SEEDS AND SYNERGIES

Innovating Rural Development in China

Edited by Song Yiching and Ronnie Vernooy
Seeds and Synergies
Praise for this book…

‘The challenge of improving food security and reducing poverty by exploiting crop genetic potential is more complex than entailed in Green Revolution strategies of developing and distributing ‘improved’ varieties. This book explores the potentials of existing varieties and the operational context of local farmer participation, farmer interactions with state-sponsored research and extension, and achieving rural empowerment for broader transformations. The many connections that ‘seeds’ have or can lead to for improving rural livelihoods and quality of life are fascinating and worth in-depth examination.’

Norman Uphoff, former director of the Cornell International Institute for Food, Agriculture, and Development, Cornell University

‘Seeds and Synergies presents inspiring evidence of change in practice and policy in the governance of seed systems and the conservation of agrobiodiversity. Policy makers and plant breeders should read this!’

Janice Jiggins, Professor and guest researcher, Communication and Innovation Studies, Wageningen University Research Centre, Netherlands
Seeds and Synergies
Innovation in rural development in China

Edited by Song Yiching and Ronnie Vernooy

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Foreword

The re-emergence of China as an important global actor is one of the miracle growth stories of the last part of the 20th century and the early part of the 21st century. Since 1980, China’s economy has been the fastest growing in the world. Poverty has decreased. In the past 30 years, more than 230 million Chinese rural residents have risen above the country’s official poverty line. Moreover, the general welfare of most of the population has improved markedly. In fact, by the end of 2007, China had achieved many of its millennium development goals.

China’s rapid economic growth would not have been possible without the successes achieved in the agricultural sector. Its growth of nearly 5 per cent a year has played a key role in the nation’s transition from an economy dominated by the agriculture sector to one in which the industrial and service sectors have achieved dominance. The growth in agricultural productivity enabled China to ‘release’ its large pool of abundant rural labour, providing cheap labour for industrialization.

However, although past accomplishments in both agriculture and the rest of the economy are impressive, great challenges still lie ahead for China’s rural development. Income disparity, for example, rose with economic growth. There are significant differences in income among regions, between urban and rural zones and among households at the same location. Despite the significant decline in poverty, the World Bank estimated that in 2004 about 27 per cent of China’s population (or 350 million people) were still living at or below the 1.25 US$/day level (in terms of purchasing power parity). Of these, 99 per cent live in rural areas. Poverty remains persistent in many western and south-western provinces (such as Guangxi) and particularly in remote rural areas.

Technology change has been a major engine driving China’s agricultural growth. However, new challenges have recently emerged. China’s agricultural research, dominated by a public research and development system, is becoming less responsive to farmers’ demands for novel technology. The agricultural extension system has been in crisis for some time. Farmers, mainly women and the elderly, in many remote areas are still facing difficulties in gaining access to information technology and markets. The achievements in agricultural growth have been made at a high cost to the environment and to agrarian biodiversity, which is being eroded all over the country. Farm incomes are now under pressure, in part because of degradation of the resource base.

Chinese leaders recognize that policy reform, especially agricultural and rural policy, has a vital role in the success of sustained agricultural and rural development. The national development goals articulated in ‘Five Balanced
Development Strategies’ are ambitious and a number of the proposed strategies and reforms are bold. However, national leaders also realize that many barriers prevent them from achieving these lofty goals. In some cases, factors that contributed to the success of China’s economy in the past have become obstacles that hinder pursuit of the nation’s future development goals. The goals are ambitious and the problems are complicated. So, the government has called for the development of new ideas and innovative policies to move China’s economy toward rapid and harmonious change.

The Center for Chinese Agricultural Policy (CCAP) is dedicated to policy studies and aims to generate new ideas and innovative policies for China’s agriculture and rural economy. It has four major policy research programmes: Agricultural Science and Technology, Natural Resources and Environmental, Integrated Rural and Urban Development and Poverty Alleviation and Agricultural Commodity Policy Analysis and Decision Support Systems.

CCAP’s participatory plant breeding initiative in Guangxi, which is highlighted in this book, is one of the most innovative in its portfolio. Participatory plant breeding (PPB) is based on multiple disciplines and involves nearly all four of CCAP’s research programmes. It has brought together a group of brave ‘action researchers’, including plant breeders, extensionists, farmers and policy researchers from the national level to the village level. Following the participatory action research approach, they have explored and experimented with ways and mechanisms to address the issues of poverty and biodiversity and overcome the institutional obstacles in public research and extension in five counties of Guangxi. They have now spent 10 years working and learning by doing, through action and experiments together with farmers and other related stakeholders, to bring innovation to rural development in China.

The Guangxi participatory action research initiative has brought many changes and new ideas to rural development. The Guangxi team’s self-evaluation (in 2008) shows that it has greatly strengthened the capacity of farmers (women and men), significantly enhanced biodiversity and increased farmers’ maize yield and income in the trial villages. More importantly, in collaboration with related policy institutions such as the Ministry of Agriculture, the Chinese Academy of Agricultural Sciences (CAAS) and the State Environmental Protection Agency, among others responsible for the implementation of the Convention on Biodiversity in China, the project has explored and experimented with a number of innovative institutional mechanisms and regulations. For example, some methods and mechanisms for PPB and participatory extension have been tested by the Guangxi team and other colleagues and are now being applied by the Ministry of Agriculture and CAAS in other provinces. Recently, the team also explored novel ways to improve farmers’ livelihoods through innovative ways of organizing by, for example, taking collective action in marketing organic produce and improved seed varieties (see Chapter 5 for details).

This book addresses agricultural and rural development in several dimensions. It also deals with some under-researched, underestimated and neglected issues. For example, the authors argue that a cooperative and complementary
relationship between farmers (with their ways of organizing the key features of rural life) and the world of formal rural development policy making and the national agricultural research system is urgently needed to address the challenges in food security, livelihood well-being, sustainable natural resource management and biodiversity conservation facing China as a whole and Guangxi in particular. They also show that decentralization of the formal research and development system (including the seed system) and meaningful involvement of women and men farmers in the design, development and implementation of innovation processes are essential to stimulate collaboration and the creation of much-needed synergies.

I certainly hope that the information in this book will be fully used by scholars who are interested in rural development.

I thank Dr Ronnie Vernooy and Dr Song Yiching, as well as their team, for the intensive research they have carried out. I would also like to express appreciation to the International Development Research Centre for funding this initiative.

Huang Jikun
Director
Center for Chinese Agricultural Policy, Chinese Academy of Sciences, Beijing
May 2009
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Preface

Back in 1999, when we first talked (by email) about starting a participatory action research (PAR) process around ‘seeds’ in Guangxi province, we had no idea that 10 years later we would still be cooperating in this work. Life is indeed full of pleasant surprises.

In 1999, Ronnie visited China for the first time, not to meet with Yiching (we would not meet until 2001), but to visit International Development Research Centre (IDRC) research partners in Yunnan and Guizhou, both neighbouring provinces of Guangxi in China’s mountainous and beautiful south-west. Thus, this year, 2009, is special in several ways: 10 years of cooperation between the IDRC and the Center for Chinese Agricultural Policy (CCAP) (where Yiching is based) and its partners, and 10 years of fruitful working in and learning about China for Ronnie.

Sharing a common university background and influence – Wageningen University in the Netherlands with its strong emphasis on social-actor-oriented approaches to rural development studies, doing fieldwork, putting research results to good use – and sharing an interest in working closely with men and women farmers, focusing on issues such as crop improvement, farmer organization and rural development policies, it was not hard to find common ground. We did not have to convince each other, but there were many others who had to be convinced to try out a novel and, in many ways, transformative way of doing research.

Luckily, from early on, we found others interested in supporting our ideas. Among them, was Hein Mallee, who was then a programme officer at the Ford Foundation in Beijing. Now, Hein is working at IDRC’s regional office for South-east Asia in Singapore and continues to be supportive of the work we started together in Guangxi a decade ago.

We set out on our journey with only a few committed people, beginning with a number of valiant Guangxi farmers (most of them women) with whom Yiching had been working in the 1990s. A number of plant breeders at the Guangxi Maize Research Institute joined us as well, as did a few brave agents from extension stations at the township level. Together, we designed a way to introduce and test participatory plant breeding (PPB), a first in all of China.

Although enthusiasm in the field was strong, the same could not be said of the upper levels of some key organizations with whom we intended to cooperate; there, views about participatory action research (PAR) were mixed. We are forever grateful to CCAP’s senior management, for whom PAR was also new, as they gave us room to experiment with this new approach and the opportunity to demonstrate that it could work in China.
How many people does it take to bring about significant change in the Chinese agricultural research and development system, which is probably the biggest in the world? What kinds of people does it take? What are good entry points? What has been tried in the past? How long does it take? Are there certain conditions that make it easier? Does it require policy analysis and advocacy or will local-level field research suffice? We had many big questions and no examples from the field of Chinese crop improvement and agricultural biodiversity conservation to learn from. It was like jumping into cold water and learning to swim by doing, moving arms and legs at the same time. But we were not afraid. ‘Let us start,’ Yiching said, ‘then, things will move.’ How right she was! Things did move – beyond our imagination.

In 10 years, China has changed dramatically. We have been able to read about it in western newspapers almost daily. The Chinese government’s ‘opening up’ policy has stimulated an enormous amount of creativity. Not that opening up has meant total freedom, but it has encouraged change and opened the door to novel ways of doing things, including introducing PAR and PPB. Although changes have been most visible in cities and in the eastern, more developed part of the country, rural areas have been affected as well. Most notably, the social fabric of villages and townships has been dramatically altered. Men and young women have migrated to cities in large numbers. Many rural areas are now left to young children, the elderly and women. The meaning of family is changing: middle-aged wives live without their husbands, young children live on their own without their parents. These young people, their grandparents and women who are too old to migrate and find work in the cities or in the booming assembly plants are today’s Chinese farmers.

The government is building new roads into rural areas. Migrant workers send money back to rural communities and many new farmhouses are under construction. Small farmhouses are now becoming two-, three-, or even four-storey homes. But many construction projects are unfinished; more money is needed to install windows and doors, to paint walls, let alone to decorate the many new rooms being added. Dreams are colourful but realities are hard.

In this rapidly and dramatically changing context, we set out to revive maize production as an entry point to lead towards renewing the local, provincial and national agricultural research and development system. We hoped to be able to create synergies between the various actors involved in maize production, break down organizational and institutional barriers and overcome ingrained prejudices about farmers’ knowledge and skills, farmers’ capacities to learn and innovate and farmers’ voices and choices concerning their own future and that of China at large. We started with maize, but the PAR process steered us into addressing rural livelihood issues more broadly. Farmers face so many problems. Over time, we learned that solving maize problems alone is not sufficient. Thus, we allowed the research agenda to evolve, adding other key elements, such as the provision of credit, extension services, questions about access to and sharing the benefits of genetic resources and, above all, farmers’ organization.
It has been a long and arduous journey, with many obstacles and setbacks. Bringing about change is never easy, especially in a country so vast, with so many people and with a history such as China’s. But we believe that we succeeded in changing something. In this book, we present our experiences to share them with others and to show that change is possible. Change is possible if there is a shared vision, a shared commitment to act and learn and enough time to build new relationships, try out new things, critically review them and adjust our actions along the way. Positive change is helped by an enabling policy and institutional environment, but such an environment by itself is not sufficient to bring about change. It takes courageous people with both feet on the ground to join forces and rebuild social relationships, both horizontally (e.g., between farmers and farmer communities) and vertically (between farmer communities and ‘outsiders’ from government, academia, non-governmental organizations and international donor agencies). In this book, we tell the story of 10 years of efforts to change things and the results.

We do not know what the future will look like 10 years from now. But we do know that change is possible. Ten years ago we were not quite sure. But now we are. The friendship that we have built along the way has been an unexpected outcome. We are convinced that without it, our results would have been less significant.

Ronnie Vernooy and Song Yiching
May 2009
Ottawa and Beijing
Acknowledgements

It takes many factors to make a maize seed grow and bear fruit. The soil and environment around the seed need to be fertile. The weather must be conducive. Other seeds and seedlings growing up nearby will allow for possible productive cross-fertilization. Attention and care during growth will have a nurturing effect. Experimentation could overcome constraints or explore new avenues.

Our action research efforts in Guangxi province in south-west China would not have been possible without all these factors giving us a helping hand. First, we would like to thank the unconditional commitment and cooperation of hundreds of women and men farmers who embarked with us on this long journey to improve maize and maize-based livelihoods. Their curiosity and courage, their arduous work in the field, and their melodious and often humorous singing and dancing showed us the way. Farmers are building and sustaining the new China, be it in the rural areas as agricultural producers, processors and vendors, or in the urban areas where they work part time as construction or factory workers or service providers. Or, in fact, as multifaceted practitioners giving new shape to Chinese society everywhere.

We have been lucky to have encountered on our way several other brave travellers. They include the so-called grassroots extension agents who, tired of the old and moribund national extension system, decided to join forces with us and try out a number of new ways of working together with and serving poor and marginalized farmers. Numbering only a few in the beginning, they nonetheless served as examples to convince higher ranking officials in the national extension system to support a systematic attempt to reform China’s agricultural extension system based on the day-to-day experiences of the grassroots reformers.

Other travellers are the maize breeders from the Guangxi Maize Research Institute in Nanning and the Institute of Crop Science of Chinese Academy of Agricultural Science in Beijing. Although sceptical at the beginning about farmers’ capability to improve maize varieties and farmers’ knowledge and skills more broadly, they opened their hearts and minds leading to a fruitful cooperation between professional breeders and farmer breeders. It is this story of cooperation and the creation of synergy that is at the centre of this book.

After several years of experimenting at the local level, we (farmers, grassroots extensionists, researchers) felt confident enough to communicate with key decision-makers in government and academia. It took courage and time to do so. In China, high-level decision-makers have a lot of prestige and also a very particular way of getting things done: top-down, with no or little voice
from ‘down’. We thank colleagues at the Ministry of Agriculture, the National Agricultural Technology Extension Center, the Ministry of Environmental Protection, the Chinese Academy of Sciences and the Chinese Academy of Agricultural Sciences, and China Agricultural University for their trust in us and our efforts, and for their willingness to join us and see for themselves.

A number of PhD and Masters students joined the team for various periods of time to learn from the field. Wang Xiufen, Yang Huan, Zhang Li, Gao Xiaowei, and Jingsong Li joined us as contributors to this book, documenting and reflecting on their in-depth field work experiences in which they learned, for the first time, about the everyday lives and struggles of poor farmers.

The Center for Chinese Agricultural Policy (CCAP), as host of our efforts, has made our work possible and provided us continuous support throughout the years. We would like to express thanks to all CCAP staff and in particular to Dr Huang Jikun (Director) and Dr Zhang Linxiu (Deputy Director).

The Ford Foundation in Beijing and the International Development Research Center (IDRC) in Ottawa provided financial and technical support. IDRC continues to support our work in Guangxi, as well as our new efforts in neighbouring Guizhou and Yunnan provinces. IDRC also made this publication possible. We would like to thank Bill Carman for his dedication to publishing innovative work from around the world, including Guangxi Province.

Sandra Garland helped to make the whole text easily readable.

Song Yiching and Ronnie Vernooij
CHAPTER 1

Searching for synergy

Song Yiching and Ronnie Vernooij

The many faces of Chinese development

China is undergoing rapid change – easily observed in many parts of the country, most spectacularly in the cities, which are growing rapidly. The country’s economic growth has been and continues to be impressive, but poverty remains persistent in many rural areas including Guangxi province, the focus of attention in this book. The changes are not lived and felt in the same way by all people across the vast country. Some are making impressive gains and managing to improve their livelihoods rapidly. Others, those farther away from the centres of economic and political power and activity, are finding it difficult to keep up.

Divergence between those who have and prosper and those who do not have and do not gain seems to be increasing. The fancy skyscrapers, luxury cars and expensive restaurants of Beijing, Shanghai and, increasingly, of provincial capitals and other major urban centres, stand in sharp contrast to the poor dwellings, dirt roads and hungry mouths found in thousands of villages in the north, west and south-west of China. Contrasts are becoming more pronounced and, as a result, tensions are increasing all over the country. (Note: To read how a 13-year-old farm girl experiences the many hardships of rural life, speaking for many rural youngsters, see the gripping journal of Ma Yan from Ningxia province (Ma Yan and Haski, 2003).)

Many rural areas and communities, although not untouched by the pace of change, seem to be struggling to respond, adjust, or take advantage of the new dynamics. Millions of rural people continue to face poverty, often severe, and this poverty is profoundly differentiated socially. In many regions, women in particular endure hardships or are experiencing increased burdens, partly explained by the dramatic feminization of agriculture. Men leave to look for work elsewhere, leaving women to play an increasingly dominant role in food production and to take responsibility for post-harvest operations, seed selection and storage, as well as food processing. Traveling through rural Guangxi (and many other provinces), one observes women just about everywhere – in fields, along paths and roads, at the markets and in shops. After a while, the realization dawns that men are absent and one begins to wonder how women are experiencing, shaping and reshaping this new reality.

However, the fact of women’s significant and increasing role in rural life is seldom noted among the key decision makers (mostly living in towns and