

A snapshot of growers' attitudes towards area-wide management of weeds

RESULTS FROM A PHONE SURVEY ACROSS THREE CROPPING REGIONS

Project team

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Executive Summary

INTRODUCTION

- ✎ For weed management to work effectively across property and institutional boundaries requires an understanding of the attitudes, intentions and weed management practices and of land managers within and across regions. This research project aims to collect and analyse such data.
- ✎ Between July and September 2021, a phone survey was conducted with cropping land managers (hereon referred to as growers) from across three regions: Darling Downs, Queensland; Riverina, NSW; and Sunraysia, Victoria.
- ✎ This report provides a summary of the results of the phone survey. For more information about the project, please contact: sgraham@uow.edu.au

METHODS

- ✎ Phone interviews were conducted with 604 growers:
 - 186 from the Darling Downs
 - 218 from the Riverina
 - 200 from Sunraysia
- ✎ The survey was developed by researchers at the University of Wollongong (named on the front cover) and administered by KG2 market research (www.kg2.com.au)
- ✎ The survey comprised of three types of questions: background information; attitudes towards weeds and their management; and current and likely participation in collaborative weed management practices.
- ✎ This document presents a brief summary of the findings of the survey. A detailed analysis of the data is not presented nor are conclusions drawn. Further analysis is currently underway.

RESULTS

FARM CHARACTERISTICS

- ✎ Almost half (45%) of the growers identified as grain producers, a similar proportion (43%) identified as grain and sheep producers, and just over one-tenth (12%) identified as grain and beef producers.
- ✎ Over one-third (37%) of growers derive 81-100% of their income from cropping.
- ✎ Twenty-six different crops were grown by survey respondents. The three most commonly grown crops were wheat (89%), barley (68%), and canola (54%).
- ✎ The average size of grower's properties, including leased and unused land, was 2,835 hectares.
- ✎ Over one-quarter (28%) of growers spend 11-20% of their farm costs on weed control, including herbicides, equipment and labour, and the same proportion (28%) spend 21-30% of their total farm costs on weed control.

ATTITUDES TOWARDS WEEDS AND THEIR MANAGEMENT

- ✎ Growers were most concerned about fleabane (77%) and ryegrass (76%).
- ✎ The four top concerns related to weed management were:

- the financial cost (56% very concerned);
 - the presence of herbicide resistant weeds on their land (43% very concerned);
 - the spread of weeds from public land (36% very concerned); and
 - the presence of weeds on their land (36% very concerned).
- ✿ With respect to preferences for working independently and collaboratively on weed management, the four statements that elicited the highest levels of agreement were:
- each land manager has a responsibility to the whole region to control weeds (40% strongly agreed);
 - weeds are everybody's problem (32% strongly agreed);
 - controlling weeds is difficult (24% strongly agreed); and
 - weed management is more effective if land managers coordinate the timing of their weed control (20% strongly agreed)
- ✿ The three benefits that growers commonly attributed to area-wide management were:
- increased awareness of new weeds in the area (95%);
 - increased awareness of herbicide resistant weeds in the area (91%); and
 - getting ahead of weed spread in the area (89%)
- ✿ The four costs that growers were most likely to attribute to area-wide management were:
- too much time spent in meetings (65%);
 - limited options for organic growers (62%);
 - being restricted to using specific herbicides (55%); and
 - having to change spraying operations to accommodate neighbours (55%).

COLLABORATIVE WEED MANAGEMENT PRACTICES

- ✿ One-quarter (24%) of growers participate in weed management activities that involve other land managers.
- ✿ With respect to managing weeds across boundaries, growers most frequently:
- discuss weed management with neighbours (33% do this frequently or always); and
 - manage weeds on public property (32% do this frequently or always)
- ✿ With respect to intention to participate in collaborative weed management activities, growers indicated that they are most likely to:
- share crop information with neighbours to minimise risk of damage from spray drift (36% very likely); and
 - share information about weed management with other land managers (30% very likely).

CONCLUDING REMARKS

The results presented in this report indicate high levels of agreement among growers about the need for collaboration and the benefits that can come from working together on weeds. There are also common concerns about the costs of participating in area-wide management. Next, the project team will examine what factors explain whether growers participate in collaborative weed management activities. In the interim, these preliminary results provide a snapshot of what is important to growers across three cropping regions in Australia, which need to be taken into account when designing and implementing area-wide weed management strategies.

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Introduction

Weeds are one of Australia's most persistent agricultural and environmental challenges. The mobility of weeds, use of biological controls and growing herbicide resistance mean that weed management is a landscape-scale problem that requires community-wide solutions.

The need for weed management to work effectively across property and institutional boundaries requires an understanding of the attitudes, intentions and weed management practices and of a land managers across whole regions. This research project aims to collect and analyse such social data.

In mid-2021, cropping land managers, hereon referred to as growers, were surveyed as part of this social research project.

This report provides a summary of the preliminary results of the telephone survey. For more information about the project please contact: sgraham@uow.edu.au

Methods

Between July and September 2021, a telephone survey was conducted in the regions of Darling Downs (Queensland), Riverina (New South Wales) and Sunraysia (Victoria).

Questions were designed to collect information on:

- **Socio-economic characteristics and nature of farming operation.** This included age, gender, type of crops grown, property size, income from cropping systems, and percentage of income spent on weed control.
- **Attitudes towards weeds and their management.** This included weeds of concern, impact of weeds, herbicide resistance or spray-drift on their and others' land, attitudes towards collaboration with other land managers, techno-optimism, and the perceived benefits and costs associated with collaborating with other land managers on weed control.
- **Current and likely participation in collaborative weed management.** These questions covered the growers' participation in collaborative weed management activities, frequency of participation in a range of weed management activities, and likelihood of adopting a set of collaborative given weed management practices.

In total, answers of 604 growers were recorded: 218 from the Riverina; 200 from Sunraysia; and 186 from the Darling Downs. Each interview took on average 15 minutes to complete.

This document presents a snapshot of the findings of the survey. Further statistical analyses will be completed in the next stage of the project.

Socio-economic and farm characteristics

Most (95.2%) growers in this survey were male and three-fifths (61.9%) were between 45 and 64 years old.

On average, the size of grower's land, including leased and unused land was 2,835 hectares. About one-third (33.9%) of growers had properties that were 1000 hectares or smaller.

Farming operations were grouped into three categories: grain producer; grain and sheep producer; and grain and beef producer. Almost half (45.4%) of the growers identified as grain producers and a

similar proportion (42.5%) identified as grain and sheep producers. Just over one-tenth (12.1%) identified as grain and beef producers.

Overall, almost two-fifths (37.1%) of growers derive 81-100% of their income from cropping.

When growers were asked about the percentage of their total farm costs are spent on weed control, including herbicides, equipment and labour, over one-quarter (28.3%) indicated 11-20% of their farm costs are spent on weed control and a similar proportion (28%) indicated that weed control comprises 21-30% of their total farm costs (Figure 1). Just over one-tenth (11.4%) of growers spend more than 50% of their total farm costs on weed control.

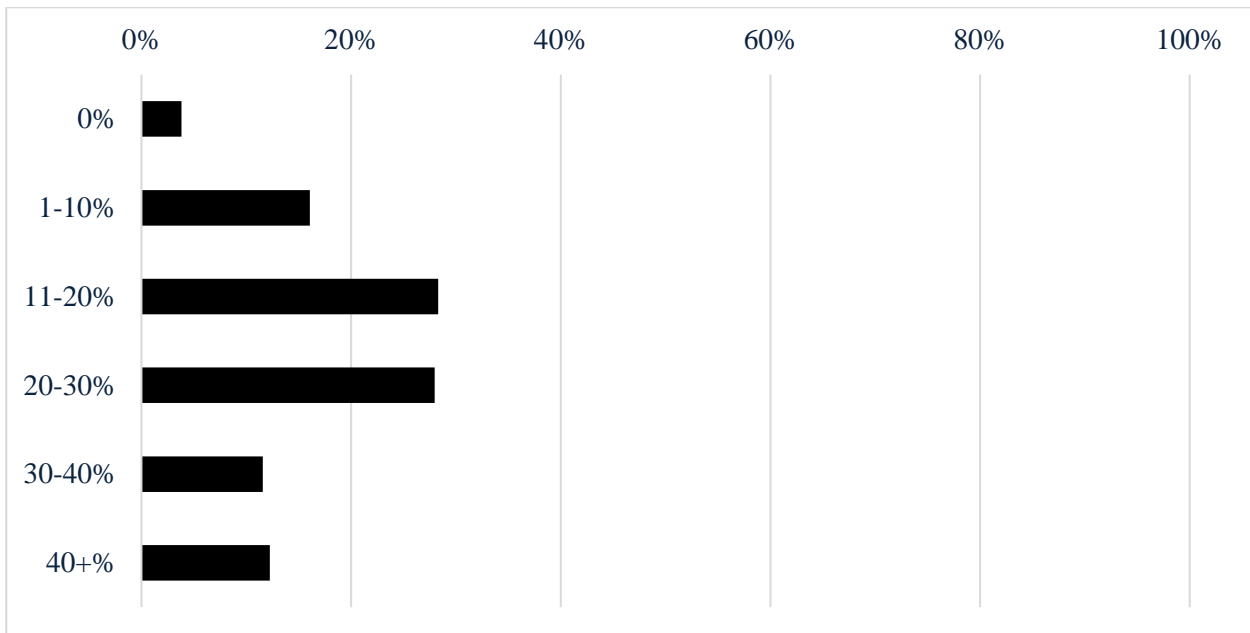


Figure 1. Weed control costs as a proportion of total farm costs for all growers surveyed.

Twenty-six different crops were grown by survey respondents. Figure 2 includes the top 22 crops, grown by at least 1% of growers. The three most commonly grown crops were wheat (89%), barley (68%), and canola (54%).

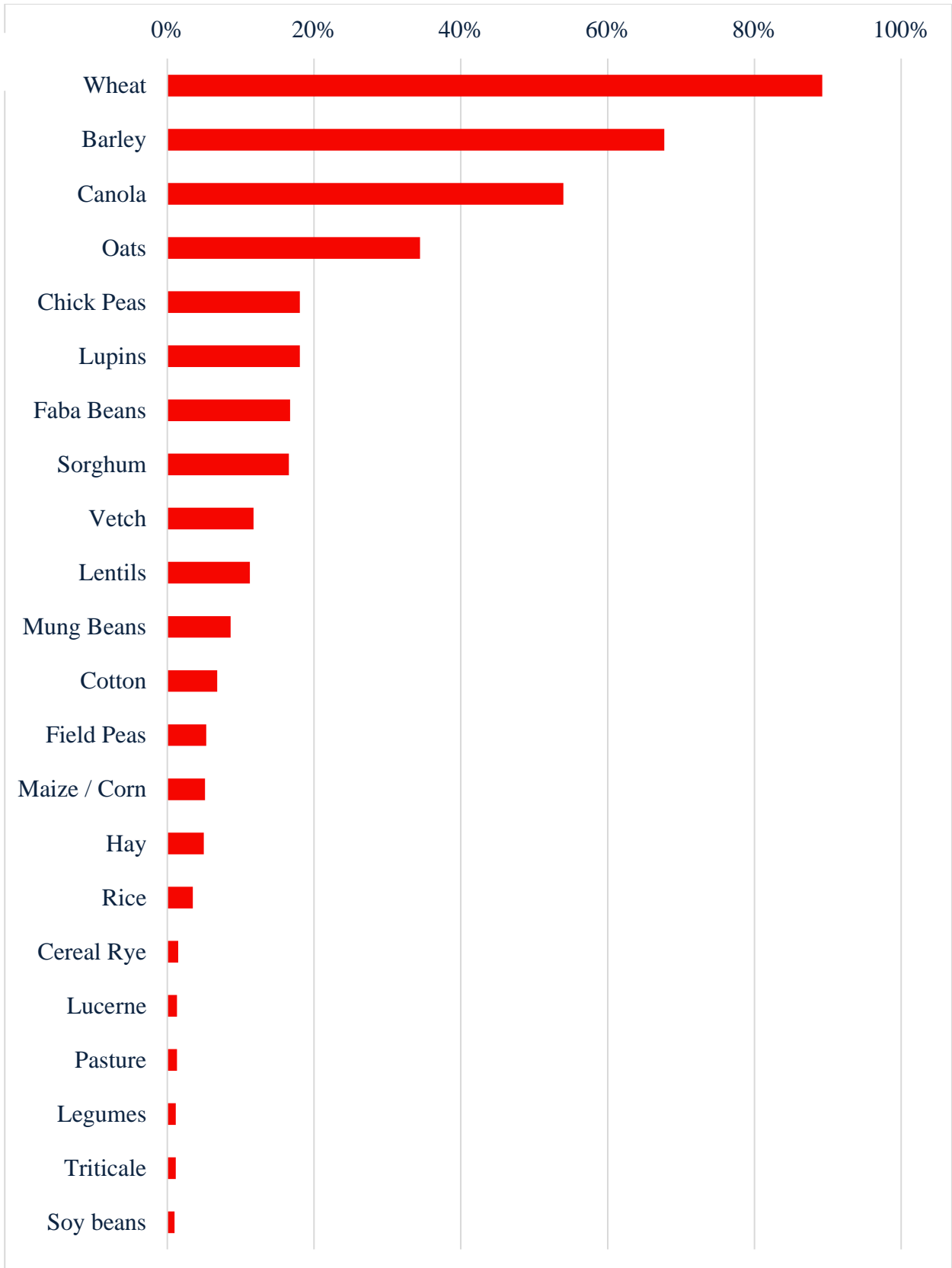


Figure 2. Crops grown by at least 1% of survey respondents.

Attitudes towards weeds and their management

Growers were asked if they were concerned about 10 specific weeds (Figure 3). Among survey respondents, fleabane (77%) and ryegrass (76%) were of most concern.

There were significant differences between regions in all weeds of concern included in the survey (Figure 3). Growers in Sunraysia were significantly more concerned (93%) about ryegrass than in the Darling Downs (43%), while growers in Sunraysia were significantly less concerned about fleabane (63.5%) than in the other two regions (~83%).

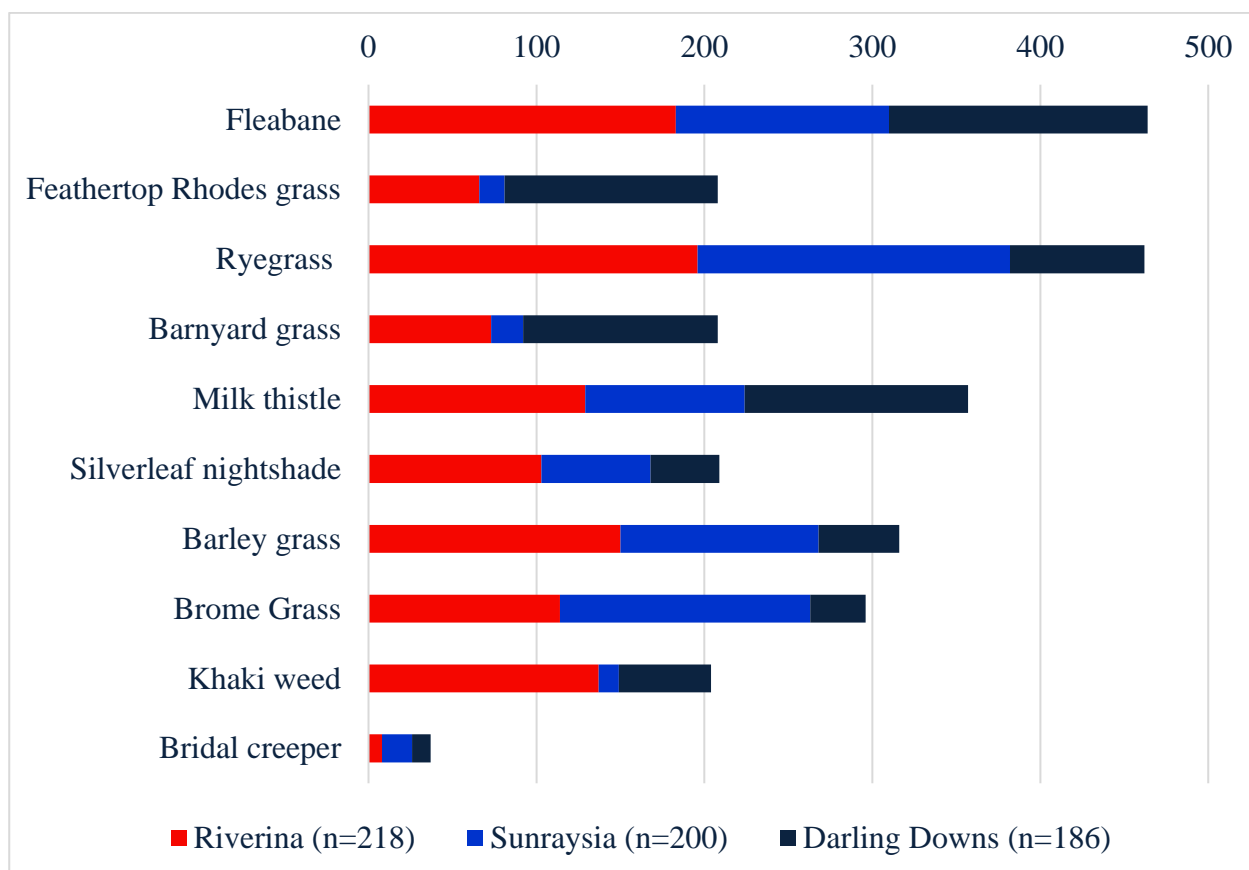


Figure 3. Number of growers who were concerned about each of 10 weeds.

WEED MANAGEMENT CONCERNS

Growers were asked to rate their level of concern regarding 11 weed management issues (Figure 4). The four statements that elicited the highest levels of concern were the financial cost of weed management (88% were concerned or very concerned), the presence of weeds on their land (78% concerned or very concerned), the presence of herbicide resistant weeds on their land (75% concerned or very concerned), and the spread of weeds from public land (70% concerned or very concerned).

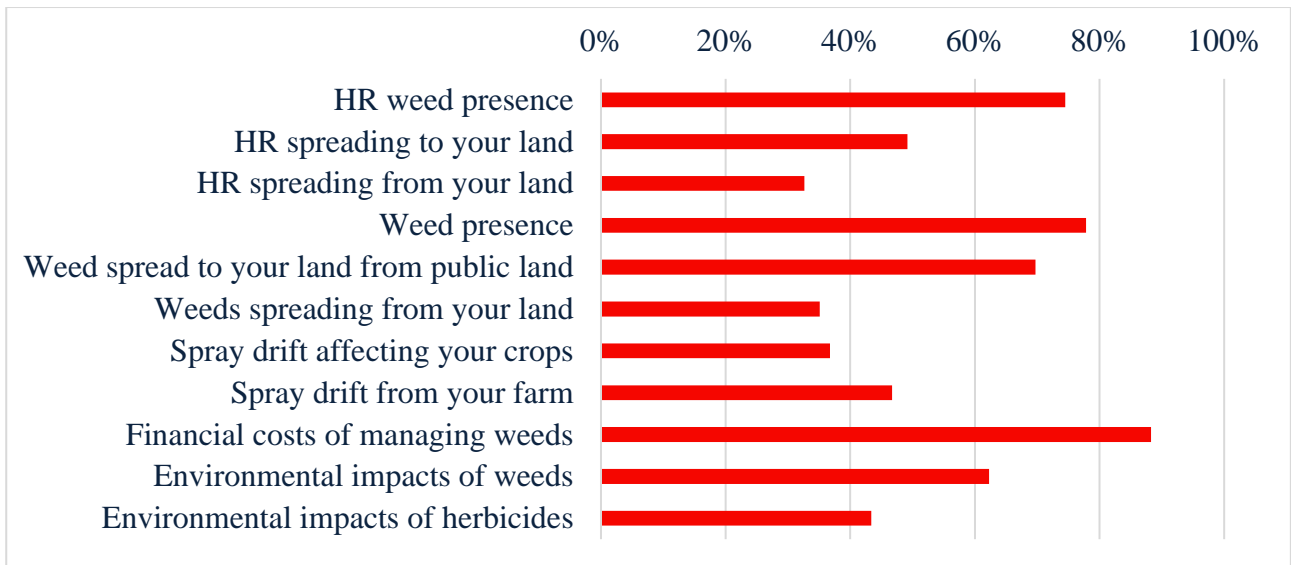


Figure 4. Proportion of growers who were concerned or very concerned about 11 weed management issues.

PREFERENCES AND OPINIONS ABOUT WEED MANAGEMENT

Growers were asked to indicate the extent to which they agreed with 13 statements about weed management, indicating their preferences and opinions about working independently (Figure 5) and collaboratively on weed management (Figure 6). The four statements that elicited the highest levels of agreement were: weeds are everybody’s problem (96% agreed or strongly agreed); each land manager has a responsibility to the whole region to control weeds (95% agreed or strongly agreed); controlling weeds is difficult (86% agreed or strongly agreed); and effective control of weeds requires land managers to work together (84% agreed strongly agreed).

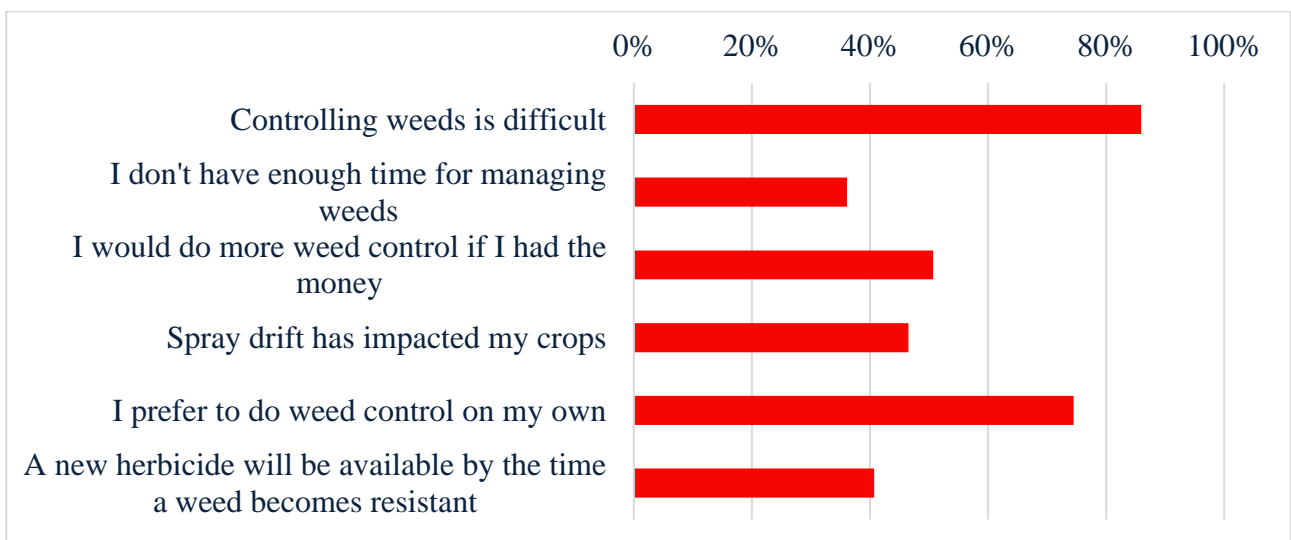


Figure 5. Proportion of growers who agreed or strongly agreed with 6 statements about weed management.

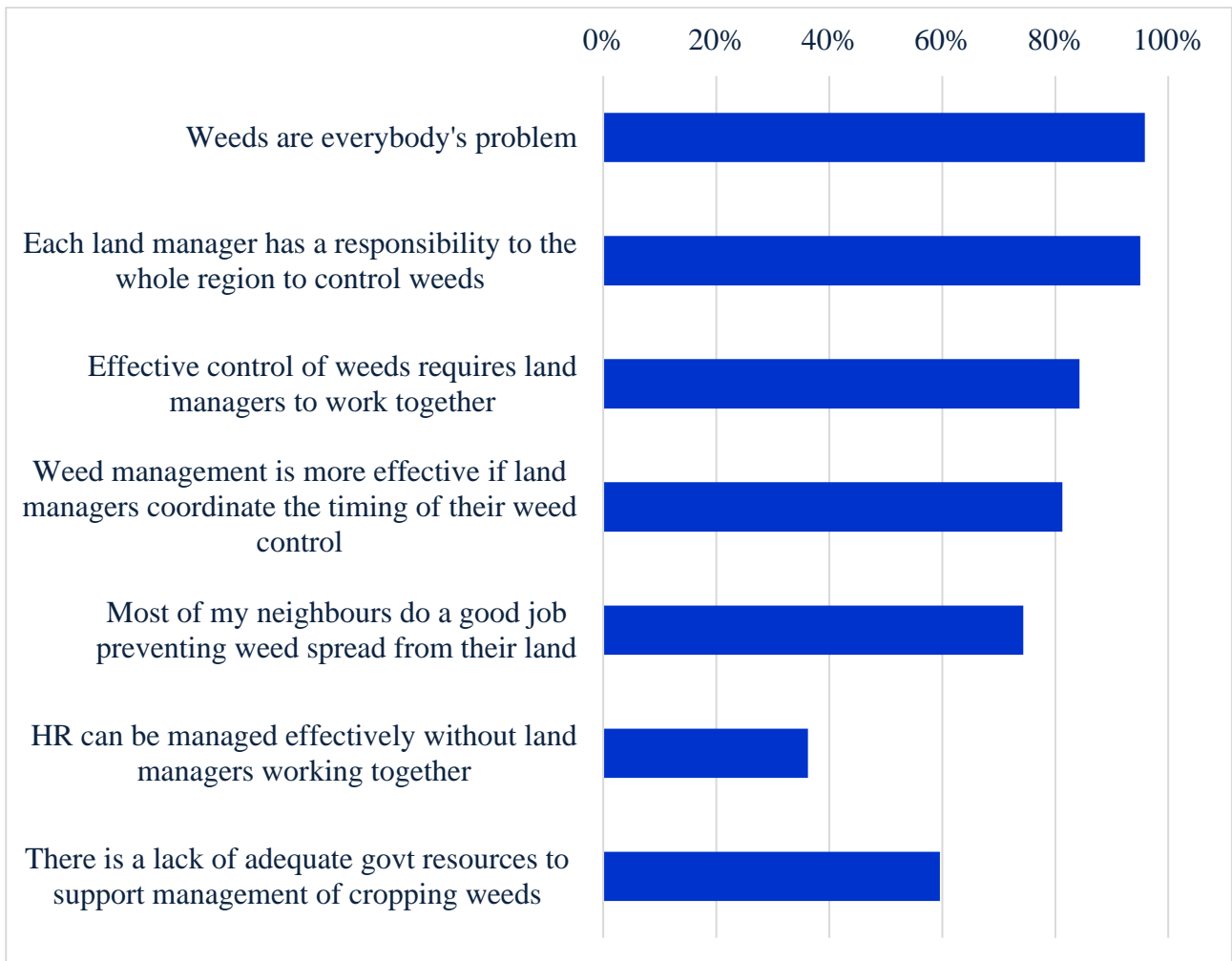


Figure 6. Proportion of growers who agreed or strongly agreed with seven statements about collaborative weed management.

BENEFITS OF AREA-WIDE MANAGEMENT OF WEEDS

Growers were asked to indicate which benefits they believed would come from managing weeds with other land managers (Figure 7), i.e. the benefits of area-wide management of weeds.

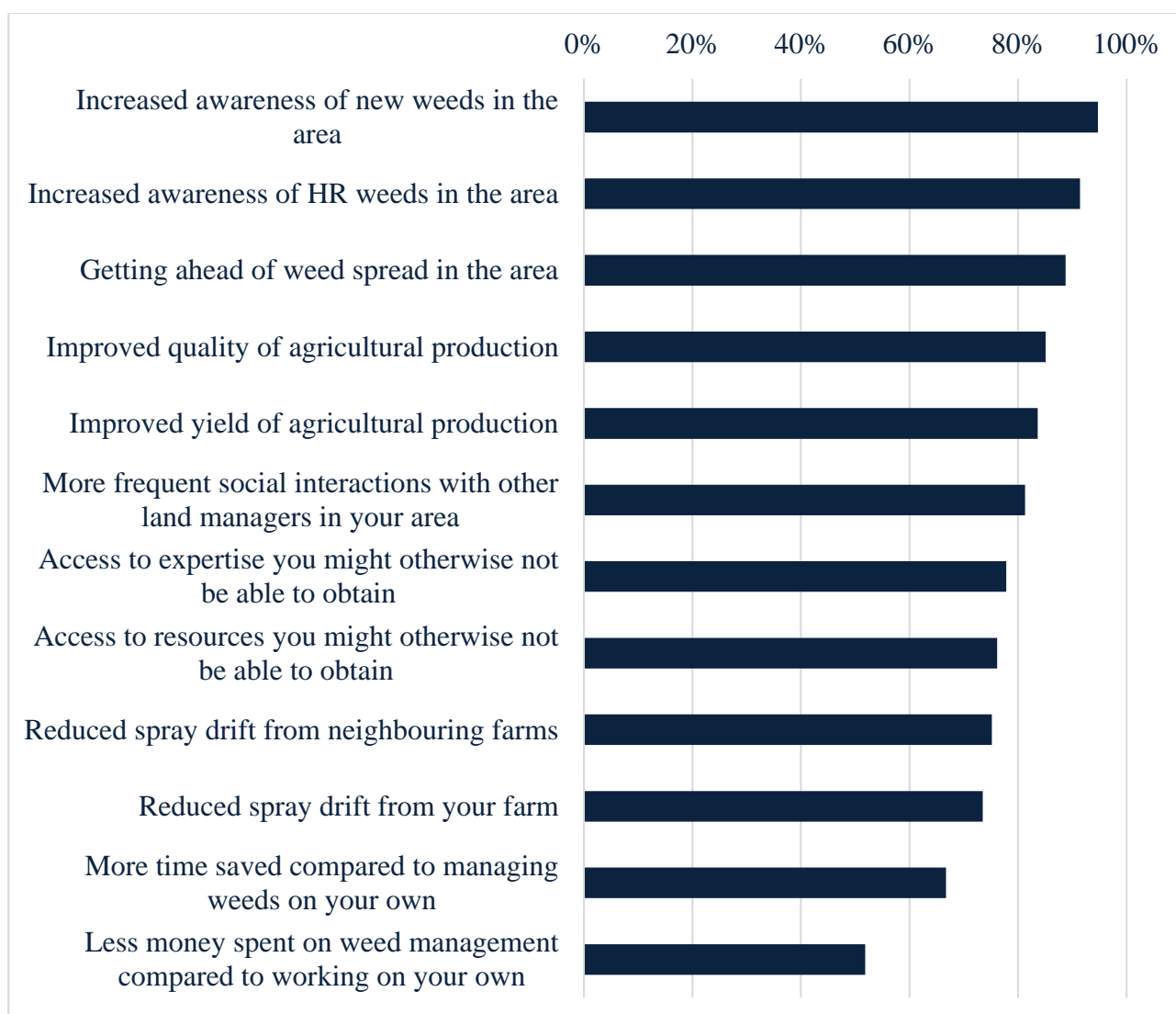


Figure 7. Proportion of growers who agreed that each benefit would arise from managing weeds with other land managers.

The three benefits that growers were most likely to attribute to area-wide management of weeds were increased awareness of new weeds in the area (95%), increased awareness of herbicide resistant weeds in the area (91%) and getting ahead of weed spread in the area (89%). Growers were least likely to believe that working with other land managers on weeds would reduce money spent on weed control (52%).

COSTS OF AREA-WIDE MANAGEMENT OF WEEDS

Growers were asked to indicate which costs they believed would come from managing weeds with other land managers (Figure 8), i.e. the costs of area-wide management of weeds.

The four costs that growers were most likely to attribute to area-wide management of weeds were too much time spent in meetings (65%), limited options for organic growers (62%), being restricted to using specific herbicides (55%), and having to change spraying operations to accommodate

neighbours (55%). Growers were least likely to believe that others knowing sensitive information about their farming operations would be a cost of area-wide management of weeds (24%).

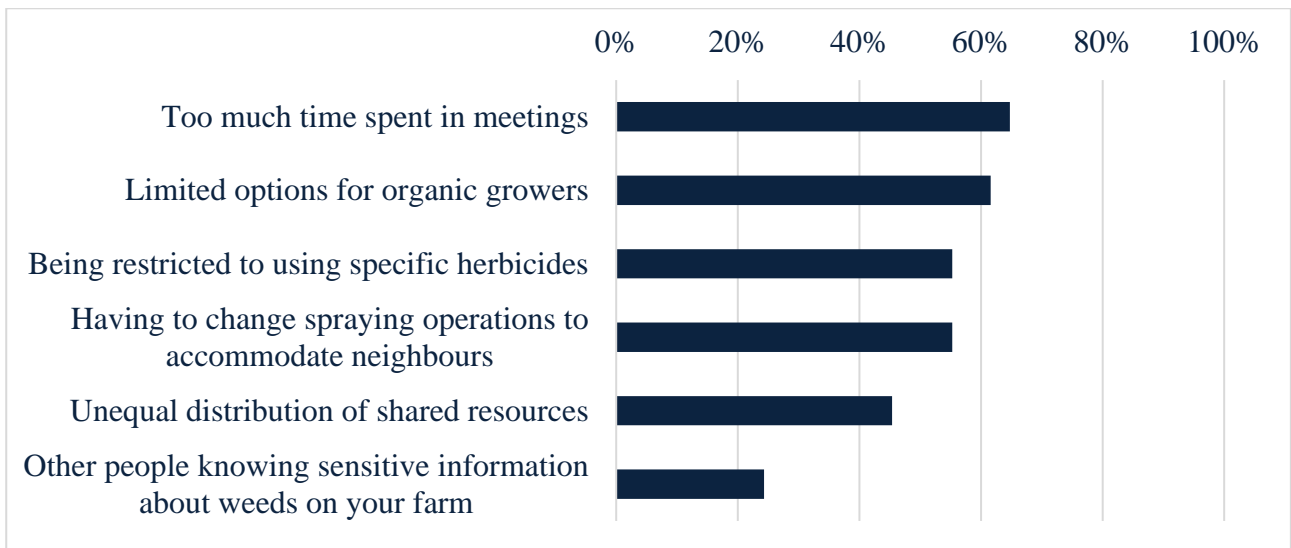


Figure 8. Proportion of growers who agreed that each cost would arise from managing weeds with other land managers.

Collaborative weed management practices

Growers were asked whether they are aware of land managers working together in their area on weeds and whether they participate in any such activities. Two-fifths (40%) of growers indicated that they believe that area-wide management of weeds occurs in their area and one-quarter (24%) of growers participate in weed management activities that involve other land managers.

There were significant differences in the proportion of growers who participate in area-wide weed management activities (Figure 9). Growers from Sunraysia (31.5%) were most likely to participate in weed management with other land managers and growers from the Riverina were least likely to (17.9%).

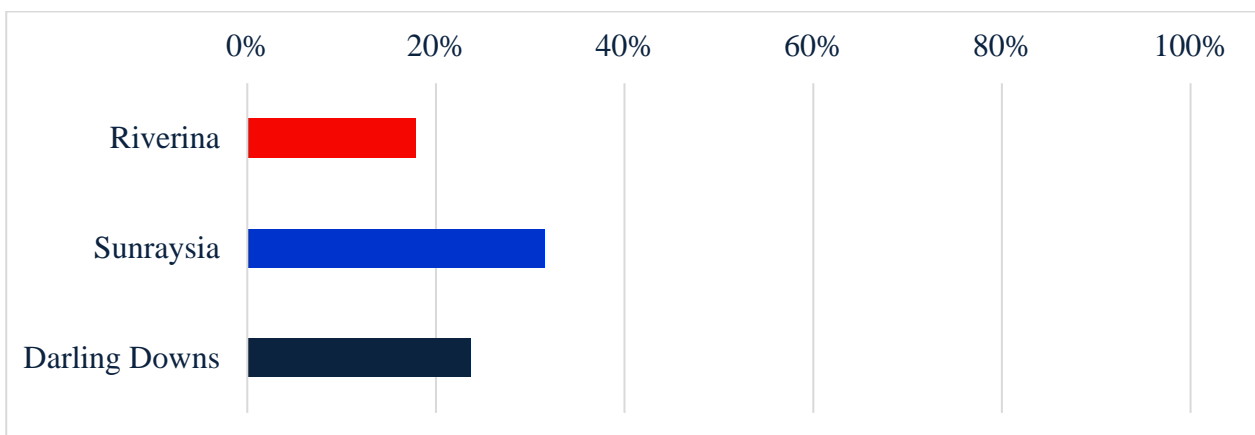


Figure 9. Proportion of growers who participate in area-wide management of weeds in each region.

AREA-WIDE WEED MANAGEMENT PRACTICES

Given that there are diverse weed management practices that could be considered to constitute area-wide weed management, growers were asked to indicate the frequency with which they participate in six collaborative weed management practices (Figure 10).

Growers were most frequently get advice from an agronomist about weed management, with 58% of growers always doing so.

With respect to activities that involve other land managers, growers most frequently discuss weed management with neighbours (33% do this frequently or always) and manage weeds on public property (32% do this frequently or always).

Growers least frequently receive external support for weed management (65% never), work on weed management with government staff (51% never) or work with neighbours to manage weeds (40% never).

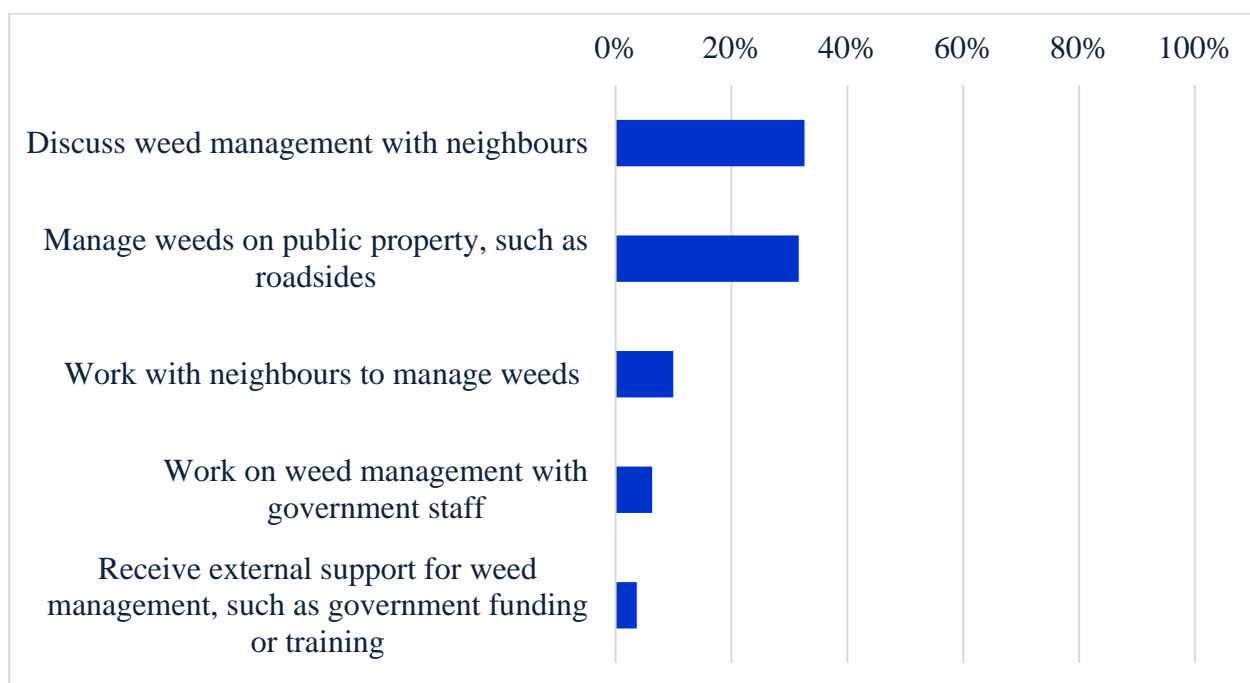


Figure 10. Proportion of growers who frequently or always participate in six collaborative weed management practices.

LIKELIHOOD OF PARTICIPATING IN AWM IN FUTURE

A question was included in the survey to understand the extent to which growers may be willing to participate in nine collaborative weed management practices in future (Figure 11).

Growers indicated that they are most likely to share crop information with neighbours to minimise risk of damage from spray drift (36% very likely) and share information about weed management with other land managers (30% very likely).

Growers indicated that they would be least likely to collectively finance weed management activities with other land managers (79% unlikely or very unlikely), apply for external support to

manage weeds (62% unlikely or very unlikely) or share equipment with other land managers (58% unlikely or very unlikely).

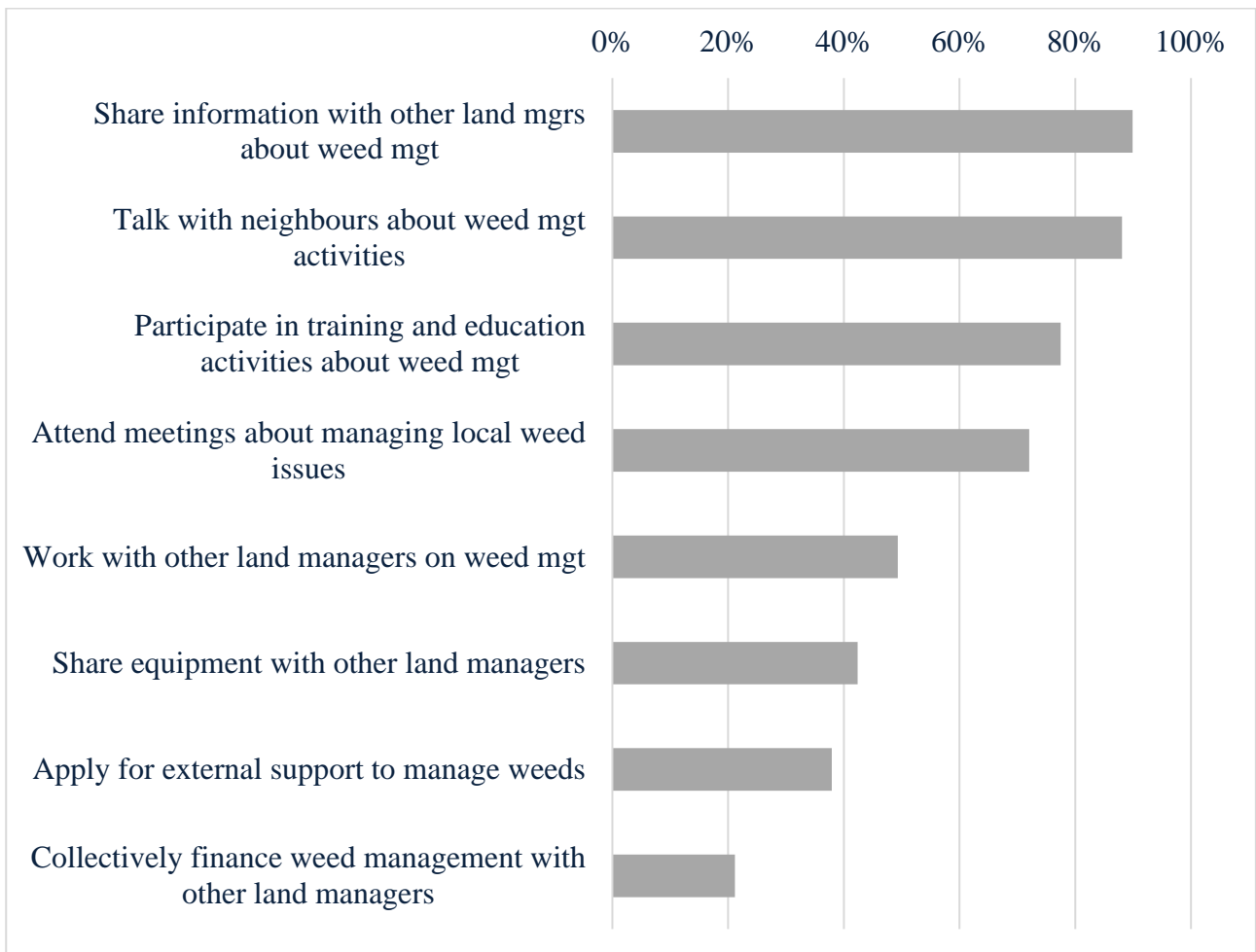


Figure 11. Proportion of growers who would be likely or very likely to participate in nine collaborative weed management practices in future.

Concluding remarks

The results presented in this report indicate high levels of agreement among growers about the need for collaboration and the benefits that can come from working together on weeds. There are also common concerns about the costs of participating in area-wide management. Next, the project team will examine what factors explain whether growers participate in collaborative weed management activities. In the interim, these preliminary results provide a snapshot of what is important to growers across three cropping regions in Australia, which need to be taken into account when designing and implementing area-wide weed management strategies.