



Data driven sales & marketing  
for farmers & agribusiness™

# 2021 PROJECT PHOENIX

## *Native Seed Supply and Demand Dataset 1*





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*"Investment into the structure and function of the native seed industry has been a key issue for at least two decades. The recent national bushfire crisis has highlighted that if we are to ensure viable conservation and future efforts to undertake large scale and continued bushfire restoration, as well as the need to address future landscape resilience, the native seed and plant supply sector is not currently in a position to respond at the scale required."*

<https://www.greeningaustralia.org.au/projectphoenix/>

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*"Native seed represents growth, potential and hope, which is why Project Phoenix has an emphasis on practical action. We must ensure future bushfire recovery can be undertaken with the confidence of having a strong seed and native plant supply sector to support it.*

*This strategic project includes the planning and mobilisation of key activities in the native seed and plant sector, as well as the development of a self-sustaining, sector supporting Indigenous groups, regional communities and landholders".*

<https://www.greeningaustralia.org.au/projectphoenix/>

## Introduction

As part of the national response to the 2019-20 bushfires, Greening Australia received \$5m in initial funding from the Federal Government under its Wildlife and Habitat Bushfire Recovery program for a strategic program to build and secure native seed and plant supply for landscape restoration, recovery and resilience in bushfire-affected areas and other vulnerable landscapes. This Project Phoenix is led by an external steering committee that includes the Council Heads Australia Botanic Gardens, Greening Australia, CSIRO, Australian Seedbank Partnership, Australian Network Plant Conservation, Australian Tree Seed Centre, Indigenous Land and Sea Corporation, RIAWA, Greenlife Industry Australia, Society Ecological Restoration Australia and Australian Land Conservation Alliance.

KG2 was commissioned to conduct a survey among native plant nurseries, seed collectors, landcare groups and other producers and consumers of native plant seed to understand the size of the native plant/seed market and to assess the following:

1. How much native seed is being produced? (Wild collection and Seed Production Areas)
2. How much native seed is being requested for purchase? (Wild collection and Seed Production Areas)
3. Do buyers differentiate between wild collection and Seed Production Areas when purchasing?
4. If the answer is yes, what is their preference?
5. In the last 12 months have you been able to meet your native seed purchasing requirements?
6. If the answer is no what percentage is unmet demand?
7. Over the last five years of purchasing native seed what percentage is unmet demand?
8. Over the last five years of how much native is wild collection or from Seed Production Areas?
9. Over the last five years of producing seed how much has been sold?
10. Over the last five years of producing seed how much is unmet demand?



## Methodology

KG2 owns and manages Australia's most comprehensive agriculture database which provided access for this survey to a full list of nurseries and councils as well as farmers to report on their native nurseries where applicable. Public data was used to supplement any gaps.

KG2 interviewed 276 people from these contacts. A report on the result of the calls is provided in this report to identify the reasons for being unable to contact them or, if contacted, why they were not eligible for the survey.

As well as establishing an overview of the market, the full survey provided feedback on the ten areas of interest to Project Phoenix outlined in the introduction.

Participants were also asked if they would be willing to provide their details to provide future feedback to Project Phoenix.

All calls were made from KG2's in-house call centre using a CATI (computer assisted telephone interviews) system by trained, experienced interviewers. Being almost exclusively university agriculture graduate and post-graduate students, they have knowledge and understanding that enabled them to create a rapport with nurseries and farmers to probe responses appropriately.

Data analysis, outputs and reporting were all completed in-house at KG2.

# Call Report

- KG2 made calls to 1857 contacts from an initial loading of 2400 contacts, resulting in 276 completed interviews. The participation rate was 15% overall but, when the 883 contacts where there was no connection are excluded, the 276 is a healthy 28% of the remaining 974.
- The sample was sourced from KG2's database, supplemented by public data.
- There was a large overlap between those who produced seed (34%), collected seed (84%) and purchased seed (61%).
- The breakdown of the calls is shown here, including the reasons for having not been contacted or why they had not participated.
- Among those spoken to but not surveyed, the main reasons for non-participation were not being interested (37%), not involved in production or purchase of native seed (23%), and no one appropriate available (17%).

## CALL REPORT

	Number	%
<b>Total Records Contacted</b>	1857	100%
<b>Completed surveys</b>	276	15%
	Number	%
<b>Completed Participants</b>		
Produced Seed	94	34%
Collected Seed	233	84%
Purchased Seed	167	61%
	Number	%
<b>Reasons for not completing survey</b>		
<b>A. Contacted but connection not made</b>		
Answering Machine / No Answer	607	69%
Disconnected	276	31%
<b>Total Non-connection</b>	883	100%
<b>B. Spoken to but survey not completed</b>		
Not interested	256	37%
Not involved with native seed (production or purchase)	162	23%
No one appropriate at this number	117	17%
Callback (rescheduled call but not completed)	63	9%
Retired / Not involved in industry	38	5%
Not applicable / Didn't qualify	34	5%
Doesn't do phone surveys / research	27	4%
Deaf / No English	1	0%
<b>Total Non-connection</b>	698	100%

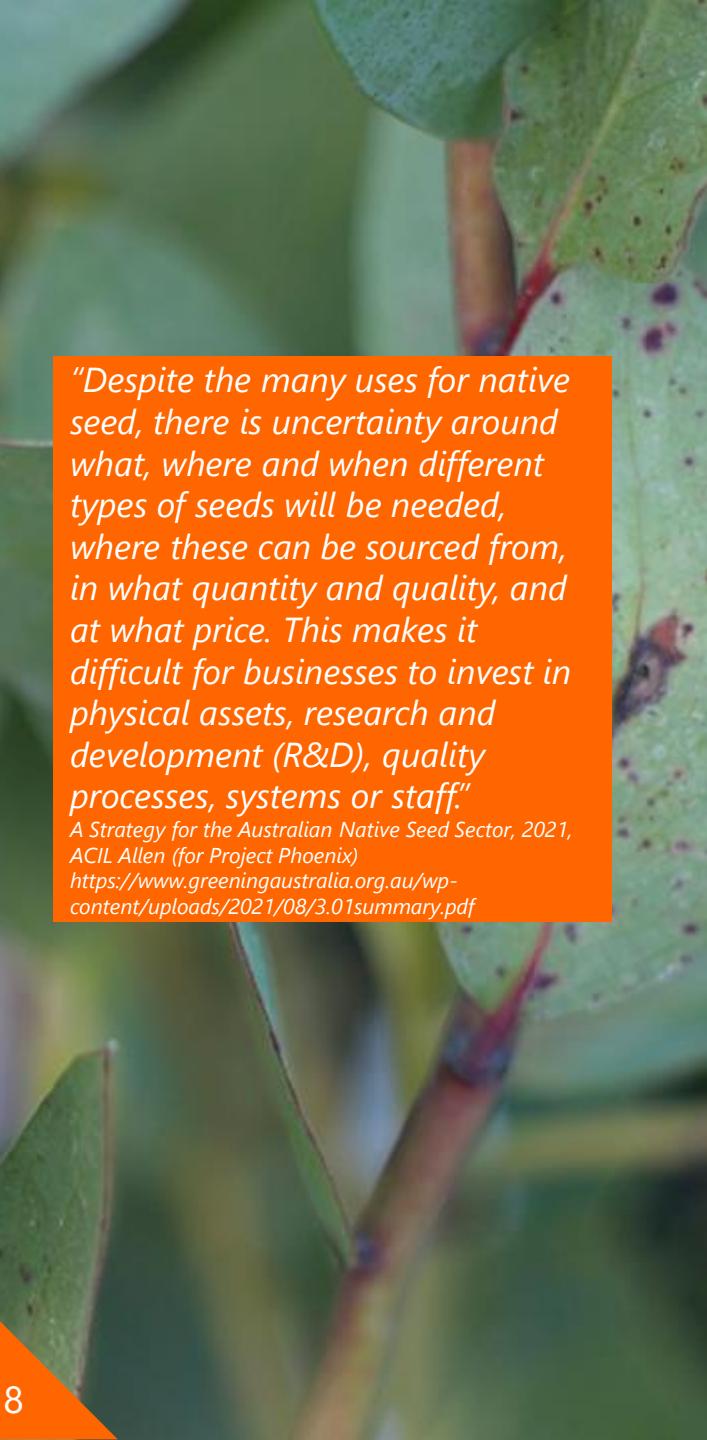
# Overview and Summary





## Why the information from this project is important

- Information on the size and configuration of the native seed sector is crucial to the future of the restoration and rehabilitation of native vegetation.
- Understanding the sector will allow the identification of gaps, where the industry is well placed, where strategic improvements could be made, where funding should be applied, and greater coordination.
- As demand for seeds and plants for restoration and rehabilitation, and demand for offsets increases, there is pressing need to develop and support the sector in meeting this demand.



## Overview

*"Despite the many uses for native seed, there is uncertainty around what, where and when different types of seeds will be needed, where these can be sourced from, in what quantity and quality, and at what price. This makes it difficult for businesses to invest in physical assets, research and development (R&D), quality processes, systems or staff"*

A Strategy for the Australian Native Seed Sector, 2021,  
ACIL Allen (for Project Phoenix)  
<https://www greeningaustralia org au wp-content/uploads/2021/08/3.01summary pdf>

- 66% of the sample were nurseries: 39% were commercial nurseries, 16% not for profit or community nurseries, 6% council nurseries and 5% nurseries on farms.
- Among the 276 respondents to the phone survey, 236 produced or collected native plant seed, of which only 27 did not also purchase seed. 40 only purchased seed (that is, did not collect or produce). 80 only collected native seed, 3 only produced seed . Of the total who collected native seed, 40% also produced native seed and 54% purchased. Of the total who purchased native seed, 39% also produced native seed and 76% collected.
- 81% of the 178 respondents who had acquired native seed were able to acquire the volume they needed.
- The survey suggests limited knowledge of funding, grants, investment or programs to encourage the production of collection of native seed in the industry. Only 38 (14%) of the 276 contacts said they were aware of relevant initiatives and a further 5% were unsure. Among those who had awareness, Landcare attracted the most recognition (24%), followed by Project Phoenix (13%).
- At least 7 in 10 respondents mentioned conservation, biodiversity restoration / direct seeding, stored for future use, and landcare-type projects as reasons to have acquired native seed
- More than two thirds did planting or direct seeding.
- 30% said they could have produced or collected more seed if there had been more demand.
- Respondents were generally optimistic about increasing the volume of seed they will produce or collect in the next year, primarily due to increased demand or new clients.
- The weight of native seed produced or collected (297 kg) and purchased (238 kg) in the last year suggest a higher volume than the average over the last five years (176 and 173 kg respectively). However, the average reported hectares restored, rehabilitated or conserved was lower for the last year (532 ha) than the average 858 ha improved ha per year over the last 5 years.
- On average, around 60% of acquired seed was sold and this has been stable over the last 5 years.
- There was a preference to purchase seed from a wild collection than a seed production area although many did not have a preference.
- On average, a large 3277.6 kg of seed was on hand for 174 respondents.
- 87% agreed to provide their details to Project Phoenix for future contact
- Extrapolations from the survey sample to values for the full population are presented in the summary based on assumptions set out in market sizing. These are indicative estimates only as an accurate size of the universe is unknown.

# Market Size Estimate – Seed Supply and Demand

- As the total populations are not known for the categories of those who produce, collect or purchase native seed, for the purpose of estimating market size, it is necessary to devise a factor for extrapolation of the survey results to provide an indication of the total market.
- Of the initial prospective contact list of 2400, 1857 were phoned. Of these 276 phone numbers were disconnected and 414 spoken to did not qualify for the survey (e.g. not involved with native seed, retired). Removing these 690 ineligible contacts leaves a balance of 1167 potential participants in the industry.
- The 276 completed surveys as a proportion of the 1167 potential participants gives an extrapolation factor of 422% for market sizing.
- It is not feasible to estimate extrapolation factors by industry segment (produce, collect, purchase seed) because the proportions of these in the total sample are not known and also because these three groups are not mutually exclusive. Many respondents were in two or three categories.

- The table below estimates supply and demand for native seed, in the last year and last 5 years.

## SUPPLY

- Average kg produced/collected this year was 295,888 kg, up from an average 174,888 per year over the last 5 years
- If there had been more demand, supply would have increased to 355,149 kg this year, up from 213,195 average per year in the last 5 years.

## DEMAND

- Using an average of reported purchase and sale data, the average number of kg sold was 141,057 this year, up from 93,063 per year in the last 5 years.
- An estimated 30,353 kg of seed was unable to be acquired this year which brings the total estimated demand to 171,410 kg, up from a 5 year annual average of 115,098

## HECTARES IMPROVED

- While supply and demand estimates are well up on the last 5 years, the average annual number of improved hectares has declined.
- Only 2% more could have been improved if there was more seed available, noting that this survey is focussed on producing seed but not those who use the seed and plants.

ESTIMATED SUPPLY AND DEMAND	Last Year	Last 5 Years	Avg per Year Last 5 Years
<b>SUPPLY</b>			
Kg of seed produced/collected	295,888	874,219	174,844
Additional kg could have been produced if more demand	59,261	191,757	38,351
<b>SUPPLY PLUS UNMET PRODUCTION (kg)</b>	<b>355,149</b>	<b>1,065,976</b>	<b>213,195</b>
<b>DEMAND</b>			
Kg purchased	129,399	469,691	93,938
Kg sold	152,716	460,935	92,187
<b>DEMAND (kg) - Average kg purchased/sold</b>	<b>141,057</b>	<b>465,313</b>	<b>93,063</b>
Kg of seed unable to acquire	30,353	110,175	22,035
<b>DEMAND PLUS UNMET DEMAND</b>	<b>171,410</b>	<b>575,488</b>	<b>115,098</b>
<b>HECTARES IMPROVED</b>			
HECTARES IMPROVED	301,005	2,425,909	485,181
Additional hectares that could have been produced if seed available	5,530		
<b>IMPROVED HA PLUS UNMET IMPROVEMENT</b>	<b>306,535</b>		

# Summary Response to the Brief

## Variation in Size of Operations

- The survey revealed a wide range of scales of the operations surveyed.
- For example, the amount of seed collected over the last five years ranged from 0.5 kg to 30,000 kg, suggesting operations range from small one-person, part-time to significant commercial operations.
- Similarly, the hectares treated over five years ranged from 1 ha to 20,000 ha.
- There are other ranges of similar extent which should be borne in mind in considering average results.

## How much native seed is being produced?

- Of the 236 responses, the average weight of native seed collected or produced in the last year was 297.1 kg each. This extrapolates to an estimated market size of 296 tonnes.
- The annual average over the last five years was lower at 213 tonnes.
- 80 respondents reported that, on average, each could have produced 568 more kg of seed, resulting in a market estimate that a further 59.3 tonnes could have been produced in the last year had there been more demand.

## How much native seed is being requested for purchase? (Wild collection and Seed Production Areas)

- Using an average of the kg purchased and kg sold by respondents in the last year, the market estimate for demand was 141,057 kg for the last year, well up on the estimated average of 93,063 kg (93 tonnes) a year for the last five years.

## In the last 12 months and 5 years have you been able to meet your native seed purchasing requirements? If the answer is no what percentage is unmet demand?

- On average, 178 respondents said they had acquired 81% of the seed they needed.
- The proportion that had been acquired ranged from a low of 25% to 100% with most in the higher ranges.
- Extrapolating this shortfall suggests that around 30 tonnes of seed was not able to be acquired (about 22% of the total amount purchased/sold).
- The estimate for unmet demand for seed in the last five years is 110,175 kg (average 22,035 kg a year).
- The reasons for this are not revealed but it could be due to specific needs or timing of requirements.
- Interestingly, the average amount of seed held for future use is 3,277.6 kg (market size estimate of 570 tonnes) suggesting many operations are able to obtain adequate supplies, or were holding it for already ear-marked projects.

## Over the last five years how much native seed is wild collection or from seed production areas?

- 182,575 kg (182 tonnes) was produced by those sampled over the last five years. Extrapolating this to the market gives 770,466.3 kg (770 tonnes).
- The majority (88%) of the 233 respondents who produced or collected seed collected wild seed, 39% collected from a seed production area, leaving 27% who collected from both.
- Assuming the same 88% wild seed collection where respondents used both sources, there was 154,751 kg from wild collection and 27,824 kg from production areas for the last five years. Extrapolating this to the broader market results in 653,049 kg (653 tonnes) and 117,417 kg (117 tonnes) respectively.
- This 85% from the wild and 15% from seed production areas estimated from this data is below the preference reported for wild seed of 69% and production seed (31%). This suggests unmet demand for seed production areas, possibly due to their limited number and size. Reasons for this paucity will be varied but could include limited knowledge of the potential, lead times for establishment, relative profits, uncertain demand and markets over time and potential buyers not being identified.



# **Summary Response to the Brief**

## ***..continued***

### **Over the last five years of producing seed how much has been sold?**

- The respondents who sold a percentage of the seed they produced or collected in the last five years sold a total of 109,226 kg (109 tonnes). This results in a market estimate of 460,935.4 kg (461 tonnes).
- The 129 who purchased native seed on average bought 862.8 kg over the last five years, a total of 111,301 kg (111 tonnes). The market size estimate is 469,696 kg (470 tonnes) purchased in the last five years.
- These two methods of estimation agree closely for the sample size.

### **Over the last five years of producing seed how much is unmet demand?**

- 80 contacts said they could have produced or collected more seed last year if there had been demand for it.
- The average of 568 kg per respondent who had produced or collected seed suggests an extra potential of 45,440 kg (45.4 tonnes) among those surveyed. This extrapolates to a market size estimate of 191,756.8 kg (192 tonnes).

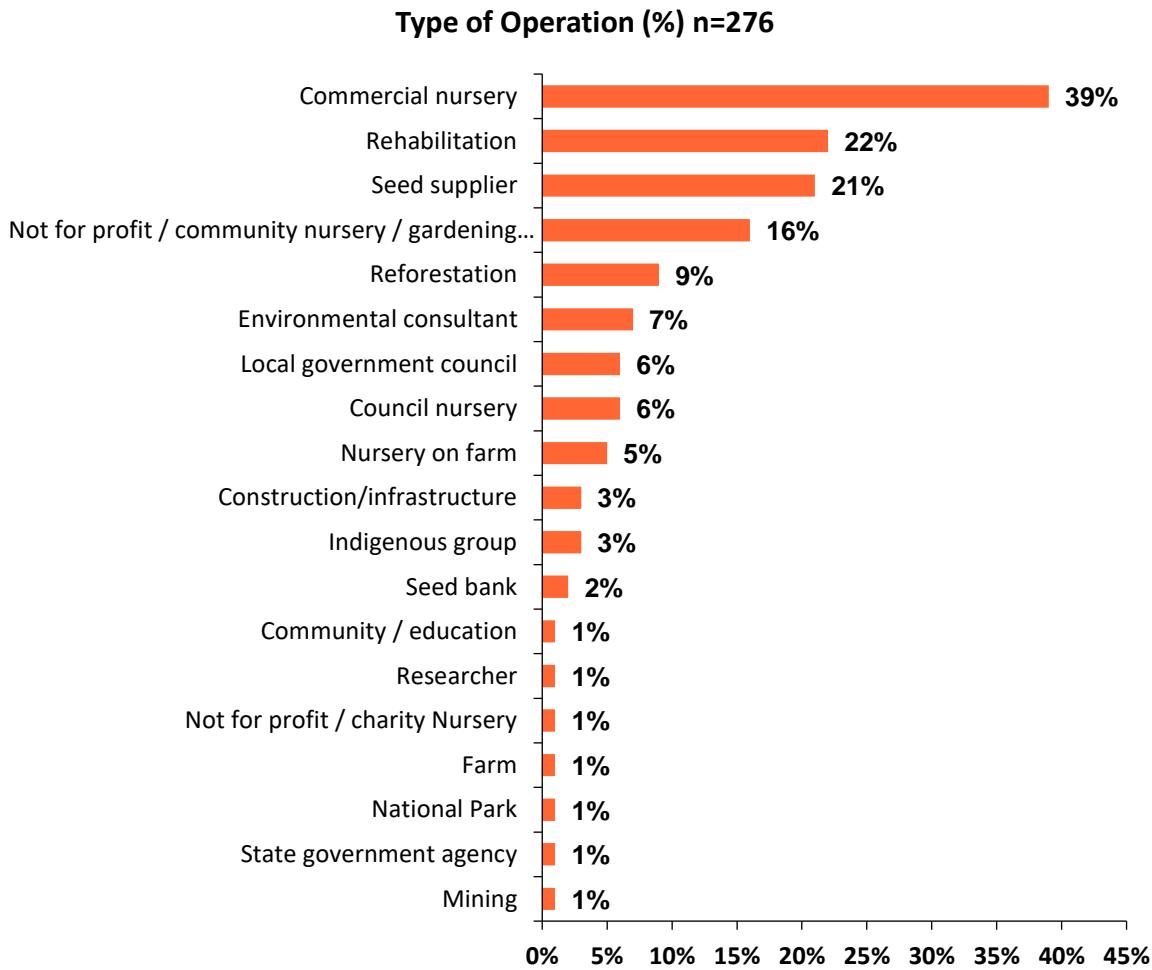
### **Do buyers differentiate between wild collection and seed production areas when purchasing? If the answer is yes, what is their preference?**

- There was a clear preference for wild seed at 38%, compared to a seed production area at 17%.
- If “no preference” and “don’t know” are considered equivalent, this lack of preference totals 48%.
- Given the shortage of supply over demand, it could be that this lack of preference by almost half the sample reflects necessity – that sources cannot always be selected by type.
- Further, seed of desired species of plant may only be available from their preference for wild or produced.

# Detailed Survey Results

# Q1. How would you best describe your operation?

- In this question multiple answers were possible from one respondent.
- The largest proportion (39%) were commercial nurseries, with a further 16% being not for profit or community nurseries, 6% council nurseries, and 5% for nurseries on farms, a total of 66% nurseries of any type.
- Those seeing their operation as involved in rehabilitation were 22% and reforestation at 9%.
- Seed banks accounted for only 2% of responses.
- The table overleaf shows the operation types in the survey by activity involved in, the purpose the seed was for and state.
- While there were not a lot of significant differences
  - 63% of those who only purchased native seed were a commercial nursery
  - Only 35% who collected native seed were a commercial nursery
  - 42% who produced, collected and purchased were a seed supplier
  - 37% who produced native seed were a seed supplier
  - 26% who used the seed for biodiversity restoration were a rehabilitation operation
  - 39% who used seed for mine remediation were a seed supplier
  - 48% who used seed for urban development projects were a commercial nursery
  - 35% who used seed for 'other' purposes were reforestation operations



Q1 Best description of operation (column %)	TOTAL	Native Seed Activity Conducted												
		Produced Native Seed	Collected Native Seed	Purchased Native Seed	Purchased OR Collected	Only produced native seed	Only collected native seed	Only purchased native seed	Produced, collected but not purchase	Collected & purchased, not produce	Produced collect & purchased	Produced AND collected	Produced AND purchased	Collected AND purchased
Q1 - How would you best describe your operation?														
Commercial nursery	39	40	35	48	36	67	20	63	41	48	39	40	39	44
Rehabilitation / Contractor	22	26	23	23	23	33	23	18	19	21	28	25	28	25
Seed supplier	21	37	23	22	23		15	8	30	11	42	38	42	27
NFP/community nursery/gardening group	16	13	17	13	17		23	10	15	16	13	13	13	14
Reforestation	9	11	9	11	10	33	6	5		13	14	10	14	13
Enviro consultant / soil testing program	7	7	8	6	8		8		7	8	8	8	8	8
Council nursery	6	3	7	4	7		14			5	5	3	5	5
Local government council	6	3	7	5	7		8	3	7	11	2	3	2	6
Nursery on farm	5	7	6	5	6		6	3	7	3	8	8	8	6
Indigenous group	3	2	3	4	3		4	3		5	3	2	3	4
Construction/infrastructure	3	4	3	3	3		1		4	3	5	4	5	4
Seed bank	2	3	2	2	2		1		4	2	3	3	3	2
Mining	1	1	1	1	1		3	3	4			1		
State government agency	1	2	2	1	2		1		4	2	2	2	2	2
National Park	1		1		1		4							
Farm	1			1				5						
Not for profit / charity nursery	1	1	1		1		1		4			1		
Researcher	1		1	1	1					3				2
Community / education	1	1	1	1	1		1			2	1	2	1	
Federal government agency	0	1	0		0				4			1		
Botanic garden	0	1	0	1	0					2	1	2	1	
Base:	276	94	233	166	236	3	80	40	27	62	64	91	64	126

Statistically significant low score

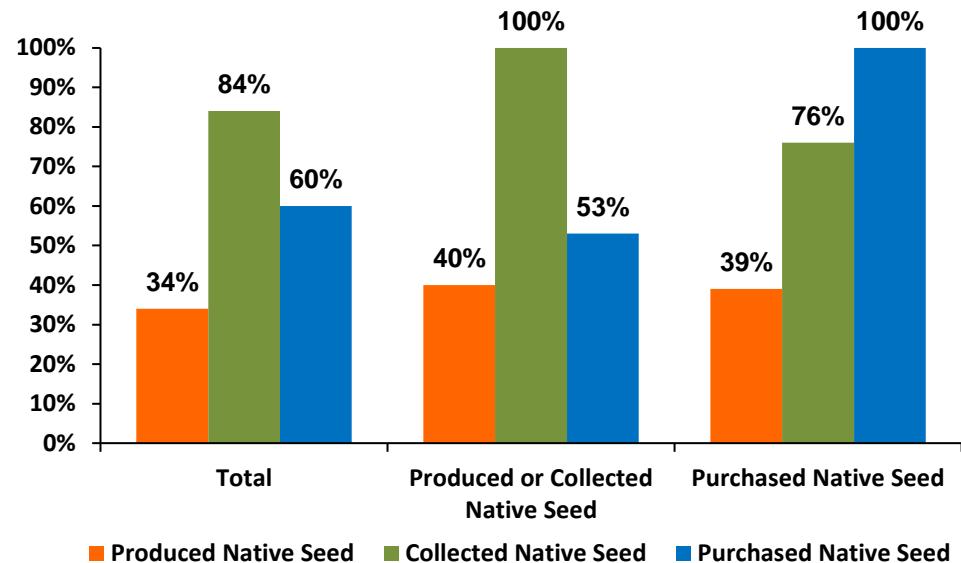
Statistically significant low score

Q1 Best description of operation (column %)	Purpose Seed Used For												State					
	Biodiversity restoration	Conservation	Mine remediation	Other	Research	Land-care type projects	Store for future use	Carbon Offset-type projects	Road-side type projects	Development Offset projects	For re-sale	Native food sector	Urban develop focus project	SA/N/T	WA	Vic/Tas	NSW ACT	QLD
Q1 - How would you best describe your operation?																		
Commercial nursery	36	36	42	35	15	39	40	45	43	47	45	47	48	42	45	33	39	54
Rehabilitation / Contractor	26	25	22	18	15	25	22	21	14	20	18	17	17	25	38	22	20	14
Seed supplier	22	21	39	24	31	21	22	25	24	22	30	21	22	17	31	14	27	17
NFP/community nursery/gardening group	17	17	5	18		17	17	10	16	11	14	19	15	17	7	17	17	17
Reforestation	10	9	9	35	8	11	9	8	10	8	8	7	8	4	14	13	7	3
Enviro consultant / soil testing program	7	7	9	6	23	7	8	7	7	6	5	7	7	4	7	8	6	6
Council nursery	7	6	5	6	15	7	8	4	9	8	3	6	8		6	10	6	
Local government council	7	7	3		8	6	7	8	6	6	3	3	5	13	7	7	4	3
Nursery on farm	5	6	4	12		7	6	8	7	6	8	6	6	8		8	2	9
Indigenous group	3	4	1			3	4	4	2	5	4	6	3		5	4		
Construction/infrastructure	3	2	4	6		3	3	3	5	4	3	4	3	8		3	2	
Seed bank	2	2	4		15	2	1	3	2	3		3	1		4	1		
Mining	1	2	5			1	1	1	1	1		1	2	4	3	1	1	
State government agency	2	1	3	6		2	2	3	2	3	2	2	2	8	3		1	
National Park	1	1			1	1								13		0		
Farm	1	1				1										2	0	
Not for profit / charity nursery	1	1	1			1	0	2		1		1	1			1	1	
Researcher					15		0									1	1	
Community / education	1	1	1	6		1	1	1	1	1	1	1	1			1	3	14
Federal government agency	0	0	1			1	0	1	1	1		1	1	4				14
Botanic garden	0	0	1			1	0	1	1	1	1	1	1	4				
Base:	229	235	79	17	13	198	217	91	127	106	119	108	132	24	29	98	90	35

## Q2. Did you or your operation collect, produce or purchased native seed in the last year?

- Collection of native seed was the most prevalent activity for 233 out of 276 respondents (84%).
- Of the total who collected native seed, 40% also produced native seed and 53% purchased.
- Of the total who purchased native seed, 39% also produced native seed and 76% collected.
- The table below shows the number of respondents for all possible combinations of produced, collected and purchased.

Activity Conducted in Last Year (%) n=276



TOTAL	Produced Native Seed	Collected Native Seed	Purchased Native Seed	Produced OR Collected native seed	Only produced native seed	Only collected native seed	Only purchased native seed	Produced AND collected native seed but did not purchase	Produced AND purchased native seed but did not collect	Collected AND purchased native seed, but did not produce	Produced, collected AND purchased native seed	Produced AND collected native seed	Produced AND purchased native seed	Collected AND purchased native seed
276	94	233	166	236	3	80	40	27	0	62	64	91	64	126

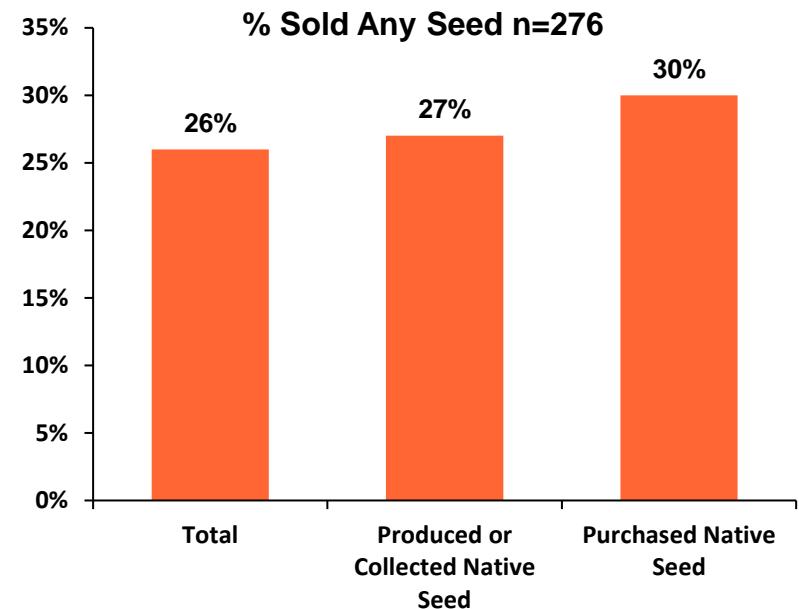
### Q3. For which of the following purposes did you collect, produce, purchase or acquire native seed?

- In this question multiple answers were possible from one respondent.
- There is an overlap between the categories of Produced or Collected Native Seed and Purchased Native Seed of 126 (46% of the sample were in more than one category).
- The order of the responses between the two groups is essentially the same, with comparable percentages for each category.
- It appears Conservation has been taken in its broad sense such that providing native plants or seeds for natural areas is conservation by definition. This is distinct from more specialised uses of conservation of a particular species or vegetation community.
- This is underscored by the similarly high levels for biodiversity restoration and Landcare type projects.

Q3 - For which of the following purposes did you collect, produce, purchase or acquire native seed?	Total	Produced or Collected Native Seed	Purchased Native Seed
Conservation	85.1	88.6	82.5
Biodiversity restoration / direct seeding	83.0	86.4	80.7
Store for future use	78.6	83.5	77.7
Landcare-type projects	71.7	73.7	74.1
Urban developments or urban focused projects	48.6	50.0	54.8
Roadside-type projects	46.0	47.9	50.0
For re-sale	43.1	41.9	45.8
Native food sector	39.1	39.8	43.4
Development Offset projects	38.4	40.3	44.6
Carbon Offset-type projects	33.0	33.1	38.6
Mine remediation projects	28.6	28.4	32.5
Research	4.7	4.7	4.8
Propagation	2.9	2.5	4.2
Unconsidered or irrelevant response	1.8	2.1	1.2
Reforestation	1.1	1.3	0.6
Other	0.4	0.0	0.6
<i>Base:</i>	<b>276</b>	<b>236</b>	<b>166</b>
Statistically significant low score			
Statistically significant low score			

## Q3AA - Did you sell any of the native seed that you collected, produced, purchased or acquired?

- 26% of the 276 respondents overall sold seed.
- Of the 166 who purchased native seed, 30% also sold seed.
- The responses for those who produced native seed and those produced, collected and purchased native seed are statistically significant for the sample size (red and green in the table).



	total	Produced Native Seed	Collected Native Seed	Purchased Native Seed	Produced OR Collected native seed	Only produced native seed	Only collected native seed	Only purchased native seed	Produced AND collected native seed but did not purchase	Collected AND purchased native seed but did not produce	Produced, collected AND purchased native seed	Produced AND collected native seed	Produced AND purchased native seed	Produced AND purchased native seed
Yes	26%	41%	27%	30%	27%	33%	18%	23%	33%	18%	45%	42%	45%	32%
No	72%	56%	72%	69%	72%	67%	83%	75%	67%	82%	52%	56%	52%	67%
Don't know	1%	2%	1%	2%	1%	0%	0%	3%	0%	0%	3%	2%	3%	2%
<i>Base:</i>	<b>276</b>	<b>94</b>	<b>233</b>	<b>166</b>	<b>236</b>	<b>3</b>	<b>80</b>	<b>40</b>	<b>27</b>	<b>62</b>	<b>64</b>	<b>91</b>	<b>64</b>	<b>126</b>

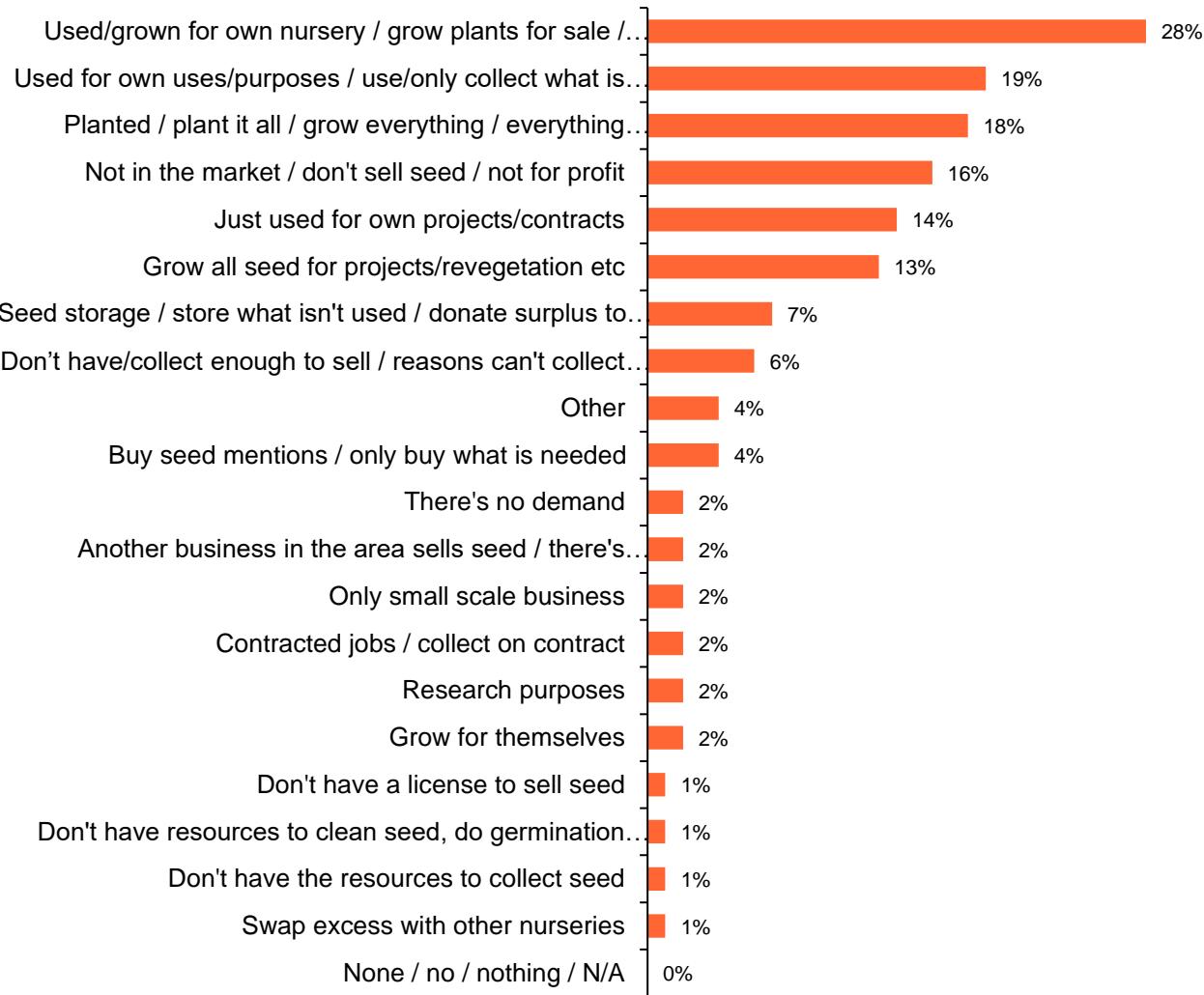
Statistically significant low score

Statistically significant low score

## Q3AB - Why didn't you sell any native seed?

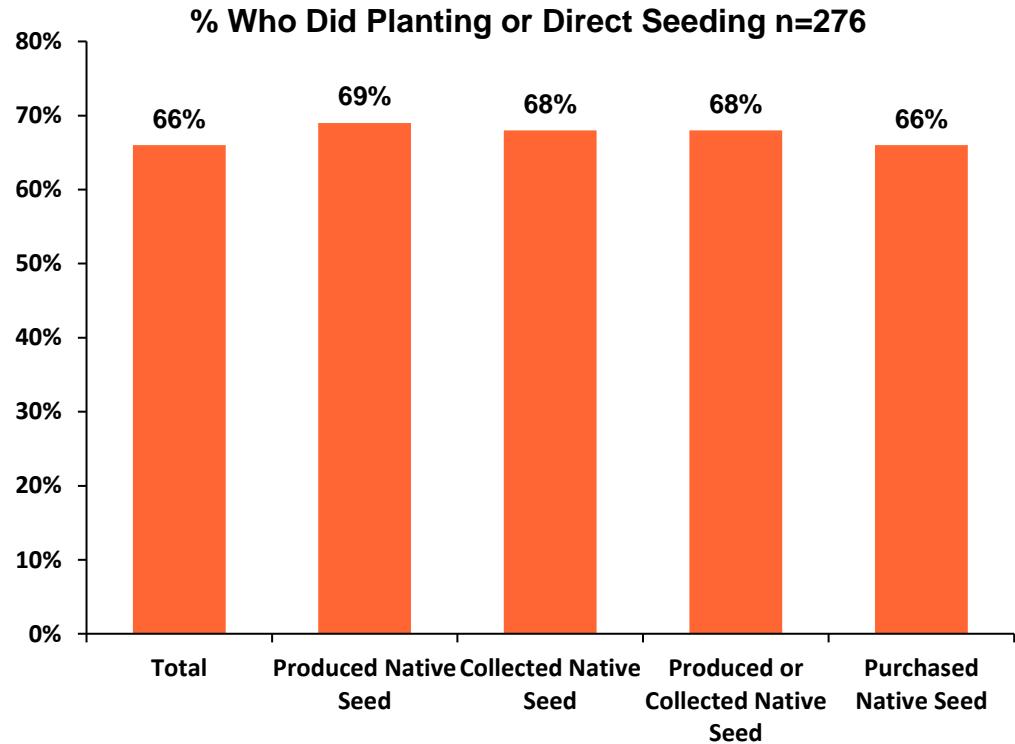
- There were 200 responses for this potentially multi-response and open-ended question.
- While expressed in different terms, by far the most predominant reason (at 55%) was that there was no surplus seed to sell – it was all used within the business or organisation.

Reasons Did Not Sell Native Seed (%) n=200



## Q3AC - Did you do or your organisation do any planting or direct seeding?

- A consistent response was seen from the 276 respondents: two-thirds or slightly more did some planting or direct seeding of native plants across the produced, collected and purchased categories, as shown in the chart.
- The highest proportions were 75% for those who produced and purchased seed, and those who produced, collected and purchased seed.
- Those involved in rehabilitation (92%) and reafforestation (96%) had the highest proportion of involvement in planting and direct seeding. At the sample size, these results are statically significant.

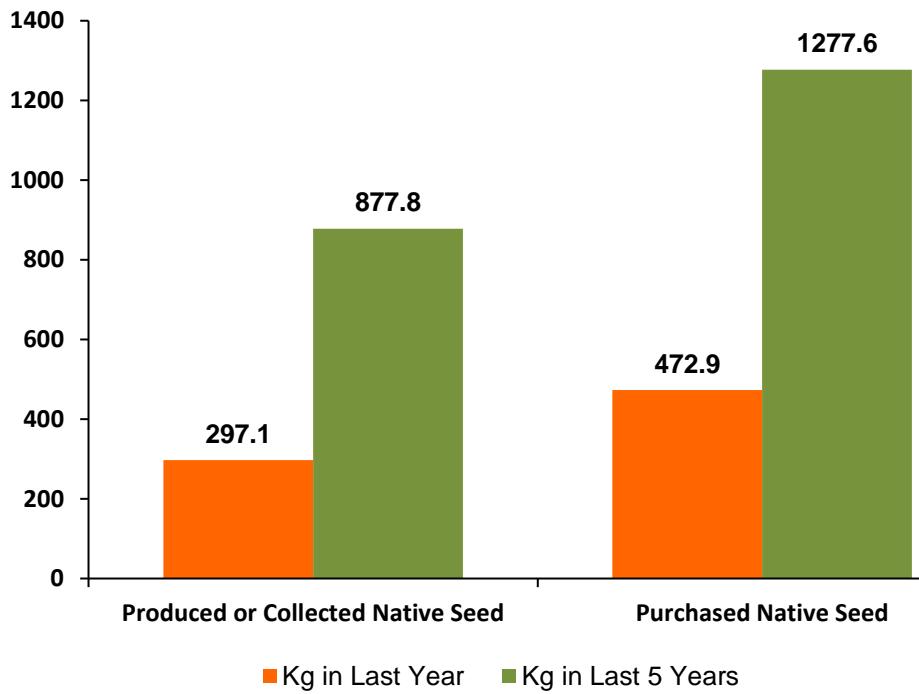


## Q4 - Approximately how many kg of native seed did you collect or produce in the last year and the last five years?

- Among the 202 responses, the average weight of native seed collected or produced in the last year was 297.1 kg each.
- For those who also purchased seed the average was notably higher at 472.9 kg each in the last year.
- Over the last five years the average was 877.8 kg overall This averages to 176 kg per year, suggesting an average increase in production this year compared with the previous five years.
- Among those who purchased seed as well as produced or collected, averaged production of 1277.6 kg. This averages to 255 kg per year, again indicating an increase in production in the last year at 472.9 kg.
- Looking at the data in ranges, 1-5 kg was the most reported volume (33% for current year and 25% five years ago).
- There was a notable increase in <1 kg being reported for the last year (21%), up from just 9% five years ago. The proportion producing more than 100 kg fell from 29% five years ago to 17% in the last year.

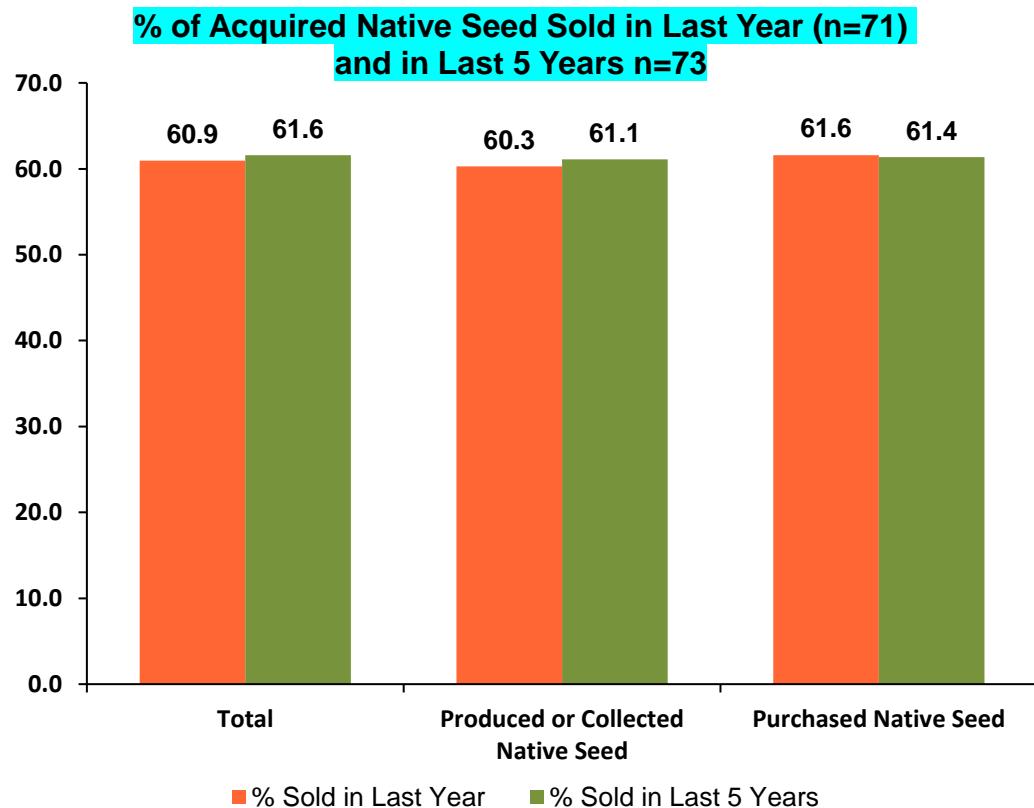
Kg Collected/Produced (% in Ranges)		
Q4A. How Many Kg Collect or Produce Last Year	Q4B How Many Kg Collect or Produce Last 5 Years	
<1kg	21%	9%
1-5 kg	33%	25%
6-10 kg	11%	8%
11-50 kg	13%	23%
51-100 kg	5%	8%
101-500 kg	10%	12%
501-1000 kg	4%	5%
1,000 -10,000 kg	3%	9%
>10,000 kg	0%	3%

Average Kg of Native Seed Collected or Produced in Last Year n=236 and in Last 5 Years n=202



## Q5 - What proportion of the native seed you acquired (collected, produced or purchased) did you sell in the last year and last 5 years?

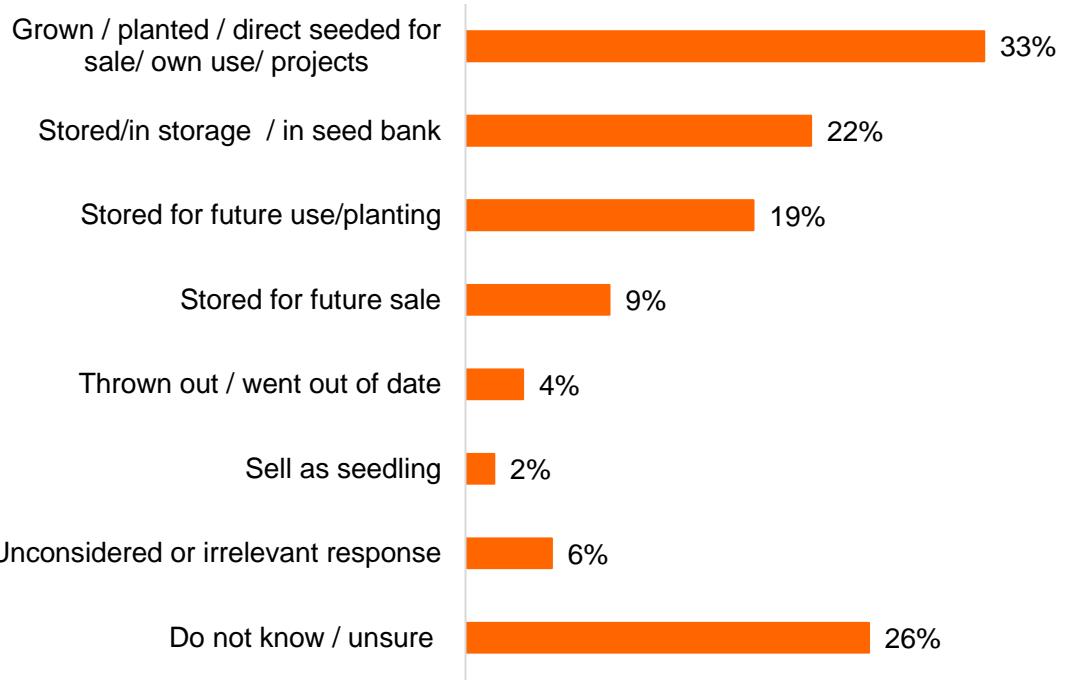
- On average, approximately 61% of the seed acquired (by any means) was sold in both the last year and last five years.
- There was virtually no difference across activity groups or the amounts sold in the last 5 years.



## Q5C - What happened to your remaining seed?

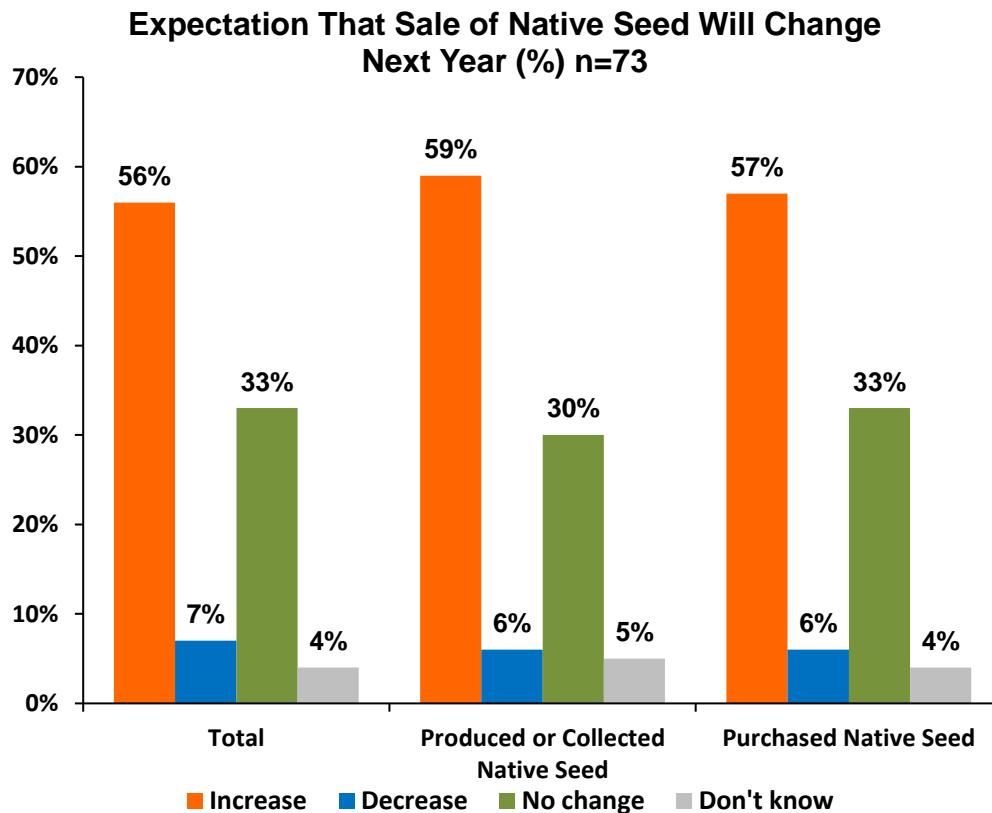
- Fifty-four respondents had unsold seed , with a high of 26% not know/unsure about what happened to their remaining seed.
- 33% used the seed for planting, direct seeding or projects.
- 40% stored their remaining seed either in a seed bank or for future use.
- 9% stored it for future sale.

**Why Remaining Seed Was Not Sold? (%) n=54**



## 'Q6 - Do you expect an increase, decrease or no change in the amount of native seed you will sell in the next year ?

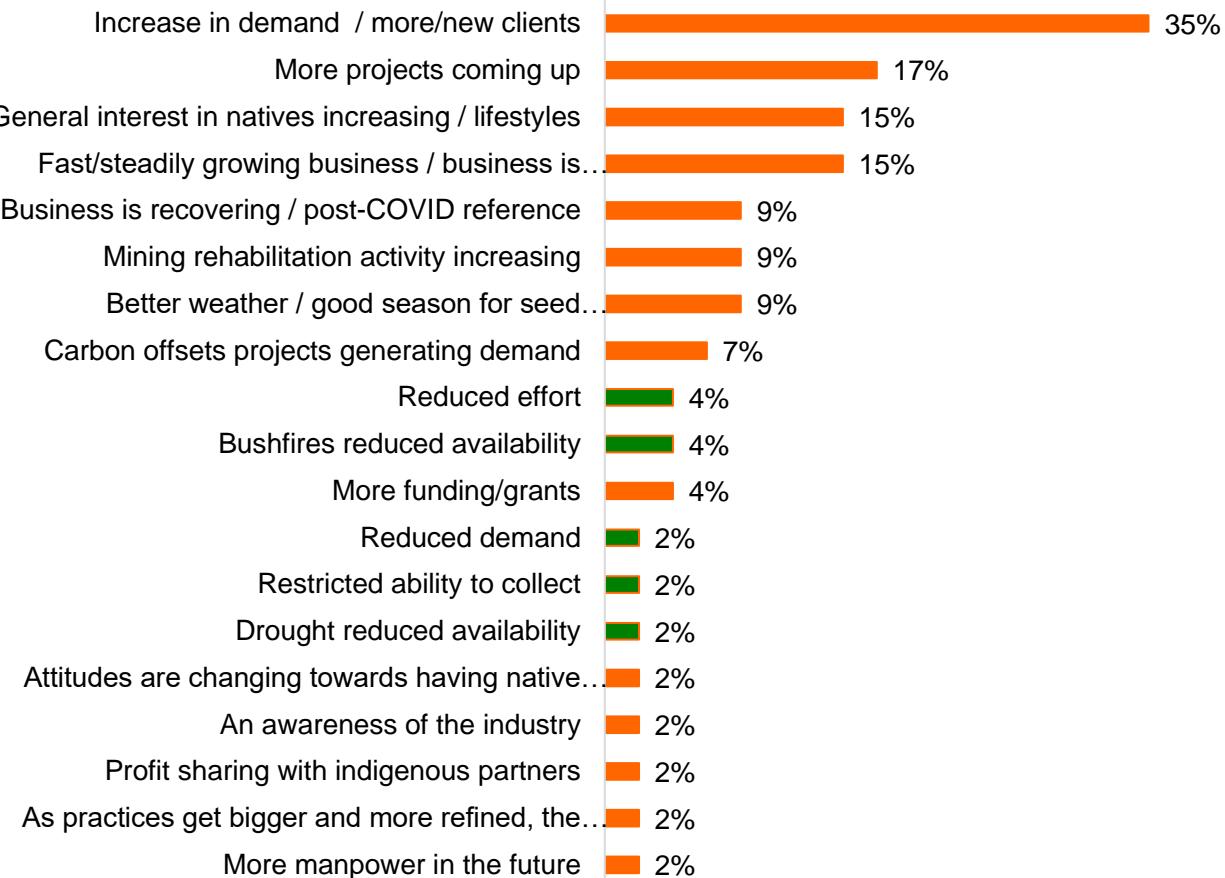
- Of the 73 respondents who had sold seed, 56% expected an increase in the amount of seed that will be sold in the next year.
- About a third expected no change and low proportions expected a decrease or did not know.



# Q6A - Expectations about amount of native seed that will sell next year

- The respondents who felt the volume sold would increase or decrease next year presented a range of favourable factors for the amount of native seed that will sell next year.
- 35% expect increased demand, or more or new clients. Similarly, 17% expect more projects, 15% reported an increased interest in native plants and for 15% their business was expanding.
- Other responses pointed to increases due to business recovery, drought ending/good seed season, and increased carbon offset projects.
- A few minor negative influences were mentioned (green bars on chart). These are in contrast to the overall positive responses and could be due to specific circumstances of a business, unrelated to trends in the sector.

Why Expect Amount of Native Seed Sold in Next Year Will Change (%) n=46



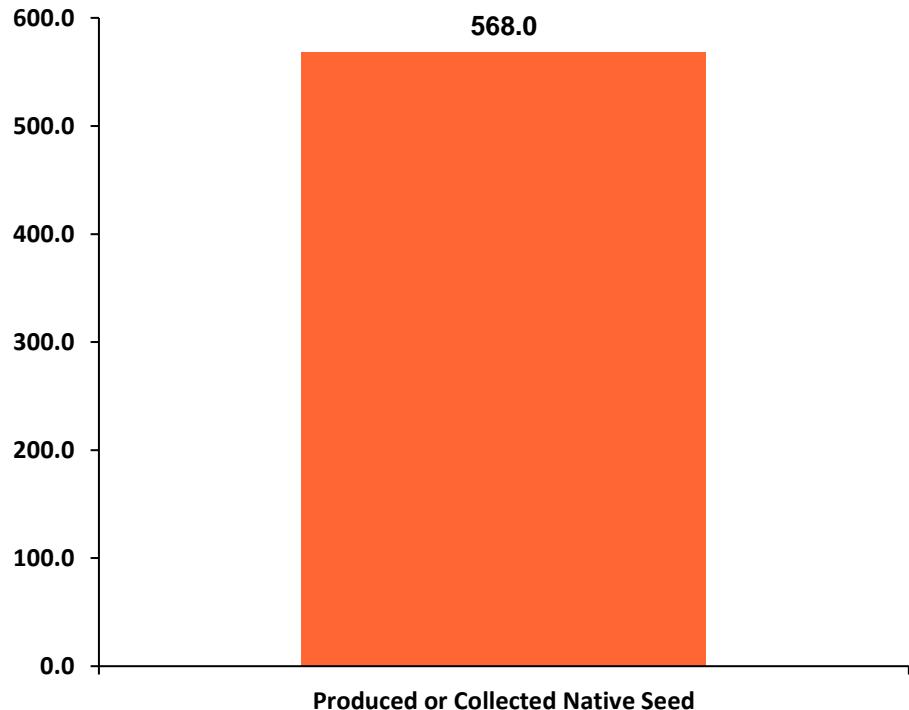
Expect increase in amount sold

Expect decrease in amount sold

## **Q6B - If there had been an increase in demand for native seed, how many additional kg could you have produced or collected last year?**

- Eighty contacts said they could have produced or collected more seed last year if there had been demand for it. That is, approximately 30% of the total of 276 responses.
- The average of an additional 568 kg per respondent who had produced or collected seed suggests the potential for a production of an extra 45,440 kg (45.4 tonnes) just among those surveyed or an estimated 192 tonnes when extrapolated to the market.

**Kg of Additional Kg of Seed Could Have Been Produced or Collected if More Demand n=80**



## Q6C - Couldn't produce or collect more native seed because ...

- 171 respondents gave reasons for not being able to produce or collect more native seed. Multiple responses were permitted.
- A range of reasons were given. The main ones can be grouped into business constraints (at capacity, lack of staff; lack of space, budget, resources, time), lack of demand/orders, and constrained seed supply.

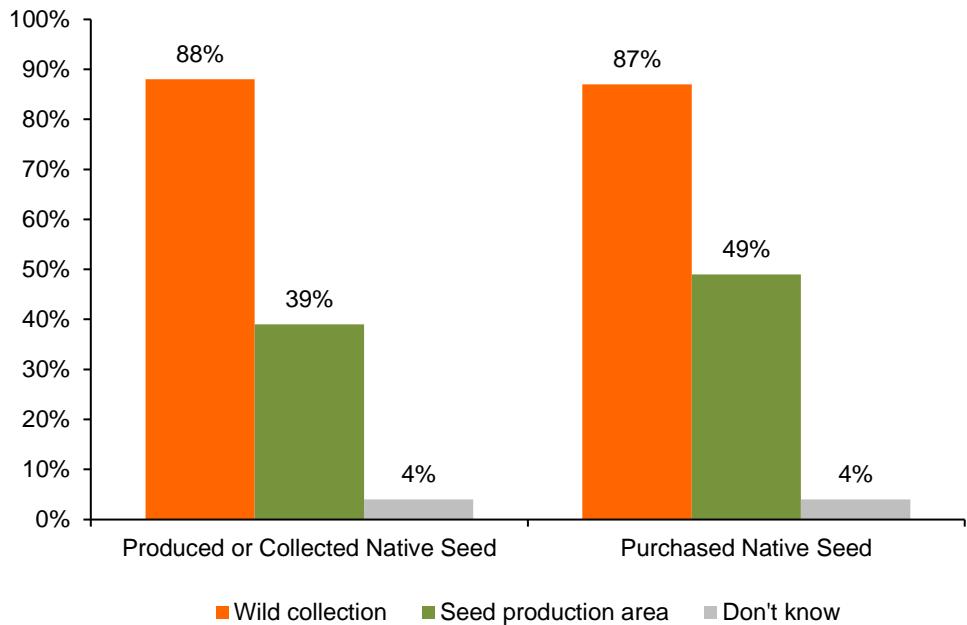
Why could you not have produced more native seed? (%)  
n=171



## 'Q7 - Is your operation wild collection or in a seed production area?

- The majority (88%) of the 233 respondents who produced or collected seed collected wild seed.
- 39% collected from a seed production area.
- Thus there is an overlap of 27% who collected from both the wild and production areas.
- Of those who produce seed a statistically significant 62% drew from seed production areas.
- Of those who purchased seed a statistically significant 49% drew from seed production areas.

Operation Wild Collection or Seed Production Area n=233



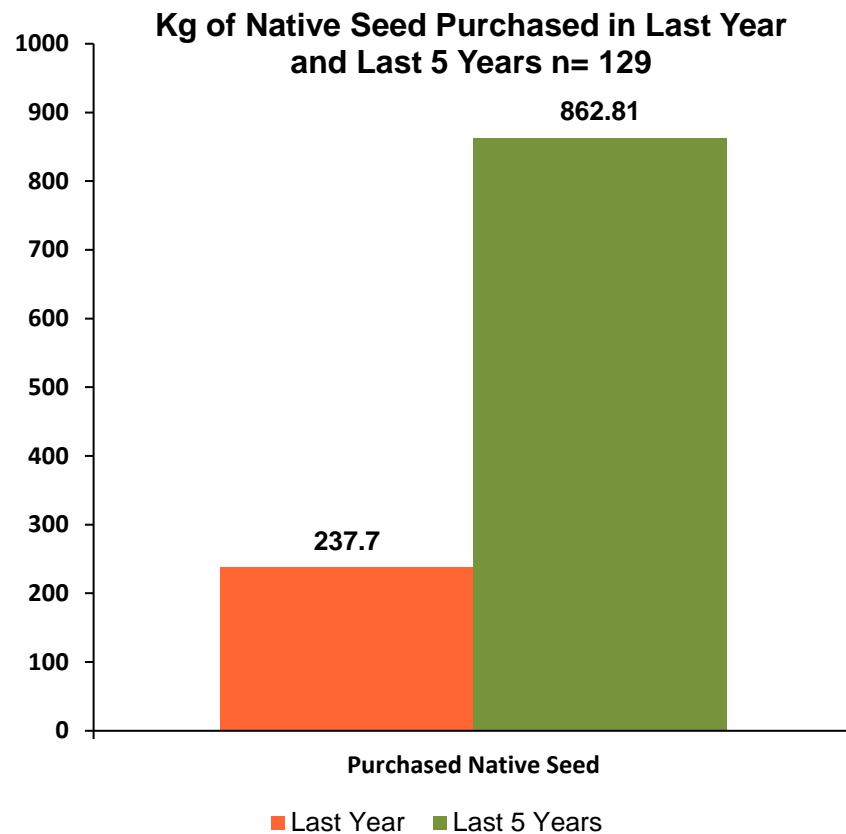
	total	Produced Native Seed	Collected Native Seed	Purchased Native Seed	Produced OR Collected native seed
Wild collection	88%	81%	88%	87%	88%
Seed production area	39%	62%	39%	49%	39%
Don't know	4%	3%	4%	4%	4%
<i>Base:</i>	<b>233</b>	<b>91</b>	<b>233</b>	<b>126</b>	<b>233</b>

Statistically significant low score

Statistically significant low score

## Q8A - Approximately how many kg of native seed did you purchase in the last year and last 5 years?

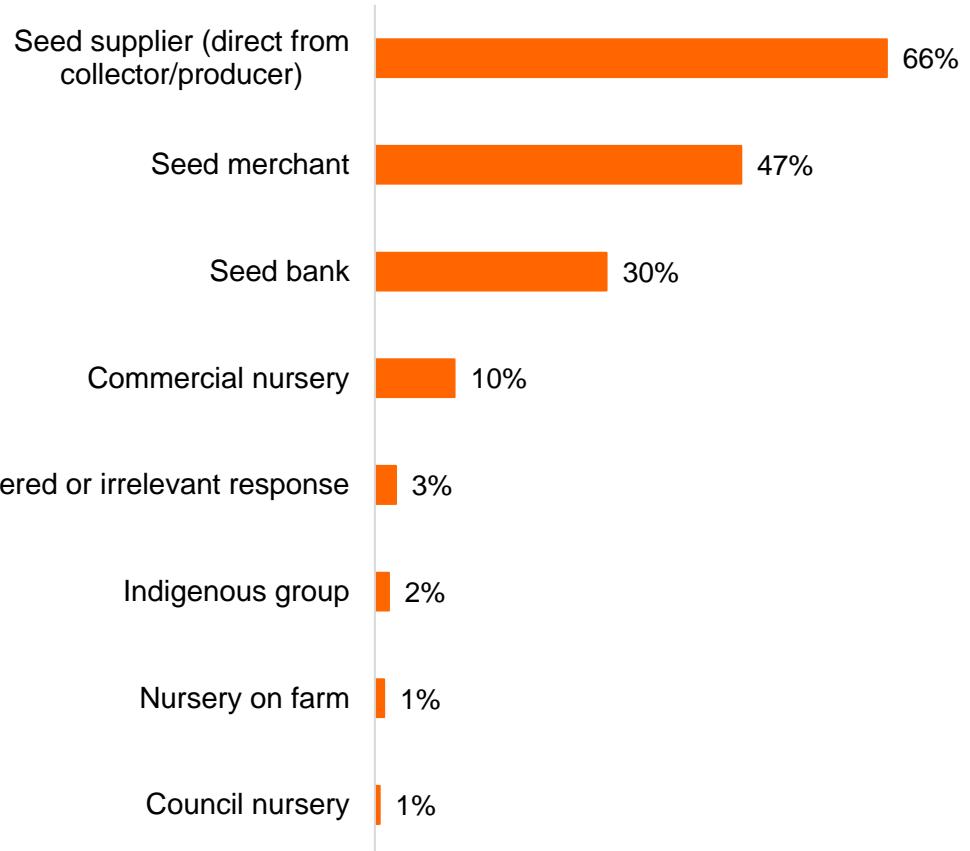
- The 129 who purchased native seed averaged 237.7 kg each in the last year and 862.8 kg over the last five years.
- That is an annual average of 172 kg for five years, suggesting an increase in seed purchased in the last year.



## Q9 - Where have you bought native seed from in the last year?

- Purchasers of native seed were most likely to have bought from seed suppliers (66%), seed merchants (47%) or seed banks (30%).

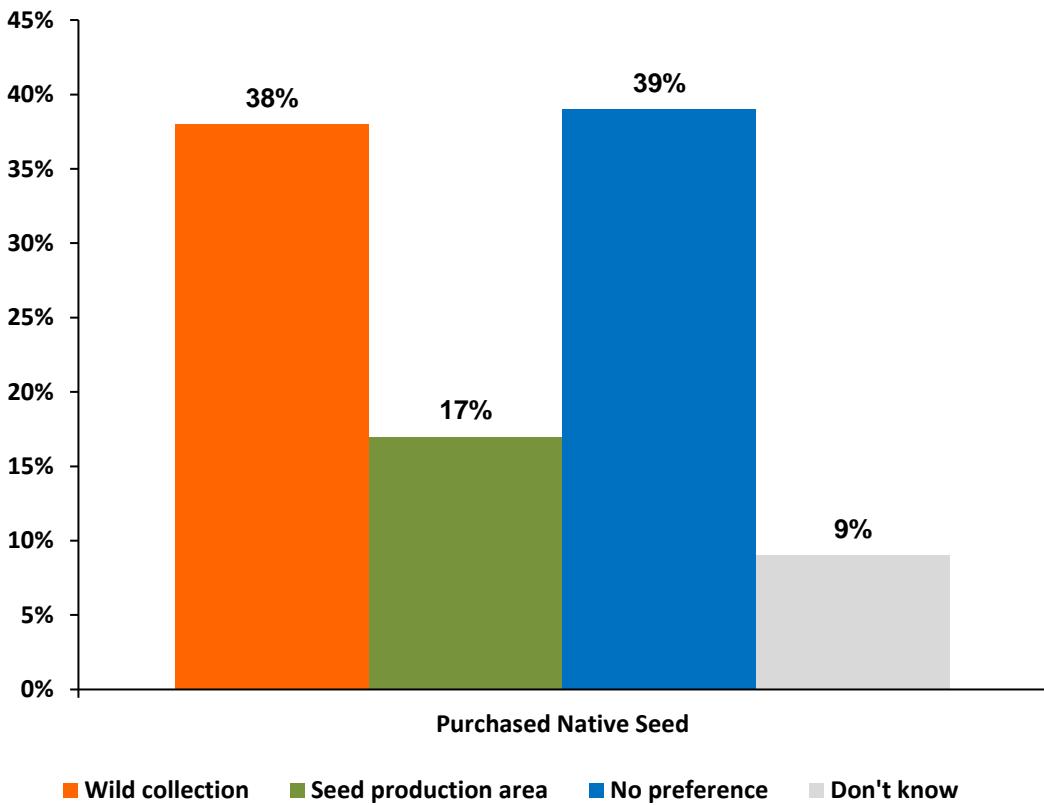
Where Native Seed Was Purchased in Last Year (%) n=37



## Q9A - Do you prefer to purchase seed from wild collection or a seed production area?

- Wild collection and “no preference” were about equally chosen at about 38%.
- If “no preference” and “don’t know” are considered equivalent this lack of preference totals 48%.
- Preference for seed production areas was lowest at 17%.

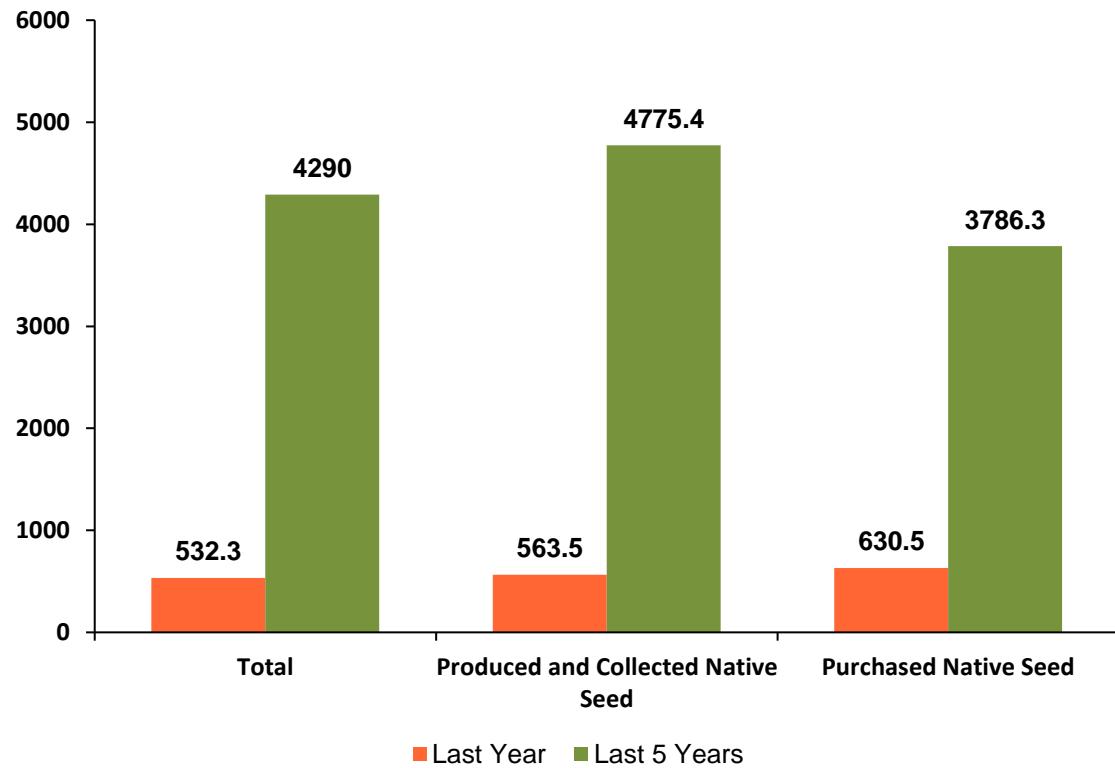
Preference to Purchase Seed From Wild Collection or Seed Production Area (%) n= 166



## Q10 - How many hectares in total did you restore, rehabilitate, reforest or conserve in the last year and the last five years?

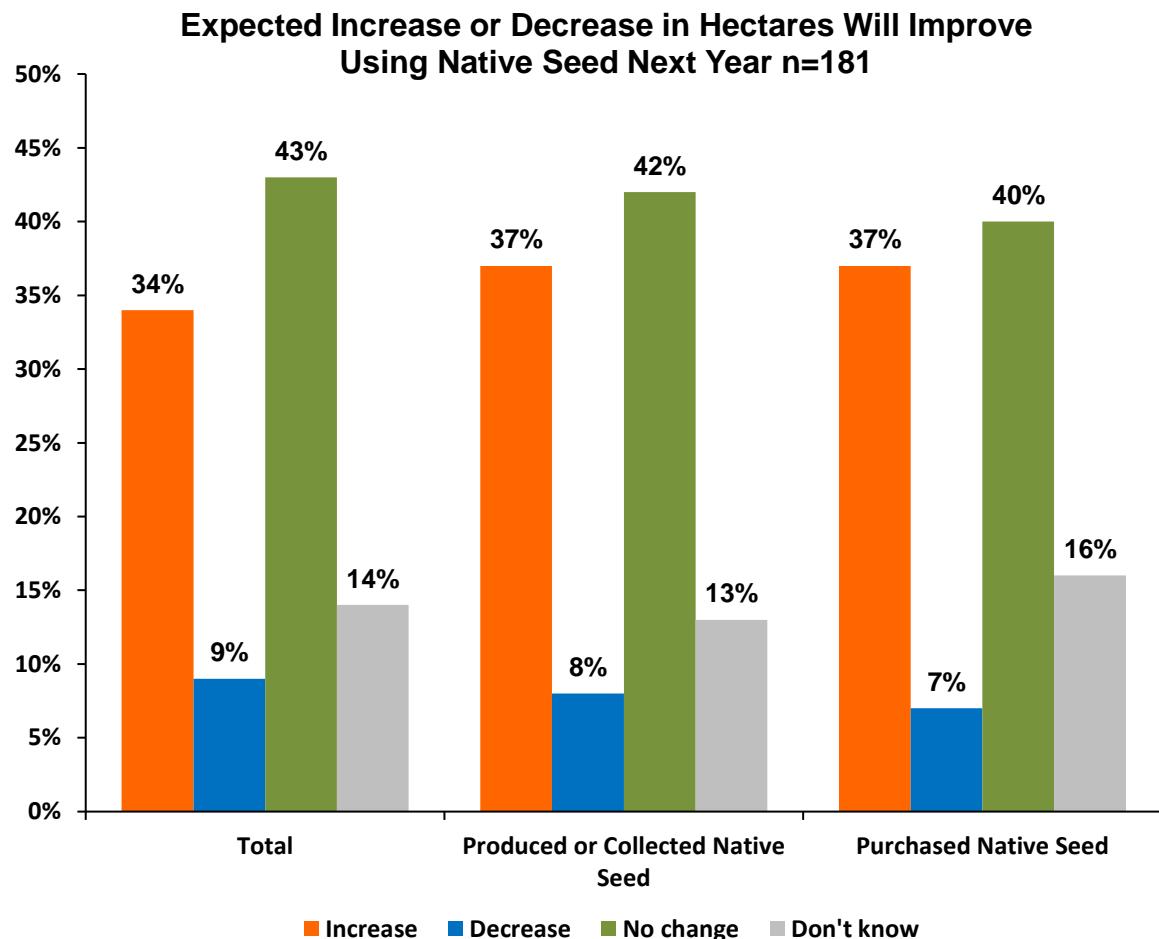
- The average number of hectares improved was 532.3 in the last year, which extrapolates to a market size of around 301,000 hectares,
- This last year's figure is about 60% of the annual average for five years when the average annual number of hectares improved was 858 hectares for (485,181 hectares estimate for the market).
- This is in contrast to the average annual increases this year reported for seed collection/production and purchase.
- It is possible that due to COVID, projects have been deferred, resulting in less area being improved. There was an expectation of increased area improved reported by about a third of respondents at the next question.

Number of Hectares Restored, Rehabilitated or Conserved in Last Year and in Last Five Years n=134



# Q11 - Assuming availability of seed, do you expect to increase, decrease or see no change in the number of hectares you will improve using native seed in the next year?

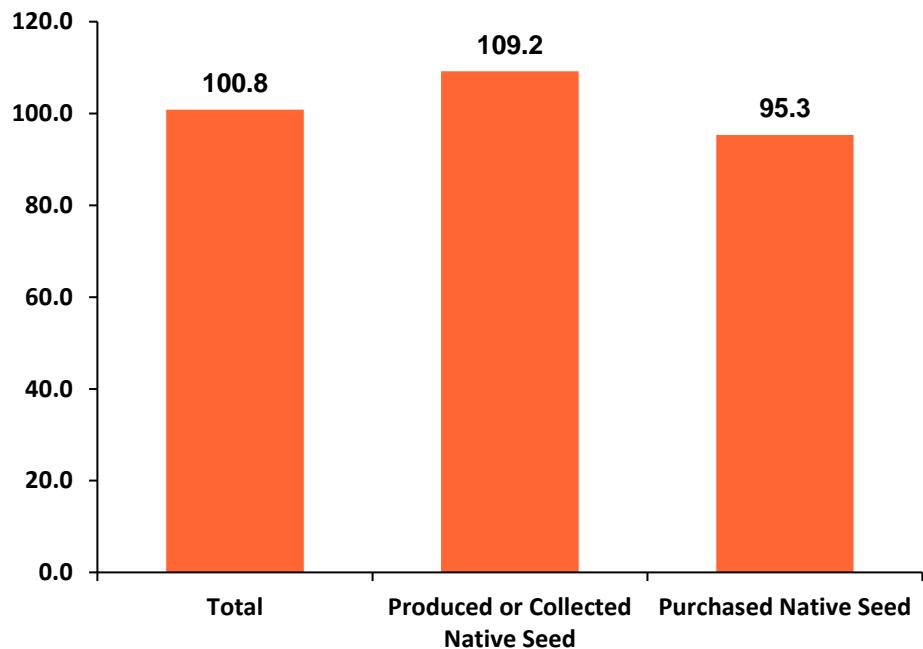
- Of 181 responses, 34% expected to increase the area they improve using native seed, assuming additional seed (or plants presumably) is available.
- 43% expected no change and 9% a decrease.



## **Q13 - How many more hectares could you have restored, rehabilitated, reforested or conserved in the last year if more seed had been available? (ha)**

- Thirteen respondents reported an average of 101 hectares more could have been treated if more seed had been available.
- If this figure is extrapolated to the market, it amounts to 5,530 additional hectares, about 2% of the 300,005 hectares improved in the last year.

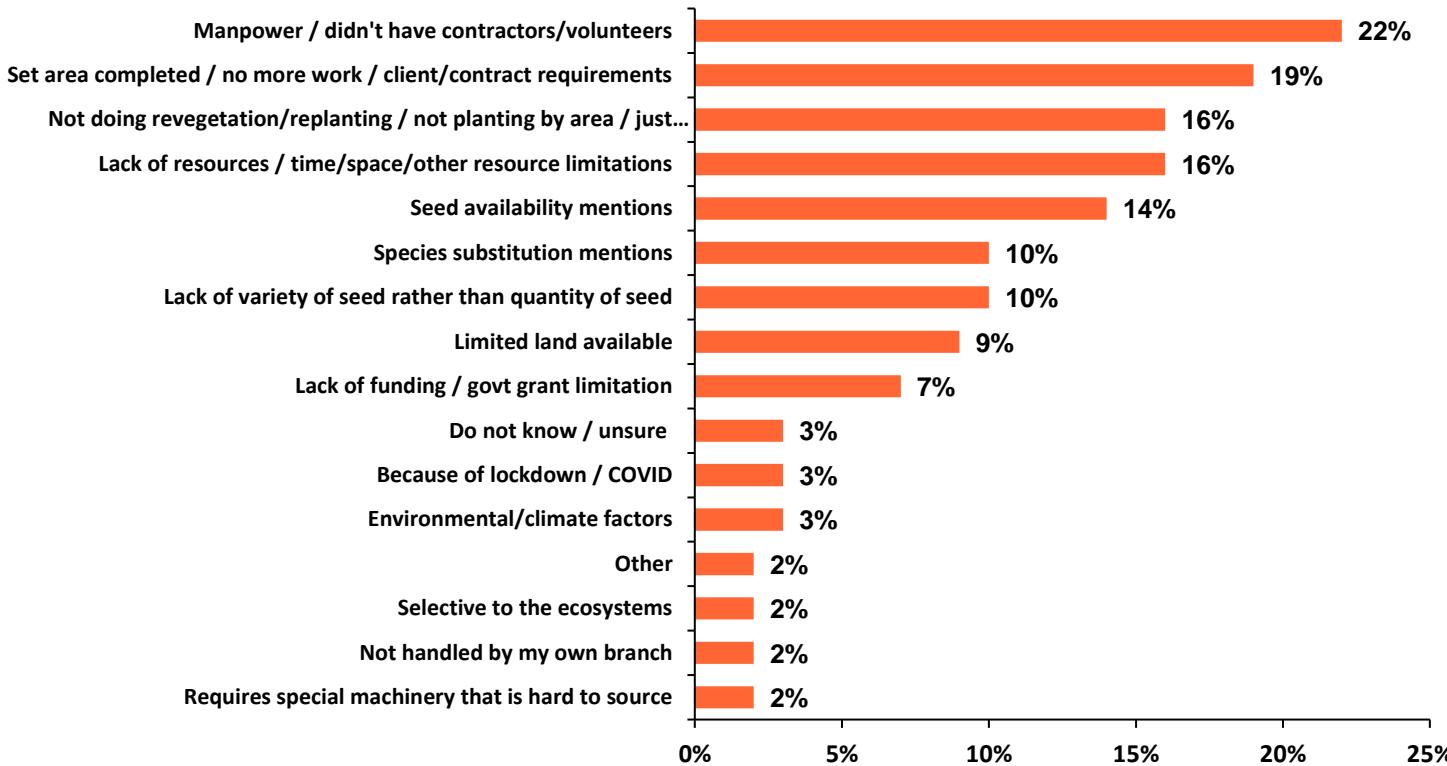
**Number of Additional Hectares That Could Have Improved Last Year if More Seed Was Available (if could not acquire all that was needed) n=13**



# Q13A Why could you have not improved any more hectares?

- 58 responses, of which 16 said they were not doing planting or a similar response.
- The main limits mentioned were a lack of people to carry out additional work (22%), no further work available (19%), lack of space, or other resources.
- 14% mentioned seed availability as a constraint, 10% mentioned species substitution as an issue and comparably 10% mentioned lack of variety of seed.

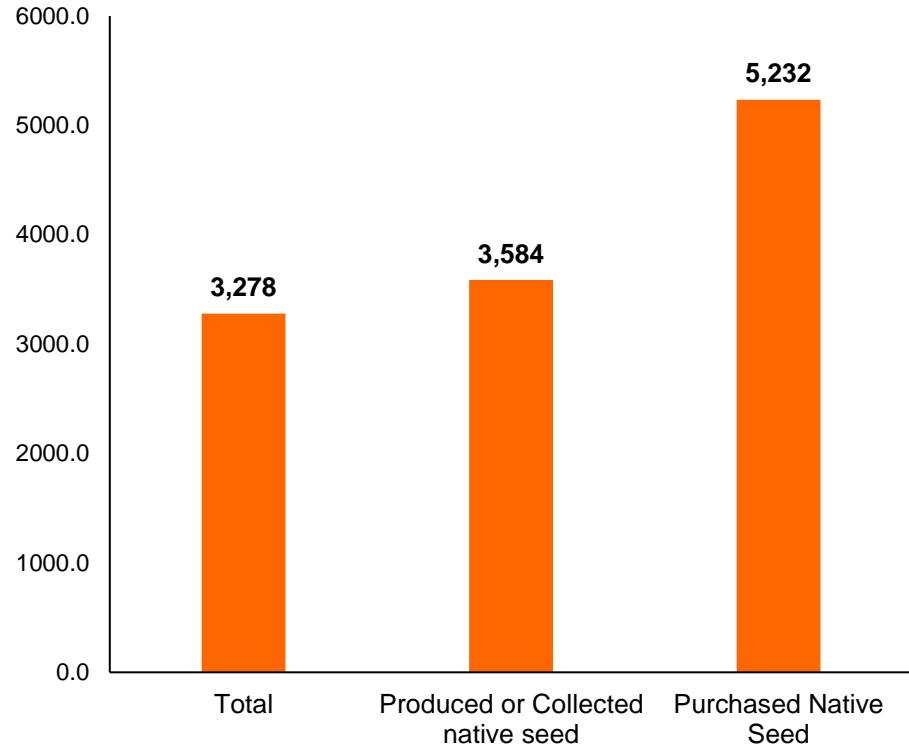
Q13A Why could you have not improved any more hectares? n=58



## Q14 - How many kg of native seed in total do you have on hand for future use? (kg)

- The average for seed on hand for the 174 respondents was 3278 kg.
- Extrapolating this volume to the market suggest more than 2400 tonnes of seed have been retained.
- The 166 who purchase seed had the higher average of 5232 kg on hand for future use.

Average Kg of Native Seed On Hand for Future Use n=174

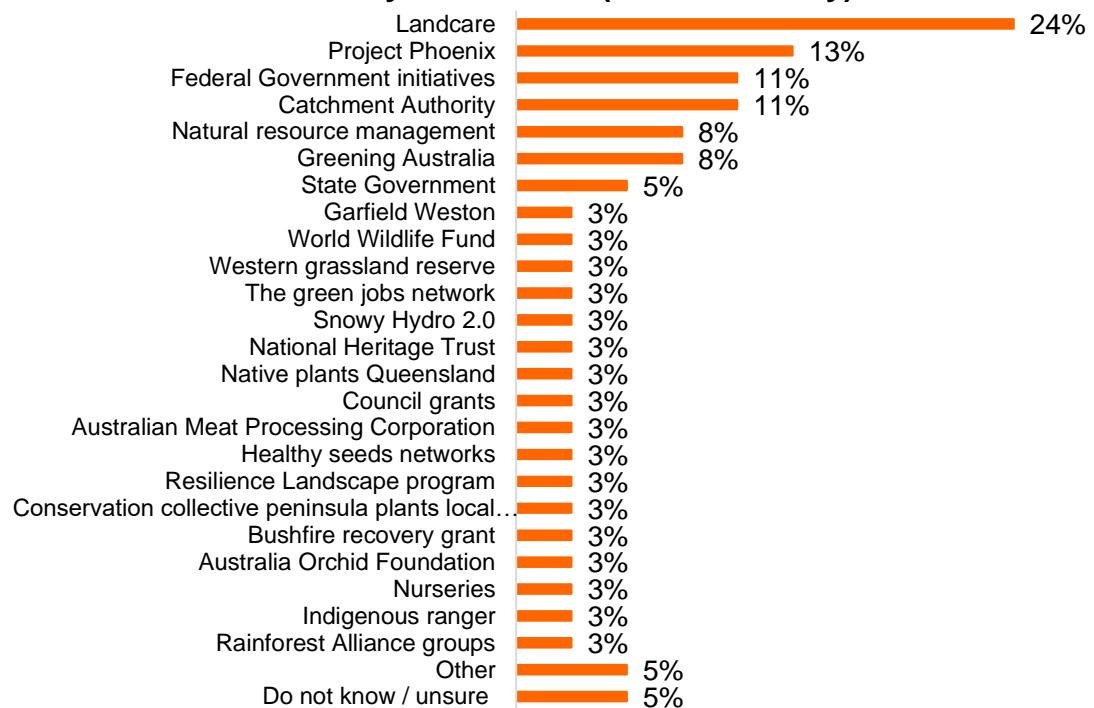


# Q15/15A - Are you aware of any funding, grants, investment or programs to encourage the production or collection of native seed? Which ones aware of?

Total	Activity													
	Produced Native Seed	Collected Native Seed	Purchased Native Seed	Purchased OR Collected native seed	Only produced native seed	Only collected native seed	Only purchased native seed	Produced AND collected native seed but did not purchase	Collected AND purchased native seed, but did not produce	Produced, collected AND purchased native seed	Produced AND collected native seed	Produced AND purchased native seed	Collected AND purchased native seed	
<b>Q15 - Are you aware of any funding, grants, investment or programs to encourage the production or collection of native seed</b>														
Yes	14	14	13	14	14	67	13	13	7	16	14	12	14	15
No	82	84	82	82	81	33	81	83	85	77	86	86	86	82
Don't know	5	2	5	4	5	0	6	5	7	6	0	2	0	3
<i>Base:</i>	<b>276</b>	<b>94</b>	<b>233</b>	<b>166</b>	<b>236</b>	<b>3</b>	<b>80</b>	<b>40</b>	<b>27</b>	<b>62</b>	<b>64</b>	<b>91</b>	<b>64</b>	<b>126</b>

- The survey suggests limited knowledge of funding, grants, investment or programs to encourage the production or collection of native seed in the industry.
- Only 38 (14%) of the 276 contacts said they were aware of relevant initiatives and a further 5% were unsure.
- Awareness of programs across the various combinations of collected, produced and purchased were broadly consistent (see table). Awareness ranged from a high of 67% for those who only collected to just 7% for those who produced and collected but did not purchase. However, these are only indicative given the sample sizes.
- By those 38 respondents who were aware, 21 specific programs were mentioned, with three further generic sources (nurseries, indigenous ranger and rainforest groups). The chart shows the percentage mentioned for each type.
- Project Phoenix was mentioned by 13% (5 contacts) and Landcare was notably the most mentioned at 24%.
- At 3% each the majority were mentioned by only one contact.

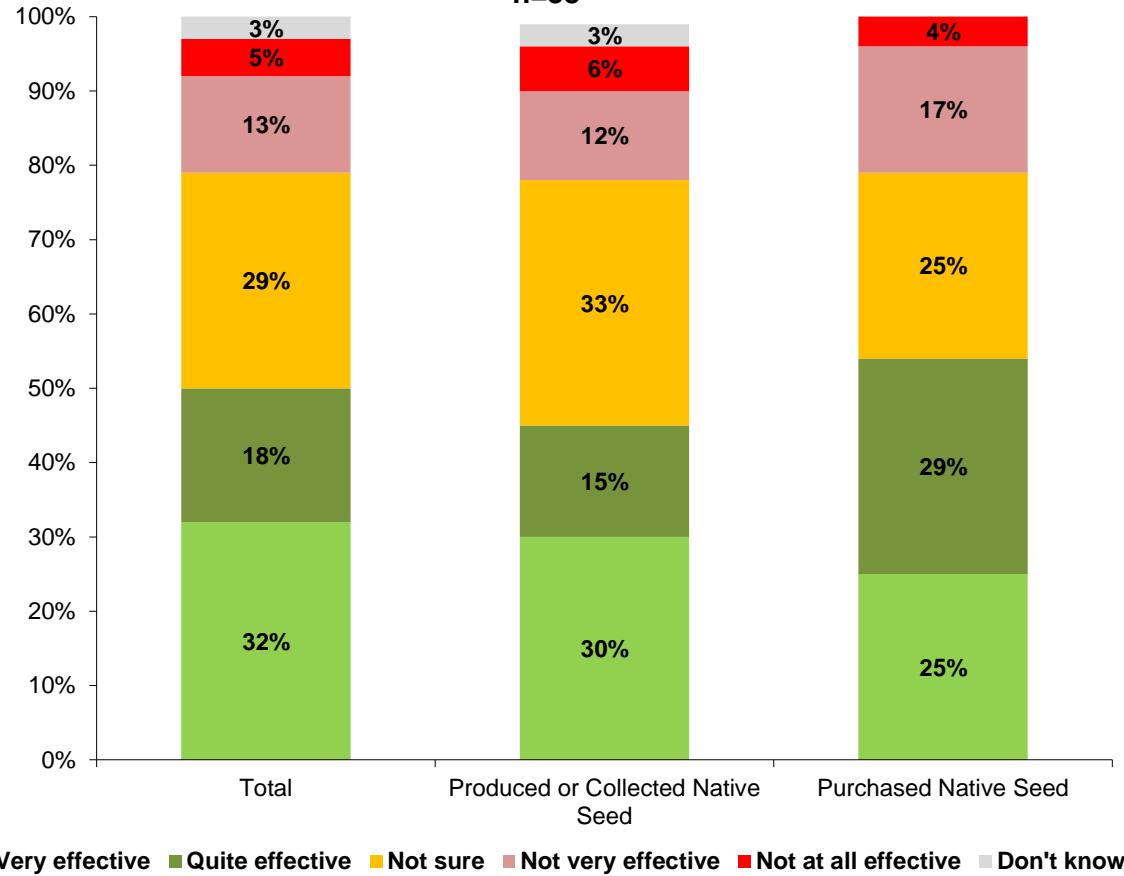
## Which funding, grants, investments or programs for native seed are you aware of (if aware of any)? n=38



## Q15B - How effective do you believe these programs are to increase the production or use of more native seed?

- Of the 38 who responded with knowledge of funding, grants, investment or programs to encourage the production or collection of native seed (Questions 15 and 15A) 32% rated these as very effective, 18% as quite effective and 29% were unsure.
- 13% (2 respondents) rated the programs (that they were aware of) as not very effective and 5% as not at all effective.

How Effective Believe These Programs Are to Increase Production/Use of Native Seed if Aware of Any (% 1-10 rating)  
n=38

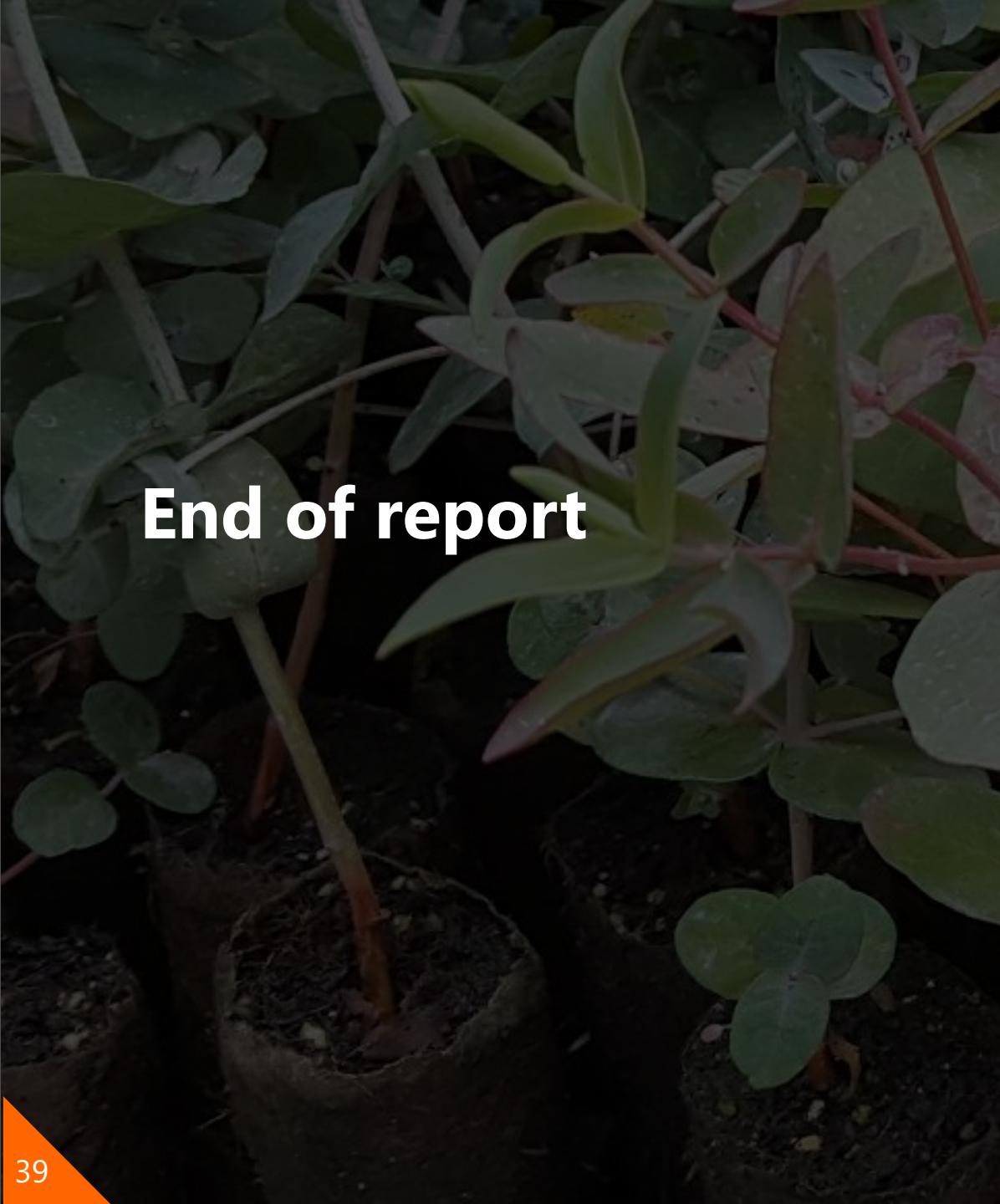


# Opt-ins for future contact

- A very healthy 239 of the 276 respondents agreed to provide their contact details for future communication regarding Project Phoenix.
- Their distribution by organisation, state and activity is shown here and the full list is provided in a separate spreadsheet.

**OPT-INS BY ORGANISATION TYPE, STATE AND ACTIVITY**

<b>Organisation Type</b>	
Seed Supplier	44
Environmental Consultant	15
Commercial Nursery	79
Nursery on farm	13
Council Nursery	15
Reforestation	20
Rehabilitation	34
Mining	4
Indigenous Group	9
National Park	3
Other (seed bank, NFP, volunteer, community group, etc.)	92
<b>State</b>	
NSW	44
VIC	15
QLD	79
SA	13
WA	15
NT	20
TAS	34
ACT	4
<b>Activity</b>	
Producer	83
Collector	207
Purchaser	139
<b>TOTAL OPT-INS</b>	<b>239</b>



End of report





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