PROJECT PHOENIX

DO WE NEED A NATIONAL SEED CODE OF PRACTICE?

(DRAFT)

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Across all of our Project Phoenix activities and actions we pay respect to the Traditional Owners and Custodians of the lands and waters on which we work. We honour the resilience and continuing connection to country, culture and community of all Aboriginal and Torres Strait Islander people across Australia. We recognise the decisions we make today will impact the lives of generations to come.

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CONTENTS

1 INTRODUCTION

A Code of Practice is a set of written rules that provides a framework for a sector to work consistently leading to efficiencies across it.

This Options Paper (Paper) explores whether a national Code of Practice for Native Seed Management (Code of Practice) for the native seed industry may be beneficial in addressing a range of challenges in the native seed sector. It is a first step towards developing a Code of Practice and explores what the sector would need to consider in establishing such a code:

- focusing on the opportunities, benefits and challenges that the native seed sector would need to consider
- exploring whether a Code of Practice may be beneficial in addressing a range of challenges in the native seed sector and
- providing three main options for consideration.

This Paper does not go into detail on the content of a Code of Practice beyond seed management. The detail of what would be included within a Code of Practice will be informed by the feedback from a public consultation process with all parts of the seed sector.

This Paper will be disseminated to the native seed industry to prompt a discussion within the industry on these issues. In particular, the views of the sector will be sought on:

- whether the Code of Practice should be voluntary or mandatory and
- whether the Code of Practice should be based on any existing frameworks or not.

This Paper will not be addressing standards for carrying out restoration projects, beyond dealing with the acquisition and use of seeds, and it also does not go into detail on the content of a Code of Practice beyond native seed management. Note also that in this Paper, the term 'restoration' is used to refer to ecological restoration, rehabilitation and revegetation.

To provide context to the discussions about a national Code of Practice for Native Seed Management for those who are interested, the Appendix contains more detail on some of the topics raised, including the background to this issue, and the current frameworks and standards in place in the sector.

The Appendix also includes a summary of the feedback gathered regarding a national Code of Practice for Native Seed Management from a sector consultation process in April 2021, in the form of several ten-year Native Seed and Landscape Strategy Design Workshops (Strategy workshops).

2 CURRENT CHALLENGES FACING THE NATIVE SEED SECTOR

There are several national barriers to growing and developing the native seed industry, many of which have been highlighted in the comprehensive *Australian Native Seed Survey Report*[1] and in *Snap! A picture of the Australian Seed Sector in 2021*.[2] Some of the key issues include:

1. Demand for native seed is becoming difficult to meet from wild harvest.
2. A need for improved native seed management practices (e.g. more seed testing) to improve restoration outcomes, including more training opportunities.
3. The market is unwilling to pay for the true cost of seed collection/seed production.
4. The native seed sector is segmented and does not have a coordinating body representing the whole sector that could develop the sector in a coordinated manner.
5. Lack of information sharing (e.g. sellers do not have warning about when seed is needed for upcoming restoration projects) creates uncertainty, and makes it difficult to plan.
6. Relevant legislation varies between states and territories, and coordinating the licences and permits required, can be burdensome.
7. There has been a lack of government investment into the native seed industry.
8. More research and development is needed to improve ecological restoration outcomes.
9. Training and capacity building are needed for both sellers and buyers in the sector.

Project Phoenix is developing a ten-year Australian Native Seed Strategy,[3] which aims to respond to the roadblocks within the native seed sector impacting on its efficiency and ability to respond to the demand for native seed and improve the overall resilience and robustness of the sector through a range of measures. The draft Strategy will be available for public consultation in July 2021.

Further details on Project Phoenix and on the background for the idea of a national Code of Practice can be found in the Appendix. Project Phoenix also includes several other projects related to the development of a national Code of Practice — please see the Appendix for a summary.

[1] Hancock N, Gibson-Roy P, Driver M, and Broadhurst L (2020). *The Australian Native Seed Sector Survey Report*. Australian Network for Plant Conservation, Canberra.
[2] Commander LE (2021). *Snap! A picture of the Australian Seed Sector in 2021,* Project Phoenix.
[3] The Report contributes to the evidence base for a ten-year strategy to guide the native seed and landscape sector. The document, which is untitled until endorsement in September 2021, is referred to as the Strategy in all Project Phoenix publications.

3 NATIONAL SNAPSHOT

The following standards, Codes of Practice or guidelines relating to native seed management are operating in Australia:

- Revegetation Industry Association of Western Australia (RIAWA) — *Code of Practice,*[4] *Seed Standards,*[5] and Accreditation System
- FloraBank — *FloraBank Guidelines and Model Code of Practice for Seed Collection*,[6] first edition (currently in use); and *FloraBank Guidelines and Model Code of Practice for Seed Collection*, second edition (due to be released shortly)
- International Network for Seed Based Restoration (Part of the Society for Ecological Restoration) — *First International Principles and Standards for Native Seeds in Ecological Restoration.*

The Australian Seed Federation (ASF) has also developed two Codes of Practice, listed below. However, these codes refer to seed used in agriculture and horticulture, and do not cover native seed for restoration purposes:

- A national *Code of Practice for Seed Labelling and Marketing* — ensures seed buyers have accurate information to make informed decisions about the suitability of seed for sowing.
- A national *Code of Practice for the Use of Seed Treatments* — ensures all treated seed for sowing sold under the ASF logo has been treated safely, accurately and efficiently following current regulatory and industry best practice methods.

Please see the Appendix for a brief overview of these organisations, as well as a comparison of their respective standards and guidelines, and structures.

[4] Revegetation Industry Association of Western Australia Code of Practice: https://www.riawa.com.au/membership/code-of-practice

[5] Revegetation Industry Association of Western Australia (2021). RIAWA Standards & Accreditation. Accessed 1 June 2021: https://www.riawa.com.au/accreditation.

[6] The *FloraBank Guidelines* and the *Model Code of Practice for Seed Collection* will be available later this year at florabank.com.au

4 WHAT'S IN THE CODE?

Exactly what would be in a national Code of Practice will depend on the feedback of the sector, however the table below contains some items which could be included.

TABLE 1. POSSIBLE INCLUSIONS FOR A NATIONAL CODE OF PRACTICE FOR NATIVE SEED MANAGEMENT

The Code of Practice could include **minimum standards for seed collectors and growers**, such as minimum standards for: • labelling • sustainable seed collection • seed quality testing
The Code of Practice could include a **minimum standard for seed buyers** that they will only purchase seed from sellers who are signatories to the Code of Practice.
The Code of Practice could include **best practice guidelines**, for example regarding: • Seed sourcing, seed collection, licences and permits • Seed production and use of seed production areas • Seed processing • Seed drying and storage • Germination • Seed treatments • Nursery propagation, direct seeding • Marketing, buying and selling seed • Record keeping, including labelling
The Code of Practice could include: • an **accreditation system** where those who follow the Code of Practice are accredited as such and can sell their seed as accredited seed • a **system for grading seed** by level of quality, like the RIAWA seed grading system (see the Appendix for more details)
In the future, the Code of Practice could: • be integrated with the use of a **seed tracking app**, to be used on a mobile device to record seed lot information (see below for more detail). In time, the use of this app may be able to replace the need for paper licences.

5 WHO BENEFITS FROM A NATIONAL CODE?

5.1 Benefits of a national Code of Practice for Native Seed Management

The key benefits of having a national Code of Practice include those listed below, which address some of the challenges currently facing the sector:

Quality assurance for buyers

- Seed buyers need to know they will get value for money in terms of genetic diversity, species verification, provenance, seed purity, viability and germination rates.

Improved prices for quality seed

- A Code of Practice would create a framework which would ensure that collectors who are already operating ethically are able to secure premium pricing as their product is differentiated from others on the market.

Improved record keeping

- Leading to **better sharing of information** between sellers and buyer, as well better information sharing with licensing bodies.

Improved native seed management practices

- Leading to improved ecological outcomes and biodiversity: Having a single, national standard would raise the standards of native seed management across the sector and would mean the quality of native seeds available in the market will improve, as well as their quantity and diversity.[7]

Ensuring sustainable collection of seed and guarding against over collection of species.[8]

If a national Code of Conduct were introduced, seed collectors and growers would become signatories to it, buyers would sign up to it by undertaking only to purchase seed from collectors and growers who are also signatories. Sellers would inform buyers that they are signatories to the Code of Practice, which would provide quality assurance to buyers and assure them that good practice in native seed management is being followed.

The table below shows how a Code of Practice could impact on different groups in the native seed sector, using the scenario of a voluntary Code of Practice.

TABLE 2. BENEFITS OF A CODE OF PRACTICE ON DIFFERENT GROUPS IN THE NATIVE SEED SECTOR

INDUSTRY GROUP	CODE OF PRACTICE — VOLUNTARY
Collectors and growers — sole trader businesses and larger business	• Can charge a higher price for higher quality seed. • Buyers receive quality assurance for seed • Detailed guidance is available through the Code of Practice on good practice in native seed management. • Potentially increased business, as buyers' contracting process includes a requirement to purchase seeds from a seller has signed up to the Code of Practice
Buyers — government, mining, private sector (includes groups carrying out restoration)	• Native seed is sustainably collected, appropriately stored, with known provenance • Increased quality and consistency in seed labelling • Quality of information provided for seed purchasing in consistent for example genus and species name, collection date, location collected, location of collection, purity • Guidance on native seed management topics such as sourcing seed, provenance, which seed to use, seed storage etc[9]
Regulator — government	• Streamlining the national licensing and permit structure for seed collection Code of Practice may support greater compliance for seed collection leading to a more sustainable sector • Improved compliance in record keeping and data collection would provide regulators with quality data and greater oversight of the supply chain.

[7] Hancock N, Gibson-Roy P, Driver M, and Broadhurst L (2020). *The Australian Native Seed Sector Survey Report*. Australian Network for Plant Conservation, Canberra.
[8] Commander LE (2021). *Snap! A picture of the Australian Seed Sector in 2021,* Project Phoenix.
[9] See Section 9.

In the case of a mandatory Code of Practice, there may be some further benefits:

- For **regulatory bodies** (i.e. government), there could be an increase in licences requested, and an increase in annual reporting for licences, as the Code of Practice is mandatory, and all practitioners are following licensing and reporting requirements.
- Further into the future, if a seed tracking app is introduced, there could be significant red tape reduction for both **regulatory bodies** as well as **seed collectors and growers**.
- Similarly, the use of a seed tracking app would likely significantly streamline labelling and record keeping processes for **seed collectors and growers**.
- A reduction in over-collected species, and the protection of fragile or damaged environmental ecosystems would result.

6 LEGISLATION

How would a Code of Practice fit within the national legislative framework overseeing native seed collection?

- One option is that during the next scheduled legislative review, **the Legislation for each State and Territory could be updated** to include the Code of Practice.
- Another simpler option is to **amend the Regulations**, which sit under the relevant Acts, and to refer within the Regulation to the Code of Practice as the guiding document to be adhered to. This would be less time consuming than amending the legislation itself and the Code of Practice would be complementary to the existing legislation.
- A third more controversial option is to **review the legislation**; such a review would not rule out dispensing with the relevant Regulations, if they are not achieving their aims, and replacing them with a national Code of Practice.

7 VOLUNTARY OR MANDATORY?

There are several questions that need to be considered and decided by the sector regarding a national Code of Practice for Native Seed Management.

The first question is whether a national Code of Practice should be introduced, or whether the situation regarding Codes of Practice and standards should be left as it is. Although there are Codes of Practice and standards for native seed management currently in use (see Section 3), there is no single national framework applying to all states and territories.

The likely outcome of not introducing a national Code of Practice for Native Seed Management is that the native seed sector would miss an opportunity to move forward in a united manner and address some of the issues it faces (see Section 2), including missing an opportunity to improve native seed management practices across the sector.

Following on from this, if the sector decides that a national Code of Practice for Native Seed Management *will* be implemented, the next decision to be made is whether it should be implemented on a voluntary or mandatory basis.

Therefore, the options are:

Option 1

Not implementing a national Code of Practice Code of Practice for Native Seed Management, leaving the situation as it is now.

Option 2

If a national Code of Practice for Native Seed Management were implemented, participation would be **voluntary**, or

Option 3

If a national Code of Practice for Native Seed Management were implemented, participation would be **mandatory**.

As it will take some time for the national Code of Practice for Native Seed Management to be developed and adopted by the sector, it seems advisable to begin with the Code of Practice being voluntary, to allow time for the sector to get used to it. Once the sector understands the benefits the national Code of Practice for Native Seed Management brings to the sector, the sector may decide to make it mandatory.

7.1 Informing the Draft Native Seed Strategy

As the action taken regarding a National Code of Practice for Native Seed Management will be determined by the native seed sector, please consider the following questions regarding whether to implement the Code of Practice, and if so, how to do so.

Question 1:

Do you think a national Code of Practice for Native Seed Management is a good idea?

Question 2:

If a national Code of Practice for Native Seed Management is introduced for the native seed sector, do you think it should be voluntary or mandatory?

In either case, training could be included as part of the licensing system. Those who apply for a licence for seed collecting would receive basic training, aligning with the Code of Practice, in areas such as sustainable seed collection, record keeping, and seed processing and storage. Applicants could then sign up to the Code of Practice and would then be able to advertise that they are signatories to the Code of Practice.

Education and training for buyers of native seed may also be a key part of the Code of Practice. If seed buyers become aware of the importance of sustainable seed collection for the future of the seed industry and for the success ecological restoration projects, they are more likely to purchase seed from sellers who are signatories to the Code of Practice. Creating demand for sustainably sourced seed may be a key step in ensuring that is worthwhile for seed collectors and growers to sign up to the Code of Practice, as it gives them an advantage in the market.

8 DEVELOPING A NATIONAL CODE

There are two key options regarding the development of a national Code of Practice for Native Seed Management:

1. One of the existing frameworks listed in Section 3 above could be used as a model for the national Code of Practice, with some revision and adaptation as required.
2. A new Code of Practice could be developed — possibly using parts of the existing frameworks above, where appropriate.

Option 1 seems to be more appropriate, as it would seem to make sense to save time by using currently existing standards and adapt them as required, rather than begin again from the start – if the current standards are useful and suitable. The existing standards are popular, well-used and have had a great deal of thought and research put into them — the *FloraBank Guidelines* for example being reviewed by 80 peer reviewers.

As the question of how to develop a national Code of Practice for Native Seed Management needs to be decided by the native seed sector, please consider the questions below.

Question 3:

If a national Code of Practice were put in place, do you think:

- the national Code of Practice should be based on one or more of the existing frameworks or
- a new national Code of Practice should be developed?

9 LICENSING

Licensing issues were explored in *Psst... Everything you wanted to know about native seed licensing*,[10] a report for Project Phoenix, which noted that complex licensing systems are hampering the native seed sector, and there are also missed opportunities in sharing data, for example between licensing agencies, restoration practitioners, industry bodies as well as other areas of government.

It recommended that training and accreditation could be linked to a simplified licensing system, to guarantee sustainable collection. Practitioners could complete training and testing before being granted a licence.

This training could link in with the Code of Practice, as those who apply for a licence for seed collecting could receive basic training aligning with the Code of Practice, in areas such as sustainable seed collection, record keeping, and seed processing and storage.

9.1 Development of an app for seed data capture

There is currently no national monitoring system in Australia for the movement of native seed. *Making tracks — Where does seed come from and where does it go?*, [11] a report for Project Phoenix, recommended that a seed collection tracking app that can be used on a mobile device would benefit the whole sector and be a useful means of ensuring that native seed is collected using a uniform methodology to sell seed in the national marketplace.

The app could be used in seed collection in the field, and photographs and GPS location could also be captured. It would also be beneficial for licensing agencies, as relevant data could be provided to the licensing body annually as a condition of the licence. In the future, if such an app is introduced and linked with licensing bodies, this could eventually take the place of the need to apply for paper licences and permits.

Licensing systems aim to manage remnants of bushland and collect data on seed collection: the app could address both issues. A useful next step may be for the government to form a working group with representation from the whole sector to agree in detail how the app will work.

[10] Birnie Z (2021), *Psst... Everything you wanted to know about native seed licensing*, Project Phoenix.
[11] Commander LE (2021), *Making tracks — Where does seed come from and where does it go?*, Project Phoenix.

10 PROMOTING THE CODE TO SEED BUYERS

If buyers are educated on the benefits of knowing where seed was collected, they will start to request this information as a minimum[12]— Strategy workshop participants also noted this. Sellers will then be required to record this data as a key 'value-add', and not to have this information will be a disadvantage and may reduce their customers. Promoting the long-term benefits of a Code of Practice to buyers, such as government bodies and mining companies, is therefore a key step in ensuring that the Code of Practice is successful in its aims.

In future, it would be useful to work with large seed purchasers (such as government bodies and mines) to align their procurement processes with the Code of Practice. A suggestion from the Strategy workshops is to develop guidelines for buyers of seed, as often those responsible for sourcing native seed for restoration projects have not been trained in this area. Guidelines could include direction on areas such as:

- sourcing seed
- seed provenance
- specifications of the seed being purchased
- which species of seed are appropriate to use for different restoration projects
- appropriate storage, depending on the type of seed or its use
- appropriate seed treatment, depending on the situation and
- considerations when engaging someone to carry out ecological restoration work.

[12] ANPC Report.

11 COMPLIANCE

Monitoring compliance with the Code of Practice will be a key issue to address i.e. who would take on this role and how it would be done. Some components of compliance such as labelling are more straightforward to monitor than others.

However, if a seed tracking app is eventually introduced, as discussed above, this could link with auditing compliance and could be a 'game changer' for the sector. A useful step in this area could be to carry out a review of existing Codes of Practice in other areas and look at how compliance is dealt with and what approaches have been effective.

12 A REPRESENTATIVE BODY FOR THE NATIVE SEED INDUSTRY

There is agreement among the native seed sector that it needs an industry body to carry out tasks such as advocating to government on relevant issues, encouraging collaboration in the sector, and overseeing research and development. This feedback was received at the Strategy design workshops and has been proposed in several reports.[13]

Currently, although there are several organisations in the sector, there is no industry body which represents the whole sector. It is agreed that the proposed industry body should have representatives from the whole sector, including seed collectors and growers, buyers, government representatives, and science and research organisations.

The options are that:

- a new industry body could be created or
- an existing organisation could incorporate the role of industry body for the native seed sector (e.g. the Australian Seed Federation or the Australian Seedbank Partnership).

If a national Code of Practice were adopted, it would need an 'owner' to maintain, develop and promote it, and the obvious owner would be a national industry body if such existed.

For detail on the feedback from the ten-year Australian Native Seed Strategy Design Workshops regarding an industry body for the native seed sector, please see the Appendix.

[13] Birnie Z (2021), *Psst... Everything you wanted to know about native seed licensing*, Project Phoenix; Birnie Z (2021), *Everything you wanted to know about access to land for native seed collection*, Project Phoenix; ANPC Report.

13 WHO WILL MANAGE THE CODE?

If a national Code of Practice for Native Seed Management is introduced, there will need to be an organisation which takes on the role of the 'owner' of the Code, which would be responsible for managing and developing it. There are several options as to which organisation could take on this role, including:

- An organisation owner within the sector, with the capacity to manage, develop and promote the use of the Code. (The Australian Seedbank Partnership and the Australian Seed Federation are two examples of such organisations.)
- A new industry body, if such a body is established (see Section 12).
- A relevant government agency; this could be at the Commonwealth, state or even local level.

The native seed sector will need to decide on the question of who will manage a national Code of Practice for Native Seed Management. Therefore, please consider the question below.

Question 4:

Who do you think should manage a national Code of Practice for Native Seed Management?

14 RECOMMENDATIONS

A Code of Practice offers an opportunity to address some of the issues which have been blocking the native seed sector from progressing. The details of what should be included in the Code of Practice and how it would best be put into practice must be carefully considered and discussed by the sector, and a way forward decided in consultation with all groups in the sector.

The recommendations below are proposed as next steps for the native seed sector, drawn from the options which will be explored in this Paper. They are made within the context of Project Phoenix and the ten-year strategy for the sector.

It is recommended that the following steps are taken:

1. **Establish a single nationally agreed Code of Practice for Native Seed Management.**

This will be used as an overarching Code of Practice for Native Seed Management which states and territories abide by in conjunction with the relevant legislation and licensing systems which apply to them.

2. **Develop the Code of Practice based on the *FloraBank Guidelines*, the Revegetation Industry Association of Western Australia (RIAWA) Seed Standards, and an accompanying training and accreditation program, based on the RIAWA accreditation program.**

3. **Create an industry peak body with representatives from all parts of the native seed sector, including seed collectors and growers, buyers, science and research organisations, Indigenous groups, and ecological restoration groups.**

The industry body will:

- be the 'owner' of the Code of Practice and accreditation program, and be responsible for maintaining, developing, and promoting them within the sector
- be responsible for advocating to government for the sector, promoting collaboration within the sector, considering issues impacting the sector, and more, and
- provide education and information to seed purchasers, highlighting the long-term benefits of the Code of Practice and of ensuring they buy seed from accredited collectors and growers. This may include developing Guidelines for buyers of native seed.

15 SECTOR CONSULTATION

The next step is for further consultation on a Code of Practice will take place in July 2021, when this Paper as well as the overarching draft ten-year Draft Strategy for the Australian Native Seed Sector will be disseminated throughout the native seed sector via email distribution lists and through the Project Phoenix Australia website. Respondents will be able to provide feedback on the issues raised in both reports by providing feedback via the Project Phoenix website. Feedback received during the consultation period will be gathered and the Code of Practice report will be updated based on the sector's feedback.

It is very important that all groups in the native seed sector have their say in shaping a national Code of Practice for Native Seed Management, to ensure that the Code of Practice is practical, useful and relevant, and meets the requirements of all members of the native seed sector.

16 QUESTIONS FOR CONSULTATION

16.1 Do we need a national Code of Practice for Native Seed Management?

This Paper has looked at the issues which face the native seed sector, and whether a national Code of Practice for Native Seed Management could address some of these. There have been Codes of Practice at state level, but the issue being considered now is whether a *national* Code of Practice would be beneficial.

Question 1:

Do you think a national Code of Practice for Native Seed Management is a good idea?

16.2 A voluntary or mandatory national Code of Practice for Native Seed Management?

Following on from Question 1, if the sector decides to introduce a national Code of Practice for Native Seed Management, the next question is whether it should be implemented on a voluntary basis or on a mandatory basis.

Question 2:

If a national Code of Practice for Native Seed Management were put in place, do you think it should be voluntary or mandatory?

16.3 Developing the national Code of Practice for Native Seed Management

When developing a national Code of Practice, a new Code could be developed, or one or more existing Codes of Practice or frameworks could be used as a basis and adapted, depending on which components are useful.

Question 3:

If a national Code of Practice for Native Seed Management were put in place, do you think:

- the national Code of Practice should be based on one or more of the existing frameworks or
- a new national Code of Practice should be developed?

16.4 Who will manage the national Code of Practice for Native Seed Management?

A national Code of Practice will need to be managed by a relevant body which would take ownership of it and develop and promote it. This could be an individual organisation; an industry body, if one was in operation; or it could be done by government, at the Commonwealth, state or even local level.

Question 4:

Who do you think should manage a national Code of Practice for Native Seed Management?

PROJECT PHOENIX

APPENDIX

CONTENTS

APPENDIX

1 Background

1.1 Project Phoenix

In response to the Black Summer Bushfires of 2019–20, Greening Australia received funding of $5 million from the Federal Government to develop a ten-year strategy to build and secure native seed supply for landscape restoration, recovery and resilience in areas affected by the bushfires and other vulnerable landscapes.

The work of Project Phoenix is built on the foundation of the *Australian Native Seed Survey Report*, a comprehensive report on the findings of the Australian Native Seed Survey, carried out in 2016–2017 by the Australian Network for Plant Conservation (ANPC).

1.2 Past proposals for a national Code of Practice for Native Seed Management

Many of the problems in the native seed sector were raised 10–20 years ago and remain unresolved today.[14] Exploring why a Code of Practice has not been implemented requires further research beyond the scope of this Paper, however it will provide an overview of the issues. Below are some possible reasons:

- One possible factor is that there is often **limited scrutiny and follow up on conservation and restoration outcomes**, as noted in several reports as well as the ten-year native seed Strategy workshops.

  It is noteworthy that seed standards and accreditation have been introduced in Western Australia, which may be due to the mining sector, and compliance required by law for mine site rehabilitation, where sites are audited to ensure that the aims of rehabilitation or restoration projects were achieved. This level of accountability has generated a demand for good ecological restoration outcomes, leading to the development of standards.

- Another factor (mentioned in the Strategy workshops) is the **disparate nature of the native seed sector**.[15] The absence of a coordinating group acting for the entire sector has hampered the sector's development, including the development of national standards.

- A **lack of government funding** in this area is another contributing element, including the ceasing of funding for FloraBank, as well an under-investment in the sector generally.[16]

Project Phoenix provides an opportunity to revisit the idea of a national Code of Practice for Native Seed Management in the context of the Strategy for the native seed sector.

[14] Commander LE (2021). *Snap! A picture of the Australian Seed Sector in 2021,* Project Phoenix.
[15] Hancock N, Gibson-Roy P, Driver M, and Broadhurst L (2020). T*he Australian Native Seed Sector Survey Report*. Australian Network for Plant Conservation, Canberra
[16] Ibid.

2 Project Phoenix activities related to a national Code of Practice for Native Seed Management

Project Phoenix activities which are relevant to the introduction of a Code of Practice are summarised in Table 1 below.

TABLE 1: PROJECT PHOENIX ACTIVITIES RELATED TO A CODE OF PRACTICE

TITLE AND KEY POINTS	RECOMMENDATIONS RELATED TO CODE OF PRACTICE FOR NATIVE SEED MANAGEMENT
SNAP! A PICTURE OF THE AUSTRALIAN SEED SECTOR IN 2021	
Provides a review of the published reports on the Australian native seed sector. It outlines issues and barriers in the sector, and recommendations to inform seed-based restoration and conservation are provided.	**Licensing and permissions** • Licensing applications must be clear and straightforward to complete, be assessed within a reasonable time frame, and collect aggregated data about collection in each jurisdiction. • Licensing agencies could implement a short, online assessment to ensure that collectors understand the licensing conditions and their obligations to harvest in a responsible and sustainable manner. • Purchasers should check to ensure that their seed was obtained legally. **Coordination and communication** • Change needs to be implemented by forming an industry body, understanding the motivations of, and communicating with stakeholders, and changing regulations. • Opportunities to communicate between different parts of the sector will benefit the whole industry.
PSST... EVERYTHING YOU WANTED TO KNOW ABOUT NATIVE SEED LICENSING	
Identifies key factors underpinning licensing systems and highlights the constraints and opportunities of licensing systems according to on-ground practitioners.	• Integrate new technologies including: – online application systems and – smart data management and reporting systems, to streamline licensing returns data management. • Simplify the licence structure to a 'driver's licence model'. • Support the development of a National Standard for Seed Quality and Code of Practice for the supply of native seed within Australia that builds off the *FloraBank Guidelines*. • Align licensing systems to formalised training and testing.
EVERYTHING YOU WANT TO KNOW ABOUT ACCESS TO LAND FOR NATIVE SEED COLLECTION	
Reviews land tenures across Australia to identify key land access mechanisms that are enablers or detractors to large-scale seed collection and production.	• Identify core species required in priority restoration locations to build incentives and capacity for the development of seed orchards and seed production areas in strategic locations. • Develop seed collection baselines to reduce unintended consequences of wild seed collection on native vegetation. • Develop Land Access Agreements and Memorandum of Understandings (MOU) across key land tenures in priority areas. • Build land tenure maps into interactive maps that can be utilised by stakeholders within the sector to identify areas where access is permitted and any requirements to access an area.

MAKING TRACKS — WHERE DOES SEED COME FROM AND WHERE DOES IT GO?	
Examines if there are readily available seed data management systems working effectively in the sector that could be used to develop of a national database and tracking system for native seed sales.	• Co-develop mobile and desktop application • Develop national web database for species information • Develop national database of collectors and suppliers • Investigate the potential for an online sales portal • In the short-term, develop a universal spreadsheet.
HOW DOES THE NATIVE SEED MARKET WORK?	
Carries out detailed economic and resource economic analysis and planning to guide future investment and funding strategies in developing sustainable sector outcomes. Reviews mining sector seed demand, and interactions and conflicts in the market.	**2021–2025** • Design and pilot a centralised exchange mechanism, to help match buyers with sellers in the market for seed. – Access to the market could be made conditional on proof of licence and code of practice credentials – The market pilot could: ❖ be a point of reference for the sector — flag future requirements ❖ redesign contracts to reduce purchaser risks ❖ reveal shortfalls in seed and allow price signals to highlight opportunities ❖ require detail of seed purity, provenance, weed content etc • Promote the treatment of seed as an ecosystem service, to activate latent assets. – Improve the network of existing resources with a view to understanding gaps – The Native Seed Network ("NSN") in the US (https://appliedeco.org/restoration/nativeseednetwork/) is a resource providing information on native seed for use in landscape scale restoration. It provides a directory of native seed vendors and products they offer and collects /provides info on where the seeds come from and how they've been handled, so seed consumers can make informed decisions. **2025–2030** • Develop seed zones – Once ecoregions have been identified, establishment of a body to provide oversight of the seed sector to ensure seed is available could be developed. – Identify an organisational type to provide oversight and research for advancing the native seed sector – Identify an organisational structure to allow the sector to coordinate its resources for scientific research, sector financing or shared commercial investment opportunities
HOW MUCH DOES NATIVE SEED COST?	
Identifies the information available on pricing of native seed nationally. The report lists (where available) data on current market rates/prices and examines the suitability of a purity grading system (or other standards) for the relative valuing of seed.	• Repeat the process of developing a pricing database annually to develop the database over time. Consideration should be given to broadening the information search to: – Capture additional suppliers and genera – Gather information on seed stocks. • Promote the information provided in the database and continue to promote it over time as the database is expanded. • Incentivise disclosure of information direct from seed suppliers to reduce reliance on publicly available information to add reliability, robustness, breadth and depth to the information.

3 Overview of organisations with standards for native seed management

A brief overview is given below of the organisations which have developed the standards and guidelines currently in use and of relevance to the native seed sector.

3.1 Revegetation Industry Association of Western Australia (RIAWA)

RIAWA was formed in 2003 and is the industry body for the revegetation sector in Western Australia (WA). RIAWA's members created a Code of Practice and accompanying Native Seed Accreditation System for revegetation and rehabilitation requiring native seed within WA.

RIAWA members can use the native seed accreditation system and associated training on native seed management. The accreditation system ensures that seed collected or harvested by accredited individuals following the Seed Standards can be sold as RIAWA Accredited Seed, meaning seed sellers can assure buyers they are purchasing seed of known quality.

As part of the accreditation system, suppliers declare the grade of the seed (conservation, commercial, or direct seeding), based on the level of testing, purity, and minimum conditions under which the seed has been stored. RIAWA has also created a seed purity database to provide the minimum purity percentage and acceptable industry standards for the most collected and traded species.

3.2 FloraBank

FloraBank is a consortium comprising members from the CSIRO, Greening Australia, Australian National Botanic Gardens, Australian Centre for Mining Research, and the Nursery Industry Association of Australia. It created and shared many resources, including the *FloraBank Guidelines*. Although it does not directly receive funding, FloraBank members work on activities such as updating the *FloraBank Guidelines*.

3.3 International Network for Seed Based Restoration

The *First International Principles and Standards for Native Seeds in Ecological Restoration* was developed by the International Network for Seed Based Restoration, part of the Society for Ecological Restoration (SER). SER is an international network of ecological restoration practitioners and scientists, who promote best practices in ecological restoration.

3.4 Australian Seed Federation

The Australian Seed Federation (ASF) is the industry body for the Australian seed industry at the local, state, national and international level, and is a member of the International Seed Federation and the Asia Pacific Seed Association. ASF members pay an annual fee and have access to various databases. Although the ASF represents the wider seed industry, its focus is on agriculture and horticulture as opposed to native seed used for ecological restoration and conservation projects.

4 Current frameworks for native seed management

The table below provides a summary and comparison of the standards and guidelines on native seed management in Australia, as well as information on membership and governance of the industry bodies.

TABLE 2. SUMMARY OF STANDARDS AND GUIDELINES ON NATIVE SEED MANAGEMENT IN AUSTRALIA

ORGANISATION	FRAMEWORK, STANDARD, CODE OF PRACTICE	NATIONAL FRAMEWORK?	INCLUSIONS AND EXCLUSIONS
Revegetation Industry Association of Western Australia (RIAWA) RIAWA is the peak industry body for Western Australia.	• Code of Practice • Seed Standards • RIAWA accreditation program linked to Seed Standards Standards were developed from and operationalise the first edition of the *FloraBank Guidelines* (first edition) RIAWA has a native seed accreditation system and a seed purity database.	Used in Western Australia	**Inclusions:** • Accreditation system • Seed Standards provide an overview of the processes of native seed management. **Exclusions:** • The Seed Standards do not include guidance as detailed guidance as in the updated FloraBank Guidelines. (However, they can be used in conjunction with the first or second edition of the Guidelines.)
FloraBank FloraBank is a consortium comprising members from the CSIRO, Greening Australia, Australian National Botanic Gardens, Australian Centre for Mining Research, and the Nursery Industry Association of Australia.	About to be released: • FloraBank Model Code of Practice for Seed Collection, second edition • FloraBank Guidelines, second edition, including modules: 1: Introduction 2: Working with Indigenous Australians 3: Approvals, Principles and Standards for Seed Collection 4: Record keeping 5: Seed sourcing 6: Seed collection 7: Seed production	First edition of the Model Code of Practice and *FloraBank Guidelines* is used nationally. Second edition of both documents due to be released shortly and will also be used nationally.	**Comment:** Second edition of Model Code of Practice and *FloraBank Guidelines* drafted by 70 authors and peer-reviewed by a further 80 authors. First edition of Guidelines was benchmarked as best practice for seed collection and widely used in the sector. The guidelines include practical steps, as well as guiding principles for each topic. The FloraBank Model Code of Practice and Guidelines are not in conflict with the RIAWA Seed Standards and accreditation system, but rather could likely easily be harmonised with them.

ORGANISATION	FRAMEWORK, STANDARD, CODE OF PRACTICE	NATIONAL FRAMEWORK?	INCLUSIONS AND EXCLUSIONS
	8: Seed processing 9: Drying and storage 10: Seed quality testing 11: Seed germination and dormancy 12: Seed enhancement technologies 13: Nursery propagation 14: Direct seeding 15: Buying and selling seed		
International Network for Seed Based Restoration (part of the Society for Ecological Restoration)	*First International Principles and Standards for Native Seeds in Ecological Restoration* (Pedrini & Dixon, 2020) Written based on the ***International Principles and Standards for the Practice of Ecological Restoration***	Yes, national Released 12 months ago. Provides a foundation for developing guidance and quality measures; can be adapted on locally or nationally.	The document was created because there was no international guidance to ensure native seeds had the same level of quality assurance as is the norm for agriculture and horticulture. **Inclusions:** • A combination of general practices in the native seed supply chain which are part of good practice in ecological restoration.

5 Governance of organisations with standards for native seed management

TABLE 3. GOVERNANCE AND MEMBERSHIP OF ORGANISATIONS IN THE NATIVE SEED SECTOR

ORGANISATION	GOVERNANCE	MEMBERSHIP COST
Revegetation Industry Association of Western Australia (RIAWA) RIAWA is the peak industry body for Western Australia.	Governed by committee, voted by members	$200 — Corporate $100 — Individual/government/ Not for profit $50 — Associate / Student
FloraBank	No existing governance structure	Not applicable — not an industry body
International Network for Seed Based Restoration (part of the Society for Ecological Restoration)	Has a Board and Chair. Members vote at general meetings.	Free for members of the Society for Ecological Restoration (SER) SER membership is: $2,500/$1,250/$436 — Business, varying levels $89 — individual Equity and Open-Door rates also exist.
Australian Seed Federation (ASF) ASF is the peak industry body for the Australian seed industry at the local, state, national and international level. Although ASF represents the wider seed industry, its focus is on agriculture and horticulture.	Has a Board and Chair. Members vote at general meetings. Has CEO and 2 staff members.	Depends on size of the company: fees range from $1,000 to $13,000.

6 Australian Native Seed Sector Strategy design workshops

Consultants ACIL Allen, engaged to carry out key Project Phoenix activities, ran several Strategy Design Workshops in April 2020 as a means of engaging with the native seed sector around the ten-year Australian Native Seed and Landscape Strategy. During the workshops, a national Code of Practice for Native Seed Management was discussed. Key points are noted below:

- A summary of the poll results from the workshops on the topic of the Code of Practice reveals that when asked *Do you support a Code of Practice for the native seed and plant sector?* most respondents (91%) did support a Code of Practice.
- Similarly, in answer to the question *Do you support a Code of Practice for labelling native seed?* Most respondents (88%) said *Yes*.
- However, beyond these issues, respondents were not as clear as to what the Code of Practice should include and how it should operate and were evenly split in their answers.

6.1 Workshop attendees and themes

One hundred and two participants attended the workshops (some participants held more than one role in the sector). In terms of the roles of the workshop participants:

- most were from government bodies, followed by
- seed collectors/growers
- conservation/botanic gardens
- researchers
- buyers.

Most participants were from NSW, followed by Victoria and then Western Australia.

The workshops were allocated different themes:

- capacity
- supply
- demand
- conservation
- research and development
- national issues.

The workshops with the most attendees were those on *Research and Development,* followed by *Conservation*, and then *Supply*.

6.2 Feedback on a Code of Practice

There was a range of feedback provided from the workshops regarding a Code of Practice. Some viewed a Code of Practice as a natural next step, whereas others were hesitant — with ACIL Allen speculating that this could be due to a lack of clarity of what a Code of Practice comprises. Observations made by participants included the following:

- There is indeed a need to reverse poor practices and to reinforce good practice — a Code of Practice will not be a barrier for those already engaging in good practices.
- Although quality assurance is happening in some transactions now, overall, there will be challenges in trying to standardise such a complex and diverse and market.
- There should be mandatory minimum standards for basic labelling, as these allow buyers to make an informed decision (e.g., scientific name, location). Additional information above what is mandatory (e.g., GPS location, sustainable collection, provenance, viability, storage) would be voluntary, but would give seed collectors and sellers a competitive edge.
- The Code of Practice could be used as a compliance system.

- If the Code of Practice does become mandatory, there would need to be a transition period.
- Quality is driven by suppliers and buyers of seed – if buyers demand quality, suppliers will meet it.
- Buyers need education to be aware that quality is a key factor and start expecting and asking for a certain level of quality for sellers to meet.
- The idea of developing a separate 'buyers guide' was seen to be beneficial.
- Finally, there also needs to be a willingness on the part of those purchasing seed to pay for the additional costs that will be incurred.

In terms of frameworks in this area which already exist:

- Participants mentioned that there has already been a great deal of good work done in the area which should be leveraged.
- For example, the *FloraBank Guidelines* are being updated and it would be useful to adopt these more widely.
- The Revegetation Industry Association of Western Australia (RIAWA) has Seed Standards and an accreditation system for accrediting native plant seed that is bought and sold in WA.
- The Queensland Biodiscovery Act limits how biological materials, including seed, are collected and accessed and has a code of ethics which involves agreement by Traditional Owners.

It was agreed that the Code of Practice would need to have a designated coordinator, however there were divergent opinions on whether the coordination should be at a regional, state, or national level.

6.3 Responses to poll regarding Code of Practice

A summary of the poll results from the workshops on the topic of the Code of Practice reveals interesting information regarding the views of the sector as captured in this format.

- When asked *Do you support a Code of Practice for the native seed and plant sector?* most respondents did support a Code of Practice: 91% of poll respondents said *Yes*, with 1% replying *No*, and 9% unsure.
- Similarly, in answer to the question *Do you support a Code of Practice for labelling native seed?* Most respondents (88%) said *Yes,* with only 4% replying *No*.

However, beyond these issues, respondents were not so clear as to what the Code of Practice should include and how it should operate and were evenly split in their answers.

- In answering the question *Do you think the Code of Practice should be voluntary or should be used as a form of compliance?* 35% felt that it should be voluntary, 44% that it should be a form of compliance, 21% were unsure.

- When asked Do you think a Code of Practice could create more red tape for small's business? 34% said Yes, 31% said No, and 35% were unsure.
- When responding to the question Do you support a Code of Practice as an alternative to current licensing and regulation? only 28% said Yes, 39% said No, and 33% were not certain.

It seems that the overall view is that the Code of Practice should be national and should focus on labelling, as respondents were split on the other issues canvassed.

6.4 Feedback on an industry body

There was a consensus among workshop participants that the native seed sector needs an industry peak body, which would:

- Advocate to government on policy issues
- Secure government grants for the sector
- Promote collaboration between players in the sector, and assist newcomers to the sector
- Oversee research and development, and look at issues impacting the sector (e.g.: threatened species movement)

It was suggested that this industry body could be government funded at first, until it is able to be supported by the sector.

Participants were asked: *What are the three most valuable roles an industry body should fulfil?* Although a range of roles were chosen, it is noteworthy that the most valuable role was *developing standards.* Of the roles respondents chose for the industry body, 29% chose *developing standards* as a valuable role, 25% chose *advocacy*, 15% chose *accreditation*, 15% chose *updates on activities and research*, 9% chose *promotion of the sector*, and 7% chose *brokerage*.