

1 The rich but little known chronicles of community seed banks

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Thirty years of experience and still growing

Community level seed-saving initiatives have been around for about 30 years. They have been designed and implemented to conserve, restore, revitalize, strengthen and improve local seed systems, especially, but not solely, focussed on local varieties. These efforts have taken various forms and names: community gene bank, farmer seed house, seed hut, seed wealth centre, seed-savers group, association or network, community seed reserve, seed library and community seed bank. They handle major crops, minor crops and so-called neglected and underused species. The multiple initiatives have sought to regain, maintain and increase the control of farmers and local communities over seeds and to strengthen or establish dynamic forms of cooperation among farmers and between farmers and others involved in the conservation and sustainable use of agricultural biodiversity.

The initiatives include establishing and supporting multiple activities, such as community gene banks and seed banks, local farmer research groups or committees, participatory plant breeding teams, farmer and community agricultural biodiversity committees, seed-saver clubs and networks, seed exchange networks, seed production cooperatives and networks of custodian farmers. In this book, we focus on community seed banks – locally governed and managed, mostly informal, institutions whose core function is to maintain seeds for local use (Development Fund, 2011; Shrestha et al., 2012; Sthapit, 2013). Beyond this core conservation function, community seed banks have a broad range of additional purposes and vary significantly in scope, size, governance and management models, infrastructure and technical aspects, e.g. seed collection, seed storage and conservation, documentation and administration (Vernooy, 2013).

The drivers underlying their establishment, evolution and sustainability over time vary considerably. Some were set up following a famine, drought or flood and the loss of local seed supplies. Others were initiated following participatory crop improvement efforts that resulted in the availability of new cultivars and new skills to locally maintain healthy and genetically pure seed. Still others were established because farmers were far removed from a reliable source of quality seed. In developed countries, community seed banks often arose when

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hobby farmers and gardeners started to conserve and exchange their seeds in their neighbourhoods (Nabhan, 2013). Depending on management capabilities, governance modality and type, and level and duration of external support, community seed banks withered rapidly or endured.

This book aims to fill a gap in the scientific literature about community seed banks. Despite 30 years of existence and growth, no book has been published that reviews their history, evolution, experiences, successes, challenges and prospects. We believe this book is unique in bringing together a rich compilation of 35 diverse case studies from around the world and an in-depth comparative analysis of the key aspects of the operations and viability of community seed banks. Case studies were based on a common framework and include individual community seed banks (23 cases from 19 countries), organizations that support community seed banks (seven cases) and countries with policies in support of community seed banks (five cases).

Brief review of the literature

Most written information about community seed banks has been empirical and can be found in the grey literature or in reports or briefs of the nongovernmental organizations (NGOs) that assist farmers in conservation and sustainable use of local crops and landraces (Vernooy, 2013). A small number of references to community seed banks can be found in the literature on seed systems and the management of agricultural biodiversity (e.g. Almekinders and de Boef, 2000; CIP-UPWARD, 2003; de Boef et al., 2010, 2013; Shrestha et al., 2007, 2008; Sthapit et al., 2012). In this literature, community seed banks are treated as examples of local-level institutions that contribute to seed conservation, in particular of farmer varieties, countering erosion of crop diversity or its loss following natural disasters. Surprisingly, a major international publication, such as the FAO's (2010) *The Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture*, does not make reference to community seed banks.

A working paper, 'A typology of community seed banks,' (Lewis and Mulvany, 1997) is, to our knowledge, the first and only attempt to characterize community seed banks globally. The authors focussed on the following distinguishing features: type of seed stored, seed-storage method and seed exchange and multiplication mechanisms. Based on these, the authors identified five types of community seed banks: de facto seed banks, community seed exchanges, organized seed banks, seed-savers' networks and ceremonial seed banks. Because of its focus on the type and management of the seeds, this work could be described as input centred and is a very useful early attempt to categorize the wide variation in community seed-saving efforts. However, it fails to fully address the diversity of functions and services provided by community seed banks and, as far as we know, it has not been brought up to date since it was published 18 years ago.

Jarvis et al. (2011) developed a framework to identify multiple ways of supporting the conservation and use of traditional crop varieties (key components

of agricultural biodiversity) within agricultural production systems. They list grassroots seed-saver networks, community seed banks, community-based seed production groups and seed cooperatives as effective participatory mechanisms to improve the availability of plant genetic materials. This more recent framework integrates community seed banks with a broader perspective of conservation and use of plant genetic resources. It does not, however, elaborate what seed banks actually do, what functions they perform, what services they deliver and what factors influence their sustainability.

Sthapit (2013) proposes community seed banks as platforms of community-based management of agricultural biodiversity that can ensure effective implementation of farmers' rights through the recognition of their knowledge of local biodiversity, their participation in decision-making concerning its conservation, benefit-sharing and the existence of a supportive policy and regulatory framework. He argues that community seed banks can also provide an opportunity for interaction and integration of informal and formal seed systems, for the promotion of in-situ and ex-situ links to back up genetic resources locally as building blocks of crop improvement, food security and sustainable community development. Sthapit's careful attention to the political, institutional, socioeconomic and agro-ecological dimensions of community seed banks allows for the development of a coherent holistic framework. The framework we use in this book builds on his analysis.

Contents of this book

This book is divided into two major parts. Part I, Chapters 2–8, offers a comprehensive comparative analysis of key operational aspects of community seed banks. Part II contains the 35 case studies. The reading order of the two parts can be debated, as we did as editors: those who wish to view the bigger picture first are invited to follow the sequence as laid out. Those who prefer to read the detailed ground material first may jump forward to Part II. An epilogue aims to provide some food for thought concerning the future of community seed banks. Parts I and II are bridged by a collection of photos from the field representing diverse aspects of community seed banking around the world. The photos were selected from submissions received from the case study contributors and from the personal archives of the editors.

Part I: Comparative analysis of key aspects of community seed banks

Although most seed banks were created thanks to the financial and technical support of NGOs and the farming communities in which they are located, in recent years, a number of national governments have developed plans and mobilized some financial and technical resources for community seed banks. In search of self-support mechanisms, some of the more recently established community seed banks in developing countries have expanded their seed

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multiplication services, e.g. maize seed banks in Guatemala (FAO, 2011) and in the Philippines (Reyes, 2012). In Chapter 2, we describe the origins and evolution of community seed banks around the globe in more detail.

Community seed banks are examples of on-farm management of local crop diversity; they allow the processes of both natural and human selection to continue as part of the agricultural production system (Brush, 2000; Frankel et al., 1975). But, perhaps surprisingly, community seed banks have rarely been the subject of systematic scientific enquiry. In Chapter 3, we propose a framework for filling this knowledge gap. It allows a comprehensive analysis of the multiple facets, functions and services of local seed-saving experiences that can be united under the common definition of community seed bank. The elaboration of this framework is based on a combination of a comprehensive review of the global literature carried out by the book editors, an analysis of the case studies brought together in this book and our own field research experiences working with community seed banks in diverse settings around the world.

Chapter 4 looks at how community seed banks are dealing with governance and aspects of management, including costs. What has gone well and not so well? What key issues have emerged? We present a typology to categorize the various forms of governance that can be found among the case studies. We highlight the active roles and contributions of women, as custodians and caretakers of seeds in many countries, in the day-to-day functioning of many community seed banks. Across the case studies, considerable variety exists in terms of exactly how governance and management tasks are executed. Although most seed banks pay attention to these factors, variance can be observed in the rigour and regularity of their execution.

Chapter 5 discusses the minimum set of technical criteria and the issues that must be addressed by those who wish to operate community seed banks. To some degree, the technical issues depend on the type of seed bank in operation, but many are relevant to all seed banks. Technical issues emerge throughout the cycle of seed management, from the early stage of selecting which crop species and varieties to keep (and that selection may change over time) to the documentation of the collection and its use. Our findings indicate that, among the case studies, a number of community seed banks are highly competent and functioning well in terms of collection, documentation, regeneration, storage, distribution and marketing of seeds of diverse local and improved varieties. However, the overall picture is not that positive. We observe that community seed banks in most of the case study countries have work to do in such areas as applying scientific methods to the collection, storage and regeneration of seeds; documenting information and traditional knowledge; and introducing the latest technologies and management innovations into community seed bank management.

Community seed banks are usually small-scale organizations that store seed on a short-term basis and serve individual communities or several communities in surrounding villages. However, such local efforts can have a multiplier effect

if the seed banks cultivate partnerships and engage in networking and sharing of information and seeds with other informal and formal seed system actors. Small community seed banks can, thus, sometimes become large ones, or a network of small community seed banks with considerable scope and depth can emerge. Chapter 6 offers some insights into the kinds of networks and the roles of the networks in which community seed banks become involved. We have grouped the case studies into two categories: light (few linkages) versus dense (multiple linkages) webs. Unfortunately, the case studies do not allow for an in-depth sociological assessment of how the nature of these networks affects performance and sustainability.

Across the world, community seed banks operate in countries with diverse political regimes and policy and legal contexts. Our review of the literature indicated that very little attention has been paid to analyzing the policy and legal environment in which community seed banks operate. Chapter 7 aims to fill that gap. The case studies offer a wide array of ways in which current policies and laws affect community seed banks, both positively and negatively. It is interesting and encouraging to note that, in recent years, promising changes have been taking place in a number of countries. This trend seems to confirm the (untapped) potential of community seed banks as well as the increasing awareness of this potential among key decision-makers and their interest in integrating community seed banks into a broader framework of policies, strategies and programmes.

The comparative analyses of key operational aspects of community seed banks in Chapters 2–7 feed into Chapter 8 where we discuss sustainability or long-term organizational viability. This is the greatest challenge facing community seed banks. What capacities must community seed banks have to be and remain effective in the long run? Our case studies suggest that a number of conditions must be met: legal recognition and protection, options for financial viability, members with adequate technical knowledge and effective operational mechanisms. Careful and systematic planning right from the start is another important factor. In this chapter, we elaborate on some aspects of sustainability of community seed banks, namely, human and social capital, economic empowerment, policy and legal environment and operational modality.

Part II: Case studies from around the world

Based on a review of the literature and enriched by the experience of the editors of this book with community seed banks over the last 20 years, we sent 50 invitations to a diverse group of people directly engaged with community seed banks in various parts of the world to contribute case studies to this book. We received 35 positive responses. Although the 35 case studies describe a considerable diversity of experiences, they do not pretend to cover in a statistically significant way the number of community seed banks per country, or region or continent. They do, however, all address key aspects of the operations and factors that influence the viability of community seed banks:

origin and history, functions and activities, governance and management, technical issues, support and networking, policy and legal environment and sustainability. The 35 case studies illustrate the rich but little known chronicles of community seed banks. Contributors include community leaders, custodian farmers, NGO staff, researchers and research managers. Case study countries include Bangladesh, Bhutan, Bolivia, Brazil, Burundi, Canada, China, Costa Rica, Guatemala, Honduras, India, Malaysia, Mali, Mexico, Nepal, Nicaragua, Norway, Rwanda, South Africa, Spain, Sri Lanka, Trinidad, Uganda, the United States of America and Zimbabwe. One case study covers Central America as a region.

We hope that the detailed comparative analysis of Part I and the narratives of Part II together will appeal to researchers, practitioners and decision-makers working on the conservation and sustainable use of plant genetic resources, seed systems, agricultural biodiversity and seed and food sovereignty.

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