The Indian economy is considered to be one of the fastest growing economies of the world with India amongst the most important G-20 economies. Ever since the Indian economy made its presence felt on the global platform, the research community is now even more interested in studying and analyzing what India has to offer. This series aims to bring forth the latest studies and research about India from the areas of economics, business, and management science. The titles featured in this series will present rigorous empirical research, often accompanied by policy recommendations, evoke and evaluate various aspects of the economy and the business and management landscape in India, with a special focus on India’s relationship with the world in terms of business and trade.

More information about this series at http://www.springer.com/series/11234
Financing Agriculture Value Chains in India

Challenges and Opportunities

Springer
Despite a progressive decline in the share of agriculture in the gross value added, fostering rapid growth in agriculture and rural development remains a major policy concern in India. The importance of agriculture goes beyond its economic contribution. It is way of life for about half of India’s population, and an important source of income for small-scale entrepreneurs, traders, processors and retailers of the supply or value chains for various agricultural commodities. Indian agriculture is dominated by smallholders, and there is enough evidence to show ‘small farms are more efficient in production’, but these have now come under a confluence of biotic and abiotic pressures threatening the livelihood of millions of farmers. Nevertheless, the expanding demand for food commodities such as fruits, vegetables, milk, meat, egg and fish that generate higher returns to land, labour and capital, is creating opportunities for faster and sustainable growth of smallholder production systems and livelihood of smallholder farmers and other marginalized sections of the rural populace.

Can smallholder farmers expropriate benefits of growing markets for high-value food commodities and value addition? There is an apprehension. Smallholder farmers are often poor, and their lack of access to institutional credit hinders them from adopting improved technologies and use of quality inputs. They also face barriers in the market. Their marketable surplus is too small to be remuneratively traded in the distant urban demand centres. The traditional supply chains for most agricultural commodities are long and dominated by intermediaries or commission agents; many of them also act as lenders and by tying the credit transactions with product transactions exploit the smallholders by paying them less than the market price of their produce.

Nevertheless, several innovations have taken place in both product and financial markets that can be downscaled to the needs of smallholders. It is being increasingly realized that some of the constraints that farming communities face can be alleviated using these in a value chain framework. The Government of India has been offering several financial incentives to processors, financial institutions and farmers to develop integrated value chains for agricultural commodities. The amendment of APMC Act to allow private investment in agricultural markets and
contract farming, removal of restrictions on inter-state trade of agricultural commodities, promotion of Farmers’ Producer Organizations and integration of regulated markets across through e-NAM (electronic national agricultural market) are some of the laudable efforts.

The financial institutions have been supportive of these initiatives by integrating their products and services along the value chains. National Bank for Agriculture and Rural Development (NABARD) too has been engaged in developing innovative products to ensure development of a sustainable value chain for various agri-commodities. Some major initiatives like setting up funds, viz. Producers Organization Development Fund (PODF), Farm Sector Promotion Fund (FSPF) and Food Processing Fund (FPF), for supporting promotion and nurturing of producer organizations and other farm sector-related activities, developing Primary Agricultural Cooperative Societies (PACS) as Multi-Service Centres (MSCs), extending Credit facility to marketing federations, corporations and cooperatives; accreditation of warehouses owned by PACS and extending Warehouse Receipt System in PACS; and implementation of Gramin Bhandharan Yojana (GBY) and Agricultural Marketing Infrastructure (AMI) schemes have directly contributed to the well-being and income of farmers.

This volume is a compilation of papers presented in the National Seminar on ‘Financing of Agriculture Value Chains: Challenges and Opportunities’ organized by NABARD jointly with International Food Policy Research Institute (IFPRI), New Delhi and comprises contributions of experts on theoretical and empirical perspectives on agricultural value chain and their financing mechanisms, and provides a way forward to improve efficiency, inclusiveness, competitiveness and sustainability of agricultural value chains. It also deliberates upon the possibilities of developing innovative financial products for integration into the value chains. Taking clue from the recommendations, NABARD has started working to evolve financial cum developmental products to effectively integrate smallholders into the value chains. I am quite hopeful that this volume will be useful to various stakeholders including policymakers, agribusiness firms and financial institutions in their efforts towards developing efficient, inclusive and sustainable agricultural value chains for the benefit of millions of small-scale producers and entrepreneurs.

Mumbai, India

Harsh Kumar Bhanwala
Chairman, NABARD
Acknowledgements

From time to time the National Bank for Agriculture and Rural Development (NABARD) organizes dialog, brainstorming sessions, seminars and workshops to seek inputs from experts to improve upon efficiency and effectiveness of its delivery of developmental as well as financial products and services to its clients, especially the farmers. This volume is an outcome of the papers presented and discussed in a national seminar ‘Financing of Agriculture Value Chains: Challenges and Opportunities’ organized by NABARD jointly with the South Asia office of the International Food Policy Research Institute (IFPRI), New Delhi at Bankers Institute of Rural Development (BIRD), Lucknow. The editors gratefully acknowledge the contributions of the authors, who submitted their paper to the national seminar, although only a few selected papers could find a place in this edited volume. The editors also wish to extend heartfelt thanks to all those who participated in the seminar as panelists, keynote speakers, discussants, rapporteurs and audience, and provided valuable insights during the course of deliberations.

In our efforts from conceptualization of the seminar on this vital topic to its final outcome in its present form as an edited volume, we have been motivated, guided and supported by the top management of NABARD, including Dr. Harsh Kumar Bhanwala, Mr. H.R. Dave and Mr. R. Amalorpavanathan. We express our sincere gratitude to them. Our sincere thanks to Dr. D.V. Deshpande, Mr. Sunil Chawla and their team comprising all faculty members and staff at BIRD/National Bank Staff College (NBSC), Lucknow for their excellent logistic arrangements. We also thank Mr. D.K. Panwar and others in the Department of Economic Analysis & Research for their excellent support in one way or the other in organizing this event.

Our special thanks to Prof. Ashok Gulati, Chair Professor for agriculture at Indian Council for Research on International Economic Relations (ICRIER); Shri Ashwani Kumar, Chairman cum Managing Director, Dena Bank and all the other experts and panellists, who steered the discussions and provided their inputs that
have helped us in bringing the outcome of the seminar in its present form. Finally, we extend our heartiest thanks to Dr. Pratap S. Birthal and Dr. B.S. Aggarwal who provided us technical and editorial support.

Gyanendra Mani
P.K. Joshi
M.V. Ashok
Contents

Part I Agriculture Value Chain Financing: Theoretical Framework

Financing Agricultural Value Chains: An Overview of Issues, Lessons Learnt, and Policy Implications ................................................................. 3
Gyanendra Mani and P.K. Joshi

Elements of Agriculture Value Chain Financing: A Review ............ 15
P.K. Joshi, Devesh Roy and Vinay Sonkar

Different Models of Financing Small Farmers’ Agricultural Value Chains ................................................................. 33
K.V. Gouri and Vijay Mahajan

Part II Agriculture Value Chain Financing in Case of Select Commodities

Formal Versus Informal: Efficiency, Inclusiveness and Financing of Dairy Value Chains in Indian Punjab ............................... 57

Smallholder Participation in Supermarket-Driven Agri-Food Supply Chain: A Case Study of Reliance Fresh .......................... 89
Rajib Sutradhar

Innovations in Agricultural Marketing in India: A Case Study of Supermarket in Punjab ....................................................... 109
Naresh Singla

Tomato Value Chain in Karnataka ................................................................. 125
K.B. Ramappa and A.V. Manjunatha
Value Chain Analysis of Dry Fish in North-East Region of India........ 143
A.D. Upadhyay, D.K. Pandey and Bahni Dhar

Broiler Value Chain Model for Empowerment of Poor Tribal Women:
A Case Study in Jharkhand........................................... 163
M.V. Ashok

Strengthening Value Chain of Compound Cattle Feed................. 171
Smita Sirohi, B.S. Chandel, Bitan Mondal, Sammu Kumar, S. Chowdhury
and D.K. Mahawar

Potato Value Chain Analysis in Selected States: Tamil Nadu, Uttar
Pradesh and Bihar......................................................... 187
R. Venkatram, N. Ajjan, S.D. Sivakumar, H.P. Singh and S.P. Singh

Part III Institutional Framework for Agriculture Value Chain
Financing

Elements of a National Agricultural Market in India............... 211
Devesh Roy, P.K. Joshi and Raj Chandra

Optimal Institutional Architecture of Farmer Producer
Organizations for Sustainable Value Creation for
Small and Marginal Farmers.......................................... 239
Amar K.J.R. Nayak

Impact of Market Reforms on Integration of
Food Markets in India................................................ 251
Madhusudan Ghosh
Editors and Contributors

About the Editors

Gyanendra Mani is currently General Manager and Officer Incharge, National Bank for Agriculture & Rural Development (NABARD), Arunachal Pradesh RO. He obtained Ph.D. in Agricultural Economics from G. B. Pant University of Agriculture and Technology, Pantnagar, Uttarakhand. He has conducted about 40 studies on behalf of NABARD and published about 40 articles/research papers in Indian and International journals. He has handled several consultancy projects on behalf of NABARD, including ‘Evaluation of SGSY Scheme’ for Ministry of Rural Development, Government of India which was instrumental in replacing the SGSY by National Rural Livelihood Mission, presently in place. He also conceived the idea of and launched the ‘THE MICROFINANCE REVIEW’ Journal on behalf of Bankers Institute of Rural Development (BIRD), Lucknow and managed it from 2009 to 2015 in the capacity of ‘Managing Editor’ of the Journal. He also coordinated several national-level seminars on Microfinance, Agricultural Value Chains, etc. on behalf of NABARD. As a faculty of BIRD, he conducted two exposure visits of senior bankers to Israel and the Netherlands. He is also a National Resource Person for ‘Design of Training’ programme being conducted by DoPT, Government of India.

P.K. Joshi is Director for International Food Policy Research Institute (IFPRI) South Asia. Previous to this, he held the positions of the Director of the National Academy of Agricultural Research Management, Hyderabad, India, and the Director of the National Centre for Agricultural Economics and Policy Research, New Delhi. He has received several awards, viz. Dr. M.S. Randhawa Memorial Award of the National Academy of Agricultural Sciences (2009–11), Prof. R.C. Agarwal Lifetime Achievement Award and DK Desai Award of the Indian Society of Agricultural Economics and RT Doshi Foundation Award of the Agricultural Economics Research Association. He has also served as the chairman of the SAARC Agricultural Centre’s governing board in Dhaka, Bangladesh (2006–08); chairman of the UN-CAPSA governing board in Bogor (2007); and member of the intergovernmental panel on the World Bank’s International Assessment of Agricultural Science and Technology for Development (2007–08). He served as a member of the International Steering Committee for the Climate Change, Agriculture, and Food Security Challenge Programme, led by the ESSP Science Community and the CGIAR (2009–11).

M.V. Ashok is currently the Chief General Manager heading the Department of Economic Analysis & Research at NABARD Head Office, Mumbai. He is a postgraduate in agriculture from the Indian Agricultural Research Institute (IARI), New Delhi, with additional qualifications in Financing Micro Enterprises from UK, besides Financing of Agri Business Management from USA. He has experience in development banking spanning 34 years with different banks like
Canara Bank, RBI and finally with NABARD since 1983. During his tenure in NABARD, he has served as Officer In charge. He has headed two state NABARD Regional Offices at Jharkhand and Maharashtra and has been a faculty member of BIRD, Lucknow. He has extensive exposure to rural finance sector in several countries including Thailand, Kenya, China, Germany, UK and USA.

**Contributors**

N. Ajjan  Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India  
Mohd. Arshad Khan  National Institute of Agricultural Economics and Policy Research, New Delhi, India  
M.V. Ashok  Department of Economic Analysis and Research, National Bank for Agriculture and Rural Development (NABARD), Mumbai, India  
Pratap S. Birthal  National Institute of Agricultural Economics and Policy Research, New Delhi, India  
Ramesh Chand  NITI Aayog, Government of India, New Delhi, India  
B.S. Chandel  National Dairy Research Institute (NDRI), Karnal, Haryana, India  
Raj Chandra  Iowa State University, Ames, Iowa, USA  
Khyali R. Chaudhary  National Institute of Agricultural Economics and Policy Research, New Delhi, India  
S. Chowdhury  National Dairy Research Institute (NDRI), Karnal, Haryana, India  
Bahni Dhar  College of Fisheries, Central Agricultural University, Agartala, Tripura, India  
Madhusudan Ghosh  Department of Economics and Politics, Visva-Bharati, Santiniketan, West Bengal, India  
K.V. Gouri  Basix Consulting and Technology Services Limited, Hyderabad, Telangana, India  
P.K. Joshi  International Food Policy Research Institute (IFPRI), South Asia Office, New Delhi, India  
Sammu Kumar  National Dairy Research Institute (NDRI), Karnal, Haryana, India  
Vijay Mahajan  Basix Social Enterprise Group, Hyderabad, Telangana, India  
D.K. Mahawar  National Dairy Research Institute (NDRI), Karnal, Haryana, India  
Gyanendra Mani  National Bank for Agriculture and Rural Development (NABARD), Itanagar, India  
A.V. Manjunatha  Agriculture Development and Rural Transformation Centre, Institute for Social and Economic Change, Bengaluru, Karnataka, India
Bitan Mondal  Institute of Agriculture, Vishwa Bharti, Sriniketan, West Bengal, India

Amar K.J.R. Nayak  XIMB, Xavier University, Bhubaneswar, Odisha, India

D.K. Pandey  College of Horticulture and Forestry, Central Agricultural University, Pasighat, Arunachal Pradesh, India

Pallavi Rajkhowa  International Food Policy Research Institute (IFPRI), South Asia Office, New Delhi, India

K.B. Ramappa  Agriculture Development and Rural Transformation Centre, Institute for Social and Economic Change, Bengaluru, Karnataka, India

Devesh Roy  International Food Policy Research Institute (IFPRI), New Delhi, India

Raka Saxena  National Institute of Agricultural Economics and Policy Research, New Delhi, India

H.P. Singh  Banaras Hindu University, Varanasi, Uttar Pradesh, India

S.P. Singh  Dr. Rajendra Prasad Central Agricultural University, Pusa, Bihar, India

Naresh Singla  Centre for Economic Studies, Central University of Punjab, Bathinda, Punjab, India

Smita Sirohi  National Dairy Research Institute (NDRI), Karnal, Haryana, India

S.D. Sivakumar  Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India

Vinay Sonkar  International Food Policy Research Institute (IFPRI), New Delhi, India

Rajib Sutradhar  Omeo Kumar Das Institute of Social Change and Development (OKDISCD), Guwahati, India

Md. Tajuddin Khan  International Food Policy Research Institute (IFPRI), South Asia Office, New Delhi, India

A.D. Upadhyay  College of Fisheries, Central Agricultural University, Agartala, Tripura, India

R. Venkatram  Tamil Nadu Agricultural University, Coimbatore, Tamil Nadu, India