



PALGRAVE STUDIES IN INDIAN MANAGEMENT
In association with Indian Academy of Management



Business Responsibility and Sustainability in India

Sectoral Analysis of Voluntary Governance Initiatives

Edited by

Bimal Arora · Pawan Budhwar · Divya Jyoti



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Palgrave Studies in Indian Management

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Series Editors: Pawan Budhwar, Aston University, UK, and Arup Varma, Loyola University, US

The Palgrave Studies in Indian Management series, in association with the Indian Academy of Management, publishes books which are designed to inform and inspire academics, practitioners, and anyone else with an interest in understanding the issues involved in management of organizations in India. Since the economic reforms began in the early 1990's, the Indian economy has been growing at a steady pace, and the country has rightfully assumed its place among the leading economies of the world. Indian organizations are increasingly going global and setting up operations and/or acquiring organizations in different parts of the world. At the same time, multinationals from around the world have made a beeline to India to capitalize on the huge market, as well as to draw upon the highly qualified workforce.

Of course, the world's largest and most diverse democracy faces numerous challenges – from infrastructure needs, to dismantling bureaucracy, and creating systems and processes that are more investor-friendly. In 2014, the Indian electorate picked a new government with overwhelming majority, and charged it with helping the Indian economy grow faster, so that the benefits may reach a wider section of the population. The new government has been busy creating policies that are designed to foster innovation, entrepreneurship, and business leadership. Indeed, in the first year since the government assumed office, the inward flow of FDI has increased substantially, and several multinational corporations have announced setting up operations in India, in response to the Prime Minister's "Make in India" campaign.

These are very exciting and volatile times for the Indian economy, and the expectations from the corporate world - both public and private are immense. The focus of this series is on the continuous evolution and growth of the Indian economy and related management issues.

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In memory of my father—Late Major Abhe Ram—PB
In memory of my father—Late Sri Lekhraj Arora—BA
For Maa and Papa—DJ
To all those who look forward to a sustainable future in India

Foreword

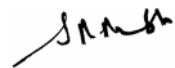
I am pleased to present a very timely and topical book that should prove very useful to anyone interested in business responsibility, sustainability and standards. Bimal Arora, Pawan Budhwar and Divya Jyoti through this book have undertaken an analysis of prominent voluntary sustainability standards in key exports sectors in India. By bringing together chapter contributors actively engaged in these sectors, the editors have put together an impressive volume that covers several critical aspects of transnational private regulation and the scene of play in India.

As I have shared on several occasions earlier, sustainability itself can often appear to be a daunting idea and an abstract construct. Therefore, standards—which articulate and define meaningful, tangible activities in production and consumptions of goods and services—can be valuable. The social and environmental impacts of business activities and exponentially growing production and consumption worldwide are an increasing threat and concern globally for sustainability. With enhanced expectations from businesses on their role and contribution towards achievement of the global goals set for the year 2030, businesses need broader knowledge, understanding, tools and an ecosystem. Multi-stakeholder initiatives driven voluntary sustainability standards can support businesses, policymakers and the diverse set of stakeholders in creating mechanisms, processes and practices that help them play their roles and contribute to achieve the “Sustainable Development Goals” (SDGs).

While there are several voluntary and public policy initiatives in India towards implementing these standards, there is indeed scope for adoption and adaptation of international standards, development of local standards where none exists, and implementation of a large number of standards for industries and consumers keeping in mind the diversity of markets and its interests. The intent of such standards, however, needs to be explicitly stated, whether these standards are for larger public good or narrow and limited interests of select corporates and micro, small and medium enterprises (MSMEs) to keep their personal slates look clean. Assuming that larger public good is the intent, this however cannot be achieved without two critical requisites. The first one is the issue of measurement, documentation and transparency, and the second is the issue of inclusiveness of all stakeholders, including developing countries, both in shaping and governance of standards.

India has long been a key sourcing destination for the global companies and is quickly becoming an important consumer market of its own. Global and national voluntary sustainability standards and collaborative sustainability initiatives can play a positive role in making this transition more responsible and sustainable. However, voluntary sustainability standards will need to be locally relevant, increase their engagements and visibility in the Indian market and among Indian consumers and policy-makers. I am happy that the editors of this book have adopted a comprehensive approach in underscoring the needs and nuances of business responsibility and voluntary sustainability standards in India with this insightful collection of work by eminent scholars and practitioners. The in-depth examination of voluntary sustainability standards in select sectors creates scope for dialogues and reflections, and I look forward to the conversation gaining momentum.

Minister of Commerce and Industry
and Civil Aviation, Government of India
New Delhi, India



Suresh Prabhu

Preface

The idea for this book was developed and shaped with the co-editors working towards incubating Centre for Responsible Business (CRB) in India between 2011 and 2013. CRB was incubated through a public–private partnership between the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), Social Accountability International (SAI) and Business Social Compliance Initiative (BSCI)/Foreign Trade Association (FTA) (now amfori), as part of a German Federal Ministry for Economic Cooperation and Development (BMZ)-supported project from 2010 to 2013. The CRB is now well established and works as a global south-based think-tank on the issues of business responsibility and sustainability, with a particular focus on voluntary, collective and collaborative governance and steering through voluntary sustainability standards (VSS).

The primary origination of VSS is generally in developed countries of North America and Europe, and the implementation happens in developing countries through supply chains and global value chains. Generally, while there is representation of developing country actors during the development of standards, wider inclusion, participation, consultation and buy-in of developing country stakeholders are not a norm. Sensing the lack of a south-based platform for North-South dialogue on VSS, the co-editors conceptualised an annual conference *India and Sustainability Standards: International Dialogues and Conference (ISS)* in 2013. The ISS convenes and conducts dialogues and consultations on diverse industry

sectors and themes in different formats every year in November, with partners as co-hosts and convenors—to deliberate on the status, challenges and opportunities inherent in different industry sectors and themes covered. The dialogues involving 60+ partners and 800+ delegates develop a roadmap for actions through the following year and taking to a wider set of stakeholders.

With overwhelming response and encouragement over the years from Indian and international partners, standard setters, large companies/MNCs, micro, small and medium enterprises (MSMEs), civil society supporters, policymakers and government agencies, media and delegates, ISS evolved into an India-based international Multi-stakeholder Dialogue Platform and as an annual flagship conference. CRB's partnership with ISEAL Alliance for a three-year project to promote awareness and uptake of VSS in emerging economies (India, China and Brazil) has played a crucial part in shaping the ISS Dialogue Platform. The adoption and initiation of Agenda 2030 for Sustainable Development Goals (SDGs) has provided both the impetus and the framework for greater attention to the issues of business responsibility and sustainable development. The role of business, and its interface with United Nations Guiding Principles on Business and Human Rights (UNGPs), SDGs and with Paris Agreement-related climate change decisions, has emerged as critical areas on this agenda at global level and requires a platform like the ISS for wide-ranging multi-stakeholder dialogues. Deliberations at the ISS Dialogue Platform also strongly oriented to contribute positively towards the Government of India's flagship initiatives like "Make in India", "Zero Defect Zero Effect", "Improving the Ease of Doing Business" and other forward-looking sustainability and developmental initiatives.

The agenda for sustainable development necessitates innovation in governance approaches and models. VSS offers one such approach and tools and calls upon societal actors, other than the state (the traditional rule-makers), to define rules and govern own and others' behaviour and practice. The size, complexity and magnitude of developmental and sustainability challenges in India beckon a concerted action by all actors. Collective steering approaches, then, undeniably have much to offer. In this book, we present few select VSS in different industry sectors, as examples of collective steering and reflect on their approach, models,

strengths, limitations and challenges as they are being adopted in India. The book is targeted at policymakers and civil society in India to better understand the interplay between VSS and policy, at different actors involved in setting up, implementation and uptake of VSS and at governance and regulation and business sustainability researchers. It is for anyone interested in sustainability issues and multi-stakeholder governance in India.

We hope that this compilation will contribute to the consolidation of knowledge and furthering of dialogues and deliberations on business responsibility, business sustainability and VSS more broadly, and particularly in India. Perhaps far-fetched, or maybe not, we hope the book will initiate and contribute to voluntary governance related debates, inspire Indian civil society and other stakeholders to consider development of home-grown VSS, and lead us to a vibrant, thriving world where voices of all actors and stakeholders find a seat at the table, where rule-makers and rule-takers are roles that everyone and anyone can assume, as per the demand of a future, which we can together make sustainable.

Birmingham, UK

Bimal Arora
Pawan Budhwar
Divya Jyoti

Series Preface: The INDAM-PALGRAVE Book Series

As we get ready to host the sixth Indian Academy of Management (INDAM) conference in December 2019 at the Indian Institute of Management, Trichy, we believe it is time to take stock of how the academy has evolved over the past decade. From the overwhelming support received at the very first conference held in December 2009 at XLRI, Jamshedpur, it became clear that INDAM had filled a critical void in the Indian management education space. Indeed, at each biennial conference since, we have seen the attendance grow steadily and the quality of submissions continue to improve.

In response to calls from members for a book series which would present books on topical issues relating to developments in India, we launched the INDAM-PALGRAVE series at the fourth INDAM conference. The first book of this series was co-edited by current INDAM President Naresh Khatri, and Abhoy Ojha. This volume was titled, *Indian Brand of Crony Capitalism: Establishing Robust Counteractive Institutional Frameworks*, and included incisive essays on subjects relating to the practice of crony capitalism and family oligarchies that have played major roles in the Indian economic story since independence in 1947. This volume was published at a critical time, given that India had elected a new government in 2014, led by Prime Minister Narendra Modi, who has made providing corruption-free governance to Indian citizens, a hallmark of his government.

We are excited to present the second volume of the INDAM-PALGRAVE series, titled “Governance through Voluntary Sustainability Standards: An Introduction”, co-edited by Bimal Arora, Pawan Budhwar and Divya Jyoti. The collection of essays in this volume discusses a hot-button topic around the world—sustainability and related voluntary sustainability standards. The content should be of interest to scholars, policymakers, private and public firms and civil society organisations, as the authors address critical issues related to sustainability and corporate social responsibility. Further, the emphasis on examining and exploring the notion and relevance of standards, and helping develop a common definition of sustainability is a critical contribution of this volume and should play a major role in helping shape policy and lead academic discussion.

We are confident the readers will enjoy reading the chapters in this volume. We will be back soon with the next book in this series.

Aston University, Birmingham, UK,
Co-founder and Past President, INDAM
Loyola University Chicago, Chicago, IL, USA,
Co-founder and Past President, INDAM

Pawan S. Budhwar
Arup Varma

Acknowledgements

For the past few years, having worked on sustainability in India, and specifically with different voluntary standards, we realised the need to compile together a book on the topic. Book projects such as this are an outcome of the efforts of dedication of a lot of people.

The majority of the contributions to this volume are original and have been specifically written at our request. We would like to thank all the contributors for being responsive to our demands, revising their chapters as per the reviewers' suggestions and for meeting rigid deadlines.

We would also like to thank all those who have helped us in various capacities, often behind the scenes, to bring this project to fruition. We would also like to thank Rijit Sengupta and other colleagues at Centre for Responsible Business (CRB) for supporting us with coordination and follow-ups as needed. Our special thanks to Palgrave for giving us the opportunity to develop this volume and for being open to our proposal and the numerous modifications. We would also like to thank the series editor, Prof. Arup Verma for his guidance and support and the reviewers of the proposal who offered suggestions for strengthening our manuscript plans. Finally, we would like to thank Liz Barlow and Lucy Kidwell for their encouragement, help and patience at various stages of the production of this volume.

xvi Acknowledgements

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Acronyms and Abbreviations

4C	Common Code for the Coffee Community
ADB	Asian Development Bank
AIDAN	All India Drug Action Network
AIIB	Asia Infrastructure Investment Bank
AMA	American Medical Association
AMR	Antimicrobial Resistance
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
AMS	Agricultural Marketing Service
APEDA	Agricultural and Processed Food Products Export Development Authority
APIs	Active Pharmaceutical Ingredients
APLR	Assam Plantations Labour Rules
APMC	Agricultural Produce Market Committee
ASC	Aquaculture Stewardship Council
ASI	Accreditation Services International
AWS	Alliance for Water Stewardship
B2B	Business-to-Business
B2C	Business-to-Consumer
B&C	Book and Claim
BAP	Best Aquaculture Practices
BC	Better Cotton
BCFTP	Better Cotton Fast Track Program
BCI	Better Cotton Initiative

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BEI	Banking Environment Initiative
BLF	Bought Leaf Factories
BMP	Better Management Practices
BREEAM	Building Research Establishment Environmental Assessment Methodology
BRICs	Brazil, Russia, India and China
BRR	Business Responsibility Report
CAA	Coastal Aquaculture Authority
CACP	Commission for Agricultural Costs and Prices
CAGR	Compound Annual Growth Rate
CB	Certification Body
CCI	Cotton Corporation of India
CCS	Content Claim Standard
CDP	Carbon Disclosure Project
CDSCO	Central Drugs Standard Control Organization
CFAs	Clearing and Forwarding Agents
CGF	Consumer Goods Forum
CICR	Central Institute of Cotton Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CMiA	Cotton Made in Africa
CoC	Chain of Custody
COP	Conference of Parties
CPO	Crude Palm Oil
CRB	Centre for Responsible Business
CSOs	Civil Society Organisations
CSPO	Certified Sustainable Palm Oil
CSR	Corporate Social Responsibility
CUTS	Consumer Unity and Trust Society
DGTD	Directorate General of Foreign Trade
DIMT'S	Delhi Integrated Multi-Modal Transit System
DIPP	Department of Industrial Policy and Promotion
DMIC	Delhi–Mumbai Industrial Corridor
DNDi	Drugs for Neglected Diseases Initiative
DPCO	Drug Price Control Order
EEZ	Exclusive Economic Zone
EGOS	European Group for Organizational Studies
EII	Earth Island Institute

EPCH	Export Promotion Council for Handicrafts
ESRC	Economic and Social Research Council
EUI	European University Institute
FAO	Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FERA	Foreign Exchange Regulation Act
FFBs	Fresh Fruit Bunches
FLEGT	Forest Law Enforcement Governance and Trade
FLO	Fairtrade Labelling Organisations International
FM	Forest Management
FMC	Forward Markets Commission
FMCG	Fast Moving Consumer Goods
FMRAI	Federation of Medical Representative Associations of India
FSC	Forest Stewardship Council
FTF	Fast Track Fund
GAA	Global Aquaculture Alliance
GAP	Good Agricultural Practices
GAPKI	Indonesian Palm Oil Industry Association
GATT	General Agreement on Tariffs and Trade
GCA	Gross Cropped Area
GDP	Gross Domestic Product
GEC	Global Electronics Council
GHG	Global Greenhouse Gases
GIB	Global Infrastructure Basel Foundation
GIF	Growth and Innovation Fund
GIM	Green India Mission
GM	Genetically Modified
GMO	Genetically Modified Organisms
GMP	Good Manufacturing Practices
GOI	Government of India
GOTS	Global Organic Textile Standard
GPNs	Global Production Networks
GRI	Global Reporting Initiative
GSCs	Global Supply Chains
GSSI	Global Sustainable Seafood Initiative
GVCs	Global Value Chains
HDPS	High-Density Planting Systems
HoReCa	Hotel/Restaurant/Café

xxii Acronyms and Abbreviations

HUL	Hindustan Unilever
ICSF	International Collective in Support of Fish Workers
iDeCK	Infrastructure Development Corporation Karnataka Limited
IDH	Sustainable Trade Initiative
IDMA	Indian Drug Manufacturers' Association
IEC	International Electro-technical Commission
IFAP	International Federation of Agricultural Producers
IFC	International Finance Corporation
IFCC	Indian Forest Certification Council
IFFO	International Fishmeal and Fish Oil
IFFO RS	International Fishmeal and Fish Oil Responsible Supply
IIFCL	India Infrastructure Finance Company Limited
IOPR	Indian Institute of Oil Palm Research
ILO	International Labour Organization
IMF	International Monetary Fund
IPM	Integrated Pest Management
IPOS	Indian Palm Oil Sustainability Framework
IQF	Individually Quick Frozen
IRDI	Inter Rural Development Institute
ISA	International Solar Alliance
ISCA	Infrastructure Sustainability Council of Australia
ISEAL Alliance	International Social and Environmental Accreditation and Labelling Alliance
ISO	International Organisation for Standardization
ISPO	Indonesian Sustainable Palm Oil
I-SPOC	India Sustainable Palm Oil Coalition
ITC	International Trade Centre
IVN	International Association of Natural Textile Industry
JOCA	Japan Organic Cotton Association
KSSP	Kerala Sastra Sahitya Parishad
LEI	Lembaga Ekolabel Indonesia
MC	Management-Oriented Criteria
MCA	Ministry of Corporate Affairs
MEL	Marine Ecolabel
MFRA	Marine Fisheries Regulation Act
MINTS	Mexico, Indonesia, Nigeria, Turkey, South Africa
MMT	Million Metric Tonne
MMV	Medicines for Malaria Venture

MM II	Mini Mission II
Mn	Million
MNCs	Multinational Corporations
MNEs	Multinational Enterprises
MPEDA	Marine Products Export Development Agency
MSC	Marine Stewardship Council
MSIs	Multi-stakeholder Initiatives
MSP	Minimum Support Price
MSPO	Malaysian Sustainable Palm Oil
MT	Metric Tonne
MTTC	Malaysian Timber Certification Council
MTWG	Materials Traceability Working Group
NAAS	National Academy of Agricultural Science
NBFCs	Non-Banking Financial Companies
NBS	Nature-Based Solutions
NCCF	Network for Certification and Conservation of Forests
NCRB	National Crime Records' Bureau
NDC	Nationally Determined Contributions
NFCC	National Forest Certification Committee
NFDB	National Fisheries Development Board
NFSM	National Food Security Mission
NFSS	National Forest Stewardship Standards of India
NGO	Non-Governmental Organisation
NIIF	National Investment and Infrastructure Fund
NITCON	North India Technical Consultancy Organisation Ltd
NLEM	National List of Essential Medicines
NMOOP	National Mission for Oilseeds and Oil Palm
NMS	National Minimal Standards
NOP	National Organic Program
NPM	Non-Pesticidal Management
NPOP	National Program for Organic Production
NPPA	National Pharmaceutical Pricing Authority
NUA	New Urban Agenda
NVGs	National Voluntary Guidelines for Social, Economic and Environmental Responsibilities of Business
NWGPL	National Working Group on Patent Laws
OCA	Organic Cotton Accelerator
OCS	Organic Content Standard

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OECD	Organisation of Economic Cooperation and Development
OTA	Organic Trade Association
P&C	Principles and Criteria
PC	Performance-Oriented criteria
PDS	Public Distribution System
PEFC	Programme for Endorsement of Forest Certification
PFAD	Palm Fatty Acid Distillate
PhRMA	Pharmaceutical Research and Manufacturers of America
PL	Performance Levels
PLA	Plantation Labour Act, 1951
PMBJPK	Pradhan Mantri Bhartiya Janaushadhi Pariyojana Kendra
PMG	Project Monitoring Group
POIG	Palm Oil Innovation Group
PPE	Personal Protective Equipment
PPP	Public Private Partnerships
PSCI	Pharmaceutical Supply Chain Initiative
PSM	People's Science Movement
PSS	Private Sustainability Standards
PT	Workers Party
PVS	Private Voluntary Standards
RA	Rainforest Alliance
RBD	Refined Bleached & Deodorised
REEL	Responsible Environment Enhanced Livelihoods
RSPO	Roundtable on Sustainable Palm Oil
RTRS	Roundtable on Responsible Soy
SA	Soil Association
SA8000	Social Accountability 8000
SAN	Sustainable Agriculture Network
SCC	Soft Commodities Compact
SDGs	Sustainable Development Goals
SEAI	Solvents Extractors Association of India
SEBI	Securities Exchange Board of India
SERP	Society for Elimination of Rural Poverty
SFDCs	State Forest Development Corporations
SMEs	Small and Medium Enterprises
SuRe	The Standard for Sustainable and Resilient Infrastructure
T4SD	Trade for Sustainable Development Programme of ITC
TBI	Tea Board of India

TFA	Tropical Forest Alliance
TGB	Tata Global Beverages
TMC	Technology Mission on Cotton
TNMSC	Tamil Nadu Medical Services Corporation
TRIPs	Trade-Related Aspects of Intellectual Property Rights
UNCTAD	The United Nations Conference on Trade and Development
UN Environment	The United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNFSS	United Nations Forum on Sustainability Standards
UNGC	United Nations Global Compact
UNIDO	United Nations Industrial Development Organization
UPFC	Uttar Pradesh Forest Corporation
US	United States
USA	United States of America
USDA	United States Department of Agriculture
VBF	Volume-Based Fee
VPAs	Voluntary Partnership Agreements
VSS	Voluntary Sustainability Standards
WWF	World Wildlife Fund for Nature
WTO	World Trade Organization

Numbers, Measurements and Dates

In this book, reference is made occasionally to the Indian numbering system, which specifies 100,000 as one lakh and 10 million as one crore. Metric measurements are used throughout, where reference is made to a non-calendar year period (2010–11). The dates in question follow the Indian financial year, which is 1 April to 31 March.

Notes on Contributors

Bimal Arora is an expert and scholar of global value and supply chain sustainability and CSR. He has combined work experience of 23 years in India and overseas with diverse sectors—private, non-profits and academia—and is a faculty member at Aston Business School, Aston University, UK. He is the founder CEO of Centre for Responsible Business (CRB), a specialist global centre focused on value and supply chain sustainability, standards and CSR that has been incubated by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH of Germany, Social Accountability International (SAI) of USA and Business Social Compliance Initiative (BSCI) of Brussels. Arora has been involved in exciting work related to path-breaking research, and design, development and implementation of innovative capacity building and training solutions for MNCs, Indian companies and SMEs on value and supply chain sustainability in various manufacturing and exporting industry sectors. He consults several global brands and companies in textiles and apparel, leather and footwear, automotive, food and beverage, electronics, mining and sandstone quarrying sectors—on human rights and environmental sustainability risks and challenges in their supply chains and developing solutions for them. Arora was awarded a gold medal during his Bachelor of Law under graduate course, achieved merit during his Masters in NGO Management from London School of Economics (LSE) and obtained PhD degree in Business and Management

(Sustainability and CSR) from International Centre for Corporate Social Responsibility (ICCSR), Nottingham University Business School, UK. He is frequently invited as speaker at conferences and workshops. He has written papers for international journals and undertaken research projects for UNDP, United Nations Research Institute for Social Development (UNRISD), British Council, GIZ, and BSCI and is authoring books on the topics of CSR and sustainable development.

Katharina Franziska Braig studied Law and Political Science at the University of Strasbourg, France. Subsequently, she holds an LLM in Law from the University of London, UK. In 2012, she completed her PhD thesis at the universities of Strasbourg, France and Basel, Switzerland, specialising in human rights and environmental law. She brings work experience from the public and private sector, as well as from international organisations.

Pawan Budhwar is the Associate Pro-Vice-Chancellor International (India), Aston University, UK. A member of the Work and Organisational Psychology Group, Joint Director of the Aston India Centre for Applied Research and Joint Co-editor-in-Chief of *British Journal of Management*. Budhwar is globally renowned for his research into the international aspects of HRM and has held many visiting professorships worldwide. Budhwar's research interests lie mainly in the linkages between HRM and performance in different international contexts. He conducts the majority of his empirical work in emerging markets, especially in India. Budhwar's work is of great significance given the links with developments within the Indian economy and the scarcity of research in the field within this context. His previous work has been extensively used by academics, especially his three-level framework of factors influencing HRM in a given context. He has examined HRM systems in emerging markets and established links with social, cultural, political and legal contexts, and this is increasingly being referenced by other researchers. He has received funding from a variety of funders such as the ESRC, Society for HRM (USA), British Academy and European Regional Development Fund (ERDF) to investigate a variety of HR aspects in different set-ups such as in Indian Call Centres, wherein he highlighted many people

management-related issues and challenges, and the problems emerging in this sector. Budhwar regularly delivers keynotes at international and national events. He has received numerous awards for his research achievements.

Louis Downing is a sustainability and resilience expert and the Chief Operating Officer of the Global Infrastructure Basel Foundation. Downing managed the development of SuRe®—The Standard for Sustainable and Resilient Infrastructure and has 10 years' experience in design engineering, post conflict and emergency engineering as well as capacity building and managing participatory stakeholder processes. Downing has worked in regions including Asia-Pacific, Africa and Europe. More recently, Downing has been working on finance for sustainable infrastructure, including working on data-driven approaches to increase the business case for sustainable investing.

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1

Governance Through Voluntary Sustainability Standards: An Introduction

Bimal Arora, Pawan Budhwar, and Divya Jyoti

Introduction

On 19–20 December 2018, as part of the 15th Global SME Business Summit in New Delhi, Confederation of Indian Industries (CII) and the Ministry of Micro Small and Medium Enterprises (MSME), Government of India, organized a session titled “Building Partnerships Through Global Value Chains”. Attended by leading industrialists and policymakers, including over 500 delegates, the focus of the summit and the global value chains (GVCs) session was on how Indian businesses, specifically small and medium enterprises (SMEs), can become a part of GVCs and how can SMEs expand and grow their markets. The deliberations identified the need for Indian SMEs to recognize the changing landscape of global trade and to adapt and work around the challenges that presently restrict their growth (Dewan 2018). One of the critical factors identified for SMEs’ integration into GVCs was “compliance with standards”, which include technical and product parameters in addition to the

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imperative of “ethical trade” (CII and MoMSME 2018). This summit was one of the many recent developments in India whereby Indian government and industry are increasingly recognizing and acknowledging the growing importance of GVCs and that of voluntary sustainability standards (VSS) within it. However, relatively little is known about how these VSS play out across different countries, regions, commodities and sectors. Addressing this gap, this book aims to contribute to deepening this understanding. On the one hand, it offers the policymakers, industry and civil society a first of its kind compilation on VSS in India, bringing together the global scholarship with an India-based sectoral analysis. On the other hand, it contributes an in-depth analysis of select but representative VSS which highlight the operational complexities, alluding to the nuances involved in the interplay of global with the local. In this chapter, we introduce the concept of multi-stakeholder-based VSS and establish the case for the same in India. We conclude the chapter with a summary of all the chapters in the book and a short note on way forward.

Grand Challenges and Collective Action Imperative

The 2030 Agenda for Sustainable Development of the United Nations and the Paris Climate Accord represent collective and normative ambitions of signatory governments and political leaders worldwide. These new global development frameworks highlight and acknowledge the societal grand challenges (Ferraro et al. 2015) the contemporary world is facing—such as poverty, inequality, modern slavery, climate change, migration and sustainable consumption and production. Scholars refer to these grand challenges as “wicked problems” (Reinecke and Ansari 2016). Non-state entities such as businesses and civil society organizations (CSOs) as key constituents and institutional actors in society too are expected to contribute towards tackling the grand challenges and wicked problems. While they do contribute, their role is becoming even more critical and important in the face of global, national and local grand challenges and related problems.

Business sustainability and business responsibility (or the globally prevalent and accepted term “corporate social responsibility”—CSR) are

now popular notions among policymakers, firms, CSOs and scholars. Among various facets of CSR and business sustainability, voluntary governance and private regulation of business conduct through norm development, international diffusion and institutional transfer—through multi-stakeholder-based sustainability standards—have become both a predominant theme and a dominant logic (Cashore et al. 2004; Draude 2017; Dunn and Jones 2010; Marx and Wouters 2018). Several forms and types of CSR and sustainability-related voluntary governance and steering have emerged in the last few decades, which some scholars have categorized in various ways (Gilbert et al. 2011; Lund-Thomsen and Lindgreen 2014; Nadvi and Wältring 2004; Rasche et al. 2013; Steurer 2013). Our interest and focus in this book is primarily on reviewing and analysing multi-stakeholder-based *certifiable* VSS covering selected industry sectors in a country context in India. We consider multi-stakeholder-based certifiable VSS different from several other forms of voluntary steering and governance, including from multi-stakeholder initiatives (MSIs) (not all MSIs are certifiable VSS), mandatory public regulations, and firm and industry-based CSR and supply chain codes of conduct (Haufler 2003). “Certification systems in particular have a kind of soft enforcement through market incentives”, as argued by Haufler (2003, 239).

There are multiple definitions for voluntary standards. In general, VSS are “voluntary predefined rules, procedures, and methods to systematically assess, measure, audit and/or communicate the social and environmental behaviour and/or performance of firms” (Gilbert et al. 2011, 24). Haufler (2003, 238) suggests that “These initiatives typically establish a set of standards and/or goals, a framework for decision-making, and a process for achieving the standards. These programs often include the development of certification systems, which are intended to provide market incentives for compliance. Consumers become the ultimate enforcers of the system, with independent certifiers playing a key role in providing information on corporate behaviour”.

While VSS attract huge policy, practitioner and scholarly interest, however, such interest, attention and wide usage do not imply a shared and universal perception and understanding. Citing David Levi-Faur (Levi-Faur 2011) on the conventional wisdom and understanding on regulation as “synonymous with government interven-

tion and, indeed with all the efforts of the state, by whatever means, to control and guide economy and society”, Töller (2017) has summarized the intriguing aspects of voluntary regulation. “In light of such a Weberian conception of regulation, voluntary regulation provokes puzzlement. Here there are no binding rules, no role for the courts, no forcible implementation by the state and sometimes no public agency at all; yet we call it ‘regulation’ and it obviously succeeds in obtaining desired outcomes, in enhancing public welfare, correcting market failures and reducing social risks, albeit certainly to different degrees” (Töller 2017, 48).

The origins, variety, logics, actors, arrangements, forms and architectures of CSR and sustainability-related VSS make them complex and often less amenable for effective policy and scholarly investigation, analysis and theoretical pursuits (Fransen and Conzelmann 2015; Fransen and Kolk 2007). Further, much of the international scholarship and literature on VSS pays relatively little attention to country-level analysis, barring a few exceptions such as Peña (2016) and Das (2014). We aim to fill this gap in the literature and knowledge with this book on country-level analysis of voluntary governance of business responsibility and sustainability, focusing on VSS in different industry sectors in India.

Evolution of CSR and Sustainability-Related Voluntary Governance and Regulations

Standards are neither new nor a new topic. Supported by engineering logics and discipline, technical standards across industry sectors and areas such as aviation, telecom, finance, chemicals, sports, and in several others have been around for a long time. There exist several long-established institutional structures, actors (state and non-state) and mechanisms—from local, regional and international—for standard setting (including global consensus building), diffusion, and processes for institutional transfers, enforcement and monitoring (Brunsson and Jacobsson 2000; Gulbrandsen 2010). The International Organization for Standardization (ISO) and International Electro-technical Commission (IEC) arguably are the world’s most widely known and long-standing international organizations for setting voluntary technical standards, with institutional

mechanisms and linkages in every country sponsored and supported by nation-states (Mattli and Büthe 2003). Convenors of European Group for Organizational Studies (EGOS) 2012 sub-theme 15, “Multiplicity and plurality in the world of standards”, argued, “We live, it seems, in a ‘World of Standards’”, and “standards have come to impact most spheres of economic and social life, quite often with a transnational scope and reach” (Djelic and den Hond 2014). However, voluntary standards in the domain of CSR and sustainability, which emerged in the last few decades, with a new set of non-governmental actors playing active roles, are rather interesting because of their departure from the state-centric regulatory models and approaches (Coen and Pegram 2015, 2017, 2018; Hansen and Coenen 2015; Hauffer 2003).

The evolution of CSR and sustainability-related voluntary governance and regulations has been spurred by several factors in the post-cold war era and on the backdrop of the momentum and movement around economic globalization (Levy and Kaplan 2008). Among others, these factors include the following: phenomenal growth of transnational corporations crossing geographical boundaries to source merchandise and services and invest in foreign shores, as a component of their competitive strategy; emphasis on deregulations under neo-liberal environment and regimes; spread, popularity and institutionalization of the notions of CSR and business sustainability; and the lack of a global governance body or mechanisms to regulate the conduct of transnational businesses. These factors offered space, scope, possibilities and opportunities to public-spirited individuals and new types of non-governmental agencies—acting as institutional entrepreneurs, to develop VSS as decentralized institutions (King et al. 2005) and private regulatory and governance norms for global diffusion and transfer, aiming to address social responsibility and sustainability-related issues (Brammer et al. 2012; Kolk et al. 1999; Manning and Reinecke 2016; Utting 2002).

Multi-stakeholder-based VSS evolved mostly in the global North in the last three decades to regulate the conduct of firms vis-à-vis CSR and sustainability, particularly in the context of international production and supply chain networks/GVC (Das 2014; Peña 2016). The VSS are usually used by lead (buyer) firms to demand their suppliers to follow and comply with certain norms, which are generally tied with terms and

conditions of business transactions (Schmitz-Hoffmann et al. 2014). Hence, VSS are also considered and viewed as market-based tools and increasingly critical for exporting and/or supplier firms in accessing the markets in Europe and the US. Each VSS has its own way and method of organizing the processes involved such as standard (norms/rules) setting, monitoring, audits, certifications and their own organizational governance systems. Schmitz-Hoffmann et al. (2014) provide a useful overview of voluntary standard system policies, processes and practices. Scholars across disciplines and fields examine and analyse the phenomena of private regulation, manifested through the international VSS, associated processes, intended impacts and outcomes in supply chains (Bartley 2018b). A review of academic literature on and around private regulation for sustainability in GVCs found 188 papers in 102 peer-reviewed journals (up to December 2011), with the earliest article published in 1999 (Wahl and Bull 2014). Certainly, these numbers would have now increased, and it would be worth examining the same to get a contemporary picture of the scene, which though is beyond the scope of this book.

Voluntary Sustainability Standards as Institutions

Some governance and regulations' scholars argue that VSS have now taken an institutional form and refer to them as institutional innovation (Hale and Held 2011) by international non-governmental organizations, creating a "global public policy network" (Reinicke 1997) via "multi-stakeholder regulation" (Hauffer 2003, 238). Cashore et al. (2004, 4) called VSS as "one of the most innovative and startling institutional designs of the past 50 years". Management scholars view the standard setters as institutional entrepreneurs (Wijen 2014) doing institutional work (Slager et al. 2012) to create an accountability infrastructure (Benner et al. 2004; Broad and Cavanagh 1999; Gilbert et al. 2011), which offers a modular governance architecture, turning "sustainability from an ambiguous concept into a concrete set of semi-independent practices, while mitigating governance complexity" (Manning and

Reinecke 2016, 618). Political science scholars view VSS setters as *epistemic communities of experts* (Bartley 2018a; Haas 1992).

The practice and policy actors (particularly global North based) consider VSS as game changer and espouse the virtues of multi-stakeholder-driven private regulatory systems, initiatives and processes by arguing that adopting VSS is a better way for companies to improve their sustainability objectives and performance (Schmitz-Hoffmann et al. 2014). The London-based global association of VSS, ISEAL Alliance,¹ claims that the “credible standards provide guidance on what better production or sustainability for the mainstream looks like in a concrete and practical way, focused on a specific process, sector or industry. This helps businesses to address the biggest impacts in a specific sector” (ISEAL 2017, 3).

The international growth, prominence and coverage of industry sectors by VSS have been speedy and steady in the last few decades as some international agencies suggest, who undertake periodic reviews and offer overviews and data-based analysis (Fiorini et al. 2017, 2018; Lernoud et al. 2016, 2017, 2018; Potts et al. 2014). The increasing policy interest and a growing body of academic literature, across disciplines, sub-disciplines and fields, are a testimony that phenomenon of VSS is attracting huge scholarly interest and attention, and almost developing into an academic sub-field (Bartley 2007; Brunsson et al. 2012; Djelic and Sahlin-Andersson 2006; Moon et al. 2011; Peña 2016; Rasche et al. 2013). Bartley (2007, 297) argued that the attempts and efforts are clearly visible for embedding “modern capitalism in social standards”.

Thousands of VSS in a variety of forms, sectors and themes have been developed and continue to grow, addressing a wide range of issues such as human and labour rights, working conditions, child rights, environmental protection, water, carbon, transparency and disclosures. Such VSS include, for instance, Forest Stewardship Council (FSC), Social Accountability 8000 (SA8000), Alliance for Water Stewardship (AWS), Global Reporting Initiative (GRI), Fairtrade, Rainforest Alliance (RA) and Global Electronics Council (GEC). A World Bank study on VSS in 2003 had estimated over one thousand sustainability codes and standards

globally (Smith and Feldman 2003). VSS are then increasingly attaining economic and political salience and significance, and associated products, commodities, services and processes are attaining high absolute volumes and growing market shares² (Berliner and Prakash 2014; Nadvi and Wältring 2004; Potts et al. 2014; Wijen 2014).

With regard to the roles of the state and contribution (or the lack of it) on the reason and trigger for the emergence of non-state-led voluntary regulation and governance phenomenon—the VSS—associated with CSR and sustainability in particular, there are usually two arguments offered by scholars. First, the nation-states were unwilling and unable to manage, and hence started receding from their traditional roles of regulation, opening space and opportunities for non-state actors (Djelic et al. 2016; Hale and Held 2011; Levy 2008). The other set of scholars argue that the state has always been there and deliberately changed the forms and methods of engagement, thereby creating space for other actors to partake (Djelic et al. 2016; Peterman et al. 2014, 2015; Wood and Wright 2015). It can also be argued that starting with the Earth Summit in Rio de Janeiro in 1992, to the events in 2015 such as the Paris Climate Summit and the UN Sustainable Development Summit, setting and launching the Sustainable Development Goals (SDGs), and several global and regional forums and conferences in between have all contributed to establishing and enhancing the scope and potential for non-state actors' involvement in the initiation and development of VSS (Arora 2017; Kolk et al. 1999).

The world is indeed more interconnected and interdependent, characterized by inherent complexity, knowledge and technical expertise. It is also highly political with clashing views and vested interests (Cruz 2015), surrounded with disparities and wicked problems, and in need of transformational shifts at scale. It is believed in certain quarters that despite constitutionally drawn legitimate authority, nation-states as traditional governance actors may no longer be able to engage with and resolve most issues solely through formal regulations, to the fuller satisfaction of and equity to all stakeholders. Other societal and institutional actors need to take responsibility and participate in local governance processes across geographies, as well as in the global governance. Problems at hand are multifaceted to be solved by a single institutional actor, and, therefore, a

dense constellation of actors and relations, mechanisms, processes and rules seems both critical and essential (Arora 2017; Morgan et al. 2016).

The Indian Context

In India, much like in other emerging economies and rising powers such as China, Brazil and South Africa, global goals-related challenges and complexities are relatively more acute. The 2030 UN Agenda for Sustainable Development and the commitment of political leaders in Paris in 2015 for achieving a 1.5 °C compatible world are especially relevant for India. We can safely assume that the (non-)achievement of these goals and agreement in India will have implications and consequences globally, not just for India. The role and responsibilities of businesses in (non-)achievement of these global goals and India's intended Nationally Determined Contributions (NDC) are critical. This is particularly critical for multinational enterprises (MNEs), both from India and from the advanced countries operating in and/or sourcing from India. With hopes and targets of becoming a \$5 trillion economy in 2019, while some argue that India is expected to be world's third largest economy by 2028 (ToI 2017), the World Bank's Poverty and Shared Prosperity 2016 report suggested that although over half the world's poor live in Sub-Saharan Africa, Indians account for one in three poor people worldwide, and largest number of people (224 million) in India live under the international US\$1.90-a day poverty line (World Bank 2018). Also, while India's emissions are much lower than western countries (and China), and only one-third of the global average in per capita terms, but with over 4.5% of global greenhouse gases (GHG) concentrations, India is among major emitters in absolute terms.³ The Indian economy relies on coal for over 60% of its electricity generation, and fossil fuel continues to be vital in India's long-term energy strategy (DW 2017).

India's growing economy, increasing pace of production and consumption, vast natural resources and a large supplier base, linked to global supply chains (GSCs)/GVCs, along with the democratic and demographic dividends, make it both an attractive market and a destination for international and Indian businesses. However, India also faces major

environmental and social challenges, such as poverty, pollution, unemployment, imbalanced resource distribution and growing inequality. All these propositions make India a ripe territory for discussions, diffusion and institutional transfer of concepts like CSR, business sustainability, MSIs and VSS. Also, due to the growing ambitions of the Indian State to secure global positions and roles (such as a permanent seat on the UN Security Council and membership of Nuclear Suppliers Group), the policymakers are proactively participating in global governance institutions and processes. Such processes include the annual climate change negotiations during the annual Conference of Parties (COP) of the United Nations and setting up of International Solar Alliance (ISA) with France (Arora 2018).

With a legal mandate on CSR, introduced through the Companies Act 2013, CSR in India has come of age. Likewise, internationally defined and developed private and voluntary governance standards and frameworks for sustainability too are gaining rapid ground in India. In parallel, the Indian policymakers are making efforts to improve India's ranking on the World Bank Group's "Ease of Doing Business Index". By implication, this also means that businesses are expected not only to grow, prosper and enhance only the shareholder value but also to take ownership and responsibility for their externalities through self-regulations (at firm and industry level) and make positive contributions to the society as well. Hence, successfully operating a business in India makes engagement with stakeholders beyond shareholders, CSR, MSIs and VSS an imperative for both Indian-origin small, medium and large firms producing and exporting to overseas markets and for foreign businesses operating in India or sourcing products and services from India.

Voluntary Governance for Business Responsibility and Sustainability in India

India has long been a key sourcing destination for global companies and is quickly becoming an important consumer market of its own. This process can be observed in real time in varying degrees across geographies, and in industries such as agriculture/agro-based industry (such as palm

oil, tea, coffee, fisheries, forestry and spices), manufacturing industry (such as apparel and garments, automobiles, chemicals, pharmaceuticals and metals) and the services industry (such as IT and ITES), which all are important part of the Indian economy. India's importance as a consumer-driven economy will continue to increase as average household income is projected to triple, which is expected to turn the country into the world's fifth-largest consumer economy by 2025. With over 1.3 billion people, as of 2019, and many of them emerging as middle-class consumers for the first time, India's growth-associated footprints and impacts on climate change, socio-economic development and inequalities are expected to rise further. As income grows and the middle-class consumers expand in numbers, the potential for CSOs engagement too is likely to rise. Businesses, policymakers and other stakeholders in India will need to take note earnestly and put together their respective policies and action plans.

The Indian government acknowledges that the private sector needs to play an active role in helping address some of the grand challenges and thereby compliment government's efforts towards achieving the global goals in India. The continuing integration of the global economy through geographically dispersed value creation and capture has been increasingly directing attention of policymakers and various other stakeholders. Participation in GSCs/GVCs is regarded as developmental and upgrading opportunity for local firms, particularly in developing countries and the emerging economies (Kumaraswamy et al. 2012; Mathews 2002). GVCs have decent presence in India, and Indian policymakers are keen that the Indian enterprises, particularly the small and medium enterprises (SMEs), enhance their capacities, productivity and efficiencies and expand their reach to GVCs. The CEO of NITI Aayog (the Government of India's policy think tank) suggested in 2018 that nearly two-thirds of the world's production take place in GVCs and argues that "a quantum jump in exports presents a tremendous opportunity for India and the conditions are ripe for India to enhance exports to boost economic growth" (Kant 2018). The Indian Minister for Commerce and Industry stated in 2018 that the government is working on a strategy to raise the share of exports in GDP. The advantage suppliers obtain through engaging with multinational corporations (MNCs) as part of their GSCs/GVCs is evi-

dent in the Indian economy, and therefore the government of India incentivizes export-oriented SMEs. Some of the major industry sectors which link up India with the international market through GVCs and international production networks (both backward and forward linkages) include: agriculture/agro-based, apparel and textiles, mining and minerals, chemicals, automotive, electrical, FMCG/retail, telecoms/ICT and financial services.

The MNCs are increasingly adopting, endorsing and/or pushing sustainability standards in their supply and value chains, targeted at improving the social and environmental performance of their GSCs/GVCs. While VSS have been predominantly introduced and supported by MNCs from the global North, increasingly there is a new generation of standards emerging from developing economies itself (Foley and Havice 2016; Schouten and Bitzer 2015). Industries in emerging markets are developing their own standards and certification schemes to satisfy domestic and, in some cases, international market needs and demands. Governments in emerging markets, including in India, are increasingly attempting to create an environment that fosters the development of such standards.

A study by Dutch Sustainable Trade Initiative (IDH) and True Price (Grosscurt et al. 2016) found that the certified farms in India are 52% more profitable on average than non-certified farms and have 35% lower external costs. VSS-driven practices such as lower water and pesticide usage all contribute to reducing the environmental cost of cultivation and higher farm productivity (ISEAL 2017). Another evidence of the impacts and benefits of VSS found in the coffee sector in the Indian states of Andhra Pradesh and Telangana suggests that the certified coffee farmers earn 52% more than non-certified farmers. The Government of India's Tea Board of India partnered in the development and launch of Trustea, a local Indian VSS in 2014, with tea industry leaders Tata Global Beverages Ltd. (TGBL) and Unilever, with the aim of transforming the Indian tea market with sustainability-oriented objectives. The national voluntary guidelines (NVGs) for social, economic and environmental responsibilities of business issued by the Ministry of Corporate Affairs (MCA) in 2011 are also seeing uptake at different levels among regulators, businesses and CSOs. The growing acceptance and significance of

VSS in India, as tools and processes for risk reduction, market and material access, or for social and environmental value creation, can be seen as valuable. The community, platforms and growing space for VSS can be leveraged well by all in the interest of business and benefits to society and the economy.

Motivation for the Book

The VSS are mostly set by the private sector entities, particularly the CSOs, and usually in response to consumer demands for information about social, environmental and other characteristics of goods and services. Typically, the MNCs, consumer groups, trade and industry associations, and sometimes policymakers support and endorse the VSS. The VSS seek to strengthen markets for goods and services for which the social and environmental criteria and related attributes lack transparency or are not directly visible to the consumers and concerned stakeholders. In India, while the number of entities encouraging and facilitating CSR and sustainable practices has grown over the last decade, we know little about questions such as what are the impacts of VSS on sustainability challenges, such as workers' and producers' income and employment conditions, and on natural resource depletion? Whether and how VSS help Indian SMEs and exporters improve access to international markets? Whether and if VSS compliment and foster or compete with laws and policies in India?

Due to the primary origination in global North, and the global and transnational nature of these VSS, much of the research attention and orientation is broader and global (Bartley et al. 2015). In-depth analysis of the perceptions of these global VSS and initiatives in countries where they are implemented, and the country-level implementation processes, complexities, challenges and opportunities across diverse contexts—due to institutional variances and national business systems—is rare. This book seeks to fill this knowledge gap by keeping the focus on studying and analysing different international VSS and initiatives in India. The country focus in the context of institutional variances for VSS adoption and implementation and challenges across different industry sectors, while retaining

the global orientation embedded in the extant knowledge and literature on the subject and sectors, makes this project distinctive. Therefore, the broader objective of this book is to develop a better understanding about operational aspects of VSS in India and to provide overview of relevant issues related to international and domestic laws, policies, rules and regulations associated with the increasing role of VSS, with a particular focus on their impacts. In order to ensure consistency in writing across all chapters, we requested the chapter contributors to pay particular attention to specific issues and questions, which included:

- Broad overview of the industry sector covered;
- How the sector supply/value chain is organized, nature of actors involved, including formal and informal actors and aspects of the sector;
- Drivers of developments and changes in India-linked GSCs/GVCs and their relationship with VSS;
- Uptake of VSS in the sector, infrastructure of the standard setter/s in India including that for audits/certifications;
- Inter-relationships between VSS and public regulations;
- How do VSS help domestic policy reforms in the sector in India, including with respect to the participation (or not) of Indian companies in GVCs? Do VSS help the Indian producers getting better market access? and
- How do VSS work in India's domestic market?

This book builds on the previous work of several scholars such as Utting and Marques (2010), Utting and Clapp (2008), Reed et al. (2013), Ponte et al. (2011), Peña (2016), Bartley et al. (2015) and Leipziger (2017). While most of these scholars have focused on CSR and sustainability-related voluntary steering, governance, MSIs and VSS more broadly, ours is among the first few attempts at examining VSS at a country level, in India. Previously, focusing on India, Das (2014) studied how Indian public and private actors—the state, domestic firms, local consumers and civil society—are influencing and being influenced by standards? If standards matter in an overwhelmingly Indian informal production sphere, with consumers segmented on the basis of a deeply

skewed distribution of income, is the rural population getting further marginalized? Another country-level analysis was offered by Peña (2016), who carried out a comparative study about the evolution of transnational sustainability governance in Brazil and Argentina. Earlier, Neilson and Pritchard (2011) investigated the impact of new trading arrangements in the coffee and tea sectors on the lives and communities of growers in South India. They highlighted the social hardships of tea and coffee producers, their struggles with issues of value chain restructuring, and the triggers of a series of political and economic struggles across a range of economic, social and environmental arenas. By their examination of coffee and tea growers in South India, they contested the claims about the impacts of changes to global trading relations on rural producers in developing countries (Neilson and Pritchard 2011). Our book adds to this body of literature and knowledge, while also adding to the literature on standards concerning developing economies such as India, which is still in nascence.

Summary of Chapters

The scholars and practitioners of VSS have contributed chapters to this volume. All contributions were sought through a special invitation to scholars, policy actors and practitioners with deep knowledge and experience of developing and implementing or studying and engaging with VSS in respective sectors, and they brought in unique insights on the topic. A deep-dive examination of VSS across industry sectors in a country context may offer a better picture on their uptake, coverage, market dynamics, challenges, complexities and realities. Individual firm, region or a sector-specific examination alone may not be able to provide such richness in understanding on the topic. We have covered seven industry sectors in this volume, and all the sectors included have both global and Indian relevance. Five sectors are from the agriculture and allied sectors (cotton, palm oil, tea, forestry and fisheries), plus infrastructure sector and pharmaceutical sector. Most of these sectors were selected as they represent uptake, integration and coverage of VSS at different levels and stages of maturity and trajectories in these sectors. Whereas, cotton is

exported, or used as an ingredient of fabric and garments, which is then exported; for palm oil, India is a net importer. The location of the commodity in the trade value chain plays a critical role in what becomes of VSS in these sectors. Tea is the first sector where together with international VSS, a local VSS has been established. In the infrastructure sector, the conversation is only now gaining ground, and there are no major global VSS in the pharmaceutical sector. In the forestry sector, it is the state and government as primary actor that plays a critical role. Fisheries are prominent for the lack of consumer awareness and domestic demand. The seven sectors combined represent products which are at different stages in value chain, for instance, seafood and tea are closest to the consumer and consumed directly. While cotton and palm oil serve as crucial ingredient or raw materials in production of major consumer goods. As such, combined, these seven sectoral chapters allow us to tease out the benefits, opportunities and challenges of VSS in India, and indicate the role the commodity/sector can itself play in making VSS matter. This, we believe, is a valuable addition to knowledge on this topic and area.

Besides this introduction chapter, the next two chapters (Chaps. 2 and 3) provide a broader context and overview to the debates on voluntary governance and VSS as well as to this volume. To further set context for this volume, Nadvi in Chap. 2 defines the concept of Rising Powers, namely emerging economies such as China, India and Brazil, and offers a six-fold definition of Rising Powers. Nadvi rightly argues that the Rising Powers, including India, are transforming the contours of the global economy and bring about radical shifts in global governance. He examines the issues around economic growth and trends in the growth of middle-class consumers in Rising Powers, and orientation of states, firms and the CSOs; argues that they contribute to Rising Powers becoming the engines of global economic change and that would potentially challenge established paradigm of economic development; and points to a new era in globalization. However, given that so far, the countries in the global North led the VSS agenda and process standards become a *sine qua non* to access more attractive markets and for international competitiveness, Nadvi raises critical questions on how the Rising Powers countries might influence the “rules of the game”. He specifically refers to the rules

pertaining to international trade, and particularly relating to process standards around labour conditions and environmental impacts, and highlights the need for a continued and more sharply focused research agenda that explores in greater depth a number of interconnected themes on Rising Powers and the governance of labour and environmental standards. These, he suggests, would require a more careful understanding of how three groups of actors within the Rising Powers—namely the state, firms and civil society—address these issues, and there is a need to consider the consequences of these developments for both developed and other developing countries. Indeed, Chap. 3 and the following chapters covering different industry sectors engaged with these issues and more closely examined the challenges of sustainability and voluntary governance for business responsibility and sustainability in those sectors. We connect with the concerns raised by Nadvi in different chapters.

In Chap. 3, Taimasova, Kasterine and Lamolle argue that VSS are considered as primary tools in value chains to demonstrate implementation of sustainability practices in production as well as for value addition and improving efficiency. They present statistical evidence on certifications by VSS between 2008 and 2015 suggests that the sustainably produced products have moved from the niche to the mainstream with higher rates of growth than of conventional product markets. As more and more VSS are developed in the developing countries, they also argue that there is a perceptible shift in the trend of global North-based origination of VSS. This is indeed an important development and, to some extent, this seems to address the concern raised by Nadvi earlier on how Rising Powers actors deal with the “rules of the game”—by getting involved in making rules themselves, besides taking rules from the Global North-based VSS. These contributors examine the global trends in sustainability product markets and their implications for the development of the sector in India, and list concerns with respect to the costs, need for soft infrastructure, transparency, proliferation and inclusiveness of VSS, which hinder larger and more efficient uptake of standards by producers, including by Indian producers.

Chapters 4, 5, 6, 7, 8, 9, 10 and 11 present sectoral analysis via desk-based literature reviews and publicly available data. The combined focus of Chaps. 4, 5, 6, 7, 8 and 9 is on agriculture and allied sectors and

agriculture-related commodities in India. This is important as the gross value added (GVA) of agriculture, fisheries and forestry in India was estimated to be INR 17.67 trillion (USD 274.23 billion) in the financial year 2018, and the GVA of agriculture and allied sector at constant 2011–2012 prices grew at a Compound Annual Growth Rate (CAGR) of 2.75% between financial years 2012 and 2018 (Shukla and Jha 2018). Chapters 10 and 11 offer sectoral diversity with the coverage of infrastructure and pharmaceutical sectors in India. Through the diversity of industry sectors in this volume, we are able to capture and offer fairly comprehensive perspectives on voluntary governance on business responsibility and sustainability in India through VSS.

In Chap. 4, Manoharan discusses the forestry sector and different forestry certifications in India. Focusing on four forest-linked commodities—timber, paper and pulp, palm oil and soybean oil—he argues that global, regional and local trade in forest risk commodities increases forest footprints, and many forestry-related VSS are directly contributing to the responsible management of world's forests and minimizing the forest footprints. Based on literature review and secondary data from national and international organizations, he analyses the role of VSS in addressing India's growing forest footprint along with a discussion on the policy context for forest certification and government initiatives in India. Given that the management of forests is the responsibility of state forest departments, reviewing Manoharan's discussion and analysis of forestry sector policies of the government in the light of concerns raised by Nadvi, we see relatively advanced approaches followed in India towards the sustainability of forests and associated processes.

The discussion on the fisheries sector contributed by Oloruntuyi, Mohamed, Malayilethu and Suseelan in Chap. 5 also presents various VSS schemes and government and international policies on fisheries and highlights the opportunities and challenges for VSS uptake in India. Fish production in India has seen rapid growth in recent years, and increased production and the growing importance of the fisheries sector to the Indian economy have not been without environmental and social effects and implications. Globally, VSS are becoming important tools to support efforts to promote sustainability of seafood resources, and about 23 million tonnes of seafood have been certified via VSS. The uptake of VSS for

seafood in India is still in its early stages, and India's contribution to certified volumes is relatively small. Similar to other developing countries, a range of factors including cost, ecological performance and data availability have constrained large-scale uptake of VSS. Nonetheless, recent developments, including persistent market demand for sustainable seafood, increased recognition of the role of VSS and government's acknowledgement and support for the use of sustainability standards, point to a future growth trajectory in the use of VSS in the seafood sector in India. However, while demand for sustainability in the sector is mostly coming from the overseas markets, instructive in this chapter is the highlight on the lack of demand in the domestic market in India, pointing to the lower local consumers and stakeholders demands for sustainability and sustainable production and consumption in the seafood sector in the Indian market and ecosystem. Connecting here again with the concerns raised by Nadvi in Chap. 2, this chapter on fisheries and seafood presents a rather contrasting sectoral scenario on sustainability in India as a Rising Power.

Chapter 6 by Singh examines sustainability in the cotton sector in India by comparing various cotton sustainability standards and their role and performance. India is the world's second largest producer, consumer and exporter of cotton, accounting for 24% of the world's cotton. Singh finds that various sustainability standards coexist in the cotton sector with a certain degree of overlap, but an underdeveloped domestic market for sustainability in the cotton sector in India again highlights the issues around the relative lack of sensitivity among consumers, policymakers and other stakeholders. He argues that these developments must be understood within the broader context of the farm sector in India. Smallholders dominate and cotton production sector suffered from crises in the 1990s and early 2000s in the form of crop failures, farmer indebtedness and related suicides. Singh discusses different foci of international VSS, much on organic, but less on issues such as gender, labour and wages, pointing to the demands from overseas markets.

Chapter 7 by Ward and Mishra also focuses on the cotton sector and offers a synoptic view and details on sustainability-related issues in the sector in India. Ward and Mishra suggest that cotton production plays an important part in India's economy, providing livelihoods for millions of

farmers and workers associated with the textiles industry in particular. Ward and Mishra undertook primary investigation for this chapter and conducted interviews with representatives of a range of international VSS operating in the cotton sector and their implementation partners in India. They bring on board empirical insights from the ground and complement the policy-oriented discussion and analysis in Chap. 6.

Chapter 8 by Mishra and Prasad focuses on palm oil in India. Palm oil is an important agri-commodity as it accounts for a significant part of edible oil consumption in India, making it a key commodity for the Indian economy. Most of the palm oil in India is imported from South-East Asia and palm oil production has been associated with allegations of various negative environmental, social and biodiversity impacts in producer countries due to unsustainable production practices that are followed. Given that India is the biggest importer of palm oil globally and a key market for exports from Indonesia and Malaysia, India is expected to play a pivotal role in influencing the industry and concerned stakeholders to move away from unsustainable palm oil production practices—to ensure long-term future of the industry, besides ensuring uninterrupted supplies of palm oil for the lower middle-class consumers in India. However, Mishra and Prasad suggest that the demand in India for responsibly and sustainably produced palm oil has been fairly tepid till recently due to factors such as cost premiums and lack of awareness, as compared to European and North American markets, where sustainability has become a key consideration for consumers and stakeholders. This chapter on palm oil sector presents a rather different dimension of voluntary governance of business responsibility and sustainability, whereby India serves as an importing country, unlike in other commodities and sectors covered in this book. Hence, the expectations differ in terms of Indian businesses and policy actors playing a role of influencer of sustainability for supplying countries (particularly Indonesia and Malaysia). However, due to the lower awareness on global sustainability issues and the lower consumer and stakeholder demand on palm oil sustainability in India, there seem to be different perspectives and stance on voluntary governance on business responsibility and sustainability. Likening here to Nadvi's concerns on the state, civil society and business attitudes and practices in Rising Powers, including in India, and their implications for developed

and other developing countries, there seems to be a need for much wider engagement on palm oil sustainability issues. Initiatives such as the Indian Palm Oil Sustainability Framework (IPOS) by Solvents Extractors Association of India (SEAI), Solidaridad and Indian Institute of Oil Palm Research (IIOPR), and the Indian Sustainable Palm Oil Coalition (SPOC) initiative by Round Table for Sustainable Palm (RSPO), Centre for Responsible Business (CRB), Rainforest Alliance (RA) and World Wildlife Fund (WWF)-India seem to be positive steps in this direction, and will hopefully facilitate changing the palm oil landscape and the political economy of palm oil industry globally.

Chapter 9 by Kadavil critically analyses certification programmes and voluntary standards of national and international private labels for addressing governance and sustainability challenges in the Indian tea industry. He argues that the certification programmes are mostly demand-driven initiatives and often governed by few dominant business houses from the industry. VSS that codify sustainability in the tea sector cover and seek compliances of producers and suppliers with social, economic and environmental issues and criteria. Except the economic/management criteria, the compliance criteria of most VSS align with the requirements placed by the Plantation Labour Act, 1951, of India. In reviewing different VSS in the tea industry in India, Kadavil examines how certification programmes help gain better social standards; price differentials, if any, for certified producers; and if VSS and certifications facilitate access to markets for producers of different scales of operations. He argues that the VSS, and the associated certifications programmes, fail to address major challenges in the tea industry—such as low prices, limited social standards and the issues around the lack of capacities among small tea growers. He advocates for wider participation from both formal and informal institutions in India for further institutionalization of VSS, besides the need for VSS setters to be more inclusive, in terms of covering the challenges of workers and small growers.

Chapter 10 by Schneider-Roos, Braig, Downing, Egler and Zemp focuses on the infrastructure sector in India. This chapter reviews VSS in the domain of infrastructure sector and offers a detailed overview of SuRe® (The Standard for Sustainable and Resilient Infrastructure) in particular, as that has a strong interest and presence in India. The authors in

this chapter argue that delivering infrastructure in a sustainable way is crucial in achieving the objectives of the SDGs, Paris Agreement and the New Urban Agenda (NUA) in India, and therefore infrastructure is considered vital for competitiveness, economic growth, reducing poverty and improving the quality of life of the citizens in India.

Chapter 11 by Horner examines India's pharmaceutical industry, which is of considerable economic importance, as one of India's largest manufacturing industries and a major contributor of exports' income. The pharmaceutical industry, Horner argues, is perhaps the most significant for public health, as a major supplier of generic medicines, for which India is often referred to as the "pharmacy of the world". The pharmaceutical industry has the potential to ensure greater societal benefit for India. Some of the major challenges in the pharmaceutical industry relate to production quality, environmental impacts, research (in terms of appropriate patent laws and regulating clinical trials) and marketing issues related to prices and access to medicines. Yet the sector, with its distinctive character of consumption and significance for public health, is one where little substantive momentum has emerged around voluntary governance initiatives. Widespread agreement exists on the need for more effective public regulation to maximize the societal benefits of the industry. However, it is perhaps instructive to note the lack of voluntary governance initiatives around business responsibility and sustainability in the form of international VSS in the pharmaceutical industry. This suggests that the focus of most international VSS is primarily on consumer facing brand-driven industries, which is not the case with the pharmaceutical industry. Being dubbed as the "pharmacy of the world" and given the growing trend of VSS emerging from the developing countries, as highlighted in Chap. 3, the CSOs, policymakers and other stakeholders may take a leaf out of this book for developing an international VSS for the pharmaceutical industry globally. This will also address Nadvi's hints in Chap. 2 on the need for stakeholders in India, as a Rising Power, for assuming the role of rule makers for the world, besides governing and benefitting public health issues in India through the contribution of the pharmaceutical industry.

Reflections for Way Forward

Multi-stakeholder-based VSS, as efforts of a range of non-state actors to participate and contribute in global governance, are aimed at regulating business conduct, particularly in supply and value chains. Drawing legitimacy and strengths from the notions and principles of democracy (Martens et al. 2017) and multi-stakeholderism (Raymond and DeNardis 2015), VSS are also believed to be mechanisms to deal with problems and issues of governance and regulation beyond the control of any single regulatory jurisdiction (Rasche et al. 2013). Therefore, multi-stakeholder-based VSS are generally identified with polyarchic relations (Dahl 1973), tied by rules, and follow, in principle, a universal governance approach related to issues of public concern or common good (Raymond and DeNardis 2015).

Since the end of the cold war, governance has become a common phrase and concept for a variety of forms of steering by state and non-state actors (Steurer 2013). Reflecting on the *Financial Times* series on Capitalism in Crisis in 2012, Martin Wolf argued, “Ours is an ever more global civilisation that demands the provision of a wide range of public goods. The states on which humanity depends to provide these goods, from security to management of climate, are unpopular, overstretched and at odds. We need to think about how to manage such a world. It is going to take extraordinary creativity” (Wolf 2012).

The multi-stakeholder-based VSS are both praised and criticized. The hopes and excitement around the potential of VSS, generated during the incubation phase in the 1990s and 2000s, seem to be waning away, and concerns around their multiplicity, fragmentation, lack of harmonization, independence, costs, impacts, credibility, legitimacy and business model are raised (Fiorini et al. 2018; Neilson and Pritchard 2011). Emerging scholarly and policy evidence demonstrates significant variations in forms, methods and nature of relations among the constituting and supporting actors in procedural rules, and in their impacts and effects. Such evidences suggest that the jury is still out on VSS, which are yet to become a coherent institutional form for the common good

(Haufler 2003, 2013; Raymond and DeNardis 2015). This is evident from the fact that the international VSS are still a marginal force in India.

While the chapters in this book highlight several VSS developed in India, interestingly none of these schemes have been developed and driven by CSOs. All Indian schemes of VSS and certification developed in India emerged with government's initiative (such as the VRIKSH scheme discussed in Chap. 4), and in most cases, the policies, laws and needs of the export markets were the primary reason for development of such schemes. The Indian-origin non-governmental organizations (NGOs) and CSOs are yet to take up the mantle on developing home-grown voluntary governance schemes and initiatives. Unless local NGOs/CSOs actively start demanding accountability from businesses and aligning and negotiating with international non-profit actors engaged in developing and implementing VSS globally, this movement is likely to continue to lie in the margins of the society, policy and economy in India. International VSS too need to consider collaborating with local NGOs as well as think of the aspects of inclusivity in their strategies and processes.

Indeed, the growth in broader awareness in India around CSR and sustainability is also due to the aggressive promotion, marketing and engagement by international organizations such as the International Finance Corporation (IFC), the Sustainable Trade Initiative (IDH), Carbon Disclosure Project (CDP), Global Reporting Initiative (GRI) and the United Nations Global Compact (UNGC). The demands by foreign financial institutional investors and western business counterparts, and an orientation among several Indian companies to globalize, along with their operations and distribution networks, too are playing a part (Kumar 2008; Kumar and Gaur 2007). There are now thousands of Indian companies that have business interest beyond India (through export activities, for instance), and several of them are now MNCs. The western MNCs, the traditional supporters of VSS, too are spreading their sustainability practices in India, particularly through supply chains. This book and the chapters contained herein, we are hoping, will help further dialogues and deliberations in policy, practice and scholarship on voluntary governance on business responsibility and sustainability in India and beyond and help rethink several issues covered, as also on the subject.

Notes

1. Four goals of ISEAL are to improve the impacts of sustainability standards, define credibility for these standards, improve their effectiveness, and increase their uptake globally, and in developing countries in particular (ISEAL 2017).
2. The State of Sustainability Initiatives Review reports annually on systems and market trends across standards initiatives operating across key commodity sectors, which account for a substantial trade value. Also, the reports claim that the average annual growth rate of standard-compliant production across all commodity sectors in 2012 was 41%, significantly outpacing the annual average growth of 2% in the corresponding conventional commodity markets.
3. WHO Global Air Pollution Database (with data on more than 4000 cities in 100 countries), released in May 2018, revealed that India has 14 out of the 15 most polluted cities in the world in terms of PM 2.5 concentrations (ToI 2018).

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2

'Rising Powers': Labour and Environmental Standards

Khalid Nadvi

Introduction

There is a growing recognition that the 'Rising Powers', namely the emerging economies, in particular, but not least, China, India and Brazil, have begun to transform the contours of the global economy, bringing about radical shifts in global economic and political governance (Breslin 2007; Kaplinsky and Messner 2008; Winters and Yusuf 2007). This is

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considered a transformative moment in global history (Henderson and Nadvi 2011; Henderson et al. 2013; Horner and Nadvi 2018). These (still) developing countries from the Global South are now behemoths in international trade, key players in many primary, industrial and services sectors, and a major source of global finance. Many commentators suggest that these economies are bringing about tectonic movements in global production, trade and aid relationships (Brautigam 2009; Henderson 2008; Kaplinsky and Messner 2008; Power et al. 2012; Yeung 2009). A core question that arises is how might these countries influence the ‘rules of the game’ that pertain to international trade, particularly those relating to process standards associated with labour conditions and environmental impacts?

Global standards underline how, with economic liberalisation and the ‘retreat’ of the state, new forms of regulatory governance involving national and global public *and* private actors have emerged (Bartley 2003, 2007, 2018; Buthe and Mattli 2011). Standards are incorporated into private company codes of conduct and corporate social responsibility (CSR) schemes (Jenkins et al. 2001; Blowfield and Frynas 2005). They are also formalised through national and international regulations formulated by global public institutions, such as the International Labour Organisation (ILO), as well as global private bodies like the International Organization for Standardization (ISO), non-governmental organisations (NGOs) and trade unions.

At the same time, standards are heavily contested, in multi-lateral trade negotiations as potential non-tariff barriers, and amongst states and civil society organisations in the Global South as representing attempts to impose ‘Northern’ values on developing countries (Lund-Thomsen 2008; Nadvi et al. 2011). Existing research suggests that developed country states and firms set global standards, often in response to Northern consumers and civil society organisations (Hughes et al. 2008; O’Rourke 2003, 2008). Yet there is limited academic research on how emerging economies might affect the governance of global labour and environmental standards. China, for example, is not only the manufacturing powerhouse of the world. It also assumes a more self-assured role in the global

governance arena and has become a leading location for emerging middle-class consumption. In terms of labour standards, the Chinese government has introduced a raft of labour regulations, including the 2008 Labour Contract Law and minimum wage rules (Zhu and Pickles 2014), yet allegations of poor working conditions in Chinese export factories continue (Chan 2010). Brazil is known for enhancing its labour and environmental regulatory regime (Piore and Schrank 2008; Pires 2008; Coslovsky 2014) and for its lead role in defining a new generation of global social standards through the ISO 26000 (Nadvi 2008; Sobczak and Martins 2010; Peña 2014). Many Indian firms are influenced by local social norms that not only affect their strategies of internationalisation but also raise questions about how they engage with and influence debates on labour standards and socially responsible business (Banerjee and Shastri 2010). This is further accentuated by the recent legal stipulation in the Companies Act 2013 which requires all firms with turnover of over INR 20 billion or net profits in excess of INR 50 million to allocate 2% of their profits to CSR-related activities. Finally, through mergers and acquisitions, Chinese, Brazilian and Indian firms are affected by, and learn from, the standards and codes adopted by many established Multinational Corporations (MNCs) (Fleury and Fleury 2011; Ramamurti and Singh 2009; Zeng and Williamson 2007; Sinkovics et al. 2014).

Some commentators fear states, firms and consumers from the Rising Powers could engender a 'race to the bottom' in global competition, marked by declining labour standards, poorer working conditions and growing environmental degradation (Hutton 2006; Jacques 2009; Kaplinsky and Farooki 2010). This is, therefore, clearly an area that requires further empirical investigation. The rest of the chapter addresses this agenda as follows: the next section seeks to define the term 'Rising Powers'. The third section turns to the issue of standards and considers how distinct sets of public and private actors from the Rising Powers might impact the governance of labour and environmental standards. The fourth section concludes by identifying areas for further research.

Defining the 'Rising Powers'

In 2001, Jim O'Neill, then at Goldman Sachs, coined the term 'BRICs' stating that Brazil, Russia, India and China would be the new drivers of global economic growth (O'Neill 2001). This formulation has come to attract a great deal of interest in academic, policy and wider public circles. O'Neill's predictions have in large measure been met. The BRIC economies grew more rapidly than the developed world from the mid-1990s to 2008. Even during and since the global economic downturn, many of the BRICs (although not all) have continued to surge forward. The argument that the BRICs would be likely to exercise not only a greater economic position in the world but also a more assured engagement in international bodies of global economic and political governance is also accepted. One of the most interesting aspects of this is the collective initiative taken by the five BRICS states (including South Africa which was not part of O'Neill's original formulation). Since 2009 there have been ten annual summits, bringing together the Presidents of Brazil, China, India, Russia and South Africa. In addition, Foreign, Finance, Health and Agriculture Ministers of the respective BRICS states now meet regularly, either at sidelines of major international events or in designated meetings restricted to the BRICS alone. There is also talk of setting up a BRICS business forum, a BRICS statistics institute, a BRICS development bank and various BRICS think tanks (see <http://www.brics5.co.za/about-brics/> for more details). The Beijing-headquartered and Chinese-led Asia Infrastructure Investment Bank (AIIB), set up in late 2015 and now with 68 member states, provides the first serious counterpoint to the dominance of the existing regional and global development banks.

Although the BRICS as a grouping of the key new emerging powers is taking on an economic and increasingly political and institutional reality, it also raises the question of how to place other large economies that may lie 'beyond the BRICS' but follow on their growth trail (vom Hau et al. 2012). Again, O'Neill has popularised new terms to describe these countries—such as the Next Eleven and the MINTS (Mexico, Indonesia, Nigeria, Turkey, South Africa) (Wilson and Stupnytska 2007; BBC 2014). While there may be debate as to the veracity of the position of some of these countries along the growth and development pathways,

what is clear is that these emerging economies collectively underline that a new global economic map is being shaped.

But are we using the right terminology? The problem with the term BRIC(S) is that it is, by nature, exclusive. It refers to the 'club' of five emerging powers defined by the acronym, some of whom have clearly been centre stage in global political arenas for quite some time (China and Russia, for example, are long-standing permanent members of the UN Security Council). The concept of the 'MINTS' is also problematic on similar grounds—who is 'in', who is 'out'? What about dynamic trajectories? Some countries may see their positions on this economic (and political) growth paths slip while new entrant may also come in—would that require a rewording of the acronym, a MINT+1, for example? What about the possibilities of global volatility and the risks that this poses for those at the boundaries of membership within these groupings of emerging economies? Are we assured that these economies, including some of the BRICS, have acquired a sufficient degree of political and economic stability to ensure that they will remain at the top table of global economic affairs?

We clearly need better, conceptually grounded, language. An alternative framework to collectively describe these economies is as 'Rising Powers'. It is not clear when this term was first coined. The UK's Economic and Social Research Council (ESRC) used it in 2007 to define a new research funding programme, but did not define what constituted the 'Rising Powers'. A number of new research initiatives have followed, exploring distinct aspects of the 'Rising Powers' and their implications for global economic and political developments (see, for example, the Centre for Rising Powers at Cambridge—<http://mws.polis.cam.ac.uk/crp/>; or the IDS, Sussex based Rising Powers and International Development programme—<http://www.ids.ac.uk/idsresearch/rising-powers-in-international-development-programme>). For the purposes of this chapter, the concept of Rising Power is defined in the following way:

- First, Rising Powers are large developing economies that experienced periods of consistent economic growth from the 1990s to 2008, the global financial crises. These are, therefore, countries that are likely to be a clear trajectory of structural transformation that has the *potential*

to turn them into developed economies, ultimately attaining an economic status at par with OECD (Organisation of Economic Cooperation and Development) member states. A few of the possible Rising Powers are already OECD members (e.g., Mexico and Turkey). While there may have been some unevenness in their growth records over this period, the economic dynamism observed within these economies has resulted in bringing about significant improvements in incomes and employment, and in forms of economic and social development.

- Second, this pattern of economic growth has often been associated with increasing participation in global trade, making many of these countries critical, and in some cases dominant, global economic powers in particular sectors.
- Third, scale matters. These are countries that are large in terms of population and economic and physical geography. This endows them with substantial natural resources, a manufacturing base and critically a large domestic market and a burgeoning middle class. As a result, the Rising Powers are not only countries that have increased their engagement in the global trade of goods and services, but also countries where there is increasing competition by national and global players for market shares within growing domestic markets.
- Fourth, the Rising Powers are marked by strong presence of the state. The central government, and its attendant civil service, is a major player in these economies. These are states that function and deliver to distinct constituencies and have played a key part in shaping the policy frameworks that have defined their respective growth strategies.
- Fifth, in many if not all of these Rising Power states, local capital (both private and public) has been a key element of the productive landscape, fostering development of the local agricultural, industrial, manufacturing and services sectors, as well as increasingly becoming international players through supplier outsourcing arrangements and foreign direct investments overseas.
- Sixth, while the Rising Powers may well be defined by quite distinct political arrangements and with varying levels of representative engagement in politics, there is an enlargement of space for civil society engagement in public-private discourses, especially with regards to regulatory

measures to improve livelihoods. Such space is likely to be uneven, and state-civil society relations may well remain an area of contestation. Nevertheless, as incomes grow, middle-class consumers expand in numbers, and the potential for civil society engagement is likely to rise.

Thus, the six-fold definition of Rising Powers used here emphasises scale, economic dynamism, trade presence and domestic growth of these economies as well as an engagement between the public sector, private capital and civil society. Together, these attributes give these economies a position of 'power'. These are not just any nation states, but rather countries that, through the various and distinct aspects of their economic dynamism, command a degree of influence and clout on the global state. Thus, in global, and increasingly regional, institutions, they exercise influence that is economic, political and strategic.

The term 'Rising Powers' is not without its limitations. There is a degree of ahistoricism in contemporary accounts of the economic growth observed in these economies since the late 1980s. Many of these countries were major economic powers (and in some cases *the* dominant power) in earlier periods of history. Yet, while this may be so, there is also a recognition that within the context of the current modern era, which dates from the end of World War II, these are developing economies that are making the transition to developed country status, and are doing so at a scale that has not previously been observed. Thus, unlike the Asian Tiger economies (most notably South Korea and Taiwan) which were feted two decades ago, the Rising Powers are of a size where they can potentially tip the balance of global economic power from the North.

Moreover, these economies are not homogenous. Differentiation in growth and history across the Rising Powers is significant, as is the nature of the spread of the gains of growth within these countries. Thus, the focus on economic growth within these countries obscures the fact that they remain economies that are marked by high levels of inequality and continuing poverty. This is true and further underscores the potential pitfalls and uncertainties associated with the continued growth of these economies. At the same time, there is a sense that in many, if not all, of these countries there is a transformative trajectory that raises the scope for poverty reduction and the achievement of broader developmental goals.

Rising Powers and Global Labour and Environmental Standards: Challenges to the Global Governance of Consumption, Production and Trade

There is now a significant body of research investigating how global labour, social and environmental standards, implemented by public bodies, private firms and public-private initiatives, impact on global production, as well as on workers and local communities (Carswell and De Neve 2013; Dolan and Humphrey 2004; Hughes et al. 2008; Locke 2013; Lund-Thomsen and Nadvi 2010; Lund-Thomsen et al. 2012; Nadvi 2008; Nadvi and Wältring 2004; O'Rourke 2003, 2008; Ponte and Gibbon 2005). Standards, codes and labels matter because they reduce transaction costs and provide easily digestible information not only about a product's technical specifications, its compliance with health and safety criteria, but also about the 'quality' of labour and environmental conditions under which it has been produced and sourced (Nadvi 2008). Western consumers are now more sensitised about these concerns. Leading global brands adopt codes of conducts in their supply chains to minimise risks to brand integrity and to differentiate themselves from competitors. For developing country suppliers, meeting international process standards on environmental impacts and working conditions is often a *sine qua non* to access more attractive markets.

What motivates this chapter is an interest in how the Rising Powers engage with labour and environmental standards and what consequences ensue for the governance of production, consumption and trade arrangements. There are four specific vectors (actors and processes) by which this occurs. First, we recognise that as incomes rise in the Rising Powers, and consumption patterns change, there is likely to be shifts in demand. This has important consequences. At a time of market contraction in parts of Europe and North America, especially in light of the 2008 global recession, growing markets in the Rising Powers appear increasingly more attractive to global producers of agricultural and manufactured goods and to service providers. Markets are shifting to the East and the Global South. What are the implications of this? Are Chinese (or Indian, or

Brazilian for that matter) consumers primarily concerned with price and quality of goods, or do they attach value to how goods and services are produced and delivered? Do they care about the environmental and social impacts of their consumption decisions? Might there be growing concerns, as has been seen and articulated in the West, with socially responsible and ethical consumption that translates into pressures on producers and service providers to improve their environmental impacts and the conditions and rights of workers?

Second, it is not only that markets are shifting to the Global South, but so too is production. The presence of global value chains (GVCs) and global production networks (GPNs) is now well recognised in the literature (Gereffi et al. 2005; Henderson et al. 2002; Coe et al. 2008). What is particularly interesting at this moment is the growing significance of Rising Power firms within these value chains—not only as suppliers to Western lead firms but increasingly as organisers and value chain lead firms in their own right (Appelbaum 2008; Azmeh and Nadvi 2014). This suggests not only that such Rising Power firms, as they internationalise and incorporate new functions, could potentially challenge established Western brands (and in many cases they are), but also that they have to engage with pressures on addressing labour and environmental standards down their supply chains. Do Rising Power firms face similar challenges on the governance of labour and environmental standards in their value chains as many Western lead firms have had to in recent years, and if so how do they go about addressing this?

Third, some of the most effective protagonists for strengthening labour and environmental norms in the West have come from civil society bodies (Bartley 2003, 2007; O'Rourke 2008). To what extent is civil society emerging as an important player in the standards debate within the Rising Powers? Are such kinds of civil society organisations active on this agenda within the Rising Powers, how do they mobilise and where do they apply pressure?

Fourth, while much of the recent agenda on labour, environmental and social standards in production has come from private actors (private firms and non-governmental organisations), the state increasingly matters. The state provides the regulatory framework, promulgating laws and ensuring their judicial enforcements, under which labour and environmental considerations are structured. How do Rising Power states address

these issues? Moreover, many of the rules that pertain to labour and environmental standards are global in nature. They have been shaped in international fora where public and private actors have negotiated common sets of standards. How do Rising Power states and private actors exercise their positions in such settings?

Together, these four vectors (of actor and processes) are likely to determine how labour and environmental standards are governed, and with what consequences. The fundamental questions that arise are as follows: (i) Are the Rising Powers moving from being 'standard-takers' to becoming 'standard-makers'? (ii) If so, what kinds of standards are being shaped by the Rising Powers, and what are the implications of that in the overall trajectory of global labour and environmental standards?

Guarín and Knorringa (2014) addressed the subject of the emergent middle classes within the Rising Powers, and their potential to drive forward an agenda of ethical and socially aware consumption that takes account of environmental and social impacts. There is now substantial interest in the discretionary spending of the growing middle classes from the global South, and most notably the Rising Powers. Yet, as Guarín and Knorringa (2014) noted, there is no uniform definition on what constitutes this group of consumers. Some approaches define the emergent middle class as those whose per capita consumption levels are only just above the poverty line, while others focus on those in higher income groups. The critical point is that the 'middle classes' in any given country context are both relative and heterogeneous. Nevertheless, it is apparent that consumption patterns are changing, with shifts in diets and increases in discretionary spending on consumer durables and on high value fashion conscious 'luxury' goods within the Rising Powers. To what extent might Rising Power consumers make 'responsible' consumption choices that recognise the environmental and social impacts of their consumption decisions? Will there be a growth in demand for private and public standards within these economies to transmit critical information to consumers on credence values? In posing these questions, Guarín and Knorringa (2014) observed that in the developed Western economies where there has been an expansion in the market for ethical consumption, there remain questions on the extent to which consumers are 'willing to pay' for this. In reviewing the limited evidence (both qualitative

and from the World Values Survey data) on this across developed and developing economies, they find no clear patterns, except that consumption of environmentally more friendly products tends to rise with national income levels. Some commentators argue that there is limited demand for ethical and responsible consumption, and associated standards that address these concerns, in emerging economies (Kaplinsky and Farooki 2010). In contrast, Guarín and Knorrings's work suggests important avenues for further research into how socially responsible private and public standards may evolve in the Rising Powers and the possible role of civil society bodies within these countries in shaping this discourse.

Many of these economies are now at the forefront of key debates around environmental sustainability and climate change mitigation. Brandi (2014) investigated environmental standards in China, specifically carbon standards and labels pertaining to greenhouse gas emissions. As Brandi observed, there have been a number of international initiatives at measuring carbon footprints. A few global retailers have also sought to adopt carbon standards to not only reduce their greenhouse gas emissions but also differentiate themselves from competitors. China faces considerable environmental challenges. Brandi argues that China cannot ignore carbon standards, thus the issue 'is not *whether*, but *how*' it responds. She illustrates examples of some large Chinese firms adopting international carbon standards. She also indicates potential challenges for China, and Chinese firms, from the rise of international carbon standards, including on costs and competitiveness. In some areas of environmental standards, Brandi points to distinct Chinese initiatives to develop China-specific standards, or to adapt international norms to the local environment. This suggests that there may be a potentially more variegated terrain of environmentally sustainable standards, and at the same time that China (and other leading Rising Powers) are likely to take a more active role in the arenas where international environmental and low carbon standards are set. This was clearly seen in the leading role played by China in the COP 21 Paris Climate Change talks in November 2015.

Finally, a key element in these countries is the significance of the state. This is especially so with regards to the discourse and regulation of labour and sustainability standards. Coslovsky (2014) investigated the role of the Brazilian state in enforcing domestic labour laws. Building on the

earlier work by Roberto Pires (2008) which pointed to the significance of effective state enforcement of labour laws, Coslovsky showed the workings of the labour inspectorate and judicial enforcement regime in Brazil. The Brazilian case indicates that the state's labour inspection regime not only protects workers' rights but also strengthens the competitiveness of individual firms by addressing the root causes that might result in non-compliance with labour norms. Through illustration from four distinct sectors (charcoal production, sugarcane cultivation, agricultural employment and fireworks manufacture), Coslovsky's work underlines the argument that Brazil's highly motivated and well-resourced cadre of labour inspectors point to a 'regulatory renaissance', a counter-balance to the neo-liberal discourse on the retreat of the state.

Peña (2014) takes us further into the Brazilian experience with standards by investigating Brazil's engagement in the process of global standard setting. Through a study of three distinct global initiatives, namely the United Nation's Global Compact, the Global Reporting Initiative and the International Organization for Standardization's ISO 26000, Peña shows how Brazil has moved from being a 'standard-taker' to a 'standard-maker'. This evidence challenges again the view that Rising Powers are likely to take a back seat in these global rule-making settings. As Peña points out, Brazil's engagement in these initiatives, including chairing the ISO 26000 standard setting process, involved both public and private actors. In particular, the role played by key individuals and institutions from the private sector, who built strong links with the then governing Workers Party (PT), was critical to forming a consensus within Brazil on issues pertaining to corporate social responsibility. Peña's study underlines the need for detailed historical and political analysis of the relationship between the state and the private sector, and its consequence for how Rising Powers might act in global standard setting bodies.

The Brazilian story is not, however, universal across the Rising Powers. There are also questions on how the experience on effective public regulation in Brazil has been affected in recent years when the PT has not been in power. Mezzadri's study on the Indian garment sector provides a sharp contrast to the narrative on Brazil provided by Coslovsky and Peña (Mezzadri 2014). It highlights the need for caution regarding the

capacity of Rising Powers to effectively engage with labour standards and CSR norms. Export garment manufacturing is a key element of the Indian industrial landscape, much of it undertaken in product-specific clusters across the country. By focusing on the 'bottom end' of the chain, namely the home-based and artisanal embroidery cluster of Bareilly which undertakes sub-contracting tasks for export garment factories in the Delhi region, Mezzadri underlines the difficulties associated with effectively addressing labour standards, company codes of conduct and sector-wide CSR norms to lower tiers of the supply chain. Although local initiatives on CSR geared to the homeworker context have emerged, in collaboration with the UK-based Ethical Trading Initiative and leading UK garment retailers, Mezzadri's findings indicate that such initiatives, aimed at addressing concerns for the poorest and most vulnerable segments of the value chain, tend to benefit the upper echelons of the local cluster with benefits rarely trickling to artisanal workers lower down the chain. Mezzadri's analysis points to the need to understand the complexity that underlies local production relations, and the deeply embedded conflicts between artisans, contractors and garment manufacturers. Mezzadri's study emphasises the view that while India may be a Rising Power in many ways, the presence of the large and low-waged informal sector, and its structurally weak position vis-à-vis more organised segments of manufacturing, underlines the need to step back from over-optimistic expectations on the ability of consumers, firms or the Indian state to effectively promote a discourse on labour standards and CSR norms (Knorringa and Nadvi 2016). Even in China, where the state is singularly powerful and has initiated a spate of regulatory reforms on labour and working conditions, enforcement of labour laws, and resourcing of labour inspection regimes, is geographically highly uneven (Chan and Nadvi 2014; Zhuang and Ngok 2014). These observations underline the danger in viewing the 'Rising Powers' as a homogeneous category.

There are of course broader questions regarding the potential pitfalls associated with the dynamism of the Rising Powers, and its consequences for debates on labour standards, and with viewing the Rising Powers as a homogeneous category. Nathan and Sarkar (2014) illustrate the growing

levels of inequality observed in most of the Rising Powers (Brazil being an exception, albeit still one of the most unequal countries in the world in terms of income distribution). The rise in income inequality that they observe raises a number of critical macroeconomic challenges at the national and global levels, and points to instability and potential future crisis. Nathan and Sarkar (2014) suggest that there is a need to differentiate the Rising Powers between those economies that have a high labour to land ratio and low levels of natural resource endowments (such as India and China or what they refer to as the 'Northern Hemisphere' Rising Powers) and those that benefit from low labour to land ratios and a relative abundance of primary commodities (such as Brazil and South Africa in the Southern Hemisphere). Economic growth in the Asian Rising Powers is denoted by a classic Lewisian-type growth model, where capital accumulation is driven by low-waged surplus labour and thus growing levels of income inequality. The nature of globalised production arrangements, usually led by Western lead firms, further accentuates this by ensuring that the major gains in surplus accrue to the Global North. Growing inequalities within and between countries can result in substantial national and global macroeconomic instabilities. To offset this, many of the Rising Power economies have instituted a raft of measures aimed at underpinning the social floor and bolstering wages of the poor. This has included, for example, the cash transfer (*Bolsa Familia*) programme in Brazil, the employment guarantee scheme in India and the Contract Labour Law and minimum wage legislation in China. Such interventions serve to raise the effective wage. As the labour surplus is absorbed in the Rising Powers, growing wages can lead to the classic flying geese model of development as capital moves to other lower-waged locations. To some extent, this is being observed in context of China as it pursues its 'Go West-Go Out' strategy (Zhu and Pickles 2014). At the same time, there are areas of real risks to global economic stability which are further compounded by the variety of global imbalances. One aspect to successfully negotiating these potential uncertainties is by raising real wages in the Rising Power economies, thus strengthening effective labour standards, improving incomes, lowering inequalities and raising consumer demand and thereby spreading the gains of globalisation from the current Rising Powers to other developing economies.

Conclusion

The Rising Powers, as *the* emergent economic and political 'drivers' of the global economy, are now a subject of considerable academic research and policy deliberations. China is the world's second-largest economy and Brazil the world's fifth-largest economic player. In many ways, the economic growth trends of such economies point to a defining moment in world history. The issue is not merely that despite the current global downturn some of these countries have managed to sustain growth, but that they are engines of economic change that potentially challenge established paradigms of economic development. The consequences of dynamism of these emergent (or as some would argue re-emergent) powers for the global economy has sparked interest across a number of cognate disciplines—from development studies, politics, international business, economic geography and sociology. For example, within development studies, there is interest on how these emergent economies raise challenges and opportunities for other developing countries (Kaplinsky and Messner 2008). In economic geography and development sociology, there is a sense that the contours of global production networks and trade flows are not only being radically altered by the emerging economies, in particular China, but that this transition points to a potentially new era in globalisation (Brautigam 2009; Breslin 2007; Henderson 2008; Henderson and Nadvi 2011; Henderson et al. 2013; Power et al. 2012; Yeung 2009).

One particular subject that is yet to be explored in depth is how these emerging economies affect debates on global standards, especially standards relating to labour and the environment. Over the past two decades, such process standards have become critical to international competitiveness. There are a number of factors behind this. The spread of dispersed global production networks over the past two decades has led to greater concerns amongst global lead firms, major brands and retailers on compliance with codes of conduct. Moreover, international and regional regulatory pressures on issues relating to health, safety and the environment have raised the need for greater assurance and compliance by dispersed suppliers in meeting global and regional norms in production and delivery. Furthermore, such process standards also reflect a growing

awareness on the part of consumers, especially in the Global North, of the importance of understanding how products are produced and delivered. Consequently, a critical debate in understanding the dynamics, and governance, of global production networks has been associated with working conditions, labour standards, environmental impacts and broader social and ethical concerns (Nadvi 2008). The critical question in the context of the emerging powers is: will the emerging economies drive a race to the bottom on international standards? And, in what ways are these economies, and the public and private actors within them, likely to emerge as setters of standards that affect producers and consumers across the world? We know very little about this. In our view, this requires an exploration of how the emerging economies have engaged with, and addressed debates relating to labour and environmental standards, and the consequences that arise from this for the governance of global consumption, production and trade.

In a number of areas, from socially responsible consumption behaviour, environmental standards, international social standards, to labour standards and labour inspectorate regimes, there is evidence that public and private actors within a number of Rising Power economies are increasingly becoming more pro-active, and in national and global contexts. At the same time, there is a need for caution, recognising the sharp differentiation between the distinct Rising Powers and the uneven nature of engagement by Rising Powers firms, civil society and states, with the agenda of labour and environmental standards. This highlights the need for a continued and more sharply focused research agenda that explores in greater depth a number of interconnected themes on Rising Powers and the governance of labour and environmental standards. These would require a more careful understanding of how three groups of actors within the Rising Powers—namely the state, firms and civil society—address these issues. In addition, there is a need to consider the consequences of this for developed and other developing countries. This would underline the need to address some of the following questions:

- First, how are Rising Power states defining and implementing labour, environmental, social and health standards within their domestic environments? And how do these states engage in the international and

regional institutions and rule-making arenas where international standard setting (including public, private and public-private standards) takes place and where trade rules are negotiated and formed? Finally, what consequences are likely to arise from the ways in which the Rising Powers individually and collectively operate increasingly as equal members on the rule-making table?

- Second, firms from the Rising Powers are becoming global players. They are taking on more substantive roles in global production networks, often becoming lead firms in their own right. How do these firms engage with labour and environmental standards, and how do they implement such standards in their own global supply chains? Again, what are the consequences of this—for their workers, for their suppliers and for their potential competitors including Western firms?
- Third, Rising Power consumers are not only gaining prominence in terms of scale, they are also becoming more demanding—both in terms of the quality of products, and the variety of choices they seek. This raises questions as to whether and how standards, particularly around labour and environmental conditions in manufacturing and service delivery, influence consumers in Brazil, China and India. It also begs the need for further analysis of how civil society groups within the Rising Powers engage in shaping discourses on ethical and socially responsible consumption as well as lobbying the state and pressuring firms to improve their practices.

These inter-linked themes provide an important avenue for further empirical and conceptual research. Research that could add to our understanding of the ways in which the contours of global trade are being changed by the Rising Powers, as well research that could better inform policy debates on international trade, sustainability standards and sustainable pro-poor outcomes.

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3

Global Trends in Sustainable Markets and Implications for India

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and Mathieu Lamolle

Introduction

Sustainably produced products¹ have moved from the niche to the main-stream with higher rates of growth than of conventional product markets. This chapter examines global trends in sustainability product markets and their implications for the development of the sector in India. It shows how the number and uptake of voluntary sustainability standards (VSS) have been increasing and what are the factors affecting this positive dynamic. The chapter also sheds light on the origins of voluntary sustainability standards, namely, showing that they originated in developed countries at their inception; however, this trend is changing, and more standards are being developed in developing countries. The chapter also provides a brief analysis of sustainability trends in India. Being both a large exporter and importer of goods, India has a great potential in making supply chains more sustainable by applying sustainability standards

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in domestic production and requesting its foreign suppliers to comply with such standards. That said, Indian producers still lack incentives to make production processes more sustainable. The chapter lists concerns around VSS, which hinder larger and more efficient uptake of such standards by producers including Indian producers. The last section of the chapter concludes with recommendations for making sustainable production practices a norm.

Sustainability Standards Are Growing in Number...

VSS are considered as primary tools in value chains to demonstrate implementation of sustainability practices in production. VSS are a set of requirements that encompass the environmental, social and economic aspects of production. The United Nations Forum on Sustainability Standards (UNFSS) defines VSS as “specifying requirements that producers, traders, manufacturers, retailers or service providers may be asked to meet, relating to a wide range of sustainability metrics, including respect for basic human rights, worker health and safety, the environmental impact of production, community relations, land use planning and others”. They are most commonly used in food products but also applied to textiles, cosmetics, medicinal products as well as service sectors like tourism. VSS can be developed by non-governmental organizations, public entities, private companies or consortia of companies.

The United Nations Forum on Sustainability Standards (UNFSS)

UNFSS was set up in 2013 and is a platform aimed at helping producers, traders, consumers, standard setters, certification bodies, trade diplomats, non-governmental organizations and researchers to exchange experience and good practices with regards to VSS as well as influence decision makers at the intergovernmental level. The platform's mandate is also to provide information, analysis and discussions on VSS raising awareness on standards among various interested stakeholders.

UNFSS is coordinated by a steering committee of five United Nations agencies:

- The Food and Agriculture Organization of the United Nations (FAO)
- The International Trade Centre (ITC)
- The United Nations Conference on Trade and Development (UNCTAD)
- The United Nations Environment Programme (UN Environment)
- The United Nations Industrial Development Organization (UNIDO)

VSS have grown rapidly since their emergence in value chains three decades ago. A study carried out by the International Trade Centre (ITC) and European University Institute (EUI) (Fiorini et al. 2017) shows that the largest number of VSS emerged between the 1990s and 2000s (Fig. 3.1). During this period, on average, eight new VSS emerged per year. As the certification market has matured, the rate of growth in the number of VSS has since slowed down.

There are several reasons explaining the growth in the number and coverage of VSS. First and foremost is consumer demand for sustainably produced products, which is especially high in developed countries.

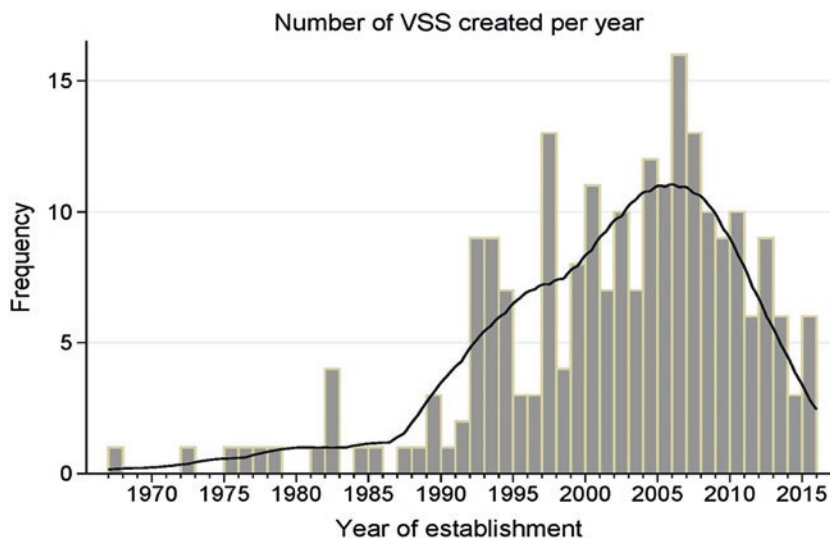


Fig. 3.1 Yearly growth of standards. Reprinted with permission from ITC. Source: Fiorini et al. (2017). Results are based on ITC Standards Map database

Secondly, the internationalization of value chains and emergence of the so-called Global Value Chains (GVCs) mean companies source products from all over the world and use VSS to monitor their value chains and mitigate risks in supply and production processes. Another reason for the proliferation of VSS is the concentration in food processing and retailing. More power is accumulated in the hands of manufacturers and retailers, which allows them to impose more requirements on their suppliers, such as quality, safety and sustainability. Last but not least is the existence of competition in the sustainability market between market players, leading to the application of stricter and more comprehensive requirements of suppliers.

...And in Terms of Certified Area

As the demand for certified sustainable products has increased, the amount of land under certified production has expanded. Figure 3.2 shows the certified area dynamic for eight selected commodities in the period from 2008 to 2015. However, it is worth noting that despite this

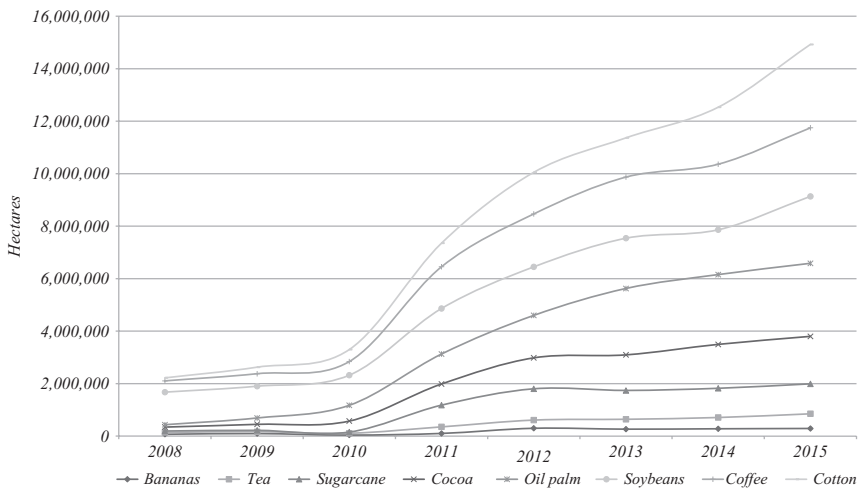


Fig. 3.2 Selected products certified by sustainability standards 2008–2015. Data reprinted with permission from ITC. Source: Lernoud et al. (2017)

rapid growth, the markets for certified products represent only a small portion of overall agricultural production, accounting for less than 1% of global agricultural areas (Potts et al. 2017).

Cotton, bananas and tea sectors have shown the largest increase in sustainably certified area. Better Cotton Initiative (BCI), Cotton Made in Africa (CmiA), Fairtrade International and Organic, four large schemes certifying cotton producers, certified a minimum of 3.2 million hectares of cotton in 2015 which represents 9.1% of global cotton-growing area. BCI had the largest certified cotton area of 2.2 million hectares showing a nine-fold increase between 2011 and 2015.

India is the world's leader in sustainable cotton production in terms of area with over 900,000 hectares of cotton area being certified to BCI, Fairtrade International and Organic standards. India is followed by China, the USA, Pakistan and Brazil. India is the world's largest producer of organic cotton, and according to Textile Exchange, it accounted for around 67% of the world organic cotton production in 2016 (Textile Exchange 2018).

Certified bananas area grew by 185.1% from 2011 to 2015 based on the data coming from Fairtrade International, GLOBALG.A.P., Organic and Rainforest Alliance/Sustainable Agriculture Network (RA/SAN), four schemes certifying banana producers. Four standards combined certified maximum of 451,000 hectares in 2015, which represents around 8.4% of global banana-growing area. The largest banana areas were in India, United Republic of Tanzania, Brazil, the Philippines and China. While India has the largest banana-growing area, not much of it is certified to VSS.

The sustainable tea sector has also experienced a large growth of certified area reaching maximum of 717,000 hectares in 2015 (data from Fairtrade International Organic, RA/SAN and UTZ),² which represents 18.9% of global tea-growing area. India is the second-largest producer of sustainable tea after Kenya in terms of area certified, with over 162,000 hectares of certified area, based on the data coming from Fairtrade International, Organic, RA/SAN and UTZ. India is also the second-largest producer of organic tea after China in terms of area of production reaching 14,150 hectares of tea-growing area certified to organic standard (Lernoud et al. 2017).

Brands and Retailers Increasingly Source Sustainable Products

Many brands and manufacturers have made commitments to source sustainably produced products. This allows them to monitor their supply chains and mitigate the risks related to brands' reputation. Companies either use "third party" external VSS as a tool for this purpose or develop their own supplier audit protocols and codes of conduct. For instance, Unilever has developed its own Sustainable Agriculture Code (Unilever SAC) to make sure that its suppliers comply with the minimum sustainability requirements set by Unilever. By 2020, Unilever aims to source 100% of its agricultural raw materials sustainably.

Mars, on the other hand, relies on external standards such as Rainforest Alliance, UTZ, Fairtrade, and Roundtable on Sustainable Palm Oil (RSPO) to source product ingredients. The company aims at sourcing 100% of its cocoa from certified sources by 2020.

Aldi, one of the largest supermarket chains in the world, also uses external VSS to source ingredients for own-brand products. For instance, they source coffee that is certified to Global Coffee Platform (GCP), Rainforest Alliance, Fairtrade, UTZ and EU Organic standards and cocoa that is certified to UTZ and Rainforest Alliance. Note that 19.5% of coffee supplies and 78.8% of cocoa supplies were certified as sustainable in 2016 (Mende 2017).

H&M group, one of the world's leading fashion companies, has also set ambitious goals for its cotton supplies. In 2016, 34% of the group's cotton supplies were either certified to organic standards, Better Cotton Initiative (BCI), or recycled. By 2020, H&M aims at sourcing 100% of its cotton-certified sustainably.

Brands, manufacturers and retailers perceive sustainability in their own way depending on the sector, product and supplying market they are working with. Therefore, they apply different standards that fit into their perception. This differentiation is one of the reasons of the increasing number of standards, codes of conduct, corporate social responsibility (CSR) policies and their proliferation.

Origins of Sustainability Standards

The majority of VSS are conceptualized, designed and elaborated in developed countries, many are then applied in developing markets to build value and mitigate risks in the supply chains, which often originate in developing countries.

However, there is a trend towards developing countries designing their own sustainability standards and schemes. Data from ITC's Standards Map³ (Fig. 3.3) show that the number of voluntary standards originating in non-OECD (Organisation of Economic Co-operation and Development) countries is increasing.

Prior to the 1990s, only 8% of new VSS initiatives emerged in non-OECD countries based on the location of the headquarters of the standards organization as opposed to 36% of new initiatives in the period between 2010 and 2015.

The rise of VSS in emerging economies can be explained by increasing consumer demand and the strategy of companies to demonstrate their production processes are based on sustainability principles rather than

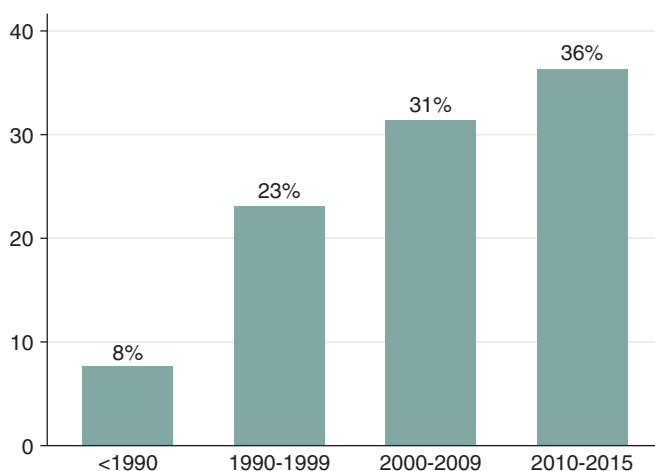


Fig. 3.3 Voluntary standards emerging in non-OECD countries. Reprinted with permission from ITC. Note: The bars show the percentage share of standards initiatives with headquarters in non-OECD countries in the total number of new initiatives, by period. Source: Fiorini et al. (2016)

being associated with negative impacts on the environment as well as unfair practices with respect to workers and local communities. In parallel with this, developing countries want to retain ownership of their own sustainability agenda and implement it via their own standards systems.

VSS Market Development in India

In domestic markets, sustainability standards have proliferated. Besides the application of existing international standards such as SA-8000, Global Organic Textile Standard (GOTS), Forest Management & Chain of Custody (FSC) and Better Cotton Initiative (BCI), India itself has developed its own voluntary standards such as Trustea, INDIA Good Agriculture Practices (INDGAP), Zero Defect Zero Effect (ZED), and Voluntary Certification Scheme for AYUSH Products, Ready mix Concrete Plant, Lead Safe Paints, Yoga Professional Certification Scheme, Forest Certification and Medicinal Plant Produce (Pande 2017).

India produces a wide range of organically certified products including sugarcane, oil seeds, cereals, pulses, spices, coffee, fruit and vegetables. There is a small but growing domestic organic market which is experiencing higher growth rates than the conventional sector. The sectors experiencing growth are focused on fresh fruits and vegetables. Most of the organic land area is however forest and wild areas (Euromonitor 2017a).

The organic market is expected to grow as consumer incomes rise. The policy framework also determines the rate of growth. The government operates the National Programme for Organic Production (NPOP). This includes an accreditation programme for certification bodies, organic production standards and promoting organic farming. State initiatives to promote organic farming also exist. The state of Sikkim, for example, in 2010 made a policy goal to become “fully organic”. The governor of Uttarakhand announced that the state will seek to become an organic food processing hub (Euromonitor 2017b).

India is also an importer of agricultural commodities. It dominates global consumption of palm oil at 9.75 MMT in 2017. Since India is not able to meet its demand for edible oil from domestic production, it increasingly draws on imports. This is expected to increase as incomes

rise. Palm oil cultivation has driven deforestation in Indonesia and Malaysia. VSS are not applied to India's imports of palm oil. Consumer awareness of social and environmental impacts of its production is low, and the average consumer of palm oil-based cooking in India is typically from lower- to middle-income groups with relatively lower educational levels and lesser access to disposable incomes (WWF-India 2017). This depends on sufficient consumer demand for deployment of VSS and therefore illustrates the limitations of VSS as a policy tool to correct major market failures such as deforestation for food production.

Barriers to Adoption of VSS in India

The incentives for Indian small and medium enterprises (SMEs) to adopt standards are low due to high costs, risk aversion and lack of finance. In many cases, smaller firms do not have the human resources to implement standards and can more easily sell to markets that do not require certification (Jain and Ashok 2017). Compensating these costs is normally achieved through accessing premium price markets which are still relatively small in India. It is also easier for large companies to absorb these costs.

Jain and Ashok (2017) identify a range of factors that drive the spread of standards. These include economic incentives, such as efficiency gains and access to lucrative markets, or public incentives such as subsidy schemes and legal requirements.

Other drivers identified include the following:

- legal threats of regulators
- access to lucrative markets (e.g. compliance with REACH and GOTS essential to access EU market)
- efficiency gains (e.g. ISO 140001 to reduce energy use)
- public incentives such as subsidy schemes and legal requirements (e.g. for ISO and ZED certifications)
- entrepreneurs' personal preferences, knowledge and exposure with regard to sustainability facilitate standard adoption

Public Sector Perspective

VSS were created with the purpose of tackling sustainability-related issues in production processes; as a result, to some extent they also contribute to a better implementation of laws and regulations in the countries where rule of law lags behind. Many standards include compliance with local laws as a requirement for producers to follow in order to pass an audit and get a certificate of compliance with a standard. One example is a requirement to comply with forests cut-off date mentioned in the legislation in order to prevent deforestation. Besides legislation, VSS also refer to international conventions. ITC-EUI research shows that International Labour Organization (ILO) core conventions are the ones the most frequently used by VSS (Fiorini et al. 2017).

Public sector institutions also participate in development of VSS. One example is organic standards; in many countries, organic standards are developed by public institutions like in the USA, European Union, Japan and China. For instance, National Organic Program (NOP) in the USA is a programme housed within the United States Department of Agriculture (USDA). Organic standards remain voluntary per se, that is, producers do not necessarily have to produce or grow organic products; however, when they do, they often need to comply with mandatory organic standards and go through rigorous audit procedures set by public institutions in order to be able to place an organic claim or a label on their products.

VSS are also used for public procurement purposes. For instance, some European countries explicitly refer to FSC standard as a proof of compliance with their sustainable public procurement requirements.

Regulatory Environment in India

Pande (2017) describes the regulatory “ecosystem” in India as consisting of the Government at the top of the chain followed by regulators and standards bodies. Regulators are mostly public agencies that create man-

andatory technical compliances required for products and processes. Standards bodies create voluntary standards in line with regulations or international standards or industry best practices. Certification bodies or Conformity assessment bodies oversee compliance by conducting inspection, testing and/or certification across the supply chain. Requirements imposed in the international markets that are mostly led by the retailers' association such as GLOBALG.A.P., BRC (British Retail Consortium) and SQF (Safe Quality Food) in the global arena has made an impact on the Indian markets. These are driven by concerns of consumers and pressure groups from the developed countries.

Taxonomy of Sustainability Standards in India

Mandatory Standards

The taxonomy of sustainability standards relating to the micro small and medium enterprises (MSMEs) in India includes both mandatory and voluntary (Kathuria et al. 2017). Seven acts cover local pollution standards with most of the compliance monitoring and enforcement done by the State Pollution Control Boards (SPCBs). The compliance to pollution standards of MSMEs in manufacturing sector is weak compared to medium-sized enterprises due to the use of obsolete technologies and poor management practices. Furthermore, small companies do not necessarily come under the ambit of regulatory authorities (FMC, IICA and GIZ, cited in Kathuria et al. 2017). In addition to mandatory emission standards, the Bharat state emission standards (BSES) apply air pollution emission standards to all new motor vehicles.

The Bureau of Indian Standards (BIS) enforces mandatory certifications for various products in the interest of 140 products for public health and safety, security, infrastructure requirements and so on. These include household electrical goods, food products, automobile accessories, stoves and valves, medical equipment and so on (Kathuria et al. 2017).

Voluntary Standards

Voluntary standards exist for pollution, energy efficiency and quality management. ISO-14001 series of standards specify the standard for establishment and maintenance of an environmental management system (EMS). According to ISO, 4362 companies in India were ISO-14001 certified. The ISI mark instituted by BIS certifies that a product conforms to BIS standards which include over 15,800 standards across many sectors including agriculture, chemicals and engineering. Of all the sectors, agriculture and food products have the most number of standards instituted with quality certification the key concern for the food processing sector. Sustainability standards like Agmark, FPO mark and India Organic are also used. International certifications are gaining ground including GLOBALG.A.P. and its local variant INDGAP (Kathuria et al. 2017). Among MSMEs in India, export-orientated firms focus more on identifying and managing environmental issues and processes to improve their end products (Padma et al. 2008 cited in Kathuria et al. 2017).

Concerns About Sustainability Standards

Despite the fact that VSS pursue a noble purpose of sustainable and fair production practices, there have been a number of concerns arising with the growing number of sustainability standards.

First and foremost is the cost of compliance with standards. The audit fees, standards' requirements and criteria implementation costs pose a major barrier for producers to get certified against sustainability standards. ITC-EUI (Fiorini et al. 2016) research based on Standards Map data shows that in 54.6% of standards, producers alone bear the costs of certification.

The *second issue* is the infrastructure, namely certification bodies and laboratories for testing the quality and safety of food products. In some cases, countries do not have certification bodies that can certify producers against standards which producers need to comply with to access certain markets. In this case, producers can invite auditors from other countries and this, naturally, increases the price of audits.

The *third issue* is technical support that producers need in order to implement sustainable production practices. VSS requirements and criteria often can be complex and may require solid technical knowledge and expertise, which producers and especially farmers often lack. Many standards provide technical support to producers to assist them in implementing standards' requirements. ITC-EUI research shows that out of 181 VSS in the analysis, 105 stated that they provide technical assistance to meet the requirements of standards. This type of support is especially critical for SMEs and smallholders, who, in most of the cases, lack financial means to search for methods of implementation of sustainable production practices.

In some cases, standards are specifically adapted to SMEs' and small holders' context; however, the number of such standards is low. ITC-EUI (Fiorini et al. 2016) research based on the Standards Map data shows that only 7% of VSS in the Standards Map database target specifically small-scale producers and producer groups. Examples of such standards are Fairtrade Standard for Small Producers Organizations, Small Producers Symbol and Fair Trade USA Agriculture Standard for Small Farms.

The *fourth issue* is related to transparency of VSS and access to information on standards for producers. Transparency on audit processes, costs and fees is critical for producers, especially SMEs, as public availability of such information can considerably reduce transaction costs of compliance with the standards.

The *fifth issue* is the issue of proliferation of VSS. Increasing number of VSS leads to confusion among producers who often face multiple standards requested by various buyers and struggle to comply with all of them. Confusion is also an issue for consumers who don't often understand what those sustainability labels mean on the packaging of the products they purchase every day. According to the survey conducted in the UK, consumers in most of the cases recognized only Fairtrade label on the products, whereas other labels remained unknown to them.

The *last* but not least is the problem of inclusiveness in standard-setting processes. In other words, inclusiveness is about mapping and involving all the affected stakeholders in the development of standards. Inclusiveness is especially important when it comes to producers who are the ones that have to implement and comply with the standards; it is important to hear

from them on the local issues related to sustainability and the possibility and ways to address these issues through standards.

These issues of concern are pertinent in terms of the development of VSS and the sustainability market segment in India. As discussed, SMEs in India lack technical resources and access to finance to comply. There are competing certifications in the market which potentially confuse consumers. The organic beverages sector, for example, competes for the same ethical consumer as health and wellness categories (Euromonitor 2017b).

Trade for Sustainable Development Programme Tackling Some of the Issues

Trade for Sustainable Development Programme of ITC (T4SD) was launched in 2009 with the purpose to tackle some of the issues listed above, namely three of them:

- transparency and access to information
- capacity building for producers
- fragmentation

The programme has developed a database called Standards Map which is currently a repository of information on more than 230 sustainability standards. The database is freely accessible online and provides information on various aspects of VSS: audit procedures, cost of certification, requirements and criteria, standard-setting processes, labelling and traceability. Standards Map is an important reference tool for producers who are looking into exporting in foreign markets and are looking for information on standards that are requested by the buyers in the export markets. The tool is also actively used by the standard-setting organizations and practitioners in the field of VSS.

Besides referencing and providing data on VSS, T4SD programme is actively involved in producer assistance, enterprises promotion in export markets and providing technical assistance on VSS requirements and audit procedures. The programme also works with private companies on supplier assessments and benchmarking of standards requirements.

Industry Players Coordinating on Sustainability

VSS are certainly contributing to sustainable production and consumption processes; however, their increasing number can lead to fragmentation of sustainable markets. In other words, a situation of redundancies, gaps and contradictions between standards operating in the same markets and sectors.

Players in the markets are realizing this issue and have been developing initiatives to coordinate and streamline the efforts to produce and source more sustainable products at various levels of value chains, from farming to processing and retailing. Such coordination often results in creating industry platforms that also tackle other issues related to VSS such as matching supply and demand for certified products (market component); credibility of governance structures and assurance models; accessibility of all supply chain actors to the system and capability to deliver positive sustainability impacts.

One of the examples of such initiatives is the Global Food Safety Initiative (GFSI). GFSI was developed as a response to food safety issues in early 2000 as well as to reduce audit duplications in the supply chains of major retailers. GFSI has developed uniform criteria for food safety to benchmark other standards against it. The benchmark standard contains food safety criteria and accreditation and certification procedures that should be met by other standards. Standards that have passed the benchmark of GFSI and are recognized by GFSI are the following (GFSI 2018):

- Primus GFS
- International Featured Standard (IFS)
- Global Aquaculture Alliance
- GLOBALG.A.P.
- Global Red Meat Standard
- Food Safety Certification System 22000 (FSSC 22000)
- CanadaGAP
- Safe Quality Food (SQF)
- British Retail Consortium (BRC)

Retailers, which make part of GFSI, accept any of above schemes. As a result, suppliers do not have to go through different certifications and can get certified to one of the GFSI-benchmarked schemes and be recognized by the retailers.

Another example is the AIM-Progress forum of leading fast-moving consumer goods manufacturers and their suppliers. One of the areas of work of the forum is mutual recognition between the audit protocols of the manufacturers. The purpose of the mutual recognition is to reduce audit fatigue and align key issues of responsible sourcing by making manufacturers recognize supplier audits completed on behalf of another company (AIM-Progress 2018).

In 2002, Nestlé, Unilever and Danone established the Sustainable Agriculture Initiative (SAI) Platform to facilitate the sharing of their knowledge and best practices to support the development and implementation of sustainable agricultural practices at a precompetitive level. Developed by SAI Platform members, their suppliers, farmers and external stakeholders, the Farm Sustainability Assessment (FSA) offers a unique framework used by leading food and drink companies to source sustainably produced agricultural materials.

SAI's 2020 vision is: "Implement secure and thriving agricultural supply chains and protect the earth's resources through widespread adoption of sustainable practices that deliver value to our members, farmers, farming communities, and consumers". In order to achieve its vision, the SAI Platform seeks involvement from all food chain stakeholders and develops (or co-develops) tools and guidance to support global and local sustainable sourcing and agriculture practices. Examples of recently developed resources include the [Practitioner's Guide for Sustainable Sourcing](#), recommendations for [Sustainability Performance Assessment \(SPA\)](#) and the [Farm Sustainability Assessment \(FSA\)](#). A good example of those tools is the Farm Sustainability Assessment tool developed by SAI, accessible to its members, to assess, improve and communicate on-farm sustainability across food supply chains.

The online version of the tool developed in 2014 in a joint collaboration with the ITC's T4SD programme creates one single, industry-aligned, widespread tool to help farmers and companies meet their sustainability targets. It works for all players in the value chain by reduc-

ing the burden of multiple assessments needed when using different schemes and codes, and it saves time and resources by sharing information across business partners.

Conclusions and Recommendations

The development of VSS and their adoptions has been rapid. The market in developed countries has matured, with growth now seen in emerging markets.

The experience to date shows that VSS are important tools for value addition, improving efficiency and promoting sustainability. However, there are concerns about VSS with respect to their cost, need for soft infrastructure, transparency, proliferation and inclusiveness. In broader policy terms, VSS have a limited reach to promote sustainable land management given that standards govern less than 1% of the world's food production.

As the deployment of VSS continues in India from its current niche market segment, the experiences from VSS development over the last 30 years are informative. Standard setters, industry initiatives and non-governmental organizations (NGOs) have a role to play in providing technical assistance to build knowledge and capacity about use of VSS. The government has a role to regulate the market to avoid some of the pitfalls experienced to date particularly relating to transparency and inclusiveness. Consumers will demand better information about what standards achieve and who benefits from their use. Government can also stimulate demand through procurement policies providing this objective meets broader development objectives, for example, improving food security.

Key Takeaways

- VSS have been increasing in number and in terms of land area certified to such standards.
- Indian products are subject to multiple international and domestic sustainability standards; however, this is mainly driven by demand for

sustainable products from international buyers rather than domestic Indian buyers.

- Main challenges of adopting VSS in India are high costs of standards implementation and certification procedures.
- Indian producers can be incentivized to adopt VSS by market incentives such as access to lucrative markets (developed countries increasingly require suppliers to comply with sustainability standards), efficiency gains as well as by public incentives such as legal requirements or subsidies for production in accordance with sustainability standards.

Notes

1. Sustainably produced products are the ones that were produced with respect to environment, human rights and with economic benefits for local communities and workers.
2. UTZ is a label and programme for sustainable farming of coffee, cocoa, tea and hazelnuts. Its mission is to create a world where sustainable farming is the norm. Source: <https://utz.org/>
3. Standards Map is one of ITC's market analysis tools, for the latest information refer to www.sustainabilitymap.org.

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4

Role of Voluntary Sustainability Standards in Addressing India's Growing Forest Footprint

T. R. Manoharan

Introduction

Voluntary sustainability standards (VSS)¹ influence global value chains, and many of them are directly contributing to the responsible management of world's forests and thereby addressing issues related to forest conversion, illegal logging, forest degradation, climate change and loss of biodiversity (Rogerson 2017; Sexsmith and Potts 2009; ITC 2011). Multinational enterprises have increasingly made commitment to VSS and zero deforestation as part of their policies and managing the global supply chains² (Rogerson 2017; Global Canopy 2018).

Proliferation of VSS since the 1990s generated interest in the market place and also concern in particular on its impact on fair trade claims these standards make and the costs associated with the introduction of these standards, in particular those for the small and medium enterprises

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and small holders. In many cases, VSS are initiated by private sector or non-governmental organisations (NGOs), and there was little or no direct engagement with the government in the development of these standards, and therefore such VSS are often referred to as “private sustainability standards” (PSS) or “NGO Standards” (UNFSS 2016; IIED 2015; Marx et al. 2012; Gandhi 2006).

The objective of this chapter is to understand the role of VSS in addressing India’s growing forest footprint. The chapter is based on literature review and secondary data from national and international organisations. Three forest risk commodities³ have been selected for analysis: timber, paper and pulp, and soybean oil.

Sustainability Governance Landscape

The 2030 Agenda for sustainable development recognises the role of private sector and non-governmental organisations in implementation of sustainable development goals and associated targets. This Agenda comprises 17 goals and 169 targets as a plan of action for people, planet and prosperity (UN 2015).

The proponents of VSS suggested that government should make use of the sustainability standards initiatives by NGOs for achieving the development objectives and meeting the commitments made at international level such as sustainable development goals (SDGs) and intended Nationally Determined Contributions as part of Paris agreement of United Nations Framework Convention on Climate Change (UNFCCC). There was a concern about the trade distortionary impact of VSS and therefore the critics of VSS are of the view that governments should take the responsibility for the actions of non-governmental entities within their boundaries (UNFSS 2016; Thorstensen et al. 2015). Attempts to link VSS in the World Trade Organization (WTO) provisions did not make much progress.⁴ Though WTO Doha Ministerial Declaration in 2001 included certain elements of Trade and Environment linkage for negotiations,

the role of VSS in environmental goods and services did not receive much attention⁵ (WTO 2004; Thorstensen et al. 2015).

Public procurement programmes have strong potential in promoting VSS. Green public procurement policies gain popularity in many developed countries. However, its uptake in developing countries is still at infant stage. SDG 12, in particular SDG 12.7, targets promotion of public procurement practices that are sustainable, in accordance with national policies and priorities.

Considering the significance of VSS and the need to engage with the government, the United Nations Forum on Sustainable Standards (UNFSS)⁶ aims to promote proactive and strategic dialogue about national policies and experiences, as well as on meta-governance issues of voluntary sustainability standards. UNFSS set up the first multi-stakeholder platform on PSS in India in 2016 in coordination with the Ministry of Commerce and Industry, Government of India and Quality Council of India.

Despite several regulatory measures imposed by the governments, illegal logging continues to be a serious challenge particularly in tropical forests. Conversion of forests for commercial agriculture, without adequate social and environmental standards, became an issue of concern (WWF 2018; FAO 2010, 2016). Deforestation is the second leading cause of climate change and accounts for 20 per cent of all global greenhouse gas (GHG) emissions.

The world forest area decreased from 31.6 per cent of global land area to 30.6 per cent between 2010 and 2015 (FAO 2018). Currently, forests cover 4 billion hectare of which 3.7 billion hectare are natural forests. The loss of natural forests was 6.5 million hectare annually during 2010–2015. UN strategic plan for forests 2030 targets an increase in forest area by 3 per cent by 2030 and to eradicate extreme poverty for all forest-dependent people (UN 2017).

Our consumption impacts forests globally. Forest footprint is the impact of consumer goods on destruction of natural forests. The global forest footprint of a country is the total environmental and social costs of a country's actions on the world's forest and forest people. The demand for wood products is significantly affected by changes in income (Duncan 2018).

While on the one hand, the multi-stakeholder-driven voluntary approaches in sustainability standards led by the NGOs are gaining popularity in the market place, on the other hand, governments are increasingly imposing environmental regulations to improve forest governance. Ideally, both the approaches can go hand in hand, but, in many contexts, establishing effective linkages between the regulation and voluntary approaches in promoting sustainability standards poses several challenges.

India's Growing Forest Footprint

India is the sixth-largest economy as of 2018 in terms of nominal gross domestic product (GDP) and is one of the fastest growing economies in the world. Forest is the second-largest land use in India. Forest plays a crucial role in contributing to the development of Indian economy by providing various ecosystem services.

India is a mega biodiversity country and one of the most forested countries in the world.⁷ However, in order to meet the growing economic needs of 1.3 billion people, India needs to depend on imports of forest and agricultural products from other countries. India's imports of forest risk commodities such as timber, soybean oil and palm oil⁸ are largely from countries which are experiencing highest level of deforestation and illegal logging. A Chatham House report indicated that about 17 per cent of all timber imports in India are of illegal origin.

Increased disposable income of the middle class, the predominance of young working people and implementation of liberalisation policies since 1991 made India a potential market for trade and investments. The impact of India's economic growth and trade liberalisation put tremendous pressure on forest resources, both within the country and overseas. It is argued that India is one of the largest destinations of illegal exports of wood products from several countries (Lawson 2014).⁹ The widening gap between timber demand and supply had adversely affected the development of forest-based industries in India (Singh 1991).

A report of the World Bank noted that India is facing serious imbalances between the supply of and demand for wood. "Much of the log

supply deficit is being met through illegal harvesting, putting additional pressure on the remaining high quality dense forests. The supply demand situation underscores the national government's strong support for forest conservation, manifested through efforts to protect existing forests and grow new plantations under Joint Forest Management" (World Bank 2006, 8).

There is a growing concern in the world's leading markets about the rapid decline of natural forests and about their ability to supply products in the future, both for local needs and for exports (EFI 2014). A research study by World Wildlife Fund (WWF)-India concluded that the key determinants of timber supply in the country include GDP growth rate, timber imports, production of industrial wood and wholesale price index of all commodities. Unless India takes the required measures to boost its timber productivity, it will face a severe shortage in timber supply from domestic sources (Manoharan 2011). A report on "India's ecological footprint: A business perspective" prepared by the Global Footprint Network and Confederation of Indian Industry (CII) in 2018 noticed a growing gap in India between the amount of natural resources the country uses and those the nation possess (Global Footprint Network 2018).

Forestry Sector in India

Forestry is in the concurrent list of the Constitution of India.¹⁰ More than 95 per cent of forests in the country are managed by the Government. India is one of the few countries where positive changes in forest cover are reported. According to India State of Forest Report 2017, India's forest cover is 70.82 million hectare (21.54 per cent of total geographical area) and tree cover is 9.38 million hectare (2.85 per cent of total geographical area). Forest and tree cover is 80.20 million hectare or 24.39 per cent of total geographical area. India targets 33 per cent of total geographical area under forests and tree cover. However, very dense forests are only 9.81 million hectare or 2.99 per cent of total geographical area (FSI 2017). Very dense forests are those having canopy density more than 70 per cent.

Forest plantations' managed by the government is the largest domestic source of timber in India (Government of India 2009). State Forest Development Corporations (SFDCs) set up by the state forest departments have established credible systems in harvesting, transporting and marketing of timber. The management of forests is the responsibility of state forest departments, and this is in accordance with the approved forest working plans prepared based on scientific forestry principles. However, the timber originated from outside forest areas often lacks such management plans. This has been addressed to some extent by the Indian industry, in particular paper and pulp sector and the government by providing technical and financial support to the farmers who participate in agroforestry and farm forestry programmes. National Forest Policy, 1988, encouraged such partnerships to increase the supply of timber needed by the industry, besides meeting the economic needs of the communities including fuel wood. Since the supply from domestic sources is insufficient, the industry has to depend on imported wood to meet the demand and address the competitiveness.

India's National Forest Policy, 1988, was a major shift from previous policies in several aspects. The earlier forest policies had focused on the sustained production of timber on scientific and business lines for maintaining a sustained supply of wood for industry and large timber for defence, communication and other national purposes.¹¹ The principal aim of the National Forest Policy 1988 was "to ensure environmental stability and maintenance of ecological balance including atmospheric equilibrium which is vital for sustenance of all life forms, human, animal and plant. The derivation of direct economic benefit must be subordinated to this principal aim" (Government of India 1988, 1).

The Policy stated "As far as possible, a forest based industry should raise the raw material need for meeting its own requirements, preferably by establishment of a direct relationship between the factory and the individuals who can grow the raw material by supporting the individuals with inputs including credit, constant technical advice, and finally harvesting and transport services" (Government of India 1988, 6). To minimise the pressure on India's forests and to meet the industry requirement of timber, the policy recommended import liberalisation of timber.

By recognising the supply constraints of timber in India, the National Forest Commission constituted by the Government of India in its 2006 report noted that felling regulations on private lands may be restricted to “highly restricted tree species” and recommended there should be no restrictions and regulations on the felling and removal of other trees on private holdings. “Under Land Ceiling Act, no land ceiling shall be imposed on land under plantation of forest tree species. This will motivate the corporate sector and big farmers to invest in plantations” (Government of India 2006, 46).¹²

Green India Mission (GIM), as part of National Action Plan on Climate Change, aims to increase 5 million hectare under forest and tree cover and another 5 million hectare to improve the quality of the existing forest or tree cover, and thereby enhancing carbon sequestration by 100 million tonnes of CO₂ equivalent annually (Government of India 2015).

Government of India introduced a draft National Forest Policy 2018 to integrate the vision of sustainable forest management by incorporating elements of ecosystem security, climate change mitigation and adaptation, forest hydrology, participatory forest management, urban forestry, robust monitoring and evaluation framework and establishment of mechanisms to oversee multi-stakeholder convergence in forest management. The overall objective and goal of the draft National Forest Policy 2018 is to safeguard the ecological and livelihood security of people, of the present and future generations, based on sustainable management of forests for the flow of ecosystem services (Government of India 2018). The draft National Forest Policy 2018 included forest certification as one of the strategies under new thrust areas in forest and tree cover management. The responses from the stakeholders on the draft National Forest Policy 2018 show that though many have welcomed the policy, there are areas of concern, in particular for those dealing with the rights of tribal and other forest dwelling communities, community participation and industrial timber (Gopikrishna 2018).

India's Trade in Selected Forest Risk Commodities

India's Timber Trade

The supply of timber in India is mainly from domestic production. The main sources of domestic production of timber in India are (a) government forests and plantations; (b) farm forestry and agroforestry areas and (c) private plantations.

India produces about 358 million cubic metre of round wood annually of which 85 per cent (307 million cubic metre) used as wood fuel. The annual production of industrial round wood in the country is about 49 million cubic metre. While domestic wood production has shown a marginal increase over the period, the imports of timber have grown substantially. In 1971, the quantity of India's import of industrial round wood was only 1400 cubic metre which was negligible. In 1981, this has increased to 9800 cubic metre. However, thereafter, the pace of India's import of industrial round wood has changed drastically. The imports of industrial round wood have increased from 0.7 million cubic metre in 1991 to 5.5 million cubic metre in 2017. The domestic production of the same has also increased from 35.6 million cubic metre to 49.51 million cubic metre during the period (Table 4.1).

Figure 4.1 shows that the volume of India's imports of industrial wood was negligible prior to 1991 when the nation introduced trade liberalisation. However, the post-1991 period shows a rapid growth in timber imports.

Table 4.1 India's industrial round wood production and trade (1971–2017)

Year	Quantity (cubic metre)		
	Production	Import	Export
1971	13,213,000	1400	26,600
1981	20,461,000	9800	5700
1991	35,667,000	765,206	36,736
2001	41,930,000	2,505,200	2800
2011	49,517,000	6,341,350	12,872
2017	49,517,000	5,509,000	27,220

Developed by author using FAO Forest Products Statistics

Three significant forest product categories have been identified for the analysis. These are HS(44)—wood and articles of wood and wood charcoal; HS(47)—pulp of wood and fibrous cellulosic material; and HS(48)—paper and paperboard, articles of pulp, paper and board.

Table 4.2 shows the value of India's trade in select forest products. In 2017, the value of import of wood under HS44 was USD 2.18 billion; pulp under HS47 was USD 1.95 billion and paper under HS 48 was USD 3.07 billion. The value of imports of the three forest products together in 2017 was USD 7.2 billion.

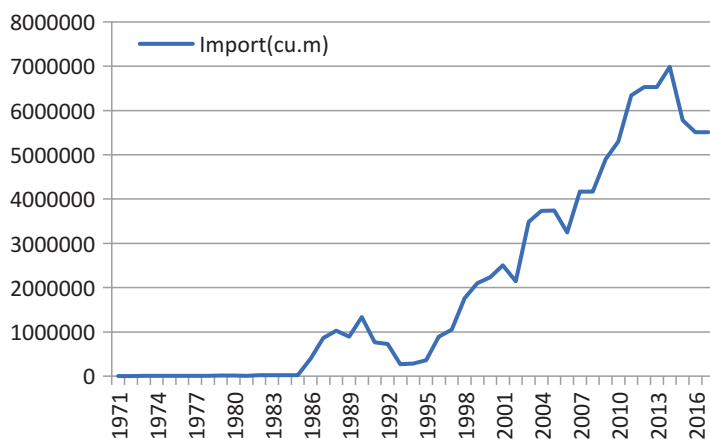


Fig. 4.1 India's import of industrial round wood (1971–2017) (cubic metre)

Table 4.2 India's trade in select forest products (in million USD)

Year	Wood (HS44)		Pulp (HS47)		Paper (HS48)		All 3 forest products		All commodities	
	Import	Export	Import	Export	Import	Export	Import	export	Import	Export
1988	247	13	178	0.03	208	8	633	21	19,351	13,872
1991	169	16	122	0.37	199	18	490	35	19,509	17,900
2001	554	30	276	1.87	468	183	1298	215	50,671	43,878
2011	2411	221	1305	1.01	2455	907	6170	1129	462,403	301,483
2012	2607	259	1285	2.83	2267	930	6159	1192	488,976	289,565
2013	2681	351	1370	0.16	2377	1141	6428	1493	466,046	336,611
2014	2704	354	1657	4.71	2610	1116	6970	1475	459,369	317,545
2015	2434	426	1609	10.93	2424	1128	6467	1564	390,745	264,381
2016	2146	401	1622	9.37	2663	1184	6431	1594	356,705	260,327
2017	2188	415	1950	1.76	3070	1284	7208	1700	444,052	294,364

Developed by author using information from COMTRADE, <https://comtrade.un.org/>

India prohibited exports of unprocessed logs to reduce pressure on Indian forests and also generating value addition and employment for local industry. Exports are allowed for value-added wood and wood products. In 2017, India’s exports of value-added wood and wooden products covered under HS(44) were USD 415 million, the pulp covered under HS(47) were USD 1.76 million and the paper covered under HS(48) were about USD 1284 million. In 2017, India’s exports of all these three forest products together were USD 1700 million. This does not include exports of wooden furniture (HS 940360).

Figure 4.2 shows the value of India’s import of select forest products during 1988–2015. India’s imports of all three categories identified (wood, pulp and paper) have shown significant growth during the period. The imports of wood have reduced marginally since 1994 primarily due to the Myanmar’s export ban of unprocessed wood in 1994. Myanmar is one of the key suppliers of timber to India. To address this deficit, the Indian importers are finding new destinations.

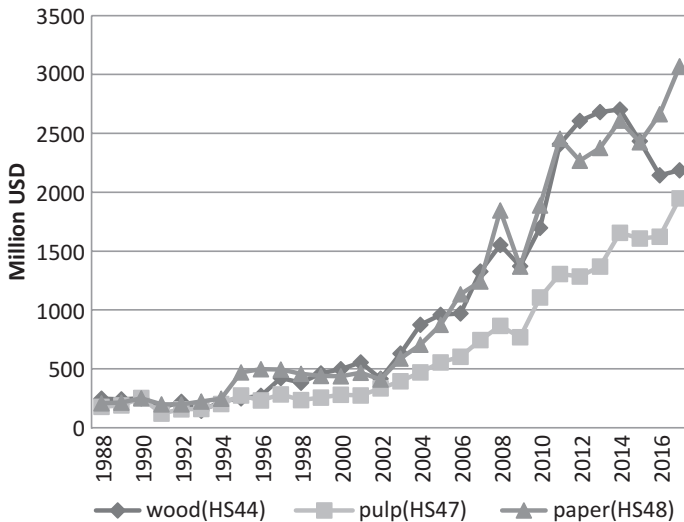


Fig. 4.2 India’s import of select forest products: 1988–2017 (in million USD)

India's leading export markets for timber products are North America, Europe, Japan and Australia, whereas India's imports of timber are mainly from tropical countries, in particular Malaysia, Myanmar, Papua New Guinea, Central and Eastern Africa, and Latin American countries. The import of wood pulp from Indonesia is also significant. Many of these countries deforestation and illegal logging are major challenges and faces issues of forest governance.

Several of these countries are in the process of voluntary partnership agreements (VPAs) with European Union as part of implementing forest law enforcement governance and trade (FLEGT) action plan.¹³ Indonesia is the first country that secured FLEGT licence in 2016.

Soybean Oil

India's import of soybean oil in 2017 was 3.3 million tonnes of worth USD 2.74 billion. In 1988, India's import of soybean oil was only 0.19 million tonnes (Table 4.3). Figure 4.3 shows that there is a high growth in imports of soybean oil since 1994. Soybean oil enjoyed the benefit of reduced tariff rate when compared to the palm oil. However, the tariff difference between soybean oil and palm oil reduced gradually. Soybean cultivation, particularly in Latin American countries, has resulted in large-scale forest conversion and associated environmental and social issues.

Table 4.3 India's import of soybean oil (quantity and value)

Year	Quantity (1000 tonnes)	Value (million USD)
1988	199.95	108.73
1991	21.73	20.43
1995	101.49	69.34
2001	1296.60	448.28
2005	1509.93	822.19
2011	939.38	1206.26
2015	3509.12	2698.31
2016	3892.74	3013.22
2017	3338.73	2748.77

Developed by author using information from COMTRADE, <https://comtrade.un.org/>

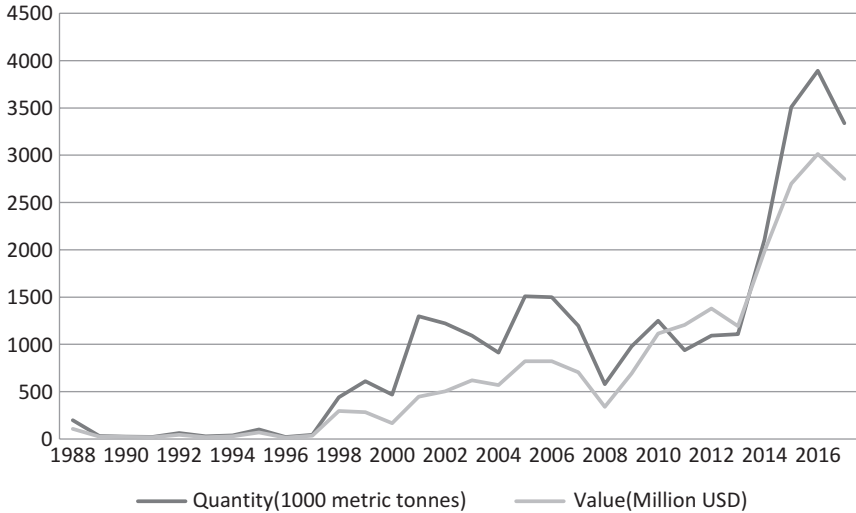


Fig. 4.3 India's import of soybean oil (1988–2017)

VSS in Forest Risk Commodities

Forest Certification

Forest certification is a market-based mechanism to promote responsible management of forests and improve forest governance (Cashore et al. 2004). Usually forest certification involves two processes: Forest Management (FM) certification and Chain of Custody (CoC) certification. FM unit certification is a process that leads to the issuing of a certificate by an independent party, which verifies that an area of forest/plantation is managed to a defined standard. CoC certificate is a process of tracking wood products from the certified forest to the point of sale to ensure that product originated from a certified forest (Fig. 4.4). The certification system involves development of standards based on credible principles, the development of traceability system and a labelling system through which the consumers can choose the certified product.

Michael Conroy, former Chair of FSC International Board of Directors, while addressing the challenges of consumer consciousness and direct consumer demand for certification noticed that one of the

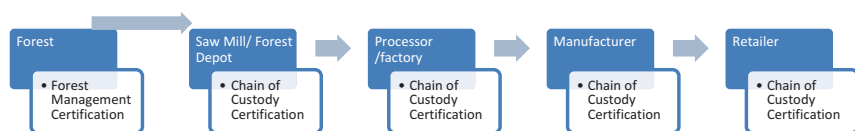


Fig. 4.4 From forest to consumer (author developed)

Table 4.4 FSC 10 principles

1. Compliance with Laws
2. Workers' rights and employment conditions
3. Indigenous peoples' rights
4. Community relations
5. Benefits from the forest
6. Environmental values and impacts
7. Management planning
8. Monitoring and assessment
9. High Conservation Values
10. Implementation of management activities

Source: FSC (2015a, b)

strongest and most interesting lessons learned in recent years is that certification systems have become most important in business-to-business (B2B) relationships, rather than in business-to-consumer (B2C) transactions (Conroy 2007).

Forest Certification has become a movement in the global market with the establishment of Forest Stewardship Council (FSC) in 1993.¹⁴ FSC is an independent, non-governmental, not-for-profit, membership-based global organisation dedicated to promoting responsible forest management. FSC's ten principles are the basis of the international standards for responsible management of natural and plantation forests (Table 4.4) (FSC 2015a). A CoC certificate is needed for the companies who process, manufacture or trade FSC material to make FSC claim. The area under FSC certification has increased from 16 million hectares to 198 million hectares during 2012 to 2017. The number of companies having FSC CoC certificates has increased from 24,414 to 33,626 during the period (FSC 2018).

Programme for Endorsement of Forest Certification (PEFC) is another international forest certification programme established in 1999. PEFC is a membership-based not-for-profit organisation, and its membership is

open to national forest certification systems and international stakeholder members (PEFC 2018a). As of November 2018, around 300 million hectare certified globally in accordance with PEFC standard and 20,000 companies have achieved PEFC CoC certificates (PEFC 2018b).

Several national forest certification schemes emerged which include Sustainable Forest Initiative in Canada, Malaysian Timber Certification Council (MTTC) in Malaysia and Lembaga Ekolabel Indonesia (LEI) in Indonesia.

The Food and Agriculture Organization of the United Nations (FAO) reported that in 2017, the annual volume of wood harvested globally in FSC-certified area was estimated at 427 million cubic metre. This is about 23 per cent of global industrial round wood production and 11 per cent of round wood production. In 2016, the annual volume of wood harvested in both FSC- and PEFC-certified areas was 689 million cubic metre of round wood (38 per cent of global industrial round wood production). Some areas are certified under both FSC and PEFC (FAO 2018). Despite several challenges, the growth of forest certification has been impressive.

Forest Certification in India

FSC Certification

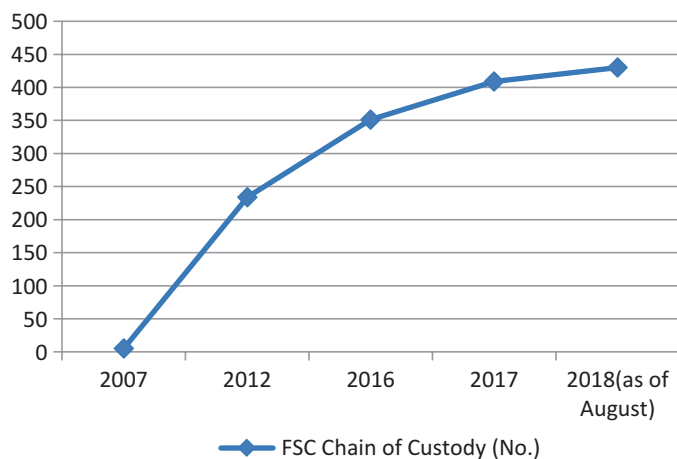
The uptake of FSC certification in India is a result of the nation's response to recognise, promote and make use of credible international standards. The total area under FSC Certification in India has increased from 644 hectare to 0.63 million hectare during 1997 to 2018 (as of August) (Table 4.5). The number of FSC CoC certificates in India has increased from 5 to 430 during 2007–2018 (Fig. 4.5). Most of these Indian companies are small and medium enterprises (SMEs).

The first FSC forest management certification in India was issued in 2001 to 432 acre plantations of *Ailanthus grandis* managed by Assam Bengal Veneer, a company based in Kolkata. The certificate was terminated the very next year due to non-compliance. In 2007, about 644 hectare of rubber (*Hevea brasiliensis*) plantation managed by the New

Table 4.5 FSC certification in India (2007–2018)

Year	Forest Management area (in Ha)	Chain of Custody (No.)
2007	644	5
2012	39,848	234
2016	508,216	351
2017	521,510	409
2018 (as of August)	631,499	430

Developed by author using FSC Facts & Figures. FSC International, <https://ic.fsc.org/en/facts-and-figures> and FSC public certificate search, <http://info.fsc.org>

**Fig. 4.5** FSC Chain of Custody certificates in India

Ambady Estate in Kanyakumari District, Tamil Nadu State, secured the forest management certificate. Later, the area under scope of certification extended to 688 hectare. The products covered in the certificate include latex and rubber wood. Since 2007, several Indian companies, both private and government, have decided to go for FSC certification.

In recognition to the relevance of FSC Certification, many Indian states including Andhra Pradesh, Telangana, Karnataka, Maharashtra, Madhya Pradesh, Odisha, Tripura, Tamil Nadu and Uttar Pradesh have shown interest in certifying forests and farm forestry/social forestry areas in accordance with FSC standards. In 2015, Uttar Pradesh Forest Corporation (UPFC) became the Certificate Holder of largest FSC-

certified area in South Asia and included 13 state forest divisions under the scope of FSC certification. Table 4.6 shows the list of FSC Forest Management areas in India.

FSC certification of 367,731 hectare of Bhamragarh Forest Division in Maharashtra State in 2012 was considered as a proactive step by the government.¹⁵ This was supported by the National Bamboo Mission, Government of India. FSC certification of 143 hectare of Kasu Brahmananda Reddy National Park in Hyderabad, Andhra Pradesh, in 2014 was another initiative by the government in certifying an urban forest area for ecosystem services. Though the certificate was terminated in 2017, the efforts taken by the government need to be appreciated. In 2013, Madhya Pradesh State Forest Department announced its programmes to promote FSC certification in the state and initiated plans to certify areas (MPFDC 2013).

Forest certification offers several benefits, including economic, social and environment. In the context of India's international timber trade, the certification helps the traders to establish due diligence system and

Table 4.6 FSC-certified areas in India (as of August 2018)

Sl No.	Certificate holder	Certified area (Ha)	State
1	New Ambadi Estate (P) Ltd	688	Tamil Nadu
2	ITC Limited—PSPD Unit Bhadrachalam	37,089	Telangana
3	Society for Afforestation, Research and Allied Works (SARA)	17,324	Karnataka
4	Tamil Nadu Newsprint and Papers Limited	3131	Tamil Nadu
5	International Paper APPM Ltd, Andhra Pradesh	33,635	Andhra Pradesh
6	JK Paper LTD, Unit: JK Paper Mills	10,817	Rayagada, Odisha
7	Uttar Pradesh Forest Corporation, Government of Uttar Pradesh (include 13 Forest Divisions in UP)	418,601	Uttar Pradesh
8	Tripura Forest Development Plantation Corporation Ltd; Government of Tripura	7087	Tripura
9	Madhya Pradesh Rajya Van Vikas Limited (MPRVVN)	103,127	Madhya Pradesh
	<i>Total</i>	631,499	

Developed by author using details from FSC, <http://info.fsc.org>

thereby securing market access besides generating social and environmental benefits.

The challenges of forest certification in India include the cost of certification, lack of awareness on the benefits of certification, capacity of small holders and micro, small and medium enterprises to meet the requirements of certification, engaging with multiple government institutions, procedural delays and lack of appropriate technology.

World Wildlife Fund (WWF)-India in coordination with other key stakeholders initiated a leading role to promote forest certification in India in accordance with the WWF position on forest certification globally¹⁶ (WWF 2010a). The FSC initiatives in India started in 2011 with the presence of a FSC National Representative based in New Delhi (FSC 2017). Presently, FSC in India is operating from two cities: New Delhi and Bengaluru. The FSC International membership from India has increased from 5 to 24 during 2011–2018.

The stakeholder initiatives to develop FSC National Forest Stewardship Standards of India (NFSS) began in 2009 during a workshop organised by WWF-India in Kozhikode, Kerala (WWF 2010b).¹⁷ On the basis of stakeholder consultation held in 2011 in New Delhi, a standard development group was constituted in 2012 and held some meetings in New Delhi and contributed to the development of FSC international generic indicators (FSC 2015b). Thereafter, the standard development group in India was reconstituted in 2016 with balanced representation of stakeholders from economic, social and environment chambers. The group has produced a draft standard for public consultation, forest testing and stakeholder reviews and plans to complete in early 2019.

PEFC Certification

Network for Certification and Conservation of Forests (NCCF) was formulated in 2014 by the stakeholders in India and became a member of PEFC International in March 2015 (PEFC 2015). NCCF co-developed India's internationally benchmarked national forest certification standard in January 2018 (PTI 2018).

VRIKSH Certification

VRIKSH Certification was initiated in 2013 by the Export Promotion Council for Handicrafts (EPCH) in response to address the legality requirements faced by the Indian exporters in the leading export markets. EPCH was established by the Ministry of Textiles, Government of India. According to EPCH, VRIKSH is an Indian timber legality assessment and verification standard. This is in line with the notification of the Ministry of Commerce and Industry, Government of India, in 2013 authorising EPCH as nodal agency for issuing certificate on due diligence adopted by the exporters in procuring wood from legal sources for manufacture of handicraft articles (Government of India 2013). The purpose is to meet the requirements of Indian exporters to respond and fulfil any request for due diligence from the buyer in the overseas market. The legality requirements in the overseas market including the US Lacey Act and the EU Timber Regulation became an issue of concern for Indian exporters.

Inclusion of *Dalbergia* species in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) list in 2017 affected Indian exporters since the industry which employs millions of artisans was not prepared enough to cope up with the compliance requirements of CITES. Considering the grievances of Indian exporters, VRIKSH certificate is recognised as a CITES comparable document to export specimens made of Sheesham (*Dalbergia sissoo*) and Indian Rosewood (*Dalbergia latifolia*) (Government of India 2017). As of 2017, around 300 VRIKSH certificates have been issued. The VRIKSH certification is an example of VSS developed and managed by the government.

VRIKSH is not a forest certification scheme. The standard is developed to support the wooden handicraft manufacturers who need a certificate to share with their buyers in the export market that the wood they sourced is legal. Wooden handicraft manufacturers are sourcing wood from both forests and non-forest areas including farm lands and agroforestry systems.

National Forest Certification Committee

Ministry of Environment, Forests and Climate Change, Government of India, had constituted a National Working Group on Forest Certification in 2005 with three sub committees on (i) Certification Criteria, (ii) Certification Processes and (iii) Accreditation Criteria & Processes. The first meeting of three committees was held in 2007. The Ministry constituted a National Forest Certification Committee (NFCC) by merging these three committees in 2008. NFCC submitted its final report in September 2010 with recommendation to establish Indian Forest Certification Council with a financial support from the Ministry. In 2011, a series of stakeholder consultations conducted by the Ministry prepared a framework to establish Indian Forest Certification Council (IFCC) (Government of India 2012). However, IFCC was not yet established. Several State Forest Development Corporations have decided to opt for international forest certification schemes in response to the emerging demand for certified timber in India's export markets.¹⁸ Accordingly, they have opted for FSC Certification.

Forest Certification Society Set Up by the State Government of Chhattisgarh

The Chhattisgarh Certification Society, INDIA (for Forestry and Agriculture), was established as an autonomous society by the State Government of Chhattisgarh in 2003¹⁹ to promote organic certification, forest certification and other certification (CGCERT 2018).

Palm Oil: RSPO Certification

Palm oil is one of the forest risk commodities, and India is the world's highest importer of palm oil. Oil palm cultivation results in conversion of natural forests, and this is a serious challenge in South East Asia, in particular Indonesia and Malaysia, the world's largest palm oil-producing countries. Indian imports of palm oil have increased from 0.6 million tonnes in 1988 to 9.18 million tonnes in 2017.

Roundtable on Sustainable Palm Oil (RSPO) was established in 2004 as a not-for-profit organisation to promote the growth and use of certified sustainable palm oil (CSPO). Members of the RSPO include companies in all stages in the palm oil supply chain globally. RSPO has 3920 members globally (as of 31 May 2018) of which 44 members are from India. Godrej industries limited joined as first RSPO member from India in 2006. A voluntary standard for sustainable palm oil was developed by RSPO in 2008 comprising a set of environmental and social criteria for companies to produce certified sustainable palm oil (CSPO). RSPO standards do not allow clearance of primary forests or areas containing high conservation values.

In 2008, the availability of CSPO has increased from 619,012 metric tonnes in 2008 to 11.6 million metric tonnes in 2017. As of 31 May 2018, the volume of CSPO reached 12.20 million tonnes of palm oil which is 19 per cent of the palm oil produced globally. The certified palm production area has increased from 106,384 hectare to 2.51 million hectare during 2008–2017. As of 31 May 2018, around 3.57 million hectare of oil palm production areas has been certified.

Indian imports of palm oil are mainly from Indonesia and Malaysia. About 95 per cent of imported palm oil in India is used as edible oil, and the rest is mainly for personal care and cosmetics. Despite world's largest importer of palm oil, the demand of certified palm oil in India is still negligible (WWF 2017; Hucal 2015a, b). The lack of awareness on sustainable palm oil, the cost of sourcing CSPO and lack of market incentives are some of the key barriers for CSPO in India. Though India liberalised imports of edible oils and provided incentives to the Indian industry to sourcing palm oil, the incentive for sourcing certified palm oil from the government is lacking.

A study on RSPO and its efforts to promote sustainable palm oil in China and India shows that India and China remain very difficult territory for private governance initiatives (Schleifer and Sun 2018). Centre for Responsible Business (CRB) in its report noticed that palm oil in India termed as “poor man’s oil” is highly price sensitive and therefore pricing takes precedence over sustainability (CRB 2014).

Soybean Oil: RTRS Certification

Roundtable on Responsible Soy (RTRS) was established in 2006 in Switzerland as global organisation to promote responsible production, processing and trading of soy. It is a membership-based multi-stakeholder platform. RTRS has 200 members globally of which 15 members are from India.

RTRS developed its standard for responsible soy in 2011, and soy producers from Argentina, Brazil and Paraguay got the certificate the same year. Globally, the production of RTRS-certified soybean oil has increased from 420,706 metric tonnes in 2011 to 4.08 million metric tonnes in 2017. The soybean area under RTRS certification has increased from 143,799 hectare to 1.24 million hectare during the period. RTRS members from India have committed to the use of certified soybean oil. However, there are concerns regarding the cost of certification. Besides, the awareness among the consumers in India about RTRS certification is very low.

Conclusion

With adequate policy support and institutional arrangements at national level, the VSS can be effectively utilised to minimise the global forest footprint and address the risks associated with India's international trade in forest risk commodities, timber, paper and pulp, palm oil and soya bean oil.

Contrary to the general perception, the government support to VSS in India in forest sector is increasing. This support is not only to the private sector for export promotion but also to the government enterprises as part of promoting sustainable procurement practices, encouraging increased domestic sourcing of raw materials, creating value addition and employment, and strengthening public-private partnerships and good governance. The government support for VSS includes financial support, in particular SMEs, and technical support in terms of capacity building. These supports

and partnerships with private sector to promote VSS need to be adequately reflected in international forums. Implementation of VSS would be crucial in achieving Sustainable Development Goals in particular SDG 15 (life on land), SDG 12 (sustainable consumption and production) and SDG 13 (climate action). It is observed that the international VSS and national VSS compliment due to the diversity in the market.

The cost of introducing VSS becomes a key concern and a limiting factor for small and medium enterprises and small holders. The incentive from the government to meet the cost of certification is a desirable solution; however, it should be for a longer timeframe.

Key Takeaways

- VSS emerge as a solution to address some of the key sustainability challenges in the forestry sector, in particular addressing the risks associated with imports of timber, paper and pulp, palm oil and soybean oil. However, the awareness on the benefits of VSS is low.
- Government incentives can minimise the cost of compliance to secure and retain VSS and thereby increase competitiveness and market access. SMEs and small holders need special assistance.
- It is found that with adequate policy support and fiscal incentives at national level, the VSS can scale up faster, contribute to the market access and minimise the forest footprint besides contributing to the 2030 agenda for sustainable development.

Notes

1. According to the United Nations Forum on Sustainable Standards (UNFSS), Voluntary Sustainability Standards (VSS) are rules that producers, traders, manufacturers, retailers or service providers may be asked to follow so that the things they make, grow or do don't hurt people and the environment.
2. The Consumer Goods Forum comprises of more than 400 companies which made a public commitment in 2010 on achieving zero-net deforestation by 2020 through the sustainable sourcing of commodities like soy, palm oil, cattle and paper and pulp.

3. The concept of “Forest risk commodities” was introduced in 2013 in a Global Canopy Project implemented by the Global Canopy, an environmental organisation.
4. These WTO provisions include Technical Barriers to Trade (TBT) and Sanitary and Phyto-sanitary (SPS) Agreements.
5. The three key elements included in Trade and Environment negotiations under WTO Doha Declaration 2011 are (i) Relationship between WTO rules and Multilateral Environmental Agreements; (ii) the collaboration between WTO and MEA secretariats and (iii) elimination of tariffs and non-tariff barriers on environmental goods and services.
6. UNFSS is coordinated by steering committee of five UN agencies, namely, FAO, The International Trade Centre, UNCTAD, UNEP and UNIDO.
7. India is one of the ten most forested nations in the world.
8. Forest footprint disclosure project identifies timber, soy, beef and leather, palm oil and biofuels as key forest risk commodities by the Global Canopy.
9. Examples given in the report include Malaysia (in particular Sarawak) (logs), Indonesia (pulp), China (furniture and paper), Myanmar (logs), Tanzania (logs), Russia (paper) and PNG (logs).
10. Both central and state governments can legislate on the items in the concurrent list. However, in case of any conflict between the central and state laws, the laws enacted by the central government override the laws enacted by the state government.
11. The focus of National Forest Policy 1952, the first forest policy of independent India, was on the management of forests for sustained production of timber. In 1976, the National Commission on Agriculture recommended a dynamic programme of production forestry.
12. All Indian states have passed land ceiling acts imposing the maximum size of land holding an individual or family can own.
13. EU-FLEGT Action Plan was launched in 2003. Voluntary partnership agreements (VPAs) are part of the action plan. EU Timber Regulation (EUTR) came into effect on 3 March 2013.
14. FSC was founded in 1993 in first FSC general assembly in Toronto, Canada, and registered as not-for-profit international organisation (Forest Stewardship Council Association Civil) in Oaxaca, Mexico, in 1994. FSC International’s headquarter moved from Mexico to Bonn, Germany, in 2003.
15. The certificate was terminated in 2016.

16. Position Paper on Forest Certification, WWF International.
17. A meeting to formulate the FSC National Working Group in India was held in the conference in 2009.
18. These include Madhya Pradesh Forest Corporation, Uttar Pradesh Forest Corporation, Tripura Forest Development Corporation and Maharashtra Forest Department.
19. The Chhattisgarh Certification Society, INDIA (for Forestry and Agriculture), for certification was registered on 18 September 2003 as an autonomous and independent society under the Chhattisgarh Society Registration Act, 1973.

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5

Charting a Path Towards Sustainable Seafood Resources in India: The Role of Voluntary Sustainable Standards

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Introduction

The rapid development and growth of the fisheries sector in India over the last couple of years has led to the sector playing an increasingly important role in the country's economy. Fisheries contribute to India's economy through increased employment, gross domestic product (GDP) and improved food security. The sector is, however, now faced with challenges to continued sustainability amidst concerns about overfishing, depleted stocks and illegal unreported unregulated fishing in the wild catch sector. In the aquaculture sector, concerns abound about landscape destruction,

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soil and water pollution, biodiversity loss, mangrove destruction, disease and chemical use (Mynar et al. 2013; Mishra et al. 2017).

Voluntary Sustainability Standards (VSS) are becoming important tools in efforts to ensure sustainability of seafood resources and ensure competitiveness of the sector in the global seafood market. Some of the more commonly known standards in the sector include the Marine Stewardship Council (MSC), the Aquaculture Stewardship Council (ASC) and the Global Aquaculture Alliance (GAA).

This chapter provides an overview of the emergence and use of VSS in the fisheries sector in India. It describes the contribution of India's fisheries sector to global fish production and trade, the sustainability issues associated with the sector, approaches to governance and management of fisheries resources, and the opportunities to scale up the impact of VSS as an increasingly important tool to support government, non-governmental organisations (NGOs) and industry efforts to promote a more sustainable approach to fisheries production in the country.

Capture and Aquaculture Production

India is one of the major fish producing countries in the world. It ranks second in global fish production and contributes over 3% of global marine and freshwater capture fisheries and about 6.3% of the world's total fish production (FAO 2016; National Fisheries Development Board 2016). Both wild capture and aquaculture (fish farming) are important to the fisheries sector in India and both sectors have seen significant development in the last few decades.

Wild Capture

India's Exclusive Economic Zone (EEZ) covers a total area of 2.02 million square Kilometre (sq. km). This is inclusive of 0.86 million sq. km on the west coast including the Lakshadweep Islands and 1.16 million sq. km on the east coast, including the Andaman and Nicobar Islands and a continental shelf of half a million sq. km (Sugunan 1997). This extensive coastline and the expansive continental shelf that can be found in some

parts of the country helps ensure India's role as a key seafood producing country. The annual marine capture is 3.59 million tonnes, making India the sixth most important country globally with respect to marine capture production (FAO 2018).

India's waters support a high diversity of marine species, of which several are of high commercial importance. Some of the more important species that dominate production in the marine capture sector include oil sardine, which makes up about 12.9% of total marine fish landings. Others are Indian mackerel, Bombay duck, penaeid prawn, ribbonfishes, threadfin breams and cephalopods. Some of the states with the highest seafood production in India include Gujarat, Karnataka, Kerala, Maharashtra and West Bengal (FRAD, CMFRI 2017).

In addition to its marine capture fisheries, the country also has important inland fisheries resources, comprising a network of rivers, reservoirs, flood plains, ponds, lakes and estuaries. Landings from inland waters amount to 1.46 million tonnes (ICAR-CIFRI 2017) with some of the most important inland capture species, including carps, catfish, trout and Indian shad.

Aquaculture

India's natural aquatic resources also provide the basis for the significant growth that India has seen in the aquaculture sector in the last couple of years. According to the Food and Agriculture Organization (FAO) (2018), total production from the aquaculture sector came to 5.7 million tonnes in 2016, making India the second most important country for farmed seafood products.

There is relatively little fish farming in the sea in India, and most aquaculture production comes from freshwater and coastal areas. The most important farmed species in India include carp, catfish, pangasius and prawns. Production systems range from extensive systems with little input beyond stocking with fish seed, to much more intensive forms involving feeding and fertilisation. Some of the most important states for aquaculture production include Andhra Pradesh and West Bengal. A more recent development in India is aquaculture of marine species of bivalves (mussels and oysters) and high value finfish such as Cobia and Pompano.

Growth and Development of the Sector

Fish production in India grew 11-fold in the last 60 years, growing from 0.75 million in the early 1950s to a production level of 9.6 million tonnes in 2012–2013 (FAO 2017). Its contribution to GDP amounts to 1.21%, and to 5.3% of agricultural GDP (Infantina et al. 2016).

The growth of the sector follows decades of technological innovation, year on year increases in fleet capacity, and increased private and public investment in the sector which has contributed to transforming the sector from the low input, highly traditional, subsistence production systems to the highly commercial and much more industrial approaches that typify a significant proportion of both the capture and culture sectors today.

In addition to its economic value, and its importance as a source of protein, the seafood sector is an important source of livelihoods in India. The population of marine fishermen in the country is estimated at 4.0 million, of which 0.99 million are active fishermen (CMFRI 2010). The sector also provides millions of related work opportunities in the post-harvest, aquaculture and trade, bringing the number of people directly and indirectly employed in the sector to an estimated 14 million people (National Fisheries Development Board 2016).

National policy on fisheries in the country has in the past largely focussed on growth and economic development. This meant a focus on increasing production and investment in capacity and infrastructure with clear dividends in terms of economic returns and global positioning as a major player in the seafood sector. The new national policy on marine fisheries places emphasis on sustainability, ecology and equity.

The rapid growth in the sector has led to increased employment, significant economic benefits and improved food security. However, the sector is now faced with challenges to the continued sustainability of this growth and threats to livelihoods due to growing concerns about over-fishing, depleted stocks, decreasing catch rates for some species, degradation of habitats and resources, illegal, unreported, unregulated fishing and stock depletion in the wild catch sector and in the aquaculture sector, concerns about landscape destruction, soil and water pollution,

biodiversity loss, mangrove destruction, and effect of chemical use (Bhavsar et al. 2016; Jayanthi et al. 2018).

The Seafood Industry and Trade

India plays a significant role in the global trade in seafood. It is the sixth largest seafood exporting country in the world, exporting seafood valued at 5.54 billion USD to over 70 countries, with key importing countries, including Japan, the USA, the European Union, China, Hong Kong, the UAE, Canada, Singapore and Thailand (Sam et al. 2015; FAO 2018). In addition to its contribution to the export sector, the industry also supports a vibrant domestic market.

The Domestic Sector

The bulk of fish produced in India is consumed domestically, of which the bulk is marketed fresh, while the remaining is sold as smoked, dried or is processed into fishmeal. The domestic industry is unorganised and considered to be inefficient with the presence of many intermediaries between the consumer and producer. Intermediaries in the chain provide a range of services, which include processing, preservation, packing and transportation. Key intermediaries include auctioneers who provide first contact for the producer, wholesalers, retailers and vendors, who then sell on directly to consumers.

Domestic seafood trade in India faces many challenges, including high perishability of seafood, but also the high cost of storage and transportation relative to domestic prices. These in turn lead to problems with quality, safety and guaranteed supply of seafood.

The Export Sector

India plays a key role in the global trade in seafood. Key export products include shrimp, squid and a diverse range of finfish. Frozen shrimp makes

up a significant contribution to the value of exports, contributing 19.24% by volume and 41.62% by value (Salim 2012).

The export sector is much better organised, compared to the domestic sector. Investment has been used to great effect to develop the infrastructure required to meet international food safety and quality requirements, and many coastal states are well served with Individually Quick Frozen (IQF) facilities, ice plants, cold storage facilities and processing factories to enable exporters to meet requirements of importing countries.

The key intermediaries in the export sector are factory or commission agents, who transport fish from fishers directly to the processor or exporter, who then exports directly to importing companies.

The seafood export sector in India is supported by an agency set up by the government—the Marine Products Export Development Authority (MPEDA). MPEDA was set up with a mandate to promote seafood trade, with a specific emphasis on exports. MPEDA supports the sector to ensure quality assurance, diversification and promotion through specification of standards, provision of training, inspections and marketing and promotion in international markets.

The export sector also has challenges of its own. These include irregularity in supply of raw material, competition for supply, high cost of production, low profit margins, low value addition and strict quality control requirements in key importing markets. A key challenge is the growing concern about the impact of fish production activity on fisheries resources and associated ecosystem and the implication this has for future seafood supply, food security and livelihoods.

The increasing interest in sustainability in top destination markets for seafood from India represents both a challenge and opportunity for the sector. A growing number of importers in the USA and the European Union request certification to sustainability standards to provide assurance about the environmental credentials of their products. While this development may be considered a constraint to trade, it also presents an opportunity through the possibility of certification leading to increased access to markets where there is interest in sustainability, and the consequent protection and improvement of the state of fish stocks in the country's waters.

Sustainability Issues

Globally, there continues to be concern about the status of the world's fish stocks. According to FAO, the proportion of stocks worldwide that are within biologically sustainable levels has been showing a downward trend in the last couple of decades. FAO estimates that 33.1% of fish stocks are fished at levels that are biologically unsustainable and that 59.9% of stocks are maximally sustainably fished with no room for further expansion (FAO 2018).

India is not exempt from the downward trend that has plagued global fisheries over the last few years. An emphasis across central and state governments on increased production through investments in improved technology and infrastructure has helped India increase its contribution to global seafood supply. However, in many instances, it has resulted in serious impacts on the state of fisheries resources. The fisheries sector in India faces many issues which have implications for sustainability of the resource. These include open access, overcapacity, which is estimated at 56% across different gear types and states (Mohamed et al. 2017), weakness of state and national level legal and policy frameworks, low capacity for monitoring control and surveillance and data gaps on sustainability of key stocks. While many tropical, short-lived species can withstand high fishing pressure to some degree, studies suggest that many important commercial stocks including perches, croakers, threadfin breams, seer, ribbonfish, skates and sharks may already be overfished, and some stocks are already in a severely depleted state and unable to withstand further fishing pressure (Korokandy 2008; Karnad and Karanth 2013; CMFRI 2017). In addition to the impact on commercial species, there is the effect of fishing activity on other species of importance in the ecosystem and habitat degradation consequences. Other issues include conflicts due to competition for dwindling resources and consequent disruptions to livelihoods and food security of those dependent on the resource.

The significant investment in aquaculture in India starting in the 1980s led to a major transformation of the aquaculture sector, which was previously traditional and low intensity. This growth, while contributing to economic growth, has led to significant environmental and social

impacts. Key issues faced in the sector over time included salt-water intrusion into freshwater bodies, release of contaminants into water sources, social imbalances and mangrove loss (Puthucherril 2016). Other issues that challenge the long-term sustainability of the aquaculture sector include disease outbreaks and collection of fry from the wild with the implications this has for wild capture stocks.

There are a range of efforts to mitigate the impact of seafood production on the environment. These include efforts by governments to improve the institutional framework for the sustainable management of resources. Non-governmental organisations also play a role in encouraging a shift towards a more socially and ecologically sustainable approach to sustainability through campaigns, awareness, capacity building and technical support. The scale of the threat and the immediacy and significance of the potential consequences calls for a range of tools and solutions to mitigate potential impact.

Resource Management

India's legislation and policy on sustainable management of seafood resources is framed within the context of a range of binding and non-binding international and regional instruments to which the country is a signatory. One of the most important instruments is the United Nations' FAO Code of Conduct on Responsible Fishing, which provides principles for conservation and management of fisheries and aquaculture resources. Other key instruments to which the country is subscribed include United Nations Fish Stock Agreement, United Nations Convention on the Law of the Sea and FAO's Voluntary Guidelines on Sustainable Small-Scale Fisheries.

Wild Capture Fisheries

Marine fisheries in India are regulated by both central and state governments. The state has jurisdiction over its territorial waters and the central government has authority up to the Exclusive Economic Zone, with

administration of fisheries in this zone lying with the Ministry of Agriculture of the Government of India.

The regulatory framework for marine fisheries management for states is provided by the Marine Fisheries Regulation Act (MFRA) (Infantina et al. 2016). The act provides guidelines to maritime states to enact laws for protection of marine fisheries by regulating fishing in territorial waters. The most important instrument under MFRA is the seasonal ban of mechanised fishing for 47 days. In 2010, a uniform fishing ban period was implemented along the west coast from 15 June to 31 July and from 15 April to 31 May along the east coast. In 2015, the government extended the fishing ban beyond 12 nautical miles to 61 days from 1 June to 31 July in the west coast and from 15 April to 14 June in the east coast (The Hindu 2015).

In 2017, the government adopted a revision of the 2004 Marine Fisheries Policy following an extended period of consultation. The overarching goal of the policy is to ensure the health and ecological integrity of the marine living resources of India's EEZ through sustainable harvests for the benefit of present and future generations (Government of India 2017). The policy is based on seven pillars, namely, sustainable development, socio-economic upliftment, subsidiarity, partnership, intergenerational equity, gender justice and the precautionary approach. Key provisions of the policy include management of fishing effort, species and area-specific management plans, conservation of ecologically and biologically significant areas and vulnerable marine ecosystems and the protection of iconic, endangered and threatened species. It also includes provisions for legislative support that will ensure that tenure rights of traditional fishermen are protected. Significantly, the revised policy acknowledges the growing importance of market-based eco-labelling programmes as a tool to ensure sustainability of fisheries and includes a commitment to create an enabling environment for environmental labelling of key fisheries that ensure benefits to stocks, the industry and fish workers.

Aquaculture

With respect to aquaculture, the regulation of brackish and coastal aquaculture falls under the central government, while freshwater and inland aquaculture is regulated by the states. Regulations are provided within the Coastal Aquaculture Authority Act of 2005, under which the Coastal Aquaculture Authority (CAA) is established. The CAA has the responsibility of regulating all activities related to coastal aquaculture and protecting the coastal environment from the impact of aquaculture. The CAA regulates the construction and operation of aquaculture facilities, develops standards for inputs and effluents and oversees the registration of aquaculture facilities (Coastal Aquaculture Authority 2006).

Non-Governmental Initiatives

NGOs in India play an important role in ensuring sustainable fisheries and aquaculture production. Several NGOs are working in India to tackle the emerging environmental issues that have accompanied India's rapid development over the last few decades. Many of these organisations have a focus on marine and other aquatic related issues. The role of these NGOs includes undertaking research to support policy development, building awareness of sustainability issues amongst the public and capacity building.

Key organisations include World Wildlife Fund India (WWF-India), which, amongst other things, works to encourage public participation in environmental protection through environmental education, awareness and capacity-building and to promote improved environmental governance through legislation, policy and advocacy (WWF 2017). WWF-India also works to spread the awareness of sustainable standards for fisheries and aquaculture and have been instrumental to the certification of the first fishery and farms to be evaluated against VSS in the country. Other organisations include Greenpeace India, which works to promote sustainability through advocacy and campaigns for co-management with fishing communities and strengthening of regulations and enforcement. The International Collective in Support of Fishworkers (ICSF) is another

important NGO with a specific programme for fisheries. ICSF focuses on social issues for fisheries and fair and sustainable management of resources for small-scale fisheries.

Voluntary Sustainability Standards for the Seafood Sector

VSS have emerged as an important tool to promote sustainable seafood production. Its growth and uptake in the sector has followed increasing public concern and awareness of the poor state of many fish stocks, depletion of iconic marine species, damage to important habitats, impact of fish farm wastes and escapes on the environment, use of pesticides and the effect of fishing activity on overall aquatic ecosystem health.

The use of VSS in the seafood sector is a more recent development compared to its use in other commodity sectors. The first seafood eco-labelling initiatives to come into existence focused on single issues and did not have a wider ecosystem approach. This included the dolphin safe label set up by the Earth Island Institute in 1990, which is centred on the use of a global standard on dolphin safe fishing practices.

Since then, other VSS with a more ecosystem-based approach have emerged. Growth has been dynamic with total seafood certified to VSS across wild and aquaculture growing from 500,000 tonnes in 2003 to 23 million tonnes in 2015 (Potts et al. 2016).

FAO's decision to adopt a set of guidelines for the eco-labelling of fish and fishery products from marine capture fisheries in 2005 signalled the growing importance of eco-labelling in the fisheries sector. A revised version of the guidelines was released in 2009. This was followed with the adoption of a set of guidelines for eco-labelling of fishery products from inland capture fisheries and Technical Guidelines on Aquaculture Certification in 2011.

The FAO guidelines provide a baseline reference for how eco-labelling programmes should be implemented, but crucially, they also provide guidelines on the minimum criteria for standards for fisheries and aquaculture. The minimum substantive guidelines for marine and inland

capture fisheries cover several key features, which include management systems, stock health and ecosystem considerations. The guidelines also specify requirements for standard setting, certification and accreditation (FAO 2009, 2011). The FAO aquaculture certification guidelines specify minimum substantive criteria for animal health and welfare, food safety, environmental integrity and socio-economic aspects. In all cases the guidelines are aimed at ensuring that the set-up and use of VSS for certification and eco-labelling in the seafood sector are based on the principles of transparency, accountability, best scientific evidence, clarity, non-discrimination and accessibility.

In 2015, the Global Sustainable Seafood Initiative (GSSI), a tool to benchmark standards against the FAO wild capture and aquaculture guidelines, was launched. Five standards, the Alaska Responsible Fisheries Management Certification programme, the Iceland Responsible Fisheries Management Certification programme, the Marine Stewardship Council, Best Aquaculture Practices Certification and GLOBALG.A.P. Aquaculture Certification system have been recognised by the GSSI as conforming to FAO guidelines.

VSS for seafood have been developed by national and regional government initiatives and international non-governmental initiatives. However, while a few governments have initiated the development of national standards for seafood eco-labels, to date, there has tended to be a much higher uptake of independent, international, non-governmental standards compared to VSS set by national governments.

Some of the key VSS initiatives include the following:

Marine Stewardship Council

The MSC is the most well-known seafood eco-labelling programme. Since it was launched as an initiative in 1997, the MSC has seen 12% of the world's wild caught marine catch engage in its programme. This represents some 300 fisheries from over 34 countries including India (MSC 2017a).

At the heart of the MSC is an international fisheries standard which has three principles. The principles look at (1) the state of the stock, (2)

the impact of the fishery on the ecosystem and (3) the management system in place to ensure delivery of the first two principles. The three principles are further elaborated by 28 performance indicators.

If a fishery is successfully assessed against the MSC Standard, products from the fishery become eligible to use the MSC's eco-label.

In addition to the fisheries standard, the MSC also has a Chain of Custody standard. The Chain of Custody standard provides assurance that the product with the label came from a certified fishery.

The MSC has a range of initiatives and policies designed to increase access of small-scale fisheries and fisheries in the global south to the MSC standard and programme. Some of the initiatives include development of a risk-based framework, which is a tool utilised by certifiers where data to demonstrate sustainability is limited. There are other initiatives and tools to support fisheries that are working towards becoming sustainable and achieving certification.

In 2014, stakeholders celebrated the certification of the first fishery in India, the Ashtamudi Clam Fishery, to the MSC standard. Prior to its certification in November 2014, the fishery undertook a period of improvement, which involved the Central Marine Fisheries Research Institute, the Kerala State Fisheries Department and WWF-India. In addition, the Ashtamudi Clam Fishers formed Ashtamudi Clam Fisheries Governance Council to develop management measures and represent the fishery at regional and state levels (Mohamed and Malayilethu 2015). These measures enabled the fishery to meet the MSC's sustainable fisheries standard and demonstrate the role of VSS as a mechanism to contribute to sustainability.

The MSC identified India as a target country for increased focus in its 2017–2020 Integrated Strategic Plan. The strategic plan outlines the intent to establish partnerships with the government, NGOs and the industry to develop projects and work with partners to encourage fisheries to put in place improvements that are needed for them to achieve MSC certification (MSC 2017b).

There are several other fisheries in India going through a transition phase and working on improvements with a view to eventually qualifying for certification to the MSC standard. These fisheries started out with pre-assessments to understand their performance gaps in relation to the

standard, followed by the development and implementation of action plans in collaboration with partners including government, business and NGOs. Some of the fisheries in the improvement phase and working towards certification to MSC include the Lakshadweep tuna fishery and the Indian oil sardine fishery (Gopal and Boopendranath 2013). Areas of improvement that these fisheries are working on include improving bait management for the Lakshadweep tuna fishery and developing harvest control rules for the oil sardine fishery.

MSC's third-party certification programme involves the use of third-party certification or conformity assessment bodies, accredited by Accreditation Services International (ASI). ASI has accredited 27 bodies globally to undertake MSC assessments (ASI 2017). Several of these accredited bodies, including Bureau Veritas, DNV GL, SCS Global Services and SGS Nederland BV, have local offices and auditors in India that provide capacity for local services in India. These auditors provide expertise for the audits for the over 20 MSC Chain of Custody certificates that have been issued in India.

The market in India for products certified to the MSC standard is less well developed, although a handful of eco-labelled products are available in some very niche outlets in the country. Currently, the greatest driver for MSC certification is from markets outside of India. However, a growing middle class in India with increased awareness of sustainability issues and the presence of transnational corporations with global commitments to sustainability points to the likelihood for an increased demand for sustainable seafood in India in the near future.

Friend of the Sea

Friend of the Sea is a non-profit, non-governmental organisation founded by the Earth Islands Dolphin safe project. The scope of the Friend of the Sea includes both fisheries and aquaculture. Two certification bodies, DNV GL and Rina Services S.p.A., have been accredited to carry out audits for Friend of the Sea.

The fisheries standard considers fish stocks, bycatch, seabed impact, compliance with regulation, carbon footprint reduction and social

accountability. The aquaculture standard covers critical habitat impact, escapes, water quality, Genetically Modified Organisms, social accountability and carbon footprint reduction.

Globally, about 100 aquaculture producers, based mainly in Europe, have been certified to the Friends of the Sea aquaculture standard. Globally 88 fisheries have been certified to the Friend of the Sea capture standard to date. This number includes two fisheries in India—the India oil sardine and yellowfin tuna. In addition to the wild capture sector, 517 metric tonnes of farm-produced fish in India are certified to the Friend of the Sea standard (Potts et al. 2016).

Naturland

Naturland is a non-governmental organisation which functions as a private certification body and an organic farmers association and has been operational since 1982. In 2006, Naturland started to operate a seafood standard called the Naturland wild fish standards for marine and inland capture fisheries. The standard outlines requirements for working conditions, protection of target stocks, protection of the ecosystem and stable business relationships along the seafood value chain (Naturland 2017). It also considers the methods by which products are processed and requires that these meet criteria for organic products. Globally, there are at least two fisheries certified to the Naturland standard. This includes the Lake Victoria Nile perch fishery and a herring fishery in the Bay of Greifswald on Rugen and Usedom. There are currently no wild caught Naturland certified fisheries in India.

Aquaculture Stewardship Council

The Aquaculture Stewardship Council (ASC) is an independent, international non-profit organisation that manages a certification and labelling programme for responsible aquaculture.

ASC has eight standards which cover 12 species including abalone, clams, mussels, oyster, scallop, freshwater trout, pangasius, salmon,

shrimp, tilapia, seriola and cobia. The standard covers environmental issues, which are inclusive of controls for the use of antibiotics and pesticides, use of sustainable feed, water quality and ecosystem impact. The scope of the standard extends to social issues and requires fair working conditions and contracts for farm workers. It also includes indicators that measure the impact of farms on the community.

Globally, there are 27 Conformity Assessment Bodies that are accredited to undertake assessments against ASC's standards. Some of them, including DNV GL and Bureau Veritas, have local branches in India.

There are 45 farms in India, mostly for white leg shrimp that are engaged in the ASC programme. Twenty-eight of these are already certified, and seventeen are undergoing full assessment.

ASC's strategic plan identifies increased output of certified seafood and availability of labelled products in Asia as a priority (ASC 2017). This can be expected to include India, given the current extent of ASC presence in the form of certified farms, and the importance of India to aquaculture in the region. To support its proposals to increase uptake, the ASC intends to operate an Aquaculture Improvement Program, which would be of significance in countries where a significant level of improvements may be required before farms are able to meet the standard.

Global Aquaculture Alliance: Best Aquaculture Practices

The Global Aquaculture Alliance (GAA) is an international non-governmental, industry-led organisation that was set up in 1997, with a mission to promote responsible aquaculture practices through education, advocacy and demonstration. GAA operates a standard called Best Aquaculture Practices (BAP). The standard covers environmental responsibility, social responsibility, food safety, animal welfare and traceability for almost all aquaculture finfish, crustacean and mollusc species and extends to the entire production chain including farms, processing facilities, feed mills and hatcheries.

Certification to the BAP standard involves third-party onsite audit against the appropriate BAP standard by an assigned certification body.

Worldwide, there are over 1600 facilities that are certified to the BAP standard. This includes 305 facilities in India, inclusive of farms, hatcheries, feed mills and processing plants that are certified to BAP standards. In terms of volume, India accounts for 0.5% of global tonnage certified to the BAP standard (Potts et al. 2016).

Auditing capacity for the BAP standard is represented in India through organisations such as SGS Nederland BV and Bureau Veritas.

GLOBALG.A.P.

GLOBALG.A.P. provides international standards for a range of farm products including aquaculture. GLOBALG.A.P.'s aquaculture standard includes criteria for legal compliance, food safety, workers' occupational health and safety, risk assessment for social practices, animal welfare and environmental and ecological care (GLOBALG.A.P. 2018). The scope of the standard extends through the whole production chain, including broodstock collection, seedlings, feed suppliers farming and processing, and applies to a wide range of finfish, crustaceans and molluscs. To become certified to the GLOBALG.A.P. standard, facilities are evaluated by a certification body on an onsite inspection. The first Indian aquaculture producer certification to the GLOBALG.A.P. aquaculture standard was in 2013 (GLOBALG.A.P. 2018).

International Fishmeal and Fish Oil Responsible Supply

The International Fishmeal and Fish Oil Responsible Supply (IFFO RS) is a third-party certification and auditing programme, operational since 2009 and owned by the International Fishmeal and Fish Oil (IFFO) organisation. IFFO RS operates three standards and includes the IFFO RS standard for responsible supply, IFFO RS Chain of Custody and IFFO RS Improver Programme. The IFFO RS responsible supply standard includes fisheries and factories within scope. The themes addressed by the standard include responsible sourcing of raw material, traceability, manufacturing practices, social accountability and community

engagement. There are currently no fisheries in India certified to the IFFO RS standard.

Other Voluntary Sustainability Standard Initiatives

There are a range of other VSS initiatives which are potentially important to India. These include seafood rating initiatives such as sustainable seafood guides provided by WWF and the Monterey Bay Aquarium. There are other initiatives that are national in terms of their scope, but they may become more important to the fisheries sector in India if the use of such initiatives becomes significant in the retail sector of countries that are of export interest to India. Examples of national VSS include the Iceland Responsible Fisheries Management Certification, which is applicable to Icelandic vessel fisheries operating in Icelandic EEZ and to shared pelagic stocks on the high seas targeted by Icelandic vessels (Iceland Responsible Fisheries Foundation 2016). Another example is Marine Eco-Label (MEL) Japan, a national eco-label in Japan, which is an important export country for India. MEL Japan is an initiative that was formed for Japanese fisheries through a partnership of the Japan Fisheries Association and the government (Swartz et al. 2016).

Voluntary Standards and Seafood Sustainability Governance in India

Compared to other parts of the world, specifically Europe and North America, the use of VSS in the seafood sector in India, either as a supplier or in the domestic market is low. The main driver for certification to VSS in India currently appears to be international markets, particularly markets where there is higher public awareness about sustainability issues in the seafood sectors. There are, however, emerging trends backed up with research that suggest that changing economic, social and psychographic attributes of India's consumer class is leading to a growing interest in ethical and sustainability attributes of products (Pande 2017). If this extends

to interest and concern about sustainability of fisheries resources, it would enhance the incentives for fisheries to comply with VSS.

As with many other developing countries, there are a range of factors that constitute a barrier to mainstream use of VSS in the capture fisheries and aquaculture sector. Some of the typical constraints include cost of certification, difficulty meeting certification requirements, limited data availability to demonstrate compliance with requirements, lack of awareness and understanding of VSS and how they operate (Ramachandran 2010; Oloruntuyi 2010; Washington and Ababouch 2011; Stratoudakis et al. 2016).

While the actual uptake of VSS for seafood product in India is low, there is clearly recognition within India, including by the government, of the role that VSS can play in encouraging social and environmental responsibility and sustainability.

In 1991, the government, through the Ministry of Environment and Forests, set up a scheme to provide a voluntary eco-label—ECOMARK—to products from a set of product categories certified as meeting specified environmental criteria. The initiative, to be managed by the Bureau of Indian Standards, was introduced for up to 16 product categories, although it did not include the seafood sector.

In 2012, the National Academy of Agricultural Science (NAAS), a government agency, proposed that India should formulate principles and criteria for certification of fisheries and recommended the implementation of pilot projects in India in collaboration with other VSS (NAAS 2012).

Another institution, the Quality Council of India, set up by the Ministry of Commerce and Industry, is the secretariat for the Indian National Private Sustainability Standards Platform (Indian PSS Platform). The platform has several objectives, which include fostering sustainability across all business, trade and production sectors, to bring transformative change to production and consumption patterns in India and to promote sustainable public procurement either through voluntary or private sustainability standards. An indication of the growing importance of VSS to government is that the Quality Council of India is currently working with the United Nations Forum on Sustainability Standards (UNFSS) to provide a dialogue platform to address issues on leveraging trade,

standards and value chains as tools for sustainable development in a range of sectors, including fisheries (ICSTS-QCI 2018).

Further evidence of the growing interest in VSS for seafood in India comes from a recent commitment made by a group of stakeholders in India to initiate and implement Fishery Improvement Projects for ten fisheries. The ambition is for the fisheries to eventually attain MSC certification (Intrafish 2018).

Conclusion

The uptake and engagement with VSS in the seafood sector in India is still in its early stages and the proportion of certified tonnage of seafood from India compared to global tonnage is still low. As such, it is too early to draw overarching conclusions of the impact of VSS at a national level.

There are, however, individual case studies that demonstrate sustainability improvements that have resulted from the use of VSS (WWF 2014; Mohamed and Malayilethu 2015). These have often followed collaboration between government, NGOs and business organisations, with these collaborations leading to a range of outcomes such as improvements in management and improvements in information and data to support management. The role of VSS in these early stages has therefore been to provide a framework within which to chart out progress towards sustainability, to facilitate collaboration required to support fisheries progressing towards certification and to signal the market benefits available to fisheries that are managed in a sustainable manner.

These examples, and the growing global market in the use of VSS, explain the growing interest in VSS in India. These developments are also consistent with the direction of fisheries policy in India, with its increasing focus on sustainable management of resource through management of fishing effort and biodiversity conservation in production processes. More specifically, India's new fishery policy, which commits the government to creating an enabling environment for the promotion of eco-labelling of key Indian fisheries that benefits fish stocks, the seafood industry and fishers, is a recognition of the role that VSS can play in promoting sustainability.

The recognition of the role of eco-labelling by the government, the important role of India in seafood trade and production, budding consumer interest in ethical issues and the initial, albeit still nascent, successes with certification to VSS in the country to date, signal the opportunities that exist within India to include VSS within the armoury of tools to promote a more sustainable approach towards utilisation of aquatic resources for fish production in India. The actual outcome and impact will depend very much on commitment from stakeholders both within and outside of India, inclusive of government, businesses and NGOs. However, many of the key ingredients for success, including awareness of VSS, market pull, NGO engagement in transition initiatives and government support for seafood sustainability initiatives are steadily coming into place and provide the basis for optimism about prospects for seafood VSS in India.

Key Takeaways

- India plays a significant global role in the trade and production of seafood.
- The rapid development of the sector has been accompanied with sustainability concerns.
- There is growing recognition in India of the role of VSS as a marketing and conservation tool.
- Sector-wide uptake of VSS is faced with a range of challenges; however, recent trends and development, both locally and internationally, indicate a likely increase in uptake of VSS in the future.
- Continued collaboration and partnerships amongst stakeholders, and particularly partnerships with the government, are required if seafood VSS are to have any significant impact as a tool to deliver sustainability of fisheries resources in India.

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6

Competing for Space and Making a Difference? An Assessment of Sustainability Standards in the Indian Cotton Sector

Sukhpal Singh

Introduction

Cotton is an important high-value commercial crop across the world accounting for 40–50% of world textile/fibre raw materials as raw cotton and 33% of all global fibre demand (ILO 2016), but it makes up only 10% of the final retail value of a garment (Nelson and Smith 2011). One hundred countries grow cotton and it has the largest area under a single crop globally. Furthermore, 150 countries trade in it, making it the world's most widely traded commodity, wherein one-third of global cotton production is exported (Caliskan 2010; ILO 2016). West African countries earn 30–40% of their foreign exchange from cotton exports (Quark 2013), and others, like Bangladesh, earn 85% of their foreign exchange from the cotton raw material-based readymade garment exports alone.

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Cotton production is located at the intersection of industrial, financial and agricultural relations of exchange and production, connecting more than one billion people to each other through routes that span agriculture, trade and textile manufacturing (Caliskan 2010). There have been many studies on the physical quality standards of cotton, their role in global cotton trade and their political economy. These quality standards are about fibre length, uniformity, fibre strength, micronaire (fineness/maturity), colour, trash content and neps, all of which affect processing and fibre quality (Quark 2013). There are, however, almost no studies of farmer and worker well-being or labour practices in cotton under sustainability standards in India. This chapter examines the nature and magnitude of sustainable cotton standards in India (organic, Fair Trade and Better Cotton) to provide a comprehensive understanding of the role of such standards in promoting sustainability in the sector.

This chapter contributes to the limited literature on sustainability standards in cotton, where only individual standards like organic or Fair Trade have been examined, that too occasionally and briefly (Singh 2009; Sneyd 2014). Some other recent studies, such as by Tayleur et al. (2018), which assess the geographic reach of the sustainability standards and their impact on poverty and conservation, exclude cotton due to data availability issues. This chapter makes a comparative assessment of the major standards of sustainability in cotton to arrive at how and in what ways the various standards overlap, how effective they are in terms of their reach and impact on economic, social and environmental dimensions of sustainability, and how they can be improved in their design and governance and implementation to improve conditions of income and work in the cotton sector in India.

This chapter is based on various empirical studies of the Indian cotton sector and existing knowledge and assessments of the various sustainability standards in the cotton sector, besides drawing on some stakeholder interviews and interactions across different standard based value chains in the cotton sector during the previous few years. It brings together both the principles of various sustainability standards in cotton and their practice

on the ground in India in the context of smallholder agriculture. It not only describes each standard and its practice in India but also compares the various standards for their relative value and effectiveness in promoting cotton sector sustainability, which is about triple bottom line, that is, economic impact on livelihoods of the farmers and farm workers from cotton crop; ecological aspects of its cultivation in terms of use of various inputs; and social sustainability in terms of relative reach to and impact of standards on various sections of rural population involved in the cotton value chain, as seen from various research and evaluation studies. Section two examines India's cotton sector and its sustainability issues; the third section outlines major cotton sustainability standards and their performance in India followed by a discussion of various standards in a comparative perspective in the next section. Conclusions and key learnings are contained in the final section.

Overview of the Indian Cotton Sector

Cotton is a politically sensitive commodity in most growing countries because of the role of the state, trade regulations and significance for local livelihoods of small producers. There are high cotton production subsidies in the USA, China, Greece and Spain, with 10 of the 11 largest cotton producing countries providing subsidies to cotton producers (Nelson and Smith 2011). Table 6.1 gives an overview of the global cotton sector, Asia's dominant place in it and India as an important

Table 6.1 Global cotton production and trade facts

Parameter	% in total
Developing world share in global production	75
Asia's share in cotton/fibre processing	70
China's share in world cotton consumption	40
Irrigated area under cotton	55
India's share in global cotton production and (yarn exports)	26 (27)

Source: Developed by author using WWF International (2007), Jain (2010), Bedi and Verma (2011), WWF and Yes Bank (2012), Naik et al. (n.d.), ILO (2016) and Grosscurt et al. (2016)

player in the sector globally. China, India and Pakistan altogether account for 60% of world fibre consumption (Jain 2010). India is the world's second largest producer, consumer and exporter of cotton (Konduru et al. 2013; ILO 2016).

Cotton is an important cash crop in India and is only next to paddy and wheat in acreage, which accounted for 11.61 million hectares in 2010–11 (Joshi Rai 2011). India had the largest area under cotton (one-third of global), which was almost double the area under cotton in China and 2.5 times that of the USA, but yields were only half of that in the USA and 40% of that in China. Bt (genetically modified or GM) cotton accounted for 95% of cotton area in 2011–12 (DtE 2013). Cotton provides not only livelihoods to 58 million Indians including 5.8 million farmers (Grosscurt et al. 2016) but also 60% of the fibre used in the textile sector, one million tonnes of cooking oil and animal feed each and 40 million tonnes of biomass in the form of cotton stalks (FICCI 2012). Cottonseed oil ranks fifth in consumption globally, accounting for 5% of global consumption of edible oil. Cottonseed-based business is largely in the hands of small-scale players in local towns, and in many states like Gujarat and Maharashtra, cottonseed oil is a major item of human consumption. Table 6.2 gives an indication of the importance of cotton in India.

India grows all varieties (short, medium and long and x-long staple) across three zones of north, central and south India (Konduru et al. 2013). Table 6.3 gives a statewise picture of cotton area and production in India which shows that Gujarat, Andhra Pradesh and Madhya Pradesh are high-yielding states. However, 70% consumption of cotton is in the

Table 6.2 A profile of India's cotton sector

Parameter	% share
Cotton farmers among total farmers	4.9
Share of GM cotton in total cotton area	95
Share of 25 GM cotton varieties in total production	98
Rain-fed cotton area in total	35
Domestic use of total cotton produced	78
Share of textile sector in fibre use	60
Textile export share in total exports	33

Developed by the author using Osakwe (2009), Jain (2010), Nelson and Smith (2011), Grosscurt et al. (2016)

Table 6.3 Statewise shares in cotton area and production in India in 2015–16

State	% share in area (hectares)	% share in production (bales)
Gujarat	22.9	32
Maharashtra	33.23	21.6
Telangana	124.93	12.8
Andhra Pradesh	5.6	8
Punjab	62.8	1.5
MP	74.6	7
Haryana	75	4.5
Rajasthan	53.8	4.4
Karnataka	45.3	5.3
Tamil Nadu	1.24	1.2
Odisha	1.0	1.3

Source: Developed by the author using 2017 statistics from Government of India

three states of Tamil Nadu, Maharashtra and Punjab. The growing practices and seasons also differ across regions in India. Whereas the north zone grows cotton in irrigated conditions, the other two zones have substantial area under rain-fed conditions (WWF and Yes Bank 2012).

In India, the cotton value chain consists of Farmer-aggregator-Agricultural Produce Market Committee (composed of representatives of farmers, commission agents, co-operatives and the government agencies); commission agent/trader (including Cotton Corporation of India—a government agency to procure cotton at minimum support prices); private mills or gins/traders- and Mills/wholesaler-retailer-non-textile user (there are also direct sales to ginners in states like Gujarat) (Fig. 6.1).

The farmer-level cotton quality issues include harvesting time and picking criterion, where only two-fifths of farmers were aware of the right practice; segregation was known only to less than half and pooling only to less than one-third, while drying and transport practices were known only to one-fifth of all farmers (Naik and Abraham *n.d.*).

The quality of ginning is poor in India as most of the gins are small scale and run by local traders and small-scale entrepreneurs. Half of the industry does not pre-clean raw cotton and half of pre-clean stage is contaminated. Indian cotton is the most contaminated in the world. The contamination is so high that six out of ten most contaminated cotton types come from India. Further, the trash content is double that in other cotton growing countries. This leads to lower price realized for the Indian

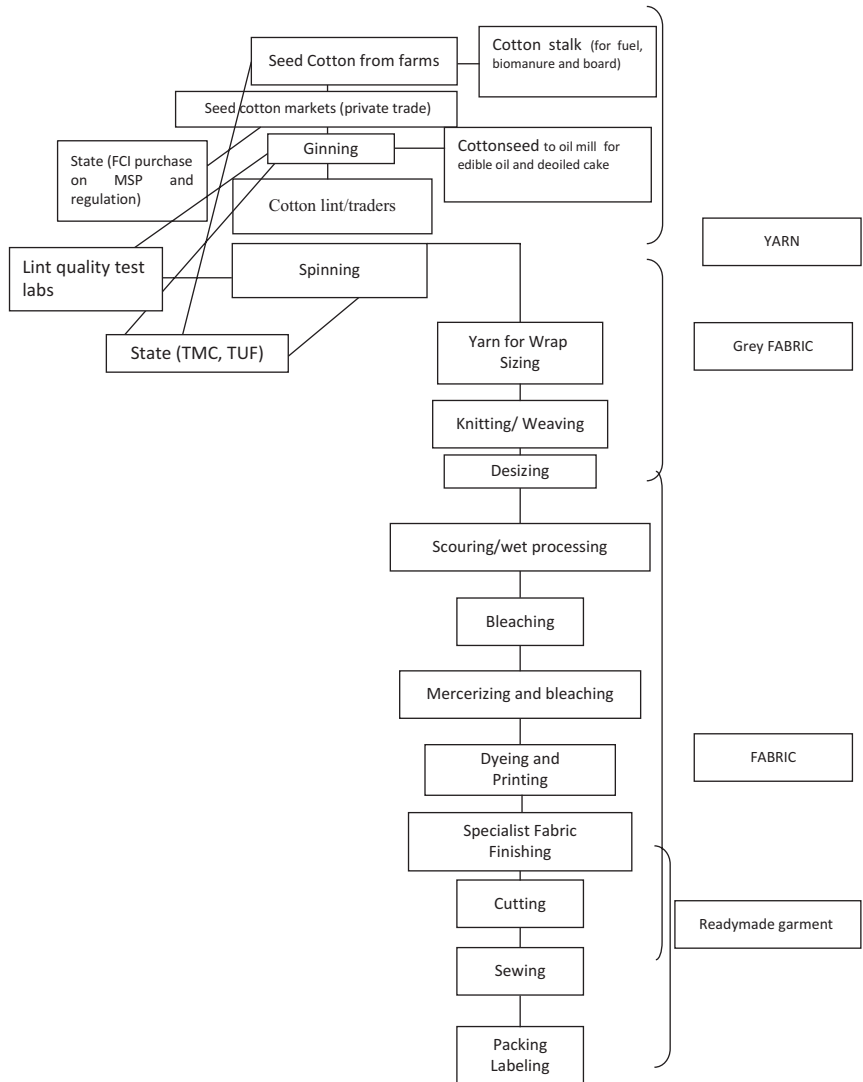


Fig. 6.1 A view of cotton global production network in India. Developed by author

cotton in global markets (Naik and Abraham *n.d.*). Figure 6.1 provides an overview of the cotton sector in India in terms of stakeholders and processes. Cotton farmers, in general, are not the poorest in their local communities, though they may suffer from many market imperfections and exploitation and may not get much of the value chain surplus.

Cotton is grown more by large and medium farms (Singh 2017; Ranganathan et al. 2018). In 2012–13, more than 50% of area grown with cotton and other crops and 20% of the only cotton area was with farmers in the semi-medium, medium and large categories. This is to be seen in the context of 85% farms being operated as marginal or small farms (Ranganathan et al. 2018).

On the other hand, labour employed in cotton farms is from the poorest landless communities who are also often migrants, and may include children in some situations (Singh 2017). Cotton is also a highly labour-intensive crop as it is not mechanized, especially its picking or harvesting, which accounts for 30% of total cost in cotton production. In India, a hectare of cotton generated 190–225 days of labour per annum even in dry land conditions like in undivided Andhra Pradesh (ICAC 2008).

Cotton picking is a highly labour-intensive activity involving men and women and sometimes even children, and there is widespread use of local and migrant hired labour for cotton picking on piece rate basis most of the time and on daily wage basis sometimes. There is also substantial practice of share cropping, including labour tenancy, in some states like Gujarat (Nelson and Smith 2011; Singh 2017). Interestingly, there is not only use of local labour for picking in most cotton growing areas but also interregional movement of labour for this activity for a few months during the season where families move across provincial borders travelling hundreds of kilometres and stay put on the farms for a few weeks or months each. These include, among others, migrant labour households from states of Bihar, Uttar Pradesh, Madhya Pradesh and Rajasthan going to Punjab and Haryana and those from Haryana and Punjab going to Gujarat during the picking season. These households have been doing this for years by now (Singh 2017).

Major Sustainability Challenges in Cotton in India

Globally, cotton consumes a very large proportion of chemical pesticides and insecticides as most of the cotton is grown under irrigated conditions (PAN et al. 2017). Water and pesticides cause the most significant environmental problems in cotton systems, and it is one of the thirstiest crops along with rice, sugarcane and wheat (Sneyd 2014). Further, there are issues of GM cottonseed and contamination of organic and Fair Trade cotton from use of chemicals in conventional cotton.

In India, the cotton sector at the production level has faced many issues like pesticide overuse, water consumption, frequent crop failures before the introduction of Bt cotton, resultant farmer distress and farmer suicides besides fluctuating cotton prices and labour conditions (Joshi Rai 2011). India is the 12th largest user of pesticides on cotton (Grosscurt et al. 2016). Low input use efficiency in India especially of nutrients remains a major challenge.

The most common method of irrigation (flood or furrow method) has only 40% water use efficiency (Bevilacqua et al. 2014). Water use in cotton in India is 8663 litres per kg of seed cotton and 20,127 litres per kg of lint cotton against global average of 3544 and 8506 litres per kg each. A majority of C&A's blue (surface and ground) water footprint lies in India as it procured a major chunk of its cotton from India (Franke and Mathews n.d.). India produces the highest greenhouse effect (0.89 kg of CO₂ per kg of cotton) due to its low cotton yields compared with other cotton producing countries (Chico et al. 2013).

Women and child labour in cottonseed production and cotton harvesting with poor working conditions and violations of basic human rights are very important issues in global cotton production, including in India. The supply side factors for child labour in cotton include poverty, social norms, migration, barriers to education and weak legislation and its enforcement. On the demand side, cheap and compliant nature of child labour and technical preference for such labour in the form of 'nimble fingers' argument are major issues (ILO 2016).

The issues of cotton farmer indebtedness, distress and suicides are still alive in many parts of India, especially in the cotton belts, as Bt cotton has outlived its utility by now (DtE 2013). The issues of lower yield, poor

seed quality, lack of irrigation, poor extension support, soil salinization (WWF and Yes Bank 2012) and increasing cost of modern inputs still remain. In some cotton pockets, like in Punjab, there are issues of waterlogging.

Similar to cotton picking work, the ginning work is also seasonal, casual and working conditions are poor. Further in the chain, in ready-made garments too, wages are low, making for a miniscule part of the cost of the product and may not give a decent livelihood to a worker.

The Standards Scenario in Indian Cotton Sector

The standards are important as sustainability—economic, social and environmental—is being sacrificed in the cotton sector when producing conventionally and also under some of the sustainability standards. The external costs of such production and handling of the crop throughout the chain in India like resource use, pollution and worker-related, which are not borne by the buyers, are attempted to be reduced by standards of sustainability in cotton under smallholder conditions. The external costs are as high as EUR 3.65 per kg of seed cotton when the farm gate price (Minimum Support Price or MSP set by the government) in India is only EUR 0.55 per kg of seed cotton which leads to a true price of cotton to be EUR 4.20 per kg of seed cotton. This is only next to cocoa's external costs in Ivory Coast, and are higher than those of green coffee beans in Vietnam and of green leaf tea in Kenya. Further three-fourths of the external costs were environmental costs and one-third related to water alone. The total external costs of the cotton chain were EUR 11.55 per kg of seed cotton, of which farm-level external costs were one-third and true price of seed cotton was six times that of the farm gate prices offered by the government (Grosscurt et al. 2016).

Certified cotton had one-third lower external costs of cultivation than conventional cotton, which resulted mainly from higher yields on certified farms, better environmental and social conditions in that order. This led to certified farms being 52% more profitable than conventional farms. This was due to lower use of water and chemical inputs and better wages

and work conditions on certified farms though underpayment and under earning was the largest social cost in cotton in India, as hired worker wage was only 41% of living wage (Grosscurt et al. 2016).

A Profile of International Sustainability Cotton Standards

Though there are more than half a dozen standards in sustainable cotton production, sustainable cotton today accounts for 12% of global supply, but it has more than doubled in the last three years though only about one-fifth of it is bought as sustainable cotton, with the rest going as conventional cotton (Truscott et al. 2016; PAN et al. 2017) despite the fact that all sustainability standards rely on market uptake to meet their objectives at the farmer level. There are 60 sustainable cotton textile labels and standards which accounted for 3.4% of global cotton production of which half was sold as standard compliant (FTF 2015). Three major international standards that operate in cotton in India are discussed below.

Globally, organic cotton accounts for 350,033 hectares of certified land with 193,840 farmers and 112,488 metric tonnes (MT) of organic cotton fibre supporting 969,200 farming family members. Further, organic cotton accounted for one-third of the cotton use of top ten users of cotton, with the other being mostly conventional cotton in 2015 (Truscott et al. 2016). Twenty-five companies/retailers globally consumed three-fourths of organic cotton (DtE 2013).

Further, most of the Fair Trade certified farmers are also organic (73% in 2015) (Truscott et al. 2016). In 2014, 77% farmers reported at least one other certification in addition to Fair Trade and 52% reported organic, which was the largest single additional certification (FTI 2016). The organic movement was moving towards including social rights and ethical trade in its standards. It was long recognized that if there was consumer pressure for this overlap, then there would be considerable implications for the volume of trade, the developing of the country's producers' ability to meet the requirements, and for the working conditions and livelihoods of producers (Browne et al. 2000)

Fair Trade was launched in cotton in 2005 globally, and yet, there are no separate Fairtrade Labelling Organisation (FLO) standards for factory workers in the readymade garment sector though FLO trade standards require each value chain partner to comply with International Labour Organization (ILO) convention on labour rights. Fair Trade is spread across nine countries involving 60,000 growers (FTF 2015; ILO 2016), but 60% of Fairtrade cotton was used for clothing, and Fairtrade remained only 10% of organic trade. In fact, globally, cotton is one of the three small volume products in Fair Trade along with rice and sports balls and did not grow much during 2015 in terms of farmers and workers, though within Asia-Pacific region, it is one of the three main products along with rice and coffee (FTI annual report 2016–17). Further, cotton farmers accounted for only 3% of all Fair Trade farmers and workers in 2014 (FTI 2016). Major challenges in cotton which Fair Trade faces remain as competition from synthetic fibres, subsidies to cotton producer in the western world, prevalence of child and forced labour, price volatility, poor resource base of farmers, excessive use of chemicals and water, climate change and GM cotton (FTF 2015).

Fair Trade standards include a minimum guaranteed Fairtrade price for seed cotton and the additional Fairtrade premium to farmers to invest in strengthening their organizations (26 globally), developing their business and improving infrastructure in their communities (FTF 2015). Fair Trade's hired labour standards allow up to 20% of the premium (going up to 50% in exceptional circumstances) to be used as cash payments to the lowest paid workers (FTI, annual report 2016–17).

The Better Cotton (BC) standards include environmentally and socially responsible production, minimum use of crop protection chemicals, conservation and efficient use of water, maintenance of soil health, conservation of natural habitats, maintenance of fibre quality and decent working conditions for farmers, including workers, and this is adapted according to farm size. The mission of Better Cotton Initiative (BCI) is to reduce the most significant environmental and social impacts and improve livelihoods of cotton farming communities to make cotton better for producers, environment and the future of the sector. The drivers of the BCI like Marks & Spencer, IKEA and others, including some global supermarkets, have committed to using 100% or some lower percentage of their cotton use as Better Cotton.

BC projects work through implementing partners who are global and local non-governmental organizations (NGOs), supply chain actors and government agencies to train and support farmer groups to produce Better Cotton and facilitate Better Cotton supply connect with demand. Importantly, it does not promise a price premium to farmers. Globally, BC was grown in 20 countries with 7.6% of global cotton production being BC and 1.2 million farmers participating in it in 2014 (ILO 2016).

In fact, each standard brings something different to the table, though they are also overlapping overtime as they are driven by market competition because there is a race between standards as they are the doors to markets. Only four standards in cotton are considered credible, that is, organic, Fair Trade, Better Cotton and Cotton Made in Africa (CMiA), as they have grown in terms of area and production and market uptake shares and recognition by stakeholders, besides the fact that they have content and systems which are trustworthy in terms of implementation, governance and assessment (PAN et al. 2017).

A ranking of companies on the basis of policy (commitment to procure sustainable cotton), uptake and traceability aspects of sustainable cotton revealed that IKEA was at the top followed by Tchibo GmbH, C&A, M&S, H&M and Levi (as half of the cotton used by them was sustainable) and others like Carrefour and Next PLC were at the other end, and many others like Auchan and Walmart scored zero (PAN et al. 2017). Surprisingly, the ILO report on child labour in cotton does not even mention Organic Content Standard and the prevalence of the issue of child labour under these standards (ILO 2016).

Practice of Sustainable Cotton Standards in India

Only 3.3% of the cotton produced in India complied with voluntary sustainability standards (VSS) in 2012, which included mainly Better Cotton and organic, and it was close to global compliance levels (3.4%) (Grosscurt et al. 2016), though globally, 11% cotton was sustainably

produced (FTI annual report, 2016–17). In 2014–15, India was the largest producer of organic cotton and was the second largest producer of Better Cotton in 2015–16 after Brazil (PAN et al. 2017). The following sections provide assessment of various major sustainability standards in India.

Organic

Organic cotton production in India started in Maharashtra during the early 1990s, when some local agencies like Vidharba Organic Farmers Association took up its cultivation and promotion (Singh 2009). Later, it spread to Madhya Pradesh and Gujarat and many private agencies like Agrocel (Gujarat) and Pratibha Syntex and even globally funded projects like BioRe (in Madhya Pradesh) took root. In 2014–15, India's share in global organic cotton was 66.9% followed by China and Turkey (Truscott et al. 2016). India's certified organic cotton area was more than half of global organic area in 2014–15. Major states in organic cotton in terms of area are Madhya Pradesh, Odisha and Maharashtra (Truscott et al. 2016). Organic cotton has been attractive to growers since the failure of the cotton crop during the 1990s, as it provides additional income from cost saving, intercropping, better prices and group certification (DtE 2013).

In the Indian organic cotton sector, which is once again seeing revival in demand and production, major issues at the farmer level include availability of non-GM seeds, adequacy and efficacy of internal control system (ICS) and its cost, besides Bt or GMO contamination. In 2010, almost one-third of cotton bought by large global retailers tested positive for GM [DtE 2013]. More recently, organic projects have set up seed projects to tackle the shortage of seed for organic production, which are non-GMO and non-treated with chemicals. The green cotton project in Madhya Pradesh, Chetna's seed guardians in Odisha and organic and fair cotton secretariat in Madhya Pradesh (with 14 organizations as members) and Central Institute of Cotton Research (CICR) seed projects are some such initiatives (Truscott et al. 2016).

On the other hand, the certification system suffers from nonconformities and lack of transparency and accountability, waiver of conversion period and dual certification besides parallel production and quality of

service. The model faces issues of minimal or no assured premium, forces of demand and supply, funding and pre-financing of farmers groups, ordering cycle and brand and consumer engagement and lack of alignment between global and Indian certification systems (ICCO et al. 2010; DtE 2013).

The spread of Bt cotton in the organic cotton growing regions led to organic farmers/groups leaving the organic projects during the last decade. The Bt cotton spread in some of the organic cotton project areas has also led to contamination problem at the farm level. There are Bt test kits available to check Bt cotton presence in the field which is cheaper than the lab test which costs INR 100 per test (approximately US\$ 1.5). Also, if farmers do not take seed from the organic cotton production organizer, then there are doubts about Bt cottonseed use. Some organic agencies decertified organic farmers as they used Bt cottonseed.

Since certification was with the project organizing agency (private player) due to the fact that it paid the cost of certification, the growers were locked into the contract due to the firm specific fixed investments they had made by going organic, and thus, were not able to sell elsewhere without certification. This could undermine the farmer or farmer group independence and autonomy. Therefore, the question of who owns the certificate is crucial. This raises a governance issue as it limits the market options for growers to those dictated by the certificate owner and thus diminishes their interest and commitment to organics. Though the organizer pays certification fees, they are not so high as to not give any right to the grower over his farm's certification as most of the conditions of certification are adhered to by the grower on the farm.

Further, the contracting companies/agencies offer open market price-based contract prices for conventional or organic produce in most cases (Singh 2009). This means that even a significant premium over market price may not help a farmer if open market prices go down significantly, which is not uncommon in India. Thus, the issue of what is fair price for the primary grower in an organic produce chain remains as there is little transparency in pricing and costing of operations when private players are the organizers of contract farming projects (IFAD 2005).

In 2011, there were more than one dozen organic cotton contract farming projects in India run by private agencies (Singh 2011). In gen-

eral, across organic cotton projects, the organic cotton area is much larger than the average cotton area of the average Indian farmer and even the average size of landholding of a farmer in some states. This shows that the organic cotton contracting companies largely work with large and medium farmers. The correlation coefficient between ownership holding and organic acreage was 0.84, which again showed that larger farmers put larger acreage under the organic project. In Gujarat, an organic contract grower had 16 acres on an average, with 7.8 acres under contract. Only 13% of the contract growers were small farmers (Singh 2009).

The organic cotton sector now has some producer (farmer) companies (cooperative companies) under a 2003 legislation, which are new institutions as they create platforms for small growers in global networks and deal directly with buyers, and some of them are both organic and Fair Trade certified (Nayak 2013; PAN et al. 2017).

The farmer concerns about organic farming include lack of awareness of benefits of organic farming, lack of access to technologies and inputs, lack of incentives, lack of skills and lack of market access. There is lack of motivation amongst farmers to improve quality due to no immediate benefits.

For workers, organic standards do not really have much to offer, as it is more about production processes and not surplus distribution. The labour issues in organic cotton whether gender or child labour or wages and compensation remain as in conventional cotton production as they are not part of organic standards unlike Fairtrade.

The traders and processors face problems of: inconsistent supplies, insufficient volumes, lack of quality storage, lack of market information, underdeveloped domestic market and high quality conditions for export. Also, the sale of in-conversion produce is an issue as there are no markets for this produce.

Fair Trade

Asia-Pacific region's 69% of Fair Trade premiums in 2016–17 was received by three countries including India (others being Fiji and Indonesia) (FTI monitoring report 2016). India's share in Fairtrade premiums in Asia and

Pacific was 27% as India had the largest number of Fairtrade organizations (80) accounting for 40% of those in the region (FTI 2016). In India, Fairtrade in cotton came in as a corollary of organic, as private agencies like Agrocel promoted not only organic but also Fair Trade cotton production, and its marketing as it was being demanded globally and there was equally good premium on it. India had the fifth largest number of Fairtrade farmers and it was the fourth largest in terms of number of Fairtrade farmers and workers in 2014, though it was the largest in number of Fairtrade certified plantations globally. Cotton had one of the lowest percentages of women farmers (15%) across Fairtrade crops (FTI 2016). In India mostly, farmers are not organized into their own organizations but work under contract production standards arrangement, wherein an intermediary organization like an exporter or processor, known as a promoting body, helps farmers in forming a functional organization. The examples of contract production in India include Pratima organic grower group under Pratima Agro and Paper Ltd. with 4000 farmers in Odisha, and Pratibha Syntex's Vasudha project with 1500 farmers in Madhya Pradesh. Under Fair Trade's Small Producer Organisation, Chetna Organic (a farmer producer cooperative company) works directly with Fair Trade India in Telangana, Maharashtra and Odisha, and supports 15,000 cotton farmers in 400 villages (FTI 2016). Each organization has to pay certification fee (FTF 2015).

The Fair Trade issues in cotton include child labour in picking, women labour and their work conditions and gender gap in wages. It is also not possible to implement minimum and equal wage in India as due to the larger dynamics of society, the women may lose work or may face higher exploitation due to higher payment.

Further, the very small scale of Fair Trade operations in cotton has meant no impact on the sector nationally or even provincially. Farmers also question the community-wide use of the premium, as membership is limited to a few farmers in each location.

There has been general unwillingness of the buyers to commit to buy the Fair Trade cotton over long periods besides fluctuations in demand, competition between Fair Trade suppliers and the cost of certification.

Further, since there has been overlap between organic and Fair Trade cotton projects and organic predates Fair Trade, it is difficult to disentangle

the impact of Fair Trade cotton on various aspects of local economy and livelihoods. In fact, there has not been much difference in the way the Fair Trade and conventional cotton value chains have been run in terms of same stakeholders taking decisions based on similar factors.

The producers are also not generally aware of Fair Trade standards, principles, processes and markets, and the improvement in labour conditions and women workers' status remains unaffected by and large due to larger social and cultural environment in which Fair Trade is embedded. Only the awareness among producers about child labour had increased. Further, farmers, despite being members of producer bodies, were not small by Indian standards and put 60% of total land area (4.3 hectares) to cotton on an average and only 4% were women. The Fair Trade does not differentiate between types of farmers in India, which is reducing the impact it could have had on the poorest of the poor cotton farmers. There was conventional Fair Trade cotton as well as both organic and Fair Trade cotton being produced in India and the Fair Trade prices paid for both types of produce were higher than Fair Trade minimum prices, as market prices led to actual Fair Trade purchase price at the local level. Since the Fair Trade prices were not revised frequently, the cost of sustainable cotton production turned out to be higher than Fair Trade minimum price in some years. Further, the producer organizations remain weak and dependent on promoting bodies—NGOs or private agencies (Nelson and Smith 2011).

Further, more like organic cotton, the volumes of Fair Traded cotton in India are too small, and therefore, it does not give producers an influence in policy-making bodies and institutions (FTF 2012). Fair Trade, however, had complemented the organic trade sector in cotton to some extent, though players are few, and now BC is doing the same to the organic movement.

Better Cotton

Since 2009, Better Cotton Initiative, which is a global multi-stakeholder initiative and focuses on the farm level sustainability—economic, environmental and social—with six principles as minimum requirement

regardless of geographical location of producers (Sneyd 2014), has picked up pace in the Indian cotton sector with major global players buying in the BCI standards. The BCI had its origins in the Better Management Practices (BMP) in cotton attempted by IKEA in partnership with WWF (Joshi Rai 2011).

In India, BC had presence in all 11 cotton growing states with 21 projects across 7 implementing partners and worked with 120,683 producers and 219,360 hectares of Better Cotton by 2012. It has civil society organizations, suppliers and manufacturers and producer agencies as its members and other stakeholders as associate members. Some producer (farmer) companies are also part of this initiative, as collectives of producers in the states of Madhya Pradesh, Gujarat, Tamil Nadu and Maharashtra, which are supported by global development agencies like Solidaridad.

India has one of the largest numbers of BC farmers and BC trained farmers and the second largest licensed farmer percentage in total (92%), as it has the highest number of projects in BC globally. But, it also has almost the highest cost per tonne of licensed Better Cotton and the least uptake of produced BC among all the BC producing countries. At the same time, India has received a lion's share (more than half) of BC Fast Track Project (BGFTP) investments in 2013 followed by Pakistan, but its contribution to BC production was only one-fifth of the total and even lower than that of Pakistan (Dhingra 2014).

However, some of the principles of BCI at farmer level are not context-relevant, such as role of women farmers who have no control on farm produce despite being farm workers, degree of farmer knowledge about application of modern inputs, and lack of farmer power to effect these changes in production practices in Asia, besides the lack of buy-in from major stakeholders like some retailers and many farmers' associations. Also, BCI does not guarantee any major price and income benefits unlike other sustainability standards and puts the entire onus of sustainability on the primary producers without commensurate benefits and without questioning the global cotton trade system (Sneyd 2014).

Further, the BCI standards do not include cottonseed production and ginneries under their ambit, which leaves a large part of the global production network out, which is known for many labour and work condition

violations. In terms of market compatibility and institutional compatibility, BCI scores better than other sustainability initiatives like organic or Fair Trade or even Rainforest Alliance, as it does not really demand any compliance from partners. It is more like Common Code for the Coffee Community (4-C) and Cotton Made in Africa (CMiA) standards, and that is why it has benchmarked and accepted CMiA as equal to its own standards (Bitzer 2012).

An assessment of the decent work aspect of BCI in India, Pakistan and Mali showed that it concerned mainly with status of women, child labour, wages and incomes, health and safety and forced or bonded labour. There was gendering of tasks (occupational segregation), wage discrimination, women's reproductive health risks associated with pesticide exposure, use of child labour, exposure of children to hazardous working conditions, low wages (even lower than legal minimum) and prevalence of forced and bonded labour. Many of the issues do not appear in the BCI system as the initiative relies on self-assessment for ensuring compliance and producers won't report it for fear of being excluded from the programme, though BCI does address it through assurance programme and external assessment on its own and by implementing partners, and independent verifiers. The global compliance on decent work was reported to be 42% in 2010, which jumped to 74% in 2012 (Usher et al. 2013).

Further, hired labour and wage issues are not addressed in smallholder category when assessing decent work conditions. Most of the time, the focus of interventions is on child labour and health and safety, which has led to higher awareness of these issues and other areas like non-discrimination and gender equality, forced/bonded labour; migrant workers and freedom of association are attended much less. In fact, very few implementing partners target workers as beneficiaries and there is very little evidence of any kind of gender focus or forced/bonded labour focus in implementing partner approaches to decent work. Therefore, suggestions are made by some agencies to refine the BCI production principle on decent work (Usher et al. 2013).

The understanding of sustainability in BCI is also not shared as different stakeholders perceive its principles differently, especially those relating to decent work. This is largely because of the nature of institutions involved in BC standards implementation and the larger non-functional

and biased local institutional environment, which does not look at non-commercial and larger aspects of agricultural sustainability and therefore provides for only partial solutions to it. Therefore, there is need for more empirical research on nature and dynamics of local institutions in mainstream and sustainable markets in order to identify their coexistence and mutual pressures and compromises.

State and Sustainable Cotton

On the production front, cotton production, like many other crops, benefits from chemical fertilizer subsidies throughout India, which has led to overuse of these chemicals though, unlike electricity subsidy for irrigation, this subsidy is equitable as marginal and small farmers get this subsidy more than their share in cultivated land as they are more intensive users of modern inputs, other things remaining constant (Sharma and Thaker 2010).

Further, many state governments, including those growing cotton, such as Punjab and Gujarat, offer free or subsidized electricity to farmers, including for cotton, to extract groundwater for irrigation, which though helps farmers cut down cost of production, but, at the same time, compromises sustainable water use in cotton, which is the objective of many sustainable initiatives like Better Cotton or organic cotton.

The state also promoted cotton crop under its national food security mission (NFSM) under the technology mission on cotton (TMC), which, launched in 2000 to raise yields, reduce cost of production and improve quality, was merged into NFSM in 2014–15. This is completely funded by the federal government and directly to the implementing agencies. The sustainable crop practices being promoted under this mission are: integrated crop management, insecticide resistance management, cottonseed production, bio-fertilizers, bio-pesticides, pheromone traps, intercropping and high-density planting systems (HDPS) to promote mechanical picking of cotton, besides improvement of market yards to reduce contamination of cotton and reduce trash content. The government has also promoted cultivation of more valuable, long and extra-long staple varieties whose share increased from 20% in 1990 to 65% by 2012 (GoI 2017).

More recently, the *Pramparagat Krishi Vikash Yojana* (traditional farming development plan), aimed at promoting sustainability in the farm sector, has led to organic farming expansion in 0.2 million hectares since 2015. It is under the national mission on sustainable agriculture and focuses on alternative standards like participatory guarantee system. It provided INR one million per farmer under a cluster scheme covering 20 hectares each, where INR 0.495 million is provided for farmer mobilization and certification support with a condition that of all farmers in a cluster, two-thirds should be marginal or small farmers and 30% of the budget should be for women farmers (PKVY manual 2017).

On the cotton marketing front, it is estimated that 75% of the cotton is bought by private channels and the remaining by Cotton Corporation of India (CCI) under both Minimum Support Price (MSP) as well as ruling market prices in competition with the private trade and the cotton cooperatives. The cotton from farmers is bought through the Agricultural Produce Market Committee (APMC) markets, most of which are regulated, implying there is open auction in these markets. However, there are still others that are unregulated and, therefore, open auction and fair price discovery is not assured. These markets, though, are central to agriculture, that too, for a crop like cotton. They are managed by representatives of farmers, commission agents/traders who facilitate farmer produce sale, local government and the cooperative or similar local agencies. The cotton crop is also allowed to be traded in futures markets which are monitored by Forward Markets Commission (FMC), though effectively, a very small percentage of cotton production is traded through these markets. The mainstream spot markets are all driven by MSP for cotton announced and implemented by the Government of India's Ministry of Agriculture and Farmer Welfare every year.

The most important role is that of the Union Ministry of Agriculture and Farmer Welfare and its Commission for Agricultural Costs and Prices (CACPC), which recommends MSP for cotton, as for 23 other commodities, implemented by CCI. This is an annual exercise and sets the floor for cotton markets and prices. It is by this price that organic cotton or Fair Trade cotton or Better Cotton prices are discovered. In the past, sometimes, a very high MSP has played havoc with organic cotton market as the organic premiums were based on conventional cotton MSP, as a percentage

of it. Even Better Cotton prices are around MSP, though it does not promise any prices to BC farmers. In 2015–16, the CCI purchased only at MSP, mostly in the states of Maharashtra, Gujarat, Telangana, Andhra Pradesh, Madhya Pradesh and Odisha (GoI 2017). Similarly, the Ministry of Commerce, and its Directorate General of Foreign Trade, decides on cotton exports and these are frequently banned or permitted driven by national and provincial farmer or textile lobbies. This also affects the farmer interest in cotton and its viability and the very sustainability of the cotton crop and livelihoods based on it. Some provincial governments have also supported civil society-led sustainability initiatives like Non-Pesticidal Management (NPM) of crops, including cotton. In fact, this initiative emerged in cotton during the early 2000s after large scale failure of cotton due to pest attacks, especially American Bollworm. It has reached large number of farmers in the states of Andhra Pradesh and Telangana. NPM uses locally devised curative measures for pest management and builds on farmers' knowledge and skills in preventive and curative measures through a farmer field-school approach for extension. Most of the curative practices are based on locally available knowledge and make use of locally available plant and animal materials in the preparation of solutions, concoctions, decoctions and fermented products. Since these products are locally made and used, only the processes are standardized, not the products. It was experimented with on select crops of a few villages in Andhra Pradesh and scaled up with a partnership between federations of women Self Help Groups, local NGOs and its implementing agency, Society for Elimination of Rural Poverty (SERP), which was supported by the Department of Rural Development, Government of Andhra Pradesh, to scale up the model. In 2005–06, the programme started in 25,000 acres in 450 villages. By 2009–10, NPM was implemented in 21 districts covering 1.817 million acres benefiting 0.738 million farmers. In 2010–11, it was scaled up to about 2.8 million acres which was 10% of gross cropped area of the two states (Ramanjaneyulu 2011).

So far as cotton farm labour regulation is concerned, there are several laws and policies to protect worker interest in the sector. These include Minimum Wages Act, 1948, Bonded Labour Systems Act, 1976, Protection of Human Rights Act, 1993, Equal Remuneration Act, 1976,

Child Labour Act, 1986, amended in 1999 and Unorganised Labour, Inter-State Migrant Workers Act, and Agricultural Workers Welfare Act, 2006. These, however, are rarely implemented.

Discussion

A comparison of various cotton sustainability standards in terms of their *objectives* shows a differential in focus on aspects of sustainability (Table 6.4). Whereas organic and textile exchange standards focus more on environmental and resource sustainability, it is only Fair Trade which directly targets producer incomes and livelihoods, and Better Cotton does it through improving the quality of fibre and reducing the cost of production. Therefore, some standards are easier to implement and scale up than others as if incomes and livelihoods are not the focus, then it is much easier to achieve results and scale up. Also, some standards are more stringent than others, for example, organic and Fair Trade do not permit use of GM seeds, whereas Better Cotton permits it, which helped it scale up in India as farmers are mostly into GM cotton production and do not need to change the seed or the growing practices and just need to manage the existing practice better with little effort.

In some contexts, BC seems more like an Integrated Pest Management (IPM) system, which uses both bio and chemical solutions for pest control in cotton and had only an additional social component. It is also surprising to note that in some parts of India, the issues of sustainability in cotton like water and child labour are not appreciated by the local agencies, whether partners in such projects or other agencies working with farmers, as they make a relative assessment of cotton with respect to other crops like paddy. Many local stakeholders (like state agricultural universities) look at farming from national food security perspective and recommend technologies which are conventional mainstream and view organic practices as unviable in general, and cotton in particular. Such agencies are keen to promote practices like HDPS in cotton to enhance yields and mechanical picking of cotton, but not so worried about water saving and other principles.

On the other hand, organic and Fair Trade standards do not find many takers in formal structures of farming. The agricultural department prefers IPM over organic and is not convinced that organic can tackle three-year conversion period viably besides the concerns with food security problem if organic is promoted in food crops. Organic farming in cotton is completely absent in Punjab. The state agencies and departments generally refuse to recognize the presence of child labour and poor working conditions in cotton harvesting and think only of farmer welfare and, therefore, focus on mechanization of cotton harvesting and not of worker welfare or machines which can creatively involve workers. All this is also due to the fact that there is no institutional variety and diversity in the state unlike other cotton growing states like Gujarat, where there are vibrant NGOs and private agencies which work with farmers. In this situation, the Better Cotton or any other sustainability initiative in cotton or any other crop has to fall back on existing institutions which are rooted in conventional technologies and belief systems, whether it is about yields or markets.

In Gujarat, there is more variety in local institutions, which include state agencies, private corporations, NGOs and farmer agencies. The state is involved in promoting sustainability in cotton through its agencies promoting micro-irrigation to save water as plenty of irrigation in cotton is from groundwater. In fact, in Gujarat, BCI roped in NGOs which were looking for market outlet for their farmers' produce, not necessarily funds as they had other sources of funds. Some NGOs in Gujarat are not driven solely by BCI. One of the implementing partners had employed a woman trainer to increase women's participation in BC in order to attend to the child labour problem.

Further, most of the local and implementing partners from the civil society sector in the state are *standard neutral* as they work with various sustainability projects at the same time, unlike those in Punjab. Many of them are also into many crops besides cotton and have farmer groups for long and are even promoting farmers legal entities called producer companies as more stable platforms for integrating farmers with modern markets. In Gujarat, there is more of NGO involvement in Better Cotton as many of them were already into agriculture and were keen to link farmers with markets. Therefore, in Gujarat, Better Cotton was dominated by NGOs, unlike Punjab, where it was state agency- and private sector-driven.

When it comes to their *investment models*, it appears that organic and Fair Trade promise definite premium over conventional cotton, but BC focuses more on cost-cutting and mainstreaming the standards through the market channel. It is perhaps innovative on the part of the BCI that it differentiated itself by focusing on cost reduction and quality improvement and therefore better income, rather than the price focus, which is difficult to maintain. Due to this, it has been able to scale up faster as farmers see cost reduction as good enough benefit as they do not need to grow cotton very differently.

The farm level application and verification of standards is very crucial to deliver it in the market and create goodwill for the standard. If we look at their *certification/verification systems*, it becomes evident that all standards which are global in nature work through third-party verification, and that is the norm now, though it is found to be costlier by farmers, especially small cotton farmers, and some of the standards have devised group certification to tackle the cost issue. There are organic and Fair Trade groups at the farmer level for such certification. However, the practice of product testing for chemical residues in organic produce market has led to serious problems in the sector as the organic process does not necessarily mean that produce is free of any residues. This (organic product testing) is a malpractice which has become common as many organic farmers and groups and their promoters took shortcuts on certification, claiming they were organic by default.

Chain of Custody is another major aspect of ensuring adherence to standards. Regarding their *Chain of Custody approaches*, the sustainability standard systems mostly focus on traceability as a mechanism, as the identity of the product should be preserved and in organic and Fair Trade the product should be moved in an exclusive Chain of Custody to avoid any contamination. More recently, Better Cotton and Fair Trade have also adopted a mass balance system (which means if you have bought Better Cotton from farmers, then you don't need to use it in your system but can claim credit for it in conventional cotton use) in order to increase uptake of certified produce so that market is not a constraint and helps achieve mainstreaming. Under this system, the certified produce produced to certain standards can be used as conventional and credit claimed for that as it was grown to standards at the farm level.

As far as *genetically modified organisms (GMOs)* are concerned, the standards differ to some extent, though most do not permit GMOs. Only Better Cotton permits use of GM seeds, as the objective in the standards is to promote sustainability at the farmer level in terms of growing practices to cut costs and improve quality, not what is grown. That is one of the reasons that Better Cotton has scaled up much faster than any other standard so far.

The land coverage of the standards and fibre produced in India gives an idea of the scale achieved. In comparing *the land* covered by each sustainability standard system in India, it turns out that Better Cotton has scaled up well while organic, and Fair Trade standards have been struggling for scale for some time now. This is largely due to the fact that GMOs were not an issue for Better Cotton. Also, farmers have been moving between and across standards for some time due to the uncertainty created by GMOs and pest attacks and the problem of uptake of produced cotton besides prices delivered by premium based standards.

So far as uptake of sustainable produce is concerned, the organic and Fair Trade seem better placed as they have a longer presence in markets, though volumes are relatively small compared with Better Cotton and also promise price edge to farmers besides working on cost and safe production like the Better Cotton. There have, however, been issues of product and process integrity in these standards unlike Better Cotton, as the GM cotton contamination testing and social standards are much more prevalent here.

The above analysis of three different sustainability standards prevalent in India (Table 6.4) shows that all of them are global in nature. Further, the global systems of sustainability certification are gaining prominence as they are backed by global buyers in terms of their commitment to going sustainable in their supply chains. However, the performance of the three differs, and more recently has taken different trajectories. For example, whereas Better Cotton is expanding nationally and is present across all cotton growing areas and has achieved global traction due to the fact that it puts fewer restrictions on growers, the organic is coming back after a lull as the GM cotton has had its full run at least for now in India. The Fair Trade is additionally focused on creating markets for its products within Indian markets (Argade and Singh 2016).

Table 6.4 A comparative profile of sustainability standards in cotton sector in India

Parameter	Better Cotton ^a	Fair Trade	Organic cotton
Objective	To transform the market by making Better Cotton a responsible mainstream commodity	Ensuring income security and community development	To promote sustainable agriculture for saving natural resources base and to produce safe fibre
Investment model	Membership fee Donor funding Growth and innovation fund	Fixed minimum price to cover average cost of production and dedicated social premium besides CSR-based funding	Premium on conventional cotton price or MSP
Verification/certification (farm level)	Self-assessment Credibility checks Third-party verification (through sample selection)	Verification (annual) Certification by third party	Verification (annual) by third parties
Chain of Custody	Mass balance from merchant onward; physical traceability at farm and gin	Identity preserved Mass balance (new option at spinner stage)	Identity preserved
GMOs excluded	No	Yes	Yes
Land (ha) (2014–15)	2,584,500	45,031	350,033
Fibre (MT) (2014–15)	1,969,700	15,021	112,488

Source: Author adaptation for India using Truscott et al. (2016)

Note: There is another private company—Cotton Connect South Asia Ltd.-initiated standard called Responsible Environment Enhanced Livelihoods (REEL) operational in India and is as big as Fair Trade in terms of area coverage.

^aClaims that it is not a certification standard but a minimums+ continuous improvement mechanism to mainstream market-based sustainable cotton production programme.

Conclusions

An assessment as above analysis indicates that the global sustainability initiatives are taking root in India in its cotton sector and achieving scale in the recent years. However, due to their competing and overlapping nature, there are both issues of conflict as well as co-operation as seen in the case of organic and Fair Trade opposition to Better Cotton and also overlap between organic and Fair Trade standards. The latter can do good to the cotton sector as multiple aspects of sustainability can be attended with such convergence. But, the policy support to most of them is still absent, as state systems are still focused on conventional cotton production.

Further, there is a renewed interest in organic in India with C&A coming in to promote 25,000 hectares area under it and the Fair Trade focusing on promoting Fair Trade market in India, where cotton is one of the focus products. Therefore, the next few years would see competition and overlap between and across standards and that can mean well for farmers, but whether small farmers would be proactively included in these initiatives and whether worker interest and labour issues would take priority remains to be seen as any initiative in Indian agriculture gets jammed at small farmer concerns and the real workers on farms and in ginneries are lost sight of.

The discussion also suggests that there is a need to combine state efforts with various standards to give a fillip to the sustainability of the cotton sector as until now the standards have been operating on their own with very little interest and involvement of the state in any way. The state, however, cannot afford to prioritize one standard over another and needs to be neutral so that all cotton farmers benefit from support.

There is need for more convergence across standards over time so that a common standard is evolved which helps mainstreaming quickly, but that is unlikely as different standards are driven by different stakeholders and each one gives them an edge in the market against others, as it is all about competing for same sustainability space in the cotton market. Mutual recognition of fair and organic and other standards can help lower cost of monitoring and certification for producers and their promoting bodies. A more strategic use of premium can also be helpful in building sustainability in these standards.

Finally, for these standards to be effective for the market as well as the producer level impact, the monitoring of these standards needs to be

better governed and assessed so that it is reliable and provides inputs for improvement in their design and implementation. It would also need new tools and techniques of research and field level activities as regional variations in the Indian context are large and need to be recognized.

Key Takeaways

- One major insight which emerges from the analysis of various sustainability standards is that some standards are easier to scale up as they demand much less from farmers in terms of disrupting their routine practices, but they may not touch significantly the social sustainability part of the objective as they are focused not so much on producer or worker livelihoods as on mainstreaming the standards for larger effect on markets.
- The second key takeaway is that for standards to make a difference, the objectives and understanding of the standards should be shared locally by partners for them to percolate down to the local and the state agencies as otherwise they may either work at cross purposes or may not be in tandem to achieve the results.
- The third key message from this analysis is that for standards to make a difference, the institutional variety in terms of representing different stakeholder interests is crucial. For example, if there is no voice of the most marginalized like farm workers, then the objectives like decent work or fair work conditions cannot be expected to be met as many times, the dominant stakeholders would like to extract all benefits from a sustainability initiative.
- The evidence on overlap between standards also leads to the learning that mutual recognition and convergence of standards for farmer and worker benefit is needed so that efforts are not duplicated at the local level in terms of certification and investment in markers. Co-operation among competitors is the way to go in this situation.
- The final takeaway is that for any sustainability initiative to scale up and sustain, the creation and expansion of market is a must. If the differently produced crop or product does not find a market, the producers would be discouraged from continuing with it. This is a problem all three standards face, which needs to be attended proactively with equal focus on markets, rather than production alone.

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7

Addressing Sustainability Issues with Voluntary Standards and Codes: A Closer Look at Cotton Production in India

Alison Ward and Amol Mishra

Introduction

There has been an increase in the volume of cotton produced in India that is verified as sustainable by cotton sustainability standards and codes. This has been driven by demand from branded manufacturers and retailers for sustainably grown and processed cotton in order to address the agronomic and social challenges faced by cotton farmers. Sustainability standards for cotton have been developed to assure cotton buyers that the cotton has been produced in a sustainable manner and provide criteria against which production can be assessed.

As in several other sectors, a number of sustainability standards and codes in the cotton sector have grown as collaborations of companies and non-governmental organisations (NGOs) have sought to influence various aspects of cotton growing, such as using organic methods, reducing environmental impact and improving farmer livelihoods. The volume

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of cotton grown in India that is certified by a voluntary governance initiative has likewise grown. An important factor in assessing the success of these initiatives is to what extent they have a positive impact on the economic, social and environmental issues they are seeking to address. All cotton standards have their own benefits and challenges, as experienced by the farmers, implementing partners of the standards and the standards managers.

Compared with conventional cotton, organic cotton production benefits both the environment and farming communities. Organic cotton uses 91% less water and 62% less energy (Textile Exchange 2017a) and the use of chemicals in pesticides is completely prohibited. Organic cotton production helps to improve biodiversity and the health and safety of farming communities. The Government of India's support for organic production has increased the volume of cotton grown to organic standards.

This chapter provides an overview of the cotton sector in India, the cotton value chain and sustainability issues and the various cotton sustainability standards and codes. The information in this chapter was obtained through a combination of desk research into the cotton farming sector in India, interviews with standards and implementing partners currently operating in India and analysis by the authors.

The Cotton Sector in India

Agriculture and cotton production are important to India's economy. Agriculture is the primary source of livelihood for about 58% of India's population. The Gross Value Added by agriculture, forestry and fishing was estimated at Rs 17.67 trillion (US\$274.23 billion) in 2018. Cotton production in India was expected to increase by 9.3% to 37.7 million bales in 2017–18 (IBEF 2018a).

India is one of the largest producers of cotton in the world, accounting for about 26% of the global cotton production. India has the largest area under cotton cultivation in the world ranging from between 10.9 million hectares to 12.8 million hectares and constituting about 38–41% of the

world area under cotton cultivation (CCI 2018a, b). In addition to an estimated 5.8 million cotton farmers, about 40–50 million people are employed in cotton processing and trading. About half of the total cotton produced in India is long staple cotton (WWF-India 2012). Long staple has the longest fibre, between 24 and 27 mm, which sells for the best price and makes the finest cloth. About 44% of cotton produced is medium staple cotton (20–24 mm) and about 6% is short staple cotton (less than 20 mm), which fetches a lower price and is used for making inferior quality cloth (Agrifarming 2018).

The states of Gujarat, Maharashtra, Telangana, Andhra Pradesh, Karnataka, Madhya Pradesh, Haryana, Rajasthan and Punjab are the major cotton producers in India (IBEF 2018a, b) (Fig. 7.1).

Sustainability Issues in the Indian Cotton Sector

Only 12% of the world's cotton is currently classed as sustainable and there are many environmental, social and economic risks associated with cotton production (Organic Cotton 2018a, b). The following section outlines the environmental and social issues found in traditional cotton farming practices. Intervention from training or programmes from sustainable cotton standards and codes aims to address these issues.

Environmental Issues

Water

Cotton production uses a large amount of water. The water footprint associated with producing cotton fibre is the highest in India compared with all other cotton-growing countries. About 8663 litres (l) and 20,217 litres of water are required to produce one kilogramme (kg) of seed and lint cotton, respectively. The global average is 3544 l/kg and 8506 l/kg (WWF-India 2012). The large volume of water used for cotton

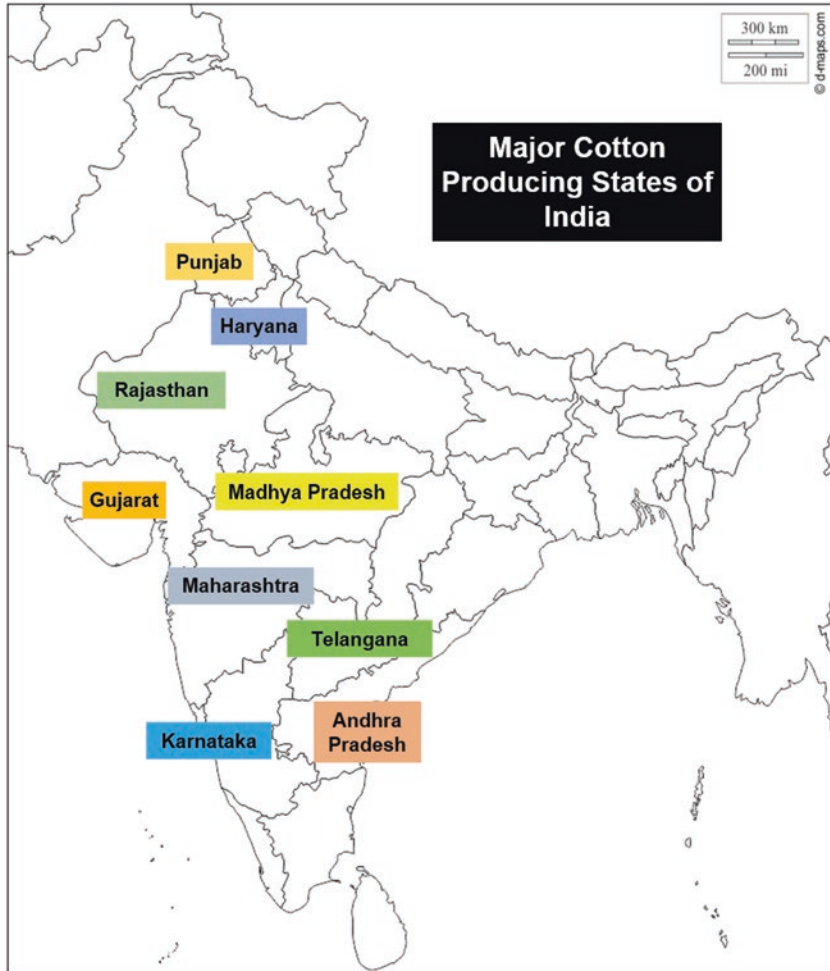


Fig. 7.1 Major cotton producing states of India. Reproduced from [d-maps.com](https://d-maps.com/carte.php?num_car=4183&lang=en): https://d-maps.com/carte.php?num_car=4183&lang=en (Source of image: Author developed)

production in India is in part due to the use of the traditional technique of flood irrigation, which is low in efficiency and uses more water than is needed for the crop. This results in water shortages for human consumption and other activities (WWF-India 2012). For every T-shirt made,

around 2700 litres of water is used across the supply chain from agricultural processes to the finished product. Many farmers do not have access to basic information when it comes to best practice for water use and conservation (CottonConnect 2014).

In India, cotton cultivation accounts for using nearly 6% of water used for irrigation in agriculture across the country. The impacts of climate change and disruptive weather patterns are resulting in water becoming scarcer in the regions where cotton is commonly grown, with cotton and other non-food crops competing with food crops for water. Lack of sharing of agricultural best practices and lack of finance to invest in new technologies results in poor and inefficient use of water in cotton farming (Organic Cotton 2018a, b).

As well as the volume of water used, there is also the risk of chemicals used in cotton production having a negative impact on the soil and ground water. In India, 27–60% of the land irrigated for cotton production suffers from some degree of salinisation. The accumulation of excessive salts, possibly from overuse of irrigation and fertilisers can result in degradation of the soil, loss of soil fertility and a detrimental effect on plant growth and yield (WWF-India 2012).

Pesticides

Cotton farmers use pesticides to control crop-destroying insects such as bollworm, with 44.5% of the total pesticides used in the country consumed for cotton production (WWF-India 2012). However, it is estimated that only 0.1% of these chemicals used reach the targeted pests with 99.9% dispersing into the soil, water and air (WWF-India 2012). Pesticides cause environmental problems when they are washed out of the soil and enter rivers and groundwater. The chemicals also interfere with the ecosystem and reduce biodiversity by eliminating not only the intended pests but also other insects (Organic Cotton 2018a, b).

The excessive use of chemical pesticides can have a negative effect on biodiversity, leading to the loss of beneficial insects such as the natural predators of bollworms and those required for crop development. The pesticides used in Indian cotton production are extremely hazardous and

often applied without safety measures or protective clothing, posing a great risk to the health of cotton labourers (WWF-India 2012).

Fertilisers

Cotton accounts for about 6% of the total fertiliser consumption in India (WWF-India 2012). Fertilisers are used in cotton farming to optimise crop nutrition and maximise yield. The key fertilisers used in cotton production are nitrogen (N), phosphorous (P) and potassium (K). Excessive use of fertilisers can result in nutrient loading in surface and ground waters and nitrification from nitrogen-based fertiliser application. This can lead to potential negative health impacts on humans and animals and reduce biodiversity. It is estimated that almost 10% of the nitrogen-based fertilisers applied on soil leaches to the surface or ground waters, causing severe water pollution (WWF-India 2012). Industrial fertilisers use 1.5% of the world's annual energy consumption and release large amounts of carbon dioxide, contributing to climate change. Soil degradation reduces its carbon sequestration capacity, also contributing to climate change (Organic Cotton 2018a, b).

Social Issues

Debt

Smallholder cotton farmers and the workers involved in cotton farming and production may fall ill or die due to a lack of adequate equipment and knowledge about how to properly use and store pesticides. In addition, unpredictable monsoons, severe pest attacks, crop failures and rates of cotton or other crops create difficulties for cotton farmers. Cotton farmers are particularly affected because cotton cultivation requires relatively large capital expenditure for seeds, fertilisers and pesticides, and these have become increasingly expensive. Since the early 1990s, the public investment in irrigation has fallen resulting in farmers investing money in their own irrigation systems. Smallholder farmers with few financial

resources have to borrow money for these expenses (Kennedy and King 2014).

However, if the income from the cotton harvest is lower than the cost of the inputs, then the farmer is driven into debt. This cycle of debt can lead to poverty and, in many cases in India, suicide by cotton farmers (Organic Cotton 2018a, b). The growing pressure of indebtedness, the rising cost of cultivation and declining returns from agriculture are understood to be the cause of increase in farmer suicides in India (Mohanty 2013). Between 1995 and 2012, the National Crime Records Bureau reported 284,673 farmers' suicides, which is 13.9% of all reported suicide deaths. The states of Andhra Pradesh and Maharashtra, with large cotton-growing areas, have a relatively higher incidence of farmers' suicides (Mishra 2014).

Child Labour

As the cotton sector grew from the fifth largest cotton producer in the world in 2002 to the second largest in less than a decade, cotton production extended further into rural locations and to family smallholdings. Children working on family farms account for approximately 30% of all working children under the age of 14 in the main cottonseed-producing states. The work is hazardous to the health and safety of young children due to extreme temperatures, heavy loads, poisonous pesticides and lack of safety equipment. In some cases, the children are migrant workers who live away from their families (International Law and Policy Institute 2015).

Gender Inequality

Women play a significant role in cotton-growing communities and are involved in tasks such as planting and harvesting that determine the quantity, quality and sustainability of cotton farming. Women account for 70% of the cotton planting and 90% of the handpicking (ITC 2011). However, because their contributions are often unacknowledged, they do

not receive the same training or support as men. CottonConnect's research found that in the absence of specific outreach efforts, only 4% of women join any form of training programme to support their role as farmers (CottonConnect 2016). Men generally control the management of the crop (e.g. purchasing of inputs, selling of produce) and manage the financial transactions (ITC 2011).

Sustainability Governance in the Cotton Sector: Government Laws, Policies and Practices

Cotton production in India is mainly covered by the Government of India (GOI) policies on agriculture and textile industries. The Government's trade policies are intended to ensure that competitively priced and adequate supplies of cotton are available to the textile industry (USDA FAS 2018a, b).

In February 2000, the GOI launched the Technology Mission on Cotton, which aimed to increase yield and production through the development of high-yielding varieties, the appropriate transfer of technology, better farm management practices and an increased area under cultivation of Bt cotton hybrids (CCI 2018a). Since its introduction in 2002, Bt cotton has been widely adopted and now accounts for an estimated 92% of the total cotton area and over 95% of India's cotton production (USDA FAS 2018a, b).

The Government of India established a minimum support price (MSP) for seed cotton to protect producers from sharp falls in farm prices. The MSP is announced annually at the start of the sowing season. In February 2018, the Indian Finance Minister announced that MSP valued at 1.5 times the cost of production will be used as a principle for determining the MSP level for all crops, including cotton. In March 2018, the Ministry of Agriculture and Farmers Welfare published a notification, fixing the maximum sale price for cottonseed for sowing, which could incentivise farmers to plant more cotton (USDA FAS 2018a, b).

The Agricultural and Processed Food Products Export Development Authority (APEDA), a part of the Ministry of Commerce of the Government of India, introduced a National Programme for Organic Production (NPOP) in recognition of India's potential to export organic produce. The national programme involves the accreditation programme for Certification Bodies, standards for organic production, promotion of organic farming including cotton production. Products meeting the NPOP standards and accreditation system have been recognised as equivalent to the country standards of the European Commission, Switzerland and the US, thus acceptable as organic by the importing countries (APEDA 2018).

Many organic farm groups in India also comply with the US National Organic Program in order to export to the US. The National Organic Program (NOP) is part of United States Department of Agriculture's (USDA's) Agricultural Marketing Service (AMS) and has regulatory oversight responsibilities over the USDA organic standards and the accreditation of organic certifying agents (USDA AMS 2018). Government policies in India have focused on improving quality, productivity and trade. The demand for improved sustainability practices has come more from NGOs and the private sector. Like many developing economies, India faces the dilemma between achieving faster development and responsible development. Voluntary governance initiatives, such as cotton sustainability standards, aim to define how to achieve responsible cotton production at scale.

Cotton Sustainability Standards in India

The main sustainability standards operating in the cotton sector in India are Better Cotton Initiative (BCI), Global Organic Textile Standard (GOTS), Organic Content Standard (OCS) and Fairtrade. In addition, the REEL Cotton Code is run by CottonConnect, and there are local variants such as Non-Pesticide Management and Low External Input Sustainable Agriculture. There were also a variety of implementing partners at national and state levels.

Better Cotton Initiative (BCI)

According to the Better Cotton Initiative, it exists to make global cotton production better for the people who produce it, better for the environment it grows in and better for the sector's future. BCI was one of a number of initiatives born out of a roundtable in 2005, led by the WWF with the goal of finding more sustainable solutions for farmers and for the environment. BCI was initially supported by major organisations including Adidas, Gap Inc., H&M, ICCO, International Federation of Agricultural Producers, International Finance Corporation, IKEA, Organic Exchange, Oxfam, PAN UK and WWF (BCI 2018a, b, c).

BCI was established as an independent organisation in 2009 and introduced the Better Cotton Production Principles and Criteria, part of the Better Cotton Standard System. The Better Cotton Fast Track Programme was launched as an independent investment vehicle managed by IDH (the Sustainable Trade Initiative of the Netherlands) to fund farmer training and investment programmes.

The Better Cotton Standard system covers environmental, social and economic sustainability. BCI explains each of the component parts of the Better Cotton Standard as follows (BCI 2018c):

1. *Production principles and criteria*: providing a global definition of Better Cotton through six key principles.
2. *Capacity building*: supporting and training farmers in growing Better Cotton through working with experienced partners at field level.
3. *Assurance programme*: regular farm assessment and measurement of results through eight consistent results indicators, encouraging farmers to continuously improve.
4. *Chain of Custody*: connecting supply and demand in the Better Cotton supply chain.
5. *Claims framework*: spreading the word about Better Cotton by communicating powerful data, information and stories from the field.
6. *Results and impact*: monitoring and evaluation mechanisms to measure progress/change, to ensure that Better Cotton delivers the intended impact.

Global Market

In the 2015–16 season, 12% of all the cotton produced globally was licensed as Better Cotton, representing the largest share of certified cotton. In 2015–16, BCI and its partners reached over 1.6 million cotton farmers in 22 countries, training them in more sustainable agricultural practices (BCI 2016). In 2015, 251,000 Metric Tonnes (MT) of Better Cotton was actively sourced by brands and retailers. By 2016, this almost doubled to 461,000 MT sourced by 54 retailers. About 807,000 MT of cotton lint was sourced at the spinning stage of cultivation, amounting to 32% of the total volume produced (PAN UK, Solidaridad, WWF 2017). BCI's goal is to train five million farmers and account for 30% of global cotton production by 2020. The aim is that BCI Farmers will be producing eight million metric tonnes of Better Cotton with retailer and brand uptake of 2.4 million metric tonnes as Better Cotton (BCI 2016).

India Market

India is a very important market for BCI. BCI opened offices in India in 2010 (Lund-Thomsen et al. 2018). India was one of the four regions of BCI's start-up phase, when BCI tested the concept of Better Cotton to improve and refine for further expansion. The first harvest of Better Cotton in India was in the 2010–2011 harvest season (BCI 2018b). The BCI standard system is operationalised in India through implementing partners, which can be divided into three broad categories: private sector suppliers to international firms, non-governmental organisations and corporate foundations. Implementing partners are reported as welcoming the introduction of the BCI standard in 2010 because they thought it would be easier for Indian farmers to comply with BCI standard than organic or Fairtrade cotton and have better market uptake (Lund-Thomsen et al. 2018). A total of 18 implementing partners implemented Better Cotton projects during the 2014 harvest season (BCI 2018b).

India has the largest BCI area in the world (638,000 hectares), with 5.5% of its cotton area BCI-certified, followed by Brazil and Pakistan

(ITC 2017). In 2015–16, 373,000 MT of lint was produced in India under Better Cotton standards (PAN UK, Solidaridad, WWF 2017).

Assessment of BCI in India

In order to assess how BCI has performed in India, it is important to consider the results of its interventions and whether it has met its goals.

Environmental issues: BCI has specific aims to reduce the environmental impact of cotton production and improve livelihoods and economic development in cotton producing areas (BCI 2018a).

Ashok Vyas, Senior Manager, Aga Khan Rural Support Programme (India), an implementing partner of BCI, reported an agronomic benefit in an interview in April 2017: “*There is a positive impact of increasing agricultural productivity to meet future nutritional needs while also reducing the adverse impacts of cotton production on the environment, including water, soil, habitat, air quality and climate emissions, and land use.*” This dual focus of improving yield at the same time as reducing negative environmental impacts helps to meet the environmental and social aims.

BCI asks farmers participating in its projects to record data related to agricultural inputs, costs and income earned from cotton. BCI collects the data reported by farmers and annually contracts researchers or consultants to conduct independent outcome evaluations in two or more countries, using a sample of comparison farmers. In 2014, BCI farmers in India achieved on average an 11% higher yield than comparison farmers. They used on average 20% less pesticide and 33% less synthetic fertiliser than comparison farmers. Using less pesticides and fertilisers to obtain higher average yields helped BCI farmers achieve on average 32% higher profits than comparison farmers. The use of organic fertiliser was 68% higher amongst BCI farmers than comparison farmers. BCI farmers reported using on average 4% less water for irrigation than comparison farmers.

Social issues: In the 2014 season, BCI introduced new social indicators for the elimination of child labour and the inclusion of women. BCI conducted awareness-raising programmes around child labour issues in partnership with local schools and communities. Around 53% of BCI

farmers demonstrated an advanced awareness about child labour, 34% had a basic awareness and 13% (concentrated in a particular region) showed a low awareness (BCI 2015).

In an interview in April 2017, Hardeep Kumar Desai, Farm Innovations Director, CottonConnect, explained the social impact: *“In both REEL and BCI programs, the farmers and farm labourers received benefits in terms of increased awareness about the issue of child labour and the importance of education for their children. They now ensure primary education for their children and also believe in strength of farmers’ group. In both the programs we have successfully built the capacity of women farmers and farm labourers in terms of agronomic practices and health and safety aspects.”* This shows how the training results in beneficial behavioural changes such as increased primary education and enhanced sustainable agricultural skills for women.

Scaling up to meet growth target: BCI’s global growth target is to reach five million farmers producing 8.2 million metrics tonnes of Better Cotton by 2020 (BCI 2018c). Through Better Cotton Fast Track Programme (BCFTP), public funders and private partners contributed to a Fast Track Fund which financed Better Cotton farmer support programmes in six countries (BCI 2014).

India was one of the primary focus areas for BCFTP. In 2015, the Fast Track Fund (FTF) invested 2.6 million Euro (52% of fund value) in 32 projects across eight states. Over the course of BCFTP from 2010 to 2015, India saw a 14-fold increase in the number of Better Cotton farmers, and the total hectares of licensed Better Cotton grew from 16,000 to over 582,000, producing over 30 times more MT Lint in 2015 than in 2010 (IDH 2017).

An independent research by the Copenhagen Business School identified a challenge for BCI in maintaining quality while scaling up. The research project “Multi-Stakeholder Initiatives in the Cotton Value Chains of South Asia” conducted research into how BCI has been formulated, its implementation and effects on income, work and environmental conditions. The researchers interviewed 240 farmers and on-farm workers in Pakistan and 360 farmers and on-farm workers in India, investigating six BCI projects in total (one in Punjab and one in Sindh, Pakistan, and two projects in Punjab and two projects in Gujarat, India).

In an interview in April 2017, Professor Peter Lund-Thomsen from Copenhagen Business School identified some of the challenges. *“To meet its volume goals, BCI needs to increase the number of farmers in projects but has limited funds, so the unit cost per farmer has to go down. This presents a challenge of scaling up while maintaining quality. With less funding per farmer, there is a risk that the farmers don’t receive the quality training that they need. This also raises the question of capacity building versus auditing. There are strict guidelines for verification which can result in a considerable amount of time spent monitoring the farmers. However, a certain amount of auditing is necessary because, along with other standards, BCI has to have enough data to prove they are doing what they claim to be doing. In some cases, auditors would like to see an even more rigorous process.”* Like other standards, BCI needs to ensure that its focus on growth does not negatively impact the quality of its training.

In February 2017, it was announced that the BCFTP had merged into the Better Cotton Initiative Growth and Innovation Fund. Private partners (retailers and brands buying cotton) pay a Volume-Based Fee for their use of Better Cotton, and a group of investors contributes funds. This continued funding is designed to achieve the aim for 30% of global cotton production to be Better Cotton by 2020 (IDH 2018).

Organic

Organic cotton is grown without the use of chemical pesticides or fertilisers used in conventional cotton production, and without the use of genetically modified organism (GMO) seeds. Organic cotton uses 91% less water and 62% less energy (Textile Exchange 2017a). Organic cotton production helps to improve biodiversity and the health and safety of farming communities. It reduces the impact on natural capital, promotes biodiversity, food security and improves and maintains the critical health of soil (CottonConnect 2017b). Increasing numbers of consumers in the western markets, in particular, are choosing organic fibre, with retailers and brands making commitments to source organically grown cotton (CottonConnect 2017a, b).

Organic was the first major international agricultural standard, established in the early 1970s. Globally, organic is the biggest sustainability standard in terms of area and variety of commodities. In 2015, more than 50.9 million hectares of agricultural production were certified as organic (or in the process of becoming certified as organic), representing 1.1% of agricultural land worldwide (ITC 2017). In 2015, Organic cotton represented 1% of the global cotton area, more than 350,000 hectares, with India accounting for almost 277,000 hectares (ITC 2017).

Organic cotton must be grown and certified to a standard approved in the International Federation of Organic Agriculture Movements (IFOAM) Family of Standards, which contains all the standards officially endorsed as organic by the Organic Movement (IFOAM 2018). The Organic Content Standard (OCS) is a Chain of Custody standard which verifies that the organic fibre in a product has been grown to an IFOAM-recognised organic farm standard. The Global Organic Textile Standard (GOTS) is a processing standard starting from the ginning process and has ecological and social criteria for the entire textile supply chain (Textile Exchange 2017a).

Global Organic Textile Standard

GOTS was created out of a need for a worldwide recognised organic textile standard. By 2002, numerous organic standards were causing confusion with producers, retailers and consumers and preventing the recognition of organic textiles (Global Standard 2018). GOTS and the related quality assurance system was developed by International Association of Natural Textile Industry (IVN) in Germany, Soil Association (SA) in the UK, Organic Trade Association (OTA) in the US and Japan Organic Cotton Association (JOCA) in Japan, all of which had their own textile standard prior to the development of GOTS. The GOTS certification system began in 2006 (Global Standard 2018).

According to GOTS, Version 5.0, March 2017, the aim of the standard is “to define requirements to ensure organic status of textiles, from harvesting of the raw materials, through environmentally and socially responsible manufacturing up to labelling in order to provide a credible assurance to the end consumer” (Global Standard 2017a). GOTS is a

processing standard and does not certify cotton farming. Organic certification of fibres entering the GOTS processing chain is required on the basis of recognised international or national standards (NPOP, EEC 834/2007, USDA NOP, IFOAM Family of Standards). GOTS certification starts from ginning, the first processing stage for cotton (Global Standard 2017c).

Only textile products that contain a minimum of 70% organic fibres can become GOTS certified. To carry the GOTS label grade “organic” a textile product must contain a minimum of 95% certified organic fibres. A textile product containing a minimum of 70% certified organic fibres can be labelled “made with organic” (Global Standard 2017c). All chemical inputs such as dyestuffs and auxiliaries used must meet certain environmental and toxicological criteria. The choice of accessories is limited in accordance with ecological aspects as well. A functional waste-water treatment plant is mandatory for any wet-processing unit involved and all processors must comply with social criteria (Global Standard 2017c).

Global Market: Globally, the number of facilities certified to the GOTS is increasing with an 8.6% increase from 4357 facilities in 2016 to 5024 in 2017, in 62 countries (Global Standard 2017b).

India Market: In an interview in April 2017, Sumit Gupta, GOTS Representative in India and Bangladesh and the Deputy Director Standards Development and Quality Assurance, GOTS, stated: “*India is the largest producer and exporter of organic cotton and organic cotton textiles. It is also the country with highest number of GOTS certified facilities. Besides, thousands of GOTS approved dyes/chemicals are being manufactured in India, both for local consumption and exports. Organic cotton textile supply chains in other countries are also sometimes dependent on organic cotton products being imported from India. The first GOTS certificate in India was issued in October 2008. We have seen a consistent growth since then. At the end of year 2016, we had around 1500 GOTS certified facilities in India, which is the highest in the world.*” This highlights India as a significant and growing market for GOTS certification. In 2017, India was the country with the largest number of certified entities at 1658 (Global Standard 2017b).

Assessment of GOTS in India: Sumit Gupta, further explained, “*The impact is multi-fold. The impacts of organic cotton farming include reduction*

in water consumption, reduction in soil erosion, protecting farmers' families from dependencies on GMO seed companies, providing food security by crop rotation. Furthermore, farmers' families and water bodies are also protected from ill effects of toxic pesticides and synthetic fertilisers. Safe and hygienic working conditions are maintained in GOTS certified textile processing facilities, benefitting health of workers. In 2017, there are around 1500 GOTS certified facilities in India and approximately 400,000 Workers are working in GOTS certified facilities in India. Only treated water is discharged from GOTS certified facilities. Hence, aquatic animals and people living downstream are saved from harmful chemicals like APEOs (Alkylphenol ethoxylates) by restricting their entry to food chain. In India, thousands of dyes and chemicals have been evaluated and improved to get approval by GOTS." GOTS certification starts from ginning, but it requires organic certification of the fibres entering the GOTS supply chain, promoting the positive impacts of organic farming. The GOTS standard then covers numerous stages of the cotton fibre process, resulting in a range of environmental and social benefits from removing toxic pesticides and synthetic fertilisers.

Organic Content Standard

The Organic Content Standard (OCS) is a Chain of Custody standard which verifies that the organic fibre in a product has been grown to an IFOAM-recognised organic farm standard (Textile Exchange 2017a). The OCS was developed by Textile Exchange to meet the need for an organic standard that would support content claims for all organic inputs. The OCS was written by Textile Exchange in 2013, in partnership with Materials Traceability Working Group and Outdoor Industry Association, consisting of 140 members from the textile sector (ECOCERT 2016).

The OCS applies to products that contain 5–100% organic material. The OCS 100 logo may be used and applies to any non-food product containing 95–100% organic material. The OCS Blended logo may be used for products that contain 5–95% organic material (Textile Exchange 2013). The OCS relies on third-party verification to verify that the final product contains the accurate amount of a given organically grown

material. It does not address the use of chemicals or any social or environmental aspects of production beyond the integrity of the organic material. The OCS uses the Chain of Custody requirements of the Content Claim Standard. OCS 2.0 was released on 1 January 2016, after a multi-stakeholder review (Textile Exchange 2018).

According to the Textile Exchange, the “goal of the Organic Content Standard (OCS) is to ensure trust in organic content claims. The OCS accomplishes this goal by verifying the presence and amount of Organic Material in a final product. It provides a strong chain of custody system from the source of the organic raw material to the final product through certification. It allows for transparent, consistent and comprehensive independent evaluation and verification of Organic Material content claims on products by an accredited third-party Certification Body (CB). As a business-to-business tool, the OCS may be used to ensure that products companies purchase actually contain Organic Material. It addresses the flow of product within and between companies, raw material verification, post-harvest processing, manufacturing, packaging, labelling, storage, handling and shipping through the seller in the last business to business transaction” (Textile Exchange 2016).

Global Market: There were 4642 OCS certified facilities in 2017 in 50 countries, an increase of 21% since 2016 (Textile Exchange 2017b).

India Market: In an interview in April 2017, Amish Gosai, South Asia Manager at Textile Exchange highlighted that “*India is very important for organic cotton as 66.90% of global organic cotton comes from India as per Textile Exchange Organic Cotton Market Report 2016. India is an important market because the first step of the chain of custody process has to be done in India at the ginning facility. After that, material can be used in the Indian supply chain or in other countries. India is in the top ten countries for OCS certified facility, with 819 of OCS certified facility partners being in India.*” India is an important and growing market for OCS due to the volume of cotton processed in Indian ginning facilities.

Assessment of OCS in India: The scale of OCS certification in India can fluctuate with the volume of organic production. In 2016, there were 902 OSC certified facilities in India, a 7% decrease since 2015, possibly related to a decline in organic production in the 2015–16 year. India’s share in global production declined from 67% to 56%. However, of the

global total of 262,975 ha of organic in-conversion, the vast majority (249,816 ha) was in India (Textile Exchange 2017b). Amish Gosai from Textile Exchange shared, “*Day by day organic cotton demand is increasing but at the same time we noticed reduction in production of organic cotton globally. It is totally market driven.*”

Organic cotton farmers in India face several challenges, such as accessing non-GMO seed, organic inputs and training in organic agriculture (Textile Exchange 2017b). For those meeting the OCS standard, there are environmental and economic benefits. Amish Gosai from Textile Exchange added: “*From our Organic Cotton Market Report and Preferred Fiber and Materials benchmark report we see the impact of the Organic Content Standard has been 91% reduction of blue water consumption, 62% reduction of primary energy demand and 46% reduction of CO2 equivalent. Farmers are getting a better price for their cotton and a reduction in cultivation cost results in economic benefits.*”

Scope for Growth of Organic Cotton

International brands and retailers are increasingly making commitments to source organic cotton for their products, which represents an opportunity for greater production of organic cotton in India. Sumit Gupta, GOTS, said: “*As the world’s second largest cotton producer, India has tremendous scope for growth and certification of organic cotton. As organic cotton is currently less than 10% in India, it could grow significantly. International buyers are constantly increasing their sustainable cotton sourcing targets and we must grab this opportunity. Of course, we shall have to work on supply chain mapping and offering better services in order to do that.*” An important step is connecting farmers to this growing market demand. If farmers can secure commitments to organic cotton volumes, this will help to offset market fluctuations and create a more sustainable organic cotton supply chain (CottonConnect 2017b).

C&A Foundation, a major actor promoting sustainability in the cotton sector, globally, has a number of initiatives to support a thriving organic cotton sector. In 2013, C&A Foundation (in partnership with C&A and other brands—H&M, Inditex, Kering and Eileen Fisher),

Textile Exchange and CottonConnect incubated the Organic Cotton Accelerator (OCA). This multi-stakeholder initiative was designed to accelerate the shift towards organic cotton production by leveraging buying practices to benefit farmers, investing in improving access to quality organic seeds and securing the integrity of organic cotton throughout the supply chain. Pilot projects of the OCA are being trialled in India. In 2014, C&A Foundation worked with CottonConnect to organise a roundtable that brought together over 170 stakeholders in the Indian organic and sustainable cotton sector. As a result, the Organic and Fair Trade Cotton Secretariat in India was created, supported financially by C&A Foundation. The group is made up of 14 organisations across government, NGOs, brands and retailers. It was created to address specific issues facing the organic cotton industry in India, such as policy issues, seed supply and integrity of organic cotton.

Fairtrade

Fairtrade International defines fair trade as “Fair trade is an alternative approach to conventional trade based on a partnership between producers and traders, businesses and consumers. The international Fairtrade system—made up of Fairtrade International and its member organizations—represents the world’s largest and most recognized fair trade system” (Fairtrade International 2018a).

The Fairtrade Cotton standard was introduced in 2004. Fairtrade cotton farmers receive the Fairtrade Minimum Price which is intended to cover the cost of sustainable production and provides farmers with a safety net against sudden drops in market prices. The Fairtrade Premium, paid on top of the selling price, provides additional income that the farmers democratically decide to invest in their businesses, families and communities.

The Fairtrade Standard also aims to protect farmers’ health and safety, promote efficient water usage and ban dangerous chemicals and genetically modified cottonseeds. A large percentage of Fairtrade cotton is also organic certified.

The Fairtrade Cotton Program was introduced in 2014 to encourage companies to work together with Fairtrade and cotton cooperatives to increase their impact for farmers and their communities. Since the introduction of Fairtrade cotton, Fairtrade's goal has been to also address the unsafe and unfair labour conditions in cotton processing and textile production factories. In 2016, Fairtrade introduced the new Fairtrade Textile Standard and Programme to reach people at all stages of textile production chains, from seed cotton to finished textile products (Fairtrade International 2018b).

Global Market

The Fairtrade cotton market is growing, with increasing opportunities for producers to sell via the Fairtrade Sourcing Programs and under the new Fairtrade Textile Standard. In 2015–16, around 16,640 MT of Fairtrade cotton lint was produced by 32,430 farmers on 34,876 hectares in seven different countries. In 2015, 73% of Fairtrade cotton producers also held organic certification—marking an increase of 8% over the previous year. Over 200 brands globally source Fairtrade cotton. In 2016, retail uptake was estimated to be 8583 MT (approximately 51% of production) (Fairtrade International 2017).

India Market

In an interview in April 2017, Abhishek Jani, CEO Fairtrade India, stated: *“India is by far the largest contributor to Fairtrade cotton supplies. It has a huge production hub and base. More than 40% of the value chain is in India. There is a need for more Fairtrade cotton cultivation as there is a lot of distress in the farming sector in India with about 70% of farmer suicides in India reported from the cotton growing regions. The focus of Fairtrade in the cotton farm sector is threefold: improving social and economic justice to ensure non-exploitative and non-discriminatory production with improved worker rights at farm level; achieving sustainable livelihoods through the Fairtrade minimum price and Fairtrade Premium and better trading terms; and*

environmental improvements on soil management, energy management, waste management and water utilization.” India is a large market for Fairtrade because of the scale of production and the fact that more than 40% of the value chain is in India.

Assessment of Fairtrade in India

Fairtrade cotton has been certified in India since 2004. In 2018, it was reported there were over 25,000 Fairtrade-certified cotton farmers operating across India (Fairtrade 2018b). The Fairtrade premium is reported as being invested in children’s education. The fact that India has government intervention into the market price for cotton, in the form of the annually stipulated minimum support price, means that the fair trading price and Fairtrade premium aspects of the Fairtrade model do not necessarily have the same impact as in other markets. According to an impact study carried out in 2014, 60% of farmers reported that they had better economic benefits after joining the Fairtrade system (Fairtrade 2018b).

REEL Cotton

The Responsible Environment Enhanced Livelihoods (REEL) Cotton programme is a three-year agricultural programme providing farmers with training on sustainable cotton farming practices. Run by CottonConnect in partnership with leading brands and retailers, the programme is proven to increase yields and farm profits while reducing environmental impacts. REEL Cotton can be fully traced from farmer to the retail stores.

The REEL Cotton programme is independently verified by the REEL Code, a code of conduct developed with FLOCERT, the organisation that provides Fairtrade International certification. The REEL Code verifies that farmers in the REEL Cotton programme are using sustainable practices, with added elements that ensure traceability and decent work. The code is based on eight principles: (1) management skills, (2) plant and field management, (3) soil nutrient management, (4) pest

management, (5) water management, (6) ecosystem protection, (7) waste management and (8) institutional grouping (CottonConnect 2017a, b).

REEL is a code, rather than a standard, and as such can be more flexible and can be tailored to focus on sustainability issues that brands and retailers are trying to address in their supply chains. In addition to the environmental focus, REEL offers brands the option to conduct social and community intervention projects in their farmer and supply chain communities and hence look at the issues of sustainability from a more holistic approach. “Women in Cotton,” “Farmer Business School” and “Health and Safety in cotton gins” are some of the social intervention programmes run by CottonConnect as an addendum to the REEL environmental element (CottonConnect 2017a).

Global Market

Since its creation in 2010, the REEL programme has trained more than 20,000 farmers, predominantly in subsistence economies in India, China, Pakistan and Peru. As well as increasing the capacity for sustainable cotton production within farmers and enhancing their livelihoods, the REEL programme helps farmers gain access to markets and supply chains of international brands and retailers (CottonConnect 2017a).

Assessment of REEL Cotton in India

CottonConnect’s REEL Cotton programme has helped cotton farmers increase their yields by 22%, reduce water/irrigation by 15% and chemical pesticides and fertilisers by 52% and 28%, respectively (on an average across all the REEL projects in India for 2014–15). This enabled farmers to increase their profits by 52% on an average (CottonConnect 2017b).

A project run by CottonConnect in partnership with a retailer and a women’s association implemented the REEL Cotton programme in the Gujarat region of India training 1251 female cotton farmers. This resulted in lower fertiliser, pesticide and water usage. In the third year of the

project, they used 40% less fertiliser, 44% less pesticide and 10% less water when compared with the control farmers (CottonConnect 2017b).

Rameshsinh Suryavanshsinh Kshatriya, President, Inter Rural Development Institute (IRDI), an implementing partner of the REEL Cotton programme, gave an example of the environmental and economic benefits of the programme, “*Earlier farmers did not use sustainable cotton cultivation practices. After joining the REEL Cotton program, the farmers first got information about the importance of soil testing, seed selection, identification of friendly and enemy insects, low cost methods of pest control like yellow sticky trap, pheromone traps and conservation of friendly insects. Previously their input cost was high but as they realized the correct practices of sustainable cotton cultivation practices, their costs for chemical pesticides and fertilizers has decreased. Thus, their overall income has increased.*” The REEL Cotton training has improved awareness and adoption of sustainable agricultural practices, which, in turn, has generated environmental, social and economic benefits. The REEL Cotton programme has also enabled brands and retailers to develop projects based on their specific goals, for example, through Farmer Business School and Women in Cotton training.

Implementation of Sustainability Standards

Sustainability standards and codes in many cases support cotton-growing farmers to be trained in sustainable practices in order to meet the criteria of the standard. This capacity building is carried out by the staff of implementation partners on the ground, who conduct farmer training sessions, regular visits for clarifications, crop monitoring and support and annual farmer conventions. CottonConnect is one such implementation partner to BCI and Organic, in addition to being the code owner of REEL. It not only conducts training programmes and annual farmer conventions for imparting knowledge on sustainable agriculture practices to farmers but also provides certification and documentation support to them, quality seed linkages and market linkages to provide procurement support for the uptake of sustainable cotton and, in some cases, market premiums.

Quantifying Impact

An important measurement of the success of voluntary governance initiatives, such as sustainability standards, is to examine to what extent there is a tangible impact on environmental, social and economic parameters for cotton production and producers. Different standards were developed with different focus areas. For example, organic standards focus on reducing cotton's environmental impact, Fairtrade aims for fair wages and competitive market prices, and BCI and other programmes work on widening the base to include more and more farmers into sustainable production. What all these standards have in common are the sustainable agronomic practices which are at the core of any kind of impact creation.

While there is a significant positive impact seen by sustainability standards and codes, there is also difficulty in quantifying the impact achieved. The major challenges for demonstrating impact are the collection and efficacy of data which form the basis of impact analysis. One of the reasons behind the difficulty in collecting data is the data collectors' need to have a minimum agronomic qualification and understanding about the services being offered by the standard implementation programmes. The data collection tool requires comprehensive training and periodic monitoring.

Beneficiaries also need to give consent for their data to be used. Group discussions with farmers are needed prior to the programme as part of the baseline data collection. External factors like poor monsoons, seed germination issues and farmers' lack of intent also have a negative effect on the data collection process.

Challenges for Sustainability Standards in India

The biggest challenge for any international standard in India is penetrating the cotton supply chain. The complexity of the supply chain makes it difficult for international brands or standards entering India, especially when they need support to establish the standard. The standards face teething issues around familiarity with the supply chain, often working

with limited knowledge and understanding of local 'on the ground' partners and data collection and verification tools. There are also major challenges around the reluctance of communities to be a part of any new programme or intervention which pushes them to give up or modify their age-old traditional farming practices.

Hardeep Kumar Desai at CottonConnect agrees: *"Many a time it is difficult to mobilize farmers in a particular direction and motivate them to adapt certain sustainable practices on scale. Sometimes it is also difficult to keep the interest of farmers intact in sustainable farmers training programs for a longer period. In addition to these, unpredictable monsoon, severe pest attacks, crop failures and rates of cotton/other crops, creates difficulties for the farmers to adapt a standard's criteria in a successful manner. Engaging farmers in training by providing fresh information and new types of training in 3rd or 4th year of a program is a challenge."* Farmers need to stay engaged in a programme over multiple years to realise the benefits of the training and yet external factors may stop them from continuing to implement the practices needed to meet the standard's criteria.

Abhishek Jani, Fairtrade India also shared some challenges: *"Due to a lack of resources, focus on short term outcomes and market distortions, we see a big challenge in getting cotton farmers to move towards low resource utilisation of non-GM cultivation practices. There are also challenges around preventing child labour and enforcing non-exploitative and non-discriminatory labour practices at farm level. Resources are also a challenge for undertaking programs for strengthening governance and leadership capacities helping to create grassroots led producer organisations which are community owned and not to be managed on paper."* Continued resources are needed to support farmers making a change from traditional ways of working to new more responsible or sustainable practices. Implementing partners of organic standards record specific challenges in farmers' meeting organic criteria. Dinesh Pandya, Manager (Programmes and Administration), Mahiti, an implementing partner for NPOP and NOP organic standards said: *"There are not enough organic fertilizers such as compost or cow dung. Some standards are very rigid such as composting should only be used from organic farmers whereas we feel farmers should be allowed to use compost from non-organic farmers also."*

When women in cotton farming communities are supported with training in agricultural practices or health and hygiene, there are benefits for the whole community as women are more likely to invest back into the community. However, some standards report a challenge in women being able to take part in training. Nagendra Rai, Project Coordinator–Organic Projects, PRERANA, an implementing partner for organic standard NPOP, identified a social challenge: “*The social mobility of women in the project area is limited. The socio-condition of the village doesn’t allow them to take much part in community-based initiatives.*” A holistic approach needs to be taken to accommodate social sensibilities while delivering gender empowerment programmes.

Conclusion

Sustainability standards are playing a meaningful role in improving the sustainability of the cotton sector in India. They provide assurance for retailers and brands looking for verification that the cotton entering their supply chain is produced ethically and sustainably. As voluntary governance initiatives, they complement the public regulations in India. The Government of India’s policies have focused on improving quality, productivity and trade. For example, the Government’s Technology Mission on Cotton improved yield and production through the increased cultivation of high-yielding varieties, the Bt cotton hybrids. The MSP for seed cotton protects producers from sharp falls in farm prices. The Government’s NPOP, supported by certification bodies, meets standards for organic production in order to leverage export opportunities.

While the public regulations primarily focus on trade and production, the demand for improved sustainability practices from NGOs and the private sector has been met by voluntary governance. The available data demonstrate a positive economic, social and environmental impact. BCI and REEL Cotton programmes have reduced negative environmental impacts (e.g. water, chemical fertiliser and pesticide use) and increased positive social impacts (e.g. increased livelihoods, health and safety and gender empowerment). The Fairtrade model has focused on improved workers’ rights and sustainable livelihoods. The Organic certifications

(GOTS and OCS) have ensured that organic fibre is grown to recognised organic standards and meets ecological and social criteria for the entire textile supply chain.

The complex supply chain in India can present a challenge for sustainability standards, especially for new standards entering the market. Motivating farming communities to adopt new methods can be difficult, particularly over a long period of time. Changes to environmental methods such as using non-GM crops, and the creation of social awareness around issues such as child labour, are noted as challenging. As the uptake of standards grows, they also face the dilemma of scaling up whilst maintaining quality of training and impact.

The demand for sustainably sourced cotton is predicted to increase as brands create further demand for ethically and responsibly sourced materials. New markets such as the hotel and hospitality sector provide a potential source of growth for standards. With a growing awareness of ethical sourcing among consumers in India, there is also a future for voluntary governance standards within the supply chains of domestic brands in India, which currently do not have even basic ethical compliance. There may be changes in the voluntary governance of the cotton sector due to the evolution of private codes and verification. This potentially increases the volume of cotton grown according to sustainable practices in India, if the private codes are used alongside sustainability standards. For standards to continue to play a role in cotton supply chains, there needs to be a greater emphasis on monitoring and communicating the positive impact.

Key Takeaways

- Cotton sustainability standards complement public policies and aim to meet the demand for more sustainable practices, resulting in positive environmental, social and economic impact.
- Cotton experienced a high growth rate of its certified area between 2011 and 2015 at 250% growth rate.
- The main sustainability standards in the cotton sector in India are Better Cotton Initiative, Global Organic Textile Standard, Organic Content Standard and Fairtrade. In addition, the REEL Cotton Code is run by CottonConnect.

- Challenges include the complexity of the Indian cotton supply chain, the reluctance of some to change traditional farming practices and the gender inequality in cotton farming communities.
- Opportunities include the use of new technology and meeting the demand for sustainably grown cotton in new markets and sectors.
- The growing trend for companies' own sustainability codes presents an opportunity for further voluntary governance and increased sustainable cotton production.

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8

State of Palm Oil and Sustainability Governance in India

Aditya Mishra and Bhavna Prasad

Introduction

This chapter discusses the fundamental dynamics, trade drivers, market forces, sustainability concerns and the relevant certification standards related to palm oil and its derivatives in India, in the broader context of the edible oil market. The chapter encapsulates the key aspects of the palm oil sector in India, covering the entire chain from producers to consumers. We discuss the significance of palm oil as a key commodity in terms of government policy and its role in meeting the ever-increasing demand for edible oil in India. We attempt to offer a holistic understanding of palm oil from the edible oil sector and commodity perspective along with the various environmental, social and logistical challenges associated with its production and trade. We also discuss the fundamentals of all the main production level and supply certification schemes associated with palm oil globally and specifically in the Indian context, given India's position as the biggest palm oil importer in the world.

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The chapter opens with an introduction to the sector where statistics and figures on global palm oil sector, palm oil applications, usage, varieties and categories of palm oil are presented. In the next section, we elaborate on the value chain of palm oil in India, including the market structure, key players and stakeholders. We then discuss the sustainability issues and challenges in the sector and elaborate the environmental and social impacts and their implications. This is followed by an examination of the voluntary and mandatory sustainability standards in the sector, including the Roundtable for Sustainable Palm Oil (RSPO) standard and the Indonesian and Malaysian national standards, their applicability to India, current status, strengths, challenges and comparison with other standards and initiatives. We then draw our discussions to a conclusion and summarize the key points.

Overview of Global Economy for Palm Oil and Other Vegetable Oils

Humans have been known to use oils and fats as a medium for cooking food since the Bronze Age at least, with animal fats readily available from livestock without any significant processing needed (Thomas 2002). Lard and butter were two popular edible fats used for cooking and baking purposes. Historically speaking, the consumption of oils and fats from dairy sources and vegetable origin oils goes back approximately 10,000 years for livestock derived fat sources and 6000 years for olive oil, one of the first vegetable origin oils used by humans on a large scale. Sesame seed oil was also discovered and used by humans concurrently with olive oil as per archaeological reports. Groundnut oil was used in Central/South America in the early Middle Ages, with palm oil following the others in the sixteenth century (Pitts et al. 2007).

Cottonseed oil was marketed in the US in the early twentieth century, with the oil derived from leftover seeds from cotton ginning. A significant increase in consumption of edible oils occurred beyond the Industrial Revolution in Europe, with new crushing techniques and use of machinery for refining leading the way. Some of the plant/tree-derived edible oils that became widespread in the twentieth century include palm oil,

soybean oil, canola oil, mustard, corn oil and peanut oil. Apart from palm oil, most widely consumed vegetable oils have been either produced from by-products like soybean oil from soy crops or annual crops like sunflower and mustard, where production volumes can be rapidly varied to match fluctuating market demand.

In modern times, vegetable oils are an important cog of food security around the globe, with billions using it as a medium for cooking. The consumption of vegetable oils has grown proportionally with economic development and population increases in developing regions in Africa, Asia and South America. Asia happens to be the single largest market for vegetable-based cooking oil, given the mainstream usage in populous countries like India, China, Indonesia, Pakistan and Malaysia (Parcell et al. 2012).

The global market for vegetable oils has grown rapidly in the last 25 years, with output increasing from 80.1 million metric tonnes (MMT) in 1990 to 188.4 MMT in 2017 (USDA 2017). In terms of varieties, palm oil, rapeseed oil, olive oil, soybean oil, sunflower oil and groundnut oil are the most traded and consumed varieties, with consumers' preferences depending on geographic, economic and cultural factors. Other newer oils such as rice bran oil, safflower and linseed oils have been gaining popularity since the 1990s, especially in the context of the health food market. High cost of production means these oils are confined to niche markets, with most consumption coming from developed countries. There are other very minor oils like linseed and rice bran which are not included in our discussion as their production volumes are very low compared to the major oils listed below. They account for much smaller volumes of the overall market given the cost.

In terms of volumes, popularity and overall uptake, palm oil is the most widely produced, traded and consumed vegetable-derived oil in the world, followed by soybean, rapeseed and sunflower oils, respectively. One of the major reasons for its popularity is that it is one of the most productive oilseeds and therefore has significantly higher yields per acreage, relative to other oilseeds. In addition, it is a very versatile edible oil that can be easily blended to several other edible oils; can be used for deep frying as it has a relatively higher boiling point; is used across a diverse range of products from biscuits to shampoo. Close to 72.9 MMT palm

and palm kernel oil, its derivatives and fractions were produced between 2016 and 2017, eclipsing soy at 52 MMT, which happens to be the second most popular edible oil and the closest competitor for palm oil in most global markets. Rapeseed oil accounted for a production of 27.54 MMT across the globe during the same period, placing it third in volumes. Sunflower oil and groundnut oil complete the top five, with 18.2 and 5.8 MMT respectively produced.

Considering specifically about “palm oil”, the term refers to the oil extracted from the mesocarp or pulp of fruits from the African oil palm tree, with the botanical name of *Elaeis guineensis*, with “Palm Kernel Oil” referring to the oil produced from crushing the kernel or seed of the oil palm fruit. The oil palm tree has a long lifespan, with 25 years and more of fruit-bearing stage, before the yields start to see a decline. On the flip side, oil palm requires pretty specific conditions to thrive or even survive, namely, the availability of water, through either irrigation or natural precipitation and the need for tropical and sub-tropical climatic conditions. Even if the aforementioned conditions are met, the issue of soil characteristics like PH, Alkalinity, porosity, humus content and nutrient loading become important factors for consideration.

In terms of global trade of palm oil and its derivatives (USDA 2017), Indonesia and Malaysia were the two biggest producers and exporters of palm oil in the world in 2016 and have been for more than two decades, with 25 MMT and 17 MMT palm oil in refined and crude forms exported respectively by each. The next exporter in the list is Guatemala, but the volumes are negligible compared to the top two who dominate the supply. India has been the largest importer of palm oil and its derivatives in the last five years, driven by a deepening deficit in meeting edible oil demand and the lower import costs of palm oil compared to others, accounting for 9.3 MMT of imports in 2017. The European Union (EU) is the next biggest importer with 7.20 MMT imported in the same period. China’s huge demand for edible oils means it is also in the top-three list of palm importers with imports of 4.9 MMT in 2016–17. Two other South Asian countries complete the top five, with Pakistan coming in at fourth with 3.0 MMT, followed by Bangladesh at 1.3 MMT in 2016–17.

The palm oil industry is also critical to the economic and overall development of Indonesia and Malaysia and a critical component of food secu-

rity needs in Asia. With 3.7 million people directly employed and 25 million indirectly dependent on it in Indonesia, palm oil is the most important agricultural crop in the country from both social and economic perspectives (ZSL 2017). For Malaysia, palm oil is a significant export commodity with the total contribution from the sector being 16.1 billion USD or 5% of the total GDP. The developmental significance of the industry is underlined by the fact that almost 40% of plantations belong to smallholders (Otieno et al. 2016). Contribution of the oil palm industry to human development and poverty alleviation in newer producer countries in frontiers such as Africa is also growing (Alam-Shah 2015). Oil palm is also becoming popular in South and Central America, with demands from countries like Colombia, Honduras and Costa Rica. These operations are the source of livelihood to smallholders who have shifted from other seasonal crops over the last few years (Furomo and Aide 2016).

Value Chain and Domestic Market of Palm Oil and Derivatives

India is the largest importer of palm oil in the world with 9.3 million tonnes imported in between 2016 and 2017, accounting for 21% of total global imports of palm oil in terms of volume. Palm oil imported into India accounts for 71% of the total demand, highlighting the gaping chasm between demand and supply for edible oils (Aradhey and Slate 2016). Palm oil, being cheap and versatile, makes up about 62% of total imported vegetable oil volumes (Aradhey and Slate 2016). The Indian palm oil industry is primarily driven by demand created for domestic consumption with little or no re-export taking place. National directives were issued to prohibit re-exports of edible oils, but a revision in policy was made in April 2018, allowing exports of edible oils again, with the exception of certain categories of mustard oil (Ministry of Commerce 2018).

A time series-based comparison of edible oil imports of different oil types from 2012 to 2017 shows palm oil's rise in terms of imports, showing an increase of 43% from 2012 to 2017, from 6.5 MMT to 9.3 MMT. The data sets also illustrate India's progressively increasing imports of major edible oils, including soybean and sunflower oils (USDA 2017).

Review of the factors that make palm oil so popular in India suggests cheap availability, high degree of versatility, higher smoke point compared to other oils, neutral taste profile and ease of processing and fractionation.

Most palm oil in India is used for food consumption, while the rest is consumed in non-food segments, like oleochemicals. While the food consumption is mainly defined by cooking oil usage, direct palm olein usage in India is limited and so the palm oil is mainly used for blending with other oils like mustard, soy and sunflower oil. The government also procures imported palm oil through its trading agencies for distribution/sales through the Public Distribution System (PDS); however, this is not happening at the central level, and offtake by the state government agencies has been very meagre since the last few years. Only some states in the south are buying palm oil to be distributed through the PDS.

Keeping prices stable is a key objective of the government in the interest of food security of vulnerable consumers and inflation (FAO 2017). A proportion of palm oil also goes into processed food products such as baked goods, biscuits and cakes in the form of emulsifying, shortening or stabilizing agents. The non-food fast-moving consumer goods (FMCG) sector accounts for the remaining volume in the form of oleochemicals/specialty chemicals used in manufacturing (personal care, detergents, cosmetics, etc.). The two biggest uses of palm oil are as cooking medium and as inputs in various consumer goods products across edible and non-edible oil categories.

The primary product, crude palm oil or CPO, is primarily used as a feedstock by refiners and processors to make different end products and ingredients for consumer goods which undergo refining to yield Refined, Bleached and Deodorized (RBD) palm oil, which is directly hydrogenated and used as semi-solid cooking fat. RBD Palm Oil is also fractionated in the next step to yield two components, which are RBD palm olein and RBD Palm Stearin, with varying applications for each fraction. RBD palm olein is the refined form of the palm olein component of the processing output. It is primarily used as cooking oil in India by itself or in the form of a blend with other edible oils. Going further down the value

chain, Palm Fatty Acid Distillate or PFAD is a non-edible by-product or residue of the refining process for crude palm oil. The main uses of PFAD are manufacturing fatty acids and fatty alcohols along with other specialty chemicals. Yet another key product category is oleochemicals, which are derived from non-edible components of the fractionation of RBD palm oil, with widespread usage in the personal care, cosmetics and non-food FMCG products. Palm oil components are also used for hydrogenation or saturation processes, leading to a semi-solid fat that is stable at room temperature and resistant to degradation. Hydrogenated fats are widely seen in the forms of butter substitutes, margarines, spreads and other similar food-based products.

In terms of the main user groups of cooking palm oil, the Hotel/Restaurant/Café (HoReCa) sector is a significant user of palm oil used for cooking. The popularity of palm oil in the sector can be attributed to its lower costs compared to alternatives, allowing higher margins. Also, the versatility and chemical resilience of palm oil has contributed to its popularity in the commercial food service sector, where palm oil is sold mostly as a blended oil. Sensitivity to price volatility, especially upward movement, is a key consideration for this group. Direct consumption of palm olein is low given the low perception of palm oil among some of the consumer groups. However, palm oil is also blended with other edible oils to make commercial blends, which are purchased by middle-class consumers. The general palm oil value chain can be represented in a simplified manner as per the value chain in Fig. 8.1.

The palm and palm kernel oil value chain in India begins at the point of import, with traders buying crude or refined palm oils and selling it to processors and refiners who cater to different markets. A few companies are present in multiple spaces due to vertical integration across the supply chain (WWF-India and RSPO 2018). A smaller segment comprises ingredient manufacturers who basically manufacture oleochemicals, fatty acids and alcohols from PFAD, fractions of palm stearin and palm kernel stearin, which are subsequently used as inputs by consumer goods companies across the personal care and cosmetics industries. Manufacturers also produce emulsified and shortened palm oil forms, which are used in processed food products by companies.

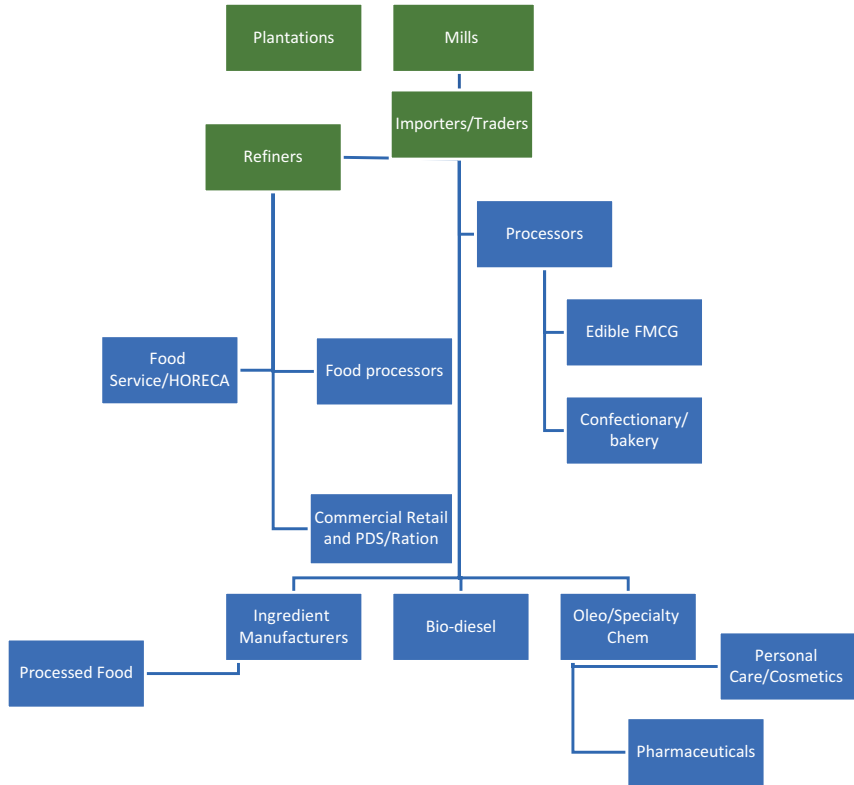


Fig. 8.1 Palm oil industry value chain in India. Developed by authors for India using Pacheco et al. (2017)

Public Policies and Schemes for Palm Oil in India

Currently, majority (Approx. 98% of total demand) of India’s palm oil demand is met through imports from Indonesia and Malaysia as the low domestic production in India is insufficient to meet the rising demand. Palm oil attracts import duties like many other commodities, with the exact percentages set by the Ministry of Commerce in India. Historically, there has been a decreasing trend in terms of duties for edible oils in general. However, there was a steep increase in duties, with 44% and 54%

duties applicable for crude palm oil and RBD palm oil, respectively, as of April 2018 (Hindu Business Line 2018). There is also a difference in the duty for crude and refined palm oils, which has historically fluctuated between 7.5% and 12.5% in the last 15 years.

In setting tariff, the government makes efforts to balance differing, sometimes opposing, interests. Since palm oil is significantly used by economically weaker sections of the population, there is a need to keep the end prices reasonable for these consumers, while arriving on an appropriate tariff structure. However, there is also the need to balance interests of domestic producers of palm oil, which includes farmers of oilseeds and oil crops as well as processors/refiners. Without an appropriate duty level, imported palm oil could make domestically produced oil uncompetitive due to much lower production costs, attributable to economies of scale and ideal conditions in producer regions. There is a constant balancing act between protection for local refiners and control of commodity prices.

The Indian government has been keen to incentivize domestic production of palm oil in order to address food security issues. India has incorporated comprehensive policies to boost the prospects of domestic production of palm oil through increased acreage, better linkages and infrastructure, technological improvements and financial support. The most recent policy framework applicable to domestic palm oil production is known as the National Mission on Oilseeds and Oil Palm (NMOOP), which was conceptualized to increase production of vegetable oils sourced from oilseeds, oil palm and Tree Borne Oilseeds (TBOs) from 7.06 million tonnes (MT) in 2011 to 9.51 MT by the end of the 12th Plan, stated to end by 2017. This plan is currently active, having transitioned from Oil Palm Area Expansion Programme (Ministry of Agriculture and Farmers Welfare 2017). The Mini Mission II (MM II) is a key mission under the NMOOP programme and is scheduled for implementation in the period from 2017 to 2019. With funding allocated to Andhra Pradesh, Telangana, Karnataka, Assam, Kerala, Gujarat, Tamil Nadu, Chhattisgarh, Odisha, Mizoram, Nagaland and Arunachal Pradesh (Ministry of Agriculture and Farmers Welfare 2017).

In terms of recent policy developments on NMOOP in 2017, the Union Cabinet, chaired by the Indian Prime Minister, has approved measures to increase oil palm area and production in India. A key measure

was the relaxation of land ceiling limit for oil palm cultivation under NMOOP. The Cabinet approved relaxation in restrictions for providing assistance to more than 25-hectare area also under NMOOP to attract corporate bodies towards oil palm and derive maximum benefit of 100% foreign direct investment (FDI). The Cabinet further approved the revision of norms of assistance mainly for planting materials, maintenance cost, inter-cropping cost and bore-well to make oil palm plantations attractive. Even though the government has been pushing for oil palm cultivation in India, the yield has been below world average due to varied agro-climatic variations, water usage and catered to less than 6% of Indian palm oil imports in 2017. Given the current domestic production scenario, in the coming years the production will not be enough to meet the demand and therefore the import dependency is expected to remain.

Sustainability Issues and Challenges of the Sector

Impacts on Environment and Society in Producer Regions

The factors that have made palm oil such a success have also brought with it well-documented environmental and social challenges. Most prominent among these are issues of production, linked to the clearing of tropical forests and peatlands, and the impacts this has had on both the environment and local communities. The environmental impacts of palm oil production and trade are centred on large scale deforestation of tropical rainforests, through large scale logging or burning, to make way for plantations. More than a third of large-scale oil palm expansion between 1990 and 2010 has contributed to forest cover loss (about 3.5 million hectares in total) in Indonesia, Malaysia and Papua New Guinea (WWF-Australia 2016). Endangered species like the Orangutan, Sumatran Tiger, Javan Rhinoceros and Pygmy/Borneo elephants have seen their numbers decline due to a decrease in habitats, as forests make way for plantations (Petrenko et al. 2016). The Indonesian province of Riau has seen some of

the highest rates of deforestation in the country, with a loss of 65% of forest cover between 1982 and 2007 (Aldred 2008) due to conversion for oil palm and other plantation species. Kalimantan (Indonesian Borneo) has also seen large scale forest losses, with 56% of the forest cover lost in the period from 1985 to 2001 (WWF 2016). This clearing of forests through slash and burn or logging contributes to climate change through global greenhouse gas (GHG) emissions from clearing forests and draining. According to scientists, more than 15% of GHG emissions result from land use change. Forest burning to clear land for planting oil palm and other plantations is an annual event (Watson et al. 2000). Draining and burning of carbon-rich peatland areas also causes the release of significant volumes of sequestered carbon, which adds to the level of GHG emissions (The Guardian 2015).

Apart from the impacts of deforestation on biodiversity, ecology and climate, oil palm plantations are also associated with ecological impacts from agricultural inputs and practices. Depletion of the water table, leaching of chemicals into groundwater sources, runoff into water bodies leading to eutrophication, change in soil PH and fertility are some of the more significant environmental impacts of excessive use of agricultural inputs. Many smallholders are not sufficiently versed with farming techniques that optimize the use of these inputs.

Apart from the ecological, biodiversity and environmental implications associated with oil palm, the sector is also not without its human impacts. While much is made of the economic benefits of oil palm cultivation, there are serious social challenges associated with its expansion as an industry. Significant proportion of populations in rural Indonesia have traditionally lived off natural resources available in forests and participate in traditional oil palm cultivation to sell off the Fresh Fruit Bunches to companies owning mills. However, the growth of the sector has seen a large number of companies aggressively acquire land for captive plantations (Schrier-Ujil et al. 2010; Obidzinski et al. 2012). Locals have reported negative effects on their livelihoods with traditional activities hampered by the growth of oil palm plantations.

Also, post the setting up of plantations and mills, the operations are labour-intensive and employ millions in plantations around the world. As a result, worker rights have become an issue linked with the continued

expansion of the industry, with below-market wages, occupational health and safety issues, basic healthcare and sanitation and discriminatory practices being some of the key issues highlighted (World Vision Action 2013; Verite International 2014).

Health issues impact local as well as neighbouring populations in the form of respiratory diseases and breathing difficulties, which have resulted from particulate pollution caused by slash and burn practices. Apart from local people, nearby countries like Singapore too are affected (Emmanuel 2000).

Sustainability Governance Landscape of Palm Oil Sector

Voluntary Sustainability Standards for Palm Oil Production and Trade

The numerous environmental and social issues associated with palm oil in producer countries have been brought to the fore in the last 15 years by non-governmental organizations (NGOs) and environmental/social interest groups, with targeted action against errant companies buying from producers in this region as well as concerted campaigns to make the public aware of the links between everyday products and environmental/social destruction. This led to increased awareness levels among consumers of FMCG products, primarily in the developed markets for palm oil such as the EU and North America, where consumers have the willingness and financial power to alter their purchase decisions based on factors other than just end cost. Action against prominent companies like Nestle (Kai 2010) in Europe by an environmental activist group created a situation where companies had to take action on their palm oil procurement or face the ire of consumers.

Given the rising levels of backlash against companies sourcing palm oil from sources linked to deforestation and species loss in producer areas, especially in the developed world in Europe and North America, the idea of 'sustainable palm oil' was introduced by stakeholders. Basically, the term refers to palm oil that is produced from sources that are delinked

from illegal and unsustainable deforestation, environmental degradation and socioeconomic conflicts and issues. Multiple interpretations of ‘sustainable palm oil’ have been made by stakeholders in the form of different voluntary industry standards, starting with the RSPO that was formalized in 2004. RSPO is a multi-stakeholder forum, bringing together representatives from seven sectors of the palm oil industry—oil palm producers, palm oil processors or traders, consumer goods manufacturers, retailers, banks and investors, environmental and nature conservation NGOs and social or developmental NGOs—to develop and implement global standards for sustainable palm oil. The growth in membership was impressive, starting from less than 50 ordinary members to more than 4000 members in 2018 in 90+ countries. Nineteen per cent of the total palm oil production market (70 million MTs) was certified by RSPO by the end of 2018. However, lack of demand from large importers like India and China means that only 50% of the certified palm oil and its derivatives are sold in the global markets as RSPO-certified.

Given the growing interest from industry, national governments are developing their compliance-based domestic standards like the Indonesian Sustainable Palm Oil (ISPO) and Malaysian Sustainable Palm Oil (MSPO). These standards are covered in the next section in this chapter. RSPO’s standard gives producers of palm oil (processing mill and plantation owners) the choice to get their plantations and mills certified on the basis of the RSPO principles and criteria (P&C) document, which is the core document defining the different social, economic and environmental indicators that the plantation/mill needs to match in order to be eligible for certification. Producers seeking RSPO certification undergo audits against the P&C document by RSPO accredited certifying bodies and are eligible for certification if compliance is demonstrated.

The core principles, criteria and indicators apply to cultivation and production of palm oil, and not to downstream supply chain companies who process and fractionate palm oil or manufacture end products with palm derivatives. For supply chain members, a different set of standards apply, known as RSPO Chain of Custody or Supply Chain Certification Standard. Basically, any company in the supply chain apart from the retailer needs to be Chain of Custody or supply chain certified in order to claim use of Certified Sustainable Palm Oil (CSPO). Any company can

buy CSPO, but are not allowed to make any claim unless certified for Chain of Custody (RSPO 2017a). For Indian companies, the supply chain standards are applicable as most of them operate in the downstream end of the chain or operate as commodity traders. Under supply chain standards, companies can avail different options for stringency and traceability by either going for a segregated certification which entails separate facilities and storages for sustainable palm oil to keep it from mixing with regular palm oil. Companies unwilling to invest in the relatively expensive segregated approach may choose the mass balance approach, which allows for mixing of certified and non-certified oil as long as records of volumes and shipments are meticulously kept and the proportion of regular palm oil is not more than that of certified palm oil in the mixture. This has been the most popular supply certification option across the globe, owing to its costs and relative ease of implementation. To make things even simpler for companies not willing to alter the modalities of their supply chains, RSPO credits system has been developed, which means producers, millers or kernel crushers can apply for RSPO credits if their operations are RSPO certified. The RSPO Book and Claim credits are put up for trading which allows companies or parties interested in supporting sustainable palm oil to purchase these credits and make a claim on their products (RSPO 2017c).

As of 2017, the volumes of RSPO certified palm oil stand at 11.83 MMT in 2017, which is 21.3% of the total global supply of palm oil (RSPO 2017b). Country-wise representation of RSPO members is dominated by Europe and North America and there are only two Asian countries in the top ten, which illustrates the gap in sustainability between European and North American companies and their Asian counterparts (RSPO 2017b). In terms of relevance and applicability, RSPO production standards do not apply as most of the companies in India are supply chain members like traders, processors and manufacturers. The RSPO Chain of Custody or Supply Chain Standard is applicable to Indian companies as per RSPO's mechanism, with supply chain certification needed in order to buy and sell sustainable palm oil. Indian companies across the supply chain can get audited as per RSPO's supply chain standards and become eligible.

Since 2011, membership of Indian companies in the RSPO has increased substantially, from 8 to 41 companies as of January 2017

(RSPO 2017b). Another significant development has been the growth in the number of RSPO certified companies. There are now close to 20 Indian companies with RSPO supply chain certifications (RSPO 2018).

RSPO is also working on developing an India interpretation of its standards that would be directly relevant to palm oil production in India, based on Indian laws and practices and cover the social, economic and environmental indicators that the plantation/mills will need to adhere to in order to be eligible for certification. This will involve a multi-stakeholder consultation process with growers, smallholders, industry supply chain, investors and environmental and social NGOs. This production standard will be potentially launched in 2019.

Other voluntary certification standards meant for various plantation crops, including palm oil, have been developed. Rainforest Alliance (RA), an international non-profit organization, works in conjunction with the Sustainable Agriculture Network (SAN), which has developed standards for sustainable agri-practices through multi-stakeholder consultation. Palm oil is an important focus for RA and SAN, owing to the impacts on tropical forests and biodiversity at a global level (RA 2017).

Additionally, the Indian Palm Oil Sustainability Framework (IPOS) is a sustainability framework introduced in 2017 to address sustainability concerns in palm oil production in India. The IPOS standard was introduced in 2017, as joint effort between the Solvents Extractor Association of India (SEA), Solidaridad and Indian Institute of Oil Palm Research, in order to address emerging sustainability challenges in the context of domestic oil palm plantations and mills (Solidaridad et al. 2017). IPOS is not a certification standard; it is a set of environmental and social criteria applicable to palm oil production in India. Even though India's overall production was minuscule at less than 500,000 MT in 2017, there is a strong focus on expanding acreage and consequently output of palm oil at a central government level, as has been the case for central governments over the last three decades, which could lead to unintended impacts on biodiversity, water and local stakeholders in emerging producer states, especially in the north-east.

Another recent development in the context of sustainable palm oil initiatives in India is the creation of a new forum for sustainable palm oil in

India, known as the India Sustainable Palm Oil Coalition. The coalition is a collaborative effort between the Centre for Responsible Business, World Wide Fund for Nature-India, Roundtable on Sustainable Palm Oil and Rainforest Alliance. The collaborative platform will consist of associations, civil society organizations, consumer goods manufacturers, food-service retailers, retailers, financial institutions and palm oil traders and producers committed to increasing the use of sustainable palm oil and its derivatives in the Indian market. The purpose of this forum is to create awareness about sustainable palm oil amongst Indian industry members and encourage the companies to make concrete and time-bound commitments to move to sustainable palm oil sourcing in a phased manner. The platform will also encourage discussion on sustainability issues, enable mutual knowledge sharing between members as well as the organizers and provide technical guidance for supply chain certification to interested companies. The forum is expected to bridge some of the knowledge and awareness gap between Indian companies and their MNC counterparts and consequently lead to positive actions by these companies.

Mandatory National Standards for Sustainable Palm Oil Production

Apart from stakeholder-governed voluntary standards for palm oil, there are national standards that have been developed in Indonesia as well as Malaysia in the form of ISPO and MSPO, respectively (ZSL 2017). The ISPO is mandatory for all palm oil growers and millers in Indonesia, with full compliance required by 2022.

The ISPO was introduced by the Indonesian government after consultation with the Indonesian Palm Oil Industry Association (GAPKI) as a producer-level standard for Indonesian producers (excluding smallholders). The main focus of ISPO was to ensure complete legality of the organized palm oil industry in Indonesia by making certification mandatory. Companies are assessed to see if they are compliant with ISPO standards. Companies failing to meet the standards are given time for improvement, after which reassessments are done. Currently, ISPO standards do not have any defined Chain of Custody or supply chain certification mechanism, so it primarily applies to plantations and mills, as opposed to pro-

cessing units and manufacturers further downstream. The ISPO aims to ensure all palm oil originating from Indonesia is legal as per national laws and regulations by 2022, including the palm oil produced in smallholder-owned plantations and mills. Indonesia already has national laws and regulations on deforestation and so ISPO is constructed in such a way as to build on the existing legal structure (Suharto et al. 2017).

The MSPO certification scheme is the primary certification standard in Malaysia, with backing from the government. It applies to growers, millers, processors and other supply chain members. The MSPO has differing principles based on the target group, such as separate standards for independent smallholders and organized smallholders (MPOCC 2017). Like the RSPO, the MSPO also covers the supply chain members through supply chain standards and sets requirements for traceability (EFECA 2017). The MSPO has a distinct two-level certification system, including plantation and mill-level standards as well as supply chain standards for downstream companies similar to the RSPO. The MSPO further distinguishes between corporate plantations and associated smallholders and independent smallholders through differing standards for both groups (MPOCC 2018). MSPO has also introduced the MSPO Chain of Custody standards for supply chain members, including processors, refiners, kernel mills, product manufacturers and biodiesel producers. The MSPO supply chain standards are similarly structured as the RSPO, with two main categories of certification. With the incorporation of supply chain standards, MSPO is now able to certify the entire chain apart from retailers, making it more relevant from a demand market perspective, including India (MPOB 2018).

Corporate and Industry Commodity Sustainability Forums

Industry-based groups, such as the Consumer Goods Forum (CGF 2018a), Tropical Forest Alliance (TFA) and Sustainable Palm Oil Manifesto (CSS 2016), are examples of industry responses to tackle the issues associated with the palm oil supply chain in a collective manner. The CGF is a collective of consumer goods companies who have targeted the year 2020 for achieving zero net deforestation in their supply chains. The likes of Nestle, L'Oreal and Procter & Gamble are participants in the

CGF (CGF 2018b). The TFA is another multi-stakeholder alliance which brings governments, civil society and industry together to collaboratively work on eliminating deforestation in the production of key commodities such as palm oil, beef and pulp and paper.

Also, with the increase in commitments to RSPO palm oil, some progressive companies, especially in Europe and North America, want to go beyond the RSPO in terms of their sustainability targets and objectives. The Palm Oil Innovation Group (POIG) (ZSL 2017) is one such framework that aims to build on existing commitments and the RSPO P&C to take it to a higher level, focusing on GHG emissions, carbon sequestration, social issues, biodiversity, development on peat and others. The POIG charter aims at better defining and quantifying important indicators in the RSPO P&C under critical categories.

The banking and finance sectors have also acknowledged the need for better environmental and social risk management when financing palm oil production and trade. Through forums such as the Banking Environment Initiative (BEI), a group of banks have made commitments to deforestation-free supply chains (CISL 2018a). Specifically, in the context of palm oil, the Soft Commodities Compact (SCC) was conceptualized as a joint initiative between the BEI and the CGF, with the objective of facilitating transformation of soft commodity supply chains towards sustainability. The SCC connects commitments under the CGF by major brands to the finance sector, represented by the BEI (CISL 2018b).

Unfortunately, Indian industry participation in these forums has been limited due to a lack of exposure to supply chain sustainability and the absence of consumer pressure as seen in progressive markets. The only companies operating in India who participate are subsidiaries or partners of global MNCs with organizational level commitments to sustainable palm oil.

Analytical Discussion and Conclusion

India is a key player that can dictate the dynamics of the palm oil industry, owing to its import footprint, the highest in the world at more than 16% of total global production. Demand for palm oil under normative

tariff regimes is expected to grow year on year at a consistent rate to a projected demand of close to 13 MMT in 2025 (Mehta 2016).

Considering all the factors driving increasing consumption of edible as well as palm oil, it is expected India will continue to be a key stakeholder in the global palm oil market, influencing production dynamics at the supply end. What inference can be derived from all this information? Simply put, the success of efforts to conserve critical biodiversity hotspots in South-East Asia, home to large but ever-dwindling tracts of contiguous rainforests, depends on India's earnest participation in these efforts. What this means in the real world is that Indian companies will need to do much more to create a concerted shift in the market, which can only happen if key consumers like India, China and the EU all demonstrate demand for responsibly produced palm oil, backed by robust production and trade standards.

So, what is the role of sustainability standards in the context of palm oil production and trade in India? Firstly, in developed countries, voluntary certification approach has been favoured by a majority of stakeholders in their quest for sustainability, especially since RSPO became established as a widely supported standard as it was structured to represent the views of a multitude of stakeholders from its inception. Secondly, the success of certification-based approaches in Europe and North America can be attributed to the increased levels of awareness about environmental issues among consumers compared to economically developing countries, matched by the economic ability to make decisions based on considerations other than the cost of the products. Also, the western markets for palm oil are primarily for branded consumer goods and products, where consumer sentiment is a critical determinant of sales, thereby empowering NGOs and civil society organizations to influence corporate behaviour through consumers.

However, the Indian palm oil market is dominated in volume and value by edible oil traders, refiners, processors, which is primarily a business-to-business market. In terms of end consumers, edible palm olein is purchased majorly by lower- to middle-income households and mainstream eateries, restaurants and hotels, and these groups are relatively less amenable for sensitization and awareness-based initiatives that work well for the FMCG sectors in Europe and the US.

Additionally, awareness levels regarding palm oil are low, as most people in India are not aware of its presence in their vegetable oils or in most of their everyday products. This awareness is even lower with respect to the negative impacts of palm oil or the availability of sustainable palm oil alternatives. For the few that are aware, the issue is sometimes perceived to be more relevant to the producer countries as opposed to the consumer countries, like India. As mentioned earlier, the Indian palm oil market is dominated by edible oil players, who cater to industrial and commercial consumers as well as the mass market food service companies, tend to be more price-sensitive relative to others. Without consumers demanding it, supply chain certification costs and market premiums associated with certified oil quickly mount up to prohibitive levels, with no entity willing to absorb the costs. As a result of all these factors, uptake of certified sustainable palm oil has been limited.

One sector where certification has seen traction is the oleochemical and specialty chemicals sector, primarily because they are suppliers to multi-national FMCG companies operating in India and many of these MNCs have made global commitments to sustainable palm oil, which includes their Indian operations. Also, many of these oleochemical and ingredient manufacturers also export directly to businesses in western markets, where buying companies are bound by sustainability commitments. In contrast, the edible oil sector is dominated by Indian players who mostly cater to high volume but low margin markets, where consumers are driven simply by price. With the growth of the FMCG sector in India, there is greater hope for uptake of sustainable palm oil as this sector is relatively less price-sensitive as compared with refiners and importers, as palm oil is a small part of its overall inputs and consequent costs. So, certifications on sustainable palm oil will continue to remain relevant in the future, especially for consumer goods companies in India, but other cost-friendly approaches need to be discussed and explored by NGOs, civil society groups and think-tanks from the industry to shift edible oil imports towards sustainable sources. Regulatory measures around differentiated import duties could possibly enhance the flow of certified palm oil into India, with some caveats, namely, around the definition of 'sustainable palm oil' due to the multitude of sustainability standards available to companies.

Coming to domestic production, will emerging domestic standards for palm oil cultivation and production become increasingly relevant? As discussed in the preceding sections, there are a host of policies and programmes in place to increase area of oil palm plantations and thereby increase domestic production of palm oil in India. However, these will remain small in the foreseeable future. Indian standards, such as emerging RSPO India production standard or IPOS framework will need to work more closely with industry to increase support for these domestic standards and frameworks. The development of these standards/frameworks could potentially help create a domestic supply chain of locally certified palm oil, allowing Indian companies to procure sustainable palm oil in India.

We can see there are multiple standards for sustainable palm oil applicable to different segments of the Indian palm oil industry, which raises the question of how these differing standards interact with each other and contribute towards broader industry-wide transformation, especially the interaction between international standards like the RSPO, Indonesian and Malaysian national standards and Indian production standards and frameworks. All these standards are complementary, as each one contributes in its respective way. While the Indonesian and Malaysian national standards can help raise the baseline for greater compliance, standards such as RSPO raise the bar further, pushing for higher environmental and social criteria within the industry. The takeaway here is that both national and international standards and certifications have a role to play in making the industry move towards sustainable production and consumption in India.

Key Takeaways

- Palm oil is the biggest soft commodity imported into India and a significant part of the total edible oil consumption in India.
- Voluntary Sustainability Standards (VSS) standards and certifications have a low penetration in India owing to added costs for certification, lack of consumer demand and premiums for certified palm oil and insufficient exposure and awareness to these mechanisms.

- Indian palm oil industry users are far behind their European and North American counterparts in adopting voluntary sustainability standards for palm oil.
- Some recent progress in terms of adoption of VSS standards has been made, but scale of impact is not enough to send market signal to producers.
- Production market national standards are an important stepping stone to achieving compliance, but voluntary standards, such as RSPO, are needed to address the larger sustainability issues associated with palm oil production.
- Both international and domestic VSS can play a conjunctive role in addressing sustainability of imports as well as emerging domestic production.

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9

Private Labelling, Governance, and Sustainability: An Analysis of the Tea Industry in India

Saji M. Kadavil

Introduction

Globally, the market trend shows that tea and other plantation commodities are gaining a steady market in the sustainable business sphere (Potts et al. 2017; Blackman and Rivera 2011). Over the past few years, the tea industry in India has witnessed initiatives such as the certification programmes of various private labelling and voluntary standards.¹ The certification initiatives have influenced the landscape of tea business in India in terms of involvement of various local and international organisations which offer sustainability-related support in the areas of management, social, ethical, and environmental standards. The certification programmes are promoted and governed by a few companies who are major players in the industry. The acceptance and engagement with certification programmes is not a wide phenomenon in the industry and it is still restricted only to selected brands. The demand-driven certification programmes claim that they can persuade and create a market for the certified products which would also ensure sustainability of the industry.

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This chapter is based on the primary research undertaken by the author as a part of a larger project in the regions of the Nilgiris and Assam in India. The analysis of the chapter was supported by discussions with the major stakeholders—estate managers, workers, health professionals, teaching staff, small farmers, and, traders—of the tea industry and implementing partners of the tea certification programme in India. The chapter proceeds as follows. The next section elaborates on key characteristics and market dynamics of the Indian tea industry. The third section discusses voluntary standards and sustainability initiatives across the plantation sector globally. The fourth section discusses how certification could address the key features and challenges of the tea industry. The chapter concludes with a few observations and arguments. The certification programmes have different impacts and benefits in the tea industry, though the impacts mostly have been short-lived.

Tea Industry in India

India is the second largest tea producer (1278.8 million (Mn.) Kg in 2017) and accounts for 22.7 per cent of the total tea production in the world (Tea Board of India (TBI) 2017). China, the largest tea producer in the world, contributes 43 per cent with a steady growth in production over the years. The other major tea producing countries are Kenya (8.7 per cent), Sri Lanka (5.4 per cent), and Vietnam (3 per cent). India stood fourth in terms of tea exports with 256.57 million (Mn.) Kg during the financial year 2017–18 and a valuation of \$ 785.92 million. Tea is largely grown in 16 Indian states, of which Assam, West Bengal, Tamil Nadu, and Kerala account for about 96 per cent of the total tea production. The share of tea production of Assam alone is about 51 per cent (606.74 Million gm) of the total production in India. Overall, North India holds a major share in tea production with 76.3 per cent of total production in India in 2017. However, Southern Indian states have a narrow lead in tea exports with 50.6 per cent of the total production being exported. Figure 9.1 shows the trend of production, area of production, and productivity of tea industry in India since 2000.

The growing share of production from smallholdings is one of the significant features (about 34 per cent) within the industry in India,

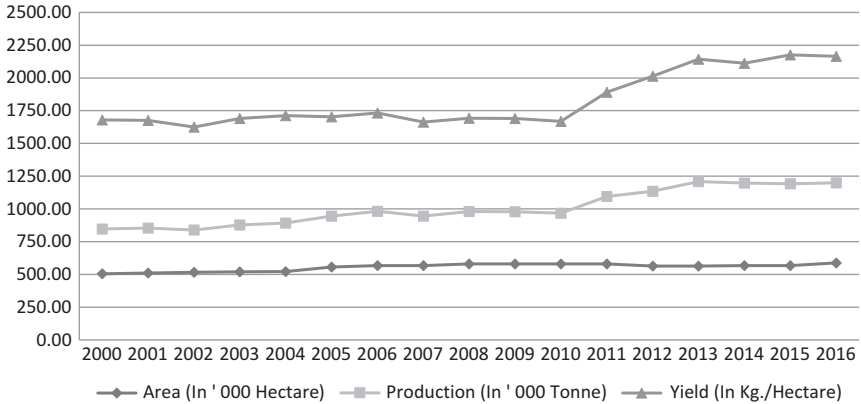


Fig. 9.1 India tea scenario (2000–16). Developed by Author using Statistics from Tea Board of India 2017

especially in post-1990s. In Sri Lanka, however, small growers produced 61 per cent of the country's tea, and in Kenya, small holdings accounted for 61.6 per cent of production in 2000. Around 53.9 per cent of small tea growers are concentrated in Southern India, whereas the share of small tea growers in Northern India is 46.1 per cent. The small tea growers supply green leaves mostly to the private factories which are known as Bought Leaf Factories (BLF). BLFs are private tea manufacturing factories and do not have their own tea plantations. Besides the growth in small holdings, there has been a steady growth in the numbers of BLFs in India since 1990s. In 2004, there were more than 162 tea factories in Assam producing 77 Mn. Kg of tea, 79 factories in West Bengal producing 50 Mn. Kg of tea, and 185 factories in Tamil Nadu producing 81 Mn. Kg of tea. In Kerala, 18 factories produced 3 Mn. Kg of tea (TBI 2016).

Emergence of Voluntary Standards on Sustainable Business

Globally, sustainable markets with many private labels have shown steady growth in the last decade. The average annual growth of standard-compliance production across all commodities was 41 per cent in 2012

with a significant difference of 2 per cent to conventional commodity markets. The market shows high growth of certified products, but the volumes of certified products are still very marginal. In the case of tea, the volume of certified tea is still negligible. It took many decades for coffee to reach a reasonable volume to sell as certified product.

The key transformation in the new sustainable business has been the ongoing shift from 'producer-driven' chains controlled by large production firms and characterised by mass-market products and vertical control, to 'buyer-driven' chains in which quality is a key attribute, products are highly differentiated, and distributors or retailers are able to control producers, impose conditions and capture an increasing share of value (Jaffee 2012; Gereffi 1996 and 1998).

Gereffi (1998) observed the differences between two commodity chains. Producer-driven chains are capital and technology intensive where transnational corporations and multinational companies (MNCs) control the core technologies through vertical integration. On the other hand, buyer-driven chains are those that are able to control and regulate the structure and process of production without owning the manufacturing process. The buyer-driven approaches of the private voluntary standards (PVS) developed a partnership of stakeholders in the demand and supply sides of the value chain and, with the commitment of the buyers, linked to the end consumers. The PVS implements certification on commodities based on their Codes of Conduct and processes it through the Chain of Custody (CoC) in the value chain.

Certified products are commonly defined as those that include the three pillars of sustainability (social, environmental and economic) and are certified by an independent third-party Certification Body (CB). The cost of CB and their auditing accountability also influence certification cost and authenticity of the process of certification. Certification and labelling procedures are used as a means of communicating information about sustainability assurance in the value chain of a commodity. The certification labelling/mark is intended for the end consumer and guarantees that the end product is produced in a sustainable way and the producers and workers are provided extra care and paid additional (premium) price for their efforts (UTZ Certified, 2014). The premium price is an additional price value which directly goes back to the producer and is one of the highlights

of sustainable trade, which recorded, in 2014, a high range of 0.22–0.53 US\$ in total products and 0.25–0.63 in tea trade (Potts et al. 2014). This premium price is not offered by many buyers. However, Fair Trade offers premium price. Initially, producers agreed that they have received marginal amount as premium given by the traders. Later, the premium price is not offered or recognised by the producers and traders. However, how the amount of premium price is used in the production units are not documented except in the Fair Trade certification (Dragusanu and Nunn 2014).² The trade union representative interviewed in 2016 observed that at least the estate management should use this amount to establish improvement in living and working conditions of workers.

Each standard or private label brings a new focus area to the industry when they enter the industry. Trustea promotes food safety,³ for instance. The objective of the Fair Trade model was to create truly alternative commodity chains that would be shorter, thereby, freeing up capital to be redistributed to farmers in the form of a higher, fairer price, and forging more direct links between producers and consumers (Raynolds 2002; Fridell 2007). Fair Trade created an overall awareness of alternative options for trade, which offered another platform for producers to get better market access and prices. UTZ and Rainforest Alliance (RA) offered more business avenues for better farming and environmental assurance which focused beyond the existing business as the Fair Trade offer.

Since the market is still developing, PVSs need not be strictly adhered to by the producer, unless particular buyers insist on a specific PVS to sell their products with which they have a partnership. Producers, manufacturers, and retailers often find additional value in certifying their products with more than a single initiative.⁴ This potentially increases access to markets and consumer recognition; however, multiple certifications cause serious challenges for those seeking to determine total sales and production statistics of sustainability initiatives (Potts et al. 2017). It benefits both buyers and producers as both are free to choose their own source, provided there are demands: the demand for certified products from buyers and the demand for sustainable products in the market. Many PVSs offer overall development as per the standards of social-environment and economic scale of operations. Therefore, by partnership with voluntary standards and certification, the company directly show-

cases not only commitment to source of commodity applying sustainable practices, but also an investment in capacity building so that stable supply is available and the community derives benefit as well. The push factor, at least for the short term of the company is to bring further thrusts to tackle the business ambience for sustainable business (Jaffee 2012; Huijstee and Pieter 2008). These partnerships are a new kind of institutional arrangement; for instance, Trustea focuses more on food safety, institutional partnership, and equal priority to socioeconomic issues as a sustainable package with the producers.⁵ How certification programmes could address the major challenges—environment and social— is still a matter of concern in developing countries today.

Voluntary Standards, Certification, and Private Labelling, and the Indian Tea Industry

As noted, the implementing agencies and private labelling organisations of the standards claim that these certifications are demand driven. However, details of demand and buying pattern of certified products are not available in the public domain. The information on how much certified products they have bought; what is the market price with premium they have offered to the producers; how they could offer better prices to the small growers; whether, if they paid better prices, are there any regulations to comply for ensuring that the proportion of premium money is spent on social and working conditions for workers; and so on are important factors to see how these certifications really work for the certified products and its industry. The section analyses four key components of the industry—small tea growers, price and profit dynamism, social standard, governance of the certification programme—to examine how the certification programme addresses major challenges in India.

Small Tea Growers

The small tea growers or smallholders have emerged as a competitive tea production segment in India. Small tea growers also provide large scale employment in the local labour market. In spite of their financial and

technical limitations, the smallholders have increased the area/hectares of production and their productivity over the few decades (Reddy and Bhowmik 1989). In the face of steady expansion, most of the small growers share their concerns about the challenges of the small tea segments. Low-price realisation, difficulties in price regulation, volatile markets, insufficient financial support for good agricultural practices (GAP), non-availability of skilled workers, and high cost of production are some of the major constraints in tea industry. In many tea producing regions, the small farmers still rely on tea estates for market access despite the steady growth of the BLFs within the sector. Das (2012) observed that regardless of higher productivity and lower outsourced labour cost, tea smallholdings remain at the mercy of tea estates and processing factories for price determination.

The price and quality nexus is reported as a vicious circle, which is a challenge in the sector. The nexus is such that if the quality of green leaves increases, the price of the green leaves improves and vice versa. As price and quality are correlated, low quality of green leaves is cited as the reason for low price to the farmers for their green leaves. Both the leaf collection agents and the small tea growers that there is no standard mechanism followed at the factories while they reject the green leaves during procurement. Each factory follows their own price sharing mechanism to fix a price for green leaves. It is not based purely on the quality of green leaves alone—as shared by the small farmers with the author. The market demand, supply of green leaves, distance from the gardens to the factory and availability of other factories in the locality also matter in deciding price for green leaves. On the other hand, small growers shared that due to the low-price realisation, which is often below the expenditure they incurred on cultivation, it is unaffordable for them to focus on the quality of leaf. Maintaining consistency on quality of green leaves requires greater investment on good agricultural practices (GAP), such as timely spraying of chemicals, pruning, and timely application of fertilisers at the farm level.

In the case of workers in the small gardens, they face challenges regarding their wages, working conditions, and other statutory benefits. The workers are not able to avail statutory benefits, such as provident fund, gratuity, housing, and medical allowance/facilities. Most of the workers in the segments are temporary in nature. Besides, wages are different for

male and female workers. The different wages are justified by small farmers on the excuse that the nature of work of male and female workers are different. Female workers are mostly engaged in plucking tea leaves while male workers are engaged in manuring, pruning, spraying chemicals, and so on.

The certification for small tea growers is offered as group level. The compliances based on the Tea Code are mandatory for each farm/small farm units under the group certification.⁶ Similarly, BLF should also have compliance with their manufacturing practices as per the Code. The Good Manufacturing Practices (GMP) at the factory and the GAP for the gardens is part of the programme which required regular monitoring and extension support activities. The certification programmes are initiated with support—both financial and technical—from various institutions. The non-compliance status and participation in the certification programmes are dependent on the price and better market access. In the case of small tea holders, the price is important for green leaves (at the level of farmers) and for making tea (at the level of BLF).

Ownership of the entire production process—collection of leaves at the farm level, collection through leaf agents, and transportation to the factory—is in one way shared by all the farmers. However, the quality of production of made tea is entirely the responsibility of the BLFs. Therefore, BLFs have a major role in controlling the mechanism of price determination and quality of tea. In the context of certification programmes, the responsibility of quality and price is neither of the factories nor of the implementing agencies of the private labels.

UTZ and Trustea have included and initiated certification programme in the small tea sectors in India. One of the first certification programmes of small tea growers was initiated by UTZ in Kerala in 2009. The programme was implemented for 450 small tea farmers. The implementation of the certification programme, which has taken nearly one and a half years, includes various awareness and training programmes based on GAP and behavioural changes. The farmers were attracted to the programme, expecting better prices and access to a steady international market. There was an increase in price and quality of green leaves for a short period in the initial phase of the certification programme due to intensive extension support activities as part of the implementation support for the

certification. However, the project couldn't sustain the positive changes achieved for long. Lack of demand in the international market, low demand for certified tea, insufficient financial support to maintain the extension support in the field and the factory, and so on were major reasons for its failure after two years of the project period. The overall cost to maintain basic standards as per the UTZ Tea Code for farmers and BLF were also a major challenge to maintain compliance level. The support from UTZ for creating market demand for certified tea was minimal to sustain their first certification programme for the small tea growers in Kerala.

Trustea certification covers many small tea growers in India. However, the demand for certified products either from Indian buyers (for domestic market) or from international buyers (for export) has not increased yet. Though the certification programme financially and technically partnered with the major buyers (Hindustan Unilever (HUL) and Tata Global Beverages (TGB) in India) the demand towards certified tea from the small segments has not reflected on their buying pattern. However, low demand for certified tea and lack of linking to stable market mechanisms couldn't offer much to the small tea growers in spite of their significant presence in the production. The concerns in the small tea segments—quality-price nexus, low returns to the farmers, unstable markets, limited capacity for investing in GAP and GMP—have remained the same even after certification within the sectors.

Market Dynamism: Price and Profit

The certification programme is a demand-driven initiative and the majority of the stakeholders expect a better situation in the tea market once the estate is certified. Most of the private labelling is happening in the Global South (Loconto 2014). Country-specific standards/labelling, for instance, Trustea, also developed for domestic markets. There is a high expectation from the producers and the implementing institutions on demand and a better price from the Global South (Tallontire 2007). However, many producers have shared their concern that there is no substantial increase in demand for export even after the certification programme on their

estates. Since certified tea is still in a niche market, the popular brands still rely on the traditional market (Rao 2005). Many private labels promote certified products in very marginal quantity. Apart from niche markets, most of the certified tea is traded through tea auction (46.48 per cent of total trade), directly exported from the garden (5.13 per cent) and through direct private sale from the garden (48.39). Currently, there is no separate mechanism to identify and recognise private labels in the auction bulletin to categorise certified tea from non-certified tea.⁷ The role of private labelling in the promotion of certified tea in significant quantity is not directly communicated or accepted either by the producers or by private labelling organisations.

Many producers of certified tea stated that the demand for certified tea mainly comes from the Netherlands and Germany. Apart from these two countries, there is also a marginal demand from other European countries. The share of export to the Netherlands and Germany is about only 6 per cent (15.08 Mn. Kg) of the total export (251.91 Mn. Kg). However, countries like Iran (29.57 Mn. Kg) and the Russian Federation (47.56 Mn. Kg)—highest proportion of exports of Indian tea—do not demand certified tea. As for tea production in India, only 20 per cent of tea is exported and the rest is consumed in India's domestic market. The pattern of domestic consumption has shown steady and positive growth since 1971. From a mere 73 Mn. Kg in 1951, domestic consumption has increased to 653 Mn. Kg in 2000. However, there is negligible visibility of certified tea in the Indian market.

The Trustea code—country-specific code—was developed to bring certified tea to India's domestic market. The partnership with major tea players—HUL and TGB—was primarily aimed to create a larger demand for certified tea from the producers for the Indian domestic market alone. The partnership with the major brands and implementation supported from Solidaridad boosted the certification programme and its coverage in a short span of the time in all tea regions in India. However, the proportion of certified tea purchased by the brands as a 'certified tea' is nil. There is no visible market for sustainable and certified tea is not marked in Indian market yet. The entire certification programme is under a stagnant phase due to low demand from the market.

Social Cost: Workers, Social Standard, and Working Conditions

The tea industry is highly labour intensive which employs more than 1.1 million workers of whom 55 per cent are women workers. Apart from direct employment, indirect employment which covers backward and forward linkages of the industry also employs around three times the direct employees. The industry stakeholders state that the workers are the backbone of the tea industry and shortage of workforce will be a major challenge in the near future for the industry. Though many estates are introducing various mechanisation processes for both the field and the factory, the industry still almost completely relies on their workers to run their day-to-day operations.

The challenges and constraints of social standard and living conditions of plantation workers have been in discussions since the colonial period (Ratnam 2000). Fair and living wages, working conditions, living conditions, childcare centres, healthcare, redundancy, protection against unfair dismissals, and so on are still continuing in the sector. The issues are still unaddressed even in the certified tea estates. Many media reports and studies highlight the poor working and unhygienic living conditions of RA certified gardens in Assam (for instances: Rosenblum 2014 and BBC Reports 2015) owned by major tea companies. However, the companies and private labels accused each other for the severity of the social standards in the gardens rather than taking the responsibility of the poor working and living conditions in the gardens.

The overview of the few estates which are already certified (few of them are certified with three private labels—UTZ, Rainforest Alliance, and Trustea) in Assam and the Nilgiris, shows that poor socioeconomic situation of workers has remained the same. The houses they live in are in fact mud huts without access to electricity, water connections, and sanitation facilities. Since many of them are migrant labour they hardly own any land. Many of workers are in the clutches of local moneylenders and have mounting debts to repay. The certification programmes also hardly created an impact on female workers in the tea gardens. Women are also involved as stakeholders as customers, shareholders, suppliers, supply chain workers, and community members. It is an urgent need that there

should be an attempt from the industry and other stakeholders to address the various issues on gender concerns in the tea industry. It is also a matter of concern in the context of social justice and from a business case perspective.

The voluntary standards of the private labels (e.g. UTZ, RA, and Trustea) give equal importance to the labour rights which are mandatory compliances. The base of labour compliances of Trustea code is the Plantation Labour Act, 1951 (PLA). UTZ and RA equate their compliances with International Labour Organisation (ILO) standards. All the standards also have mentioned that the law of the land is an important matter, and whichever is more stringent in terms of ensuring better labour standards should be followed. However, it is observed that the standards are very often focused on basic issues (e.g. minimum wages) and mandatory physical infrastructure of the working conditions such as availability of toilets and housing/living rooms in and around the premises. The programme is not ensuring the quality of these basic services, access to the services and who are the beneficiaries of the services. In most of the cases, the compliance mechanism of the certification is in a 'continuous improvement' phase, which is considered for three to four years. In the three to four years of improvement phase, mandatory points for the first year covers only very minimum requirements to meet the stipulations for first audit.

The discussion with the workers (permanent, temporary, male, and female) in the certified gardens in the Nilgiris shows that majority of the workers reveals that there is no alternative employment available in the region which is a major factor which drives the workers to be in the industry for a long time. However, among the other factors, few of the workers pointed out that the tea industry provides permanent employment which ensures job security in the long run. The workers indicated that there is also an opportunity in the industry to get a job for all their family members. It was observed from the field study that many of the family members work in the same estates, either in permanent or in temporary positions. One manager stated that their company gives priority to the plantation community if any vacancies arise. Migrant workers also shared their experience that generally they come to work with their friends who are already working on the estate. Later, if there is an opportunity to bring their families/partners to find a job in the tea industry,

they bring them. In most of the cases, both partners get a job either as a temporary or as a permanent employee in the estate. Many workers have pointed out the few factors that still attract workers to the industry. However, the majority of them indicated that they do not prefer their children to be tea workers in the future. Low dignity and poor lifestyles were the two major reasons for them not to prefer jobs in the tea industry for their children. It was also noted that there is immigration from the plantation community to find jobs outside the tea industry. In most of these cases, they join as labour in the construction sector or in daily wage jobs. The young generation tries to find jobs in the garment industry in the town 60 km away from the Nilgiris.

The workers stated that they are not treated decently and the plantation economy still follows the colonial management structure. Though there is a change among the management and staff, workers are still treated very poorly as reported by them during the informal discussion. This factor becomes a major reason for the new generation preferring jobs outside the tea estates as they find the wage rate and nature of jobs more attractive. In the case of Assam, working and living conditions in the tea gardens have remained the same even after the certification programme. The attempt of the management to reduce the cost of healthcare was also observed since the colonial times (Bhowmik 2015; John and Mansingh 2013). In Assam, apart from the PLA, the Assam Plantations Labour Rules (APLR), 1956, exist to ensure safe working and living condition for workers in the tea estates. The Act and the Rules are given mandatory requirement with details. It was observed from the certified tea gardens that there are many violations of PLA and the Rules in the estates for providing the very basic needs like standard housing accommodation, clean toilets, bathing enclosures to the workers' occupational health and safety, and other entitlements for workers and their families by the management. There is not much change in the social and production relations in the plantation economies even if there are many rules and regulations in place (Bhowmik 2015; Jones and Mucha 2014).

The living and working conditions are not better off even after the estates have undergone many certification programmes. Management provides housing, toilets, and water only to the permanent workers and not to the temporary workers. The estate management claims that they provide basic facilities to all workers and their families. The actual work-

force is only 50–60 per cent of the plantation community, as stated by one of the estate managers in Assam. However, in PLA, there are no separate provisions for permanent and temporary workers. According to PLA, all workers should get equal treatment including medical facilities (John and Mansing 2013). Similarly, personal protective equipment (PPE) is not covered or provided to temporary workers, those who are chemical sprayers. The medical facilities and subsidised food grains are also denied to temporary workers. Temporary workers are entitled to subsidised food grains, but only per worker, and not for the entire family of the worker. Food grains are supplied to all family members in the case of permanent workers. Medical facilities are mainly available for permanent workers and their dependents. If a woman is a permanent worker, then free medical facilities are not available for her dependents, if dependents are above 18 years of old and non-workers in the estate. For instance, even her husband will not get free medical care under dependent category. Temporary workers get basic medical facilities at the hospital and not outside the estate dispensary. The dependents of temporary workers do not receive any medical facility in the estates. Same is the case with adult members (above 18 years) of the family of the permanent workers. Even if there are mandatory points in the Tea Code of the certification programme, the situation in the tea gardens shows the limitation of certification initiatives in the day-to-day operations of the estate management. The limitation of the certification to address the basic needs such as medical care, food grains, housing, and other basic amenities to all workers irrespective of the nature of employment and gender differences shows how ‘voluntary’ the standards are. The relations are the same even after the implementation of the multi-stakeholder initiatives of the certification programmes. One of the workers observed that even after long years of colonial rule, the structure in the gardens remains the same which is the pivotal cause for their poor socio-economic and working conditions today.

Governance of the Tea Business

Roberts (2013) and Stewart (2014) observed that voluntary standards, certification, and labelling systems are private governance institutions with rules, structures, and standards that have been developed to govern

without the direct involvement of formal government. The plantation economies are still following the colonial structure. The top-level management still holds a major role in the process of decision making in governance and management of the estate. Within the governing institutional structure of the tea industry in India, there are various ways to influence the regulatory framework of the plantation management by the institutions, both government and private, at different levels. For instance, the Tea Board of India (TBI) regulates the overall production and management of the estate. The labour officer at the regional level holds a monitoring function to oversee the labour conditions on the estate. The tea associations, for instance, the Indian Tea Association, also play a major role in the business. However, their role is limited to facilitating business and plantation management. The governance of day-to-day operations and business management is solely with the management of the company/estate at different levels. As stated, a private label claims that certification and standards are developed on the initiative of the multi-stakeholders of the sector. However, the role of certification and private labels are very limited in the governance of the tea business both at the plantation level and at the market level.

To meet compliance of mandatory points is important at the implementation phase of any certification. However, these mandatory points are limited to basic requirements for a compliance status, but not in implementing it as a regulation. For instance, Trustea is supported by the Tea Board of India, but it is not a regulatory norm by the Tea Board or any other government body. How do these standards regulate the estates and the markets? Is there any guarantee that certified tea will be sold in the market with premium price? Can mandatory points of the standards address the basic challenges of the markets (such as price), and in the field, such as wages, social standards, and other working conditions? These are the basic questions raised by many producers in the initial stage of the certification process. Unfortunately, these questions remained unaddressed by these standards and certifications even after a decade of the first phase of certification in India.

Conclusion

The Indian tea industry has witnessed an intermittent increase in certification programmes in the past decade, which was initiated by national and international private labels. There was no direct involvement of formal institutions in the certification programme of the various private labels. This chapter has tried to critically analyse how private labels could address existing and major challenges in the tea industry in India. An intervention from formal institutions for the implementation of existing regulations, rules, and acts that can address the challenges of the industry in a sustainable way is imperative. The initiative of certification claims better access to stable markets within the price-profit-market-dilemma of the existing institutions. In one way, the certification programme offers an opportunity to the estate management to initiate the process of change at various levels—management, social, and environmental. However, field level observations emphasise that private labels often fail to promote overall improvement in social-economic and environmental standards; rather, they were centred on non-compliance status of the third-party audits for certification.

Certification programmes bring some tangible and intangible benefits to the industry in a short period, though the basic characteristics and inadequacies are still prevalent in the sector. The basic issues relate to social standards, poor working and living conditions, low price and low profit, and issues of the small tea growers which are still widespread even after implementation of various certification/private labels in the industry. The changes observed in the small and large segments show that the certification systems are not an alternative to ensuring the basic social standards, regulating price mechanisms, and other governance issues in the tea sector. However, the benefits are more at the company level. The governance system of private labelling entitled the major tea players to communicate to their customers that their business is sustainable. The certification initiative claims a multi-stakeholder partnership, but, the partnership hardly has any role in the decision making and governance of operation management in the industry. The initiatives require wider attention and participation from both formal and informal institutions

for better governance and institutional support. The study argues that the certification process and its implementation need to be more inclusive to cover the challenges of workers and small growers which may eventually help the industry to move forward.

Key Takeaways

- The certification programmes are mostly demand-driven initiatives and very often governed by the few dominant business houses from the industry.
- The voluntary standards that codify sustainability cover primarily three areas of production compliances: social, economic (management), and environmental.
- The certification programmes fail to address major challenges in the tea industry, such as low prices, limited social standards, and incompetent small tea growers.
- The initiatives require wider attention and participation in terms of governance and institutional support from both formal and informal institutions.
- Certification process and its implementation need to be more inclusive to cover the challenges of workers and small growers which may eventually help the industry to move forward.

Notes

1. The terms such as voluntary standards, certification and private labelling are used interchangeably in the whole chapter. However, each term holds different definition or meaning. Voluntary standards are the critical points/criteria for the manufacturing attributes of a product, process or service. For instance, the tea code covers major critical points which explain how to meet critical criteria during the production process of green leaves in the field and major manufacturing practices at the tea factory. Certification is a process which is often performed/audited by a third party for verifying the product or process and adheres to a given set of

- standards and criteria. Private labelling is the method of providing information on the attributes for a product and process.
2. In Fair Trade it is mandatory that premium price should be used in community related development. In UTZ, it states that the premium amount should be mentioned in the next audit and it is not mandatory to spend on any specific areas of operations. However, the management should clearly mention the amount for next audit (UTZ 2016). It is the same for Rainforest Alliance (RA). Trustea has not mentioned anything on specific premium price.
 3. The Greenpeace mounted a campaign against the pesticide use in the tea plantations were also aired in the year 2013–15. The study by the Greenpeace detailed about the presence of pesticides, considered highly hazardous by the WHO. Greenpeace India tested tea from the tea estates of major tea companies including Hindustan Lever Limited (HUL) and Tata Global beverage (TGB). The launch of Trustea with partnership of major tea brands was also an attempt to bring back the food safety in the industry and reduce risk factor in the business for the company.
 4. Few corporate tea estates obtained multiple certifications of various private labels. One of the reasons is the difficulty to maintain and the time needed for preparation of audits. The other is that the estates may find new markets since market intervention of each label varies from region to region.
 5. Trustea has developed partnership with IDH (the sustainable trade initiative of the Dutch Government), Solidaridad, Ethical Tea Partnership (ETP), RA HUL, TGB, Wagh Bakri and other private companies in India.
 6. Technical term used by the private labels. For single estate it is single unit, and for group of farmers it comes under group certification.
 7. In Sri Lanka, there is a provision to mark certified tea in the tea auction. This facility is started with the support of tea auctioneers in Sri Lanka with support from UTZ Certified Tea.

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10

Voluntary Standards as a Driver for Sustainable Infrastructure Delivery in India

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Introduction

Globally, urbanisation is a defining feature of the human development trajectory: in 1800 less than 10% of people on the planet lived in urban areas, in 2000 it was 50%, by 2050 it could be 75% (Kimmel et al. 2013). Cities will double in size by 2050, requiring an almost unimaginable amount of new utilities, roads and urban infrastructure systems (Kimmel et al. 2013). Over the coming years, infrastructure development such as telecommunication networks, transportation systems, water treatment, waste management facilities and alike will be key for a balanced economic

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and cohesive social development so crucial to the well-being of the world's population (Kimmel et al. 2013). Humanity strongly depends on the services infrastructure sector and facilities provide.

However, despite the indisputable benefits such infrastructure delivers, if they are not well handled and if no multi-stakeholder involvement and voluntary steering takes place, they can also have significant negative impacts on the environment and society—resulting, for example, in an increase of CO₂ emissions and a loss of biodiversity as well as a decrease in human well-being.

In very general terms, there are still a number of challenges to overcome. Firstly, there is an insufficient pipeline of properly structured, bankable projects. This is slowing the flow of private capital to infrastructure. Secondly, a lack of environmental, social and governance (ESG) monitoring and comparability tools hamper sound project selection and long-term surveillance. Thirdly, there is a lack of credible benchmarks demonstrating the long-term performance of infrastructure investments. Finally, decreasing government spending in infrastructure due to budgetary deficits and economic slowdowns.

From a holistic perspective, infrastructure poses not only great challenges but also an opportunity to highlight the issues of climate change, resource depletion, the danger for biodiversity and health as well as environmental depletion (Bowonder 1986). Buildings constructed according to energy efficiency standards, solar farms replacing coal-fired power plants, innovative water and waste treatment plants, as well as efficient public transport systems can save large amounts of greenhouse gas emissions (GHG) throughout their life cycles, including the protection of carbon sinks.

Thus, the benefits of sustainable infrastructure are manifold and can be of an environmental, social, institutional, financial and economic character. Indeed, several studies have shown that investment in sustainability pays off. For instance, Oberholzer et al. (2017) investigate four infrastructure project case studies in different cities around the world and find evidence of a resilience dividend, which becomes larger the more sustainability is taken into account (Kiose and Keen 2016). Moreover, by analysing infrastructure bonds, empirical evidence supports the hypothesis that environmental and social factors are associated with infrastructure's financial performance (Oberholzer et al. 2017).

Infrastructure also plays a crucial role in the implementation of the SDGs as more than 60% (Casier 2015) of these goals rely on infrastructure development in some form. This is also underlined by the fact that in 2016, the G20 Summit highlighted infrastructure as one of the global priorities for sustainable development and promised heavier investment in sustainable infrastructure.

The Indian infrastructure sector—which in this chapter refers to the physical and digital components of systems that provide the services required to enable, sustain or enhance societal living conditions—is one of the biggest in the world (Kalra et al. 2016). The main constraints to further development of this sector in a sustainable way are currently thought to be transparency in the governance structures, political and regulatory risk, access to finance and macro-economic instability (Rao 2017).

After introducing some of the main characteristics of the Indian infrastructure sector, we argue that embedding the aspects of sustainability and resilience into infrastructure design and construction can not only help in attaining the SDGs and other international targets India has committed to, but can also provide numerous benefits such as lower energy, repair and maintenance costs. Proactive environmental approaches and societal benefits such as fair labour conditions may also be beneficial. This chapter describes how voluntary standards, particularly SuRe[®]—The Standard for Sustainable and Resilient Infrastructure, could play a vital role in this development.

Overview of the Indian Infrastructure Sector

India has taken the challenges of future infrastructure development seriously, as evidenced by projects such as the Delhi–Mumbai Industrial Corridor (DMIC) (DMICDC 2017), which is India's most ambitious infrastructure development programme and also aims to develop new industrial cities as “Smart Cities”, including the convergence of next-generation technologies across infrastructure sectors.

Due to its specific situation, the Indian subcontinent has to tackle a number of challenges (Narain 2009; Chatterji 2013; Mathur 2012;

Pradhan 2014).¹ Referring specifically to the Indian context, the top constraints in the infrastructure development over the next couple of years are thought to be: transparency in the governance structures, political and regulatory risk and access to financing and macro-economic instability (Papakonstantinou 2015). Political and regulatory risks include community opposition to investments, changes to asset-specific regulations and breach of contract terms (Papakonstantinou 2015). For some stakeholders, denial of payments from the government that go against contractual agreements seems to be perceived as likely to influence future investment decisions (Papakonstantinou 2015). Another constraint, namely access to financing, touches upon the main feature of the infrastructure sector in its long-term payback period (Papakonstantinou 2015). It is thus sometimes believed that the Indian government is not eager to take on more risk in privately financed infrastructure projects, leaving the private sector exposed (Papakonstantinou 2015). Other main factors hampering rapid infrastructure development are thought to be the delayed approvals and land-acquisition procedures that put a strain on the tendering process which are sometimes criticised for being drawn-out and in some cases non-transparent or biased (Papakonstantinou 2015).

Two interlinked causes for the persistence of these challenges are often believed to be the lack of sustainable, non-depletable financing of the early stages of structuring and absence of efficient project preparation (Papakonstantinou 2015). Additionally, it is considered that stronger cooperation and communication is needed between the private and public sectors, as well as the enforcing of a unified regulatory framework for infrastructure—several projects overrun cost and time because of state or central government policies like land acquisition, environment clearances, finance approvals and so on. The creation of better dispute-resolution mechanisms for infrastructure investments, improved training and empowerment of government officials, a more transparent process for public–private partnerships (PPP), higher public spending, new infrastructure funds, as well as insistence on transparency in the governance structures. These are all needed to satisfy this added demand for infrastructure that is been created by factors such as a growing urbanisation, a burgeoning middle class, a booming service sector and an increasing disposable income (Papakonstantinou 2015).

The Prime Minister Narendra Modi's administration, from 2014 to 2019, has tried to tackle some of these challenges, for example, by opening up important sectors to foreign investors (Papakonstantinou 2015). The Indian government has also set up a Project Monitoring Group (PMG) to track frozen projects and find ways of conflict resolution (Papakonstantinou 2015).

Additionally, to tackle some of the above-mentioned problems, the idea of sustainable and resilient infrastructure has grown in prominence since it was first discussed in the late 1990s (Hazarika and Sharma 2016). Several mutually supportive and complementary systems are currently being discussed, among them "green" infrastructure, which puts a focus on "building with nature". The overarching and converging approach is to speak about sustainable and resilient infrastructure, which does, among others, also take "green" infrastructure ideas into consideration.

Given the long-term nature of infrastructure and its benefits for society, sustainable and resilient infrastructure systems are thus more and more often believed to be vital in ensuring that long-term sustainable development, particularly on the resource-heavy Indian subcontinent, is able to succeed. Sustainable and resilient infrastructure is a means to mitigate environmental, economic and social risks, as well as to increase resource optimisation and develop additional benefits.

Despite great efforts to focus more on sustainable and resilient infrastructure in international debates, major challenges have yet to be overcome (Guy and Marvin 1999). The question "What is a sustainable and resilient infrastructure project, and how does it differ from a conventional infrastructure project?" remains to be better assessed. Thus, this lack of clear definition can result in targets being missed. A substantial amount of money continues to flow to short-term unsustainable projects, whereas a large number of long-term sustainable projects that would generate considerable social, economic and environmental benefits are lacking finance. Another hindering element is the association of sustainable and resilient as being more expensive as opposed to traditional projects.

But how does this affect the infrastructure sector on the subcontinent? It enjoys intense focus from the Indian government for initiating policies that would ensure time-bound creation of world-class infrastructure in the country. In 2016, the country jumped 19 places in World Bank's

Logistics Performance Index 2016, to rank 35th amongst 160 countries (India Brand Equity Foundation (IBEF) 2018). According to the Department of Industrial Policy and Promotion (DIPP), foreign direct investment (FDI) received in construction development sector from April 2000 to December 2017 stood at US\$ 24.67 billion (IBEF 2018). The Indian logistics sector is expected to increase at a compound annual growth rate (CAGR) of 10.5%, from US\$ 160 billion in 2017 to US\$ 215 billion by 2020 (IBEF 2018). To have sustainable development, the country has a requirement of investment worth INR 50 trillion (US\$ 777.73 billion) in infrastructure by 2022 (IBEF 2018). Today, India is witnessing an enormous interest from international investors. For example, in February 2018, the Indian government signed a loan agreement worth US\$ 345 million with the New Development Bank for the Rajasthan Water Sector Restructuring Project for desert areas (IBEF 2018). In January 2018, the National Investment and Infrastructure Fund partnered with DP World, a company based in the United Arab Emirates (UAE), to launch a platform to mobilise investments worth US\$ 3 billion into terminals, ports, transportation and logistics businesses in the entire subcontinent (IBEF 2018).

Prior to the general elections in 2019, the Government of India was expected to invest highly in the infrastructure sector (IBEF 2018). According to the announcements in the Union Budget 2018–19, the following measures are suggested: A push to the infrastructure sector by allocating US\$ 92.22 billion for it; railways received the highest ever budgetary allocation of US\$ 22.86 billion; US\$ 2.47 billion allocated towards a scheme that aims to achieve universal household electrification in the country (Sahaj Bijli Har Ghar Yojana Saubhagya Scheme); US\$ 648.75 billion allocated to increase the capacity of the Green Energy Corridor Project along with other wind and solar power projects; allocation of US\$ 1.55 billion to boost telecom infrastructure (IBEF 2018). The 90 smart cities shortlisted by the Government of India have proposed projects with investments of US\$ 30.02 billion with an investment of US\$ 23.95 billion (IBEF 2018). The government has also launched new flagship urban missions like the Pradhan Mantri Awas Yojana, under the Urban Habitat Model (IBEF 2018). The country's national highway network is expected to cover 50,000 km by 2019 (IBEF 2018). The

Government of India is also devising a plan to provide Wi-Fi facility to 550,000 villages for an estimated cost of US\$ 577.88 million (IBEF 2018).

India and Japan have joined efforts for infrastructure development in the country's north-eastern states and are setting up an India–Japan Coordination Forum for Development of North East to undertake various strategic infrastructure projects in Northeast India (IBEF 2018).

Stakeholders in the Indian Infrastructure Sector

In the realisation of successful infrastructure projects, various stakeholders need to be considered. Particularly when thinking of sustainable and resilient infrastructure the acknowledgement, involvement and buy-in of these multiple stakeholders are key. Due to the scale of infrastructure projects and the impact and involvement of many different stakeholder groups, inclusion and consensus are key to the success of such projects. This implies ensuring that project planning, structuring and design by the public sector and engineering consultants are carried out in close consultation with the financial sector. Close consultation is the only way to ensure that projects are designed to be bankable from the very beginning. Likewise, the inclusion of affected communities has been shown to improve project appropriateness and reduce the risk of project delays and cost overruns. The respective roles of these multiple stakeholders in the design, construction and operation of sustainable and resilient infrastructure are outlined in the following paragraphs.

Public Sector

The public sector at central, state and/or municipal level plays a crucial role for all infrastructure projects in India given the importance of the regulatory requirements and design in the whole process of sustainable and resilient infrastructure (Zérah 2007; Rahman et al. 2012; Baviskar 2011; Delhi Development Authority 2007; Adhvaryu 2011), in particular

regarding the basic design requirements, adoption of appropriate public procurement systems and eventually the design of PPP models. In addition, such actions need to be embedded in well-designed master plans, laying the foundation for the creation of safe, secure and healthy urban environments with access to basic services for all (Town and Country Planning Organisation, Government of India: Ministry of Urban Development 2014; Fernandes 2004).

Due to the growing pressure on government budgets, the Indian government has strongly promoted PPP to stimulate additional financial means and transfer know-how to infrastructure projects from the private sector. In general, PPPs have the potential to allow public and private know-how to be combined in order to enhance the quality of services, increase resource efficiency, improve risk allocation and—due to the skills and effectiveness of the private sector—contribute to reducing the whole life cost of a project compared to those developed *via* standard public procurement. In addition, such collaboration will allow projects to access innovation and additional technical know-how, both of which are key inputs.

Financing Sector

Sustainable infrastructure requires the financing sector to be socially, environmentally and governmentally more responsible and forward-looking (Rao and Bird 2010). If projects will result in the massive relocation of local inhabitants, or the loss of culture and traditions, or damage to the local ecosystem, or cause devastating impacts on resource regeneration, these projects can lead to severe social and environmental risks and financial loss.² In addition to the public financing when talking about the financing sector, it should not be forgotten that this sector is highly diverse. In India, it mainly has the following players: First, the non-banking financial companies (NBFCs)³ and financial institutions, such as the National Investment and Infrastructure Fund (NIIF),⁴ the India Infrastructure Finance Company Limited (IIFCL)⁵ and the Industrial Finance Corporation of India (IFCI) Ltd.⁶ Second, Infrastructure Debt Funds, such as the IDFC Debt Fund (IDFC 2017a) and others play a considerably important part in the infrastructure-financing sector. Third,

infrastructure-focused private equity firms, such as IDFC Alternatives⁷ or ICICI Ventures⁸ are of a growing relevance. Fourth and more traditionally, banks still have their place in this sector. Among them, IDFC Bank,⁹ ICICI Bank,¹⁰ Axis Bank,¹¹ State Bank of India (SBI) and other public sector banks are particularly relevant for the infrastructure sector. Fifth, with ongoing globalisation, the multilateral development banks, such as the World Bank or the Asian Development Bank (ADB) are involved in an ever-growing number of sustainable and resilient infrastructure projects.

Project Developers

Whereas the public sector decides whether or not to implement an infrastructure project, it is the project developers who turn the public sector requirements into an executive plan for the project's construction and operation. The role of project developers is significant for a project life cycle's performance in terms of sustainability and resilience. Project developers are, for example, composed of construction companies, consulting engineers, contractors and technology providers. Many of them are aware of the trends of sustainable infrastructure and are ready to gain a competitive advantage by developing their sustainable infrastructure expertise.¹²

Civil Society and Local Communities

Offering a real stake to the local population and civil society organisations, by introducing participatory approaches and more transparency, can contribute a lot more openness, better acceptance and even support of projects by the society (Howard 2017; Tandon 2011; Zyl 2014; Unnithan and Heitmeyer 2014; Lloyd-Jones and Rakodi 2014). There are a growing number of Indian non-governmental organisations (NGOs) and local communities trying to influence and to further support policymakers, practitioners, financiers and project developers in their efforts to overcome the barriers to sustainability and resilience.¹³ Each of these partners (De 2014; Shatkin 2014; Kalia 2006) has a special focus and

expertise that make sustainability and resilience accessible to cities, financing institutions and project developers at the local level.

Consumers and Affected Communities

Various examples show that the inclusion of consumers and affected communities is crucial in order to prevent project delays and cost overruns associated with formal objections, or informal resistance such as sabotage or boycotts of service provision (Global Infrastructure Basel Foundation (GIB) 2018). Moreover, it is important to ensure that service provision is appropriate to the needs of consumers, which will enable the creation of accurate revenue forecasts based on realistic predictions of demand and willingness to pay. This means ensuring that each project is implemented with high-quality stakeholder engagement, including free prior and informed consent and ideally some form of delegated power to stakeholder groups (GIB 2018).

Sector Supply/Value Chain

The way the supply chain is organised in the field of infrastructure is in many ways revealing (Narula and Bhattacharyya 2017; Pritchard and Neilson 2016; Lee and Tang 2017; Jayaram and Avittathur 2016). India certainly needs a huge jump in its infrastructure sector to sustain its rapid economic growth; the country needs to make every effort to efficiently manage all components of the value chain. Mapping the relevant value chain can help to identify where there are weak links. Value chain analysis helps policymakers to find out which bottlenecks deserve priority attention.

Individual infrastructure projects are usually part of a broader value chain, particularly in their construction phase with all the construction material, but also in their operation and maintenance phase. In addition, individual infrastructure projects are usually part of a whole network of projects within a broader master plan. Furthermore, infrastructure projects are usually also part of a financial instrument's value chain with multiple equity and debt providers and the participation of insurance

companies. In India, supply/value chains for infrastructure projects are being developed in partnership with the private sector:

- *Project development:* Sector-specific and management consultants usually do technical design and financial structuring, respectively. Respective government authority obtains clearances. Consultants are in the formal sector and most of the largest international consultancies like Parsons, Deloitte and DHV are present in addition to the major management consultancies (PricewaterhouseCoopers, The Boston Consulting Group, McKinsey and Company, etc.). Some of the project developers more focused on the Indian market include Power Tech Pvt Ltd, Shah Technical & Consultants Pvt Ltd, Consulting Engineering Services India Private Limited or Infrastructure Leasing and Financial Services Limited (IL & FS).
- *Marketing/bidding of projects:* This is done as per the procurement norms of the respective government authority by the designated agency on behalf of government. Most projects are marketed by government agencies (national, state and local bodies). Most governments have floated public sector corporations to manage the transactions. Some of the stakeholders that are more focused on the Indian market include IIFCL Projects Ltd, Infrastructure Development Corporation Karnataka Limited (iDeCK), North India Technical Consultancy Organisation Ltd (NITCON), Delhi Integrated Multi-Modal Transit System (DIMTS) Ltd, AIDC Technologies Association of India and Rajasthan State Road Development and Construction Corporation Limited (RSRDC Ltd).
- *Project appraisal:* When there is a bid, project buyers (prospective bidders/developers) take the project to various lenders who appraise the projects for lending. Such infrastructure lenders are all in the formal sector.
- The technical and financial closure is met by all stakeholders—government agency, selected bidder, lenders.
- The construction contract and operations and maintenance are usually awarded to respective contractors by the selected bidder, in consortium with international partners.

Due to the fact that infrastructure requires the joint participation of the public sector, project developers, financiers and citizens to create benefits for not only the project itself but also for the whole value chain and throughout the whole project life cycle, then these challenges require effective and innovative instruments and partnerships in project financing, assessments, planning, design, construction, operations and decommissioning. Provided that there are suitable financial tools, such tools and collaborations will, in turn, lead to the transformation of the financing and infrastructure markets and make them more sustainable. Internationally comparable standards applied by the public sector, the financial sector and the project developers are therefore key elements. This is particularly necessary in order to establish a benchmark and a comparison between different projects in order to allow proper allocation of financial means, including reference class forecasting (Satyavolu and Sangamnerkar 2016; Duff 2016). Capacity, both on demand and supply sides, needs to be enhanced using these tools and techniques.

Sustainability Issues and Challenges of Infrastructure Sector

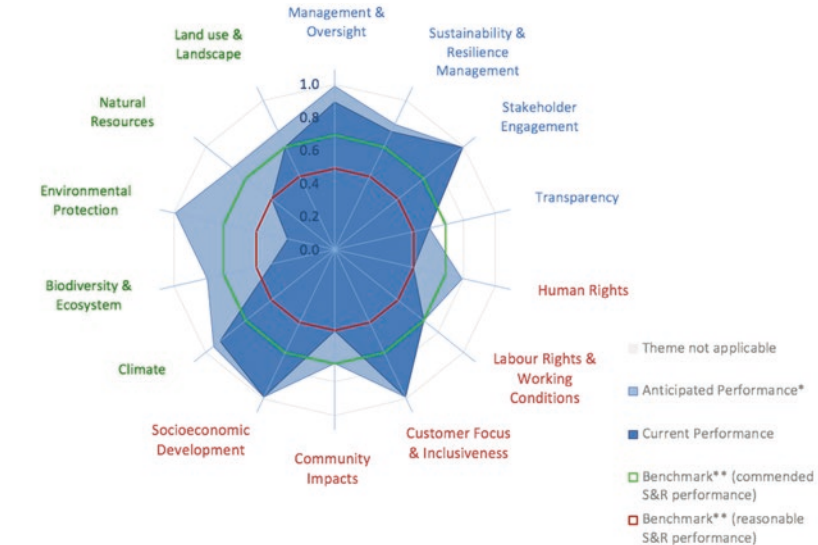
The Indian infrastructure sector faces a large number of complex and interlinked challenges regarding sustainability. Key among these are the existential threats posed by environmental challenges, such as climate change, the depletion of natural resources and increasing stresses placed on our life-sustaining ecological systems. When overlaid with simultaneous social challenges occurring, such as rapid urbanisation, social cohesion issues and a broadening poverty gap, the role of infrastructure in alleviating environmental and social stresses becomes as complex as it is critical to the survival of the human race. Appreciation of this has been increasingly growing over the past decade (Keivani 2010; Roy 2009; Drakakis-Smith 1995; Mell 2009; Tzoulas et al. 2007; Siemens 2011; Asian Development Bank 2012; Ramalho and Hobbs 2012). For example, as populations become more urbanised, greater stress is placed on centralised infrastructure service provision, such as sewage treatment and transport, water sup-

ply, solid waste management, transport, electricity production and transmission. In many cases, boosting capacity of these systems can be percussively expensive or physically impractical, for example, sewerage enlargement in crowded, overpopulated areas. As populations increase, service provision also becomes more complex and interlinked, requiring the coordination of many actors simultaneously across sectors and geographies, integration of dynamic data sets on demand forecasting and flexibility for and awareness of new technologies becoming available. Notable in India is the looming threat of water insecurity.

In 2017 and 2018, the Swiss-based Global Infrastructure Basel Foundation (GIB) conducted assessments of infrastructure projects in the cities of Gwalior, Jaipur, Ujjain, Dahej and Udyogpuri. From these assessments (see Fig. 10.1 for sample assessment using the GIB SmartScan), several important trends can be drawn, which demonstrate the challenges to implementing sustainable infrastructure in India. A significant trend is the looming threat of water insecurity and the inability of municipalities to respond rapidly and effectively. In the industrial area of Dahej, for example, enterprises are experiencing increasing salinity of their reticulated water supply. This is due to seawater encroachment from an overdrawn surface water source. As more water is drawn, the source becomes increasingly saline, however, the more saline the water, the more water is required by desalination units of the consumers to produce the same volume of water. This cumulative feedback cycle is further reinforced by the positive economic development of the region meaning greater demand and the decreasing rainfall due to climate change. In such cases, municipalities are resorting to environmentally unsound infrastructure solutions; often to tap a larger river or dam which is simultaneously being marked as a solution by other neighbouring cities. In the case of Dahej, a highly controversial dam across the Gulf of Khambhat is being proposed and could lead to irreversible environmental damage, enormous capital cost and has unknown technical feasibility (Rao 2010).

Other key issues encountered through the assessments conducted by GIB include the following:

- *Capacity to improve resilience of projects:* In many cities, no climate resilience planning has taken place and in many cases city master planning or project design has not taken climate resilience into consideration.



Scoring Orientation:

0-0.5	Underperforming	Sustainability and resilience (S&R) performance is considered lower than reasonably expected for a project
0.5-0.7	Reasonable	S&R performance is considered as high as reasonably expected for a project
0.7-1	Commended	S&R performance is considered above what is reasonably expected for a project
>1	Leading	S&R performance is considered to be leading in this area

*Anticipated Performance relates to the performance anticipated once the project reaches the stage of maturity at which the activities required to achieve this score would be completed. For example, a project in design stage would not be expected to be generating renewable energy until it has been built, however, if it has made a commitment to do so, it will receive an Anticipated Performance score.

**Sustainability and resilience benchmark. This indicates performance that is considered "reasonable" or "commendable" for sustainability and resilience indicators.

Fig. 10.1 Sample assessment of a project using the GIB SmartScan. Reprinted with permission from the Global Infrastructure Basel Foundation. Source: Global Infrastructure Basel Foundation

- *Capacity to reduce impact:* There is a persisting lack of awareness on how to mitigate climate change and reduce greenhouse gas emissions throughout project lifecycles.
- *Optimisation of time schedules:* Tight timelines under Smart City and Atal Mission for Rejuvenation and Urban Transformation (AMRUT) schemes of Government of India do not allow for sufficient basic research results in infrastructure that takes ESG, climate impacts into consideration and is not efficiently coordinated, hence synergies cannot be leveraged.

- *Role and mandate of commissioners:* The short period that regional commissioners are in office is a hindrance to sustainable infrastructure planning and development.
- *Integration of local knowledge:* Smart Cities special purpose vehicles are often run by non-local staff, meaning that local knowledge is not used adequately in the process, leading to inappropriate design decisions.
- *Optimisation of convergence between infrastructure schemes:* Convergence between schemes is a key issue, and inter- and intra-departmental coordination is still lagging behind.

The social, economic, governance and environmental elements of an infrastructure project can help to mitigate risks in this area and is particularly cost-effective when done at the beginning of the development process. Take the example of the construction of a water dam that creates risks for the biodiversity and ecosystem, as well as for the habitat of indigenous people (Douglas 2016). Mitigation measures would include stakeholder engagement: preparing, informing and negotiating with the indigenous communities before any displacement decisions are taken and better assessing the impacts on biodiversity and ecosystems, resulting in the possible redesign of the project in question. Not taking such risks into account could result in conflict with local populations or NGOs and even end in a temporary or permanent stop to the project. The consequences could result in a loss of the already-invested capital and increase of reputation risk of the involved companies and institutions.

Embedding the aspects of sustainability and resilience into infrastructure projects can provide benefits such as lower energy, repair and maintenance costs, as well as proactive environmental approaches. The integration of these aspects can result in better environmental and biodiversity protection, including through reduced CO₂ emissions. As mentioned above, infrastructure development and upgrade present significant opportunities in relation to climate change adaptation and mitigation, since such projects are usually built to last for decades and influence the livelihoods, lifestyles and consumption behaviour of many people every day. Houses built according to energy efficiency standards and with sustainably produced materials, wind farms that replace coal-fired power plants, innovative water and waste treatment plants, as well as public

transport systems (Varghese and Adhvaryu 2016), can save large amounts of greenhouse gas emissions throughout their life cycles by increasing the share of renewable energy consumption and protecting carbon sinks.

Additional elements to consider, that are not yet as widely known, are the nature-based solutions (NBS). NBS are increasingly recognised as complementary solutions providing infrastructure projects with important benefits and increase their level of sustainability and resilience. NBS are natural systems—like wetlands, forests or mangroves—that can substitute conventional man-made infrastructure, such as dams and water treatment plants, and are integral to the health of ecosystems and human well-being (World Business Council for Sustainable Development (WBCSD) 2016).

Voluntary Sustainability Standards in Infrastructure Sector

Given the importance of the infrastructure sector, its complexity and the fact that so many stakeholder groups are associated to successful implementation of infrastructure and the relative urgency for finding pragmatic, neutral and globally comparable and locally applicable solutions, voluntary sustainability standards (VSS) can play a crucial role, particularly because to date no international public standard in the infrastructure sector has been defined and developed. So far, several obstacles hamper its adequate implementation of sustainable and resilient infrastructure (Williams 2010): the low level of know-how regarding sustainability and resilience issues; the weak capacities of project sponsors, designers and developers; the lack of well-structured, bankable projects; and the lack of a benchmark and thus a standardised approach.

Over the years, several industry standards have been developed to overcome these challenges. However, the number of infrastructure projects globally means that the overall market penetration of sustainability standards is low. Many of the existing standards also, focus on one or few sectors, stakeholder groups or regions. In order to achieve sufficient market penetration, these standards are beginning to work more closely together to approach the market with a common voice. Examples include Envision,¹⁴ the Infrastructure Sustainability Council of Australia

(ISCA),¹⁵ Leadership in Energy and Environmental Design (LEED)¹⁶ and the Building Research Establishment Environmental Assessment Methodology (BREEAM).¹⁷ In an effort to bring together international frameworks, conventions and means of assessing infrastructure, the French investment bank Natixis and GIB, together with other stakeholders from financial sector project developers, the public sector, industry experts, civil societies and, also, a representative of the Indian IDFC, have developed SuRe®—The Standard for Sustainable and Resilient Infrastructure (Egler 2016a, b; AECOM 2017). SuRe® is meant to contribute to benchmarking and comparability of infrastructure projects between countries and sectors, and create a common language between the main stakeholders involved (see Table 10.1 for overview of dimensions and themes).

GIB expects that, if the Standard becomes a fully ISEAL member, SuRe® will become the first globally applicable, ISEAL¹⁸ compliant, third-party certifiable, voluntary and legally non-binding standard for sustainable and resilient infrastructure. Applying this standard gives procuring authorities, investors and project developers the possibility to include state-of-the-art

Table 10.1 Overview of SuRe® dimensions and themes

3 dimensions	14 themes	61 criteria	+ 2
Governance	Management and oversight Sustainability and resilience management Stakeholder engagement Anti-corruption and transparency	19	Materiality assessment Reporting for impact assessment
Society	Human rights Labour rights and working conditions Community protection Customer focus and community involvement Socioeconomic development	24	
Environment	Climate Biodiversity and ecosystems Resource management Pollution Land use and landscape	18	

Source: Author Developed using the SuRe® Standard Documents from GIB

About SuRe®—The Standard for Sustainable and Resilient Infrastructure

The SuRe®—Standard for Sustainable and Resilient Infrastructure has been developed with the inputs of experts from the public sector, financing institutions, project developers, civil society and academia, spanning all continents. It is made up of a total of 61 criteria covering the environmental, social and governance (ESG) factors of infrastructure as well as a materiality assessment and reporting requirements that provide structure and legitimacy. The Standard is designed following the International Social and Environmental Accreditation and Labelling (ISEAL) codes of good practice for standard setting, assurance and monitoring and evaluation. As such, SuRe® creates a common language and understanding of sustainable and resilient infrastructure projects between project developers, financiers and local authorities. It provides guidance on how to manage those aspects from both a risk management and a benefit creation perspective. Applying the SuRe® Standard to projects is expected to assist project owners to design sustainable and resilient projects and leverage both public and private investments in infrastructure in a way that ensures cost-effective access to critical services for companies and households while strengthening resilience, maximising social benefits and limiting the environmental footprint.

SuRe®, formally launched at COP21 in 2015, was developed through a rigorous multi-stakeholder process. The Standard underwent two public consultations spaced between 2015 and 2017 lasting a total of 90 days with more than 300 comments. This approach saw the Standard change dramatically to be more closely aligned with global targets and frameworks including the SDGs, the Sendai Framework for Disaster Risk Reduction, The United Nations Framework Convention on Climate Change (UNFCCC); and local contexts, with a focus on developing countries, in order to provide maximum benefit and utility to infrastructure projects and the industries that rely upon them. At COP23, in 2017, version 1.0 of SuRe® was released, the first version to which projects could be formally certified to. In 2018 SuRe® formally entered in its implementation phase.

Source: Global Infrastructure Basel Foundation

sustainable and resilient criteria into their projects. Together with a mix of project instruments such as the self-assessment and due diligence tool, SmartScan (a rapid self-assessment tool based on the SuRe® Standard, see Fig. 10.1), and additional tools for the financing sector such as Credit SuRe¹⁹ for credit rating and SuRe Underwriting²⁰ for insurance companies, infrastructure projects can be planned, built and operated whilst enhancing resource efficiency, reducing emissions and mitigating risks.

Assessment and Certification Overview

Certification is possible for infrastructure projects throughout the world and across the different types of infrastructure, including both greenfield and brownfield projects. Projects shall have a capital expenditure amounting to a minimum of USD 10 million in order to be eligible.

Compliance with SuRe[®] is assessed on the basis of minimum compliance thresholds, supporting evidence and reports that monitor progress on compliance. SuRe[®] comprises performance-oriented criteria (PC) and management-oriented criteria (MC). While PC are outcome/results oriented, MC are commitment/process oriented. For PC (about one-third of all criteria), performance is assessed on the basis of up to three performance levels (PL), differentiating between minimum compliance (PL 1) and superior performance leading to additional positive impacts (PL 3). MC (about two-thirds of all criteria) has one performance level only, which is the minimum compliance threshold.

A number of SuRe[®] criteria are mandatory requirements, meaning that compliance with these criteria is required in order to achieve certification. Opting out from certain requirements is not allowed, except in special cases where the non-applicability of specific criterion/criteria is supported by evidence which has been reviewed and approved by the auditor.

Source: Global Infrastructure Basel Foundation

SuRe[®] integrates the International Finance Corporation (IFC) Performance Standards (IFC 2017) and is based on the major international sustainability conventions such as the Sendai Framework for Disaster and Risk Reduction (UNISDR 2017), the Convention on Biological Diversity (CBD 2017), the United Nations Framework Convention on Climate Change (UNFCCC) (UN 1992) and the International Labour Organisation (ILO) Declaration on Fundamental Principles and Rights at Work (ILO 2017). In addition, SuRe[®] supports projects to report on and integrate key indicators contributing to the achievement of the SDGs, particularly goal 9 “Industry, Innovation and Infrastructure” and Goal 11 “Sustainable Cities and Communities”. Therefore, projects assessed under the Standard are expected to contribute and be in line with key international ESG frameworks and multilateral agreements, as outlined in Table 10.2.

In order to channel larger financial flows from institutional investors towards sustainable and resilient infrastructure, complementary tools focusing on the default risk assessments of debt financing and underwriting are needed.

Table 10.2 Overview of main international agreements/frameworks

Environment	Social	Governance and overarching frameworks
UNFCCC	UN Universal declaration on human rights	IFC performance standards
Montreal Protocol on substances that deplete the ozone layer	UN guiding principles on business and human rights	The equator principles
Convention on biological diversity	ILO fundamental principles and rights at work	GRI sustainability reporting standards
Sendai framework for disaster and risk reduction	OECD BRIDGE indicators (for gender equality)	FIDIC
IUCN red list and key biodiversity areas standard	UN universal declaration on human rights	FATF national money laundering and terrorist financing risk assessment
Rotterdam convention	UN guiding principles on business and human rights	Transparency International Business Principles
Stockholm convention on persistent organic pollutants	ILO fundamental principles and rights at work	The OECD guidelines for multinational enterprises
–	–	The Addis Ababa Action Agenda: Financing for Development
–	–	The MNE (multinationals) declaration (ILO)
–	–	UN sustainable development goals

Source: Author Developed

How can these and similar tools help Indian cities handle and overcome the challenges they are facing? First, they facilitate appropriate procurement criteria, enable the comparison of infrastructure projects and help organise the project selection process. Second, they ensure that environmental, social and governance criteria are covered, thus increasing the quality of infrastructure, improving risk management and creating benefits. Third, they prepare projects for the scrutiny of potential financiers,

who increasingly focus on such criteria when assessing projects. In this regard, the involvement of private investors helps such projects to access finance.

Using innovative tools—such as the SuRe® Standard or similar instruments—to assess the sustainability and resilience of infrastructure projects can generate significant benefits for the various stakeholders involved.²¹

Benefits for the Public Sector

- Increases the quality of infrastructure
- Offers greater resilience over time
- Facilitates the setting of appropriate procurement criteria
- Enables infrastructure project comparisons and improves project selection
- Supports the more efficient use of limited public resources in infrastructure

Benefits for the Financial Sector

- Offers sustainable investment opportunities (particularly for unlisted infrastructure)
- Offers instruments for risk mitigation and benefits
- Offers infrastructure project comparability, within and across sectors
- Offers compatibility with ESG safeguards, principles and standards used in project finance

Benefits for Project Developers

- Allows early identification of potential causes of delay or showstoppers
- Offers opportunity for synergies and innovation to deliver additional impact and revenue
- Allows efficient use of resources (natural, financial)

- Allows clear communication of benefits to stakeholders—project sponsors, financiers and investors
- Improves reputation and social acceptance

In the past, numerous examples have shown the usefulness of the involvement of different stakeholder groups. For example, plans to build an enormous hydroelectric dam, the São Luiz do Tapajós dam, in the Amazon basin have been put on hold after Brazil's environmental agency, Ibama, suspended the licensing process over heavy concerns about its impact on biodiversity and the indigenous community in the region. The dam would have flooded a vast area, requiring the forced removal of some indigenous communities. The indigenous communities' attempts to preserve their land have been hamstrung by the government's decade-long refusal to recognise their territory, prompting the community to carry out its own demarcation process. After years of lawsuits that dogged another dam project, the Belo Monte dam, energy and construction companies may be reluctant to risk large amounts of money on impact assessment studies for yet another project that may never be realised. An early, transparent and constructive stakeholder engagement and adoption of original plans might have contributed to a potentially beneficial solution for the local communities and biodiversity conservation, as well as a bankable energy production.

Such efforts have been undertaken in the cities of Udyogpuri, Gwalior, Jaipur and Ujjain. Through initial dialogues with the city authorities, project developers and financial actors, general issues such as the lack of awareness of climate change and risks were revealed. Through the assessment of projects with the SmartScan tool, areas of insufficient performance could be identified and fed into the planning and design of the projects. These covered a wide range of aspects: sustainability and resilience management; stakeholder engagement; transparency; human rights; labour rights and working conditions; customer focus and inclusiveness; community impacts; socioeconomic development; climate; biodiversity and ecosystem; environmental protection; natural resources; land use and landscape. The identification of issues and a list of recommendations provided to the project developer's aim at helping

the projects improve their sustainability performance, such as lower energy use, climate change mitigation among others.

In such cases, it can therefore be useful to first identify thoroughly the possible risks. Second, conduct an in-depth analysis of the policy measures that were taken. Third, the opportunities of the project can be carved out. At first glance, such an approach in three steps might seem to be of little use and time consuming. However, having in mind the above-mentioned example and many more (e.g. the Sardar Sarovar Dam) (Safi 2017), we argue that the contrary might be the case: taking time to design a sound project can actually save time by negating the need to revisit a bad one later.

Analytical Discussion and Conclusion

The Indian subcontinent is urbanising rapidly and must provide its growing population with the necessary goods and services (Mookherjee and White 2011). Hard infrastructure, although bitterly needed, on one hand can have detrimental effects on the environment and human health. In this context, it is critical to ensure that infrastructure development becomes a driver to achieve the SDGs and particularly SDG 9, and other targets set by international agreements. This can boost economic development, contribute to the protection of the environment and biodiversity and provide Indian society with a number of social benefits. On the other hand, considering environmental, social and governance risks is already at an early stage and has the potential to contribute substantially to the improvement of resource consumption and well-being of substantive parts of particularly marginalised groups within the population. This would therefore contribute to social cohesion.

As shown above, investments in sustainable and resilient infrastructure projects make, from a business perspective, perfect sense for all the involved major stakeholder groups, such as construction companies, financial intermediaries and also the public sector, be it in the short, medium or long run. In situations where additional costs may be incurred by sustainability and resilience measures they should not be considered as such, but rather as additional return-providing investment, as they can

contribute to the mitigation of risks and even increase the benefits associated to infrastructure projects or could contribute to multi-functional solutions of infrastructure projects and thus generate additional income. Considering additional elements or innovative approaches can contribute to lower cost solutions and enhance the benefit creation potential and resilience of infrastructure. Strengthening the ties between the PPP and having more efficient public procurement systems to implement sustainable and resilient infrastructure projects should also be considered. The public sector, project developers and financial intermediaries need to apply more innovative tools. Halting the current tempo of urbanisation does not currently seem to be an option. However, introducing sustainability and resilience aspects into infrastructure projects can lead us onto a development road which provides better well-being to more social societies, reduces the resource consumption per capita substantively, leads to better connectivity, inclusion and participation; and to a more sustainable path.

Generally, VSS can provide guidance towards improved sustainability performance by introducing sustainability themes and thereby raising awareness towards environmental, societal and governance issues. Additionally, they give access to best practice on a larger scale and can thus help improve projects with newly gained knowledge from similar projects planned and built in other regions.

Key Takeaways

- In order to achieve not only the SDGs or the Paris Agreement, but also the New Urban Agenda (NUA) in India, new infrastructure needs to be delivered in a sustainable way.
- Voluntary standards, and more particularly SuRe®—The Standard for Sustainable and Resilient Infrastructure can contribute to the fostering of risk mitigation and benefit creation potential of sustainable infrastructure.
- With the help of voluntary standards, not only can the challenges that hinder investments in sustainable infrastructure be overcome, but also poverty can be reduced, economic growth can be facilitated and the life of the citizens of India can generally be improved.

Notes

1. There is a rush of riverfront development schemes in India. Such projects aim to commodify rivers to develop urbanscapes while ignoring the ecological and social settings of Indian rivers and the fact that challenges here are significantly different from the foreign models that they aspired to emulate.
2. Global Infrastructure Basel Foundation (GIB) is focused on providing a systematic and standardised approach for the financing sector in India, using its experience from China. To further sensitise the financing sector, GIB has initiated the Sustainable Infrastructure Dialogue, a platform on sustainable infrastructure finance, together with GIZ and WRI in order to share the experiences obtained in China with other countries from the BRICS group and the G20.
3. NBFCs are financial institutions that provide certain types of banking services but do not hold a banking licence. Generally, these institutions are not allowed to take deposits from the public, which keeps them outside the scope of traditional oversight required under banking regulations. NBFCs can offer banking services such as loans and credit facilities.
4. Since infrastructure investments require long-term patient capital, the Indian Government announced the setting up of NIIF, as a quasi-sovereign wealth fund. NIIF is expected to play the role of a catalyst for supporting investments in infrastructure with the objective of maximising economic impact through investments in commercially viable projects, both greenfield and brownfield and including stalled projects. NIIF shall also consider other nationally important projects, if found commercially viable. The fund has been set up as a fund of funds structure with the goal to generate risk-adjusted returns for its investors alongside promoting infrastructure development and technology in the country by means of investments. National Investment and Infrastructure Fund Trustee Ltd. (“NIIF Trustee Ltd.”), a 100% Government of India owned company, is the trustee to NIIF.
5. IIFCL is a wholly owned Government of India company set up in 2006 to provide long-term finance to viable infrastructure projects through the Scheme for Financing Viable Infrastructure Projects through a Special Purpose Vehicle called India Infrastructure Finance Company Ltd (IIFCL), broadly referred to as SIFTI. The sectors eligible for financial assistance from IIFCL are as per the harmonised list of infrastructure

- sub-sectors as approved by the Government and RBI and as amended from time to time. IIFCL has been registered as a NBFC-ND-IFC with RBI since September 2013 (IIFCL 2017).
6. IFCI, previously Industrial Finance Corporation of India, is an Indian government owned development bank to cater to the long-term finance needs of the industrial sector. It was the first development finance institution established by the Indian Government after independence. Until the establishment of ICICI in 1991, IFCI remained solely responsible for implementation of the government's industrial policy initiatives. In 1993 it was reconstituted as a company to impart a higher degree of operational flexibility. IFCI was allowed to access the capital markets directly. The main objective of IFCI is to provide medium- and long-term financial assistance to large-scale industrial undertakings, particularly when ordinary bank accommodation does not suit the undertaking or finance cannot be profitably raised by the issue of shares.
 7. IDFC Alternatives is an Indian multi-asset class investment manager. It is IDFC's alternative asset management vertical and manages over USD 3.4 billion on behalf of leading institutional investors from across the world. With three distinct asset classes—private equity, infrastructure equity and real estate—IDFC Alternatives offers investors a range of risk-return profiles. Since IDFC Alternatives' first private equity fund was launched in 2002, IDFC Alternatives has expanded its alternative asset portfolio to include a total of three private equity funds, two infrastructure equity funds and one domestic real estate fund (IDFC 2017b).
 8. ICICI Venture is a specialist alternative assets manager based in India. It is a wholly owned subsidiary of ICICI Bank (ICICI 2017a).
 9. IDFC Bank Ltd. (Infrastructure Development Finance Company) is an Indian banking company that forms part of IDFC, an integrated infrastructure finance company. The bank started operations on 1 October 2015. It received a universal banking licence from the Reserve Bank of India in July 2015. Subsequently, in November, 2015, IDFC Bank was listed on BSE and NSE. The bank serves corporate and private customers in India including the infrastructure sector that IDFC specialised in from its founding in 1997 (IDFC 2017c).
 10. ICICI Bank (Industrial Credit and Investment Corporation of India) is an Indian multinational banking and financial services company headquartered in Mumbai. In 2014, it was the second largest bank in India in terms of assets and third in term of market capitalisation (ICICI 2017b).

11. Axis Bank Ltd is the third largest of the private-sector banks in India, offering a comprehensive suite of financial products. It has its head office in Mumbai (Axis Bank 2017).
12. To mobilise this sector, GIB has proactively shared and demonstrated its approaches towards sustainable and resilient infrastructure. Since 2011, GIB has established long-term partnerships with a number of Indian project developers. These developers and GIB share the view that climate change adaptation and mitigation are not only challenges, but also offer advantages and opportunities for industries.
13. See below for GIB's effort to involve this group.
14. As a rating system for sustainable infrastructure, Envision is supported by a wide array of respected organizations involved in infrastructure design, construction and operation (ISI 2017).
15. The Infrastructure Sustainability Council of Australia (ISCA) is a member-based, not-for-profit peak body operating in Australia and New Zealand with the purpose of enabling sustainability outcomes in infrastructure. More details on ISCA (2017).
16. LEED or Leadership in Energy and environmental Design is a green building rating system available for building, community and home project types that provides a framework to create healthy, highly efficient and cost-saving green buildings. More details on USGBC (2018).
17. BREEAM, first published by the British Building Research Establishment in 1990, is the world's longest established method of assessing, rating and certifying the sustainability of buildings. More than 250,000 buildings have been BREEAM certified and over a million are registered for certification—in more than 50 countries around the world.
18. ISEAL represents the global movement of sustainability standards. Its mission is to strengthen sustainability standards (ISEAL 2017).
19. Based on its SuRe[®] Standard, GIB (with the support of The Rockefeller Foundation) has developed a blueprint for a credit rating of transport infrastructure debt in a developed country context—"Credit SuRe". The aim of this endeavour is to channel larger financial flows from institutional investors towards sustainable and resilient infrastructure. Credit SuRe tries to make the resilience dividend accessible to capital markets, thus creating a competitive advantage for sustainability oriented, long-term investments. Credit SuRe is envisioned to become a tool in promoting private-sector investment in resilient and sustainable infrastructure. Credit SuRe will be applicable to projects from financial

- close onwards, in the construction and refinancing processes, in order to ease their access to credit from investors by having a resilience and sustainability rating.
20. GIB is currently in the development phase of SuRe Underwriting—A Sustainable and Resilient Underwriting Standard. GIB sees this as a further step in aligning players in sustainable and resilient infrastructure financing and development. Based on the SuRe[®] Standard, SuRe Underwriting will scrutinise several infrastructure project-related risks, thereby providing better insights into residual risks that insurers eventually insure. SuRe Underwriting will take into account, and where applicable build upon, existing standards like the UNEP FI Principles for Sustainable Insurance (PSI). Thus, GIB is striving to implement the essence of these global and institutional standards in a complementary way on a project level in the respective regions. SuRe Underwriting strives to improve existing risk assessment standards and to identify new and possible project-inherent mitigation measures.
 21. For example, in 2016 GIB conducted a trip to India with the objective to introduce the SuRe[®] Standard to national industry experts from the Dahej cluster of the Resource Efficient and Cleaner Production (RECP) Net, with a view to enhance local experts' understanding of the standard and how it could be used to enhance activities in Dahej. The background to this trip was as follows: the United Nations Industrial Development Organization (UNIDO) implements, in cooperation with the United Nations Environment Programme (UNEP), a global programme that is aimed at building capacity and supporting the scaling up and mainstreaming of RECP. RECP applies preventive environmental management and total productivity practices and methods to (industrial) processes, products and services with the triple aim of: Improving the productive use of natural resources (materials, water, energy, etc.); minimising the generation of waste and emissions; and reducing (industrial and related infrastructure) risks.

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11

India's Pharmaceutical Industry and the Enduring Public Regulation Challenge

Rory Horner

Introduction

India's pharmaceutical industry is a large and high-profile manufacturing industry, and is of great significance both within India and abroad. It is of economic importance—as one of India's largest manufacturing industries yet is perhaps of most significance for health—as a major supplier of generic medicines. Indeed, this industry is known by groups such as Medecins Sans Frontières (MSF 2007), as well as industry groups, as the “pharmacy of the developing world”. It is widely estimated that the Indian pharmaceutical industry is the third-largest pharmaceutical industry in the world in volume terms.

Yet, the industry also faces substantial challenges in terms of delivering on its full potential in terms of societal benefit. Health and access to medicines, as well as environmental impacts, are key sustainability challenges, although considerable regulatory gaps are present in relation to

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the Indian pharmaceutical industry. Indeed, effective quality control regulations, price controls, and ethical marketing have been a long-standing focus of very active civil society campaigning within India. Moreover, patent laws have attracted considerable debate and controversy, with India at the centre of global debate over the introduction of the Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement as a condition of membership of the World Trade Organisation (WTO). While India's pharmaceutical industry is large and prominent, the civil society campaigning in relation to the industry has overwhelmingly focused on seeking more effective public governance, as opposed to promoting the creation of, or adherence to, voluntary standards. This is true both within India and further afield for pharmaceuticals.

While the growing prominence of private governance has been well documented globally (e.g. Bartley 2007, 2018; Vogel 2008), notably in forest products and apparel, such forms of governance are less well established in the pharmaceutical sector. Moreover, while such voluntary governance initiatives are attracting growing attention within other sectors in India, as documented elsewhere in this volume, they are only nascent in pharmaceuticals. The literature on voluntary sustainability standards has, at times, been critiqued for being overly focused on a small number of high-profile examples of such initiatives, such as the Forest Stewardship Council (FSC), with little exploration of cases where private regulatory systems have not emerged or have been slow to develop (Bartley 2007, 341). Amongst a tendency to focus on highly visible and successful programmes, Fransen and Conzelmann (2015) have explored variations in fragmentation of transnational private governance across industries, while Bloomfield and Schleifer (2017) have looked at a failed programme—the Marine Aquarium Council. In this context, this chapter thus seeks to address an underexplored issue in relation to voluntary governance initiatives—exploring why they may be limited in some sectors and why the challenge of effective public regulation endures.

This chapter argues that public regulations are a long-standing challenge in relation to Indian pharmaceuticals. To be clear, the relative

absence of private governance initiatives does not mean that this, in any sense, is a “perfect” industry. Indeed, activists have long campaigned for a more socially and environmentally beneficial pharmaceutical industry in India. India's pharmaceutical industry has consistently faced suggestions that the focus has been more on the health of the industry, rather than an industry for health. Yet, public regulation remains of utmost importance, for a number of reasons. Most of all, the pharmaceutical industry is of perhaps greater significance than almost any other industry—because of its key role for public health. It provides products which can be essential for human survival. Second, the nature of consumption is very different from say textiles and apparel, with little consumer information or choice and thus less scope for consumer power, given many products are subject to prescription by a doctor.

The chapter draws on a body of work exploring the political economy of India's pharmaceutical industry, which has included almost 100 interviews with key stakeholders in India in 2009, 2011, 2012, and 2015. The next section highlights, through a historical perspective, the creation of a successful industry, yet continued struggle to fully deliver for health. A brief overview of the contemporary industry is provided. The key sustainability challenges are introduced, before outlining the continued public governance challenge and the nascent attempts at private governance. The chapter concludes by reiterating the importance of addressing continued public governance gaps within Indian pharmaceuticals.

An Overview of India's Pharmaceutical Industry

Pharmaceuticals is a large and vibrant industry in India. The Department of Pharmaceuticals 2016–17 Annual Report (5) notes a turnover figure for the industry of 185,388 crore Rs. (approx. US\$29.1 bn.) in 2015–16 (down slightly from 200,151 crore Rs. or US\$31.4 bn. in 2014–15). One estimate projects the size of the industry could be US\$200 billion by

2030 (Federation of Indian Chambers of Commerce and Industry (FICCI) 2015, 15). It is the 3rd largest such industry in the world in volume and 13th largest in value (Export–Import Bank of India 2016, 54). The sector is heterogeneous, being comprised of a very large number of firms. Estimates vary for the exact number, ranging from more than 10,000 units (NPPA 2007)¹ to 300–400 “organised” firms plus 15,000 “unorganised” firms (Export–Import Bank of India 2016, 54). Pharmaceuticals exports comprise approximately 5% of all of India’s merchandise exports (FICCI 2015, 15) and in the year 2015–16 were valued at US\$16.2 billion (Export–Import Bank of India 2016, 55) with large segments to both global North and South. Approximately 75% of the exports are of formulations, with 25% of bulk drugs (FICCI 2015, 15). Estimates for employment are difficult to gauge accurately, but one recent estimate from FICCI suggests that approximately 2.5 million people are directly or indirectly employed in the industry (FICCI 2015, 15).

While the history of India’s pharmaceutical industry has received considerable attention (e.g. Chaudhuri 2005, more recently Joseph 2015), it is briefly recounted here. Some major health benefits have emerged, most notably in terms of the industry’s major contribution to the supply, and lowering the price of, anti-retroviral medicines—of which it is estimated to manufacture 30% of the world’s volume (Department of Pharmaceuticals 2015). Yet, the story of the Indian pharmaceutical industry has been characterised by long-standing sustainability challenges (broadly understood), particularly in relation to effective public regulation to maximise the health benefits from the industry.

The pharmaceutical sector has long attracted recognition as an important priority for the country. For the first two decades after independence in 1947, the Government of India aimed to develop a domestic pharmaceutical industry that would adequately address the health needs of the Indian population. Recommendations of the National Health sub-committee of the Congress Party’s National Planning Committee in 1940 proposed that India should be self-sufficient in the supply of drugs and that no firm should be allowed to hold patent rights in a medical product. At that time, the domestic pharmaceutical industry was deficient in technological skills, while the foreign multinational companies (MNCs) successfully lobbied to prevent any change to the patent law

inherited from colonial times (Kochanek 1974). Most of India's pharmaceuticals were largely imported in the 1950s and were amongst the most expensive in the world (U.S. Senate 1961). The Indian state's first major initiative to promote a domestic pharmaceutical industry was through two public sector units, Hindustan Antibiotics and Indian Drugs and Pharmaceuticals Ltd (IDPL), which were established in 1954 and 1961. Although the units were ultimately not commercially successful, their significance lay in initiating the move towards domestic pharmaceutical production in India.

The most widely recognised factor in the establishment of India's pharmaceutical industry is the Patent Act 1970, which removed product patent protection and only provided for limited process patents (of 5 years). Support for this Act came on account of domestic public health concerns and from the Indian Drug Manufacturers' Association (IDMA), which had been set up to lobby for a change in the patent law regime (Kochanek 1974). Effectively giving domestic firms legal access to the most innovative technology, the Act had a particular impact in pharmaceuticals where the knowledge behind a drug can be highly codified and can be easily copied. Without product patent protection, Indian pharmaceutical firms could follow a strategy of using a different process to produce for the domestic market those drugs being introduced by the big pharmaceutical companies in North America and Europe. Many pharmaceutical products were made available in India within three years of their invention (by another process) elsewhere (Hamied 1988). As a result, Indian companies developed considerable chemistry skills through reverse engineering products, while the foreign MNCs, who held patents themselves, suffered a loss of market share.

Yet, many other countries also removed product patents around this time yet did not develop domestic pharmaceutical industries to a similar degree as India (Horner 2013). A variety of other policy initiatives were also crucial as part of India's broader disengagement—or "strategic decoupling"—from global pharmaceutical MNCs (Horner 2014a). A 1973 Foreign Exchange Regulation Act (FERA) imposing general restrictions on multinationals was followed by a 1975 Government Inquiry expressing deep concern over their presence in the pharmaceutical sector, citing their negative impact on the domestic industry, and arguing that their

activities in the country must “cease as early as possible” (Government of India 1975, 97). The New Drug Policy of 1978 and subsequent Drug Price Control Order (DPCO) 1979 controlled prices of essential drugs and ensured that foreign MNCs allocated a share of their production to lower-margin bulk drugs. Even though some foreign companies were able to strategise around the regulations by reducing their equity yet still retaining control, these policies acted as a major constraint on foreign pharmaceutical companies. The number of drug companies with more than 40% foreign equity declined from 49 in 1973 to 45 in 1978 to 22 in 1981 (Lal 1990, 18). With policy so conducive to the domestic industry, many scientists with considerable technical training left the public sector to pursue opportunities in private firms.

The more directly public health-oriented policies, of price and quality controls, suffered more obviously from divergent social and industrial interests and from the lack of state capacity to discipline the industry—long-running challenges which continue to exist to varying degrees to the present. Quality standards are vital for public health, yet the state suffered from a lack of resources in both drug control administration and environmental control. Charged with enforcing drugs standards, the regional states had been responsible for some very variable implementation. In the early 1960s, a government health report had observed that “while complaints are commonly heard of spurious and sub-standard drugs, the machinery required for the supervision of manufacture, distribution and sale of drugs is almost non-existent” (1961, 428). In the mid-1970s, the Hathi Committee identified an inadequate level of enforcement in most of the states (1975, 191), while the lack of state capacity in the well-trained and qualified personnel needed to control drug quality continued through to the 1980s (Gothoskar 1983, 227). Although the Hathi Committee Report (1975) recommended the creation of a National Drug Authority for an integrated implementation of price and quality controls, the administration of drug policy continued to be fractured. Designed to ensure key drugs could be sold at an affordable rate, price controls had been introduced in 1962 in the wake of the Sino-Indian War, yet the first long list of drugs deemed as essential was compiled only in 1970. The original price controls largely failed in their objective of keeping prices of essential drugs low (e.g. Government of India 1975,

179). The state lacked resources and coherence for their implementation, while the application of price controls met continuous resistance from the industry, both domestic and foreign. Firms often found the price controls too rigid, unresponsive to increases in raw materials prices or input costs (multiple interviews) and, in consequence, persistently and successfully strategised around the price controls.

The Indian state began taking a more widespread pro-business orientation after Rajiv Gandhi became Prime Minister in 1984 (Chatterjee 2010), followed by widespread liberalisation measures affecting industrial development, trade, foreign investment, finance, and the public sector, with the adoption of major economic reform in 1991. The more explicitly pro-business approach is evident in a number of policy areas. Early changes affecting the pharmaceutical industry included a new Drug Policy reducing the span of drugs under price control from 347 to 142 in 1986 with a further reduction in 1994. The public sector production units were closed. Other reform measures included the abolition of industrial licensing, the elimination of requirements linking bulk drugs to formulations production and the ending of restrictions to 100% foreign investment. These measures were paralleled by more collaborative relations between the state and the pharmaceutical industry. The government started a scheme in 1994–95 to support industry-institutional R&D collaborations, while it later provided financial support, under the Pharmaceutical Research and Development Support Fund set up in 2004–05, and through tax incentives for research activities. Since the Special Economic Zones Act in 2005, pharmaceutical-specific parks have been set up, such as Jawaharlal Nehru Pharma City near Visakhapatnam (Andhra Pradesh) and Pharmez near Ahmedabad (Gujarat), providing dedicated infrastructure and tax concessions to encourage the pharmaceutical industry. A special export promotion agency, Pharmaceutical Export Promotion Council of India (Pharmexcil) was founded in 2005. To further co-ordinate promotion activities for the industry, the government formed a special Department of Pharmaceuticals in 2008.

The industry has thus evolved from a foreign-dominated, largely import-dependent sector, to one with considerable domestic production and which exports globally. Although considerable fear was present about the impact of adjusting to the re-introduction of product patents as part

of the WTO's TRIPs Agreement in 2005, the industry has continued to prosper. Yet, even when benign legislation and the expansion of the industry led to the prices of many key medicines becoming among the lowest-priced in the world (Hamied 1988), the state has lacked crucial capacity and internal coherence and has thus struggled to maximise the public health benefit—particularly where industrial and societal interests have diverged. After introducing the pharmaceutical value chain in the next section, these sustainability challenges and their governance will be explored in detail in the following sections.

The Pharmaceutical Value Chain

The pharmaceutical value chain can be divided into four basic stages. The more technically challenging bulk drugs production involves chemical reactions to convert raw materials into active pharmaceutical ingredients (APIs). Formulations production is the less complicated part of pharmaceutical production and generally involves physical processes to combine the ingredients including the API into a final form, such as a capsule, tablet or liquid. Beyond production, the research is an especially important stage for new-to-the-world products, including clinical trials. For all products, marketing and retailing are a key group of activities prior to consumption. Although these four are the key overall stages, other actors may be involved, for example, in raw materials production before APIs, or then in distribution such as clearing and forwarding agents (CFAs) stockists, wholesalers, and retailers—pharmacists and hospitals (Brhlikova et al. 2011). It is also important to note that there are different strands of production in the pharmaceutical value chain, which Haakonsson (2009) has identified as a producer-driven strand for branded products, a buyer-driven strand for quality generics, and a strand for low-value generics which is not driven. Indian firms mostly participate in the generics strand segments.

Amongst the large number of pharmaceutical firms in India, there is considerable heterogeneity. Many of the largest firms possess capabilities across API, formulations production and have their own marketing representatives in India and dedicated subsidiaries and representatives

abroad. Other firms are specialist producers of APIs or of product formulations. Many small-scale companies are also present in the sector, including some which are contract manufacturers and some which are primarily regionally-oriented. Small firms are also often linked in supply relationships with larger firms. The industry also experiences considerable segmentation in relation to the research-intensity of firms, and especially in accordance with quality control requirements—most notably between activities oriented towards highly regulated “developed” markets and others towards less regulated developing country markets. Vast differences can thus be identified in their everyday practices and forms of participation in the global economy (Horner and Murphy 2018), with a variety of quite different challenges faced across different firms.

The greater Hyderabad area has been particularly central to various API production in India, having been the original home of Indian Drugs and Pharmaceuticals Limited. Notably, in recent years, India has become increasingly reliant on API supply from China, with a recent estimate suggesting that more than 80% of bulk drugs arrive from China (FICCI 2015, 25). For formulations production, Gujarat is a prominent location, including greater Ahmedabad and Vadodara, while since the mid-2000s locations such as Baddi (Himachal Pradesh) and Haridwar (Uttarakhand) have benefited from excise benefits for the domestic market and have witnessed a growth in formulations production.

Sustainability Issues and Challenges in Pharmaceuticals

In consideration of sustainability challenges in the sector, this chapter takes a broad view. Clearly, health is a major sustainability challenge. Within the Sustainable Development Goals (SDGs), health can be viewed as both a contributor to and a beneficiary of sustainable development (WHO 2015). Sustainable Development Goal (SDG) 3 of the United Nations aims to “ensure healthy lives and promote well-being for all at all ages”. Other SDGs are also related, however, including SDG12 (to “ensure sustainable consumption and production patterns”), SDG9

(to “build resilient infrastructure, promote sustainable industrialization and foster innovation”), as well as other goals which relate to decent work (SDG 8) and reduced inequalities (SDG 10), for example. Thus, the sustainability issues in the sector are diverse and cross the three core dimensions of sustainability—economic, social, and environmental. The pharmaceutical industry has huge, perhaps unique significance for health as well as industry (Horner 2016). Yet ultimately, the major societal challenge involving pharmaceuticals, including within India, is access to medicines. Insufficient access remains a considerable problem despite the relatively thriving industry in India (Chaudhuri 2007; Srinivasan 2011). One estimate is that 50–80% of the Indian population are unable to access the medicines that they need (Maiti et al. 2015, 5). Medicines are the most important component in out-of-pocket health expenditure, often leading to impoverishment, especially in rural areas (Ghosh 2011; Sangar et al. 2018).

A whole variety of issues affect the production of, research into and consumption of quality, efficacious and affordable medicines. These include quality controls, pollution control, patent laws, price controls, and ethical marketing. At the production stage, quality controls are particularly important in order to ensure that drugs are effective and to avoid the dangers of sub-standard products or irrational combinations. The Indian pharmaceutical market contains a vast array of different drugs, with many prescribed and dispensed which may not be fit for medical purpose. The production of drugs also creates effluent, which needs to be appropriately treated and disposed of (Chaturvedi et al. 2017). Notably, the Hyderabad area has been found to have the highest recorded levels of pharmaceutical pollution in the world (Larsson et al. 2007). Sewage treatment (or lack of it) and overprescription can be conducive for spread of antibiotic resistance in India, which is notably where the first identification of antibiotic-resistant genes in the world can be traced to (Nordea 2016; Earth Security Group 2017). India has even been identified as “a global hotspot for AMR” (antimicrobial resistance) (Earth Security Group 2017, 24).

In terms of research, patents are hugely significant in the pharmaceutical industry as, although it can take a long time to introduce a new drug, once introduced a drug can be relatively easily copied. Patent protection,

which prevents provision of generic drugs, can lead to very high prices, and has been the subject of considerable controversy in India (Horner 2014b). In addition, clinical trials are a key part of testing new drugs and have surged in number in India, especially since the amendment to India's patent laws in 2005 (Mondal and Abrol 2015; Sariola et al. 2015). India's attractiveness as a location for clinical trials has been attributed to the large pool of patients, presence of skilled investigators, lower costs, and timeliness (Mondal and Abrol 2015, 2). Nevertheless, concerns have been expressed about whether there is sufficient access within India to any benefits from such trials (Sariola et al. 2015) and whether local participants have sufficient awareness of what is involved, including the potentially negative implications from participating in such trials (Mondal and Abrol 2015).

In terms of the market stage, the price of drugs and marketing practices are key issues. The cost of drugs continues to be the major component, estimated at between 40 and 80%, of healthcare expenditure, with many patients having to cover fees out of pocket in the absence of health insurance (Government of India 2012). Price controls have thus often been attempted with a view to set a limit on the prices of generic drugs. Ethical marketing is also a challenge for the pharmaceutical industry everywhere, with gifts often provided to doctors to influence their prescribing practices (Grande 2010; Töller 2017). This is not to say these are the only sustainability issues, but the primary ones that attract considerable focus as major challenges for India's pharmaceuticals.

India is noticeable as a place with particularly vibrant civil society engagement seeking to make the pharmaceutical industry more societally beneficial. A wide range of groups and campaigns have been very active. The Medico Friends Circle emerged in the 1970s. The Federation of Medical Representative Associations of India (FMRAI) and the Kerala Sastra Sahitya Parishad (KSSP), the People's Science Movement in Kerala, have also long been engaged. The All India Drug Action Network (AIDAN) was formed in 1980 as a loose network of the People's Science Movement (PSM), health and consumer groups and NGOs, coordinating their drug-related work (Shukla and Phadke, 1999). AIDAN, for example, campaigned on irrational combinations and also took up the

issue of bannable drugs, raising awareness of malpractices in the pharmaceutical industry, both domestic and foreign. A long-standing focus, since the 1980s, has been on essential medicines and a rational drug policy. Notably, the campaigning has not all been against the industry. A campaign group involving both domestic industry and civil society was formed in 1988, under the guise of the National Working Group on Patent Laws (NWGPL), to “create a movement against foreign pressure to change our patent laws and India’s general position on intellectual property rights” (Hamied 1988). A variety of other organisations, including the Lawyers Collective and Delhi Network of Positive People, as well as international organisations have subsequently become involved in access to medicines issues related to patent laws. As the following section will elaborate, civil society campaigning efforts, and the key governance gaps, have overwhelmingly been focused on more effective public regulation, with the emergence of private governance remaining limited.

Sustainability Governance Landscape in Indian Pharmaceuticals

Public governance is of utmost importance in the pharmaceutical industry. Considerable information asymmetry exists between producers and consumers. As Rågo and Santoso (2008, 66) explain:

Drugs are not ordinary consumers’ products. In most instances, consumers are not in a position to make decisions about when to use drugs, which drugs to use, how to use them and to weigh potential benefits against risks as no medicine is completely safe.

While prescribers and dispensers can help, they are unlikely to be informed about all aspects of medicines. The assessment of safety, efficacy, and quality is an important function of a medicines regulatory system. This requires attention to the whole supply chain, register of approved products, post-marketing surveillance and control over marketing of medicines. Rational pricing has also been pointed to as an important

function of such a body (Gray 2004, 1). Poor quality medicines have been linked to various issues including therapeutic failure, disease exacerbation and even resistance to pharmaceuticals (WHO 2003, 1). Despite the importance of public regulation, many regulators—especially in developing countries—are often under-resourced (Gray 2004). A 2003 estimate from the WHO (2003, 1) suggested that only about 20% of countries have “well developed and operational medicines regulation”, while half have variable, and the remaining 30% have none or very limited. This section outlines key public governance challenges related to pharmaceuticals in India.

Production: Quality and Environmental Controls

With respect to quality controls, although India has a series of regulations on paper dating to the Drugs and Cosmetics Act of 1940, gaps in implementation continue to be noted. The Indian Pharmacopoeia² was published in 1945, replacing the British Pharmacopoeia which had operated until then. Schedule M (Good Manufacturing Practices (GMP) and requirements of premises, plant and equipment for pharmaceutical products) was prescribed in 1988, then revised in line with WHO GMP text in 2001, applicable to all drug manufacturing units from 01 July 2005. For implementation, the system depends on both the Drug Controller General of India under the Central Drugs Standard Control Organization (CDSCO), in charge of drug regulation, and on the States, which control the manufacture and sale of drugs.

Yet, it is widely recognised that problems continue in terms of the implementation of quality controls. Many smaller companies were found to not reach the new standards, with less than 10% of those manufacturing units with drug licences in 2002 complying with WHO GMP requirements (Government of India 2003). Although many of the interviewed firms recognised that there has been greater implementation of quality controls, particularly since the introduction in 2005 of the revised schedule M to the Drugs and Cosmetics Act 1940, recent government health reports have also found that substandard drugs continue to be

available due to poor regulatory systems and weak drug control infrastructure at both regional and central levels of administration (Government of India 2005, 65; 2012, 18). A Department of Pharmaceuticals Task Force (2015) has itself noted that the CDSCO is poorly resourced in terms of staffing levels. Amongst firms, awareness of GMP has been found to be high, but compliance weak (Batham et al. 2013, 2). Thus, considerable variation in quality can be found in India, with India having a large number of US FDA approved plants (FICCI 2015; Export–Import Bank of India 2016), yet persistently facing gaps in adequate implementation of quality controls.

Although some regulations are in place, appropriate environmental governance remains a challenge in India's pharmaceutical industry. Following the Water Act 1974, the Central Pollution Control Board was set up, with State Pollution Control Boards responsible for implementation. Much of the industry had initially emerged before in the very early days of the establishment of Pollution Control Boards in many of the states, with little awareness or ability to control effluent loads. The Central Pollution Control Board (1989) published recommendations for National Minimal Standards (NMS)—minimisation of pollution and good water quality management. Although appropriate effluent treatment has long been intended, the implementation again remains questionable. Batham et al. (2013), for example, reported considerable variation across states in terms of the infrastructure available at the firm-level to manage environmental aspects. In relation to environmental regulation, they suggest that for effective enforcement of Schedule M (Good Manufacturing Practices) cooperation is required, yet found to be absent, between the State Drug Controller and State Pollution Control Boards (Batham et al. 2013, 124). The Earth Security Group has pointed to the Pollution Control Boards suffering from being “chronically understaffed and underfunded” (2017, 22), and suggested that insufficient regulation of medical compounds and antibiotic pollution has created a breeding ground for AMR (2017, 26). Amongst my interviewees, a number noted that it was difficult for the small-scale industry to afford proper effluent treatment and doubted how much they would survive with enforcement of very strict environmental regulations.

Research: Patent Laws and Clinical Trials

Patent issues related to pharmaceuticals in India have been particularly controversial and have attracted a lot of domestic and foreign interest, related to their implications for access to medicines as well as for the industry. As noted earlier, the absence of product patents from 1970 has been widely cited as especially crucial in the making of India's pharmaceutical industry. Starting with the Uruguay Round of GATT (General Agreement on Tariffs and Trade) Negotiations (initiated in 1986) and as a result of campaigning from the multinational pharmaceutical and other allied industries on the US-driven Intellectual Property Committee (Drahos with Braithwaite 2002), significant external pressure was placed on the Indian state to change its patent law in order to comply with the emerging Trade-Related Aspects of Intellectual Property Rights (TRIPs) Agreement. This faced considerable resistance from within India, most notably in the form of NWGPL who expressed concern over the continued ability of India to supply generic medicines. Last to hold out in the negotiations, and despite emerging opposition from the domestic industry and civil society, the Indian state eventually agreed to the global patent protocol in 1989 when a balance of payments crisis forced it to look to the International Monetary Fund (IMF) for assistance (Patnaik 1992). When the TRIPs Agreement came into force with the formation of the WTO in 1994, India was allowed ten years to reform its patent law and re-introduce product patents.

The patent issue is a case where civil society groups have been quite effective in seeking to promote public health interest within India. In the run-up to the full implementation of TRIPs in 2005, as well as a range of domestic NGOs (Das 2003), transnational civil society increasingly worked alongside to protect public health interests, bringing worldwide attention to the industry. Concern around access to HIV/AIDS medicines (Sweet and Das 2010), and over the continuity of India's supply of low-cost drugs drove much of the broader civil society activism. Médecins Sans Frontières (MSF) helped build an image of India as the "pharmacy of the developing world", making it the "economic-backbone" of the global access to medicines campaign

(Roemer-Mahler 2013: 133). Domestic organisations including The Lawyers Collective and Delhi Network of Positive People were extremely proactive in involving people. Reflecting concerns over access, pressure from civil society groups helped ensure that the amended patent law of 2005 incorporated public health safeguards, including provisions for compulsory licensing and strict criteria for patentability. In the years since 2005, the industry has largely adapted to the patent law change and the more liberal economic environment (Horner 2014b), although interest in patent issues has not stopped. At the same time, the Indian government has been subject to external pressure from the US, European Union (EU), and Japan to introduce such TRIPs-plus measures as patent-term extensions, data-exclusivity, and increased border and enforcement measures, in bilateral and regional trade negotiations. At the same time, civil society groups, at times working with domestic industry interests, have continued to ensure adherence to the public health safeguards in the amended patent law. In a high-profile case, the Lawyers Collective successfully opposed an application by the Swiss multinational, Novartis, for a patent for the cancer treatment drug Glivec (generic name imatinib) (Chaudhuri 2013).

Regulatory challenges still persist in relation to clinical trials, which are already noted to have increased significantly in number since the amendment to India's patent laws in 2005. Another regulatory development also facilitated the expansion of clinical trials in India, with the requirement for a particular phase of clinical trials to already have been conducted abroad (before taking place in India) removed from Schedule Y of the Indian Drugs and Cosmetics Act (Sariola et al. 2015, 240). Following concerns that patients were being involved in trials without due awareness or consent, audio-video recording of informed consent has been made mandatory for companies intending to conduct clinical trials. Yet, with part of the allure of India as a clinical trials location being lesser regulatory "hassle", calls have persisted for more effective public regulation for "ensuring the conduct of clinical trials without violation of humanitarian ethics and other social norms" (Mondal and Abrol 2015, 19).

Market Stage: Price Controls and Provision of Medicines

Price controls have continued to be reduced, to just 74 drugs since 1995. The 2002 Drug Policy, which proposed to further halve the number of drugs under control, was curtailed by public interest litigation. Government inquiries, including a 2005 Task Force concerned with making life-saving drugs available at affordable prices and the Commission on Macroeconomics and Health 2005, have stressed the need for further price regulation. Yet, the Draft National Pharmaceutical Policy 2011, with provisions to include over 348 essential medicines in price control, has been subject to much debate and by spring 2013 had still to be introduced (e.g. Selvaraj et al. 2012). Drugs (Prices Control) Order, 2013 was modified following the National List of Essential Medicines (NLEM) 2015, notified in March 2016. The National List of Essential Medicines (NLEM) 2015 includes 929 drug formulations over 30 therapeutic groups. The National Pharmaceutical Pricing Authority (NPPA) has fixed ceiling prices of 540 formulations and expressed intention to fix more (Department of Pharmaceuticals 2017).

Civil society groups have struggled with little success to trigger actions by the state to increase, or improve the implementation of additional price controls. One access to medicines campaigner I interviewed observed that the government “call us to the meeting. They prepare a pharmaceutical policy but they never implement it”, and also stated that the companies were “anarchists” who don't follow the ceiling prices (Interview, Delhi, 22 May 2012).

Procurement and delivery systems of essential medicines to public health facilities need to be improved for the NEML to have more effect. Problems of irregular supply have beset public health facilities, although with variation across different states. Notably, the Tamil Nadu Medical Services Corporation (TNMSC) has attracted particular commendation for its effective pricing and procurement (Srinivasan 2011). The central government has established Janaushadhi in 2008 as a government initiative to provide medicines at affordable prices. Administered through the Bureau of Pharma Public Sector Undertakings of India, the scheme has

operated as Pradhan Mantri Bhartiya Janaushadhi Pariyojana Kendra (PMBJPK) since November 2016, with 2060 PMBJP Kendras reported to be operating by the end of July 2017 (Department of Pharmaceuticals 2018). While pharmaceuticals policy has also been mooted to include the National Health Protection Scheme, a persistent challenge remains in policy implementation to achieve access to medicines.

Limited Coordination in Public Governance of Key Sustainability Issues

Particularly because of the crucial public health interest in pharmaceuticals, public governance is the key. Indeed, a long-standing challenge relating to India's pharmaceutical industry relates to persistent differences within the Indian state over whether the development of the industry has been, and still is, more about the promotion of the industry or of health. For the most part, the majority of the regulations concerning pharmaceuticals have been the purview of the Ministry of Commerce and Industry. Licensing to manufacture, for example, was governed by the Ministry of Commerce under the Industries (Development and Regulation) Act, whereas quality control regulations were established by the Drugs Controller General of India in the Ministry of Health and implemented by the State Drug Control Authorities. This division of regulation at times led to inter-ministerial conflict with the Health Survey and Planning Committee observing in 1961 that:

the licensing regulations under the Industries (Development and Regulation) Act are more concerned with the development of the pharmaceutical industry as an industrial enterprise of the country rather than one whose chief concern is to produce quality goods for the consumer at rates within his means. (1961, 423)

Arguing that having different ministries in charge of different aspects of state regulation was detrimental and that licensing should be the function of the Ministry of Health (1961, 427), the committee suggested that the Commerce Ministry could be an adviser to the Ministry of Health in pharmaceutical planning, rather than vice versa as was then the case.

Notwithstanding the shared objective of the development of a domestic pharmaceutical industry, these inter-ministerial tensions over quality, and later price, were destined to be long-running. They are arguably a key challenge in delivering the full social benefit of India's pharmaceutical industry.

Various inter-ministerial conflicts persist concerning the most appropriate policies and administrative structures for the industry. Echoing the reports of a succession of committees over the preceding 30 years, the 2005 National Commission on Macroeconomics and Health has noted "poor governance and a dysfunctional role of the state" (Government of India 2005, 44), including a lack of coordination between different ministries in relation to public health policy. A National Drug Authority, long recommended by the Hathi Committee Report 1975, the 1986 Drug Policy, and a 2002 report on pricing and availability of pharmaceuticals, has still not been created.

More recently, working groups preparing for the 12th Five-year Plan have diverged significantly on which is the most appropriate ministry for dealing with the industry. Whereas the Drugs and Pharmaceuticals Group envisaged a common authority on pricing of drugs and ensuring quality as part of the Department of Pharmaceuticals within Working Group on Drugs and Pharmaceuticals (2011, 23), the Drugs and Food Regulation Group foresaw all pricing and quality issues under the health ministry (2011, 33). Reinforcing the latter perspective, the expert group on Universal Health Coverage has argued that: "public interest would be best served by transferring the Department of Pharmaceuticals to the Ministry of Health. This would help to better align drug production and pricing policies to prioritised national health needs" (2011, 135). Even as recently as 2015, it was announced that a separate pharma ministry (incorporating CDSCO, the DCGI and NPPA in one body) would be created (Business Standard 2015), although this has not happened as yet.

Coherent public governance to ensure the full societal benefit of India's pharmaceutical industry remains a key challenge, especially given the trajectory of deregulation without a sufficient welfare state (D'Mello 2002). The Government of India have argued that many of the problems facing the drugs industry arise from the key regulatory

bodies being orientated more towards the pharmaceutical industry than to the consumer (2012, 8). An activist interviewed argued that: “policy-making in India regarding pharmaceutical industry has always been about the health of the industry” (Interview, Delhi, 12 December 2011), while another suggested that “before, health was [the] primary [consideration] and the economic was the offshoot. Now you hear mainly the economic argument” (Interview, Delhi, 08 December 2011). Srinivasan has suggested that given the thriving industry, yet significant gaps in access to medicines, when it comes to pharmaceuticals, India is “sitting on the banks of the Ganga, yet thirsty” (2011, 45).

Voluntary Sustainability Standards (VSS) and Initiatives in Indian Pharmaceuticals

Amongst the major public governance challenges, voluntary sustainability standards have only received nascent attention in India’s pharmaceutical sector, and indeed in the worldwide pharmaceutical sector. Pharmaceuticals is an industry where few such initiatives have emerged, in contrast to sectors such as textiles, apparel, and electronics. The International Social and Environmental Accreditation and Labelling (ISEAL) Alliance has been created as an organisation to strengthen credible and accessible voluntary sustainability standards. It includes the Fairtrade Labelling Organizations International (FLO), Forest Stewardship Council (FSC), and Marine Stewardship Council (MSC). Yet the pharmaceuticals section does not appear to feature anywhere on the website of the ISEAL Alliance (as of March 2019). This is consistent with other forums on voluntary sustainability standards. For example, Potts et al.’s (2014) focus on the state of play across voluntary sustainability initiatives, highlighting the prominence of such initiatives in commodity-based sectors such as biofuels, cocoa, coffee, cotton, forestry, palm oil, soybean, sugar, and tea, yet the six-letter term “pharma” does not appear anywhere in the report. The same is true of the ITC’s (2017) report on voluntary sustainability standards.

To be clear, the pharmaceuticals sector has seen various initiatives emerge to leverage greater health benefits from the industry, yet few have taken the form of voluntary sustainability standards. Public-private product development partnerships include the Drugs for Neglected Diseases Initiative (DNDi) and Medicines for Malaria Venture (MMV) (Moon 2008). Various other initiatives, many involving both public and private involvement, have sought to increase access to medicines, including the Global Fund for HIV AIDS, TB, and Malaria, the Gates Foundation. The Medicines Patent Pool has emerged as a UN-backed initiative to facilitate companies to voluntarily offer their IP to a patent pool (Bermudez and t'Hoen 2010). The Access to Medicines Index, first published in 2008, is an independent ranking of pharmaceutical companies in terms of their commitment to making their products accessible. The main voluntary governance attempt is The Pharmaceutical Supply Chain Initiative (PSCI) (<https://pscinitiative.org/about>), established in 2006, by large multinationals in the industry (e.g. Pfizer, AstraZeneca, Roche). It established the Pharmaceutical Industry Principles for Responsible Supply Chain Management.

Ethical marketing guidelines have been deployed in the pharmaceutical sector, with guidelines from the American Medical Association (AMA) in the US since the 1990s, endorsed and updated by the Pharmaceutical Research and Manufacturers of America (PhRMA) (Grande 2010), as well as in Germany through the voluntary FSA (Freiwillige Selbstkontrolle der Arzneimittelindustrie) Codex (Töller 2017). Nevertheless, questions have persisted about how much substantive change arises from such guidelines for self-regulation (Grande 2010).

Within the Indian pharmaceutical industry, voluntary sustainability standards are also nascent. India's National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (NVGs) were released by the Ministry of Corporate Affairs in 2011, with a set of nine business conduct principles. A reporting format Business Responsibility Report (BRR) has been mandated by the Securities Exchange Board of India (SEBI) in 2012 for the 100 largest publicly traded companies. Cipla (2015), for example, which is one of India's largest pharmaceutical companies, has released a report in accordance with the SEBI's Clause 55 of the listing agreement with stock exchanges. GIZ

et al. (2012), in their analysis of large companies, however, found very little sustainability reporting for the Indian pharmaceutical industry, with little discussion beyond corporate social responsibility. Other research has found the Indian pharmaceutical sector to lag behind the industry globally as well as other industries in India in this regard (Jose and Saraf 2013). The Consumer Unity and Trust Society (CUTS), with the support of the Indian Institute for Corporate Affairs and GIZ, has developed sector-specific guidelines for pharmaceuticals based on the National Voluntary Guidelines (NVGs) on Social, Environmental & Economic Responsibilities of Business (CUTS 2014). These sector-specific guidelines seek to mainstream the guidelines into pharmaceuticals although it is still unclear what effect they have had, or if these sector guidelines have been implemented at all. In the meanwhile, MCA has revised the NVGs, dropping the term “voluntary”, and with a new title “National Guidelines on the Economic, Social and Environmental Responsibilities of Business”.³

Marketing practices is an area where a voluntary initiative has been launched in India, although to date this is a private code with little independent monitoring. Indian Medical Council Regulations, 2002, state that doctors should not accept a variety of favours from a pharmaceutical company. Yet in an effort to promote more ethical marketing, the Department of Pharmaceuticals launched a voluntary code in 2011. It was announced that it would be transformed into statutory if firms were not abiding by it. Batham et al. (2013, 103) suggested that while many firms are aware of the code, few had initiated actions to abide or promote them. In August 2017, it was reported that in light of the reported ineffectiveness of the voluntary code, the Department of Pharmaceuticals was drawing up a mandatory code of marketing regulations (The Economic Times 2017).

Pharmaceuticals is thus a case where voluntary sustainability initiatives attract relatively little attention compared to other sectors, and where public governance remains an overwhelming challenge. In India, voluntary standards are more prominent where firms are exporting to, or participating within supply chains oriented to, markets in the global North (Sood and Arora 2006). Although Indian firms are increasingly participating in the global supply of pharmaceuticals, public regulation is

the major challenge. In particular, the nature of consumption is very different, given consumers often have little to no information or even choice about what they consume. In other sectors, private initiatives have sought to facilitate a better flow of information on sustainability content between producers and consumers (Giovannucci and Ponte 2005, 298), originally targeting consumers in the global North, but more recently with potential in the global South (Nadvi 2014). Without seeking to appeal to ethically conscious consumers, the ground for private governance appears less fertile in pharmaceuticals. Moreover, the huge significance of pharmaceuticals for public health means that the overwhelming focus has been on more effective public regulation. In other sectors, it has been noted that private governance requires interested firms and entrepreneurial organisations (government or NGOs) that adopt the project and mobilise (Bartley 2007). Maenen and Marx have pointed to less private pharmaceutical regulation as a result of little pacification of NGO-industry relations (2012, 29). In some aspects, noticeably patent issues, NGOs and industry groups have worked together, yet civil society organisations have been very active in seeking more effective public regulation.

Conclusion

India's pharmaceutical industry is a very large and thriving sector. Given post-independence India was once dependent on imported medicines, and that the prices of medicines in India were amongst the highest in the world, it is quite remarkable that India has developed one of the largest pharmaceutical industries and that it is known as the "pharmacy of the world". Not only is it a successful industry, but clear public health benefits can be detected in some issue areas, notably in the major role of India in supplying anti-retroviral medicines. The Indian state has greatly facilitated and played a major role in the rise of India's pharmaceutical industry, with crucial interventions in terms of changes in patent law and restrictions on foreign investment in the 1970s. Yet, even with major changes in the overall policy context towards liberalisation, and so on, it is remarkable how persistent and similar public governance challenges

are, especially in relation to quality controls, environmental regulations, research, and marketing.

Civil society engagement, which has been very prominent in India in relation to pharmaceuticals, has largely sought more effective public governance to enhance access to quality, efficacious and affordable medicines. It has been most successful where it has been aligned with the domestic pharmaceutical industry campaigning in the national interest (e.g. with respect to patent laws), but in other instances the ability of civil society groups to discipline and produce improved social outcomes has been less effective (e.g. price, quality, and environmental controls). It is thus not the case that relations were extremely contentious between NGOs and the industry across all issues. Voluntary sustainability standards are nascent, with the nature of consumption very different compared to other sectors, and public regulations of utmost importance given pharmaceuticals significance for health. More effective public coordination of the regulation of pharmaceuticals remains the biggest thing that could be done for producing greater societal benefit from the industry.

The challenge of public regulation endures in India's pharmaceuticals. Mayer and Gereffi have suggested that in the longer run, it is likely and desirable that in larger developing country economies more effective public, rather than private, governance is developed, and that, "this would provide more effective, stable, and representative governance for the global economy" (2010, 20). This statement rings very true for the case of the pharmaceutical industry in India today.

Key Takeaways

- Pharmaceuticals is one of India's major manufacturing and exporting industries.
- The sector provides an important counter-example of where voluntary governance initiatives are limited in India, as well as further afield.
- Products are of huge significance for health and the nature of consumption, out of necessity and through prescription by a doctor, is different to most sectors with well-established voluntary sustainability initiatives.

- Major challenges are still present across production, research, and marketing where a consistent emphasis remains on the need for more effective public governance.

Notes

1. Estimates for the number of firms in India's pharmaceutical industry vary considerably.
2. A Pharmacopoeia is "an official (legally binding) publication containing recommended quality specifications for the analysis and determinations of drug substances, specific dosage forms, excipients and finished drug products" (Rägo and Santoso 2008, 72).
3. MCA uploaded the new guidelines for public comments in June 2018. http://www.mca.gov.in/Ministry/pdf/DraftNationalGuidelines2018_20062018.pdf.

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