

Partnerships for plant conservation: seed banks in Australia

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Abstract

The Australian Seed Bank Partnership (the Partnership) is a national effort to conserve Australia's plant diversity through collaborative *ex situ* conservation, research and knowledge sharing. Through shared efforts the partnership is working to bridge the gap between policy makers, researchers, land managers and on-ground conservation and restoration activities. The establishment of the Partnership has required an evolving process to ensure it is an effective venture that actively contributes to national and international plant conservation priorities. This paper discusses the work of the Partnership and outlines its areas of collaboration for plant conservation. This case study highlights the importance of a government framework for conservation partnerships and illustrates the value of such partnerships in effectively leveraging resources to make significant contributions to conservation efforts. The challenges and benefits presented through working across a federation of states are highlighted, and the social and philosophical shift required to expand functional boundaries of partnership members beyond their traditional 'turf' is discussed. From these insights, consideration is given as to what is needed to maintain a successful national partnership.

Keywords

Partnerships, conservation, plant diversity, seed banks.

Introduction

With the rapidly reducing resources available for plant conservation in countries, including Australia, partnerships are seen as a key way to do business and deliver a conservation mandate (Trauger *et al.* 1995: 114; Toupal & Johnson 1998: 4) and so deliver societal change (Glasbergen 2007: 4). While partnerships are not always be the solution or be appropriate for every situation, they can be critical to advancing plant conservation programmes and accomplishing goals (Trauger *et al.* 1995: 115). Moreover, partnerships can pave the way for opportunities within botanical institutions to diversify how they undertake their conservation efforts, as well as result in necessary change to widen the perspective taken by these institutions.

This paper presents a case study on the Australian Seed Bank Partnership (the Partnership) and attention focuses on its establishment and ways in which this stakeholder partnership is working on national plant conservation priorities. It also reflects on what makes a successful national partnership and considers some of the challenges and lessons learned to date.

Context and governance for the Australian Seed Bank Partnership

At a continental scale 87% of Australia's native vegetation remains; however, there has been substantial loss of vegetation since European settlement and native vegetation loss continues at a rate of nearly 1 million hectares per year (State of the Environment, 2011: p.586). Changing climates, new biological security issues and increasing natural disasters, such as fire and flood, are also challenges facing Australia's plant conservationists.

Considering all these challenges to the maintenance of biodiversity, the Australian Seed Bank Partnership has an ambitious vision of a '*future where Australia's native plant diversity is valued, understood and conserved for the benefit of all*'. The Partnership works towards achieving this vision through collaborative efforts in seed banking, research and knowledge sharing. This stakeholder partnership (Leach *et al.* 2002: 646) consists of representatives from fourteen leading

botanic gardens, state environmental agencies and academic institutions, as well as non-government organisations. In addition, there are several Associates who work with the Partnership on a project-by-project basis.

The Partnership has complex beginnings and it builds on a legacy from phase one of the Royal Botanic Garden Kew's Millennium Seed Bank Partnership. The Australian Seed Bank Partnership has been established as the principal conservation programme and a trading name of the Council of Heads of Australian Botanic Gardens Inc. (CHABG). CHABG was originally an informal network of executives formed in the early 1990s; it has recently evolved into a legal entity through its incorporation and registration as a charitable organisation. In addition, an executive role and secretariat are provided by the Australian Government, through the Australian National Botanic Gardens.

Establishing this governance structure was crucial for the long-term management of the Australian Seed Bank Partnership programme. Particular governance arrangements are required to enable fundraising from such sources as trust and foundation grant programmes and philanthropic and public donations. Furthermore, creating a board with strong connections to environmental agencies within Australia's state and territory governments, as well as the Australian Government, enables the Partnership to access established communication channels that can support the promotion of the role of *ex situ* conservation in integrated conservation management.

Scope of collaboration

The challenge for any conservation partnership is determining what needs to be done as a collaborative effort and how it needs to be done; this process requires a team with expertise in leadership, strategic thinking and negotiation. The current scope of collaboration by the members of the Australian Seed Bank Partnership is outlined in Table 1.

Progress to date

Leach *et al* (2002: 650) explain that 'Critics assert that partnerships consume excessive amounts of time and effort, create new and unnecessary layers of bureaucracy, divert attention away from important problems, [and] give false legitimacy to parochial deliberations when regional and national interests are at stake'. There is little doubt that partnerships require significant resources to provide leadership and manage the communications, negotiations, projects, fundraising and administration, just to name a few. The Australian Seed Bank Partnership is trying to address national plant conservation interests through its collaborations and thereby, encourage a national perspective and challenge parochial jurisdictional thinking within *ex situ* conservation.

There is an array of issues that a partnership like the Australian Seed Bank Partnership can address through its collaborative national approach, particularly within a federated system of states and territories. To measure the multiple dimensions of success one needs to consider measures of outputs, actions and perceived values of the partnership by its members. It must be highlighted that the evaluation of the three year old Partnership programme is in its early stages. This paper will initially draw on quantitative data from recent reports on partnership projects to measure actions and outputs, as well as using qualitative data from participant observation and a focus group conducted with key stakeholders to assess the perceptions of the value of the Partnership.

The first two and a half years of the Partnership's development saw the establishment of its governance arrangements, negotiation of its ten-year strategic business plan, creation of its brand (including a web presence) and the growth of stakeholder relationships. By the third year, the Partnership began to deliver on various agreed plant conservation-related priorities. It is noteworthy that these timelines for establishment are along similar timelines to those experienced by other conservation partnerships. For example, in the United States, studies have found that the majority of watershed management partnerships often took more than four years to achieve

several benchmarks of success (Leach *et al* 2002: 662 and 665). Consequently, caution must be taken with prematurely judging early stage partnerships as failures. It typically takes between four to six years ‘...to educate participants, overcome distrust, reach agreements, secure funding, and begin implementation’ (Leach *et al* 2002: 666). The development of the Australian Seed Bank Partnership is observed to be following similar timelines to those described by Leach *et al* (2002). For example, in its third year of operation the Partnership is beginning to secure project funds and deliver outputs that contribute to achieving two of its main goals.

Key areas of cooperation	Defining the cooperation
Collections	Prioritising seed collection and banking of national priority species including threatened, endemic ones and those of known or anticipated economic importance.
Influencing national policy	Full cycle of influence from defining the problem, planning, lobbying and raising awareness of the role of <i>ex situ</i> conservation in the conservation of biodiversity to influence government policies and strategies and their implementation.
Enhancing scientific opportunities	Collaborative mentoring and postgraduate supervision. Sharing scientific resources and facilities at a country-level to support efficient use of resources. Collaborative research to assist in the efficient use of resources and expertise, enhancing research quality through engaging a range of experts, as well as reducing the likelihood of duplication.
Leveraging resources	Sharing resources and undertaking collaborative fundraising for <i>ex situ</i> conservation that addresses national plant conservation priorities.
Sharing knowledge	Sharing collection information for the benefit of researchers and the conservation and restoration sectors.
Training and capacity building	Bringing national expertise together to build capacity and offering training for the conservation and restoration sectors.

Table 1 Scope of collaborative efforts by the Australian Seed Bank Partnership

One of the Partnership’s goals is to collect and store seed in secure seed banks as long-term insurance against loss of plant diversity (so contributing to GSPC Target 8). Efforts to achieve this goal are currently being made through the *1000 Species Project*. This project has involved partners developing a national priority list for seed collections of 1000 endangered, endemic or economically significant species. As a result of Australia’s federated system of states, the process to create a priority list has required careful consideration of State, Territory and Australian Government biodiversity conservation legislation.

Through a three-year fieldwork fund, generously provided by the Royal Botanic Gardens Kew, and a collective 82% in-kind contribution from the eight participating partners, the collecting work for the 1000 Species Project commenced in the 2012/2013 financial year. In its first year, 155 new taxa were added to conservation seed bank collections. The Partnership also received funding from the Australian Government, and 70% in-kind contributions from the two participating partners, to build provenance collections of 20 threatened species susceptible to ‘dieback’ (infestation by the fungus *Phytophthora cinnamomi*) in areas of national concern.

Both of these collecting activities are a valuable illustration of how partnerships can leverage resources effectively for conservation activities, which address national concerns such as the impact of biosecurity threats in the maintenance of plant diversity. Furthermore, these projects also encouraged a wider perspective to be taken by the partner organisations beyond their traditional jurisdictions to ensure resources were directed to national priorities.

A second goal of the Partnership is the sharing of knowledge and engaging the public, private and charity sectors, as well as community members, in the work of the Partnership (contributing to GSPC Targets 14, 15 and 16)

The *Australian Seed Bank Online* is a project that builds an accessible seed information resource. The project hub operates as an aggregator of data supplied directly by member institutions. The hub gives these collections a 'common' presence on the web and enables extended information sharing and collaboration, as well as ease with reporting to governments and the Convention on Biological Diversity. The project is being delivered through the *Atlas of Living Australia* (ALA), which has been demonstrating significant success in coordinated planning and delivery of digitised content from Australia's biological collections, including Australia's herbaria. Stage one of the *Australian Seed Bank Online* has been realised solely through in-kind contributions from the Partners and the *Atlas of Living Australia* (a contribution conservatively valued at A\$350,000).

There is evidence of a growing attitudinal shift among the Partners through working collaboratively on these projects over the past two to three years. Ongoing exposure of the Partners to different individual and institutional ways of thinking is increasing their ability to deal with Partnership matters from a national perspective and expand the functional boundaries beyond traditional 'turfs'. There is a growing vision of plant conservation beyond the member's jurisdiction and core business, and there is a cultural shift from inward-looking perspectives that consider the institution's immediate need for funds, to outward-looking approaches that prioritise resource allocation in terms of national priorities. It is also fair to say, that the national perspective can waiver from time to time and be challenged when institutional resources continue to decline, experts are lost from an institution and/or there are mounting institutional pressures through restructuring and changing priorities.

In the context of the Australian Seed Bank Partnership, we need to keep investing and supporting this cultural shift within botanical institutions, to provide the necessary backing for us to have real collaborations that result in national and international plant conservation benefits.

What makes a successful national partnership?

- Key ingredients for strengthening and maintaining partnerships have been discussed by others in case study literature (e.g. Toupal & Johnson 1998; Siebert & Smith 2004). Several limitations have been highlighted that affect the development of models for successful conservation partnerships. These limitations mean that the structure of a partnership needs to be tailored to enable a specific partnership to be successful, particularly over a large geographical area.
- Within an Australian context, consideration of Australia's large geographic area and its federated system of states is critical. This federated system means that the Partnership's work operates under a variety of legislative instruments. This has implications for undertaking truly collaborative projects with cross institutional collaboration. Particular areas effected are i) securing resources for its work because of jurisdictional funding frameworks; and ii) practical operations such as arranging seed collecting permits, negotiating priorities with three levels of government, and the ability to duplicate collections across states/territories for risk management.

The recent focus group with ASBP members revealed some key perceived values of the Partnership:

- Where there are limitations in capacity [of member institutions], the partnership has been beneficial in providing staff with opportunities to work with other partners and develop their experience and increase skill levels.
- ...a national partnership assists in discussions with government and other funding bodies, providing a powerful case for demonstrating the rationalisation of funding for shared infrastructure and research goals.

The main issues that the partnership is successfully addressing are:

- Seed banking has been mainstreamed in host institutions
- Seed banking has become more visible due to national undertaking.

Importantly, individual efforts are recognised as contributing to the whole:

- While participation in research projects has been difficult, contributing to collaborative projects such as the development of [ASBP] web pages has been a valuable contribution to the whole partnership.
- While aspects of measuring partnership success can be subjective, there are characteristics of success common to partnerships that can provide the basis for assessment (Toupal & Johnson 1998: 5). Many of the ingredients of success identified with the Australian Seed Bank Partnership have been highlighted in other partnerships (e.g. Siebert & Smith 2004; Agranoff 2005) including:
 - **Executive leadership in mobilization:** Dedicated champions with a commitment to collaboration are critical to the development and promotion of a partnership. For example, champions within government have enabled the Partnership to have a seat at the table to contribute to national discussions and debate on the transition to management of myrtle rust (*Puccinia psidii*). Furthermore, due to the Australian Government hosting the Partnership's Secretariat through the Australian National Botanic Gardens, communications on the partnership are sent to the Minister for the Environment, Parliamentary Secretary and Australian Government Senior Executive when appropriate. In addition, it has enabled the Partnership's work to be featured in international reporting such as briefs presented at the recent Convention on Biological Diversity's SBSTTA meeting in Montreal. Executive leadership is also provided by the Committee members of the governing body CHABG and member representatives on the Partnership's Strategic Steering Committee. All these champion efforts help to profile and enable the work of the Partnership at both a national and international scale.
 - **Brokering the collaborative:** A supported secretariat is crucial to the functioning of a national partnership. Secretariat staff need to take a broad national, and at times international, perspective and be high-level strategic thinkers. This is particularly important because a secretariat provides a key point of contact for new organisations and individuals wanting to collaborate. Furthermore, it provides resources and leadership to create opportunities for action, as well as bringing stakeholders together and conducting team building to strengthen collaborations across organisations.
 - **Monitoring and flexibility:** Taking a flexible approach to collaborative work is essential. The ASBP business plan provides a framework for achieving the Partnership's vision and goals; however, the agreed plan needs to allow flexibility to enable the Partnership to

respond to changing national priorities. Recent examples of changing national priorities in Australia include a new government elected with different conservation approaches, and new biosecurity risks through the establishment of myrtle rust (*Puccinia psidii*) in 2010. Furthermore, flexibility is essential at times when partners are not 'ready' to tackle some of the agreed tasks and a stalemate results if things are pushed. An adaptive approach allows for project timeframes to be modified while still maintaining a commitment to the overall agreed priorities.

- **Financial mechanism:** A financial mechanism is essential for the success of a conservation partnership addressing national priorities. While the Partnership relies on its members to have a sustainable base to undertake their core business in *ex situ* conservation, the efforts needed to successfully deliver a visionary national collaborative programme in plant conservation require the creation of a sustainable financial mechanism. The process of working towards a sustainable financial model takes time and involves integrating a complex range of components to diversify funding sources and reduce vulnerability to changing political and financial climates. One key component of this mechanism for the Partnership includes the contribution of a national coordinator and secretariat services and facilities by the Australian Government, through the Australian National Botanic Gardens. In addition, voluntary in-kind contributions by members of the Partnership provide significant resources for strategic planning, project development, marketing and communications. These resources, combined with various grants and funds, have enabled the Partnership to develop its governance, agenda and commence work on 16 of its 32 identified priorities in its business plan within three years of operations.

Challenges and lessons learned from the Australian Seed Bank Partnership

All partnerships present challenges and the Australian Seed Bank Partnership is no exception. Participants in the recent focus group discussion revealed:

- Resourcing levels can make collaboration difficult and core business takes precedence.
- We need to think from a more national perspective...difficult for us to balance institutional core business with national priorities within our resource limits.
- ...whether the states/institutions should be collaborative or competitive in applying for funding...

Some of the key challenges and the lessons learned are:

- **Staff shortages / staff turnover:** the small teams across Australian conservation seed banks, as well as staff shortages, staff turnover and contract staff all affect Partnership operations. Consequently, additional human resources need to be included in project proposals to enable Partnership members to participate in larger-scale or longer-term projects.
- **Expertise:** There needs to be diverse expertise in the steering committee and to support the administration of such a partnership. The expertise is needed in such disciplines as fundraising, strategic thinkers, research programme development, and financial and legal management. One of the most challenging aspects is getting research leaders who are able to make a long-term commitment to progressing collaborative research. This is an ongoing challenge where funds are not available to support the development of research ideas and collaborations.
- **Participation:** the participating partner organisations and their representatives need to be open to different views, interests and styles and this requires careful management.

- **Constraints and improvement:** Members of the Australian Seed Bank Partnership do not have equivalent levels of staffing, facilities or resources dedicated to seed science and banking. Consequently, members have different capabilities for achieving the Partnership's objectives and contributing to its overall development and activities. In some situations this has created issues that have needed careful management and consideration of equitability. For example:
 - Expectations that the Partnership will secure resources for an individual institution's core business
 - Advancing collaborative science is reliant on a small number of members who have research leadership skills
 - Varying expertise in project development and management places pressure on those with these skills.
- **Government buy-in** – There are challenges with Australia's federated system, which makes securing government support quite complex and an expectation that funding support for a national programme will come from the Australian Government is unrealistic. Furthermore, the corporate and philanthropic sectors expect government support for plant conservation efforts.
- **Communications** – Effective communication is the cornerstone of any successful partnership effort. There is a challenge to gain recognition as a fledgling organisation and this can affect the likelihood of engaging champions and securing funding. Managing both internal and external communications is one of the biggest ongoing challenges to maintaining a partnership and is resource intensive.
- **Relevance** – There need to be ongoing efforts to promote the value and relevance of a partnership's achievements to wider stakeholders. In the case of the Australian Seed Bank Partnership, these end users include those stakeholders who need access to scientific knowledge to assist with establishment in restoration projects; for example, state environment agencies, regional botanic gardens, land managers, researchers, and the nursery and horticultural industry.

Concluding remarks

The Australian Seed Bank Partnership draws together diverse expertise and offers a political and practical way to address national conservation priorities through *ex situ* conservation and gain momentum for ongoing efforts in the maintenance and sustainable use of plant diversity. In its third year of operation, the Partnership remains challenged to secure sufficient resources to enable the achievement of its strategic plan in a ten year timeframe; nevertheless, it must be highlighted that the governance, strong vision and ongoing good will of committed member organisations and individuals creates a social cohesion that goes a long way to realising national plant conservation priorities. The advantage of a collaborative approach in a federated system of states is that it allows *ex situ* conservation to be considered from a national perspective and through this alliance address those plant conservation priorities that otherwise are overlooked due to a jurisdictional approach taken by individual botanical institutions.

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