committee inspected the project in the western districts of Victoria and although it did not find that the features of the project were necessarily unique it was impressed by the impact that the approach had on the long term viability of the demonstration farms. It was also apparent that the demonstration farms were a most effective means of showing the advantages of the whole farm planning approach to other farmers. A note of caution about such projects was sounded by representatives of the New South Wales government who suggested to the Committee that:

"I think that sponsoring demonstration farms is something that the Commonwealth could consider ... demonstrations are a very powerful extension force. They are expensive and this is why (the Department of Agriculture) does not have or is not in that area as much as it might be ... It is a very useful technique but it is expensive ... demonstration farms certainly showed how you could stop soil erosion, but they did not get their message through to farmers very effectively, mainly because they were funded by governments and most farmers did not think that they were economically feasible. I think farmers are cautious about demonstration farms and think that governments probably are not the best one to run them ... To just have one farm is unlikely to meet the needs of demonstrating all techniques. As well, farmers may have some credibility problem unless farmers are directly involved in that issue ... the committee could consider subsidising farmers on key properties ... and not to set up an individual farm as such. That would allow you to set up an agreement with a farmer

for a period of time to do that work and then it could be reviewed. Of course, that might allow you to then consider a number of these issues distributed across Australia."¹⁶

6.39 The Committee considers that the whole farm planning approach could be a significant element in strategies to prevent and repair land degradation. However, it notes that it will be difficult to achieve wide spread acceptance of this approach unless farmers are provided with good information and technical assistance. It will also be necessary to show farmers the benefits of this approach including the positive economic returns. Government agencies have a role to play in this area but they are not yet necessarily in a position to provide the type of advice which integrates principles from a variety of sources and emphasises both the economic and ecological advantages. Farmers will have to be individually involved through their organisations to ensure that the move towards whole farm planning achieves some credibility in the rural community. There is also scope for organisations like the Potter Farmland Plan and Greening Australia to provide the farmers with advice on farm plans and assistance in the establishment of land care committees. The Committee recommends that:

the Commonwealth through the Australian Soil Conservation Council and the Australian Agricultural Council establish a working group to investigate, in consultation with the farming community, ways and means to develop and promote whole farm planning.

6.40 The Committee also considers that there is scope for the Commonwealth to directly encourage whole farm planning either in the way proposed by the National Farmers' Federation and the Australian Conservation Foundation or by allowing the cost of whole farm planning to be an allowable tax deduction. The Committee recommends that:

the Commonwealth review of the impact of tax provisions on land degradation consider the extension of tax provisions to encourage and assist whole farm planning.

c) Direct assistance

6.41 As discussed above the Victorian government called for the Commonwealth to accept the principle of providing direct assistance to land holders and the Committee received many proposals for specific activities to be directly subsidised. For its part the Victorian government operates a land protection incentive scheme which provides assistance directly to land owners. Some other States operate grants and loan schemes of a similar nature. The South Australian government provides assistance to landholders refused approval to clear native

16. Evidence, p.172.

vegetation, so long as they agree to enter into a Heritage Agreement providing for the on-going management and conservation of the vegetation retained. The assistance available in South Australia takes two forms. Firstly, a payment is made to cover any decline in land value as a result of the controls on vegetation clearing. Secondly, assistance is made available to landholders to fence and manage areas retained from clearance. The availability of funds to provide financial assistance for farmers who have been refused permission to clear is a major concern of the South Australian Government, which advised the Committee that it proposed to approach the Commonwealth for support.¹⁷

6.42 The Western Australian Farmers Federation told the Committee that they had asked the State government to introduce a Conservation Loan Scheme and that the Minister for Agriculture had accepted the concept. The Western Australian Department of Agriculture was drawing up guidelines for a loan scheme to help finance all aspects of soil degradation on the basis of reduced interest rates over a maximum of 20 years. An option of a \$165 per \$1000 "up front" grant was part of the proposal.

6.43 While a loan scheme might be easier to fund, in the long run it might not be beneficial in all situations. The Committee heard at a meeting with representatives of the rural community in Toowoomba that funds for reduced interest rate loans for soil conservation works, made available through the Queensland Industry Development Corporation, were not fully taken up.

6.44 The Committee has already identified economic and financial constraints as one of the most significant factors limiting progress in the prevention and repair of land degradation. Given the apparently overwhelming problems landholders sometime face in addressing land degradation and the substantial benefits that could flow to the community generally from land conservation programs, the Committee concludes that there is a need for the Commonwealth to become more involved in providing direct assistance. To avoid duplication with States or public confusion the Committee considers the Commonwealth should work with those States which have existing programs and encourage the others by offering assistance, mainly through a loan scheme but with provision for grants. The Committee recommends that:

the Commonwealth establish a program to provide funds for grants and subsidised loan schemes operated, and partly funded, by State and Territory authorities for land degradation prevention and repair works.

d) Cross Compliance

6.45 One way to encourage land owners to adopt land conservation practices would be to require that certain land management techniques be implemented before they become eligible

17. South Australian government submission p 37

to receive assistance from the Commonwealth government. Such a requirement is known as a cross compliance provision and the Committee received a number of submissions which called for the introduction of such provisions. The South Australian government submission defined cross compliance as a concept of requiring soil conservation objectives and practices to be included as conditions of approval for farmers to gain financial (loans, tax concessions) and other relief measures available from government sources. The submission suggested that soil conservation land management practices could be included as a required part of rural assistance funding such as carry-on finance and farm build-up as part of disaster relief funding.

6.46 Support for cross compliance provisions was voiced by the National Farmers' Federation who said that incentives for land care should be available only to people who are undertaking an approved land care project.¹⁸ The Queensland Cattleman's Union's discussion paper on a proposal to establish land care programs also called for a system of cross compliance. Both the National Farmers' Federation and the Queensland Cattleman's Union saw the potential for the adoption of cross compliance as a result of increased resources being made available by governments. If this was the case it would also result in an increase in land conservation by individual land holders.

6.47 Greening Australia (Tasmania) made a specific proposal that eventually whole farm planning be a prerequisite for assistance from, or participation in, all government agricultural programs. This proposal and the National Farmers' Federation's approach was criticised by the national manager of Greening Australia who told the Committee that:

"We are rather concerned that the NFF initiative is based on using the farm plans as an administrative tool for disbursement of tax incentives or other programs. Whilst there certainly needs to be some system in place, doing a farm plan for taxation purposes is entirely the wrong reason, so we disagree with its general thrust in that area."¹⁹

6.48 Given the New South Wales' experience of the low level of adoption of farm plans the Committee agrees that plans should not be drawn up primarily because land owners want to manage their land to prevent and repair land degradation. It would be especially counter productive if farm planning or soil conservation in general was seen as a means of "rorting" the system. However there is scope to consider tax provisions in relation to encouraging farm plans and the need to review this was discussed in the preceding section.

18. Evidence, p.562.

19. Evidence, p.576.

6.49 There would be problems involved in introducing a general cross compliance scheme in Australia. A representative of the Department of Primary Industries and Energy stated in relation to the whole farm planning cross compliance proposal that:

"It certainly has desirable factors ... (but) ... we have to look at the practicalities of that in that we have got 170,000 farms in Australia. Those that have a property plan at the moment would be far less than 10,000. If Queensland were to embark on preparing property plans for all its farms, it would take 1,000 person years, which would probably represent a distortion of soil conservation effort in that State..."²⁰

6.50 This does not mean that general cross compliance requirements would be of little value if introduced in Australia. The results of the cross compliance program in the United States of America are quite impressive and suggest that the concept deserves closer scrutiny. The Department of Primary Industries and Energy told the Committee that:

"...the program called the Conservation Reserve Program in the United States is entirely based on the establishment of whole farm plans for conservation measures or planning. It is very active in the sense that the implementation rate of the conservation reserve program has been very rapid. It was only initiated in 1985 on a per farm basis ... The United States of America Department of Agriculture has made it a fundamental aspect of their activities to the extent where they have the entire nation, except for two states, with soil surveys done and computerised. They have now gone with a fully computerised system for their central planning office as well as providing computers to each of the county offices. They will be in a position before 1995, when they have to implement their conservation reserve plans, for any farmer to be able to walk into a county office and be presented with a plan that is drawn off a computer system."²¹

6.51 The Conservation Reserve Program was one of five components of the United States of America's national approach to soil conservation. The other four are the Highly Erodible Land provisions, the Wetlands Conservation provisions, conservation easements related to assistance programs and taxation provision reforms.²² The objective of these provisions was to remove

20. Evidence, p. 659.

21. Evidence, p.662.

22. Information supplied by Dr Gordon Burch, Bureau of Rural Research.

certain incentives for persons to produce agricultural commodities on highly erodible land or converted wetland and thereby to:

- . reduce soil loss due to wind and water erosion;
- . protect the nation's long term capability to produce food and fibre;
- . reduce sedimentation and improve water quality;
- . assist in preserving wetlands; and
- . curb the production of surplus commodities.

6.52 Landowners were required to apply an approved conservation systems on all highly erodible lands used to produce agricultural commodities. Persons who failed to comply with this requirement were denied benefits available under 16 various programs administered by the Department of Agriculture including stabilisation and loans schemes and commodity purchases.

6.53 The scheme is based on an extensive soil survey and assessment of land capability. The Committee agrees that it would be difficult to immediately duplicate this approach in Australia but notes that a representative of the Department of Primary Industries and Energy pointed out that:

"...we have all the basic topographic information ... so to some extent we could, on a fairly broad scale, provide some plans for all farms ... One of the efforts that we are embarking on is to give that technology a bit of a good solid kick along ... the National Resources Information Centre which is all based on these geographic information systems ... is going to enhance that technology in Australia quite substantially and many other organisations are developing quite sophisticated geographic information systems." 23

6.54 The Committee saw evidence of the potential of this technology when it inspected the Landsat facility and the Central Australian laboratories of the CSIRO in Alice Springs. The Committee concludes that there may be potential to introduce specific cross compliance provisions in Australia. Such provisions would greatly enhance the effectiveness of land degradation programs and help bring together Commonwealth measures, including those recommended above, into a comprehensive and co-ordinated strategy. Cross compliance measures would also complement performance standards or achievement criteria that may be introduced in relation to the National Soil Conservation Strategy and would also assist attempts to encourage whole farm

planning. However there is much more research and preparatory work to be done before cross compliance schemes can be formulated and introduced in Australia and the Committee recommends that:

the Bureau of Rural Resources give a high priority to research into, and formulation of, cross compliance provisions linked to all Commonwealth measures related to land degradation

The relative level of Commonwealth Government funding for land degradation programs

6.55 Many of the Committee's recommendations and other proposals made to the Commonwealth, for example the joint National Farmers' Federation and Australian Conservation Foundation submission, call for an increase in Commonwealth expenditure on land degradation. The Committee has noted that the Commonwealth's contributions have increased (see Table 5.1) and are likely to further increase in real terms in the next few years. However the level of expenditure is still very low in terms of the magnitude of the problem and in proportion to total Commonwealth outlays. Table 6.1 outlines expenditure on various conservation programs and it can be seen that, although land degradation is widely described as the most serious environmental problem in Australia, the level of funding it attracts is less than for some other programs and is only a small part of the total outlays by the Departments concerned. This analysis is obviously simplistic and cannot be used to establish what the level of funding should be. It is presented here only to reinforce the Committee's view that there is scope to increase land degradation expenditure in relative terms to give effect to the recommendations in this report.

6.56 There will be substantial benefits if land degradation trends can be reversed and this also justifies increased expenditure. During a visit to the CSIRO Division of Soils laboratories in Canberra the Committee was told by Dr Smiles that the yield achieved by Australian agriculture is in the order of only 20 per cent of the theoretical maximum set by soil moisture levels. This low yield was due to soil degradation, mainly resulting from soil structure breakdown, acidification and dry land salinity and due also to the failure to replace nutrients exported in harvested crops.

6.57 Dr Eckersley's paper on 'Regreening Australia' states that there is evidence that improving land management to overcome land degradation processes could reasonably be expected to increase wheat production to 50 per cent of the potential yield on half the farms. This would add about \$1 billion to gross export earnings.

6.58 The Committee also notes information provided by Dr Burch of the Bureau of Rural Resources, which showed expenditure in the United States of America on the federal Conservation Reserves Program is equal to 0.77 per cent of gross value of production and that payment to farmers through conservation program was equivalent to 40 per cent of net income from agriculture. In Australia the Commonwealth's outlay on land degradation programs was only 0.14 per cent of the gross value of production.

6.59 The Committee concludes that the evidence shows that an increase in Commonwealth outlays on land degradation programs is warranted and would probably result in significant benefits in relation to the additional costs which might be involved. However there is also a need for the States to play their part and for land owners to make contributions because they are the main beneficiaries. It is also necessary to reinforce the feeling of local ownership and commitment to programs.

6.60 Other areas of possible contribution which have so far been largely untapped are the finance and business houses with major interests in providing services and finance to the rural community. The economic factors which have constrained progress with land degradation programs include factors such as interest rates and the charges imposed by the tertiary sector of the economy. There may be an increasing awareness of land degradation problems on the part of this sector and the National Farmers' Federation told the Committee;

"... (the lack of finance coming through farming-oriented finance organisations) ... is a very big factor ... (contributing to financial pressures on farmers) but it is one which has now been identified by the financial institutions. For instance, about three or four years ago the NFF went through the process of a debt mediation scheme, in co-operation with the Australian Bankers Association ... We virtually spent half a million dollars educating the banks about the types of services that they needed to provide for farmers and the gaps which existed in their existing services. As a result of that, a number of the banks have instituted special training programs for people who are to be involved in rural lending. I think that is a step in the right direction. There has been a lack of expertise. Certainly the policy of shifting people from area to area and, obviously then, from industry to industry over a two or three-year period has meant that there has not been the continuity, the experience and the knowledge. That has been a contributing factor."²⁴

6.61 The Committee considers that finance institutions and business houses should take a more positive and direct role in preventing land degradation, not only because they have contributed greatly to the financial pressure which has led to poor land management practice, but also because the long term maintenance of agriculture in Australia is in their own interests. The Committee recommends that:

the Australian Bureau of Agricultural and Resource Economics review the role that the policies and activities of rural finance institutions and business houses have on land degradation and develop schemes to involve a more positive and direct contribution from this sector to programs aimed at the prevention and repair of land degradation.

Peter Milton
Chairman

November 1989

APPENDIX 1

CONDUCT OF THE INQUIRY

10-10-10

10-10-10 10-10-10

CONDUCT OF THE INQUIRY

The Hon. J J Brown, MP the then Minister for the Arts, Sport, the Environment, Tourism and Territories wrote to the Committee on 8 December 1987 requesting that it undertake an inquiry into land degradation. This followed an approach from the Committee to the Minister proposing that such an inquiry would be worthwhile. The Committee adopted the terms of reference for the inquiry on 10 December and then widely advertised the inquiry with an invitation to the public to make submissions. The Committee also wrote to a large number of organisations and authorities seeking submissions.

During the course of the inquiry the Committee carried out extensive inspections and held informal meetings in rural areas of all States and Territories except Tasmania. It also held public hearings in Canberra, Sydney, Melbourne, Perth and Adelaide. A complete list of inspections, meetings and hearings is attached to the report as Appendix 2.

Submissions were received from 85 individuals, organisations and government authorities including all State and Territory governments except Queensland. In a number of cases the Committee sought additional information and several supplementary submissions were received. The Committee also took 668 pages of evidence at public hearings.

The Committee received considerable assistance from a number of individuals and organisations who provided detailed technical information and general advice or who assisted the Committee in the organisation and conduct of its inspections. The Department of Primary Industries and Energy provided detailed information and background material on several occasions and officers of the Department's Soil Conservation Branch were particularly helpful. The CSIRO Division of Soils also provided information and assistance. Staff of the Division based in Canberra and Townsville assisted the Committee with its inspections and facilitated discussions with local landholders and representatives of other organisations.

Officers of the New South Wales Soil Conservation Service and Department of Agriculture, the Victorian Departments of Conservation, Forests and Land and Agriculture and Rural Affairs, the Western Australian Department of Agriculture, the South Australian Department of Agriculture, and the Northern Territory Conservation Commission assisted the Committee to arrange inspections and informal meetings. Other organisations and individuals who assisted the Committee in this way included Dr Brian Roberts of the Darling Downs Institute of Advanced Education, Mr Gerry Morvel of Greening Australia, members of the Yass River Valley Revegetation Project and the Potter Whole Farm Plan Project.

The informal meetings and discussions were a feature of the inquiry and the Committee met with a wide range of representatives of rural communities as well as many individual land owners in all of the areas it visited. This enabled the Committee to canvas a wide range of views and to see at first hand the practical problems involved in implementing solutions to land degradation.

The Committee appreciated the assistance of all those who helped the Committee or who made submissions, met with Committee or gave evidence. It also greatly appreciated of the hospitality shown to it by the many landowners who welcomed the Committee onto their properties and into their homes.

APPENDIX 2

LIST OF HEARINGS AND INSPECTIONS

LIST OF HEARINGS AND INSPECTIONS

- 28.1.88 Field Inspections - Bacchus Marsh
 Erosion (ACF campaign launch)
- 29.3.88 Meeting - Dr Brian Roberts - Toowoomba
 Field Inspections - Toowoomba
 Water erosion group schemes
- 30.3.88 Field Inspections Toowoomba
 Meeting - Toowoomba Erosion Awareness Group
 Public Meeting - Community representatives
 Toowoomba Region
- 6.4.88 Field Inspections - Kerang
 Irrigation salinity

 Meeting - Community representatives - Swan Hill
- 4.5.88 Field Inspections - Darling Ranges Wongan
 Dryland salinity
- 27.5.88 Public Hearing - Canberra
- 15.6.88 Field Inspections - Wagga Wagga
 Acidity, Water erosion
- 16.6.88 Field Inspections - Benalla Rutherglen
 Group schemes, dryland salinity, soil
 structure decline
 Meeting - Warrenbayne-Boho Landholders Group
- 17.6.88 Public Hearing - Sydney
- 26.8.88 Public Hearing - Sydney
- 13.9.88 Field Inspections - Adelaide River
 Weeds and Feral animals
 Meeting - Northern Territory government
 representatives - Darwin
 Meeting - Northern Land Council
 Meeting - Northern Territory Environment Centre
- 14.9.88 Meeting - Victoria River District Conservation
 Association - Katherine
 Field Inspections - Victoria River Downs - Semi
 arid/arid grazing

15.9.88 Meeting - Arid Zone Research Institute
 - Alice Springs
 Meeting - CSIRO - Wildlife and Ecology
 Meeting - Central Land Council

16.9.88 Meeting - Northern Territory Cattlemen's
 Association - Alice Springs
 Meeting - Arid Land Environment Centre

25.10.88 Field Inspections - Charters Towers
 Erosion - semi arid grazing
 Meeting - Dalrymple Land Care Committee

26.10.88 Meeting - Research staff - James Cook
 University/CSIRO/DPI

3.3.89 Meeting - CSIRO, Division of Soils - Canberra
 Laboratory

29.3.89 Field Inspection - Adelaide Region
 Land alienation, land capability, erosion

30.3.89 Public Hearing - Adelaide

18.4.89 Field Inspections - Cranbrook
 North Stirling NSCP project
 Field Inspections - Jerramungup
 Malle Road Project

19.4.89 Field Inspections - Gairdner River catchment works
 Public Hearings - Perth

5.5.89 Field Inspections - Canberra region
 Yass River Valley tree planting project,
 Acidity, structure

20.6.89 Field Inspections - Hamilton
 Potter Farm Planning System

APPENDIX 3

LIST OF SUBMISSIONS

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1000000

1000000

LIST OF SUBMISSIONS

- 1 G Hardie NSW
- 2 Roseworthy Agricultural College
- 3 Department of Agricultural Engineering, Uni of Melbourne
- 4 The Colong Foundation for Wilderness Ltd
- 5 Gosford District Wildlife Conservation Society
- 6 Dr E K Christie Qld
- 7 Mr G Bird NSW
- 8 Soil Association of South Australia Inc.
- 9 Mr N P Hunt Qld
- 10 United Farmers & Stockowners of S.A. Inc.
- 11 Mr L Smith Vic
- 12 Mr A Holding Vic
- 13 Mr H S Whittington WA
- 14 Whittington Interceptor Salt Affected Land Treatment Society Inc.
- 15 NSW Department of Environment & Planning
- 16 F B Michael WA
- 17 The Agricultural & Veterinary Chemicals Association of Aust. Ltd
- 18 Northern Land Council
- 19 Australian Institute of Landscape Architects (NSW Branch)
- 20 W A & J W Martin Vic
- 21 Ms B Moore NSW
- 22 Australian Trust for Conservation Volunteers (W.A)
- 23 Tropical Grassland Society of Australia
- 24 Mr R Tauss WA
- 25 Queensland Land Administration Commission
- 26 Dr A V Arakel (Queensland Institute of Technology)
- 27 CSIRO Institute of Natural Resources & Environment
- 28 Central Australian Conservation Council
- 29 Conservation Farming Information Centre
- 30 Queensland Agricultural College
- 31 Kerang Lakes Area Working Group
- 32 Mr A G & G H Holden Vic
- 33 Australian Bureau of Agricultural & Resource Economics
- 34 Lockyer Watershed Management Association
- 35 CSIRO Division of Soils
- 36 The Institute of Foresters of Australia Inc
- 37 Ms T Stadler Tas
- 38 Mr W E Matheson SA
- 39 Mr R H Ashby SA
- 40 Bureau of Rural Science
- 41 Dr E W Radoslovich ACT
- 42 National Conservation Employment Work Group
- 43 NSW Soil Conservation Service
- 44 Department of Agronomy and Soil Science (University of New England)
- 45 Australian Society of Soil Science Inc.
- 46 Department of the Arts, Sport, the Environment, Tourism and Territories

47 Department of Primary Industries and Energy
48 NSW Department of Agriculture
49 Nature Conservation Council of NSW
50 North Coast Environment Council
51 Pittsworth Shire Council
52 Mr C Malcolm WA
53 Soil and Water Conservation Association of Australia
54 The Western Australian Farmers Federation (Inc.)
55 Australian Petroleum Exploration Association Limited
56 Tasmanian State Government
57 North Queensland Conservation Council Inc.
58 Dr C L Watson ACT
59 The Wilderness Society
60 Mr W H Baker NSW
61 NSW Farmers Association
62 The Environment Centre N.T. Inc.
63 Mr K Walter SA
64 Soil Conservation Advisory Committee (W.A)
65 The Victoria River District Conservation Association
66 Australian Nuclear Science & Technology Organisation
67 Greening Australia (SA) Inc.
68 Western Australian Government
69 Australian Conservation Foundation
70 Institute for Tropical Rainforest Studies
71 Dalrymple Landcare Committee
72 Tasmanian Conservation Trust
73 Australian Conservation Foundation
74 National Parks Association of NSW Inc.
75 The Men of the Trees Inc.
76 Northern Territory Government
77 Greening Australia Limited (ACT)
78 Victorian Government
79 South Australian Government
80 R C Bowman NSW
81 Mr J A Friend NSW
82 Professor I S Ferguson, University of Melbourne
83 National Association of Forest Industries Ltd.
84 Greening Australia (Tasmania)
85 Mr B Milne Vic

APPENDIX 4

LIST OF WITNESSES

14/1/14

20/1/14

LIST OF WITNESSES

Abbott, Dr T.S.	Principal Agronomist, Soil Management, NSW Department of Agriculture & Fisheries
Adamson, Mr L.G.	Field Officer, Whittington Interceptor Salt Affected Land Treatment Society Inc.
Barker, Dr S.	Manager, Resource Management Environment Division, SA Department of Environment & Planning
Bomford, Mr R.	Natural Resources Section, Department of the Arts, Sport, the Environment, Tourism & Territories
Bowen, Mr R.W.J.	Acting Principal Officer, Land Resources and Environment, NSW Department of Agriculture & Fisheries
Burch, Dr G.J.	Assistant Director, Bureau of Rural Resources, Department of Primary Industries & Energy
Butcher, Mr O.E.	Chairman, WA Soil Conservation Advisory Committee, Department of Agriculture
Cahill, Mr D.N.	Manager, Policy, Planning & Programming, Land Protection Division, Vic Department of Conservation Forests & Lands
Campbell, Mr A.D.	Vice President, Western Australian Farmers Federation
Campbell, Mr C.A.	Assistant Director, Centre for Farm Planning and Land Management, University of Melbourne
Campbell, Mr M.W.	State Coordinator, Greening Australia (SA) Inc.
Charman, Mr P.	Policy Analyst, NSW Soil Conservation Service
Christie, Dr A.G.	First Assistant Secretary, Natural Resource Management Division, Department of Primary Industries and Energy
Colley, Mr A.G.	Honorary Secretary, Colong Foundation for Wilderness Ltd.

Crane, Dr W.J.B	Former Chairman, Institute of Foresters of Australia
Devin, Mr L.B.	Assistant Secretary, Soil Conservation Branch, Department of Primary Industries & Energy
Dexter, Mr J.C.	President, Greening Australia (SA) Inc.
Drew, Mr G.F.	Committee Member, Whittington Interceptor Salt Affected Land Treatment Society Inc.
Eliason, Mr P.G.	Depty Director, National Farmers' Federation
Elix, Ms J.K.	National Land Degradation Coordinator, Australian Conservation Foundation
Farley, Mr R A	Executive Director, National Farmers' Federation
Ferguson, Prof I.S.	Professor of Forest Science and Dean, Faculty of Agriculture and Forestry, University of Melbourne
Florence, Dr R.G.	Fellow, Institute of Foresters of Australia
Fryer, Dr J.H.	ACT Chairman, Institute of Foresters of Australia
Graetz, Dr R.D.	Principal Research Scientist, Division of Wildlife and Ecology, CSIRO
Gray, Mr J.	Executive Officer, Institute of Foresters of Australia
Halse, Mr N.	Director-General, WA Department of Agriculture
Hawkins, Mr C.A.	Federal Secretary, Australian Society of Soil Science
Higginson, Dr R.	Director of Chemistry, NSW Department of Agriculture & Fisheries
Holesgrove, Mr R.L.	Director, Natural Resources Section, Department of the Arts, Sport, the Environment, Tourism & Territories
Johnson, Mr A.W.	Leader, Technical Services Section, SA Department of Agriculture

Landsberg, Dr J.J.	Deputy Chief, Division of Wildlife and Ecology, CSIRO
Lothian, Mr A.	Manager, Environmental Policy, Department of Environment & Planning, Member of Council, Greening Australia (SA) Inc.
Matheson, Mr W.E.	Private Citizen
McCloy, Mr K.R.	Principal Officer, Remote Sensing, NSW Department of Agriculture & Fisheries
McGregor, Mrs P.A.	President, Wittington Interceptor Salt Affected Land Treatment Society Inc.
Messer, Dr J.	Chairperson, Nature Conservation Council of NSW
Morvell, Mr G.	National Manager, Greening Australia
Munns, Mr N.O.	Executive Officer, Western Australian Farmers Federation
Newland, Mr N.P.	Deputy Director, Conservation Land Management, SA Department of Environment & Planning
Nothrop, Mr L.J.	Administrator, Natural Soil Conservation Program, Department of Primary Industries & Energy
Nulsen, Dr R.	Principal Research Officer, Salinity & Hydrology Research Branch, WA Department of Agriculture
Odgers, Mr B.J.	Director, Procedures & Agreements Environment Assessments Branch, Department of the Arts, Sport, the Environment, Tourism & Territories
Patton, Mr C.T.	Manager, Policy Development Rural Policy & Marketing Division, Vic Department of Agriculture & Rural Affairs
Pfitzner, Mr D.	President, United Farmers & Stockowners
Powell, Mr J.R.	Policy Advisor, Soil Conservation Branch, Department of Primary Industries & Energy

Reis, Mr R.G.	Public Affairs Manager, Agricultural and Veterinary Chemicals Association of Australia Ltd.
Sands, Mr J.R.	Assistant Secretary, Land and Natural Resources Branch, Department of the Arts, Sport, the Environment, Tourism & Territories
Slee, Mr D.	Consultant, United Farmers & Stockowners
Smiles, Dr D.	Chief of Division, Division of Soils, CSIRO
Smith, Mr M.K.	Executive Officer, Heritage Assessments & Resources Division, NSW Department of Planning
Somerville, Mr J.G.	Director, Colong Foundation for Wilderness Ltd.
Sutherland, Mr P.D.	Manager, Regional Planning & Environment Branch, Vic Water Resource Management Division, Department of Water Resources
Trewin, Dr R.	Acting Assistant Director, Australian Bureau of Agricultural and Resource Economics
Van Rijswijk, Mr G.A.	Technical Manager, Agricultural and Veterinary Chemicals Association of Australia Ltd.
Whittington, Mr H S	Private Citizen
Wickes, Mr R B	Chief, Soil & Water Conservation Branch, SA Department of Agriculture

APPENDIX 5

RECOMMENDATIONS OF THE REPORT ON FISCAL MEASURES AND THE ACHIEVEMENT OF ENVIRONMENTAL OBJECTIVES

RECOMMENDATIONS RELATED TO LAND DEGRADATION
FROM THE HOUSE OF REPRESENTATIVES
STANDING COMMITTEE ON ENVIRONMENT AND CONSERVATION
REPORT ON FISCAL MEASURES AND THE ACHIEVEMENT
OF ENVIRONMENTAL OBJECTIVES

The Committee recommend that:

- . the Minister for Resources and Energy and the Treasurer review taxation provisions relating to environmental rehabilitation after mining activities and the setting aside of funds to cover anticipated rehabilitation costs with a view to providing tax deductions for such measures.
- . the Minister for Arts, Heritage and Environment and the Treasurer urgently review taxation provisions which could apply to tree planting and vegetation conservation for nature and soil conservation purposes to promote and encourage tree planting and vegetation retention.
- . the Minister for Arts, Heritage and Environment and the Minister for Employment and Industrial Relations review the criteria used to assess community employment programs to make funds available for tree planting and vegetation conservation works on private lands in those cases where a community benefit is clearly demonstrable.
- . the Minister for Primary Industry in consultation with the Australian Soil Conservation Council investigate the introduction of soil conservation conditions as a pre-requisite to drought assistance.
- . (i) the Minister for Primary Industry in consultation with the Treasurer and the Australian Soil Conservation Council review all aspects of Commonwealth and State soil conservation programs to develop an integrated, comprehensive and effective program, and
- . (ii) a principal element of this review be a comprehensive revision of existing taxation provisions and the introduction of new taxation provisions particularly rebates and tax credits.

1. The first part of the document is a letter from the President of the United States to the Congress, dated January 1, 1861. It is a very important document, as it sets out the President's policy for the new year. The President states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

2. The second part of the document is a letter from the Secretary of the Treasury to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

3. The third part of the document is a letter from the Secretary of the Interior to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

4. The fourth part of the document is a letter from the Secretary of the Navy to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

5. The fifth part of the document is a letter from the Secretary of the War to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

6. The sixth part of the document is a letter from the Secretary of the State to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

7. The seventh part of the document is a letter from the Secretary of the Education to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

8. The eighth part of the document is a letter from the Secretary of the Agriculture to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

9. The ninth part of the document is a letter from the Secretary of the Commerce to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

10. The tenth part of the document is a letter from the Secretary of the Public Works to the Congress, dated January 1, 1861. It is a very important document, as it sets out the Secretary's policy for the new year. The Secretary states that he is pleased to see the Congress assembled, and that he is confident that the country is in a good position to meet the challenges of the future.

CONSIDERATION OF ASSISTANCE TO INDIVIDUALS
AND ASSOCIATED REGULATIONS

(Appendix to the submission by the Department
of Primary Industries and Energy)

APPENDIX - CONSIDERATION OF ASSISTANCE TO INDIVIDUALS AND ASSOCIATED REGULATIONS

FORM OF ASSISTANCE

ADVANTAGES

DISADVANTAGES

DIRECT FORMS

(a) GENERAL

- | | |
|---|--|
| <ul style="list-style-type: none"> . Involves State/other agencies . can be targetted at land type/ problem/type of solution . effectiveness can be evaluated . more cost effective than indirect . link with intent of assistance (govt policy) more apparent . greater control of of standards and types of measures . responsibilities of those involved more readily defined . level of expenditure by government/landholders more 'visible' . more amenable to punitive options - as 'polluter' more readily identified . more likely to be 'market neutral' | <ul style="list-style-type: none"> . involves a third party . not readily available to all landholders . dependent on numbers/ location of implementing agency staff . leads to growth in agencies . increases government's 'responsibility' for soil conservation in eyes of landholder . administratively more complex and time consuming . can be distorted by third party for political purposes . need more information on land resources and economics of options to define targets . to be effective C'wealth has to define its policies and priorities . policies/priorities of C'wealth more visible and requiring justification . if targetted, landholders elsewhere likely to defer soil conservation activity . may lead to two standards of service to landholders |
|---|--|

FORM OF ASSISTANCE

ADVANTAGES

DISADVANTAGES

(b) SPECIFIC

<ul style="list-style-type: none"> Concessional loans 	<ul style="list-style-type: none"> cost effective as commits landholder to a proportionately greater level of expenditure administratively simple as some States already geared to provide loans State soil conservation services usually favour this option funds can be recovered if landholder fails to comply with conditions duration of assistance likely to lead to landholder adoption of practices/measures once established may become self-supporting by the money revolving farmer more likely to treat whole farm 	<ul style="list-style-type: none"> previous similar schemes generally lack landholder support landholders believe loans reduce borrowing capacity initially requires large input of funds requires long term govt commitment to soil conservation if to be administered by other than State services (eg C'wealth, local authority) will require coordination with State services a form of subsidy thus need to convince 'government' of its cost-effectiveness
<ul style="list-style-type: none"> Conditional Loans (see also cross compliance) 	<ul style="list-style-type: none"> as per comments for concessional loans could provide landholders with funds as 'lender of last resort' for conservation measures has psychological effect of linking soil conservation to other farming activities 	<ul style="list-style-type: none"> as per comments for concessional loans but can be resented by landholders for interference in private decisions administrative load is greater as surveillance necessary
<ul style="list-style-type: none"> Grants - on works/specific measures on properties 	<ul style="list-style-type: none"> favoured by landholders doesn't affect landholders borrowing capacity if linked to 'community benefit' can be seen as 'government bearing its share of the cost of measures' 	<ul style="list-style-type: none"> requires maintenance of works/measures and no certainty that landholder and subsequent landholders will continue to maintain them a form of subsidy thus need to convince 'government' of

FORM OF ASSISTANCE

ADVANTAGES

DISADVANTAGES

	<ul style="list-style-type: none"> helps landholder to finance reclamation works for degradation caused by previous landholders or high cost to government as a previous land-use planning decision by government 	<ul style="list-style-type: none"> its cost-effectiveness US experience unfavourable more applicable to reclamation seen as a subsidy to those mismanaging land encourage idea that soil conservation is a gov't responsibility
- on purchase/ modification of machinery (for conservation/ farming)	<ul style="list-style-type: none"> encourages landholder 'self-help' and adoption of residue management techniques conservation farming is very popular at present, thus government initiative will be highly 'visible' 	<ul style="list-style-type: none"> not 'market-neutral' problem on sale of machinery - landholder refund? difficult to define types of machinery, thus may have to inspect all new machinery and modifications no certainty that residue techniques will be used on degradation prone land machinery may mainly advantage landholders with large areas, without degradation problems if used for machinery to construct earthworks, landholders will need training in its use
- for organising catchment groups of landholders and preparation of catchment plans	<ul style="list-style-type: none"> encourage landholder 'self-help' and acceptance of responsibility increases resources devoted to soil conservation in Australia mobilises existing interest in soil conservation 	<ul style="list-style-type: none"> may require a change in role for State agencies may result in slightly lower standards of conservation

FORM OF ASSISTANCE	ADVANTAGES	DISADVANTAGES
	<ul style="list-style-type: none"> encourages private consultants takes some pressure off State agencies 	
<ul style="list-style-type: none"> Rate rebate (subsidy administered via local authorities) 	<ul style="list-style-type: none"> increases community involvement/ responsibility for soil conservation makes local authority more aware of land degradation and costs to them enables link with zoning/land-use powers of local authorities 	<ul style="list-style-type: none"> involves a fourth party may be difficult to administer with numbers of local authorities involved potential 'political' differences between State and local authorities
<ul style="list-style-type: none"> Cost of landholder training schools 	<ul style="list-style-type: none"> encourages self-help highly visible form of assistance 	<ul style="list-style-type: none"> because of potential numbers involved possibility of high cost State services would have to support an possibly provide 'trainers'
<ul style="list-style-type: none"> Compensation (land resumption set aside. Funding offset for loss of income) 	<ul style="list-style-type: none"> supportive of other measures where a lower intensity of use is involved may be only means available enable reafforestation and retirement from grazing to be undertaken on critical areas 	<ul style="list-style-type: none"> requires commitment by States to undertake need to have future responsibilities for the land determined high cost to government if used widely
<ul style="list-style-type: none"> Awards 	<ul style="list-style-type: none"> rewards responsible behaviour high C'wealth profile 	<ul style="list-style-type: none"> benefits difficult to assess administratively difficult
<ul style="list-style-type: none"> Portion of property used for conservation purposes excluded from rateable area 	<ul style="list-style-type: none"> could be used in place of compensation 	<ul style="list-style-type: none"> need to be able to define small areas legislatively excluded at present

FORM OF ASSISTANCE

ADVANTAGES

DISADVANTAGES

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|---|---|--|
| <ul style="list-style-type: none"> . Cross compliance - conditions on Commonwealth loans (eg development/RAS) - ineligibility for commodity underwriting - ineligibility for drought assistance/disaster assistance - removal of taxation concession eligibility | <ul style="list-style-type: none"> . demonstrates consistency in government soil conservation policies relating to use and management of land . demonstrates political will of government . can be phased in . recognises that soil conservation is an integral part of production system | <ul style="list-style-type: none"> . administratively complex . involves third party . could require support of other government portfolios . requires political will . subject to litigation . requires development of precise/measurable standards . administering very complex |
|---|---|--|

INDIRECT

(a) GENERAL

- | | |
|---|---|
| <ul style="list-style-type: none"> . doesn't involve a third party . generally available to all landholders . minimum involvement of government . administratively simple . less information required on land resources/economics . doesn't lead to increase in State services . all lands can be included (not dependent on a formal plan) . can be precursor of direct assistance | <ul style="list-style-type: none"> . not targetted . difficult to evaluate . may unnecessarily fund commercially viable works/measures . doesn't require a State commitment . government contributions difficult to define . more likely to have undesirable side-effects . less control of standards and types of measures . level of landholder involvement in soil conservation less clear . non-state involvement reduces 'educational' opportunities that exist with direct landholder contact . less amenable to punitive options |
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FORM OF ASSISTANCE

ADVANTAGES

DISADVANTAGES

SPECIFIC

<ul style="list-style-type: none"> • Taxation concession/rebates 	<ul style="list-style-type: none"> • proven psychological effect • current provision 	<ul style="list-style-type: none"> • restricted to tax payers only affects capital expenditure when encouragement for management/maintenance is desired
<ul style="list-style-type: none"> • Investment allowance 	<ul style="list-style-type: none"> • favoured by landholders 	<ul style="list-style-type: none"> • likely to benefit only larger landholders • restricted to tax payers • restricted to capital expenditure activities
<ul style="list-style-type: none"> • Commodity surcharge 	<ul style="list-style-type: none"> • links cost of degradation to commodity pricing • involves industry in degradation control 	<ul style="list-style-type: none"> • penalises producers with low degradation
<ul style="list-style-type: none"> • Improve enterprise income <ul style="list-style-type: none"> - reduce farm input costs (eg reduce tax, subsidise machinery, herbicides, fertilisers etc) - increase market price of commodity 	<ul style="list-style-type: none"> • favoured by landholders • improves affordability of soil conservation 	<ul style="list-style-type: none"> • not market neutral • short-term benefits and likely long-term govt commitment • much would go where not needed • no way of ensuring extra net returns go to soil conservation • not 'market neutral'
<ul style="list-style-type: none"> • Increase technical service/landholder education programs 	<ul style="list-style-type: none"> • likely to be supported by landholders 	<ul style="list-style-type: none"> • overlaps with States' and National component

APPENDIX 7

THE ROLE OF TREES IN SOIL CONSERVATION

(Extract from the submission by the
Institute of Foresters of Australia)

ROLE OF TREES IN SOIL CONSERVATION

(Extract from submission by the Institute
of Foresters of Australia)

Why are trees so important in a technical sense in sustaining the productivity of Australian Soils? The principal answer lies in the role of trees in the formation of Australian soils and their influence on soil erosion, fertility decline, salting and acidity.

Maintaining soil fertility

The inherited fertility of the two layered 'duplex' ('podsollic') soils can be largely related to the influence of trees. Trees ensure that the generally 'toxic clay' is continually carried to the lower levels in the profile by the unique acids trees produce, leaving a workable loamy-textured surface soil horizon within which the roots of the grasses and cultivated herbaceous annual crops can proliferate. Not only do trees detoxify the surface soil of aluminium, iron and acidity, but at the same time they 'pump up' from the lower root zone and concentrate essential plant nutrients such as phosphorus and natural lime. Most of these nutrients are returned to the topsoil by the continuous turnover of fine roots in the surface soil and by the litterfall of the trees. The presence of nitrogen fixing legumes in both native savannah woodlands and in agroforests is also an essential component of sustained fertility and productivity.

Australian agricultural and grazing practice has been inherited from Europe where the soils are more fertile. The adoption of a treeless agriculture on the Australian duplex soil has removed the very agency - the trees - by which the fertility of the soil was sustained.

Containing soil acidity

It is important to appreciate that the tree not only helps to protect the soil physically and hydrologically but it also protects the soil chemically, preventing rapid changes in pH and acidity. Acidity is a product of excess nitrate nitrogen production - a product of the highly efficient nitrogen producing legumes of improved pasture. The buffering of soil acidification by trees is a natural process in savannah woodlands and hence in the agroforest.

Restricting salting of soils

Dryland salting of soils in Australia is generally a result of indiscriminate clearing of trees. Salting can be attributed to a rising water table previously kept at depth by the influence of trees. Trees not only act as nutrient and toxin pumps as described previously, but also as water pumps. Clearing or dieback of trees can cause water tables to rise which brings fossil salt contained in most Australian soils to the surface.

The incidence of salting can be reduced where sufficient trees are planted to reverse this process.

Slowing the erosional process

Finally, trees are the natural tool for slowing the erosional process. The potential erosive energy of rain and wind is physically absorbed by the protective crowns and the above ground mass of trees. The humus produced by the tree and its roots help to bind the soil even where rilling and gullying have begun. In addition, trees can reduce wind speeds at the soil surface by 10 to 100 fold thus reducing soil loss and the severity of bushfires. Thus trees have not only been nature's agent of soil formation but have also acted to minimise soil loss through erosional processes.