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natural resource management

results for 2004-05 from an ABARE survey of Australian farmers

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- > ***ABARE's latest survey of land management on Australian farms indicates that membership of Landcare groups has increased, and is at an all time high.***
- > ***Weeds and animal pests continue to be the most commonly reported form of degradation.***
- > ***Farm expenditure on land care related works is higher than previously recorded.***
- > ***Most farmers reported having the necessary skills and information to implement sustainable farming practices.***
- > ***Many farmers reported a lack of time, finances or incentives as significant constraints to the adoption of more sustainable farming practices.***

survey of natural resource management practices

The 2004-05 survey was the fifth in a series of triennial natural resource management surveys undertaken by ABARE. Since the previous survey, which was conducted in 2002, there has been considerable change in the government's natural resource management program landscape. The Australian Government has committed new funding under phase two of the Natural Heritage Trust program which commenced in 2001, while activity under the National Action Plan for Salinity and Water Quality has increased dramatically since 2001-02. Funding for the National Landcare Program has also been continued to 2008.

These changes were expected to lead to greater awareness of, and participation in, Australian Government natural resource management programs than previously reported. The influence of these programs was also expected to be higher, and to be reflected in greater awareness and reporting of degradation and greater adoption of practices designed to deal with degradation issues.

In the latest survey, awareness of degradation among Australia's broadacre and dairy farmers was investigated along with the forms of degradation being reported and whether farmers were responding to the identified degradation. Some socio-economic characteristics of farmers reporting degradation were also identified. The relationships between participation in natural resource management programs and adoption of practices were also investigated.

This article is a summary of key findings from an ABARE survey. The complete survey report – *Australian Farms: Natural Resource Management in 2004-05*, ABARE Research Report 06.12 – includes additional and more detailed tables and is available from www.abareconomics.com. The survey was supported by the Australian Government's National Landcare Program.

reported degradation

Around 60 per cent of broadacre and dairy farmers reported signs of degradation in 2004-05. The most common problem identified by farmers was degradation caused by weed and animal pest infestations (table 1). These problems were more commonly reported in the nondairy livestock industries, whereas erosion and dryland salinity were identified as significant problems in the cropping and mixed livestock-cropping industries. Of farmers reporting degradation in 2004-05, 46 per cent had already altered their management practices to deal with the problem.

reported land degradation ^a

Australian broadacre and dairy farms

	all farms ^a	
	%	
Signs of significant degradation ^b		
Dryland salinity	7	(14)
Irrigation water quality ^c	3	(20)
Water and wind erosion	14	(9)
Surface waterlogging	9	(11)
Poor soil quality ^d	22	(6)
Weeds or pest animals resulting in land degradation ^e	36	(5)
Other	2	(23)
Any signs of degradation	58	(3)
Response to signs of degradation		
Already changed management practices during 2004-05	46	(4)

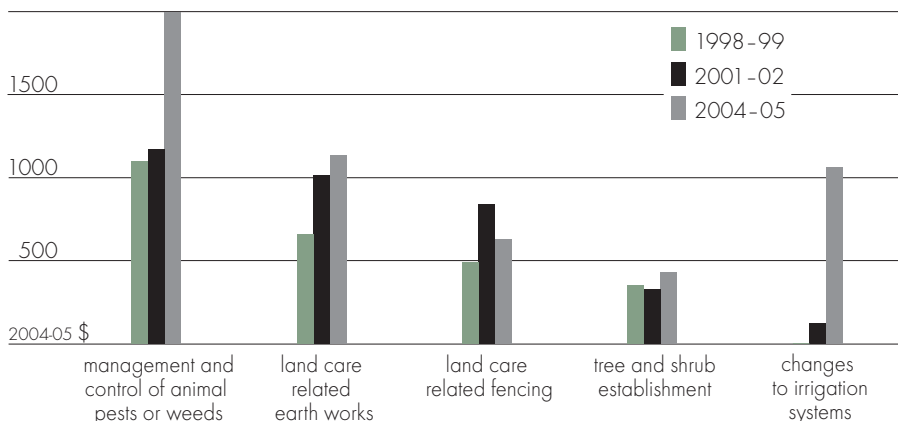
^a By farmers who provided a response to these questions. ^b Proportion of farmers who reported that these problems had a significant impact on their farming business during 2004-05. ^c Includes those who reported irrigation water salinity. ^d Includes water repellence, soil compaction, soil acidity or sodicity. ^e Excludes more easily controlled weeds. Note: Figures in parentheses are standard errors, expressed as percentages of the estimates.

expenditure on land care works

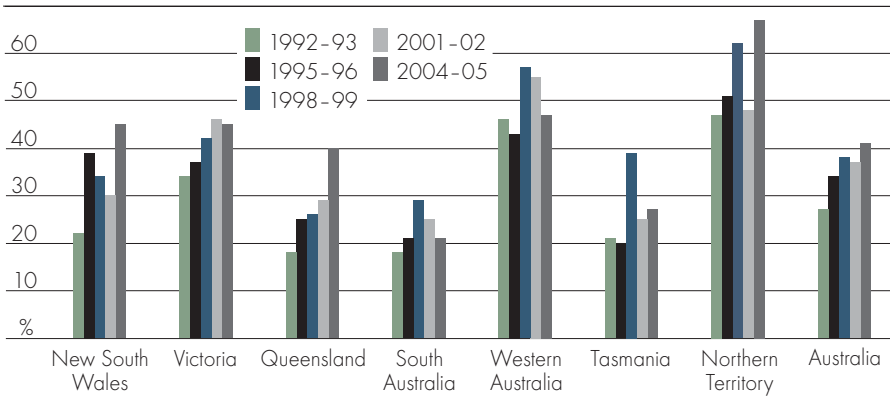
The survey also collected data on average expenditure by farmers on land care related works. By far the greatest expense incurred was upgrading machinery to implement more sustainable management practices (an average of \$3600 per farm), with crop farmers spending much more on this than did livestock farmers. The next largest expenditure category was for the control of animal pests and weeds. In contrast, average expenditure was least for the establishment and maintenance of trees and shrubs.

The total expenditure reported for 2004-05 was higher than that reported in previous surveys (figure A). Data for machinery upgrades were collected for the first time in 2004-05, and are not presented in the time series graph.

A average expenditure on land care related works



B average Landcare group membership over time



farmer characteristics

The survey also collected data that allowed the socioeconomic characteristics of farmers reporting degradation to be compared with those not reporting degradation. While these characteristics were fairly similar in terms of income and age, farmers reporting degradation tended to be more highly educated, to be more likely to engage in training activities, to be a member of a Landcare group and to participate in natural resource management programs.

membership of Landcare

In 2004-05, 41 per cent of broadacre and dairy farms had a representative who was a member of a Landcare or similar group. This compares with 37 per cent in 2001-02 and 39 per cent in 1998-99 (figure B). This increase in membership was largely driven by New South Wales and Queensland, where membership is currently the highest it has been in the course of the surveys.

2 adoption of sustainable management practices, by participation in natural resource management initiatives ^a

practice	participants		nonparticipants	
	%		%	
Tree and shrub establishment and maintenance ^b	27	(15)	24	(21)
Formal monitoring of pasture condition	31	(7)	16	(4)
Soil or plant tissue testing	70	(3)	46	(5)
Regular monitoring of watertables	22	(9)	12	(17)
Excluding stock from areas affected by land degradation	66	(3)	31	(10)
Managing native pasture as part of overall farming operations	64	(3)	39	(8)
Other practices to control or prevent land and water degradation	13	(5)	6	(23)

^a Applicable to farmer's location, enterprise mix or situation.

^b Determined from the number who reported spending money on this activity.

Note: Figures in parentheses are standard errors, expressed as percentages of the estimates.

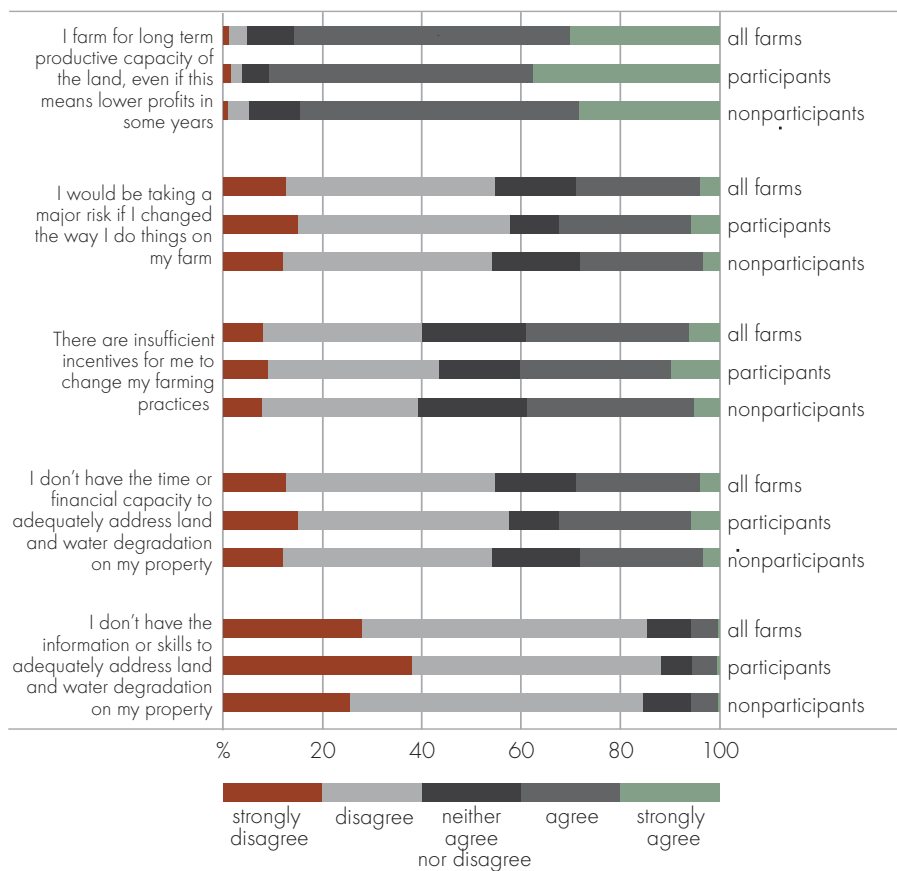
impact of participation

Similar to the 2001-02 survey, significantly more participants in natural resource management programs and Landcare groups reported degradation problems compared with nonparticipants. Participants in these initiatives were also more likely to adopt what have been identified as more sustainable management practices (table 2).

While there is an identifiable relationship between participation in natural resource management programs and awareness and adoption, the ABARE natural resource management survey cannot answer the question of whether program participation helped farmers identify degradation problems, or whether they joined programs after identifying degradation problems. However, if more problems are being appropriately identified and addressed, the issue of causality is not particularly relevant.

In addition to questions on awareness, adoption and participation, the 2004-05 survey also contained a number of attitudinal questions (figure C). Responses to these attitudinal questions may provide some important insights for the design of future natural resource management surveys and programs. For example, the survey results indicate that over 80 per cent of respondents farmed to maintain the long term capacity of their land, and were prepared to accept lower profits in some years in order to achieve this. This suggests that

C responses to attitudinal questions



these farmers are prepared to invest in more sustainable farming practices as long as it maintains or improves the productivity of their land over the long term.

Over 80 per cent of farmers also said that they had the necessary skills and information to address degradation on their property. Interestingly, there was no distinguishable difference in responses between program participants and nonparticipants. This suggests that the adoption of better natural resource management practices is not being hindered by a lack of willingness from farmers, or by a lack of skills. The survey did reveal, however, that farmers considered a lack of time, finances and incentives to be significant constraints on the adoption of more sustainable farming practices. This suggests that skills or awareness are not significantly constraining the adoption of more sustainable farming practices.

Taken together, these responses suggest that the type of benefits being generated by sustainable management practices will influence their adoption. If the main benefits are on-farm, and information and skills are not a constraint, governments and industry have the greatest potential to increase adoption by investing in research and development in technologies that can address degradation at a lower cost to the farmer. If the main benefits generated by additional sustainable management practices are off-farm, suasive measures are unlikely to lead to significant adoption since adoption will often result in lower profits. Under these circumstances governments may need to consider policies that provide incentives to farmers to generate off-farm benefits.

conclusion

Many of the trends observed in earlier natural resource management surveys were identified to have continued in the 2004-05 survey. For example, land degradation continues to be a problem on Australian broadacre and dairy farms, with over half of survey respondents reporting at least one degradation problem. Moreover, weed and animal pest infestations continue to be the most commonly reported problem. Farmers reporting degradation tend to be more highly educated, to undertake additional training, and to participate in groups with a natural resource management focus than farmers who do not report degradation.

Importantly, the results of the latest natural resource management survey indicate that there may be some benefits from adjusting natural resource management programs to increase adoption of sustainable agricultural practices. It would appear that farmers are generally aware of degradation and the solutions to degradation, but may need assistance in implementing solutions, especially where there are flow-on benefits to other agricultural producers or the environment. Governments and industry also have the opportunity to encourage adoption where the benefits are primarily on-farm by investing in research and development in technologies that can address degradation at a lower cost to the farmer.