

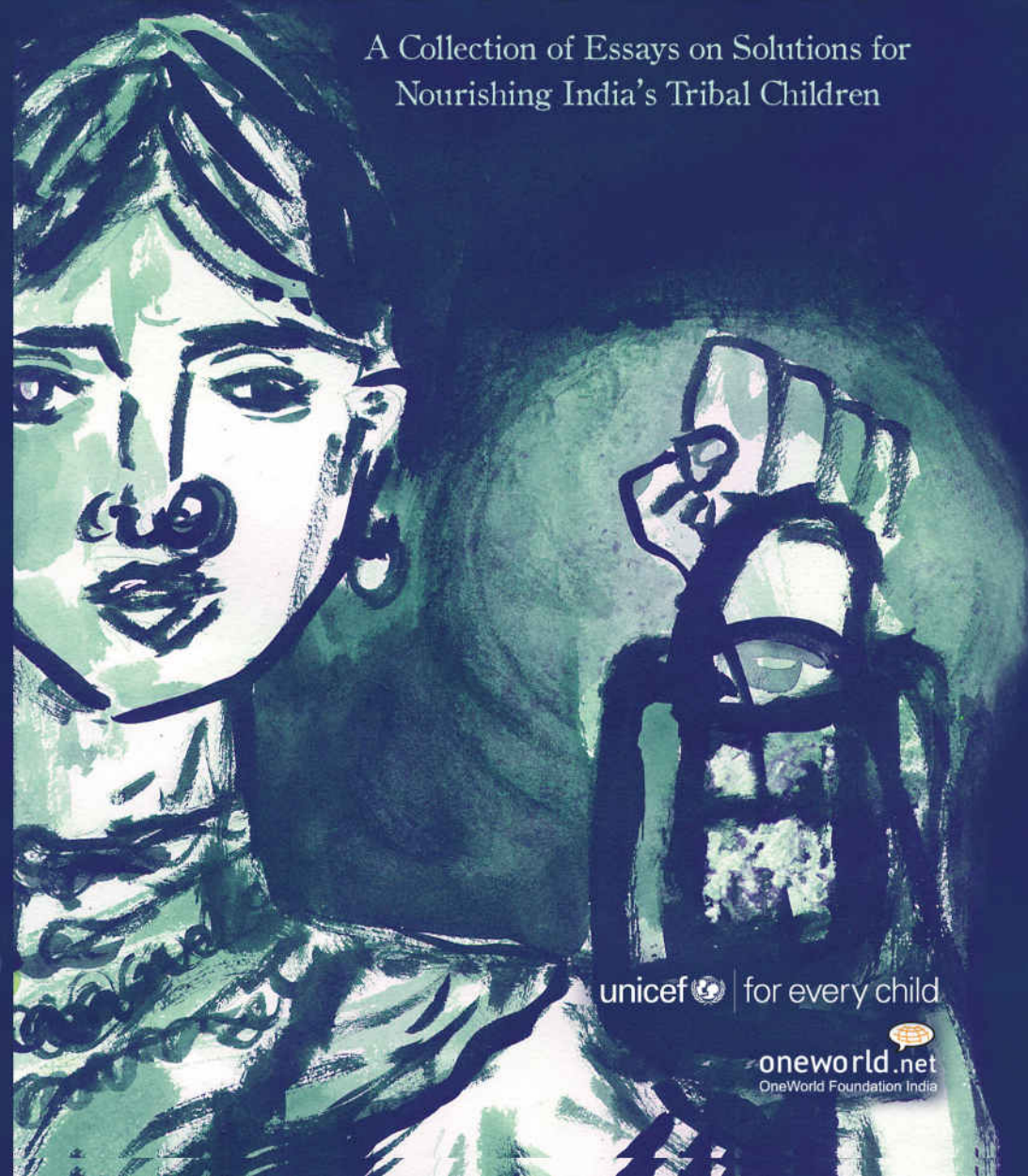
EDITOR-IN-CHIEF: VIRGINIUS XAXA

EDITED BY RAJIV TIKOO



# Forest Lanterns

A Collection of Essays on Solutions for  
Nourishing India's Tribal Children



unicef  for every child

  
oneworld.net  
OneWorld Foundation India

# Forest Lanterns



# Forest Lanterns

EDITOR-IN-CHIEF: VIRGINIUS XAXA  
EDITED BY RAJIV TIKOO

  
oneworld.net  
OneWorld Foundation India

  
unicef  
for every child



An imprint of Penguin Random House



PENGUIN ENTERPRISE

USA | Canada | UK | Ireland | Australia  
New Zealand | India | South Africa | China

Penguin Enterprise is part of the Penguin Random House group of companies  
whose addresses can be found at [global.penguinrandomhouse.com](http://global.penguinrandomhouse.com)

Published by Penguin Random House India Pvt. Ltd  
7th Floor, Infinity Tower C, DLF Cyber City,  
Gurgaon 122 002, Haryana, India



Penguin  
Random House  
India

First published in Penguin Enterprise by Penguin Random House India 2017  
Penguin Enterprise is the custom-publishing imprint of Penguin Random House India

Copyright © United Nations Children's Fund (UNICEF), 2017  
*Forest Lanterns* is a collaborative work between UNICEF and OneWorld Foundation India  
*Forest Lanterns* is licensed under a Creative Commons Attribution—Non-Commercial 4.0  
International License

All rights reserved

10 9 8 7 6 5 4 3 2 1

The statements and photographs in this publication are the views of the authors and do not necessarily reflect the policies or the views of UNICEF. Where contributors are affiliated with UNICEF, the opinions reflected are those of the contributors, and are not the official statement of UNICEF. The facts are as reported by authors, which have been verified to the extent possible, and they are responsible for the facts stated in their respective articles. The editors and publishers are not in any way liable for the same. The text and photos have not been edited or fact-checked to UNICEF official publication and photo material regulation standards and UNICEF accepts no responsibility or error. Maps used do not reflect the position by UNICEF on the legal status of any country or territory or the delamination of any frontiers. Contributions are royalty-free. This book has been facilitated and brought out by OneWorld Foundation India on behalf of UNICEF India.

ISBN 9780670089857

Vani Sethi (conceptualization, curation, technical leadership and book title); Akanksha Dutta (copy-editing of select chapters and coordination) and Surbhi Bhalla (referencing); Bijoy Basant Patro, Kakoli Roy, Ashok Kumar, Sridhar Raman and Tej Prakash Yadav (editing and writing of select chapters); Avalon Information Systems (fact sheets); Saisha Vasudeva (cover illustration); Chushool Mahaldar (design); and Subhendu Giri and Vijay Kumar (IT support).

Typeset in Adobe Garamond Pro by Manipal Digital Systems, Manipal  
Printed at Thomson Press India Ltd, New Delhi

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, resold, hired out, or otherwise circulated without the publisher's prior consent in any form of binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

[www.penguin.co.in](http://www.penguin.co.in)



## Note for Readers

*Forest Lanterns* is a collection of invited essays on forty-six solutions from solution seekers working on the ground, for improving the nutrition of tribal children from nine states (Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana) in India. The essays have been derived from presentations (audio-transcribed) made by the authors during the two-day National Conclave on 'Nourishing India's Tribal Children' from 15–16 January 2015 in Bhubaneswar, Odisha. Other contributions were invited after the conclave. The essays and initial contributions of authors have been coordinated by UNICEF and OneWorld Foundation India. The dollar exchange rate used throughout the book is INR 67= USD 1.

Note for Readers



These states have scheduled pockets under the Fifth Schedule of the Constitution of India. The Fifth Schedule deals with administration and control of Scheduled Areas and Scheduled Tribes in Andhra Pradesh, Jharkhand, Gujarat, Himachal Pradesh, Maharashtra, Madhya Pradesh, Chhattisgarh, Orissa, Rajasthan and Telangana.

# Contents

<i>List of Abbreviations</i>	xiii
<i>Foreword</i> A.V. Swamy	xxi
<i>Preface</i> Neerja Chowdhury	xxiii
<i>Acknowledgements</i>	xxv
<i>Introduction and Overview</i> Virginius Xaxa and Vani Sethi	xxvii

## IMPROVING FARMING AND HOUSEHOLD ECOSYSTEMS

Forests Are Central to Food Security <i>Debjcet Sarangi, Bichitra Biswal and Pradeep Patra</i>	3
Farms for Nutrition <i>Jayesh Joshi</i>	9
Farm Fresh Blueprint <i>Ajay Parida and Bhavani R.V.</i>	13
Growing More with Less <i>Saroj Mahapatra</i>	19
Building Skills to Increase Incomes <i>Rajashree Joshi</i>	24



Of Social Good and Sound Economics <i>Meera Mishra</i>	29
Sustainable Approach to Achieve Nutrition Security <i>Sweta Banerjee</i>	36
<b>DELIVERING FOOD SECURITY ENTITLEMENTS</b>	
IT Improves Service Delivery <i>Manohar Agnani</i>	43
Daily Nutritious Boost for Women <i>Laxmi Bhawani and Vani Sethi</i>	47
Crèches Nourish Children Better <i>Ramani Atkuri</i>	51
Action Against Malnutrition <i>Ganapathy Murugan</i>	56
Conditional Cash Transfer Matters <i>Vishal Dev and Sourav Bhattacharjee</i>	62
Partnering for Last-mile Delivery <i>Abner E. Daniel and Pratibha Sharma</i>	66
Bridging the Trust Deficit <i>Abner E. Daniel</i>	70
<b>DELIVERING PRIMARY HEALTH OUTREACH AND REFERRAL SERVICES</b>	
Prescription for Sound Primary Healthcare <i>Pavitra Mohan and Akanksha Dutta</i>	79
The Malaria Sting <i>John Oommen</i>	85
Access Key to Success of Healthcare <i>Yogesh Jain and Suhas Kadam</i>	90
Mobile Phones Help Fight for Health <i>Dhiren Modi and Pankaj Shah</i>	96

Interactive Communities, Screening Solutions <i>Vinay Kumar</i>	103
Lasting Impact of a Child's Early Years <i>Robini Mukherjee, J.C. Reddy and Manish Raikar</i>	109
Sting Operation to Combat Malaria <i>Neeru Singh</i>	114
Particularly Vulnerable Focus <i>Arti Ahuja</i>	119
Mothers by Choice <i>Somesh Kumar</i>	124
<b>IMPROVING DRINKING WATER AND SANITATION SERVICES</b>	
Water Conservation Nurtures Livelihood Options <i>Rajendra Singh</i>	133
Creating a Watermark <i>Arvind Ojha</i>	138
User Ownership Drives Water Initiatives <i>Joe Madiath and Gobinda Dalai</i>	143
From Water Scarcity to Water Security <i>Siddharth V. Patel</i>	149
Towards Bottom-up Governance <i>Alok Pandey</i>	155
Treating Fluoride Toxicity <i>Sunderrajan Krishnan and Rajnarayan Indu</i>	162
<b>MEDIA AND TRIBAL CHILDREN</b>	
Beyond Just Another Headline! <i>Sachin Kumar Jain</i>	169
Triggering Media to Voice Tribal Issues <i>Geetanjali Master and Sonia Sarkar</i>	175

Old Medium, New Media <i>Bijoy Basant Patro</i>	179
Media and Mobiles <i>Shubhranshu Choudhary</i>	185
<b>PEOPLE, POLITICS AND BUDGET</b>	
#I.COMMIT <i>Vani Sethi, Geetanjali Master, Sonia Sarkar and Idhries Ahmad</i>	193
Today's Parliamentarians Focus on Tomorrow's Children <i>Ninong Ering, Purvi Malhotra and Astha Alang</i>	200
Positive Discrimination for Equal Development <i>Vadrevu Ch Veerabhadru</i>	206
Rooting for Forest Rights <i>Johnson Topno</i>	212
Betting on Gram Sabhas <i>Dattatray Gurav</i>	217
Nutrition-Sensitive Tribal Sub Plan <i>Chandrika Singh and Vani Sethi</i>	223
Live Experiments in Social Labs <i>Sunita Gupta</i>	228
<b>GOOD GOVERNANCE</b>	
Time to Break Down Departmental Silos <i>N.C. Saxena</i>	235
Government Schemes Fortify Traditional Nutrition <i>Manoj Kumar Pingua</i>	241
New Mission to Take on Legacy Challenges <i>Deepak Kumar Dey</i>	247
Winning on a Sticky Wicket <i>Satish B. Agnihotri</i>	252

NGOs Demonstrate, Government Scales Up <i>Prasanta Tripathy</i>	257
Mission against Undernutrition <i>Vandana Krishna</i>	264
<b>APPENDICES</b>	
<i>Fact Sheets</i>	273
<i>Definitions</i>	285
<i>Contributors</i>	297
<i>Index of Organizations that Have Contributed to This Book</i>	311



## List of Abbreviations

<b>AAM</b>	Action Against Malnutrition
<b>AARR</b>	Average Annual Rate of Reduction
<b>AAY</b>	Antyodaya Anna Yojana
<b>ACT</b>	Artemisinin-based Combination Therapy
<b>ANC</b>	Ante Natal Care
<b>ANMs</b>	Auxiliary Nurse Midwives
<b>APL</b>	Above Poverty Line
<b>ASHAs</b>	Accredited Social Health Activists
<b>AWCs</b>	Anganwadi Centres
<b>BAIF</b>	Bharatiya Agro Industries Foundation
<b>BCC</b>	Behaviour Change Communication
<b>BHS</b>	Basic HealthCare Services
<b>BMI</b>	Body Mass Index
<b>BPL</b>	Below Poverty Line
<b>CAA</b>	Constitutional Amendment Act
<b>CAG</b>	Comptroller and Auditor General
<b>CBOs</b>	Community-based Organizations
<b>CCM</b>	Concurrent Monitoring Survey
<b>CDPOs</b>	Child Development Programme Officers

<b>CFR</b>	Community Forest Rights
<b>CHB</b>	Christian Hospital Bissamcuttack
<b>CHC</b>	Community Health Care
<b>CMCLDP</b>	Chief Minister's Community Leadership Development Programme
<b>CNSM</b>	Comprehensive Nutrition Survey in Maharashtra
<b>COCO</b>	Connect Online Connect Offline
<b>CPR</b>	Child Parasite Rate
<b>CRMC</b>	Community Radio Management Committee
<b>CSPs</b>	Community Service Providers
<b>CSS</b>	Centrally Sponsored Schemes
<b>CTARA</b>	Centre for Technology Alternatives in Rural Areas
<b>CTCs</b>	Child Treatment Centres
<b>DDS</b>	Dietary Diversity Score
<b>DLHS</b>	District Level Household Survey
<b>DMCs</b>	District Monitoring Committees
<b>EAG</b>	Empowered Action Group
<b>EFC</b>	Expenditure Finance Committee
<b>FGD</b>	Focus Group Discussion
<b>FHFI</b>	Fight Hunger First Initiative
<b>FP</b>	Family Planning
<b>FPS</b>	Fair Price Shops
<b>FRA</b>	Scheduled Tribes and Other Traditional Forest Dwellers Act (Forest Rights Act)
<b>FRCs</b>	Forest Right Committees
<b>GPS</b>	Global Positioning System
<b>HAZ</b>	Height for Age Score
<b>HMIS</b>	Health Management Information System
<b>HUNGaMA</b>	Hunger and Malnutrition

<b>ICDS</b>	Integrated Child Development Services
<b>ICMR</b>	Indian Council of Medical Research
<b>ICTs</b>	Information and Communication Technologies
<b>IEC</b>	Information, Education and Communication
<b>IFAD</b>	International Fund for Agricultural Development
<b>IFPRI</b>	International Food Policy Research Institute
<b>IFR</b>	Individual Forest Rights
<b>IMNCI</b>	Integrated Management of Neonatal and Childhood Illnesses
<b>IMR</b>	Infant Mortality Rate
<b>ImTeCHO</b>	Innovative Mobile-phone Technology for Community Health Operations
<b>IPHS</b>	Indian Public Health Standards
<b>IPR</b>	Infant Parasite Rate
<b>IRS</b>	Indoor Residual Spray
<b>ISHI</b>	India State Hunger Index
<b>ITDA</b>	Integrated Tribal Development Agency
<b>IVRS</b>	Interactive Voice Response System
<b>IYCF</b>	Infant and Young Child Feeding
<b>IYCN</b>	Infant and Young Child Nutrition
<b>Jhpiego</b>	Johns Hopkins Program for International Education in Gynecology and Obstetrics
<b>JSNM</b>	Jharkhand State Nutrition Mission
<b>JSS</b>	Jan Swasthya Sahyog
<b>JSY</b>	Janani Suraksha Yojana
<b>JVAM</b>	Jharkhand Van Adhikaar Manch
<b>KKY</b>	Khawati Karz Yojana
<b>LANN</b>	Linkages of Agriculture, Nutrition and Natural Resource Management
<b>LANSA</b>	Leveraging Agriculture for Nutrition in South Asia



<b>LLINs</b>	Long-lasting insecticide-treated bednets
<b>MADA</b>	Modified Area Development Approach
<b>Mal-Mal</b>	Malaria-Induced-Malnutrition
<b>MANTRA</b>	Movement and Action Network for Transformation in Rural Areas
<b>MDG</b>	Millennium Development Goal
<b>MDM</b>	Mid-day Meal
<b>MFP</b>	Minor Forest Produce
<b>MGNREGA</b>	Mahatma Gandhi National Rural Employment Guarantee Act
<b>MIS</b>	Management Information System
<b>MMR</b>	Maternal Mortality Ratio
<b>MoTA</b>	Ministry of Tribal Affairs
<b>MPLAD</b>	Member of Parliament Local Area Development
<b>MSSRF</b>	M.S. Swaminathan Research Foundation
<b>MTC</b>	Malnutrition Treatment Centre
<b>MUAC</b>	Mid-Upper Arm Circumference
<b>NARC</b>	Nutritionally at Risk Child
<b>NFHS</b>	National Family Health Survey
<b>NFSA</b>	National Food Security Act
<b>NHM</b>	National Health Mission
<b>NIRTH</b>	National Institute for Research in Tribal Health
<b>NMR</b>	Neonatal Mortality Rate
<b>NNMB</b>	National Nutrition Monitoring Bureau
<b>NOP</b>	Nutrition Operation Plan
<b>NRC</b>	Nutrition Rehabilitation Centre
<b>NRDWP</b>	National Rural Drinking Water Programme
<b>NRHM</b>	National Rural Health Mission
<b>NRLM</b>	National Rural Livelihoods Mission
<b>NSFS</b>	Nutrition-Sensitive Farming System

<b>NSSO</b>	National Sample Survey Organisation
<b>NTFPs</b>	Non-Timber Forest Products
<b>NVBDCP</b>	National Vector Borne Disease Control Programme
<b>OTELP</b>	Odisha Tribal Empowerment and Livelihoods Programme
<b>PACS</b>	Poorest Areas Civil Society
<b>PDS</b>	Public Distribution System
<b>PEM</b>	Protein Energy Malnutrition
<b>PESA</b>	Panchayats (Extension to Scheduled Areas) Act
<b>PFR</b>	Pre-Feasibility Report
<b>PGC</b>	Parliamentarians' Group for Children
<b>PHC</b>	Primary Health Centre
<b>PHED</b>	Public Health and Engineering Department
<b>PHRS</b>	Public Health Resource Society
<b>PLA</b>	Participatory Learning and Action
<b>PMUs</b>	Programme Monitoring Units
<b>POP</b>	Progestin Only Pill
<b>PPIUCD</b>	Postpartum Intrauterine Contraceptive Device
<b>PRADAN</b>	Professional Assistance for Development Action
<b>PRI</b>	Panchayati Raj Institution
<b>PRIA</b>	Society for Participatory Research in Asia
<b>PTGs</b>	Primitive Tribal Groups
<b>PVTGs</b>	Particularly Vulnerable Tribal Groups
<b>RDT</b>	Rapid Diagnostic Tests
<b>RI</b>	Routine Immunization
<b>RMNCH</b>	Reproductive, Maternal and Child Health
<b>RSCD</b>	Resource & Support Centre for Development
<b>RSOC</b>	Rapid Survey on Children
<b>RWSS</b>	Regional Water Supply Schemes



<b>SAM</b>	Severe Acute Malnutrition
<b>SBA</b>	Swachh Bharat Abhiyan
<b>SC</b>	Scheduled Caste
<b>SCSP</b>	Scheduled Castes Sub Plan
<b>SD</b>	Standard Deviation
<b>SDG</b>	Sustainable Development Goal
<b>SHG</b>	Self-Help Group
<b>SIFS</b>	Sustainable Integrated Farming System
<b>SNP</b>	Supplementary Nutrition Provisioning
<b>SPRING</b>	Strengthening Partnerships, Results, and Innovations in Nutrition Globally
<b>SRI</b>	System of Rice Intensification
<b>SSA</b>	Sarva Shiksha Abhiyan
<b>ST</b>	Scheduled Tribe
<b>TACs</b>	Tribal Advisory Councils
<b>TCDC</b>	Tribal Cooperative Development Corporation
<b>TPDS</b>	Targeted Public Distribution System
<b>TSP</b>	Tribal Sub Plan
<b>U5MR</b>	Under-Five Mortality Rate
<b>ULBs</b>	Urban Local Bodies
<b>USAID</b>	United States Agency for International Development
<b>VAAGDHARA</b>	Voluntary Association of Agricultural General Development Health and Reconstruction Alliance
<b>VBDs</b>	Vector-borne Diseases
<b>VCDCs</b>	Village Child Development Centres
<b>VHNDs</b>	Village Health Nutrition Days
<b>VHWS</b>	Village Health Workers
<b>VLWs</b>	Village Livestock Workers
<b>VWSCs</b>	Village Water and Sanitation Committees



<b>WASH</b>	Water, Sanitation and Hygiene
<b>WASMO</b>	Water and Sanitation Management Organisation
<b>WATSAN</b>	Water and Sanitation
<b>WAZ</b>	Weight for Age Score
<b>WHO</b>	World Health Organization
<b>WSPs</b>	Water Security Plans



# Foreword

A.V. Swamy

The urban world that counts its calories and fortifies its food has much to learn from tribal peoples. Access to forests meets both their food and commercial needs. They cultivate indigenously and collect forest foods, which are usually nutritious and unadulterated, being closest to nature. They gather a number of wild fruits and cultivate organic vegetables. Their input for cultivation is organic, being naturally available in their surroundings.

Communities in remote tribal areas are used to having different varieties of food. Unlike urban society, where access to varied foods and alien species fortify our nutritional needs, tribal peoples have indigenous practices and techniques to pursue and promote diverse species. In any tribal area, when climatic changes impact fields and ground situation—for example, waterlogged areas turn dry or vice versa—tribal peoples persist with their local species, and gradually the local plant adapts to the change. Now, modern science has introduced chemicals to increase their produce, but this affects the nutritive value of indigenous foods. For example, land ideal for pulses is diverted to grow commercial cotton, which is alien and, therefore, unsustainable. By and large, tribal peoples do not lack nutrition as long as they remain close to forests and pursue their indigenous practices, except where they cultivate mono species.

Most cases of undernutrition and hunger are found in places away from forests.

Tribal practices are usually sustainable and can offer tips to solve some of today's problems. For example, in Koraput District, Bonda tribals live and farm on hilltops. When a Bonda hunts down an animal in the jungle, he calls out thrice to check if anyone is around to share. If nobody responds, he hauls it to the village centre, where the headman decides the share of meat for the village. In tribal culture, forest resources belong not to an individual, but are shared by the entire community.

They also have good practices for water conservation and know how to store every drop. For example, in Kalahandi district, people use stones to construct contour bunding that arrests the first rain, breaking its momentum. At the highest contour, they build a *munda* (with stones) to break the speed of rain. Subsequently, at lower levels, they construct a *kotta* (check dam) to store water. Water can be tapped from the kotta and diverted downstream. At the lowest contour, they create ponds and tanks at the lowlands. Beyond this, water tributaries flow out to rivers and seas. Today, we call it watershed management. In the 1950s, half the land was irrigated this way. Similarly, medicinal plants that tribal peoples have long been using for treatment of diseases and general health are today a source of modern medicine.

At the same times, tribal peoples can do better with the benefits of modern development, but it need not displace land, culture or indigenous knowledge. Similarly, introducing new technologies and practices from different contexts should respect their indigenous way of living so that their self-esteem and confidence are ensured and respected. It will ensure their self-reliance and cultural preservation.

Local solutions solve local problems the best. *Forest Lanterns* captures such stories of hope, positivity and changes on the ground that have worked to address hunger and undernutrition in tribal communities in India.

# Preface

Neerja Chowdhury

Some months ago I happened to see a PowerPoint presentation for an ongoing project being undertaken by UNICEF and the Tata Trusts to pull children suffering from severe and chronic undernutrition back from the brink. One bout of diarrhoea or pneumonia could end the life of any of these children. The project had identified 12,000 such children in one district of Nandurbar in north Maharashtra alone.

What stayed with me were the pictures of these children. Surely, I thought to myself, this could not be happening in the India of 2017. But then it was found that in Orissa also, nineteen children from the Juang tribe had died in Nagada village due to undernutrition in just two months in 2016. These examples are merely illustrative, and work is going on all over India to combat child undernutrition.

These incidents had once again pointed to an urgent need—to address problems in tribal areas because India will not achieve its fullest potential without ensuring a healthy and meaningful life for them.

There are 705 distinct tribal groups in the country today and they make up just under one-tenth of the country's population (104 million). No other country in the world has such a large tribal population. These are people with a rich cultural and environmental



heritage, living close to the land, nature and forests. They are concentrated in central and eastern India in big states that send a large number of people to Parliament, who should be able to influence national policy in their favour.

The painstaking putting together of *Forest Lanterns* could not have been more timely. The book has compiled new evidence, documented experiments and shown a growing engagement between ministries for tribal welfare, health, education, water and sanitation. The underlying idea is to focus greater attention on tribal children and women, whose deprivation kicks off a relentless cycle of undernutrition.

India has done well in creating pilots about what can be done for children, for women, for new agricultural practices to provide better nutrition, for tapping potable water and improved sanitation conditions, and for creating livelihoods. The challenge now is to scale-up these pilots and to work closely with governments so that these experiences become an integral part of systems that deliver.

The challenge is also to evolve solutions through conversations held with the tribal communities themselves. We know they have been alienated from their lands and forests. There are funds allocated for their development and special Tribal Sub-Plans earmarked for their progress, but they have, for a variety of reasons, not yielded the results that should have come our way by now.

What is the kind of help they look for from the rest of India? What are their priorities? How do they see a better life for themselves and their children? It surely cannot—and should not—be an *annadata* (food provider), in the one-way manner of a patron doling out help.

*Forest Lanterns* makes all these points tellingly, and I hope ordinary citizens and policymakers all over India will read it and be moved by it. Perhaps film-makers will capture and commit to celluloid some of these stories so that the last tribal child can find her due place under the sun.

## Acknowledgements

*Forest Lanterns* documents the promising practices presented at the two-day National Conclave on ‘Nourishing India’s Tribal Children’ on 15–16 January 2015 in Bhubaneswar, Odisha. The Conclave sought to identify promising initiatives for replication to accelerate actions to reduce undernutrition in tribal children in nine Fifth Schedule states of Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan, Odisha and Telangana.

The Conclave was organized by the Ministry of Tribal Affairs and UNICEF in collaboration with five ministries—Rural Development, Ministry of Public Distribution and Civil Supplies, Health and Family Welfare, Women and Child Development, and Drinking Water and Sanitation.

We express our gratitude to all the organizers and participants at the Conclave for sharing their experiences. In addition to the practices shared at the Conclave, this book also includes similar practices from other organizations that couldn’t make it to the Conclave. We are also grateful to them for sharing their experiences and UNICEF for convening this initiative.

We would also like to thank A.K. Shiva Kumar, adviser, UNICEF India, and Arjan de Wagt, chief, child development

and nutrition, UNICEF India, for their valuable guidance and support.

And to conclude, we are grateful to Rachita Raj, Akhilesh Soodan, Balraj Pahwa, Tara Upadhyay, Manipal Typesetters and the entire team at Penguin for helping make the book what it is.

# Introduction and Overview

Virginus Xaxa and Vani Sethi

Indian history and civilization are old, dating centuries before Christ. At the root of this civilization are a host of religious traditions, Hinduism being the most dominant. Most people in India follow one religion or the other and become a part of their social organizations. Besides religion, another very important social marker has been the caste of a person, which again is more pronounced among Hindus. While other faiths have not completely done away with the caste, they are less rigid about it.

When the British began to rule India, not all of the population under the British territory could be categorized as such. This slice of the population was classified as tribes by the British. Later, they were even listed and counted in the Census for administrative purposes. After India became independent, the listed tribes were included in the Schedule of the Constitution and categorized as Scheduled Tribes. Thus, a distinction has come to be introduced between tribes and Scheduled Tribes. The latter is a politico-administrative category and the state policies and programmes for tribes are meant for Scheduled Tribes and not for tribes as such. The two overlap but are not necessarily coterminous.

Tribal populations in general are scattered across the length and breadth of India. As per Census 2011, they number 104 million,

constituting 8.6 per cent of the population of the country.<sup>1</sup> Their percentage may be small, but tribal groups are hugely diverse when it comes to their language, size of population, stage of development, and contact with the outside world. The Census 2011 has identified 705 ethnic groups as Scheduled Tribes.<sup>1</sup> Despite such diversity, tribal groups have many features in common, which make them strikingly different from the larger Indian population.

Since independence, multiple government policies and programmes sought to develop tribal communities by focusing on their livelihood, education and health. Despite six decades of special treatment, even today, tribal peoples continue to be the most undernourished segment of the Indian society.

The latest available data reveals that 4.9 million out of 11.5 million tribal children of India suffer from chronic nutrition deprivation affecting their survival, growth, learning, performance in school and productivity as adults.<sup>2</sup>

About 80 per cent (3.9 million) chronically undernourished tribal children live in just nine states of Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Rajasthan, Odisha and Telangana.<sup>3</sup> Tribal peoples in these states, which are covered by the Fifth Schedule of the Indian Constitution, and also other states have borne the maximum brunt of land alienation, displacement and poor compensation.

Given this backdrop, a two-day national conclave on Nourishing India's Tribal Children was held on 15–16 January 2015 in Bhubaneswar, Odisha. The conclave was organized by the Ministry of Tribal Affairs (MoTA) and UNICEF in collaboration with five other ministries—Rural Development, Public Distribution and Civil Supplies, Health and Family Welfare, Women and Child Development, and Drinking Water and Sanitation. The conclave focused on identifying promising initiatives (what works and how) to accelerate synergistic multisectoral actions to reduce chronic nutrition deprivation in tribal children in nine states.

*Forest Lanterns* is a collection of forty-six essays on solutions and solution seekers across the above nine states developed in preparation for and as a follow-up to the conclave. The essays focus on solutions that exist for nourishing India's tribal children. The book is thematically structured into seven sections, which are also the broad determinants of chronic undernutrition in tribal children. Each essay concludes with the key takeaways for a doer. The seven sections are followed with fact sheets based on the latest available data on tribal nutrition, health and well-being indicators for the nine states. The initiatives under each thematic area are summarized below.

## Section 1

### Improving farming and household food security

Tribal children have higher levels of undernutrition compared to children of socially economically advanced sections. Similarly, income security of tribal peoples has been adversely affected by losses and access to productive resources (rights to forest or agricultural lands coupled with poor compensation). Debts are one of the main coping strategies, resulting in a hand-to-mouth existence for those affected. To make matters worse, they consider their uncultivated yet nutritious foods unfashionable.

Efforts have, however, been made in Odisha (Living Farms) and Rajasthan (VAAGDHARA) to reclaim and regenerate the forest's untapped fruits and vegetables for use in the household hearth to improve dietary diversity. Both these efforts were backed with advocacy for protection of community forests, keeping minimum percentage of land as forest land for protection of indigenous livelihoods as well as the environment.

IFAD's promotion of the Trellis method for farmers with small landholdings enhances their income. Efforts have been also made by M.S. Swaminathan Research Foundation to leverage agriculture for nutrition. Professional Assistance for Development Action

(PRADAN) (Chhattisgarh), BAIF Development Research Foundation (Maharashtra) and WeltHungerhilfe (Karnataka, Madhya Pradesh, Odisha, West Bengal and Jharkhand) have been engaged in marrying practices of crop diversification with animal husbandry, natural resource management, nutrition and healthcare promotion to ensure food sufficiency for nine to twelve months in a year.

## Section 2

### Improving delivery of food security entitlements

Access to public distribution system entitlements has been constrained by poor definition of below the poverty line coupled with limited to negligible awareness levels on where and how to access entitlements and non-inclusion of traditional food items consumed by tribal peoples. Constraints in the implementation of the Integrated Child Development Services (ICDS) in tribal areas are well known. There are tribal villages, which no government officer may have ever visited. In addition, the issue of non-tribal workers looking down upon tribal workers makes matters worse. Even if there are take-home food rations for children, these are mostly not adequately used. The ICDS data coverage, allocations and expenditures for tribal pockets are still not available publicly.

However, there have been some promising initiatives as well. Samagra, an online portal of the Government of Madhya Pradesh, is supporting identification, verification, updating and categorization of all individuals in a family by local bodies and linking households to their respective fair price shops electronically. An ICDS supplementary nutrition programme for pregnant women and lactating mothers with hot cooked meals in Andhra Pradesh and Telangana has helped improve coverage of ICDS.

Similarly, in Chhattisgarh, Jan Swasthya Sahyog has made efforts to generate evidence on hamlet-based crèches for children between six to thirty-six months in forest villages and fringe areas of rural Bilaspur. They have also developed the operational requirements, costing,

training materials and stationery needs and a troubleshooting guide for running such a programme at scale by the government. Using learnings of Bilaspur crèches, a group of civil society organizations under the Action Against Malnutrition project have tried generating operational evidence of how crèches work in Maharashtra, Madhya Pradesh, Bihar and Jharkhand. These experiments show that hamlet crèches in tribal areas are both needed and feasible.

This section of the book also covers other initiatives, which are culturally sensitive but acceptable to communities, like the Odisha government's efforts to improve banking penetration and literacy while implementing cash transfer programmes and the Chhattisgarh's government's Wajan Tyohar (weighing festival), and partnerships with NGOs for last-mile delivery of government schemes in strife-affected places.

### Section 3

#### Delivering primary health outreach and referral services in tribal areas

Access to government health outreach and referral services is constrained by geographical, language, cultural and social barriers and high opportunity cost (loss of wages, travel time to the facility and cost of medicines). With poor housing and recreational facilities; endemic road, power and electricity problems; centralized human resource policies that rarely specify the duration of such postings; and inadequate hardship allowances for serving in difficult terrains (such as transportation, boarding and lodging, promotions and incentives), a few professionals want to work in these areas. The potential of nurses to manage community health services is still untapped. Tuberculosis, malaria and sickle cell anaemia are major coexisting health problems and rarely addressed through nutrition programmes.

The essays in this section show a gamut of promising practices to improve access to healthcare in tribal areas. The efficacy of



clinics managed by nurses with intermittent doctor supervision and supplementary activities (clinic, community mobilization, home counselling and crèches for nutrition support) in difficult and dispersed tribal catchment areas of Udaipur in Rajasthan has been demonstrated by Basic HealthCare Services. An example worth emulating is of the Christian Hospital in Bissamcuttack, Odisha, which has a school of nursing attached to the hospital and simultaneous efforts to reduce malaria-induced undernutrition.

Jan Swasthya Sahyog has also provided low-cost, high quality community-based healthcare systems like outreach clinics, rapid diagnostic kits for malaria and insulated sleeping bags for newborn babies in Bilaspur. While Digital Green has innovatively used tech aids to improve nutrition outcomes, SEWA Rural and Naandi Foundation have developed mobile-phone technology for monitoring the results of their initiatives. The Indian Council of Medical Research (ICMR) initiatives such as Indoor Residual Sprays (IRS) using Alphacypermethrin, long-lasting insecticide-treated bednets (LLINs) and artemisinin-based combination therapy (ACT) have prevented vector borne diseases in Jabalpur district of Madhya Pradesh. Odisha government's equity approach in reaching out to Particularly Vulnerable Tribal Groups, too, has contained vector borne diseases like malaria. Both are replicable practices. Jhpiego's work on creating a systems approach by involving and training nurses to provide postpartum intrauterine contraceptive devices (PPIUCD) to clients who opt for it as a key initiative under family planning is promoting maternal and child health as well as reducing maternal, infant and child mortality and morbidity in tribal areas.

## Section 4

### Access to drinking water and sanitation

Water crisis and shortage of water purifiers are endemic in tribal and desert-prone areas. If at all toilets exist, these are often not used and

many don't have doors and water. Infections, particularly in health centres with poor access to safe water and sanitation, are a menace. Even while community-based models are promoted, fund flow mechanisms and newer technologies rarely match the requirements. Promising practices, which include unbundling of water supply systems, collecting rainwater and promoting water harvesting in hilly areas, along with installing mini pipelines, training local youth on basic geohydrology and water resource engineering to support development of village water security plans, have been demonstrated by Water and Sanitation Management Organisation (WASMO) in Gujarat, and Society for Participatory Research in Asia (PRIA) in Chhattisgarh and Jharkhand.

There is also a community-group-led-and-managed total-sanitation scheme called Movement and Action Network for Transformation in Rural Areas (MANTRA) by Gram Vikas in Odisha, wherein credit linkages from banks, microfinance institutions and Self-Help Groups have been made for toilet construction. Government-NGO partnership models by PRIA and Gram Vikas have helped communities and Gram Panchayats to work together in Chhattisgarh, Odisha and Jharkhand for creation and maintenance of water and sanitation structures and activating their district planning committees. The Flouride Network of India links the reduction of fluoride toxicity in drinking water directly to nutritional improvements. Tarun Bharat Sangh and the Urmul Trust use traditional wisdom of water management from communities and highlight community water management models in severely water-scarce desert districts of Rajasthan.

## Section 5

### Media for tribal children

Traditionally, tribal health and nutrition have not been priority issues for the media. When one looks at the coverage of nutrition-



related issues of tribal population, it presents dismal statistics related to undernutrition in tribal societies, without raising questions about deep-rooted reasons. The situation is changing now with democratization of media. It is happening through tribal-sensitive sections of the mainstream media, community radio stations, mobile phones and the Internet. Both Vikas Samvad and OneWorld Foundation India emphasize the role of mainstream media as well as community media in highlighting stories of development. The CGNet Swara initiative in Chhattisgarh has enabled tribal peoples to use mobile technology to voice their problems and seek redressal. UNICEF's experience highlights how media triggers creation of space for dialogue that is a sine qua non for community-catalysed behaviour change. But there is a long way to go before tribal peoples get their due media space.

## Section 6

### People, politics and budget

Andhra Pradesh is a case in point, which has improved accountability, decentralization and inclusive planning to ensure adequate budgeting for the Tribal Sub Plan (TSP) and special central assistance. TSP's allocation for nutrition-specific schemes has been earmarked. In addition, the nutrition missions across states offer a platform for pursuing inter-sectoral planning and special initiatives for nourishment of tribal children. With single line administration in tribal areas, Integrated Tribal Development Agencies are complemented with Tribal Programme Monitoring Units (PMUs) under National Rural Health Mission, Sarva Shiksha Abhiyan, and Mahatma Gandhi National Rural Employment Guarantee Scheme. Maharashtra shows that decentralization like empowerment of Gram Sabhas can secure buy-in of welfare initiatives like Mid-Day Meal scheme by local communities.

Initiatives like the Parliamentarians' Group for Children (PGC) with a focused subgroup for tribal children are helping amplify



their voices on the floor of the Parliament to sensitize policymakers. They are also emphasizing up on Ministry of Tribal Affairs (MoTA) and National Institution for Transforming India (NITI) Aayog to influence concerned departments and state governments to ensure better policies and delivery in tribal regions. The experiences of Poorest Areas Civil Society (PACS) and Resource and Support Centre for Development (RSCD) in Jharkhand and Maharashtra respectively give voice to the people's movement and advocate decentralization for the implementation of welfare initiatives by local communities. Strategically designed leadership programmes connect government functionaries with emerging leaders in Madhya Pradesh. UNICEF's #I.COMMIT campaign stresses on continued public advocacy at multiple levels with multiple departments for affirmative action for addressing undernutrition in tribal children.

## Section 7

### Good governance

Though standalone initiatives serve their intended purpose, yet they have the scope to amplify their impact in an ecosystem of good governance to address the challenges of tribal children's undernutrition more effectively and efficiently.

Since ensuring adequate nutrition to tribal peoples cuts across the work of multiple government agencies, it is imperative that they work in unison. This is what the MOA is seeking to do by working to strengthen its coordination with state departments and supplement their initiatives like promoting the cultivation and consumption of traditional foods like millets. Going forward, breaking down ministerial and departmental silos and rallying various agencies together would give a further push to formulate tribal-friendly nutrition policies and service delivery.

There is also potential to fast-track progress by integrating complementary initiatives as has been demonstrated by Ekjut in

Jharkhand and Odisha. It is for the government to replicate and scale up such initiatives. There are out-of-the-box learnings from outside the nutrition space, too. For example, strategy lessons from disciplines like sports offer lateral learning, opening newer windows to tackle legacy challenges.

Of course, the easier and simpler approach to tackle the challenge is to follow the examples of Maharashtra and Andhra Pradesh and set up focused missions to target undernutrition. It enables funnelling in of resources, learnings and experiences for an institutionalized action plan, promising sustained results.

While a one-size-fits-all approach may not be viable, there is no dearth of proven solutions to address the challenge of undernutrition singularly or in a bouquet.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> Ministry of Women and Child Development and UNICEF, India. Rapid Survey on Children 2014.
- <sup>3</sup> The Odisha News 360. Available from: <http://odishanews360.com/Odisha/details?mallId=3&jobId=11183&type=LATEST>.

IMPROVING FARMING AND  
HOUSEHOLD ECOSYSTEMS



Odisha

## Forests Are Central to Food Security

*Reconnecting with forests enables tribal communities  
to access nutritious food.*

Debjeet Sarangi, Bichitra Biswal and Pradeep Patra

Undernutrition is widespread in Odisha's tribal communities, which comprise 23 per cent (9.5 million) out of total population of 41 million in the state.<sup>1</sup> As recently as in 2016—between March and June—around nineteen tribal children in the state's Jajpur district died of undernutrition.<sup>2,3</sup>

With this pressing reality as the backdrop, Living Farms, a non-governmental organization (NGO), is working with 15,000 tribal households in the Bissamcuttack and Muniguda blocks of Rayagada district since 2005, to introduce initiatives to reclaim and regenerate forests, as well as promote forest foods and improve household dietary diversity.

Living Farms has been particularly rethinking ways of getting forest foods back into the farm and the plate of small landholders, who own up to two hectares of agricultural land and face over five months of severe hunger from May to September every year.<sup>4</sup> Securing food between May and September becomes difficult for two reasons. Firstly, there is no scope for full-time employment.



Secondly, with the region's tropical climate, extreme heat prevents villagers from working on a daily wage basis.

The NGO conducted an exploratory study<sup>5</sup> in 2014 on food and nutrition security in the tribal districts of Rayagada and Sundargarh in Odisha to understand issues concerning collection and consumption of forest foods and to find out the extent of local community's dependence on such food sources.

The study recorded 121 different kinds of forest foods harvested by the sample households between July and December 2013. Each household harvested about 5 kg during a collection foray, having twenty-one to sixty-nine varieties of food. Almost 1 kg of forest food was cooked and eaten by each household daily. The highest diversity was observed in mushroom tubers, which made up most of the harvest. Across six villages, forest foods accounted for nearly a quarter of the total cooked food per day. The study showed that critical supplement to the daily diet came from forest foods of these communities.

On an average, people collected oilseeds, twenty-five varieties of roots and tubers, thirty-five kinds of fruits, mushrooms, fish and crab, forty kinds of greens, birds, animals and edible insects throughout the year. However, the study claimed that both availability and consumption of forest foods were declining. As diversity ebbs away, entire species are disappearing. Forests are becoming sparse and getting replaced by a culture of growing single crops.

Taking forward the learnings of the study, Living Farms has used dialogue and discussion to encourage farmers to cultivate variations of local paddy and collect hundreds of wild food items from forests including edible flowers, fruits, tubers, leaves, stems, seeds, wild mushrooms, tamarind, bamboo shoots and edible insects. The farmers have traditionally grown multiple crops like millets, maize, sorghum, lentils, sesame, flaxseeds, spices and vegetables by practising mixed cropping.

The community dialogues are led by elderly women in the region on the household economy's dependence on forests. They

share experiences of how forest foods provide more nutritionally-balanced diets and contribute to dietary diversity. This in turn supports a shift away from calorific intake as the primary metric for food security, towards nutritionally-balanced diets as well as greater control over food consumption choices, particularly during drought years and lean periods, giving them a sense of independence, dignity and pride. They have been the first to appreciate how vital the forest is for securing their families' health and nutrition. The women are also emphatic that the forest has saved them from the clutches of moneylenders.

In village after village, women are now resisting the spread of commercial plantations and are instead planting multipurpose trees to regenerate the original cover. As a result, they have managed to protect and nurture 10,000 acres of forest, reviving 275 varieties of wild foods rich in micronutrients, which are vital for a balanced diet.



Collecting bamboo shoots: Tapping a source of dietary fibre (Source: Living Farms)

Also, village and Panchayat-level forest food festivals are organized to encourage farmers to exhibit their traditional crops, emphasizing their importance for nutrition security. Such festivals have been found to be an important tool for promoting food sovereignty as they take place in local public spaces and within people's own sociocultural settings.

Living Farms has collaborated with academic institutions and scientists on the role of the forest structure, forest management and biodiversity in supply of food and nutrients. This collaboration is expected to generate a set of benchmark data to reveal the forest ecological determinants of food diversity and availability; estimate the quantity of food supply from the forest; and indicate the influence of the mode of forest governance and management on the forest ecosystem properties and, subsequently, on the food provisioning services of the forest.



A tribal woman at work in a mixed farm: Diversified cultivation and collection  
(Source: Living Farms)

Based on its experience, Living Farms has derived the following lessons:

- Forests need to be seen as something that nurture both communities and their culture. One cannot highlight forests and forest foods, but keep forest communities out of the picture because their food cultures are intrinsically linked to the forests.
- Forest clearance procedures for projects must factor in loss to forest foods. Also, national reporting frameworks that distinguish where and how food is obtained must include contribution of forests and farm trees—both planted and in the wild. Forest agencies, national statistical bureaus and research bodies like the National Institute for Nutrition, and Food & Nutrition Board need to effectively record and promote the importance of forests and trees.

The idea of food sovereignty in its true sense can be realized only by having an institutionalized governance mechanism for democratizing forest governance.

These learnings emphasize the critical role of forest biodiversity in providing locally harvested safe foods rich in micronutrients to tribal communities, and subsequently improving their household dietary diversity.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in)
- <sup>2</sup> Indian Express. 19 tribal children die of malnutrition at Nagada. Available from: <http://indianexpress.com/article/india/india-news-india/odisha-begins-feeding-drive-in-remote-village-2918719/>.
- <sup>3</sup> Times News Network. How malnutrition is killing kids of a mineral rich Odisha tribal village. Available from: <http://>

timesofindia.indiatimes.com/city/bhubaneswar/How-malnutrition-is-killing-kids-of-a-mineral-rich-Odisha-tribal-village/articleshow/53125313.cms.

- <sup>4</sup> Plan VL. Household Economy Approach Rayagada District 2011 Fact Sheet working version 3. 2011. Available from: <http://welthungerhelfesouthasia.org/wp-content/uploads/2014/02/Household-Economic-Assessment-Rayagada-Orissa.pdf>.
- <sup>5</sup> Deb. D, Kurungati.K, Rao V.R. and Yesudas. S (2014). Forests as Food Producing Habitats: An Exploratory Study of Uncultivated Foods, and Food and Nutrition Security of Adivasis in Odisha. Odisha: Living Farms



Rajasthan

## Farms for Nutrition

*Tribal farmers rediscover extinct food varieties.*

Jayesh Joshi

Despite seventy years of Independence, undernutrition in tribal areas of Rajasthan continues to be a dark spot. While the multilayered challenge is being confronted by a modern India with a range of tested and innovative solutions, a relatively new approach in agriculture gives us food for thought.

Nutrition-sensitive agriculture, which focuses on nutritionally rich foods, dietary diversity and indigenous practices to overcome the malaise of undernutrition, is capturing the attention of stakeholders. The approach prioritizes a variety of food items on the basis of their nutritional value. It also involves learning about extinct practices and varieties that could support food and nutrition security.

To spread the word where it matters most, Voluntary Association of Agricultural General Development Health and Reconstruction Alliance (VAAGDHARA), an NGO, flagged off its Samwad Yatra (Journey for Dialogue) initiative in April 2016—covering four remotest blocks in Banswara, a district in South Rajasthan—to engage with tribal communities and learn from their experiences. As the NGO visited tribal villages, it set the stage for organizing facilitated



participatory dialogues and meetings on agricultural practices and nutrition on monthly basis. The core idea was to help tribal farmer families link nutrition with their agriculture system.

The NGO organized several meetings and discussions with over 7000 farmers. To start a dialogue with farmers, the NGO came up with innovative ways to involve and make them part of a journey that was mutually enriching. Community meetings—lasting two to three hours—were held during the daytime as and when it was convenient for farmers. The best time to engage with the community was after the bhajan *geet* (prayer) programmes, when farmers were relaxed.

The fortnight-long initiative engaged farmers, who shared indigenous knowledge and innovative solutions for achieving nutrition security. Their knowledge came from hands-on experience—some long-forgotten—of the ground realities.

On one hand, community members talked about practices they followed earlier and sometimes even debated among themselves if it was possible to implement them today. Elders recalled many indigenous varieties of food that have disappeared from their menu over time. On the other hand, the NGO members talked to the larger community about nutrition-sensitive agriculture, which triggered questions about traditional varieties and if these could be cultivated or even adapted today.

A case was built for nutrition-based farming and the members of VAAGDHARA explained to the farmers how that would boost productivity and make quality food available in their fields. This helped the communities realize that this approach could check undernutrition, especially among women and children. Also, the close interactions helped villagers to comprehend not only the nutritional value of their foods, but also the fact that it could fight undernutrition.

This initial round of yatras was followed by monthly meetings where a group of elders tried to identify commonly consumed indigenous foods. Youth groups tried to figure out how much the



VAAGDHARA members and farmers in an evening meeting: Debating nutrition value of traditional foods (Source: VAAGDHARA)

present generation knew of the produce or processes shared by elderly people. This helped distinguish current practices from those that have been phased out.

The trend analysis covered three generations and knowledge spanning 150 years, including even what grandparents had acquired from their parents. For example, elders pointed out how different it feels to knead the maize flour into dough today, compared to two decades back.

Alongside, a group of mothers discussed prevalent notions and practices concerning reproductive and child health, and associated nutrition. While each group tackled a different questionnaire, the field facilitators discovered that around 85 per cent mothers were unaware of undernutrition.

Interviewing health workers, local leaders and representatives of the Panchayati Raj institutions helped in identifying locally available foods—cultivated and gathered—that were used traditionally to beat scarcity. Such engagement also helped record local idioms, stories, folklores, culture and practices that were associated with food.





Traditional foods on display: Showcasing diversity and nutrition richness (Source: VAAGDHARA)

A wide range of interviews also assisted the field workers to conduct nutritional analysis of major food items in traditional diets to know their health benefits. Besides, it also enabled them to map historic changes in local farming systems and diets, tracing results on the basis of a timeline.

For example, elderly farmers revealed that they earlier sowed minor millet in their fields, but today it is soybean and cash crops. The exercise highlighted the large diversity of indigenous foods available and consumed. Numerous micronutrient-rich plant foods were part of daily diet. Popular items were particularly rich in iron, calcium, and Vitamin A and C.

The initiative built evidence and also helped communities understand how they could make the most of nutrition through their own fields. Apart from discussing and addressing several knowledge gaps, the advocacy led to the adoption of various indigenous species and improve nutrition.

The key lesson VAAGDHARA has to offer is to have a deeper focus on indigenous practices and food groups that are fast disappearing from the plates of tribal peoples, while planning nutrition programmes to address the problem of undernutrition.



Multiple states

## Farm Fresh Blueprint

*Improving agricultural practices enhances nutritive  
value of harvests.*

Ajay Parida and Bhavani R.V.

In India, over a quarter of the rural population still lives below the poverty line.<sup>1</sup> Not even half of India's rural population can afford to spend on adequate nutrition because they are struggling to survive. While the country ranks 130 on the Human Development Index 2015, when it comes to counting the undernourished, India ranks second in the world despite having buffer stocks of foodgrains.<sup>2,3</sup>

Tribal communities are in a worse situation, and tribal farm families in particular are the worst affected. They are not only excluded from the mainstream agricultural systems, but even their land, water, biodiversity and ecosystems have been extensively degraded.

They usually operate small farm holdings in challenging ecosystems. Fragmentation and pressure on land have led to multiplication of even these small holdings. Tribal farm families also have a tradition of shifting cultivation. They cultivate a particular plot of land temporarily before moving on to another. This practice often depletes essential nutrients from the soil. Therefore, it is imperative



to make extra efforts to ensure that agriculture meets their food and nutrition needs.

Cognizant of this challenging situation, the M.S. Swaminathan Research Foundation (MSSRF), an NGO is working with rural and tribal communities in different parts of India to enable them pursue sustainable livelihoods and food security. The NGO focuses on improving agricultural practices to enhance food production and productivity. It also helps build an environment, wherein a community can access nutritious food easily.

Mapping of such large-scale requirements demands clear strategies, which MSSRF has developed over time. Besides improving agricultural practices, it stresses that 'more crop per drop' can be achieved by using water efficiently. Another strategy of the organization includes addressing post-harvest processing and storage.

MSSRF is active in rural and tribal areas of Andhra Pradesh, Maharashtra, Odisha, Puducherry, Tamil Nadu and Kerala. The



Women farmers handling tamarind at Koraput: Enhancing incomes (Source: MSSRF)

sites in Odisha (Koraput), Tamil Nadu (Kolli Hills) and Kerala (Wayanad) are in areas dominated by the tribal community, and are also agro-biodiversity rich and hotspots of eroding genetic resources for food and agriculture. Partnering with tribal communities, MSSRF has been facilitating the development of agro-biodiversity conservation systems and mechanisms to secure the economic interests of the community around them. It also ensures that such efforts are sustained.

MSSRF tries to manage natural resources at farm and landscape levels in such a way that producing food does not end up clashing with how we use our ecosystem or how we conserve it. This approach encourages sustainable farming systems and also bolsters food security.

Another strategy it uses is to promote conservation of biodiversity. This helps to provide the genetic material necessary for crop cultivation, breeding and improvement. A major challenge is to conserve agro-biodiversity even as we draw from it to enhance productivity and profit in the small-scale subsistence agriculture sector.

MSSRF has successfully demonstrated this through its integrated 4C approach of 'Conservation-Cultivation-Consumption-Commerce'. It partners with tribal farm families, who are not just custodians, but actively involved in the value chain.

Conservation includes enhanced and sustainable use of biodiversity, which comprises both on-site conservation on farms, and off-site in gene banks. Cultivation focuses on low external inputs and sustainable agriculture practices.

Consumption covers food security and nutrition. It promotes traditional food habits, including use of underutilized crops, tubers and wild edible foods. Commerce creates an economic stake in conservation by addressing the cause of conservation and livelihood security through Self-Help Groups and producer companies.

Today, multiple sectors compete for access to scarce water resources. Efficient water management in agriculture can help us reduce pressure on water resources. So it is critical to harvest, conserve and recycle all the water available for agriculture. MSSRF

has introduced the concept of bio-industrial watershed to deal with the issues of ecology, economics, employment and equity in an all-inclusive manner. The thrust of bio-industrial watershed is on community rather than physical and natural resources alone.

In an integrated farming system model, production involves many biological and physical processes. Farming practices that maximize production are adopted. The cropping system uses all available resources optimally and in a sustainable way. The approach also incorporates a judicious mix of agricultural enterprises like dairy, poultry, piggery, fishery and sericulture, depending upon what suits the given agro-climatic conditions. All this adds to the prosperity of small farmers.

Besides, MSSRF uses Information and Communication Technologies (ICTs) to provide need-based information to enhance skills and capacity of tribal farm families. Such access to ICTs allows farmers to obtain information on agricultural inputs and technologies, weather, markets and prices, as and when needed. Under the Leveraging Agriculture for Nutrition in South Asia (LANSA) research programme, MSSRF is now demonstrating how feasible it is for poor, rural and tribal communities to adopt integrated farming systems in order to address their nutrition needs.

A Farming System for Nutrition study is in progress in a cluster of villages in Wardha district of Maharashtra and Koraput district of Odisha on these lines. After carefully assessing the nutritional status of the community, it has designed ways to boost food production and provide the community easy access to nutritious food. The blueprint involves promoting naturally growing, bio-fortified crops like drumsticks and orange-fleshed sweet potatoes that are rich in micronutrients, nutrient-rich crops like millets and pulses, and animal source foods. The stress is also on identifying and promoting wild, edible plants, which are rich in micronutrients.

With regard to a farming system for nutrition, the steps include first surveying the area to identify problems like undernutrition and hidden hunger, which is caused by lack of vitamins and minerals in the diet. Second, mainstreaming nutrition criteria in

the design of the farming system; this involves identifying and designing agricultural remedies to address the nutritional maladies. The solutions would include crop-livestock integration; cultivation of nutrient-dense millets and pulses, horticulture and bio-fortified crops; setting up of nutrition gardens of vegetables and fruits; and promotion of poultry, fishery and agro-forestry, based on the existing natural resource base. Third, improving small-farm productivity and profitability to enhance income; and fourth and most important, promoting nutrition awareness to ensure better food intake and nutrition status.

The MSSRF experience shows that pursuing sustainable agriculture with nutrition focus can enhance the nutritive value of harvests in tribal agriculture systems. Improving agricultural practices not only leads to increase in food production and productivity, but also creates an opportunity for the community to access nutritious food locally.



Women farmers in Saheli village, Wardha: Sharing produce from the community nutrition garden (Source: MSSRF)

## Notes

- <sup>1</sup> Planning Commission. Press Note on Poverty Estimates, 2011–12, Government of India, Planning Commission July 2013. Press Inf Bur. 2013; 1–10.
- <sup>2</sup> United Nations Development Programme (UNDP). Human Development Report 2015 Work for Human Development. 2015.
- <sup>3</sup> FAO, IFAD and WFP 2015. The State of Food Insecurity in the World 2015. Meeting the 2015 international hunger targets: taking stock of uneven progress. Rome, FAO. Available at: <http://www.fao.org/3/a-i4646e.pdf>



Chhattisgarh

## Growing More with Less

*Small landholders adopt the System of Rice Intensification  
to increase yields.*

Saroj Mahapatra

Tribal peoples constitute 31 per cent (7.8 million) of the total population of Chhattisgarh.<sup>1</sup> More than 75 per cent of this population, including farmers with small landholdings, lives in rural areas, making forests and agrarian economy central to their development process. Since most of the agricultural area in the state is used for cultivating rice, improved methods of cultivation can lead to higher yields and ensure food security. However, one of the problems is that lack of food compels farmers to try and grow rice even on the upper reaches, where the soil's capacity to hold water is limited. In order to avoid such a situation, the challenge is to produce more rice in the low and mid-low lands, and ensure food security throughout the year.

The primary focus of NGO PRADAN, (Professional Assistance for Development Action) has been on developing women's Self-Help Groups (SHGs) in the state. The idea is to build their knowledge and skills so that they understand how a different approach can result in better yield and how crop diversification can gradually put an end to their economic and food security miseries.





In this context, one practice that PRADAN has been promoting is the System of Rice Intensification (SRI). SRI typically uses younger seedlings planted singly, spaced out and hand-weeded with controlled irrigation to keep the soil moist but not flooded. The SRI method also directs humus content—soil's organic component—in such a way that beneficial microbes remain active in the root zone.

SRI packages require low-cost inputs and are flexible in matters of transplantation and water management, which suits marginal farmers well. The method aims to increase the productivity of land, water, nutrients and labour. In the process, it also enhances the health of the soil and its fertility to sustain agriculture-based livelihoods. Though SRI calls for a shift from traditional practices, it seldom requires any additional labour other than two to three family members working on an acre of land.

When rice farmers with small landholdings apply SRI, their inputs reduce and incomes rise as market opportunities improve. In



Controlling water consumption, but raising yield: A win-win situation (Source: PRADAN)

such a scenario, households are less likely to slip back into poverty. Their food security and resilience to climate change increases. The increased production directly addresses the foodgrain deficit faced by small and marginal farmers—about 1 ton of grains per year, per family.

The SRI method aims to produce 6000 kg of rice from a hectare of land, whereas the national average of paddy yield is less than 2500 kg per hectare. Thus, if a family managing on its own farm with four months' food security adopts SRI, it can achieve year-round food security. Families at a higher level of food security can comfortably move on to high-value crops and earn more.

Supported by Sir Dorabji Tata Trust (SDTT), PRADAN and its NGO network introduced the SRI method of paddy cultivation to small and marginal farmers in the Balrampur, Bastar, Bilaspur, Dhamtari, Gariabandh, Jashpur, Kanker, Kodagaon, Korba, Sarguja, Surajpur and Raigarh districts of Chhattisgarh.

PRADAN and partner NGOs also developed an integrated strategy to mobilize women in SHGs and strengthen the village organizations. The idea was to strengthen farm-based livelihoods, align financial services and increase access to markets and government entitlements under the Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS), Public Distribution System (PDS), Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) programme, to mention a few.

A group of community resource persons—one for every fifty families—was trained to help farmers implement new practices in their fields. Families also received refresher training. The community benefited from learning about SRI and resource management. Efforts were made to introduce SRI in different crops. The pilot period strengthened the package of practices not only for SRI, but also introduced better practices for vegetables, millets and oilseeds, engaging quarter of the families in the selected area.

*Dhaincha* (*Sesbaniaaculiata*) or similar locally available crops with pods and root nodules were used to reduce the cost of cultivation and

improve land by including nitrogen, which has moisture-holding capacities. Vermicomposting (a process in which earthworms convert organic waste into fertilizer), *Jibamrit* (liquid fertilizer), leaf composting and organic repellents were tried to revive soil health across the project area.

Efforts were also made to find ways to intersect with government programmes and existing schemes to ensure year round agriculture-based development, and facilitate irrigation during the critical phase of crop development. Government officials were roped in for field visits to SRI sites, yield certification and technical workshops.

In seven districts of Bastar, Bilaspur, Dhamtari, Gariyabandh, Kanker, Sarguja and Surajpur, land and water initiatives were tied up with MGNREGS. A major focus was on improving and enhancing the carrying capacity of land and water resources, strengthening the primary livelihood, investing in women's collectives and helping Gram Panchayats to comprehensively plan and implement the land and water-based interventions under MGNREGS. Ten partner NGOs were engaged to help Gram Panchayats implement these programmes comprehensively.

Women's groups led drives for agricultural development and managed to trigger major changes by developing an optimal mix of low-risk and stable crops as well as high-risk and more remunerative crops. They also engaged in building awareness around nutrition and dealing with challenges of social norms. Besides, the groups incorporated dietary diversity and nutritious crops in the overall cropping plan. To top it, they got involved in increasing awareness about their entitlements of subsidized foodgrains from the PDS and wages under MGNREGS.

During 2015–16, the NGO's reports show, the project covered 35,872 families, spread over 752 villages in twelve districts, cultivating around 7500 hectares. Main crops included rice, mustard, millets and vegetables. The average yield of SRI paddy was 5.3 MT/ha, which is a three-fold increase in the average yield of paddy in the state. Similarly, in case of SRI millets, the average yield was 2.7 MT/ha.

To analyse if the project led to food sufficiency, 3633 families (10 per cent of the participating families) were surveyed. The average family landholding under SRI was around a quarter hectare. Each family with an average of five members consumed about 3 kg of rice per day. Around 1 kg of paddy gives a little over a half kg of polished rice after threshing and drying.

While the average productivity under traditional practices was around 2.1 Mt/ha, it increased to 5.3 Mt/ha with SRI practices. Families ended up with foodgrain security for ten months compared to three months under traditional farming.

A case in point was the Chhindbharri Village, Nagri Block, Dhamtari district. Annual food security was ensured for all seventy-one tribal families. Besides, each family had an additional average annual income of Rs 25,400 (\$379) from farming. All children including girls went to school and SHG members influenced government to construct a health centre under the Panchayat. The community mobilized support from Chhattisgarh Renewable Energy Development Agency (CREDA) to harness biogas. In a major development, all households contributed to get tap water supply to the village.

While agricultural growth is effective in ensuring food security and adequate nutrition, when this growth involves small landholders, especially women, it also improves the overall quality of life. Government officials have been visiting Chhindbharri to assimilate this learning to replicate and scale up the model.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in)

Maharashtra

## Building Skills to Increase Incomes

*Localized interventions supplement traditional knowledge.*

Rajashree Joshi

Faced with geographical isolation, depleting natural resources, decreasing yields from fragmented landholdings and lack of reliable weather forecasts, tribal peoples in India face endless challenges. With little access to even basic infrastructure, most migrate from their habitat, which further deepens their misery with regard to livelihood, health, sanitation and nutrition. In dire need for solutions to address their problems, they constantly seek innovative ways to improve their quality of life.

Among these tribal communities, many still retain their rich agrobiodiversity. Custodians of traditional knowledge on surrounding forest habitat and its resources, they are inherently skilled and know how to live in harmony with their environment. But they are still afflicted with poverty amidst plenty.

Since 1967, Bharatiya Agro Industries Foundation—a voluntary organization now known as BAIF Development Research Foundation—has supplemented traditional knowledge with scientific inputs to come up with solutions customized for specific contexts in ten Indian states, thereby touching lives of more than 2,00,000

tribal families (the Bhils, Gonds, Kathkari, Kokna, Kolam, Kolcha, Kotwalia, Pawra, Sahariya, Thakur, Warlis, etc.). BAIF's focus is on training tribal farmers to integrate their rich traditions, cultural values and ecological principles with latest agricultural practices to attain economic and food security.

One of the popular programmes of BAIF is the promotion of its Wadi model, a tree-based farming system. It encourages marginal tribal farmers to grow forest crops as well as regular crops and also pursue horticulture. Besides intercropping foodgrains and vegetables, farmers are trained to manage soil fertility, develop water resources and prepare grafts. Forward and backward linkages are facilitated to supplement meagre farm incomes.

The Wadi model promotes introduction of a combination of region-specific fruit varieties like mango, cashew, lemon, gooseberry (amla) and guava, which have high nutritional value and can be processed at the village level. The underlying idea is to produce forest species that can serve as food, fibre, fuel wood, fodder and medicinal herbs. The Wadi approach is also about mixing short and long gestation crops. While intercrops can be harvested early, fruit crops take four to five years.

The thrust on mixed cropping of diverse local food crops ensures that most food requirements in a small farmer's household are met. The crop diversity also means that nutritious food is available for tribal families. At the same time, the Wadi model has helped convert waste and marginal lands into productive assets, thereby providing local communities with livelihood and nutrition. It is an evolving model, continuously adding more innovative features. At many locations, BAIF's Wadi model focuses on small gestation fruit crops like papaya and guava. For small plots, BAIF focuses on floriculture (jasmine, marigold, strawberry and aromatic grasses) and encourages collective marketing of produce.

BAIF has also distributed improved seeds and trained tribal farmers to cultivate high-value vegetables on small plots. Tribal farmers in the Jawahar region of Maharashtra are now increasingly

growing seasonal vegetables like okra, brinjals, chilli, onion, bitter gourd, bottle gourd and yard bean. It is a departure from earlier times when they grew mostly paddy in rain-fed conditions.

Agro-biodiversity is another focus area for BAIF. Tribal communities in the Thane district of Maharashtra traditionally cultivated over 300 varieties of rice, with several distinct properties. While some varieties satiated hunger, others provided instant bursts of energy during peak workloads and so on. Such diversity formed the basis of a nutritious and secure diet for tribal peoples. The rapid erosion in the diversity is, therefore, a cause of concern. Communities no longer know how to use bio-resources and farmers have become ignorant of gene banks. Precious local seeds and genetic resources are thus lost. It is only in remote areas that some farmers continue to cultivate traditional varieties on small landholdings, mainly for subsistence.



A tribal farmer displays his produce: New cropping patterns yield better results (Source: BAIF)

On its part, BAIF has identified biodiverse hotspots that traditionally abounded with a wide variety of food crops like nutritious millets, beans, pulses and wild food resources such as tubers, trees and creepers. It then initiated a drive to conserve and revive diverse native food resources in five different tribal clusters. Around 1000 tribal farmers from twenty villages in Maharashtra, Madhya Pradesh and south Gujarat participated in the conservation, seed production and community seed-banking programme. BAIF has also initiated lab analysis of indigenous foods for their nutritional content to promote healthy recipes.

On small plots surrounding homes, BAIF has reintroduced the tradition of having perennial kitchen gardens, bringing nutritious locally grown foods back to the table. The BAIF model involves multilayered and multipurpose indigenous trees, plants, herbs and shrubs that families can use as food fibres and medicines. BAIF has not only provided seeds and planting materials like tubers and seedlings, but has also helped families water and protect their gardens. Kitchen gardens have come up in Vidarbha and Akole, in the Ahmednagar region of Maharashtra and in the Dangs region of south Gujarat.



Livestock centric interventions: Supplementing family income (Source: BAIF)



Self-help Groups (SHGs) and village health workers, too, are involved in this exercise, ensuring tribal women and children get a healthy diet replete with green leafy vegetables, nutritious tubers, mushrooms and wild tree parts. A BAIF-designed kitchen garden has a combination of trees, shrubs and herbs, which fully meet the family's nutrition needs for the entire year.

In the Vidarbha region of Maharashtra, BAIF has piloted a new livestock model that ingeniously combines fishery, food crops and local trees. Based on the farming systems approach, this innovation juxtaposes the inland fishery farming with water chestnut cultivation on a small-surface water body. Crops and vegetables are grown on the surrounding banks.

BAIF is also cognizant of the fact that goat and poultry are a part of the food production chain, bringing in additional income into tribal households. The NGO has introduced selected breeds, improved breeding services and trained families on how to scientifically manage their livestock resources. Building a local cadre of community workers, it has guided livestock keepers on forward linkages and helped them market their livestock produce in newer ways.

Showing tribal communities how to link food with nutrition, health and income, the BAIF team has organized locals into SHGs, federations, cooperatives, producer companies and commodity interest groups. Together, they address post-production wastage and loss of agro-horticulture and forest produce.

BAIF's three decades of experience shows that diversifying the livelihood options of tribal peoples and working with existing resources can help them overcome food and nutrition challenges. Reconnecting tribal communities to their inherent local knowledge, traditions and existing biodiversity is helpful in ensuring food security. At the same time, it is an imperative to train tribal farmers in latest technologies and build their skill-based capacities. If governments and other development agencies mainstream such successful initiatives on a large scale, many more isolated tribal families would benefit.



Jharkhand and Odisha

## Of Social Good and Sound Economics

*The Trellis method enables farmers to pursue sustainable farming.*

Meera Mishra

While India's growth story is laudable, the ground realities reflect a contrasting storyboard of deprivation and hunger. India is home to 40 million stunted or chronically undernourished under-five children.<sup>1</sup> The situation is worse among tribal peoples. They are among the most nutritionally deprived social groups in the country. Over 40 per cent tribal children below five are stunted—a mark of chronic undernutrition—which adversely impacts the development of body and brain and has irreversible and lifelong consequences.<sup>2</sup>

Several factors may cause stunting such as limited access to adequate food, early marriage, undernourished minor mothers and, consequently, newborns with poor nutrition status from the womb. It could also be due to inadequate feeding for supporting rapid growth and development in infancy and early childhood. Frequent infections due to unhealthy environments and poor access to essential health services can be also responsible.

In tribal communities, additional factors include laws and policies that limit their access to forest produce, as also change in



feeding habits from micronutrient- and mineral-rich millets to a rice-wheat diet promoted through the Public Distribution System (PDS). Also, inadequate livelihood options to enhance family incomes as well as lack of awareness of nutrition compound the problem.

Among tribal peoples, the Particularly Vulnerable Tribal Groups (PVTGs) need greater attention. The livelihoods of PVTGs are overwhelmingly dependent on natural resources, mainly rain-fed agriculture and Non-Timber Forest Products (NTFP). Settled farming is relatively new and farming practices are poorly developed. Given the ecological complexity of their terrains, poorly developed farming systems and slowness in developing rain-fed areas, the PVTG habitat has suffered widespread degradation.

Driven to migrate in search of wage labour, PVTGs often neglect their own farming systems and fail to develop the natural resource base at hand. Depletion of forest resources and a shrinking livelihood base are now compelling them to purchase food. The usual diet of rice and salt, or millets and salt with few vegetables has limited nutritive value. Intake of protein and pulses is low and most PVTGs do not consume milk. July and August are particularly bad months as wage employment is difficult to come by and the monsoons make forests inaccessible.

India's constitutional provisions and legislations protect the rights of tribal peoples to good nutrition. The Panchayats (Extension to Scheduled Areas) Act (PESA), 1996, empowers tribal communities to protect, manage and control their land, forest and natural resources. However, policy implementation is poor and tribal peoples remain unaware of their rights. Policies relating to Minor Forest Produce (MFP) are often dictated by a desire to maximize state revenues. The welfare of gatherers, who are mostly tribal women, is often not taken into account.

The Tribal Sub Plan (TSP) budget items, too, are focused on infrastructure, overlooking softer components, such as basic outreach services. Even the TSP infrastructure budget remains untapped. It is neither used to set up Primary Health Centres and Nutrition

Rehabilitation Centres nor to provide crèches and toilets in remote tribal areas.

Apart from poor utilization of funds, tribal peoples also suffer due to poor governance in the areas that they live in. There is shortage of skilled workers and high level of staff absenteeism, which worsens in areas affected by conflict. Despite dedicated policies, programmes and resources, tribal peoples continue to be among the most disadvantaged groups.

On its part, the International Fund for Agricultural Development (IFAD) prioritizes tribal development in Fifth Schedule States like Chhattisgarh, Jharkhand and Odisha, etc., as well as Sixth Schedule States areas of the north eastern states of India. IFAD supports projects that help shape agriculture and food systems in ways that improve nutrition, incomes and productivity of smallholder farmers and the rural poor.

IFAD empowers tribal communities to plan for themselves and prioritize their needs. Specific groups are formed accordingly. The natural resource management groups focus on forest and fisheries conservation. Village Development Committees prepare village development plans and allocate community-driven development grants for social and economic infrastructure. Self-Help Groups focus on savings and loans. Building partnerships between government and local NGOs, this participatory approach ensures high quality last-mile delivery and community engagement in decision-making.

For addressing nutrition related challenges among tribal communities, IFAD uses a three-pronged strategy. It includes helping tribal households diversify their incomes to deal better with hunger days, promoting nutrition-sensitive agriculture, and making tribal families and youth aware of nutrition available in their natural surroundings. Additionally, through convergence with government schemes, it helps expectant and lactating mothers as well as infants access nutritious and adequate food, including supplements.

In 2014, the Odisha Tribal Empowerment and Livelihoods Programme (OTELP) introduced the 'Trellis method' for commercial

vegetable cultivation. The Trellis method enables farmers to grow more from small plots of land. OTELP took a team of thirty-five farmers from two villages on exposure visits, providing training and support to adopt this method.

By 2015, these farmers started selling their produce in the weekly bazaar, earning a substantial profit. Now, over 550 smallholder farmers have adopted the Trellis method. Another 2260 farmers began commercial vegetable cultivation in raised beds with pressure-compensated drip irrigation kits. Switching to a low-pressure drip irrigation system increased both productivity and profitability. Poly house was introduced to provide a favourable climate for germination of seeds, raise the quality of seedlings and protect seedlings from adverse weather. Increased production and productivity helped raise incomes, enabling poor farmers to purchase food during hunger days. Access to fresh vegetables also made for a more nutritive diet.

Bio-fortification and improvements in soil health can raise the nutrient value of crops, as can better storage, preservation and processing. OTELP introduced cultivation of orange-flesh sweet potato instead of the existing white-flesh variety. Sweet potato is an important local crop used as food, feed and raw material for industries, and even its vines are used as fodder for cattle during off-season. An inexpensive source of beta-carotene, orange-flesh sweet potato can address Vitamin A deficiency. The project set up community nurseries to cultivate vines and supply them to local farmers. It is estimated that 178 farmers covered an area of over 20 hectares with sweet potato vines.

In Madhya Pradesh, the Tejaswini Rural Women Empowerment Programme, which focuses on women's development leading to improvement in their living conditions, began promoting cultivation of minor millets among the remote Baiga tribal community. Implemented by a women's federation in Dindori district, the *kodokutki* programme worked with 1500 farming households and used programme funding to procure quality seeds and agricultural inputs, and then set up a system for distribution and recovery of cost.

Post-harvest, members returned double the quantity of seeds and the federation recycled the seeds twice and stocked about 60 tons of kodo-kutki in its warehouse, valued at about INR 60 lakh (\$89,552). Programme coverage has also increased to 7000 households, without any additional investment. While this ensured there was no shortage of foodgrains, people still preferred to eat the PDS grains (rice and wheat) as a staple, eating kodo-kutki as extra supplement. Efforts are being made to educate tribal households on the nutritive value of kodo-kutki.

While forest department regulations bar tribal communities from hunting, prohibitive costs stop them from including meat and fish in their diets. So, promoting livestock production was required. Tribal communities not only received additional income by raising livestock, they also acquired access to protein sources.

In Jharkhand, under the Jharkhand Tribal Development Project (JTDP), water bodies were developed using primarily resources of Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS). Fish culture was promoted in programme villages to increase incomes and improve nutrition. Over 35 per cent of households were engaged, with women taking the lead. Livestock rearing became popular. Most of the households readily adopted improved breed of pig (T&D), goat (Black Bengal), poultry (Red Divayayan) and duck (Khankhi Campbell). Village Livestock Workers (VLWs) from the communities were trained to provide basic health services at the local level.

However, experience shows that enhanced income does not always translate into food and nutrition security. When their incomes rise, the poor often emulate wealthier communities and spend money on junk food to distinguish their so-called enhanced social status. The ongoing need is to promote nutrition awareness and help people make healthy choices among foods readily available to them.

IFAD experience tells us that the agriculture sector should partner with health, water, sanitation and education sectors, focusing



A farmer using the Trellis method: Growing more on small plots of land (Source: OTELP)



Women packing their produce: Completing a key task in the agri-value chain (Source: IFAD)



on improved nutrition and increased livelihoods for the tribal household. Investing in nutrition through agriculture is more than a social good. It is sound development policy and good economics.<sup>3</sup>

## Notes

- <sup>1</sup> Raykar N, Majumder M, Laxminarayan R, Menon P. India Health Report: Nutrition 2015. New Delhi: Public Health Foundation of India, 2015.
- <sup>2</sup> National Family Health Survey India 2005–06 (NFHS-3): Nutrition in India. Mumbai: IIPS. Available online at: [http://rchiips.org/nfhs/nutrition\\_report\\_for\\_website\\_18sep09.pdf](http://rchiips.org/nfhs/nutrition_report_for_website_18sep09.pdf)
- <sup>3</sup> Wiegers E., Dorp M. Van, Torgerson S. Improving Nutrition through Agriculture. LibraryWurNI [Internet]. 2012. Available from: [http://www.undp.org/content/dam/rba/docs/WorkingPapers/ICT\\_Productivity.pdf](http://www.undp.org/content/dam/rba/docs/WorkingPapers/ICT_Productivity.pdf) \n <http://library.wur.nl/WebQuery/edepot/173655>





Multiple states

## Sustainable Approach to Achieve Nutrition Security

*Converging agriculture, natural resources management and  
healthcare tackles undernutrition.*

Sweta Banerjee



Maternal nutrition is crucial for both mother and child. Undernourished women may not survive pregnancy or may even deliver prematurely. In some cases, the babies are too small for their gestational age. Also, iron and calcium deficiency in pregnancy causes anaemia and pre-eclampsia leading to slow foetal growth, low birth weight or preterm birth. Undernutrition may be caused by lack of food and repeated infections. It is the outcome of food scarcity in the household, poor access to food, health and livelihood-related entitlements, and the lack of hygiene and care practices at home.

In India, both the National Family Health Survey (NFHS-3) and a Welthungerhilfe baseline survey have revealed that stunting and low Body Mass Index (BMI) are common among children and young women.<sup>1</sup>

With this understanding, Welthungerhilfe along with its partner organizations launched Fight Hunger First Initiative



(FHF) in five states (Jharkhand, Karnataka, Madhya Pradesh, Odisha and West Bengal). The aim was to tackle intergenerational chronic undernutrition by converging agriculture, natural resource management, nutrition and healthcare with focus on community empowerment through Community-based Organizations (CBOs). The initiative is designed on the premise that adequate and inclusive welfare systems have to be in place for the poor to break free of their vicious cycle of poverty and undernutrition.

Poverty, hunger and undernutrition were rampant among these backward communities and primitive tribes In Jharkhand. Degraded forests, barren lands and single crops forced people to migrate and engage in wage labour. Hence, the FHF was clubbed with the Sustainable Integrated Farming Systems (SIFS) to improve the lives of the community. SIFS seeks to raise farm productivity through diversification. From 2012 to 2015, nearly 6000 households in two blocks of Deoghar district participated in the experiment. Today there is enough evidence to show that nutrition-sensitive farming along with care practices can make sustainable changes in the nutritional status of the community. Through SIFS, the overall production, income and nutrition—both food and fodder—have been enhanced and diversified.

In terms of impact, diverse food is available throughout the year. With increased income from farm produce and enhanced purchasing capacity of essential foods, market dependence for staples has reduced. Also, reduction in the cost of agricultural inputs has made farming more profitable year round with positive impact on migration patterns. The programme has led to better childcare and improved access to health services, thus reducing incidences of communicable diseases. Now, mothers can spend more time at home with their children.

Besides, the focus on natural resource management helps improve biodiversity, restore forests, increase consumption of uncultivated food and promote judicious harvesting of forest produces. The entire family helps tackle undernutrition, collectively addressing

its immediate, underlying and basic causes. Focus is on nutrition through access to government schemes like the Integrated Child Development Services (ICDS), Mid-Day Meal (MDM), Public Distribution System (PDS), Mahatma Gandhi National Rural Employment Guarantee Schemes (MGNREGS), availability of diverse food from farms, and improved household care and hygiene practices. Emphasis is also on organic and low-cost farming and food safety. The project targets small and marginal farmers and the nutritionally vulnerable families.

An anecdotal reference can serve as a good example of the project's progress. Nandalal is a marginal farmer living with five family members on 2.5 acres of land. He did not profit from his farm for ten years and moved to the outskirts of Delhi to work as an unskilled wage labourer. Already deep in debt, he mortgaged an acre of his land to fund the wedding of his fifteen-year-old daughter in 2011.



Harvesting the second crop: Sustainability in income and nutrition (Source: Welthungerhilfe)

Today, the project has helped Nandalal use his waste land for a fish-farming pond, bio-digester, nutrition garden, duck rearing and millet cultivation. The family has three meals a day and consumes animal protein two to three times a week. Over the last few years, his family's dietary diversity improved from four food groups to eight. They grow two to three kinds of vegetables throughout the year. His cost of production went up by 27 per cent or INR 14,500 (\$216) by the third year, pushing his income up by 77 per cent to INR 82,725 (\$1235). Far from working to repay creditors, Nandalal today has a healthy balance in his two bank accounts. They also have a toilet, and the younger children are healthy and attend school.

In Sonarathari block of Deogarh district, Jharkhand, there has been about 56 per cent additional cultivation of Kharif crop and 37.5 per cent of Rabi crop, which has reduced the hunger period by two months. Households have got an additional income of INR 48,000 (\$716) annually through 45 per cent household work for an average of forty-five days under MGNREGS. There has been 5 per cent reduction in moderate and 4 per cent in severe wasting among children below five years over a period of three years.

Improvement in nutrition outcomes has been recorded by 64 per cent children. A majority of pregnant mothers (78 per cent) are now registered at the Anganwadi Centre (baseline 55 per cent), and 56 per cent of children under six years receive supplementary nutrition. There has been 5 per cent increase in dietary diversity score (DDS) of five to eight food groups, 2 per cent increase in DDS of eight to eleven food groups and 6 per cent reduction in DDS of <5 food groups.

Despite such isolated successes, large-scale challenges persist, which call for a multipronged approach to ensure that landless and marginal farmers rise above poverty and undernutrition, and sustained behavioural changes are ushered in.

Going forward, FHF is now ready for upscaling along with strengthening of CBOs, MGNREGS microplanning, knowledge and practice of hygiene and childcare, and nutrition-sensitive agriculture.

These together will help communities to access food and nutrition throughout the year.

## Notes

- <sup>1</sup> International Institute of Population Sciences. National Family Health Survey 2005–06 (NFHS-3): State Report Chhattisgarh. Available at: [http://rchiips.org/nfhs/chattisgarh\\_report.shtml](http://rchiips.org/nfhs/chattisgarh_report.shtml).

DELIVERING FOOD SECURITY  
ENTITLEMENTS



Madhya Pradesh

## IT Improves Service Delivery

*Samagra Samajik Suraksha Mission's digitization makes  
Public Distribution System transparent.*

Manohar Agnani

The Public Distribution System (PDS) provides subsidized food and fuel to a large number of people in India. These subsidies happen to be one of the most important social safety-net programmes of the government, but better implementation would make it more effective. Large-scale pilferage and diversion of grains plaguing wholesalers is common. Retailers have to contend with duplicate and ghost beneficiaries. Other issues relate to wrongful exclusion and inclusion of names, as well as availability and quality of commodities. Fair Price Shops, too, face pilferage.

In 1997, the Targeted Public Distribution System (TPDS) was launched as an improved form of PDS. It was designed to include all the poor households and to raise the 'unit subsidy' and 'ration quota' considerably. States were asked to first identify the poor as per the poverty estimates of the Planning Commission (1993–94), set up foolproof systems to deliver foodgrains at FPS and then distribute it in a transparent and accountable manner. States were allocated foodgrains based on their average annual off-take under PDS.



After meeting the requirement of below poverty line (BPL) families, the state could pass on the excess foodgrains to those above the poverty line (APL). About 103 lakh (10.3 million) tonnes of foodgrains were earmarked for this annually. This transitory allocation was to help the APL population cope with the sudden withdrawal of PDS benefits. These grains were, however, priced higher than the BPL quota. Subsidy was confined to about 6.5 crore (65 million) identified BPL families. Foodgrains were sold to APL households at a price that ensured consumer subsidies did not exceed budgetary estimates.

When prices of grains for APL cardholders went up in March 2000, almost touching market prices in some states, most APL households stopped buying grain from PDS. In December 2000, the Antyodaya Anna Yojana (AAY) was launched to make TPDS more focused. Rice and wheat were now provided to the poorest of the poor families at lower than BPL prices. But households that had neither BPL nor Antyodaya cards got effectively excluded from the PDS.

In 2013, the National Food Security Act (NFSA) made right to food a legal entitlement. Filling gaps in PDS, it provides subsidized foodgrains to nearly two-thirds of the population. The development was significant in a state like Madhya Pradesh, where 38 per cent of the population lives below the poverty line.<sup>1</sup> Tribal peoples constitute over one-fifth of the state's population. The Act ensured 5.5 crore (55 million) people in Madhya Pradesh receive entitlements under Targeted PDS.<sup>2</sup> At present, three quarters of the population of 546 lakh (54.6 million) is covered under the PDS. The subsidized grains reach over 116 lakh (11.6 million) families, majority of whom live in rural areas. Working to reform the PDS in line with NFSA, Madhya Pradesh intervened in ways different from those of other states.

The Madhya Pradesh government is working to reform PDS in line with NFSA. The Samagra Samajik Suraksha Mission is the focal initiative of the state government. Its bilingual Samagra portal is a

common integrated digital platform for proactive e-governance and doorstep delivery of services.

It acts as a one-stop destination for digitizing of data after local bodies identify, verify and categorize all families; linking households electronically to their respective Fair Price Shops; and generating authentic, accurate, monthly fair-price shop-wise allocations of foodgrains. With Samagra, online monitoring, analysis and real-time information become possible.

Similarly, the entire TPDS supply chain has been computerized—from the issuing centre to the beneficiaries—to prevent leakage and make it error-free. Even beneficiary data has been mapped and posted on the state PDS portal. The portal displays toll-free numbers, links to the chief minister's helpline for grievance redressal and lists every service available to beneficiaries. It acts as a transparent portal, posting contact details of different departments. Meanwhile, efforts are on to integrate the state PDS portal with other portals.

Besides, the government has taken many other steps to make life easier for poor people. Firstly, Madhya Pradesh is providing additional support to all beneficiaries amounting to benefits worth INR 532 crore (\$79.4 million) extra every year. For example, the price of foodgrain under NFSA is INR 2 per kg (3 cents), but the state rate is INR 1 per kg. Under TPDS, the state provides 35 kg of foodgrains to every AAY family and 5 kg to each member of Priority Household, at an additional annual expenditure of INR 432 crore (\$64.48 million). Another INR 150 crore (\$22.39 million) is spent to make 1 kg each of sugar and salt available to the households.

Secondly, now the state considers an individual in the family a unit. Earlier, under PDS, a family was the unit for allocations. When a new member arrives in a family now, the allocation increases. The system generates e-ration cards. These entitlement slips are updated monthly for change in family status, birth, death, etc.

Thirdly, the state government has identified twenty-four deprived segments where food insecurity is the most acute. It runs a special campaign called the Khadhya Suraksha Parva (Food Security

Festival) to identify SC and ST families. During this month-long festival in 2014, many families self-declared their SC/ST status to avail PDS benefits. The Samagra portal then cross-verified their claims. Around 15 lakh families (1.5 million) or 65 lakh members (6.5 million) enrolled for these entitlements. The state reached out to nearly 35 lakh (3.5 million) members of tribal peoples. Though there was some overlapping of data and duplication of beneficiaries, the state managed to cover the whole SC/ST population in the state.

This initiative tells us that TDPS can be made more robust with the inclusion of biometric authentication, linked via Aadhar Card. Considering records of PDS shops as public documents as per the Right to Information Act, 2005, would also bring in added transparency and accountability.

## Notes

- <sup>1</sup> Evans A. E. V, Giordano M, Clayton T. 2012. Investing in agricultural water management to benefit smallholder farmers in Madhya Pradesh, India. Ag Water Solutions Project country synthesis report. Colombo, Sri Lanka: International Water Management Institute (IWMI). p. 27. (IWMI Working Paper 151) [doi: 10.5337/2012.214].
- <sup>2</sup> Madhya Pradesh State edition of the *Pioneer*. MP pioneer in executing National Food Security Act. Available at: <http://www.dailypioneer.com/state-editions/bhopal/mp-pioneer-in-executing-national-food-security-act.html>. October 2015

Andhra Pradesh

## Daily Nutritious Boost for Women

*Strong political will and civil society support help  
deliver nutrition services successfully.*

Laxmi Bhawani and Vani Sethi

Despite erstwhile Andhra Pradesh's thriving economy, the National Nutrition Monitoring Bureau 2012 survey data indicated that one-third of women of reproductive age in rural Andhra Pradesh were chronically undernourished. The same survey showed that the diets of over one-third of pregnant women and breastfeeding mothers were deficient in energy and protein, and the diets of 97 per cent of women were deficient in iron. Such poor diets can be a major cause of maternal undernutrition and anaemia, with devastating consequences for women and children, including intra-uterine growth restriction, low birth weight, and stunted growth and development in infancy and early childhood.

The state's Integrated Child Development Services (ICDS) programme run by the Department of Women and Child Development in that year provided daily take-home rations to pregnant women and breastfeeding mothers. These rations contained about 600 kcal of energy and 18–20 gm of protein and essential vitamins and minerals as per the ICDS norms. Simultaneously, the

Department of Health and Family Welfare delivered iron and folic acid supplements to pregnant women and breastfeeding mothers as part of prenatal and postnatal care services. However, women's uptake of these services has remained traditionally low.

In view of this situation, the then Andhra Pradesh government launched in January 2013 'One Full Meal', a programme that aims at improving the nutrient intake of pregnant women and breastfeeding mothers and reducing the prevalence and severity of maternal anaemia. The programme reaches over 310,000 pregnant women and breastfeeding mothers across some 23,949 Anganwadi Centres (AWCs)—about 30 per cent of ICDS projects in the state—located in villages where undernutrition rates are high. Some 7600 (29 per cent) of these AWC are located in hard-to-reach tribal villages. 'One Full Meal' entitles pregnant women and breastfeeding mothers to receive a free nutritious meal every day between 11 a.m. and 2 p.m. at the village AWC, twenty-five days per month.

The hot cooked meal—prepared daily by the Anganwadi Helper—contains 125 gm of cereal, 30 gm of pulses, 50 gm of green leafy vegetables, 50 gm of eggs and 200 ml of milk, and provides 1052 kcal, 33 gm of protein and about 500 mg of calcium (i.e., about 40 per cent of the daily requirement of these nutrients). Adequately iodized salt is used in the cooking of the meal.

After the meal, the women who participate in the programme receive on-the-spot iron and folic acid supplements for controlling iron deficiency and anaemia. They are counselled by the Anganwadi Worker on how to improve their dietary intake and nutrition, and are encouraged to use the services provided during the monthly Village Health and Nutrition Day. The Anganwadi Worker keeps a record of the women who are enrolled in the programme, the services they receive, the weight they gain during pregnancy and the weight of their children at birth.

Each ICDS project officer enters into a memorandum of understanding with three parties that supply raw ingredients to the AWC for the programme: i) the Civil Supplies Corporation, which

provides cereals, pulses and cooking oil; ii) the local dairy corporation, which supplies packaged milk; and iii) the women self-help group federations, which purchase eggs, vegetables and condiments locally. Over 5100 federations of women self-help groups were engaged to support the implementation of the One Full Meal programme. Each ICDS project gives a quarterly grant to the federations that are involved in the implementation of the programme.

In each AWC, a five-member committee is constituted to supervise the implementation of the programme. The committee, chaired by a representative of the local self-help group federation, includes another federation representative, one pregnant woman, one breastfeeding mother and the Anganwadi Worker. The committee designs the menus, mobilizes women to come for the meal each day, supervises meal consumption, administers the iron and folic acid supplements, ensures that the women's weight is monitored, maintains participation records, reviews programme progress and submits monthly accounts to the ICDS project officer.

The unit cost of the One Full Meal programme is INR 15 (US\$ 0.25) per woman per day. This cost is borne by the state government through additional allocations to the Department of Women and Child Development (Supplementary Nutrition Programme). The scheme, reviewed monthly at the state level, has set an exclusive '104' telephone line to address grievances.

In 2013, the programme data showed that as of August 2013, 96 per cent of eligible women were receiving a meal and iron and folic acid tablets for at least twenty-one days per month. In the 7600 AWCs located in predominantly tribal communities, over 66,200 (97 per cent) eligible women were being provided a meal, a counselling session and iron and folic acid supplements regularly.

In 2014, an independent assessment of sixty AWCs spread across three districts traced remarkable achievements in health and nutrition practices of women.

After the state bifurcation, 2015 onwards, the programme under the Arogya Laxmi Scheme was scaled up in all the 149 ICDS

projects in the state of Telangana, covering 31,897 main AWCs and 4076 mini AWCs. Currently, 35,791 AWCs run the programme, covering 395,466 pregnant and lactating women with the support of departments of Women Development and Child Welfare; Health, Medical and Family Welfare; and Tribal Welfare .

Despite the bifurcation of Andhra Pradesh, Telangana continued the programme under the Arogya Laxmi Scheme to provide full nutritious meal every day to pregnant and lactating women, expanding to cover all the tribal blocks. Other densely tribal populated states of Chhattisgarh, Madhya Pradesh, and Maharashtra have also launched similar programmes to improve nutrition levels in pregnant women and lactating mothers. In Madhya Pradesh, the Atal Bihari Vajpayee Bal Arogya Evam Poshan Mission was launched as a pilot in the districts of Satna, Badwani, Alirajpur, Didori and Umaria in August 2015.

Learning from the above experience, other states followed suit. The Maharashtra government launched the Bharat Ratna Dr A.P.J. Abdul Kalam Amrut Ahaar Yojana in November 2015 in the Fifth Scheduled Areas and Additional Tribal Sub-Scheme Areas of the state. It provides, once a day, nutritious food to women in the last quarter of their pregnancy and to lactating mothers during the first quarter after their delivery.

Chhattisgarh launched Mahtari Jatan programme in May 2016, providing a hot meal as spot feeding and ready-to-eat food as take-home ration for pregnant women visiting AWCs. More recently, in June 2016, Uttar Pradesh started the Hausla Poshan Yojana Feeding programme to reach out to pregnant women and undernourished children with cooked food and fruits, and in April 2017 Odisha also started the One Full Meal Scheme.

These experiences demonstrate that nutrition services can be successfully and equitably delivered to women and children when a political decision is made to reach out to the most vulnerable members of society.



Chhattisgarh

## Crèches Nourish Children Better

*A crèche initiative improves the nutritional and health status of tribal children.*

Ramani Atkuri

Undernutrition is a widespread problem in tribal India, and a leading cause of disease and death. Often, it starts early, with consequences that can last for generations. In early years, it hampers physical and cognitive development, reducing one's potential to earn, thus perpetuating the cycle of poverty and undernutrition.

Chhattisgarh's population comprises 31 per cent (7.8 million)<sup>1</sup> tribal peoples, including 52 per cent chronically undernourished tribal children below five years of age.<sup>2</sup> The incidence of chronically undernourished tribal children has come down to 44 per cent, according to RSOC.<sup>3</sup> Despite the improvement, women who have been undernourished in childhood tend to give birth to underweight babies, thus continuing the vicious cycle of ill health in the next generation.

There is no dearth of government and NGO initiatives to improve the nutrition of young children, but their performance is not completely satisfactory. For example, the idea of having kitchen gardens works, but only partially. Though a good source of vitamins





and minerals, these gardens rarely provide all the supplementary calories and proteins. The 'Take-home Ration' programme for young children, too, is rendered ineffective because the food supplement is often shared among family members. Nutritional Rehabilitation Centres (NRCs), too, cater only to children with severe and acute malnutrition (SAM), ignoring the mild to moderately undernourished majority. These centres also don't have a sustained effect on children once they improve and return home. Besides, most initiatives wrongly place the onus of feeding and childcare entirely on the mother.

To address the problem of undernutrition in children, Jan Swasthya Sahyog, a non-profit organization, started its crèche programme called Phulwari in 2006 for children aged six months to three years. The programme now covers forty villages, managing 995 children in eighty-five crèches. The crèche is usually located close to where the children live, and runs from 8 a.m. to 4 p.m. Timings are tweaked according to the season and the local work schedule. The cost per child per day is INR 28 (41.79 cents), including administrative expenses. Though the initial response at the community level was slow, people gradually welcomed these crèches, especially in poorer villages, where both parents need to go out to work.

A woman caretaker is selected by the village community to run a crèche for ten children. If the number exceeds thirteen children, two caretakers are engaged. Active children are 'safe' under constant watch. Special emphasis is placed on personal hygiene of the caretaker as well as the children. The caretaker ensures that the food has the required consistency, taste and variety, and is of adequate quantity. The crèche provides three meals that meet about two-thirds of a child's daily requirement of calories and protein—one of sattu (made of roasted gram, ragi, wheat and sugar); and two meals of khichdi (made of rice and dal, supplemented with oil). Thrice a week, the children get boiled eggs. Younger children have to be fed and even cleaned after toilet. The village health worker weighs all the children at birth, and then at specified intervals, to track their growth. In cases



Children having a meal at the crèche: Meeting two-thirds of a child's daily calorie requirement (Source: Ramani Atkuri)

where the health worker is illiterate, a literate boy or girl in the village is paid a modest honorarium to maintain the attendance registers and record the weight of children.

Following the launch of the programmes, the nutritional status of children improved, directly impacting their health. Among those regularly attending the crèches, the number of children underweight or wasted significantly reduced. In 2009, 56 per cent of children going to the crèches were underweight. In 2011, this figure dropped to 44 per cent. Also, among the crèche children, cases of acute hunger (low weight for height) reduced from 26 per cent in 2009 to 10 per cent in 2011.

In course of the programme, a change was visible in the eating habits of the crèche children. They began eating more, even at home. There were many spillover benefits—older siblings returned to school, and both parents could now go to work, thus enhancing family income. Meanwhile, children carried back good habits,

insisting their families wash hands before eating. Though the crèche programme has many benefits, challenges remain. Initially, parents were asked to send their children with a handful of rice to the centre each day. However, the poorest families—the ones most in need of this facility—stopped sending their children, as they had no grains to spare. The rice requirement was consequently withdrawn. Practical hurdles have made implementation difficult. Ensuring the supply chain of sattu, rice, dal, oil and eggs to so many crèches scattered deep in the forests was not easy, especially during the monsoons, when rivers and mountain streams tend to overflow. To prevent eggs from breaking, they are now boiled at the sub-centre and then delivered to crèches on a motorbike or bicycle. Another issue concerns the protein-energy ratio in meals like khichdi. Women have been found mixing rice and dal in random proportions. Now, a standard measure for rice and dal for each child (a ratio of 5:1) has been specified.

Besides, the steep rise in foodgrain prices in recent years has proved a roadblock. As a result, despite stretching itself, the programme is unable to cover the poorest families, who live in scattered and single-hut settlements far from the villages. Their children are often the most undernourished.

Funding can be potentially sourced from the departments of Tribal Welfare, Panchayati Raj, Women and Child Development, and National Rural Health Mission. Modifying existing policies and programmes, too, can go a long way. For example, Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) pays for a crèche worker, but not for crèche facilities; this can be rectified. There is also a need to tweak the Public Distribution System (PDS) so that foodgrains can also be allocated to young children in crèches. Such changes call for inter-sectoral coordination.

Jan Swasthya Sahyog's crèche programme may be facing these challenges, but at the same time it is also finding the way out. The effort is worthwhile, given the programme's success in improving the nutritional and health status of tribal children. In fact, the effort is an investment in the health and future of our children. Else, we might

end up spending even more in treating illnesses that commonly afflict undernourished children.

## Notes

- <sup>1</sup> MoTA. Statistical Profile of Scheduled Tribes in India. 2013;1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> International Institute for Population Sciences (IIPS) and Macro International. 2007. National Family Health Survey (NFHS-3), 2005–06: Chhattisgarh State Report. Available from: [http://rchiips.org/nfhs/chattisgarh\\_report.shtml](http://rchiips.org/nfhs/chattisgarh_report.shtml).
- <sup>3</sup> India, Ministry of Women and Child Development, and UNICEF, India. 2014. Rapid Survey on Children 2013.



Multiple states

## Action Against Malnutrition

*A comprehensive and inclusive system combats  
child undernutrition effectively.*

Ganapathy Murugan

Undernutrition is too complex a challenge to be addressed in a piecemeal manner. As a result, a plethora of fragmentary initiatives fail to provide a comprehensive and overall childcare. Besides, lack of manpower and capacities frustrate efforts, especially when dealing with children less than three years. These problems are compounded by a critical absence of systems for community-based management of undernutrition.

There are three well-known government programmes—The Public Distribution System (PDS), the Integrated Child Development Services (ICDS) and the Mid-Day Meal Scheme (MDM)—that are currently targeting undernutrition. These schemes—though well-conceived—are poorly implemented and lack community involvement. For example, the ICDS aims to provide health, nutrition and education to all children less than six years of age, but it overlooks the needs of those below three. This is crucial because undernutrition is best treated early; beyond three, the damages caused by undernutrition may be irreversible.



A group of civil society organizations, therefore, came together to set up the Action Against Malnutrition (AAM) initiative in May 2012 with the aim to take care of children right from birth till they turn three years old. A three-year project, AAM has been extended till February 2017.

The Jamsetji Tata Trust funds the initiative and the consortium of implementing partners includes Public Health Resource Society, Children In Need Institute (CINI), Chaupal, Ekjut, and Institute for Development Education and Action (IDEA). Besides, overall technical guidance and support is provided by Jan Swasthya Sahyog, Ekjut, Mobile Crèches, and Public Health Resource Society.

AAM field sites are spread across multiple districts in Jharkhand (Ranchi, Ramgarh and West Singhbhum), Odisha (Mayurbhanj and Keonjhar), Chhattisgarh (Sarguja) and Bihar (East Champaran).

It began with a survey, which revealed widespread undernutrition and poor infant and young child feeding (IYCF) practices. Of the 3489 children surveyed, 60 per cent were stunted, about 50 per cent were underweight, and nearly 25 per cent were wasted (considering weight-for-height).

Also, it showed how socio-economic conditions directly affected the nutritional status and development of children. In the poorest segment, 72 per cent of the children had stunted growth. Among the richest segment, it was only 48 per cent. Children from Scheduled Tribes (STs) and Scheduled Castes (SCs) were generally underweight and short. Other factors that were considered included the sex of the child, district of residence, family wealth and education of the mother.

The IYCF indicators showed that more than half the babies (55 per cent) had been exclusively breastfed, with over one third (36 per cent) receiving mother's milk within an hour of birth. Almost 67 per cent of the children began receiving complementary food when they turned six months old. However, less than a quarter of the older children (six to thirty-six months) had a balanced diet, which included four or more food groups.



Monitoring of an AAM crèche: Effective management at the community level  
(Source: PHRS)

Armed with this knowledge, AAM employed a three-pronged strategy, revolving around crèches, community-mobilization and strengthening of systems. Crèches provide essential day-care services for children—from six months to three years. Community members help take care of nutrition and health needs of the children. This allows the mothers to go out and earn their livelihood. Also, it allows the elder siblings to go back to schools, since they no longer have to babysit.

AAM crèches regularly monitor and manage children who are undernourished, at risk or early stimulation. Thrice a day, children are fed local calorie-rich food, which takes care of 70 per cent of their daily nutritional requirement. Presently, 138 crèches cater to 4100 children.

The AAM initiative reaches out to over 20,000 young women through community mobilization. The Participatory Learning and Action (PLA) approach helps guide women on IYCF, childcare and health issues. While mothers are also counselled at home, Gram Panchayats are trained on monitoring and auditing government programmes like ICDS, Public Distribution System (PDS) and Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS).

System strengthening involves engaging with service providers to build capacities to ensure effective delivery of programmes. The focus is on ICDS, PDS, MGNREGS, health services and provision of water and sanitation in villages. Working with frontline workers, block and state-level officials, it ensures all services reach their rightful beneficiaries.

The AAM initiative has successfully mobilized people on issues of child health and undernutrition. As the community continues to participate in crèche and meetings, it shows signs of taking ownership of these processes. The AAM crèches are regularly monitored at the community level, ensuring services are effectively provided. The initiative has also built a pioneering management information system (MIS) to track the crèche children.



Across the project area, parents have started taking children to Malnutrition Treatment Centres (MTCs) for twenty-one days, as required. Officials at the Nutritional Rehabilitation Centres (NRC) are being persuaded to increase admission capacities. Also, project teams organize regular health camps across seven blocks and encourage the community to avail its healthcare services.

Learning from the AAM experience, Anganwadi Workers (AWWs) have started monitoring the services provided at Anganwadi Centres closely. In several villages, workers have tied up with the AAM team to monitor growth. Block teams have also collaborated with government officials in ICDS, Panchayati Raj Institutions (PRIs), and the departments of Health, and Drinking Water and Sanitation.

The community has wholeheartedly supported the AAM crèches, running and monitoring them closely. From identifying space, rebuilding broken rooms and erecting fences to providing firewood, fuel, green leafy vegetables and other items for the crèche kitchen, communities have demonstrated their ownership. Women and crèche workers have contributed to buy ducklings and poultry for mothers of crèche-children to boost their livelihood options. Others have donated goats. All this ensure that eggs and milk are readily available for the crèche. Local NGOs have contributed clothes, mats and toys. As awareness spreads, families are increasingly accessing these crèches and demanding quality services. With children in AAM crèches, mothers have more free time to explore work opportunities across Jharkhand. They have set up tailoring businesses, run mushroom farms, grocery shops, and work at MGNREGS sites, recording a steady rise in their family income and dignity.

The results are encouraging. It has been observed that the general health of the children has improved in areas where children attended AAM crèches, mothers attended crèche meetings and counselling, and children with Severe Acute Malnutrition (SAM) were referred to MTC. Also, the MIS has revealed significant improvement with 67 per cent of the moderately and 36 per cent of the severely wasted



Children at an AAM crèche: Availing essential day-care services (Source: PHRS)

children becoming normal over four-six months (May–July 2013 to November 2013).

There has been a ripple effect with neighbouring states evincing interest. The Madhya Pradesh government contacted the International Food Policy Research Institute (IFPRI) and Mobile Crèches for starting Anganwadi-cum-crèches. Recently, the Delhi government invited NGOs to bid for the programme. Chhattisgarh launched a state-wide feeding programme through PRIs. Ekjut worked with the Odisha government to launch PLA activities in fifteen districts.

It is a testimony to AAM's successful demonstration of how a comprehensive community-led model, involving crèches, can ensure proper feeding, care, safety and growth-monitoring for children under three years.

Odisha

## Conditional Cash Transfer Matters

*Direct cash transfers to women's bank accounts empower them.*

Vishal Dev and Sourav Bhattacharjee

In 2006, more than half of Scheduled Tribe (ST) children were stunted in Odisha, according to state-level studies.<sup>1</sup> Tribal children were at a greater risk of dying during the first year of life than their other counterparts. Tribal women were less likely than any other group to receive antenatal care, particularly from a health professional.

Seized of the state of affairs, in 2011, the state government launched a conditional cash transfer programme named Mamata (mother's affection) to increase women's access to and use of health and nutrition services to tackle related challenges of maternal and infant undernutrition in pregnant women and lactating mothers.

Spearheaded by the Department of Women and Child Development, Mamata provides INR 5000 (\$85) cash incentive to pregnant women for their first two live births. The amount is transferred to a woman's bank account in four instalments. However, this condition of two live births was subsequently waived for those in the Particularly Vulnerable Tribal Group (PVTG) areas, keeping in mind their special vulnerabilities, so that now they get this cover for all live births.

At the end of her second trimester of pregnancy, a woman receives the first instalment of INR 1500 (\$25). She can avail the benefit only if she has registered her pregnancy in time, received at least one antenatal check-up, one tetanus-toxoid vaccination, iron and folic acid supplements, and attended at least one monthly counselling session at an Anganwadi Centre (village child development centre).

The second instalment of INR 1500 (\$22) comes three months after the delivery. To claim it, she should have registered the childbirth, weighed her child at least twice in the previous three months, her child should have received all the age-appropriate vaccinations and attended at least two infant-feeding counselling sessions at the AWC.

The third instalment amounting to INR 1000 (\$17) is given to the mother when her infant is six months old. To be eligible, the mother should have exclusively breastfed an infant for the first six months, introduced complementary food items upon completion of the breastfeeding period, weighed her child at least twice in the previous three months, attended at least two counselling sessions on infant-feeding, and completed all the required immunizations.

The mother receives the final instalment of INR 1000 (\$15) when her child turns nine months old. She must ensure that her child receives the first Vitamin A dose with the measles vaccine, is fed age-appropriate complementary foods, and has been weighed at least twice in the previous three months.

The cash instalments are transferred electronically to women upon fulfilment of the transfer conditions, which is verified through the Mother and Child Protection Card and the pictorial counselling and entitlement card used by both the Integrated Child Development Services (ICDS) and the National Rural Health Mission (NRHM).

By December 2011, three months after the launch of the Mamata initiative, 70 per cent of the eligible women had been enrolled in the programme and their bank accounts opened across thirty districts of Odisha. However, in some of the disadvantaged districts like Gajapati, Kandhamal, Koraput, Mayurbhanj, Malkangiri, Nabarangapur, Rayagada and Sundargarh, the coverage was only 44 per cent. In

these districts, 50–60 per cent of the inhabitants are tribal peoples, with three-quarters of these communities still below the poverty line. Most tribal women had neither any identity card nor any residential proof. Moreover, they did not have required banking access and literacy to open and use a bank account and avail benefits under the Mamata conditional cash transfer scheme.

In January 2012, the state government devised an acceleration plan to address poor programme coverage in tribal districts. In addition to the nationalized banks, it persuaded five rural banks to start offering electronic fund transfers through their branches.

Simultaneously, the banks held fifty-three Mamata awareness and enrolment camps to help eligible women open a bank account on the spot with a simple identity and residence certification by their village head. In addition, all AWCs received new weighing scales and Mother and Child Protection Cards, ensuring all programme supplies and services were in place.

The government of Odisha also strengthened the planning process for the monthly Village Health, Sanitation and Nutrition Days (VHSNDs) by organizing these events in an additional 112 villages, reaching out to women and children, largely from tribal communities. Simultaneously, partnering with well-known local civil society organizations, the government organized social mobilization drives in eight districts where tribal women, families and communities were encouraged to use the new services available to them. By June 2013, a mere eighteen months after the acceleration plan was initiated, the number of women enrolled in these eight districts had almost tripled, their number rising from 105,000 to about 280,000. Even among the enrolled women, the number of those having a bank account was nearly five times higher, an increase from 46,000 to 222,000. The proportion of enrolled women with an open bank account almost doubled from 44 per cent to 80 per cent.

Because the departments of Women and Child Development, and Health and Family Welfare reviewed the state programme monthly, over 95 per cent of the VHSND events were held as

planned. Importantly, the number of bank branches with electronic cash-transferring facilities increased from 418 to 641. By June 2013, over 70 per cent of the women enrolled in the programme had received at least the first and second instalment of cash transfers.

The Odisha experience demonstrates that with sufficient political will, innovative programme design, and careful planning and monitoring, governments can significantly increase the efficiency and reach of public services. Tribal women and children often get left behind when it comes to access and availing benefits. Partners like banks, PRIs, women's Self-Help Groups and civil society organizations also help target these vulnerable sections in a more effective manner.

## Notes

- <sup>1</sup> International Institute of Population Sciences. National Family Health Survey 2005–06 (NFHS-3): Odisha Report. Available online at: [http://rchiips.org/nfhs/orissa\\_report.shtml](http://rchiips.org/nfhs/orissa_report.shtml)



Chhattisgarh

## Partnering for Last-mile Delivery

*Government agencies join hands with civil society organizations to deliver nutrition services.*

Abner E. Daniel and Pratibha Sharma

Chhattisgarh is home to over 25 million people. Tribal peoples constitute 31 per cent of the population. India's Third National Family Health Survey (NFHS 3) indicated that 52 per cent per cent of tribal children under-five are stunted due to chronic undernutrition.<sup>1,2</sup> According to the survey, only 56 per cent of the tribal children participate regularly in growth promotion sessions. This implies poor access and use of Integrated Child Development Services (ICDS), government's flagship programme for delivery of child nutrition and development services in the state. It is primarily due to the fact that delivering nutrition services to tribal children and women in remote hamlets, mostly in districts affected by conflict is a challenge.

The Abujmarh region is a case in point. Even basic government services are inaccessible due to civil unrest in this hilly and forested tribal setting in Chhattisgarh. This area houses 34,000 tribal population in 233 far-flung villages, spread across 4000 sq. km. Extremist activities and paramilitary search operations have made it



difficult for the government workers to work in this region, affecting delivery of government-run basic health and nutrition programmes. This severely limited their ability to provide timely and quality information, counselling, support and services to tribal children and women spread across all villages. Moreover, in case of 40 per cent of these villages, the nearest health facility was at least 20 km away.

The Orchha block, comprising 209 villages, has been the worst affected. A field assessment conducted in 2009 revealed that Orchha had only eighty-five Anganwadi Centres (AWCs). The challenge of taking the existing programmes to the intended beneficiaries and making full use of entitlements became one of the high priorities of the government. Local NGOs working in these regions with their well-established coordination points presented themselves as the big opportunity.

The state government had outsourced the implementation of ICDS in Orchha to Ramakrishna Mission Ashram, a well-accepted faith-based organization. In April 2011, the state departments of Women and Child Development, and Health and Family Welfare tied up with the Mission and UNICEF to improve the coverage and quality of services provided by ICDS.

UNICEF supported Ramakrishna Mission Ashram in building technical and functional capacity of its staff to protect, promote and support optimal feeding practices for children under-two, in order to prevent undernutrition. It also helped establish Nutrition Rehabilitation Centres to provide therapeutic care for severely undernourished children. The government also offered mothers not just free transportation to the nearest Nutrition Rehabilitation Centre, but also in-kind compensation.

Thirty-two trainers, fluent in the local language, were trained to guide 135 Anganwadi and mini-Anganwadi Workers (AWWs) on how they should inform, counsel and support tribal women on infant and young child feeding techniques, nutrition and care. Additionally, 157 community volunteers, at least one per village, were recruited and trained to help AWWs promote the improved



ICDS programme. These volunteers mobilized communities to avail the benefits available under government programmes.

A number of innovations were introduced to improve counselling of mothers and to track mother-child pairs. Each village developed a timetable for home visits by AWWs and community volunteers. Both workers and volunteers were equipped with pictorial tools and job aids to make their counselling sessions more effective. Village Health and Nutrition Days held monthly at AWCs became well-organised events that provided health and nutrition services, monitored community growth and held counselling sessions. Intensive immunization and awareness drives were also conducted in ninety-seven hard-to-reach villages during the weekly village haats (markets).

Programme data (May 2013) indicates that all AWCs in Orchha block organised monthly Village Health and Nutrition Days. The growth of 72 per cent of the children under-five was being monitored monthly, and 61 per cent of the mothers received information, counselling and support on infant and young child feeding practices. In total, 741 children with severe acute malnutrition were admitted to the six Nutrition Rehabilitation Centres between 2011–13.

Trained health workers from Ramakrishna Mission Ashram also managed five health posts—Kundla, Akabeda, Irakbhatti, Kachhapal and Kutul—inside Abujhmarh. In 2013, 20,383 patients, of whom 89 per cent were from the tribal community, received free treatment.

The partnership helped the government agencies to understand the systemic gaps that existed for full compliance of the centrally-sponsored schemes targeting vulnerable sections among tribal women and children. Although there remains room for further improvement, the experience in Chhattisgarh proves that partnering with local civil society organizations that are trusted by the communities they serve can vastly augment government resources.

It is possible to significantly improve the delivery of essential nutrition interventions to tribal children and women, particularly those living in remote locations or areas affected by civil strife. But first it is important to build capacities of frontline workers so that

they can effectively inform, counsel, support and service families and communities.

The lack of leadership among tribal populations comes with its own challenges like lack of an instant connect between the government-sponsored schemes of nutrition for women and children. However, the grass-roots organizations including many NGOs have made deep inroads in these areas and enjoy the confidence of the local population. These organizations need to cultivate leadership amongst the tribal communities so that the tribal communities can then present a collective voice that can demand more customised initiatives for addressing the needs of tribal women and children in these areas.

The ready presence of such organizations in these regions has led to strengthening tribal focus in existing nutrition programmes, with the incorporation of special strategies for improving reach and quality of services, along with regular monitoring of tribal nutrition services within existing government schemes.

The engagement of these organizations not only helped the government agencies in their last-mile delivery, but also provided them with something that could effectively feed back into the supply system to take better note of the real nutritional needs of women and children in tribal regions.

## Notes

- <sup>1</sup> MoTA. Statistical Profile of Scheduled Tribes in India. 2013;1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in)
- <sup>2</sup> International Institute for Population Sciences (IIPS) and Macro International. 2007. National Family Health Survey (NFHS-3), 2005–06: Chhattisgarh State Report. Available from: [http://rchiips.org/nfhs/chattisgarh\\_report.shtml](http://rchiips.org/nfhs/chattisgarh_report.shtml)



Chhattisgarh

## Bridging the Trust Deficit

*Local NGOs negotiate with Naxals to deliver health  
and nutrition services.*

Abner E. Daniel

The Indian government has adopted an integrated approach to address the Naxal challenge—providing security, ensuring development, managing public perception, and facilitating surrender and rehabilitation of extremists. The Union government has also advised the states to comprehensively develop the affected regions. The ground reality, however, does not always match the lofty ideals. Chhattisgarh has many well-designed government programmes, but they are poorly implemented and have varying degrees of coverage.

In Chhattisgarh, pockets affected by conflict often overlap tribal tracts that are rich in forest cover and have huge minerals deposits. Naxalism remains a big challenge here and the government has realized the need for a comprehensive plan of action to accommodate the discontented and agitated tribal peoples in the affected areas. A decentralized fund was thus created for the security and development of these districts. But the Comptroller and Auditor General (CAG) Report 2011–12 on the Integrated Action Plan for Odisha found that the projects were mostly being selected by the line departments,



legislators and local Parliamentarians, without taking any inputs from the Panchayati Raj Institutions (PRIs). This top-down and one-size-fits-all approach failed to read the ground situation fully, jinxing the projects even as they were launched. Many of these projects got cancelled for being unviable or not in tune with local needs. Projects that did take off were poorly executed.

In Bastar and Narayanpur districts of Chhattisgarh, even well-designed government programmes failed to provide the required quality and coverage. Extremism brought its own set of problems. The Naxals opposed all attempts to set up infrastructure like roads, mobile towers and buildings, and allowed implementation of only soft programmes related to education, health, nutrition and civil supplies. Non-existent roads, poor communication facilities and limited electrification affected the logistics like lodging of government functionaries at remote locations. This in turn impeded service delivery. It was a unique challenge that called for unconventional methods and informal structures.

In 2011, UNICEF started implementing the Abhujmarh Health Outreach Project (A-HOPE) in the Bastar region of Chhattisgarh through a local NGO partner, Ramakrishna Mission Ashram (RKMA). Initially the project covered 209 villages in the Orchha block. The next year, the programme was extended to include another ninety-nine hard-to-reach villages in the Narayanpur block through another NGO partner, Saathi Samaj Sevi Sansthan. These local tie-ups were helpful. Their years in the Bastar region gave the NGOs a reasonable acceptance and access to remote locations. Also, both Ramakrishna Mission Ashram and Saathi Samaj Sevi Sansthan were known for successfully negotiating humanitarian space to service poor tribal communities.

The A-Hope project focuses on the health and nutrition of tribal children. It identifies and treats children with severe acute malnutrition (SAM), counsels mothers on Infant and Young Child Feeding (IYCF) practices and promotes Routine Immunization (RI). By removing demand and supply bottlenecks, it has strengthened



service delivery and reached out to the most vulnerable and marginalized communities. The five Abhujmarh centres located in remote areas of Orchha have been equipped and optimally staffed to start functioning as health referral centres.

In the state, the Integrated Child Development Services (ICDS) scheme is also being run by Ramakrishna Mission Ashram. That is because the government has outsourced the management of all the eighty-five Anganwadi Centres (AWCs) and 185 mini AWCs in the district to this NGO. The ICDS platform helps deliver services at the grass-roots level. Six Nutrition Rehabilitation Centres with outpatient facilities have also been set up to manage SAM children.

In 2012, the state began an initiative—Wajan Tyohar (weighing festival)—to record the number of underweight children in Chhattisgarh.<sup>1</sup> Measurements taken at Wajan Tyohar revealed that the number of underweight children in the state had reduced by a quarter, dropping from 41 per cent in 2012 to around 31 per cent in 2015. The improvement has been more pronounced in thirteen districts that are free of extremism.

With many areas affected by conflict, a systematic approach is necessary for undertaking any development programme in this region. Such an approach would be guided by four lessons.

Firstly, one should realize that it is not easy to deliver government programmes in remote tribal areas, which are often crisscrossed by rivers and streams and become inaccessible, especially during monsoons. Existing administrative maps are of little use here. At times, even adjacent villages are inaccessible as a mountain or creek lies in between. When the villages are grouped into sectors (under ICDS) or sub-centres (under the Health Department), these ground factors are usually overlooked. There are, however, few select old-time functionaries in government departments who can locate even the most interior villages, tapping into their experience. Some have even prepared local maps of these areas.

Secondly, it is also difficult to determine to what extent a village is affected by conflict. When declaring villages as ‘affected’, government functionaries tend to make subjective assessments. Moreover, it is a



dynamic situation that needs to be reviewed constantly. Sometimes, 'affected' villages are different for different government departments. There is no common view. Villages can be grouped as minimally affected or severely affected, but then there are villages where the degree cannot be easily defined. A tested operational definition of 'affected' villages has to be framed in such cases and consistently used.

Thirdly, at times, functionaries also describe villages as severely affected due to a 'perceived threat'. This excuses them from providing regular services or staying at the designated village. Seeking objective opinion from multiple sources would help distinguish a 'perceived threat' from an 'actual' one.

Fourthly, pursuing development activities in such regions requires much tact and careful planning. Every programme has to be implemented phase-wise, moving from the less-affected and accessible villages to the severely affected ones. The NGO workers have to first strive to earn the trust of the local communities. As people start accepting them, the demand for their services picks up. When people in more-affected villages see nearby less-affected villages benefit from these programmes, they, too, start desiring similar services. This rising demand for development programmes pushes locals into forming pressure groups, which then negotiate with Naxals and security forces to access these services. The security personnel often detain tribal peoples residing in interior areas for questioning. Negotiating passage across checkpoints is thus equally important. Villages in the heart of the affected regions, however, serve as Naxal headquarters and, therefore, remain 'no-go zones'.

Bargaining for safe passage is easier said than done. Many a times, the tribal peoples residing in the interior conflict-affected areas get caught in the crossfire. They are not only questioned by the security forces at check-posts, but also warned by the Naxalites not to share any information with the security forces. Cornered thus, they retract into their shell, preferring to avoid confrontation with both parties. But it is imperative that the communication channels with tribal communities are kept open. These people have to learn to trust government

functionaries. They can come to know of the various government programmes and think of availing the services only when they interact.

Finally, for any programme to succeed in these areas, it has to be designed keeping in mind the culture of tribal communities. Any development initiative that is not sensitive to local beliefs and customs is likely to be rejected by the people, leading to poor uptake of services.

A Nutrition Rehabilitation Centre (NRC) set up at Akabeda in the interiors of Orchha block to treat SAM children failed to service the local community because the tribal peoples believed it was haunted. The programme implementation team realized that until this belief was countered, admissions to the NRC would not improve. Instead of telling the people they were wrong, the programme team requested the tribal community to recommend a solution. Only after the locals held a meeting with their priest, followed by an exorcism at the NRC, did they feel safe and begin visiting the centre. It is, therefore, important to understand and respect the local way of life in order to function there. Communicating the programme in local languages and through bardic tales, folk songs and local theatre is likely to strike the right chord with tribal communities.



Nutrition Rehabilitation Centre in a Naxalite-affected area: Innovative initiative  
(Source: UNICEF Chhattisgarh)

A credible local civil society organization can help implement the plans more effectively and also maintain the necessary checks and balances. But they should hire only local coordinators. They know the language and are better placed to negotiate with Naxalites for programme access. Also, it is crucial that these coordinators engaged by NGOs stay in the project villages itself. This creates a social fencing and builds trust. Local communities are then more likely to support their actions.

When negotiating safe spaces to provide life-saving services to the people, it is best to contact Naxalites informally through indirect channels. These approaches can be further refined with programme experience to build an operational framework for planning and monitoring development programmes in conflict-affected areas. But any such initiative can succeed only when the political and administrative machinery are sincerely committed to implementing it.

## Notes

- <sup>1</sup> Ministry of Women and Child Development. Available at: [www.nawajatan.com](http://www.nawajatan.com).





DELIVERING PRIMARY HEALTH  
OUTREACH AND REFERRAL SERVICES





Rajasthan

## Prescription for Sound Primary Healthcare

*Community and technology-based services seek to  
cure ills of poor healthcare.*

Pavitra Mohan and Akanksha Dutta



Living in remote villages in hilly, forested or desert areas, tribal peoples have to battle rough physical environments, lack of livelihood opportunities, and inadequate access to healthcare, potable water and sanitation facilities, amongst other challenges. To top it, high expenditure on healthcare further adds to their misery.

The Primary Health Centre (PHC), as part of the three-tiered Indian healthcare system, was conceived to provide integrated curative and preventive primary healthcare to rural population. The primary tier comprises three types of healthcare institutions: the Community Health Centre, Primary Health Centre and Sub-centre.

A typical PHC, equipped with six indoor observation beds, covers a population of 20,000 in hilly, tribal and difficult terrains. In plains, numbers swell up to 30,000. It acts as a referral unit for six Sub-centres. The PHC in turn refers cases to Community Health Centre (thirty-bedded hospital) and advanced-care public hospitals.



Since the density of population varies from one area to another, the number of PHCs depends upon the caseload.

However, the reality is that most PHCs have limited resources, besides being located far away from the populations they are meant to serve. Further, as doctors are reluctant to live in rural areas, PHCs often become dysfunctional. Unlike western countries, there is no cadre of primary care providers in the country. MBBS doctors—with no additional training—are by default the primary care providers. Also, nurses are supposed to assist doctors.

To make the primary healthcare system effective, Basic HealthCare Services (BHS), a not-for-profit specialized primary health care initiative, recommends that the PHC should not only be the point of first contact for all new needs, but also person-focused rather than disease-focused.

BHS was incubated by Aajeevika Bureau (AB), a not-for-profit organization, which provides a range of services and solutions to seasonal migrants who leave their villages to find work in cities, factories and farms.

Registered as a trust in 2012, BHS is driven by the vision of working towards a responsive and effective healthcare ecosystem that is rooted in the community. Comprising a group of doctors, public health experts and rural development professionals, BHS also emphasizes that continuous and comprehensive care should be provided over time to address common needs.

It believes that services have to be well coordinated with higher levels of care to handle those ailments that may not be manageable at this level. In addition, it has to be accessible to all, based in the community, include preventive, promotional and curative healthcare.

Almost 85 per cent of the healthcare needs can be met at the primary level. The remaining special cases can be referred to higher levels for advanced care. Primary care requires a team of health professionals, workers and volunteers. A judicious skill mix from the available resources works best. While a physician is in charge in most systems, nurses are increasingly playing a central role.



AMRIT clinic staff attending to patients: Providing low-cost and high-quality primary healthcare (Source: Basic HealthCare Services)

This is where AMRIT Clinics—a collaborative initiative between BHS and Aajeevika Bureau—play a role. These clinics address healthcare challenges of tribal peoples and high out-migration communities in South Rajasthan. They provide community-based high quality, low-cost primary health care services in these areas.

One of the largest states in India, Rajasthan has a tribal population of about nine million.<sup>1</sup> These communities live in dispersed clusters, often in arid rural areas that are prone to drought and food insecurity. The state, however, has a reasonably large health infrastructure, delivering healthcare through 11,487 Sub-centres, 1517 PHCs, 408 Community Health Centres and thirty-four district hospitals.<sup>2</sup>

The AMRIT clinics are managed largely by primary healthcare nurses, supported by general physicians and appropriate use of technology. Arrangements with tertiary hospitals enable referral care. In tribal, high out-migration areas, such community-based, nurse-managed and technology-enabled services offer a practical solution to fragmented and poor quality public health services that exist currently.



An outreach session on antenatal care: Reaching out proactively to community members (Source: Basic HealthCare Services)

The clinic services include the Out-patient Department (OPD) management, like consultation, laboratory testing and drug dispensing along with childbirth services. Other services include outreach sessions on antenatal care, home-based care for mothers and newborns, community health education sessions, facilitating referrals (emergency and scheduled) and linking other social services through existing social service initiatives.

Operating from community buildings leased by Gram Panchayats, AMRIT Clinics have been renovated extensively to ensure provision of all basic amenities. Each clinic serves about 12,000 people, spread across two Gram Panchayats.

AMRIT Clinics have been set up in Bedawal, Manpur and Ghated villages of Udaipur district, each of which is about 120 km away from the district headquarters. These clinics provide preventive,

promotional and primary curative care to about 2000 families, each in remote, underserved areas of Udaipur. Three qualified nurses, two trained health workers and ten to twelve community volunteers run these clinics. A general physician visits the clinic weekly, and is available for consultation and emergencies. An ambulance and management staff help link up the healthcare facilities at the block and district levels to public or private hospitals, if required.

Over 13,000 patients have made about 30,000 visits to the clinics in three years. The clinics have been able to provide care to many patients suffering life-threatening conditions such as severe childhood pneumonia, diarrhoea with severe undernutrition, newborn sepsis and falciparum malaria at the clinics itself or through escorted referral to a tertiary hospital.

The clinics have also helped a large number of women to make appropriate contraceptive choices for family planning and provide them high quality antenatal care. The clinics managed to address these conditions, partnering with the local public health system, when required.

Based on the experience, it is understood that the following issues need to be tackled by the government. First, the government has to explicitly assume responsibility for providing primary healthcare. The responsibility needs to be reflected in higher investments in the health sector, especially in primary healthcare. Within the overall budget, higher proportion needs to be allocated to tribal areas to meet their increased needs on account of difficult terrain and remote locations.

In view of the scattered populations and remote locations, primary healthcare facilities in such areas should have much smaller catchment areas than in non-tribal areas. An ambulance service that is capable of going to the last mile will help make appropriate referrals and build credibility of such facilities.

Nurses should be trained and deployed as nurse practitioners in primary healthcare facilities and physicians should be trained in family medicine and deployed as primary care physicians. Nurse





An antenatal care session in progress: Providing care with empathy (Source: Basic HealthCare Services)

practitioners and physicians need to have management and social skills in addition to their clinical skills to function effectively. Moreover, the use of appropriate technology for diagnostics as well as tele-consultation would enable nurses to provide a high quality of care. In such a system, one physician can support three to four facilities, each of which can be managed primarily by nurses. The AMRIT clinic model has shown that the way forward is to strengthen primary healthcare in remote tribal areas and use new and innovative ways of service delivery.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013;1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> Welfare M of H& F, Welfare G of I. Rural Health Statistics. 2015; 1–82. Available from: [http://wcd.nic.in/sites/default/files/RHS\\_1.pdf](http://wcd.nic.in/sites/default/files/RHS_1.pdf).

Odisha

## The Malaria Sting

*Both prevention and treatment of malaria are key to improving health of children.*

John Oommen

Undernutrition means different things to different people. Nutritionists approach it with proteins, calories, zinc and magnesium. Economists focus on purchasing capacity. Sociologists argue over food security. Activists raise human rights issues and doctors fret over diseases. But undernutrition is about a person—usually a child—and it is a question of his or her life.

The Bissamcuttack and Chandrapur blocks in Rayagada district have population of 1,33,619.<sup>1</sup> Tribal peoples comprise 63 per cent of this population.

For over sixty years, Christian Hospital, Bissamcuttack (CHB) has been serving the tribal population in the area. Lack of alternative healthcare in the region makes the service by this hospital even more critical. The Christian Hospital Bissamcuttack today provides cost-effective healthcare, training in health, and also quality school education. The hospital also has a community health department called MITRA. It works with about 12,700 people in fifty-three villages to provide services related to health, education, income generation, etc.

The overwhelming needs of the local community proved a big challenge for the Mitra community health team. Issues of child survival and undernutrition posed a confusing conundrum.

Till 1996, parents hesitated to name their babies until they turned two, as 20 per cent of newborns died in their first year, and 35 per cent did not make it to the age of five. Surprisingly, childcare practices were relatively good. Breastfeeding was early and sustained for two years. There was a gap of two to three years between two babies in a family. But, then, why were the children continuing to be undernourished?

Looking for answers, as part of a medical investigation, six severely undernourished children were brought to the Christian Hospital for medical assessment. What was discovered was that four out of the six children tested positive for falciparum malaria. The remaining two showed intestinal parasitic infections like giardiasis and amoebiasis in their stool samples.

In such a situation, the goal was to ensure that all children were healthy and well-nourished and it was imperative that the approach was intrinsic to the local environment.

MITRA developed a unique approach, focusing on the nutrition status rather than just food. Also, they started focusing on growth monitoring or weight-change rather than just weight recording.

Parents were encouraged to weigh their children every month to monitor how their child was doing. Rather than focusing on external growth standards, they now adopted a different strategy and raised questions like: How has this child grown compared to last month? The child's growth was then classified either as 'adequate', 'inadequate', 'zero change' or 'negative change'.

Based on the trajectory of growth curves, MITRA fixed 'adequate growth' at more than 500 gm a month in the 0–12-month age group, and 200 gm a month in the 13–36-month age group. A child with two consecutive negative-change readings or three consecutive zero-change readings was considered a 'nutritionally at-risk child' (NARC), needing intervention.

These children were then treated with a medical package that included anti-malaria medicine (sulfa-pyrimethamine, followed by three to six months of chloroquine prophylaxis); a course of metronidazole for intestinal infections; iron and folic acid supplements for anaemia; a dose of Vitamin A; and a course of antibiotics, depending on the case.

As a result, the number of children with negative and stagnant growth curves sharply reduced. In a sample of seventy-four children, followed up in 2009, the average weight change improved from -29 gm a month to +325 gm a month on this protocol.

In 2010, the MITRA project started the 'Mal-Mal' (Malaria-induced-Malnutrition) approach. The Christian Hospital organizes annual Mal-Mal camps for children in the project villages, where each child gets a general check-up, growth monitoring and treatment for minor ailments and also a blood smear for malaria parasites.

All positive cases are treated with Artemisinin-based Combination Therapy (ACT) or Chloroquine as per guidelines. Medicated mosquito nets are also provided. This annual exercise in the peak transmission months helps detect children with malaria parasites and provide effective treatment embedded within a regular growth-monitoring programme.

To generate awareness, the MITRA team holds street plays on malaria, promotes personal protection measures like neem oil and medicated mosquito nets, and sets up mobile clinics with health workers for education and treatment purposes.

In 2010, out of the 1245 under-five children, who participated in the Mal-Mal Camps, 730 or 58.6 per cent tested positive for malaria parasite. But only 8 per cent manifested fever. Rest remained afebrile, a condition called asymptomatic malaria, which can turn serious and result in anaemia, faltering growth, poor school performance and sometimes even death.

All positive but asymptomatic children were, therefore, treated. Malaria prevention drives were promoted. Over the next three years through 2013, the child parasite rate decreased to 33.1 per cent, 27.1

per cent and 11.5 per cent respectively. Mirroring this trend, the under-five mortality rates (all causes) and fever death rates (all ages) too dropped.

The knowledge was then picked up by a network of NGOs in the neighbouring districts, and was rolled out in 650 villages, aptly supported by the Tata Trusts, Mumbai.

In this context, one may say that six gaps in the current approaches affect the health and nutritional status of tribal peoples. First, consultants and policymakers often are unable to see beyond capitals or headquarters. When it comes to tribal peoples and their issues, their approach is often patronizing, romantic, or even disrespectful. Though tribal peoples make up about 23 per cent of Odisha's population and more than 60 per cent of the population in districts like Rayagada,<sup>1</sup> they are excluded from the planning process and important discussions that involve their lives.

Secondly, disaggregated data from surveys like the National Family Health Survey suggests that better health status and access to healthcare mostly depends on one's caste, community, gender, economic status and location. In Odisha, location also implies the region, size of the village and distance from the main road. Risk of disease and death is more so in areas where these factors overlap.

Thirdly, there is a dire need for authentic, disaggregated data on health status and outcome indicators to measure and guide these interventions. Too much energy is spent monitoring process indicators, which vary with staff performance. Instead, focusing on vital indicators like the under-five child mortality rate is critical for the survival of tribal communities.

Fourthly, malaria is now concentrated mostly in the tribal districts of Odisha. For many tribal communities, it is the most critical health issue and community-based malaria control strategies should be evolved and nurtured. Civil society has considerable experience and expertise in this area.

Fifthly, In case of undernutrition in tribal children, there is a need to think 'nutrition status', not just 'food'. The focus has to be

on 'weight change', not just 'chart positions'; and think 'inter-box', not 'boxed-in'. There is a need to connect issues like undernutrition and malaria and not separate them by departments and donors.

Finally, focusing on infants or children is not enough. Health issues afflicting adults in the tribal community are equally important and perhaps have a more serious impact on the family and community. The community is facing a fast-rising epidemic of hypertension, diabetes and chronic kidney disease that should not be ignored, for these could have been fuelled by poverty, maternal undernutrition and low birth weight.

Three changes in perspective must precede the quest for a holistic change in the quality of life in tribal areas. First and foremost, tribal communities should not be viewed as passive beneficiaries. They should have a say in all decision-making processes. Secondly, there should be investment on children's quality education that is rooted in the culture and language of the people. Thirdly, there is a need to strategize from the insider's perspective. As Gandhiji said, 'We have to become the change we want to see'.

## Notes

- <sup>1</sup> The Census of India 2011. Available online at: [http://censusindia.gov.in/pca/cdb\\_pca\\_census/cd\\_block.html](http://censusindia.gov.in/pca/cdb_pca_census/cd_block.html).

Chhattisgarh

## Access Key to Success of Healthcare

*Innovative health initiatives tackle low birth weight challenges.*

Yogesh Jain and Suhas Kadam

Health indicators for India's tribal peoples are far worse than those of the general population. Living in rural and remote villages amidst hardships with little access to potable water, hygiene and sanitation makes tribal peoples, particularly women and children, more vulnerable to diseases. Illnesses tend to be more severe and last longer. Illiteracy and undernutrition add to their despair.

To address such problems, Jan Swasthya Sahyog, a voluntary non-profit society of health professionals, has been working with the community in tribal areas of Chhattisgarh over the last fifteen years to introduce modest but crucial innovations to combat hunger and low birth weights, and provide potable drinking water.

One of Jan Swasthya Sahyog's initiatives is its low-cost health programme, which provides both preventive and curative services. Besides running a community health programme, the society has also set up a three-tiered, low-cost healthcare system in the tribal blocks of Bilaspur and Mungeli districts.

Jan Swasthya Sahyog started by conducting some micro-level surveys in seven districts of Chhattisgarh to gauge the profile of

its potential patients. Tribal communities most common in the surveyed districts included the Gonds, Baigas, Kols, Kanwar, Oraons, Dhanuhar, Bhumias and Manjhis. Surveys revealed that the Particularly Vulnerable Tribal Groups (PVTGs) such as Baigas, Dhanuhars and Manjhis were participating in the intensive community programme, but only a few visited the referral centre.

Nearly a quarter of the surveyed people were landless and more than half held the Below Poverty Line (BPL) and Rashtriya Swasthya Bima Yojana cards. A majority of the patients attending a clinic at the referral centre lived in *kachcha* houses.

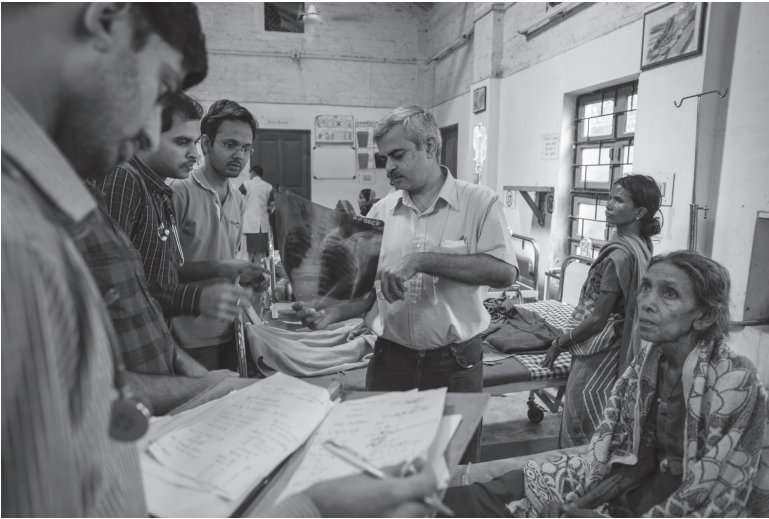
A community programme in thirty-five villages of Bilaspur and Mungeli districts of Chhattisgarh in 2013—comprising a population of 35,669—showed that the tribal communities had to frequently battle life-threatening diseases and infections including tuberculosis, cancer, severe hypertension, diabetes, leprosy, rheumatic heart diseases and chronic renal failure, to mention a few.

It was found that tribal women were particularly prone to cervical cancer. Hypertension and rheumatic heart disease afflicted women twice as much as men. Locals also suffered from undernutrition, severe anaemia, major avitaminosis and animal bites. Social factors worsened their suffering with unequal access to food, safe drinking water, public health systems and roads.

It led Jan Swasthya Sahyog to start a referral health centre between the villages of Ganiyari and Beltukri in the Takhatpur block in Bilaspur. It has an outpatient clinic with a low-cost pharmacy, a diagnostic laboratory, X-ray and ultrasound facilities. It has also a ward with seventy beds and three operation theatres meant for major and minor surgeries.

In addition, complementary healthcare programmes are run with the help of Village Health Workers (VHWs), who are selected by the community. They provide preventive and curative services in fifty-four tribal villages of Kota and Lormi block of Bilaspur district. These VHWs are trained to address health conditions like diarrhoea, upper respiratory tract and ear infections, pneumonia, skin infections





Doctor attending to patients at a health centre: Reaching healthcare to communities in forest fringe villages (Source: Jan Swasthya Sahyog)

and malaria. They also supervise community initiatives targeting undernutrition, malaria and tuberculosis.

Patient data suggests that undernutrition is the most serious condition afflicting tribal peoples. Since weight and Body Mass Index (BMI) are the prominent indicators of undernutrition, measurements of height and weight have been made mandatory for every person visiting the OPD. When Body Mass Index of patients was calculated, it was much below the standard, suggesting severe cases of hunger. Tribal peoples fared worse.

Severe cases of undernutrition are treated based on initial anthropometric measurements. Also, because half the adult population registered a BMI less than sixteen, they are now provided not only medicines, but also supplementary food.

In remote and isolated forest areas, physical access to basic health facilities is critical to provide treatment in initial stages and lower the incidence of fatalities. To meet these objectives, three outreach clinics—with a team of doctors, laboratory and pharmacy staff—are

run weekly in three different Sub-centres, located up to 60 km off Ganiyari.

These clinics have brought healthcare to forest-fringe villages, home to marginal tribal communities like the Baiga, who often lack access to modern services. At these Sub-centres, individuals can access care for both acute and chronic conditions, and if necessary, they are referred to the hospital for advanced medical care.

Access to healthcare facilities, timely diagnosis and treatment are critical aspects of an effective system. For marginal populations, losing even a day's wages to avail of healthcare services is not viable. So, the same-day care strategy was designed, which cuts both wage losses and indirect cost of care, which is about a patient seeking help from multiple people.

Besides providing rapid diagnostic kits for malaria, Jan Swasthya Sahyog also tried running a slide courier system with the help of school kids to ensure a reliable reporting system and offer advice on treatment method. This helps patients cross-consult at one place and obtain rational care.

Other innovative strategies included providing insulated sleeping bags to underweight newborns. Filled with palm oil in one chamber, they keep the babies warm in the other chamber. Palm oil emits heat as it melts at body temperature, which is helpful for the baby. A crèche programme called Phulwari was also started to address undernutrition in children under three. Crèche children are fed during the day in such a way that 70 per cent of their daily calorie requirements are met. It also provides a safe environment for children, allowing both parents to work and older siblings to return to school.

Jan Swasthya Sahyog has also installed solar refrigerators to store vaccines. It is particularly helpful in remote areas, where grid electricity is sparse and unreliable and storing vaccines is challenging.

At the community level, efforts have been made to provide potable water after on-site bacteriological testing for faecal coliform. Here, the quality of water is monitored through



Village health workers with their new kitbags: Forming patient support groups on issues like alcohol de-addiction (Source: Jan Swasthya Sahyog)

hydrogen sulphide (H<sub>2</sub>S) paper-strip test. An alternative is to use ultraviolet drums to purify water. Drums are battery-operated or require manual cycling.

Jan Swasthya Sahyog has also encouraged tribal peoples to form patient support groups on alcohol de-addiction. Over 200 people in nine forest villages have joined this Self-Help Group. They claim a success rate of over 50 per cent. Jan Swasthya Sahyog's experience has resulted in three main lessons.

Firstly, providing healthcare in remote, socially and economically backward areas can be challenging as even basic services are missing. Unavailability of blood in rural areas often leads to maternal deaths. Having conventional blood banks and blood storage centres is not viable, given the geographical conditions. Licensed and well-regulated use of unbanked blood can, however, save many lives in these areas.

Secondly, people with little knowledge and skills are unprepared to handle emergencies like animal bites by snakes and rabid animals, or stings by scorpions, bees and wasps. Equipping Sub-centres with training manuals can help deal with such cases. Also, what is needed is a full-fledged surgical team, equipped to handle any patient in need of surgery.

Thirdly, however, facilities are not a solution if they are inaccessible. So the role of public transport becomes crucial in these remote and disconnected areas. Similarly, having an emergency helpline number 108 is useful only where cellular network is available, thus ruling out its usage by needy people from remote tribal areas. Interventions in tribal areas can be meaningful only if they can stand up to local challenges.

Healthcare initiatives in isolated and rural tribal areas need to be comprehensive and competent to address the complex challenges locals face, but these need not be exclusive. Integrated programmes with a substantial focus on tribal populations work. Besides, healthcare initiatives can be successful only if these are accessible. In order to make these accessible, they have to be cheaper, user-friendly and effective. The onus of making healthcare cheaper is on the state, which should also push for using low-cost health technologies.

Gujarat

## Mobile Phones Help Fight for Health

*An innovative mobile app helps reduce maternal, newborn and child mortality incidence.*

Dhiren Modi and Pankaj Shah

In the past two decades, Gujarat may have experienced a growth rate higher than the national average with the help of its private sector-driven economic development model, but it still lags behind in overall social development.

While the government has provided health and education infrastructure, marginalized communities in remote areas have little access to these basic services. The Scheduled Tribes (STs), who constitute nearly 15 per cent of the state's population, have been left far behind in this success story.<sup>1</sup>

The Rapid Survey on Children conducted by UNICEF in 2013–14 has revealed that 42 per cent of India's tribal children under five are stunted, which indicates that they are chronically undernourished.<sup>2</sup> The trend persists despite introduction of numerous schemes. Shoddy implementation and lack of monitoring at the grass roots are to blame. Also, not involving tribal peoples in the planning and implementation of schemes that were meant for them has been a mistake.

In an attempt to address the challenges, SEWA Rural, a voluntary development organization engaged in health and development activities in rural Gujarat, has been trying to reach out to the poorest of poor. It designs programmes to address community needs, but at the same time preserves local values and ensures that everyone stays engaged.

Its family-centred safe motherhood and newborn care model is central to its community healthcare programme. The programme focuses on the Jhagadia taluka of Bharuch district in Gujarat. Jhagadia is located in the tribal belt, which stretches along the eastern border of Gujarat. It is one of the most underdeveloped areas of the state where poverty, illiteracy and ill health are prevalent.

SEWA Rural has been working in this area since 1980. It has been successfully running the Primary Health Centre (PHC) of Jhagadia since early 1990s, meeting the target of 'Health for All by 2000', which was a voluntary commitment of countries to attain the goal of health for all on the basis of primary healthcare. SEWA Rural also manages the First Referral Unit.

When SEWA Rural adopted the Jhagadia PHC, over 95 per cent of the children under six were registered under the Integrated Child Development Services (ICDS), which had poor children's health track record. Even the severe protein-energy-malnutrition (PEM) rate was at 16 per cent.<sup>3</sup>

The organization quickly realized that they would have to overcome local factors that made children vulnerable. So, SEWA Rural came up with a range of innovative communication tools. The members used pictorial cards to educate mothers on child nutrition, growth monitoring and weaning.

SEWA Rural explored effective ways to educate people through demos on good nutrition, which opened people's minds to newer and healthier nutritional practices. Alongside, paramedical teams conducted regular health check-ups and screened all the children. High-risk cases were referred to the nearby hospital for timely

treatment. Each little step took time and impacts had to be gauged and measured in several ways. It took years, but the number of cases of child undernutrition decreased.

Under the family-centred safe motherhood and newborn care model, trained frontline workers interact directly with the target population on a regular basis. This network of field workers includes 175 Arogya Sakhis (one per village), 250 Trained Birth Attendants (TBAs), twenty-one link workers (one per eight to ten villages), and seven field supervisors. They are assigned to check undernutrition among young children and can diagnose cases that need hospital care and referral.



IMNCI card being filled up by an Anganwadi worker: Measuring to improve management (Source: SEWA)

Arogya Sakhis weigh all the children under two and record the measurements on a specially designed health-tracking card. The card displays health status (weight and height) as per the protocol of Integrated Management of Neonatal and Childhood Illnesses (IMNCI), which is standardized case management of sick newborns and children. Link workers and supervisors crosscheck the logged records. For moderately and severely undernourished children, doctors conduct check-ups in mobile clinics. Simultaneously, field supervisors use diverse media tools to counsel the mother on the right feeding habits.

Such initiatives cannot function in exclusion and are not just about children and mothers, but the whole community. So one major task is to familiarize the community with the growth chart and show them how it can be used to trace a child's growth status. Also, health awareness camps are held at night when most villagers are available. Maternal and child health issues are discussed with reference to local case studies in camps. All the effort, close monitoring and supportive supervision, has paid off, with undernutrition getting reduced by 10 per cent within a year.

However, it is important to remember that communication is crucial for achieving good results in community initiatives. Communicating effectively to generate health awareness among tribal populations was a tested SEWA Rural strategy. Unless, and until, people were convinced of the impact of the efforts, they would be sceptical.

SEWA Rural based a large chunk of this healthcare service on mobile phone technology called mHealth. This phone application helps community workers like Accredited Social Health Activists (ASHAs) involved in maternal, newborn and child health (MNCH) services provide lifesaving aid, thereby assisting in reducing maternal, newborn and child mortality rates, and checking undernutrition in tribal communities.

The mHealth intervention (ImTeCHO) stands for Innovative Mobile-phone Technology for Community Health Operations.



*Techo* in Gujarati also means ‘support’. Hence, ImTeCHO implies, ‘I am the support’. The ImTeCHO mobile phone application integrates a checklist (to ensure standardisation of services) with regular mobile phone features like the ability to transfer data instantly, and automatically applies an algorithm to the entered data.

The ImTeCHO mobile phone application has proved useful in scheduling and task management. This works because health workers receive alerts on their mobile phones on tasks for the day. The application also promotes healthcare using multimedia. Nine short videos assist ASHAs to counsel on healthy behaviour during their home visits to beneficiaries. Other features show diagnosis and customized treatment plans based on entries made on mobile phones. Also, the ImTeCHO Web interface provides real-time information to medical officers so that timely support and supervision can be



A Village Health and Nutrition Day in progress: Providing health, nutrition and sanitation services at the local level (Source: SEWA)

provided. All this is made possible by using a low-cost phone of INR 4500 (approximately \$70).

Instead of being used as a simple data-collection tool, this technique has made the job of ASHAs easier and more effective. As the application generates automated feedback and suggests next steps based on the entry data, the right remedy and information reach the right person at right time. For instance, on November 2014, Sapnaben delivered at home a baby girl weighing 900 gm against the normal weight of 2.5 kg. Her family informed an ASHA, who entered her observations about the baby using the application. Instantly, the app instructed the ASHA to refer this case to a nearby hospital. However, due to family constraints, the baby was brought home two days later. The helpline and ASHA began a regular follow-up via phone alerts. The app helped educate the family in newborn care. As a result, the baby started gaining weight at home.

The ImTeCHO application has helped improve service delivery. ASHAs and PHC staff increasingly use this application to provide preventive and curative services to pregnant and post-partum women at community level and also treat premature babies and serious infections. It effectively takes care of children under two, especially when it comes to treating diarrhoea and pneumonia.

In every village, ASHAs are the focal point for delivery. They now provide MNCH doorstep service by using mobile phone applications. Everyone—ASHAs, female health workers, PHC staff, including medical officers—benefits as critical information is instantly available on the mobile and Web interface. Since 2013, around 31,500 people from 250 tribal villages, including pregnant women, newborns and children under two have directly benefited from the ImTeCHO project. There is big potential in scaling up this innovation. Targeting more numbers and exploiting technology will be able to ensure large-scale impact and benefit more people. Evaluation of data from the pilot scheme has already given a thumbs-up to the scheme.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> India, Ministry of Women and Child Development, and UNICEF, India. 2014. Rapid Survey on Children 2013.
- <sup>3</sup> The SEWA Rural Experience. Making of a Primary Health Centre. 2003. Available online at: <http://sewarural.org/sewa/wp-content/uploads/2012/04/Making%20Primary%20Health%20Centre.pdf>.

Multiple states

## Interactive Communities, Screening Solutions

*Tech-enabled participatory engagement enables  
exchange of good practices.*

Vinay Kumar

Agricultural extension systems in developing countries are usually costly, slow and ineffective. The extension workers visit villages erratically; they often lack knowledge of local context and the information rarely reaches those who need it the most. The community is not sufficiently motivated to adopt the good practices that are promoted.

To address this gap in agriculture extension, Digital Green was started as a project at Microsoft Research in 2006. The research developed an approach that uses community videos produced by the farmers themselves on locally relevant practices featuring local farmers to promote good agricultural practices. These videos are screened by a local intermediary from the village using a handheld battery-operated pico projector to groups of fifteen to twenty farmers. This approach was found to be ten times cheaper and uptake of practices seven times higher compared to traditional approach. In 2008, Digital Green was set up as a non-profit to scale this approach.

Digital Green partners with public, private and civil society organizations to empower the rural communities to generate and share knowledge on good practices through community videos and other complementary platforms such as mobile, interactive voice response system and radio.

According to Pinky Devi, thirty, mother of three, from Nalanda district, Bihar, the videos helped her communicate good practices to her community in a more effective manner. 'Around fifty farmers in my village adopted the Systematic Rice Intensification method (SRI), and thirty-five farmers started their own kitchen gardens after attending the sessions. This increased their farm output, ensured food security and nutritious food for their families.' Pinky Devi has been part of a Self-Help Group (SHG) since 2009, organized by JEEViKA, State-Level Rural Livelihoods Mission - Bihar.

In October 2012, the Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) project—funded by the United States Agency for International Development (USAID)—piloted a year-long collaboration with Digital Green and VARRAT, a local NGO in thirty villages in Keonjhar district of Odisha, where the infant mortality rate is 49 per cent, well above the national average of 39 per cent.<sup>1,2</sup>

The project tested if the Digital Green video approach could be leveraged to promote maternal, infant and young child nutrition (MIYCN) behaviours and care practices—child feeding, care during pregnancy and hand-washing. The study results were highly promising. Ten locally produced MIYCN-focused videos were shown in biweekly SHG meetings. Over 70 per cent of the audience comprised tribal peoples.

Demand and acceptability of these videos were high among SHG members, their families and frontline health workers. Consequently, the pilot was scaled up from thirty to 140 villages.

In terms of innovation, the organization strategically focused on strengthening the links between agriculture and nutrition. It emphasized on a varied and nutrition-rich diet, while informing rural



An Anganwadi worker explaining the vaccination schedule: A friendly approach  
(Source: Digital Green)

communities about good practices related to care for pregnant or lactating women and their children. The organization linked it with agricultural good practices of multicropping, organic cultivation and livestock management.

Malati Majhi, member of Maa Sunamukhi SHG, is a case in point. A resident of Kothaghara village in Keonjhar district, Odisha, she recalls that she learnt a lot from the videos during her second pregnancy. 'I consulted the Anganwadi Worker, completed the vaccination schedule and regularly took iron tablets. After delivery, I fed the baby first milk within an hour of birth and completed vaccination of my child. I exclusively breastfed my child for six months. Now my child is nine-month-old.' Majhi's first-born had low birth weight and was not growing well as she did not know about exclusive breastfeeding and complementary food after the first six months.

Digital Green leverages videos produced by local communities to drive behaviour change among community groups. It partners

with organizations that have domain knowledge, strong community linkages and reasonable scale of operations. SHG networks of women from farming communities are engaged to share and discuss videos on good nutrition, health and hygiene. As community members star in these videos, they seem authentic. Also, it trains interested community members to shoot and edit informative videos with low-cost video cameras. Then, a community member from the village who is trained by Digital Green in facilitation skills screens them using inexpensive and portable pico projectors.

Three innovative components comprise the Digital Green approach: initiation, production, and dissemination. The first component includes group discussions with community and partner staff. Local intermediaries are identified and trained in video production, screening and data management.

The second component involves producing short videos featuring community members after consulting local community and subject matter experts. Videos are screened to SHGs comprising adolescent girls, young mothers and older women. Trained community members motivate groups to clarify doubts and adopt the demonstrated practices. Each video has an adoption checklist, listing mandatory aspects of the practice, which forms the basis of adoption verification.

This data captured on paper forms is digitized, using the innovative Connect Online, Connect Offline (COCO) data management system that lets users seamlessly toggle between offline and online modes for uninterrupted browsing in regions with intermittent Internet connectivity. This data powers a suite of online analytics dashboard to help monitor and improve programme activities on the ground. Partner organizations deploy these solutions to offer more efficient extension services.

On another front, Digital Green provides access to these videos to a wider global audience through its online video library.

Digital Green's suite of mobile solutions currently comprises responsive Web tools, mobile applications and interactive voice response systems (IVRS). It has also developed a training video course



Community members shooting a video: Creating a participatory learning environment (Source: Digital Green)

in Hindi comprising a set of videos (on how to use a pico projector) and a manual (giving pico model-specific details). An accompanying score-sheet assesses their learning. An Android training application has also been developed to help Digital Green and National Rural Livelihoods Mission (NRLM) trainers hone skills of field agents and evaluate their progress by tracking their enrolment, course completion and accreditation. Application data helps the central training team assess every participant's learning scores and field performances to identify skill gaps and accordingly provide refresher trainings. Also, it allows them to analyse the performance of trainers and pinpoint gaps.

Shifting from paper to mobile-based data collection is significant given the near real-time access it provides—resolving issues faster and maintaining historical data in a more transparent and accessible manner. The impact of the video-based approach has been significant. It has transformed the way NRLM produces and shares knowledge,



as well as how it collects and analyses evidence for its policies and programme at the national, state and local levels.

Digital Green is currently partnering with nine state rural livelihood promotion societies in India—Bihar, Rajasthan, Andhra Pradesh, Telangana, Madhya Pradesh, Odisha, Maharashtra, Jharkhand and Chhattisgarh. From 2008 to June 2016, it has reached over 1 million individuals across 13,592 villages through 4426 videos; 574,222 viewers adopted one or more of the good practices promoted through these videos. In addition, having recently partnered with Jharkhand State Nutrition Mission (JSNM), Digital Green aims to promote good nutritional practices among women, children and adolescents in a project supported by USAID.

It has collaborated with various partners to introduce locally relevant ICT-enabled platforms that include video, mobile, radio and IVRS to interact with the community and create a participatory learning environment. Digital Green's COCO will capture near real-time community data and use it to upgrade project activities. A pilot phase in Patratu block, Ramgarh district, will determine how the project will be scaled to realize the goal of an undernutrition-free Jharkhand.

This Digital Green model has demonstrated that a community-driven and technology-enabled platform can be efficient and more cost-effective than conventional development interventions.

## Notes

- <sup>1</sup> Kadiyala S., Roopnaraine T., Margolies A., Cyriac S. Using a Community-Led Video Approach to Promote Maternal, Infant, and Young Child Nutrition in Odisha, India: Results from a Pilot and Feasibility Study. Arlington, VA: USAID/Strengthening Partnerships, Results, and Innovations in Nutrition Globally (SPRING) Project. Available at: [https://www.springnutrition.org/sites/default/files/publications/reports/spring\\_community\\_led\\_video\\_miyen\\_india.pdf](https://www.springnutrition.org/sites/default/files/publications/reports/spring_community_led_video_miyen_india.pdf).
- <sup>2</sup> The Census of India 2011. Available online at: [http://www.censusindia.gov.in/vital\\_statistics/SRS\\_Bulletin\\_2014.pdf](http://www.censusindia.gov.in/vital_statistics/SRS_Bulletin_2014.pdf).



Multiple states

## Lasting Impact of a Child's Early Years

*Focusing consistently on a child's first 1000 days  
reduces undernutrition.*

Rohini Mukherjee, J.C. Reddy and Manish Raikar

After the 2009 Lok Sabha elections, a group of Parliamentarians, across party lines formed the Citizens' Alliance against Malnutrition and engaged NGO leaders and senior journalists to run high-decibel campaigns to draw attention of those in power to focus on reducing alarming levels of undernutrition among children. The idea was to persuade corporates and civil society to join the battle against child undernutrition. After travelling the length and breadth of the country, speaking to young mothers and Anganwadi Workers (AWCs) and urging local leaders and district authorities to battle undernutrition, the group realized they needed more current data on child nutrition to sharpen focus.

So the Citizens' Alliance Against Malnutrition assigned Naandi Foundation with the task of conducting the HUNGaMA (HUNGER and MAlnutrition) Survey 2011. Naandi Foundation, a public charitable trust, was founded in 1998 with the idea of creating a professionally-run organization managed by eminent business leaders as trustees. The organization was expected to serve as a new





experiment in the socio-development sector of India by partnering with various state governments, corporate houses, international and national development organizations, and showcase successes of delivery of large-scale public services.

When Naandi Foundation collected data on child nutrition, the survey revealed the nutrition status of over 100,000 children and highlighted the voices of 74,000 young mothers. This was the first time that such large-scale data was collected by a non-government entity. It was also the first time since 2004 that district-level data had been reported, demonstrating that large-scale information on child nutrition could be documented, analysed and published quickly (within a year).

HUNGaMA findings as well as other research highlighted that the most crucial period of a child's life—the first 1000 days starting from the womb till the baby is two years old—remains largely neglected in our country, and this perhaps is the key reason for high prevalence of undernutrition. It is over this period that a child's emotional, physical and nutritional aspects develop. What is particularly important to know is that not much can be altered once a child crosses the age of two. The survey findings confirmed everyone's worst fears. In the 100 most challenged districts of the country, every second child was undernourished.

So, HUNGaMA Next worked on programmes that focused on the first 1000 days. In 2012, funded by the Avantha Foundation, Naandi Foundation began the HUNGaMA Next project in one block each in three HUNGaMA focus states—Odisha (Kundra block in Koraput district), Rajasthan (Chhoti Sarwan block in Banswara district) and Madhya Pradesh (Sheopur block in Sheopur district).

As per Census 2011, Scheduled Tribes (STs) comprised 51 per cent in Kundra block (Koraput district in Odisha), 93 per cent in Chhoti Sarwan block (Banswara district in Rajasthan) and 13 per cent in Sheopur (Sheopur district in Madhya Pradesh).<sup>1</sup> And, in all three districts, the prevalence of underweight was very high among children below five years.



Naandi Foundation planned to take about three years—1000 days—to establish a successful template and show early results. Working within the Integrated Child Development Services (ICDS) framework, Naandi Foundation planned to strengthen it in such a way that three years later this template could be integrated into their regular planning and implementation. The project activities were designed believing that if a child remained in the green zone (properly fed) from its birth to two years, half the battle was won.

But, to achieve this, it was imperative that the family understood the child's growth pattern, its determinants and the realistic remedial measures to take. Translating this on the ground, functionaries made monthly home visits to children less than two years old. They measured the infant's weight and put it on the Shishu Vikas Chart (a mini growth-monitoring chart fixed in the child's home) and discussed with the family what that month's weight revealed about the child's nutritional status. Repeated monthly visits trained family members to track the growth of their child and understand what drives it.

Besides, in order to conduct community demonstrations, HUNGaMA Next organized monthly gatherings for mothers of all infants in a village. Different Infant and Young Childcare and Feeding (IYCF) activities were demonstrated here. These community demonstrations ranged from the correct position for breastfeeding to tips on avoiding and managing diarrhoea.

In small groups, mothers were further counselled on various aspects like when to introduce semi-solid food. Like in any group activity, nutrition demonstrations often turned into a celebration with mothers bringing small helpings of food they cooked for their child that day. Each mother got to taste and learn about a variety of meals she could prepare for her child. Also, the Anganwadi Workers (AWWs) got to judge the quality, frequency and nutritional component of those meals.

Using a mobile phone application called HUNGaMA-Jatak, Naandi staff along with AWWs and supervisors recorded and



Health workers explaining the child growth chart to family members: Measuring for improvement (Source: Naandi Foundation)



HUNGaMA–Jatak App on mobile: Calculating the real-time weight data of the child for taking remedial measures (Source: Naandi Foundation)

calculated the real-time weight data of the child and analysed trends to take immediate action.

AWWs accompanied the Naandi Foundation field staff on monthly home visits and learned to take the lead. Various capacity-building programmes were conducted to train AWWs about the importance of the first 1000 days, growth standards, importance of growth-monitoring, IYCF practices and diarrhoea management. Regular refresher sessions were also held during the ICDS sector meetings.

Project HUNGaMA Next showed promising early results with significant and steady increase in the number of children in the green zone. AWCs in the Koraput block showed the best improvement. Banswara needed more time, their baseline figures were much lower than those of other project areas. Across AWCs, the project had a positive impact on nutrition status (weight for age) of under-two children across the blocks.

Across three locations, numbers for severely underweight children have reduced steadily. The AWCs in Koraput also recorded the best improvement in severe grade (August 2015). Even the Banswara AWCs made significant strides to reduce prevalence of severe cases of undernutrition.

The results confirmed that it is possible to not just take most children to the green zone, but also sustain it. This met the programme objective of creating a template that brings down child undernutrition rate to almost zero.

The logical next step, therefore, is to hand over the model together with its components and learnings to the government so as to facilitate its replication for reduction of child undernutrition.

## Notes

- <sup>1</sup> The Census of India 2011. Available online at: [http://censusindia.gov.in/pca/cdb\\_pca\\_census/cd\\_block.html](http://censusindia.gov.in/pca/cdb_pca_census/cd_block.html).



Madhya Pradesh

## Sting Operation to Combat Malaria

*A judicious blend of technical and educational interventions controls forest malaria.*

Neeru Singh

Vector-borne diseases (VBDs) are a group of communicable diseases transmitted by mosquitoes and other vectors. Malaria, Dengue, Chikungunya, Japanese Encephalitis, Kala-Azar and Lymphatic Filariasis are common VBDs in India.

According to the National Vector-borne Disease Control Programme (NVBDCP), about 95 per cent of the country's population resides in malaria endemic areas and 80 per cent of malaria reported is from areas where 20 per cent of the population resides in tribal, hilly, difficult and inaccessible areas.<sup>1</sup>

Generally, the rural and tribal pockets and urban slums are high-risk areas for VBDs, where poor, marginalized and vulnerable groups live with limited access to quality healthcare, communication and other basic amenities.

As far as numbers are concerned, India recorded around 0.61 million malaria cases till August 2016.<sup>2</sup> About 83 per cent of them were reported by nine states—Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Odisha, Uttar Pradesh and



West Bengal. In 2013, 0.88 million cases were recorded, with 128 million tests conducted on the suspected cases, with *P. falciparum* causing 53 per cent and *P. vivax* causing 47 per cent of the infections.<sup>3</sup>

The National Health Mission (NHM) is the government's umbrella body in the country for all preventive measures undertaken under the NVBDCP. Both the Urban Health Mission and the Rural Health Missions, too, work under it. While nationally, there are broad parameters and priorities, states get room to plan and implement state-specific action plans.

Malaria control is complex in Central India as tribal settlements are scattered across vast tracts of forests. About 31 per cent of Madhya Pradesh is covered by forests. A rural agricultural state, it is marked by poverty and underdevelopment. The terrain is highly undulating. Villages crown hilltops or stand on slopes of hillocks, traversed by hilly streams with the state's topography dictating the terms. Hunting, food gathering, primitive agriculture practices and shifting cultivation are a way of life here. Socio-cultural norms and lack of basic amenities add to the situation.

While schools and health centres are scarce, in tribal villages people are mostly illiterate and superstitious. They live in mud, thatched and bamboo houses. The houses are generally dark, damp and often without ventilation. The doors are low and small and most houses have no windows with residents usually sleeping on the floor, without any mattress or blanket.

Sibling species of the anopheles mosquito transmit all malaria in this region. Infesting most parts of the state, *An.culicifacies* is known to rest mainly indoors. On the contrary, *An.fluviatilis* is found mostly outdoors. Though absent in forest villages, it gets trapped in large numbers in outdoor light-trap catches. Both species breed profusely throughout the year in the rocky beds of streams, stream bed pools and seepages. *An.fluviatilis* favours slow running streams and its tributaries.

National Institute for Research in Tribal Health (NIRTH) study data pins 12 per cent of the malaria cases in the state on Dindori



district. This small tribal district is overrun by the anopheles vectors and also the two malarial parasites, *P. falciparum* and *P. vivax*. Even the Infant Parasite Rate (IPR) and Child Parasite Rate (CPR) have been found to be quite high.

Tribal populations find it difficult to sustain on farm produce with infertile soil and lack of irrigation facilities. Six months a year, they go gathering forest foods or bank on forest labour. This constant movement of people makes it difficult to treat individuals and the malaria gametocyte load remains high in communities.

In these forest villages, people frequently spend the night out in the open, where the anopheles is present in large numbers. So, there is a strong possibility of being infected outdoors. It is particularly so because the communities did not use mosquito repellents, coils and bed nets. They were neither aware of nor could they afford such protection.

NIRTH zeroed in on three Community Health Centres (CHCs) in the Dindori district of Madhya Pradesh to study the Baigas, a Particularly Vulnerable Tribe Group. The villages here are very remote, inaccessible and located in forests. Houses are scattered in fields and forests, with no or meagre access to healthcare facilities. Even electricity and water supply are very limited.

The strategies focused on both vector control and prevention. A combination intervention package was designed and implemented to combat malaria in the district. Measures undertaken from 2010 to 2014 included a range of methods including Indoor Residual Spray (IRS) using (Alphacypermethrin, Long-lasting insecticide-treated bednets (LLINs), Artemisinin-based Combination Therapy (ACT), Rapid Diagnostic Tests (RDT), and Information, Education and Communication (IEC) through the Public Private Partnership mode.

The IEC approach was used for health education. Emphasis was on prevention and generating demand for health services in the area. Select children and youth from the villages were trained to be change agents. They then roamed the villages, educating people on

the dos and don'ts for malaria prevention. From each school, five children were chosen. Forty-seven unemployed young men from the village were made para-village facilitators. Collaborating with a Kolkata-based NGO, Banglanatak Dot Com, a series of workshops was organized to train these men to communicate well and handle IEC events.

The data analysis shows drastic fall in malaria prevalence from 27 per cent in 2009 to 2 per cent in 2014 in the project district. Also, the success of the malaria awareness programme during 2011–14 was reflected in the improved utilization of health services.

The Dindori project underlined the crucial role played by IEC and supplies like bed nets. A similar study by NIRTH in the Balaghat district failed to produce the same results and the malaria prevalence rate did not drop appreciably. The absence of IEC and inability to procure bed nets had adversely affected the project outcome.

However, one of the major challenges of working in this area involves staff members, who are unwilling to live and work in remote tribal villages. Limited mobile network in these areas hampers routine communication and disconnects the staff and community from their families and outside world. Inadequate public transport adds to the overall problems. Though roads and public transport provide connectivity to the community health centres, they do not exist for villages. Until the supply chain management improves significantly, workers will feel demotivated and the frontline staff will struggle for medicines and diagnostics every day.

The entire supply chain and procurement of key components need refurbishing. This would enhance performance of workers, assure supply chain management, and make purchases more transparent and timely. Primary and secondary health centres, too, need strengthening. Quality secondary health services must be available within the local district.

Besides encouraging community participation, continuous capacity building drives and refresher trainings for ASHA and Anganwadi Workers (AWWs) are needed. There is an urgent

demand for technical staff in remote areas. For a robust prevention drive, activities of local health workers, malaria control teams and local communities must be coordinated. Also, more IEC activities are required to generate awareness among tribal peoples. Above all, basic connectivity and reliable communication facilities need to be in place for any sustained impact.

## Notes

- <sup>1</sup> Directorate General of Health Services. Ministry of Health and Family Welfare. National Vector Borne Disease Control Programme. Malaria: Magnitude of the problem. Available from: <http://nvbdcp.gov.in/malaria3.html>.
- <sup>2</sup> Malaria: Malaria Situation in India. National Vector Borne Disease Control Programme. Ministry of Health & Family Welfare. Government of India. Available from: <http://nvbdcp.gov.in/doc/mal-situation-aug16.pdf>.
- <sup>3</sup> A Profile of National Institute of Malaria Research. Estimation of True Malaria Burden in India. Pp. 91–99. Available at: [http://www.mrcindia.org/MRC\\_profile/profile2/Estimation\\_of\\_true\\_malaria\\_burden\\_in\\_India.pdf](http://www.mrcindia.org/MRC_profile/profile2/Estimation_of_true_malaria_burden_in_India.pdf).

Odisha

## Particularly Vulnerable Focus

*A range of complementary interventions focusing on the individual improves health indicators.*

Arti Ahuja

Tribal communities constitute 23 per cent of Odisha's population.<sup>1</sup> Historic deficits persist in their socio-economic status. Thirteen Particularly Vulnerable Tribal Groups (PVTGs), with a population of about 8,70,000, which inhabit scattered forest villages, are worse off. Their remote and inaccessible locations impede provision of services. Mosquitoes proliferate in these verdant hilly hamlets. More often than not, they lack access to approach roads, drinking water and electricity. Recurring incidents of undernutrition in these inhabitations indicate an urgent need for basic social infrastructure.

Odisha approaches the social sector with a strong equity focus, which has resulted in a range of schemes designed especially for the PVTGs. Several programmes have been launched in the fields of education, livelihood and provisioning of basic services over the years.

Instead of exclusive and focused programmes, a host of complementary interventions have more impact on health and nutrition indicators. A range of factors like clean drinking water,

adequate and diverse foods, education and age of marriage need to be addressed holistically and not categorized on the basis of departmental silos. Interventions for PVTGs need to transcend departments and procedures to succeed.

Odisha's tribal area plans perceive logically that the person at the end of the intervention is the same. So beneficiaries of one department need not be distinguished from that of another department. That proves that if state policies and schemes are designed with the individual in focus, convergence will flow naturally.

For instance, one of the specific and innovative plans includes the Nutrition Operation Plan (NOP), an evidence-based plan to fast-track underweight reduction in the state. As early as 2010, Odisha implemented NOP for fifteen high-burden districts, comprising predominantly tribal populations. With equity at its core, the NOP set clear objectives, but was flexible when it came to implementation. It devised independent concurrent monitoring for both course correction and providing evidence for policymaking. Also, NOP broad-based a number of interventions to strengthen systems in tribal districts, such as in Integrated Child Development Services (ICDS).

Besides, it focused on community processes such as the Participatory Learning and Action (PLA)-based Shakti Varta with Self-Help Groups and strengthened convergence mechanisms with other departments.

Within NOP was nested the PVTG plan. Combining actions of different departments with specific actions and accountability mechanisms, the plan tried to innovatively solve issues of distance and lack of social infrastructure in PVTG areas.

It united different departments under one umbrella, laying down a concrete action plan with clearly delineated responsibilities. Also, joint interventions and monitoring mechanisms were put into place. Indigenous tribal institutions as well as Panchayati Raj Institutions (PRIs) became stakeholders. Independent evaluation such as the Concurrent Monitoring revealed that tribal groups benefited from these interventions and the uptake of services increased.<sup>2</sup>

Similarly, conditional cash transfer scheme, Mamata, was launched in 2011 to fund improved nutrition during pregnancy. Mamata provides INR 5000 (\$75) in four tranches to pregnant women for the first two live births. For PVTG women, this condition was later relaxed to benefit all births. Given the overwhelming issues facing PVTG communities, it has been a protective, practical and sensitive relaxation.

Intensive interventions like Strategy for Faster Reduction of Infant and Maternal Mortality Rates (2015) were designed for the most vulnerable blocks in tribal areas. The idea was to reduce Infant and Maternal Mortality Rates (IMR and MMR) and undernutrition even in far-flung hamlets.

Service delivery for ICDS, Village Health and Nutrition Day (VHND) and other schemes are generally centred on the most populous hamlet in the village, expecting PVTGs from distant hamlets to walk down with small children to access these services. However, this rarely happens. Also, these schemes expect the predominantly female field staff to climb up and deliver services in scattered tribal hamlets frequently, which is a very difficult task given the area required to be covered.

Population norms for Anganwadi Workers (AWWs) and Accredited Social Health Activists (ASHAs) are partly to blame for this. But the Odisha government decided to reach out to PVTGs in a focused manner. Accordingly, they identified the most vulnerable blocks for making focused intervention. The blocks with the highest vulnerability (fourth degree) were classified as V4. The intervention included providing additional stretchers, transport support for mothers and babies, mobility support for teams for visiting each hamlet, night stays of visiting teams, and conducting joint VHND and malaria interventions. Micro-plans were drawn for these areas and monitoring systems were put in place.

It is well known that doctors are usually reluctant to work in tribal areas. To meet the deficit, as part of Place-based Incentives (since 2015), the state started ranking institutions based on vulnerability of their location. Remote PVTG areas got higher weightage.

A specialist doctor, for example, is given Rs 80,000 (\$1067) extra per month for serving in most vulnerable places or V4 blocks. District collectors receive a corpus fund of INR 1 crore (\$149,254) each to ensure HR availability, including hiring of dormitory accommodation for them. A counselling-based exit policy and cluster-housing proposals were also taken up for these areas. Within a year of these measures, vacancies for doctors reduced substantially in tribal districts.

Most of the tribal districts in the state are malaria endemic. It has been clearly observed in one of the districts that malaria coexists with undernutrition. Underweight children often have asymptomatic malaria, with no fever. But, when tested, they are found to be positive. When treated, these children quickly gain weight.

Any amount of feeding would not help, if the mother or child carries the malaria parasite in their body. So, the state funded and launched Malaria-focused DAMAN (Durgam Anchal re Malaria Nirakaran) Strategy (2016). Under this strategy, interdisciplinary teams have to visit PVTG hamlets before and after monsoons to take preventive action on malaria and focus particularly on women and children.

A number of specific plans and schemes were designed over a period for tribal and PVTG communities. All of these show a strong desire to recognize and address particular vulnerabilities. As poverty reduces to some extent, girls attend schools for longer periods, new roads open up the areas, marketing opportunities become available, and clean water and sanitation make inroads. However, the gestation period for these interventions is long and often insidious.

Too much time elapses before the impact is visible. There is a need to specifically design and take up interventions for adolescents, women and children in order to make a visible impact. The state has walked this talk, and heavily invested its own resources in strategies aimed at tribal districts, more specifically for PVTGs. The base is low, and the effort required is immense. Indeed, the journey to the PVTG land is arduous and difficult—both literally and metaphorically. But

the Odisha example demonstrates that where there is a strong will, the way will be found.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> Odisha Health Sector and Nutrition Plan (OHSNP) 2008–2015: Learning and Options for Future Policy and Strategy. Submitted To The Development Commissioner, Government of Odisha. 2015;2008–15.



## Jharkhand and Chhattisgarh

# Mothers by Choice

*A wider basket of family planning methods empowers women.*

Somesh Kumar

What did Hanna Karketa do when her labour pain started? She walked for hours before she could get a vehicle to reach the hospital. The twenty-six-year-old lives inside a forest in the district of Bano in Jharkhand, a state where tribal peoples comprise 26 per cent of the population.<sup>1</sup>

The road is more than a kilometre away from her hut, which is not an unusual case in such locations where poor infrastructure often cripples people's lives. Mother of a two-year-old boy and a fifteen-day-old baby girl, Hanna says the doctor does not even want to visit when the children are sick. She was sure she did not want another child anytime soon especially with her husband having to be away for work for long periods of time.

Not too far away, in Chhattisgarh, a state that shares its border with Jharkhand, Lata Sahu was married at sixteen and became a mother at eighteen. Within a year, she had her second child and the third followed soon after. More than 30 per cent of Chhattisgarh is tribal—the largest proportion of tribal population in Central India.<sup>1</sup> Statistics from the rural areas show that Lata is not an isolated

case.<sup>2</sup> In fact, close to 35 per cent of the currently married women (twenty to twenty-four years) were married before the legal age of eighteen years; 40 per cent women aged fifteen to nineteen years are already mothers or pregnant; close to 30 per cent women have three or more children; only 46 per cent of births occur after the recommended interval of thirty-six months.<sup>3</sup>

Hanna and Lata are the face of millions of women with an 'unmet need' for family planning. According to the World Health Organization, 'Women with unmet need are those who are fecund (capable of bearing children) and sexually active but are not using any method of contraception, and report not wanting any more children or wanting to delay the next child'.

India has an unmet need of 21 per cent, which is even higher in states like Jharkhand (34 per cent), which has a large tribal population. An analysis of data from India's Third National Family Health Survey (2005–06) found that 65 per cent of women in their first year postpartum have an unmet need for family planning.<sup>4</sup>

It may take time, but things are indeed changing. The nurse at the hospital where Hanna delivered her baby informed her about various family planning methods. She told her about the postpartum intrauterine contraceptive device (PPIUCD)—a reversible yet long-acting method—which could be adopted right after delivery. Hanna convinced her husband and went in for it. Today, Hanna dreams of a bright future for her two children.

Lata, too, was counselled by community health volunteers and after the birth of her third child, she went in for PPIUCD. The fact that it would be effective for ten years and would not require an invasive surgery or a daily reminder made her opt for PPIUCD.

This long-acting reversible contraceptive method has revolutionized the family planning programme. It is a known fact that family planning can avert nearly one-third of maternal deaths and 10 per cent of child mortality when couples space their pregnancies more than two years apart.<sup>5</sup> Though India has one of

the oldest family planning programmes (which was stated in 1952), it was meant to stabilize the country's population with sterilization being the only method in practice. This was also undermining the need of a large section of women who would want another child in future but did not know how to space their pregnancies.

In the last decade, family planning was repositioned as a key initiative to promote maternal and child health, and reduce maternal, infant and child mortality and morbidity.

Additionally, the exponential rise in institutional deliveries to around 80 per cent, largely due to the Janani Suraksha Yojana (JSY)—a conditional cash transfer scheme—brought millions of women to deliver at public health facilities. This provided women with a unique opportunity for the expansion of postpartum family planning (PPFP) services, especially the PPIUCD.

Further, the London Family Planning Summit of 2012 steered the resurgence of family planning, making it a core element in the country's RMNCH (Reproductive, Maternal, Newborn and Child Health) strategy. India made bold commitments, which included ensuring access to family planning services to 48 million additional women by 2020; sustaining the coverage of 100 million women currently using contraceptives; and a financial commitment for family planning to the tune of \$1791 million till 2020.

In view of the existing scenario, since 2006, Jhpiego—a global health affiliate of Johns Hopkins University—has been working with the Indian government at the national and state levels. Opting for a 360-degree comprehensive advocacy strategy, Jhpiego has been speaking not only with policymakers, programme managers, but also professional associations and has used data from other countries to demonstrate how the new technique of providing PPIUCD services is safe with very low rates of expulsion.

Jhpiego's advocacy led to the government's landmark policy decision of allowing nurses to insert PPIUCD on clients who opt for it. With a severe shortage of doctors in many remote pockets, especially in tribal areas, nurses are the only healthcare providers.

Their training in PPIUCD services has opened doors to women from marginalized communities.

Jhpiego has trained close to 15,000 providers in PPIUCD services and several of them have gone to become champions of PPIUCD service delivery. One such champion is Dr Kiran Marandi, fifty, who works at the District Hospital in Lohardaga, one of the poorest districts of Jharkhand. She is from a tribal community herself and wanted to be there for the women from the district, many of whom are also from tribal communities. With 353 villages in Lohardaga and more than 36,000 families living below the poverty line, progress is slow and severely challenged because of the Naxalite (a militant communist group) activity. There are no private hospitals, making residents solely dependent on government-run facilities, especially the District Hospital.

Dr Kiran Marandi and her assistant, nurse-midwife Bindeswari, were trained by Jhpiego in PPIUCD services. She says, 'I had seen too often women delivering at our facility, going back home and returning within six months with another pregnancy.' Part of the reason, she believed, was the fact that the hospital was sending women home from the facility without a family planning option in hand. Bindeswari recalls, 'When we wanted to start providing PPIUCD services at our facility, people would refuse to accept it.'

Lack of knowledge, mistrust for family planning methods and fear of adverse health consequences were major road blocks in acceptance of the PPIUCD. That is when Jhpiego advocated for the need to have dedicated counsellors, which led to success and the government deployed more than a 1000 RMNCH counsellors at high-load delivery points.

Not just counsellors, even frontline health workers and community health volunteers were trained in counselling. Today, India has a strong army of 900,000 Accredited Social Health Activists (ASHAs), who visit families, spread health and family planning messages and partake in community-based distribution of contraceptives in their community.<sup>6</sup>

Serophena Tete, a Sahiya (as ASHAs are called in Jharkhand) working in Gidyatoli, was also trained by Jhpiego. Women like Serophena have the unique advantage of belonging to the same community. They speak the same language and are able to reach out to these women like a friend.

‘They understand that the PPIUCD will not harm them, it will only stay in the uterus and cannot move to any part of the body or cause any diseases,’ says Sister Shiromani Kumari from Community Health Centre, Manoharpur, Jharkhand, endorsing the role played by Sahiyas like Serophena.

With the success of the PPIUCD programme, the Government of India, with technical assistance from Jhpiego and other partners, is now set to expand the basket of postpartum family planning choices beyond PPIUCD. Three new contraceptive options will be on offer, including two oral pills (Centchroman and Progestin Only Pill or POP) and an injectable hormone (Depot Medroxyprogesterone Acetate or DMPA). Having a wider choice of family planning methods will allow many more women in India to take control over their fertility and empower them to have children by choice, rather than by chance.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013;1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> Office of the Registrar General and Census Commissioner, India. Annual Health Survey 2012–5-13. Fact Sheet - Chhattisgarh. 2012; 1–130. Available at: [http://www.censusindia.gov.in/vital\\_statistics/AHS-Bulletins/AHS\\_Factsheets\\_2012-13/FACTSHEET-Chhattisgarh.pdf](http://www.censusindia.gov.in/vital_statistics/AHS-Bulletins/AHS_Factsheets_2012-13/FACTSHEET-Chhattisgarh.pdf).
- <sup>3</sup> Annual Health Survey : 2012–13. Chhattisgarh Factsheet. Available at: [http://www.censusindia.gov.in/vital\\_statistics/AHSBulletins/AHS\\_Factsheets\\_2012-13/FACTSHEET-Chhattisgarh.pdf](http://www.censusindia.gov.in/vital_statistics/AHSBulletins/AHS_Factsheets_2012-13/FACTSHEET-Chhattisgarh.pdf).

- <sup>4</sup> USAID. Family Planning Needs during the Extended Postpartum Period in India. 2009. Available at: [http://pdf.usaid.gov/pdf\\_docs/pnaea344.pdf](http://pdf.usaid.gov/pdf_docs/pnaea344.pdf).
- <sup>5</sup> Cleland J., Bernstein S., Ezeh A., Faundes A., Glasier A., Innis J. Family planning: the unfinished agenda. Cleland, John et al. *The Lancet*, Volume 368, Issue 9549, 1810–827. Available at: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(06\)69480-4/fulltext](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(06)69480-4/fulltext).
- <sup>6</sup> Ashavani, Research Reports. Voices of Women Health Workers in India. Available at: <http://www.ashavani.org/resources-archive>. Accessed on: <http://www.ashavani.org/resources-archive>.



IMPROVING DRINKING WATER AND  
SANITATION SERVICES





Rajasthan

## Water Conservation Nurtures Livelihood Options

*Tribal peoples take charge of their own water management.*

Rajendra Singh

For India's 700-plus tribal groups, constituting about 8.6 per cent of the total population, life is a grim, endless struggle brought about by years of neglect. Dogged by lack of access to basic facilities like water, sanitation, healthcare and food entitlements, healthy life is a distant dream for these communities.

Tribal men and women were highly anaemic compared to other social groups.<sup>1</sup> As high as 66 per cent women are anaemic.<sup>1</sup> The nutritional level of their children is the worst. The deficiency of Vitamin A among children was alarming. High prevalence of wasting in this group is a pressing concern. The reasons are obvious. Tribal communities live on a poor diet, particularly deficient in fruits and milk or curd.

Their situation is compounded by lack of access to safe water. A mere 11 per cent of Rajasthan's tribal households have access to safe drinking water within their premise according to Ministry or Tribal Affairs.<sup>2</sup> Water is either not available or is contaminated by

toxic waste flowing out of large mines that operate amidst many of their habitats. It affects their intake of essential nourishment in the form of vital grains, lentils and milk because plentiful availability of safe water is a must for feeding cows, buffaloes and goats as also for farming.

In tribal dominated districts of Rajasthan, it has been observed that there is a direct correlation between inadequate water availability and undernutrition, which is the cause of most diseases plaguing tribal peoples. Lack of usable water limits livelihood options, leading to migration and displacement of tribal peoples, which deprives children of the care and foods that are available in their traditional environments. It in turn has an adverse impact on their growth. Complicating the issue are market practices that have supplanted age-old dietary and cropping traditions, which are upsetting health of tribal children.

With government initiatives taking their own time to provide drinking water to these habitats, it has become imperative to mobilize communities to enable them to secure access to local water resources through practices like water harvesting.

Starting with Alwar in Rajasthan, Tarun Bharat Sangh, an NGO, has spent about four decades working with rural communities to enable them to revive their traditional ways of life. It has entailed educating villagers to take charge of their own water management, including investing in water harvesting and watershed restoration.

By building *johads* (rainwater storage tanks) and check dams, Tarun Bharat Sangh has been helping people not just collect rainwater, but also replenish groundwater. While *johads* are constructed in the form of storage tanks to collect and store rainwater to cater to the drinking water needs of people and animals, check dams are constructed across waterways.

Check dams have embankments on three sides and the fourth side is left open to allow free flow of water. These check dams are constructed with the voluntary help of local people wherein barriers are constructed using locally available material, including mud

rubble. These earthen check dams not only arrest wastage of water, but also help in improving percolation that in turn helps to raise the groundwater level and prevents traditional wells from going dry during summers. Wells serve as the year round source of water in arid and semi-arid areas of Rajasthan, providing water for drinking and cultivation. Such water conservation efforts have begun to bear long-term fruit, too. The soil is retaining moisture and aquifers are getting recharged, shoring up groundwater level.

Such community-driven decentralized solutions to build and manage water resources have proved to be effective practices. Ushering tribal communities back to traditional conservation practices and cropping patterns has led to disciplined and sustained use of water resources. Rational cropping practices have been encouraged in tribal areas as against blind adoption of new cropping patterns or choice of crops for better market prices. People have learnt to prioritize natural resource development and find their own solutions.



Development of water resources boosts agriculture: Securing livelihoods and nutrition (Source: Tarun Bharat Sangh)



Since 1975, about 4500 johads have been built to store water in villages across eleven districts. Further, rivers like the Arvari, Ruparel, Sarsa, Bhagani, Sabi, Jahajwali and Maheshwari have been also rejuvenated by sealing fractures in their beds to recharge their underground aquifers and constructing about 11,000 water bodies in the river beds.

The development of local water resources has boosted the availability of water and livelihood options in these areas. It has helped tribal peoples diversify and multiply their livelihood options and, in the process, check migration. They have got water for drinking, agriculture and animal husbandry. Cultivation of grains and availability of milk and milk products has enabled them to supplement their nutrition.

The nearby availability of water has also helped uplift the lives of women, who save a lot of time, which was earlier consumed in fetching water from distant sources. It has ensured that mothers have more time to cook and take care of their children, which have raised their nutritional standards, underscoring the fact that water is linked not just to nutrition, but also to empowerment of women in tribal areas.

Going forward, it is obvious that a sustainable environment, which emphasizes on smart management of water resources, needs to be promoted to enable tribal peoples to stay in their habitats and continue to follow their traditional ways of life. Also, mines operating in tribal areas need to be regulated to ensure that they manage their wastes safely and do not pollute surface water resources.

The health of tribal communities and their children is best served when they are able to continue with their own way of life that has survived through centuries. The scarcity of water can be deeply disruptive to this way of life, depriving the communities of their traditional livelihood options and leading to large-scale dislocation with grave consequences, particularly for the health of their children.



## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in)
- <sup>2</sup> Ministry of Tribal Affairs. Annual Report 2015–16. Annual Report 2015–16. Pp. 1–292. Available from: <http://tribal.nic.in/WriteReadData/CMS/Documents/201606060452201526687EnglishAR.pdf>.

Rajasthan

## Creating a Watermark

*Traditional practices and new technologies of water management help fight water scarcity.*

Arvind Ojha

Water is a critical resource for human development and environmental health, particularly in deserts. Over half of the north-western state of Rajasthan is covered by the Thar Desert, which comprises sand dunes, low infertile hills and land that are high in mineral content. The western regions of the state are hot arid zones. Rainfall is erratically distributed and is less than 60 cm a year. Temperatures vary between 48°C and 50°C in summer and fall below freezing point in winter.

Changes in weather patterns during the last century have led to the drought cycle increasing from one good year in three years to one in six years. Some pockets in the Thar remain perpetually drought prone. The state records the lowest rainfall in India, getting half of what the country receives. The average annual rainfall seldom exceeds 60 cm. It ranges from 100 cm at some places to less than 25 cm at others.

The region has suffered severe ecological degradation due to frequent droughts and the absence of a holistic drought proofing strategy. The crisis manifests itself in drinking water scarcity for human beings and animals. Over time, the chiefly pastoral economy

got replaced by agriculture economy, completely disregarding the poor soil profile and exploiting the groundwater system. This aggravated desertification, magnifying scarcity in fodder, fuel wood and food.

The region reels under economic backwardness, environmental degradation and lost livelihoods for local communities. The land use classification reveals that there is less than 1 per cent forest cover. Barren and uncultivated lands account for about 10 per cent, pastures 4–7 per cent and cultivable wastelands go up to 5 per cent. The net sown area is over 60 per cent and most of the agriculture is rain-fed. As demand for water increased, particularly in the absence of regulations, groundwater was overexploited. As a result, it left communities dependent on rainfall for their domestic as well as agricultural needs.

Many desert districts of Rajasthan—Churu, Bikaner, Jodhpur, Jaisalmer and Barmer—not only lack surface water, but even groundwater is saline. The situation worsens during summers and drought is common. Yet Rajasthan never looks or behaves like a classical desert. The secret lies in the way it manages its scarce water resources.<sup>1</sup>

Access to safe drinking water and sanitation reflects the socio-economic status of a household and is also fundamental to the health of its members. Also, safe drinking water is essential for child survival.

Addressing water scarcity is beyond a simple quest for clean water. It is a larger issue, which impacts health, hunger, education and poverty. People are forced to drink poor quality water, often contaminated. Waterborne diseases are common, and diarrhoea is the second biggest killer of children, which is completely preventable.

Diarrhoea accounted for 9 per cent of all deaths among children under five worldwide in 2015.<sup>2</sup> The UN estimates that it is primarily due to lack of clean water. Rajasthan reported 15.1 per cent cases of diarrhoea.<sup>3</sup> Less water also builds up sewage, which breeds mosquitoes that cause malaria outbreaks. Besides when public places like clinics are denied sufficient water for cleaning, it compromises the health of staff and people using the facilities. Children, especially girls, often miss school to haul water from pumps and basins to their homes.



It takes a lot of water to grow food and take care of animals. Experts say, globally 70 per cent of water is used for agriculture and only 10 per cent for domestic purposes. Less water translates into lower yields and loss of livestock. Hunger is constant and quality of life is poor. Vulnerable populations face the brunt of it.

Depending on the government to provide water made them neglect their own water management systems, even in desert regions. Lack of community ownership or a sense of responsibility has added to the growing water crisis.

The Indira Gandhi Canal for Irrigation and Drinking Water did minimize the water crisis in western Rajasthan, but safe drinking water remained unavailable to people staying along the canal. Additionally, waterborne diseases would increase when stagnant canal water got contaminated. The canal was a huge investment in agricultural productivity, but it triggered undernutrition. After getting canal water, farmers preferred growing wheat to traditional grains like bajra (millet), which had high iron content. This altered local diets, and increasingly adolescent girls and women turned anaemic.

With this challenging backdrop, the Urmul Rural Health, Research and Development Trust was set up by Urmul Dairy (Uttari Rajasthan Cooperative Milk Union Ltd.), Bikaner, in 1983. The trust represents a family of organizations working towards bringing about social and economic change in the lives of the people in the harsh, inhospitable and interior regions of western Rajasthan.

Believing in a people-oriented approach, the Urmul Trust organizes communities into groups to restore, build and manage water harvesting systems. Social governance is decentralized as communities manage and implement micro-projects themselves to create social capital.

The Urmul Trust's approach essentially is to respect the traditional practices of water management, while implementing newer water supply initiatives to address the damaging effects of water scarcity.

A water development and management fund has been set up, wherein communities maintain bank accounts to sustain the effort

and ensure maintenance. Further, small community-owned water enterprises have been set up in villages to increase availability of inexpensive and safe drinking water.

The Urmul Trust has adopted a participatory approach in decision-making, which is in sync with its belief that development plans succeed only when beneficiaries are empowered. This instils a sense of ownership and fully vests in users all rights and duties regarding restoration and development of resources, and also brings about transparency in management and sharing of benefits.

In rural Rajasthan, the Urmul Trust is building community-driven models for social development. It devises programmes, strengthens, sustains and finally hands them over to communities. It trusts people to take charge of schemes concerning their food, fodder, water security, drought and disaster mitigation. Focus is on women's empowerment and capacity building. It improves access to basic services, education and early childcare. Child-right issues are addressed, too.

The Urmul Trust engages farmer groups for collective management (harvesting and distribution) of surface and groundwater from wells and percolation tanks. It gives them free rein to determine the water requirement, select sites, make water troughs for cattle, and keep records. The community has to ensure participation of women. Also, it settles all disputes over water distribution.

Water quality is another area of concern. Communities are encouraged to tie up with public and private agencies to access newer technologies in water treatment. Awareness on improved hygiene practices and sanitation facilities reduces health expenditure by limiting waterborne diseases.

Other health hazards arise when people and particularly animals consume brackish water. Groundwater in over three quarters of the villages is high in Total Dissolved Solids (TDS), nitrate and fluoride. Also, women still hesitate to take lead in water management.

In places where the government supplies water, it is generally piped to a water tank in the middle of the village. This supply

remains uncertain. In western Rajasthan, a few families live near the water tank. Most have to walk hours each day from distant *dhanis* (hamlets) just to get water. A few can afford to pay and get their private tanks filled.

So, efforts to build equitable access to safe water resources have been a boon for women. Many women have been saved the ordeal of walking long distances to fetch water. Families now have water even during months of acute shortage. Further, engaging women in community activities has turned the society more inclusive. And small women-run water enterprises have boosted family incomes.

Therefore, one may say, building water ownership should be key in deciding schemes, policies or projects. Community engagement has to evolve as an integrated strategy and roadmaps will help replicate successful models.

Water management efforts work well when community engagement is balanced with government initiatives and modern technology. A core group of the state, engaging communities to design monitor and review on-going and future initiatives, may be the best foot forward.

## Notes

- <sup>1</sup> Mishra A. Radiant Raindrops of Rajasthan. New Delhi: Gandhi Peace Foundation, 1995. Available at: <http://www.indiawaterportal.org/articles/rajasthan-ki-rajat-boondein-book-anupam-mishra>.
- <sup>2</sup> UNICEF Data: Monitoring the Situation of Women and Children. Diarrhoea remains a leading killer of young children, despite the availability of simple treatment solution. October 2016. Available online at: <http://data.unicef.org/topic/child-health/diarrhoeal-disease/>.
- <sup>3</sup> State Institute of Health & Family Welfare. Government of Rajasthan. Child Health: Rajasthan. Available online at: <http://www.sihfwrajasthan.com/ppts/full/Child%20Health.pdf>.

Odisha

## User Ownership Drives Water Initiatives

*When roped in as key stakeholders, rural people pay for better water and sanitation facilities.*

Joe Madiath and Gobinda Dalai

Safe drinking water, sanitation and hygiene are essential for good health. Recurring episodes of diarrhoea and dysentery threaten young lives in particular. Children turn extremely weak when unable to retain any food. Consuming unsafe drinking water coupled with undernutrition often can be fatal.

Aware of such realities, Gram Vikas, a rural development organization working with tribal and marginalized communities in southern and south-western Odisha for over three decades, conducted a survey in 2004 in the state that had 60 per cent of the population below the poverty line.

The survey revealed that out of 4399 households in forty-nine villages across nine districts of Odisha, less than 1 per cent had access to piped water supply. The earlier surveys conducted by the organization in the early 1990s had linked almost 80 per cent of the outbreaks of diseases and deaths in rural Odisha to unsafe drinking water. This could be attributed to a callous attitude towards human waste disposal, which was contaminating water resources.

Absence of sanitation and water supply facilities compelled people to defecate in the open. Also, forced to bathe in the common village ponds, women hesitated to clean themselves properly in the presence of men. Moreover, in summers, communal bathing in turbid waters of a shallow pond would spread skin diseases.

Women walked nearly four to five km daily to fetch water for household tasks. Often, the girl child had to skip school to help fetch extra water, which involved five to six hours of walking. As a result, attendance figures for girl children in rural schools were abysmal.

So, starting with its community-based sanitation and water supply programme in 1992, Gram Vikas set out to improve the quality of life in rural areas. Policymakers have long believed that rural development programmes need only low-cost solutions irrespective of quality. But Gram Vikas's flagship programme of inclusive water and sanitation called Movement and Action Network for Transformation in Rural Areas (MANTRA) demonstrates how a socially inclusive, gender equitable, people-friendly and financially viable model of sustainable and holistic development can be developed. Ensuring that the poor are important stakeholders and not mere beneficiaries of development programmes, MANTRA has transformed over 1200 villages in Odisha. In the process, MANTRA has also proved that rural poor can and will pay for better sanitation and water facilities.

Under this programme, a toilet and a bathing room are constructed for every household with community contribution. The community bears up to 25 per cent of the cost for setting up a water supply system. Piped water is supplied round the clock from a common elevated water reservoir and delivered to each and every family through three taps—one each in the toilet, bathing room and kitchen. Water is pumped up using electricity wherever available. In the absence of electricity, solar power is used. In hilly areas, water is sourced from perennial springs.

The programme advocates that people being primary beneficiaries must pay for their own development. When people contribute



Piped water supply in homes: Helping prevent the outbreak of waterborne diseases  
(Source: Gram Vikas)

substantially, there is a strong sense of ownership for the assets created. While Gram Vikas helps mobilize government resources to buy cement, steel, doors and toilet pans, people contribute with local materials, including sand, stones, boulders and aggregates.

The innovative programme is showing positive changes on the ground. To start with, 24x7 potable piped water supply from a protected renewable water source has ensured around 80 per cent reduction in waterborne diseases. The creation of sanitation infrastructure has given each family access to a quality toilet and a bathing room.

Periodic health camps with programmes for maternal healthcare and immunization, hygiene training, capacity building of local health workers, and training of traditional birth attendants to increase the safety of childbirth at home have contributed to child and infant health.

Also, backyard kitchen gardens, which have been set up around soak pits for effective liquid waste management, have increased livelihood options, food security and nutrition. School-based hygiene

education programmes have led to behavioural change in hygiene and sanitation among schoolchildren.

Gram Vikas includes every single household in this endeavour because if even one family disposes of human waste carelessly, it can defile the quality of water. Thus, the inclusive nature of the programme demonstrates how rural communities can help develop and sustain their own village infrastructure and housing.

In the MANTRA villages, once all the toilets and bathing rooms are constructed and the piped water supply is in place, each family pays a monthly fee fixed by the village committee to help maintain the water supply system and cover the salary of the pump operator. Also, up to two village youths are trained in masonry, plumbing and handling electrical equipment so that they can service the infrastructure independently.

To ensure the success of the initiative, every villager must regularly use the toilet and the bathing room, and also keep them clean. So, village committees have laid down uniform codes of behaviour. Anyone defecating within a km of the village is fined INR 50–500 (74 cents–\$7). A dirty toilet invites a penalty of INR 10–25 (15–37 cents). Weekly or fortnightly, schoolchildren inspect toilets and bathing rooms, clean the dirty ones and collect penalty, which goes to their school fund. These social pressure tactics have ushered in a behavioural change.

A programme in Teranti village is a case in point. Situated in Sankari Panchayat of Keonjhar district in Odisha, this village has sixty-five households comprising a population of 391 (195 males and 196 females). Out of sixty-five families, thirty-three are below poverty line, twenty-four are from STs and three from Scheduled Castes. Their main occupation includes agriculture and daily labour.

In the absence of toilets, all villagers defecated in the open, mostly on the banks of the village pond, using its water for cleaning, washing clothes and even bathing. Animals, too, used the same pond. In summers, when the pond and bore well dried up, women travelled about 2 km to fetch water.



Students washing their hands before eating: Following safe hygienic practices (Source: Gram Vikas)

Though initially hesitant, the villagers ultimately collected a corpus of INR 65,000 (\$970) to invest in quality toilets and bathing rooms and round-the-clock potable piped water supply. Each family contributed INR 1000 (\$15) and those who could afford gave more. Today, the fund has INR 75,000 (\$1119) set aside to subsidize construction of new toilets and bathing rooms, when families grow larger.

The families helped make bricks, collected local rubble and sand and prepared the aggregates. Training the daily wage earners in the village in masonry, Gram Vikas supervised the construction of toilets and bathing rooms, a sanitary dug well and an elevated water reservoir, which has a capacity of 40,000 litres. Each family got three taps, one each in the toilet, bathing room and kitchen, along with potable piped water supply.

The villagers started working on this programme in October 2005, and completed it by February 2008. The local school built



separate toilets for girls and boys, provided running water and included hygiene education in the school curriculum. Today, over 90 per cent girls and 95 per cent boys of school-going age are attending school.

The contributions for building the water reservoir and water distribution system included INR 6,65,000 (\$9925) from the Rashtriya Sam Vikas Yojana scheme, an area specific government scheme for redressal of problems of backward districts. Meanwhile, people contributed 60 per cent of the cost by way of labour, local materials and cash. The local legislator contributed INR 75,000 (\$1119) towards sanitation, and Gram Vikas contributed INR 3000 (\$45) per family.

The impact of the programme has been significant. Incidence of waterborne diseases has reduced by 82 per cent. Over 90 per cent of the eligible children attend school and regular immunization camps are conducted. Moreover, young girls from this village are reluctant to marry boys from villages that lack toilets and running water.

This initiative shows that local communities can manage their local institutional mechanisms and financial resources. Since inclusivity is necessary for the success of such an initiative, it also ensures that the marginalized sections of the community have an equal say in decision-making, implementation and management. Acting as a pressure group against vested interests, everyone also learns to question and hold the elected village committee accountable. Villagers learn to maintain public accounts, organize general body meetings and hold elections. The community-led total sanitation initiative is a successful example of a development initiative launched and sustained with the help of poor people, who contribute in cash and kind in their self-interest as well as for common good.

Gujarat

## From Water Scarcity to Water Security

*Management of water and sanitation systems by user communities ensures their sustainability.*

Siddharth V. Patel

Water, sanitation and hygiene are crucial for not only health, but also achieving nutrition security. Concerted efforts are needed to transform water-scarce areas into water-secure areas. It is also true for most parts of Gujarat, particularly because the distribution of rainfall is very uneven and ranges from over 2000 mm in the Dangs (in south Gujarat) to about 200 mm in Kutch. The past eight decades have witnessed several drought years.

Water scarcity causes many problems that include drying up of water sources, recurrent droughts, repeated failure of tube wells, poor water quality and the need for redrilling in water scarce areas, especially during drought-prone summers, and mass migration of humans and cattle.

Safe drinking water and proper sanitation and hygiene practices are critical for survival as well as quality life. Or else, communities are susceptible to illness and death from waterborne diseases. Women and children are particularly at risk—be it in rural areas, urban slums or displaced populations. Also, in a

patriarchal society, men often get priority when it comes to food and drinking water.

One of the biggest challenges that women and girls face involves fetching and managing water in tribal areas. Hence, water scarcity not only adversely impacts their health, nutrition, hygiene, sanitation, but even education, leading to low attendance in schools. Water, sanitation and hygiene improvements can save much time, which can be better employed in the fields to secure more food. This would enable women, too, to devote more time and energy towards childcare and nutrition. Mainstreaming gender concerns is thus important for fair distribution of water.

Seized of these issues, the government-owned Gujarat Water Supply and Sewerage Board (GWSSB) implements regional water supply schemes; manages filtration, chlorination and treatment for providing safe water; and also supervises water distribution to villages and towns. Another government agency, Gujarat Water Infrastructure Limited transmits water in bulk across the state to the water supply systems operated by GWSSB.

Water and Sanitation Management Organisation (WASMO), set up by the state government as a special purpose vehicle in 2003, works to ensure water availability in rural areas by empowering village level institutions (Gram Panchayats, and Village Water and Sanitation Committees) and local communities to plan, implement and manage their water supply schemes. It also handholds local communities, providing technical guidance and ensuring provision of adequate financial resources for implementing water supply schemes. WASMO acts like a catalyst in developing community-owned and -managed water and sanitation facilities in villages. It aims to create sustainable systems in water and sanitation. This in turn would enhance the quality of life, provide urban amenities in tribal areas, address drudgery and improve services and access.

Following its mandate, WASMO has realized that tribal areas have their own set of problems. The state has a tribal population of about 8.9 million, living in scattered hamlets called *falias*.<sup>1</sup>



Household connection: Making life easier and safer (Source: WASMO)

Villages are typically organized on the basis of castes in various habitations. Villagers usually collect and consume forest produce and live off the sale of roots and non-timber products, and agro produce such as paddy, minor cereals and pulses. Handpumps, open wells and streams are their main sources of water.

WASMO aims to supply safe drinking water to all tribal habitations. In five years, it plans to cover over a quarter of the tribal households and also create a surveillance system that regularly monitors the water quality.

Since the habitations are far-flung and dispersed particularly in tribal areas, the unit of a village for planning the water supply system often proves to be insufficient to meet the needs of all groups. So, individual household has been considered as the unit for coverage and multi-village schemes have been implemented for maximum coverage of affected habitations by strengthening of local sources and convergence with other departments.

For this, setting up a community-managed water distribution system in every habitation with household connectivity has been

the key intervention of WASMO. The community at its discretion decides the operation and management arrangements. Government schemes help train local youth to maintain the machinery.

WASMO helps the village community plan, implement, operate and maintain the intra-village water distribution system. Information, Education and Communication (IEC) activities create awareness for safe water. WASMO partners with the community, NGOs, Self-Help Groups and dairy cooperatives to effectively use traditional knowledge for water management. It helps bridge the knowledge gap among communities, sharing inputs with all on water resource management, water conservation, safe drinking water, hygiene and sanitation issues.

Aiming to improve supply of drinking water through a combination of local and bulk water supply systems and village-level infrastructure, WASMO encourages communities to adopt best practices on local water resource management, including rainwater harvesting. It not only empowers women, but also ensures their participation in the whole process.



Individual rooftop rainwater-harvesting structure: People help themselves (Source: WASMO)

Scattered habitations and undulating terrain render the rural water supply schemes technically and financial unviable. Every household has been connected with a piped water system. The Department for Tribal Affairs, in its 2014–15 budget, allocated INR 40 crore? (\$5.97 million) to WASMO for providing 100 per cent tap connectivity. The department also gives special grants to waive off community contributions in these areas.

Innovative models were tried in areas where regional water schemes seemed less feasible. Besides the household tap water systems, WASMO also established mini-pipe water schemes, rooftop rainwater-harvesting structures (adopted in hilly terrain), individual schemes managed by the community, solar pumping machinery and SAMEEP handpumps, which are designed to cater to the needs of scattered households.

IEC initiatives remain an effective tool for changing people's perception. Continuous, intensive and focused awareness generating activities are, therefore, conducted at the community level. This also helps upgrade skills at various stages of implementation. Popular folk forms are used to communicate effectively.

WASMO emphasizes community involvement and ownership to sustain water security systems and processes. It has made efforts to create alternative sources like piped water supplied from Regional Water Supply Schemes for providing more quantity and improved quality of water, seasonally or perennially. WASMO has also worked to help communities collect and store rainwater close to its place of use and tried innovative techniques to recharge existing schemes for water harvesting. Sources were developed based on water budgeting of 100 litres per head in villages.

WASMO has enabled tribal communities and village institutions to assume technical and managerial roles. Workshops on supply chain linkages have ensured smooth operations. Vesting the Gram Sabhas with powers to elect members of the Village Water and Sanitation Committees was a big step forward.

The programme busted many myths like the community cannot bear responsibilities; villagers are unwilling to contribute

financially; and Gram Panchayats cannot implement construction or maintain fiscal discipline and transparency. Contrary to this, Gram Panchayats augmented their capacity and contributed wholeheartedly to establish systems and implement schemes. Villagers, too, paid willingly for the water supply system, accepting that water is not a free commodity and that the government needed their cooperation.

Rigorous awareness programmes also encouraged people to resolve water conflicts. The biggest myth WASMO broke was that women have no role to play. Instead, women now became central to water management efforts. The entire process instilled faith amongst community, cutting across caste, economic barriers and gender issues to sustain efforts in water management. WASMO's emphasis is on community involvement and ownership to plan, implement and manage local water supply schemes is a recipe for setting up sustainable water and sanitation systems.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013;1-448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).



Chhattisgarh and Jharkhand

## Towards Bottom-up Governance

*Decentralizing governance improves water and sanitation services.*

Alok Pandey

Health and nutrition of a community are closely associated with its access to safe drinking water and sanitation facilities. The Twelfth Five-Year Plan highlighted the need for ‘certain essential interventions’ beyond the commonly understood ‘area of health’.<sup>1</sup> It included, for example, construction of toilets with water facilities in schools.

The 73rd and 74th Constitutional Amendments passed onto local self-governments—Panchayati Raj Institutions (PRIs) and the Urban Local Bodies (ULBs)—the responsibility of mobilizing the community to prepare their annual plans. The District Planning Committees (DPCs) would help Panchayats and Municipalities in their respective districts to prepare draft development plans for their districts for the given financial year. It would thus become the basis to develop the annual plan of that state.

However, as per the Twelfth Five-Year Plan, policy implementation has been poor and can be blamed for the misery of the tribal and rural areas in Bihar, Chhattisgarh, Madhya Pradesh, Jharkhand, Odisha and Uttar Pradesh.<sup>2</sup>





The 73rd Constitutional Amendment Act was followed by Panchayats Extension to Scheduled Areas (PESA) Act, 1996. It sought to empower and mainstream the development of tribal peoples, keeping in mind their cultural traditions and practices. The PESA Act enabled villagers in Scheduled Areas, which have been designated to protect the interests of tribal peoples, to play an active role in addressing their daily issues.

Through PRIs, village communities were empowered to plan for village development, manage natural resources and resolve conflict in accordance with traditional customs. But in the absence of rules to conform to, state governments like Chhattisgarh further tightened their grip over common natural resources, brushing aside people's customary rights. Lack of effective governance at local level and the state's emphasis on industrialization led to land alienation and exploitation of common resources, especially of water, causing much concern in tribal areas of Chhattisgarh.

Similarly, in Odisha (2009–10), local governments in Talcher block of Angul district had drawn up a plan for a pipeline water supply project. But conflict and lack of coordination between the Public Health and Engineering Department (PHED) in urban area and the Department of Rural Drinking Water (DRDW) in rural area frustrated their efforts. The District Planning Committee, too, failed to sort out the issue.

So, it was obvious that water and sanitation facilities could be improved only if existing governance structures, systems and procedures in tribal areas are strengthened and decentralized at three distinct levels—local self-governance, local leadership and merging of existing and other external systems—while managing natural resources in conformity with the PESA Act.

There was a felt need for capacity building, too. Since local governments, particularly those in rural areas, had very limited human and technical capacities, some states aided by the Central government started training programmes to augment capacities of the elected representatives, but they failed to assess needs on the ground.



Testing water for microbial and chemical contamination: A significant step in the quest for safe water (Source: PRIA)

Local governments were unequipped for participatory planning. This was further complicated by departments reluctant to converge, and officials citing technicalities to retain control over their domain.

At the same time, NGOs, too, are working in this space. PRIA (Society for Participatory Research in Area), a non-governmental, non-profit organization working in the field of governance and occupational health, is conducting significant experiments on improving water and sanitation based on local-level planning in Chhattisgarh and Jharkhand. Tribal peoples make up more than a quarter of the population in Chhattisgarh and Jharkhand.<sup>3</sup> Despite having rich resources like land, forests and water, and multiple schemes aimed at tribal welfare and development, their condition is dismal.

PRIA has come up with two models—one in Korba (Chhattisgarh) and another in Sahibganj (Jharkhand). The NGO has

helped five tribal Gram Panchayats in Korba district of Chhattisgarh to develop community plans on water related issues.<sup>4</sup> First, each Gram Panchayat prepared a vision document. Frequent community meets and capacity building programmes were then organized in each Gram Panchayat. Here, various stakeholders shared their individual perspectives to help solve community issues. Finally, the villagers drafted annual plans (2012–13) for their areas. For the next financial year (2013–14), PRIA helped Gram Panchayats approach government departments and corporates for funds. They successfully mobilized INR 1.4 crore (\$208,955) against their total plan outlay of INR 4.14 crore (\$617,910). These funds were used to construct, operate and maintain water resources.

Across Jharkhand, 412 habitations have reported microbial and chemical contamination of water.<sup>5</sup> Even the water and sanitation (WATSAN) status of Sahibganj, a tribal district, is poor. It all stems from a combination of poor governance, weak and nascent



Developing water security plans: Complete community ownership (Source: PRIA)

Gram Panchayat institutions and low community participation. Traditionally, the people of Sahibganj used surface water like ponds and wells for drinking purpose. Now, they draw from bore wells and handpumps. But this water is highly arsenic. As Sahibganj is situated on the banks of river Ganga, the ground water is prone to be contaminated with arsenic. The best solution, thus, remains utilizing surface water in the area.

PRIA asked six tribal Gram Panchayats in this district to develop water security plans. It surveyed the existing community-based water management methods and shared these findings with the district officials.<sup>6</sup> Then different strategies were framed to augment capacities of various stakeholders like the elected representatives of PRIs, Jal Sahiyas (women members) of the Village Water and Sanitation committees (VWSCs), etc. A local cadre base was set up to help PRIs, VWSCs and Jal Sahiyas prepare water security plans. Stakeholders were also trained in technologies like global positioning system (GPS) to help them identify water bodies in the nearby areas.

One of the challenges, however, is that planning is still considered a highly technical exercise. Officials and agencies often make it sound too technical just to prevent people at large from having a say in the planning process. Departments and officials mostly use terms like pre-feasibility report (PFR) and detailed project report (DPR) to protect their domain. This not just restricts people's access to the planning process and services, but also makes the system less transparent and accountable. The top-down approach in bureaucratic functioning compounds the issue. All this limits the engagement of the community in overall governance, creating a huge trust deficit between governments and their citizens.

Despite the fact that the Constitution of India provides the framework for decentralizing the planning process, governments need to take concrete steps to reinforce the constitutional provisions. Meanwhile, issues to be addressed on priority include the need to strengthen the District Planning Committees, especially those in tribal areas. Enhancing capacities will enable them to decentralize

planning and take better decisions for the community. There is also a need to draft and implement rules related to PESA Act so that citizens can increasingly participate in planning. The earlier the state government implements it, the better the results would be.

Conducting activity mapping exercises on priority basis would help devolve functions, functionaries and funds to the local governments. Additionally, though state governments have formed Tribal Advisory Councils (TACs), they need to become more energetic and transparent in order to make an impact.

It is also imperative that planning process terminology is made jargon-free and locally acceptable. It is intriguing to see how people with little interest in tribal development are deciding their issues, citing terms like 'consultation at appropriate level'. There is a need for clarity on such terms before taking decisions on matters like acquisition of land, planning and management of minor water bodies, grant of licence or lease for minor minerals, and resettlement and rehabilitation. In a democracy, the appropriate level should certainly be closer to the community, the Gram Sabha being the best option.

Strengthening and decentralizing existing governance structures, systems and procedures at the local level, as well as managing natural resources sustainably, are imperative for improving water and sanitation services in tribal areas.

## Notes

- <sup>1</sup> GoI. *Faster, Sustainable and More Inclusive Growth: An Approach to Twelfth Five-Year Plan*. Government of India. 2011; 146. Available from: [http://planningcommission.nic.in/plans/planrel/12appdrft/approach\\_12plan.pdf](http://planningcommission.nic.in/plans/planrel/12appdrft/approach_12plan.pdf).
- <sup>2</sup> GoI. *Twelfth Five-Year Plan (2012–2017): Faster, More Inclusive and Sustainable Growth, Volume*. Planning Commission Government of India. 2013. Pp. 1–392. Available from: [http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp\\_vol1.pdf](http://planningcommission.gov.in/plans/planrel/12thplan/pdf/12fyp_vol1.pdf).

- <sup>3</sup> MoTA. Statistical Profile of Scheduled Tribes in India. 2013; 1–448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>4</sup> The 5 Gram Panchayats viz. Chuiya, Dondara, Jam Bahar, Songuda and Sonpuri under Korba district.
- <sup>5</sup> Ministry of Drinking Water and Sanitation. Government of India. Annual Report 2012–13. Available at: [http://www.mdws.gov.in/sites/default/files/AnnualReport12\\_13\\_\\_Eng.pdf](http://www.mdws.gov.in/sites/default/files/AnnualReport12_13__Eng.pdf).
- <sup>6</sup> Ambadiha, Mahadev Baran, Damin Bhita (Mandro block) and Purvi Udhwa, Mohanpur, Amanat Diyara (Udhwa block).



Madhya Pradesh

## Treating Fluoride Toxicity

*Low-cost water filters treat fluoride toxicity and  
save children from deformity.*

Sunderrajan Krishnan and Rajnarayan Indu

A sizeable number of people in India have fluorosis. Though cases have been reported from twenty-four states, the problem is particularly acute in ten states. Caused primarily by drinking water from wells that have high levels of fluoride, it leads to a number of disorders like thyroid imbalance and iodine deficiency, which cause pituitary gland malfunctioning, goitre, intellectual deficiency, amongst many others ills. More importantly, fluorosis causes anaemia in pregnant women.

The most severe effect of excessive fluoride consumption is, however, on bones. Children with fluoride toxicity may get osteoporosis, especially in the long bones. This type of juvenile osteoporosis is rare and is seen only in children who have severe calcium deficiency and live in areas where the fluoride levels are high in both water and food. Tackling such osteoporosis is not easy. It calls for not only checking fluoride levels, but also giving children calcium supplements, along with nutrients, to help them absorb calcium effectively.



Identified first in the 1930s, fluorosis was seen causing severe and crippling deformities in people. In the late 1980s and early 1990s, Dr Tapas Chakma and Dr S.P.S. Teotia observed that skeletal fluorosis was resulting in early-age bone deformities in children. It was not a coincidence that a large number of these children came from tribal pockets of central India.

It is also well known that water-related diseases are aggravated by undernutrition, a condition mostly associated with the poor and marginalized communities in India. It is a disease of poor people of rural society in general. Social factors linked to poverty and nutrition also determine the prevalence of fluorosis—with tribal dominated states reporting the most number of cases.

By 2010, the India Natural Resource Economics and Management (INREM) Foundation, supported by the Tata Trusts, and earlier Dr Chakma, Dr Raja Reddy and Dr A.K. Susheela, were working on a comprehensive approach to tackle fluorosis. To address the range of problems faced by fluorosis patients, they studied the linkages between safe drinking water and nutrition and found that unsafe water and undernutrition was not just driving down the health status of the people, but also creating wider health problems.

The team focused on the tribal communities inhabiting the Jhabua district of Madhya Pradesh. Almost half the population here was living below the poverty line. In 2011, doctors with INREM diagnosed that twenty-three children in two Jhabua villages (Jasoda Khunji and Miyati) had fluorosis. All of them had very high levels of blood serum and urinary fluoride, severe bone deformities and conditions typical in osteoporosis. Local people were found drinking water that had high fluoride content (up to 8 mg/l), while their daily intake of calcium was very low (around 200–250 mg/day). This called for a combined action on water and nutrition.

At the same time, it has been seen that Vitamin C helps the body fight consumed fluoride, and magnesium can detoxify fluoride and help build calcium. The findings led to a Protocol for Action on Nutrition that calculated how much magnesium, Vitamin C and



calcium people should take daily if the drinking water in their area has high fluoride content. Dr Leela Iyengar, Adjunct Professor at Jain University in Bengaluru, also helped design a fluoride removal filter for household use, which she had earlier worked on at IIT Kanpur with the support of UNICEF. Additionally, those water sources that had relatively lesser fluoride were promoted so that gradually people had a more sustainable source of safe water.

All these programmes were built with the aim of providing safe water and better nutrition, the twin pillars of good health. Singular focus on water or nutrition limits the impact. A two-pronged approach was adopted. Water purification filters specific to local requirements were supplied to households, village schools and Anganwadi Centres so that people could access safe water for drinking and nutrition. Also nutrition gardens were promoted so that people could get to eat local nutritious food to check undernutrition.

A community reach-out programme was initiated to usher in behavioural changes relating to water, nutrition and health. During weekly visits to families, functionaries helped solve people's problems and encouraged them to use and conserve safe water resources and get all their nutrition locally from their fields.

A fluorosis mitigation programme promoted several nutritious items such as til chikki (a sweet made from sesame and jaggery) in winters, pharma supplement tablets (containing calcium 1000 mg, Magnesium 150 mg, Vitamin D3 IU 1000 mg and zinc 4 mg) for children; cassia tora (*Chakora*, *Puvadia*) powder for adults (5 mg powder per day containing as high as 4500 mg Calcium and 380 mg Magnesium/100 gm of dried powder) and other nutrient-rich food such as soya, moringa (pod and leaves), dahlia (broken wheat), dried amla (Indian gooseberry) and amla tablets. Also, water filters were modified to suit local needs.

All children under this fluorosis mitigation programme were closely observed—by their parents, teachers, peers and, most importantly, their siblings and the children themselves. Children soon reported some relief from pain, increased vigour and attention,

and general vitality. The visual evidences were more striking—bow-legged children were seen walking straight, those with sword-like legs recovered to cycle, run and lead normal lives.

One particular boy from Jashoda village, Nilesh, who joined the mitigation programme in 2010, had severe fluorosis. His bowed and deformed legs straightened considerably and now he is able to carry on his life with ease. The visual observations in early 2012 were followed by a round of clinical tests, authenticating the former. Nilesh not only looked fitter, his X-rays validated his recovery. His case study was written and published by Dr Raja Reddy and included in the API Textbook of medicine.<sup>1</sup> Similar improvement was recorded for many more children, establishing a case for the safe water and good nutrition approach. When it comes to tackling extreme juvenile fluorosis coupled with problems of undernutrition, this seems to be the way forward.

The Jhabua experience gives hope to many across India who suffer from fluorosis and related symptoms. It tells us to act early if we are to save affected children from a life of deformity and crippling. But, most importantly, constant communication of positive examples showing recovery, as well as those that caution of danger are needed at every juncture of the fluorosis mitigation programme.

Besides promoting the safe water and good nutrition regime widely, there is also a need to encourage sustainable efforts like conserving rainwater and developing nutrition gardens.

Developing nutrition gardens is particularly important because most of the nutritious foods like luni bhaji (purslane), moringa and cassia tora are not being consumed as much as they should be. Simple food preservation drives, especially of leafy material, can go a long way in securing micronutrients such as calcium, iron and vitamins available in such leaves. Local food preservation units that run on quite basic technology can be set up. Also, low-cost water filters that consume less energy and require minimum maintenance need to be developed to make local water fit for drinking.

The most important contribution of this initiative is that a gradual behavioural change is happening in the tribal community, which is now increasingly getting more children out of fluorosis. Since they appreciate the benefits of safe water, they are using safe water sources in the village. A change in food habits has been also observed as they have started consuming fresh vegetables from their homestead nutrition gardens.

## Notes

- <sup>1</sup> Munjal Y P, Sharma S K. API Textbook of Medicine. 10th Edition. India: Jaypee Brothers Medical Publishers Private Limited. New Delhi. 2015

# MEDIA AND TRIBAL CHILDREN



Madhya Pradesh

## Beyond Just Another Headline!

*A nuanced media coverage can trigger change in government policy.*

Sachin Kumar Jain

Tribal health and nutrition are not priority issues for the media. This observation does not come from any irrational bias or casual audacity, but from first-hand experience spanning fifteen years. Working in the regions dominated by the Sahariya tribe in districts like Shivpuri, Sheopur and Vidisha (Ganjbasoda) of Madhya Pradesh has given us crucial insights on how media views tribal nutrition.

In earlier days, the media highlighted that tribal peoples in some regions were dying of hunger, consuming only grass and seeds. What the media mistook as seeds were actually little millets, which are similar to any other grain that people eat. Unaware of tribal peoples' dietary habits, the media called them 'seeds'. Till the 1970s, besides little millets, these tribal peoples consumed significant grains like kodo (millet), bajra (pearl millet), kangni (foxtail millet) and ragi (finger millet). But, for our media, this nutritional diet was simply 'plain' grass and 'insipid' seeds.

When one looks at the coverage of nutrition-related issues of tribal population, particularly by the print media, it presents dismal



statistics related to undernutrition in tribal societies, without raising questions about its deep-rooted reasons. The issues are mostly seen as stories of seasonal disease, systemic loopholes in hospitals, corruption, and lack of facilities or political will to effect changes.

The media needs to look beyond government schemes to explore questions about food security. In this context, it is important to know that for thousands of years, tribal society has been relying on naturally available food resources. A pertinent approach would be to ask what has changed now that the tribal peoples are falling prey to hunger and undernutrition.

A case in point is the Gond tribe. A large percentage of the population in the southern districts of Madhya Pradesh, especially in Hoshangabad, Betul, Chhindwara and Harda, belongs to this tribal group. The Gond palate reflects the tribe's biodiverse lifestyle. The tribal peoples fetch about 262 items from forests, including mahua (butter tree), asparagus, bel (wood apple), chiraunjee (charole seeds), and arjun tree. They use mahua to make bread and rotis, and a drink, and even as cooking oil. While tendu (Asian ebony tree) leaves are rolled into beedis, the fruit is edible. Nirgundi (five-leaved chaste tree) relieves joint pains. Tikhur (arrowroot) strengthens the body and wild ginger helps treat flu. Around fifty-five varieties of forest produce are used to treat over eighty different diseases.

However, an ongoing internal study on the Baiga, Sahariya, Korku, Bharia and Kol tribal communities threw up startling facts. The study revealed that almost 68 per cent of the tribal youth knew nothing about their grains, tubers and green leafy vegetables; these seeds are no longer available.<sup>1</sup> Unfortunately, tribal peoples that don't preserve their knowledge are the ones gripped by undernutrition today. Also, livelihood of these tribal peoples has to reflect their innate needs and lifestyle. For example, despite a bumper crop of soybean, tribal peoples faced protein deficiency. Even today, the Baigas believe in community holdings, but forest laws push them towards private ownership. But can these tribal peoples survive on meagre holdings of one and a half to three acres? Maybe, provided



they get community rights on their natural resources. What we really need to know is how did these so-called backward tribal societies have such a rich cuisine—with nearly 262 food items on their plate? And who moved their food?

The media assigns sizeable column spaces to tribal hunger tales, but remains tight-lipped on the fast-diminishing glory of the innate tribal food security system. Our analysis of 860 stories, op-ed articles and editorials that appeared in the English, Hindi and Urdu Press and news portals, since January 2014, has projected tribal population as one of the most marginalized, deprived and oppressed sections of the Indian society.

The coverage underlined the irony of India having the largest population of tribal peoples in the world, yet overlooking them in its growth narrative. Efforts for their social inclusion are very limited and scattered. Human development indicators for tribal populations remain poor, especially in health, education and status of girls and women.

In 2015, 86 per cent stories related to tribal issues were event-based, relating to atrocities on tribal women and girls and NGO agitations opposing displacement of tribal peoples from their lands. There were some news analysis and op-ed articles apart from some studies conducted in tribal areas. These have linked poverty with dismal human development indicators like health, undernutrition, lower immunization coverage, education, situation of women and also lack of infrastructure in tribal areas. There were some positive stories, too, reflecting the higher sex ratio in tribal areas and their love for nature.

Between 2004 and 2015, 6980 news items, articles and analyses were published in the print media in Madhya Pradesh. Over 300 programmes were beamed on TV. A discerning change in the attitude of the media is emerging. Issues of undernutrition and child health have become central to social policy.

The media has also flagged the issue of nutritional anaemia afflicting tribal peoples, especially women and children. Both rural



and tribal women have heavy workloads and anaemia seriously affects their psychological and physical health. Maternal undernutrition is common in tribal women, especially those having multiple and frequent pregnancies.

But the media failed to dwell on ground realities when it came to implementation of government schemes for tribal populations—like the Tribal Sub Plan (TSP), forest laws and the Panchayats (Extension to Scheduled Areas) Act, 1996 or (PESA Act). It did not even question as to why there were no committed efforts to usher structural changes in the system.

But, in the last few years, many news stories based on surveys conducted by the Integrated Child Development Services (ICDS), National Rural Health Mission and HUNGaMA (Hunger and Malnutrition) and National Family Health Survey (NFHS-4) have highlighted the cause of undernourished tribal children. Vikas Samvad also prepared a comparative, self-explanatory and media-friendly analytical fact-sheet on NFHS-4. And it has already triggered publication of fifty-seven stories in six months—till August 2016—in the state.

One can say that though the media has been alert to chronic and serious cases of undernutrition over the years, yet it has been little interested in genesis of the problem. Even today, newspapers and channels lap up pictures of emaciated children. Besides, a section in the media also feels that tribal activists are in the way of industrial development. But, we forget, tribal peoples got marginalized when their land was acquired for dams, hydroelectric and thermal power plants, mining and expanding mineral-based industries.

The media reports express concern about the industry's rising demand for land and possible amendment of the Land Acquisition Act, which may further alienate tribal peoples from their land and sources of livelihood. Already, tribal communities constitute the largest chunk of internally displaced people, often described as refugees in their own country.



An awareness meeting on undernutrition: Setting the stage for triggering change in thinking (Source: Vikas Samvad)

It is vital to ensure that while the future displacement of tribal peoples does not compromise their identity, it is accompanied by adequate compensation and that robust measures are taken for their rehabilitation. A large chunk of corporate social responsibility (CSR) budgets should be provided for improving health, education and skill development of tribal communities. Only by promoting inclusive models of growth can industry succeed in tribal areas.

The government's thrust on 'Sabka Saath, Sabka Vikas' becomes irrelevant if tribal peoples are not part of India's unfolding growth story and are made to pay for the country's development. The Vanbandhu Kalyan Yojana (VKY), launched recently in ten tribal districts, earmarks INR 10 crore (\$1.49 million) for infrastructure development of each block. Hopefully, it will be a big step forward.

However, it has to be said that even if the media has played a limited role, it has indeed played an important role in highlighting



rampant undernutrition among tribal children and women, and has been pushing issues like dismal human development indicators—based on surveys and international studies—in the public discourse. Also, tribal peoples hardly get to know what is being written about them. It needs to be reiterated that the least we can do is to respect their identity before deciding anything on behalf of them. Nothing can be done ‘on behalf of them unless they themselves decide for it’.

## Notes

- <sup>1</sup> Malnutrition, tribes and media. Sachin Kumar Jain. Available at: [http://www.india-seminar.com/2016/681/681\\_sachin\\_kumar\\_jain.ht](http://www.india-seminar.com/2016/681/681_sachin_kumar_jain.ht).



Multiple states

## Triggering Media to Voice Tribal Issues

*Discourses on tribal children's undernutrition put  
the issue under spotlight.*

Geetanjali Master and Sonia Sarkar

The media is a key influencer in society. It has the ability to initiate important discourses, raise awareness on diverse issues and in the process influence public opinion. It has often played a catalytic role in highlighting important issues related to the lives of children. When the media provides balanced and credible coverage, it empowers the civil society, communities and decision-makers with relevant information to take necessary actions for making a positive difference to the lives of people.

One such experience is that of how the media has highlighted the challenges faced by most of the marginalized communities in the country, particularly on the issue of nutrition for tribal communities.<sup>1</sup>

India has a tribal children population of 11.5<sup>2</sup> million, including 4.9<sup>1</sup> million children who are stunted or chronically undernourished. As high as 3.9 million or 80 per cent of the affected children live in just nine Indian states of Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana.<sup>1</sup>

With this backdrop and on the basis of the evidence gathered on the status of nutrition among tribal children in 2013, UNICEF developed a concrete action plan under the UNICEF #I.Commit campaign to refocus attention and push for affirmative actions for tribal children's nutrition. #I.Commit highlighted promising solutions for improving the nutritional status of tribal peoples and supported respective state governments in implementing programmes in a time-bound manner.

However, with a strong campaign such as #I.Commit in place, there was a critical need to generate a meaningful discourse around it to ensure that it reached the relevant stakeholders, urging them to take actions and this is where the role of media became even more important.

Prior to this campaign, a media analysis was conducted, and it highlighted that nearly 10 per cent of the media reporting about tribal communities was around issues such as deaths of children due to undernutrition. The reports were largely sensational. Mostly, the stories highlighted the prevalence of undernutrition among tribal women and mothers, rather than children. Pertinent issues faced by tribal communities like depleting source of livelihoods, or cultural challenges were largely missing from the mainstream discourse.

This campaign became an important platform for UNICEF to engage with the media in a constructive manner while providing them with opportunities to interact with tribal societies in ten states (Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana) and enabling them to get a sense of the challenges faced by these communities.

A two-fold focus was kept in mind while engaging with the media. One was to bridge the knowledge gap that limits the uptake of the issue in media and the other was the need to delve deeper and lay bare actual barriers that perpetuate the cycle of undernutrition. This also meant focusing on diverse issues related to the issue, including livelihoods, gender and social norms.

This media strategy was put into action by facilitating field visits of over twenty-five journalists to various hard-to-reach areas in the tribal districts, including Kondagaon and Dhamtari in Chhattisgarh. This was an opportunity for the media persons to meet different stakeholders and observe good practices of tribal nutrition, as well as understand their challenges. A number of nuanced, balanced reports on the subject resulted from these visits in publications such as *The Pioneer*, *Hindustan Times*, *Rashtriya Sahara*, *Navbharat Times*, *Outlook* and *IANS*, a news agency. District media houses were also engaged through the network of *Khabar Lahariya*, among others.

Besides, UNICEF also partnered with leading dailies such as *Amar Ujala*, which brought out in-depth stories, in the local language. Strategic partnerships like this ensured that media interest in this issue was sustained.

The results were encouraging. One of the key developments noticed after this initiative of creating an enabling environment in the media around the #I.Commit campaign, was an increase in the media coverage on issues related to undernutrition of tribal children. The outcome was observed both in terms of quantity and quality.

Quantitatively, there was a 25 per cent rise in coverage on tribal undernutrition in the print media after the launch of the campaign. Compared to ninety-two stories on tribal undernutrition in 2014, 116 stories appeared in 2015. The challenge faced was to sustain steady flow of reports, particularly opinion articles, on the subject. Overall quality of coverage improved wherein 64 per cent of the stories touched tribal undernutrition with focus on undernutrition among women. An interesting aspect noticed was that nearly 32 per cent of the articles focused on nutritional needs of tribal children.

Continuous in-depth analysis of the coverage revealed that there is still a gap in highlighting cross-linkages responsible for the prevalence of undernutrition among tribal children. The issues include lack of vaccination of mothers, poor diet and early marriage. Such knowledge is imperative not only to provide constructive inputs

for media stories but also guide policymakers towards promoting holistic programmes.

Going forward, there is also a need to bring in fresh perspectives. For example, there is scope to bridge the gap between the media and anthropologists for better understanding of public health issues related to tribal communities. It would also have a positive impact on the reportage. The trained eye of anthropologists to observe unique tribal traits, both cultural and physical, could be referred to while researching and reporting on such issues.

There is also a need to make research available in local languages, which will equip the local media with data-rich information, enabling constructive discourse and critical appraisal of implementation of programmes.

Finally, there is a need for diverse stakeholders to come together and facilitate holistic and sustained discourse on the issue. The #I.Commit initiative is a positive step in this direction, which can ensure that the marginalized voices from far-off tribal regions continue to get mainstreamed in the media.

## Notes

- <sup>1</sup> Ministry of Women and Child Development, and UNICEF, India. 2014. Rapid Survey on Children 2014. Available at: <http://wcd.nic.in/sites/default/files/RSOC%20FACT%20SHEETS%20Final.pdf>
- <sup>2</sup> The Census of India 2011. Available at: <http://www.census2011.co.in/scheduled-tribes.php>



Madhya Pradesh

## Old Medium, New Media

*Tribal peoples produce and broadcast radio programmes  
based on their own interests.*

Bijoy Basant Patro

The essential difference between community media and conventional media is the way the former defines communication. Community media is a collaborative effort, where audiences as well as informants have important roles to play.

Community radio, which is the most popular form of community media, fulcrums a social process, where members of a geographical community come together not only to identify what they need to know and hear, but also freely participate in designing, producing and airing their own programmes.

Reflecting the needs and interests of its audiences, a community radio station doesn't talk to its community, but makes the community central—linking up directly with listeners, training them, ensuring members of the community decide and take part in how the station is run.

Affordable, low-power transmitters that cover a small geographical area facilitate the process, catering to specific communities—ethnicity, occupation, gender and age—and even interest groups.





This makes community radio communication—also due to its accessibility and easy availability—even more relevant and popular in the developing world. It also knits well with rural, especially tribal, communities where habits and taken-for-granted culture of shared household assets lead to group listening, which is a sine qua non for community-catalysed behaviour change.

Community radio believes that communication is more about ‘being heard’ than simply ‘listening to’ what is said. That is because ‘listening’ (and, by extension, being a good listener), which has been far too long been understood as being fundamental to communication, is going out of vogue. It is partly because listeners have been on the wrong side of the communication equation.

Community radio tries to rewrite this equation by acknowledging that listeners too have a viewpoint. Working thus, community radio has been able to engage listeners in a way no other media could and inviting people to be part of the community that determines the shape of the content to be broadcast, the treatment of its subject, the format of the programme or the timing of its airing. This is the unique selling proposition (USP) of community radio.

Besides, the unique advantage of group listening that such media brings, radio programming performs multiple communication functions like enabling active listening; raising awareness of entitlements, rights and services; informing about events and programme schedules, and even facilitating discussion on the information it provides. Programmes cover a range of topics integrating traditional knowledge with scientific information, which is appropriately repackaged in different formats, and placed in the local socio-cultural context for their audiences.

Since media penetration in tribal dominated areas has been zilch to symbolic in terms of coverage, imposed to perfunctory in nature, and incomprehensible to unfriendly in taste, it eludes the interests of tribal communities because people far removed from the ground

decide most of the content for media. All they want is to deliver a market-driven message to the audience, and to drive this audience to the market.

Community radio thus holds much promise, especially in programming for tribal communities in the country. This is best proved by the number of community radio stations operating in eight tribal pockets of Madhya Pradesh.

Spread across eight districts of Madhya Pradesh, Vanya Radio, as these community radio stations are called, have become great examples of community radio. While the Tribal Welfare Department of the state government has helped set up the infrastructure for these community radio stations, the latter cater specifically to the information and communication needs of tribal peoples in different regions. The stations have also become an effective medium for delivering government's public welfare schemes to the tribal communities scattered over remote regions of the state.



A woman listens to radio in Khalwa, Khandwa: A strong bond between people and community radio stations (Source: Vanya Radio)

Programmes covering a diverse range of topics are aired up to ten hours daily by these central community mouthpieces. Programmes revolve around economic development as well as social and cultural needs of the communities, with locals closely participating in the dialogue. Community radio stations in Bhabhara (Alirajpur), Khalwa (Khandwa), Chicholi (Betul), Sesaipura (Sheopur), Chada (Dindori), Nalchha (Dhar), Bijauri (Chhindwara) and Meghnagar (Jhabua) air programmes in local dialects like Bheeli, Korku, Gondi, Sahariya, Baigani and Bhariya.

The approach to producing programmes is based on their experiences as well as aspirations. For example, programmes link undernutrition with health as well as agriculture. The issue of nutrition is addressed in different ways. It is often a component of health-related issues, which also tie up with farming concerns.

A good example is *Kuposhan* (malnutrition), the signature programme of Vanya Radio, Khalwa. Vanya Radio, Khalwa, was launched to benefit the Korku community that inhabits the area bordering Maharashtra. While the programme discusses problems related to tuberculosis, malaria and cancer, it also shares information on government facilities. Programmes tie undernutrition to health issues facing the community.

Likewise, Vanya Radio, Nalchha's and Vanya Radio, Sesaipura's signature programme *Kheti Kisani* (agriculture and farming) and Vanya Radio, Chicholi's *Kisan Vanyni* (message for the farmer), *Sukhi Jivan* (peaceful life), and *Baat Pate Ki* (on women's health) have gone a long way to address community issues. They have aired essential information, often life-saving, and engaged specialists to prompt real behavioural change in people.

In the process, amateurs turn radio programme producers. Community members, often young men and women, get together to produce a programme revolving around a subject identified by the Community Radio Management Committee (CRMC), which again is a representative body of select community members, actively associated with the radio station.

Such an approach also helps in harnessing local expertise for sharing micro views. Subject matter experts in the nearest institutional set-up help with programme research. Often it is the doctor in the local Primary Health Centre (PHC), the trainer identified by the Anganwadi Worker, an expert recommended by an Integrated Child Development Services (ICDS) official or even the local Community Service/Block Officer (CSO/CBO). Meeting these experts helps the programme team thrash out the key messages based on CRMC's recommendation. A dose of creativity helps decide the programme format (a radio drama, talk show or an interview). Key messages recorded, edited, produced and aired in the local language when heard on household sets become signals of change!

Amateurish packaging strikes a chord with the local community. Recorded in the local dialect of the people, with folk music filling in background sound, there is an earthiness to these programmes. It is this amateurish packaging that works better than the slick format a professional setting in the studio of a commercial radio station or a public broadcaster offers. That is because professionals do not live or work close to the tribal peoples like the community radio stations.

Elsewhere in the country, there are a number of community radio stations that too have experimented with programming. With varying degrees of sophistication, they tackle issues concerning health and nutrition as well as a range of subjects that are usually handled by development journalists in the mainstream media. In Satara district of Maharashtra, Mandeshi Tarang station has produced radio programmes on the subject of nutrition using local art forms that appeal to listeners.

Similarly, another series of experiments on community radio, which was a part of the *Science for Women* project of the Central government's Department for Science & Technology, produced popular programmes on nutrition. Though not broadcast specifically to tribal population, this series reiterated the creative abilities of communities to produce their own radio programmes once they have the key message.

Some stations have gone beyond their mandate in a bid to reach out to their communities. Radio Matoli in Kerala, for instance, has partnered with the Rajiv Gandhi National Institute for Youth Development and distributed radio sets to tribal women.

Communities are reciprocating. In the village of Khuraja, not very far from Radio Vanya in Meghnagar, Jhabua, a young woman, Kalawati, was so overwhelmed after listening to *Baat Patte Ki* programme that she immediately bought a radio set from the market. Mustafa, a local shopkeeper selling radio sets, confirmed that such instances were common. A local journalist in Jhabua reported how villagers were getting increasingly restless because their favourite community radio programme was not on air. A change in the broadcast timings had caused a furore. Such is the romance of community radio in these parts of the country. The trick is to leverage it for larger good.

It is not difficult, given that potential community gains outweigh the ground work required. In its participatory and demand-driven form, community radio is already an extension of the local community, especially because it conforms to local dialects that largely go unnoticed by mainstream radio and other media. When broadcasters of the participatory radio ilk collaborate with government officials, civil society representatives and, most importantly, the local community, it ensures direct linkages, which in turn creates scope for leveraging such assets for addressing development challenges. The way is already laid out. It is now only a question of the will.

Chhattisgarh

## Media and Mobiles

*The Internet and mobile technology enable tribal peoples to voice problems and seek redressal.*

Shubhranshu Choudhary

With the flourishing of democracy, we have slowly and steadily moved away from authoritarian ways of governance worldwide to systems where more people can contribute and control. India, too, has a history of people's movements and progressive parliamentarians. Many people's movements and pro-people political parties have fought alongside the poor and tribal peoples. In keeping with this ethos, India decided to become a political democracy after her independence from the British. Today, every single Indian citizen has an equal say in choosing political leaders.

But our mass communication, which binds the community and helps us decide the type of politics we engage in, continues to be feudalistic in nature being controlled by a handful of elite people. The mainstream media continues to remain very urban with little space or time for the rural, poor and tribal peoples living in forests far away from cities.

This mainstream media—newspapers, radio and TV—also continues to follow a top-down, one-way communication model.

This despite the fact that newspapers, radio stations and TV channels are proliferating in the country.

But it is a little different when it comes to radio. Private radio stations too have been sprouting all over the country, but they are not permitted to broadcast news. India, a nation of 1.21 billion people, has just one radio platform, All India Radio, which covers news. All India Radio is a government platform with little flair for plurality and hardly broadcasts any programmes for tribal peoples numbering 104 million, who speak many languages.<sup>1</sup> Since radio is the only medium having a footprint throughout the country, under realization of its full potential is a lost opportunity for a vast majority of poor and tribal peoples.

Such a media landscape is affecting poor population in general and tribal peoples in particular. Despite growing literacy figures from India's hinterland, most of the poor and tribal peoples can't read and/or write and remain oral communities. Poor and tribal peoples just speak and listen, yet there is barely a public platform where they can speak up. India's flourishing media is either averse to or not mandated to let bottom-up voices ride airwaves.

It does not help that tribal peoples speak a language that the mainstream India does not understand. Even today, it is hard to find a journalist, administrator or police officer who understands a tribal language like Gondi, which is the lingua-franca of Maoists and their supporters and sympathisers.

'Are there any Hindi speakers in the village?' is often the first question a journalist asks when he or she visits a tribal village, oblivious of the question's implication. A Hindi speaker in a tribal area is often a representative of the creamy layer of that society who many a times is seen to misrepresent the lower class of tribal communities, which comprise the majority of the sympathisers of Maoists today. Most of the upper class tribal peoples who speak a mainstream language like Hindi are seen to be with the government and most of the lower class of tribal peoples who do not speak any of the mainstream languages comprise the majority of the extended Maoist community. Maoists themselves have expanded their base and influence by solving the

problem of distance and language by living with tribal peoples and learning their languages.

When aspirations are stirred by democratic polity, but voices remain unheard, problems often don't get solved. Since their voices remain unheard and problems unresolved, one of the collaterals is that tribal peoples are expressing themselves through violence. Most of the supporters and sympathisers of this Maoist-led violence are tribal peoples. This, despite the fact that most of their problems have remedies in the legal and constitutional framework of the nation and should not require any unconstitutional approach as is happening now.

So, it is important to democratize communication platforms where each voice is heard and valued. Lately, however, the Internet is helping break the top-down mainstream media tradition and giving bottom-up voices a space. Today, linking mobile phones and the Internet is helping create a democratic model of communication even in developing areas where the Internet penetration is low. Unlike hierarchical models of mass communication like newspapers, and radio and TV stations, modern communication tools like the internet are democratic, giving voice to large sections of people. This despite the fact that technology is yet to reach a majority of the poor and tribal peoples.

It is this gap that CGNet Swara, an NGO in Chhattisgarh, is trying to fill. It has set up a voice portal that enables ordinary citizens to report and discuss issues of local interest. The objective is to try to improve governance by changing our current communication paradigm with prudent use of available technologies. CGNet Swara is training tribal peoples to tell their stories in their own languages, using their mobile phones. Mobile phone is a ubiquitous tool these days. Most villagers have mobile phones, even if not the signal. It is the new tool for listening to songs and watching movies as well as raising the issues bothering them and seeking redressal. People not only highlight many of their own problems, but even share the phone numbers of officers who are in a position to help on a specific issue.

The working model is simple. When people get a mobile signal they call CGNet Swara to record their messages and songs. Once the messages are recorded, some trained persons from the community cross-check the



messages. They also translate them into mainstream languages (Hindi and English) and create a radio programme out of these messages. Once the programme is ready, it is shared with those who have a smart phone and the internet. The programme is not only in their own languages, but it also addresses their concerns and issues. Village dwellers use Bluetooth technology to transfer audio and video files amongst themselves. They popularly call this technological intervention 'Bultoo Radio' because they find it difficult to pronounce Bluetooth.

Many of the problems raised in CGNet are now getting solved. For example, when Jeetanram from Pahadi Korwa, a primitive tribal community, reported that two pregnant women had died in his village because they could not reach the hospital in time due to poor road connectivity, Suresh Ediga, an engineer based in New York got the story through CGNet Swara's website and also the phone number of the district collector. When he called up the district collector, the latter was very surprised how someone in New York knew about the problems in his district. After a few days he ordered a road to be constructed. Later, an Anganwadi building was also built to help undernourished children. This is not an isolated example.



Tribal women recording messages on a mobile phone: Voicing their issues  
(Source: CGNet Swara)

In this new era, geography is history, and distance is often more useful. Effectiveness of calls from faraway places to government officers is inversely proportional to distance. If you are putting pressure from your village and it is not working, often a distant call works. A call from New York is more effective than a call from New Delhi and a call from Mumbai is more effective than a call from Bhopal.

Now, people don't have to take leave and go to villages to help people, but sitting in the comforts of their homes and offices, they can contribute towards improvement of governance in the remotest parts of the country by making a call or posting on social media. This way tribal peoples can be heard better and urban people can use the internet and mobile to help them find solutions. After Gandhi's Satyagraha (pursuance of truth), maybe it is time for Mobile Satyagraha and Internet Morcha (campaign).

## Notes

- <sup>1</sup> Ashavani, Research Reports. Voices of Women Health Workers in India. Available at: <http://www.ashavani.org/resources-archive>. Accessed on: <http://www.ashavani.org/resources-archive>.



# PEOPLE, POLITICS AND BUDGET





Multiple states

## #I.COMMIT

*Public advocacy to reclaim affirmative nutrition  
action for tribal children*

Vani Sethi, Geetanjali Master, Sonia Sarkar and  
Idhries Ahmad

In India, 4.9<sup>1</sup> million of the 11.5<sup>2</sup> million tribal children suffer from stunting or chronic nutrition deprivation. Furthermore, 80 per cent of the 4.9 million tribal children who are stunted (3.9 million) reside in just nine states of Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana.<sup>1</sup> These nine states are also the states that are covered by the Fifth Schedule of the Constitution and have borne the brunt of displacement, poverty and food insecurity. It is obvious that the pathway to accelerate efforts to reduce stunting in India is to increase focus on tribal children.

It is well known that child stunting has three broad underlying determinants of food, health and care. Achieving optimal nutritional status is possible when children have access to affordable, diverse and nutrient-rich food; appropriate maternal and childcare; adequate health services; and healthy environment, including safe water and sanitation. This demands multisectoral coordination and for each



of these causes to be addressed at least six ministries have a direct role to play. But the main causes for stunting in tribal children, and how do these differ from those of non-tribal children are not known. The convening power of the Ministry of Tribal Affairs (MoTA) to accelerate coordinated action and budgets for health and nutrition services in tribal areas with respective line ministries often remains untapped.

It is known that the universal coverage of tapped proven nutrition interventions can reduce stunting during the 1000-day window of opportunity—conception to first two years of a child’s life. These interventions range from preventing pregnancies that are too early, too many and too soon; providing adequate micronutrients; initiating breastfeeding within an hour and exclusively for six months; complementary and age-appropriate food for infants; providing immunization and Vitamin A supplementation with deworming tablets; and therapeutic feeding and access to safe drinking water. But which of these interventions are the most critical for tribal children are often not analysed.

While UNICEF earlier focused on universalizing effective nutrition interventions, there was a felt need to make extra efforts to reach the children belonging to the vulnerable tribal communities with differentiated strategies.<sup>1</sup> Also, when we compare the overall annual rate of reduction (ARR) in child stunting over the last eight years, these nine states have seen a significant ARR in child stunting and it is higher amongst tribal children.<sup>1</sup>

Hence, in April 2013, UNICEF started the #I.Commit campaign, an evidence-based public advocacy initiative to re-focus attention and reclaim affirmative nutrition action for India’s tribal children.

The first step was generating the evidence where we analysed data pertaining to tribal children between zero to fifty-nine months old residing in rural areas of eleven Indian states (Assam, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, West Bengal and undivided Andhra Pradesh), which are home to 90 per cent of India’s tribal population.<sup>2</sup>

We conducted multivariate analysis of the Third National Family and Health Survey with analytical sample of 1606 tribal and 6108 non-tribal children; desk review of published and unpublished literature on constitutional provisions, policies, national and state government programmes of six related ministries and programmes of fifteen NGOs; and interviews with thirty-two tribal think tanks/practitioners.

It was found that severe stunting was nine percentage points higher in tribal than in non-tribal children (29 per cent vs. 20 per cent) and it was the main reason for the nine-point difference in overall stunting (HAZ <-2) between both groups (54 per cent vs. 45 per cent). Significant predictors of severe stunting included child's age, birth order and gender, maternal factors (maternal stunting, age, pregnancy interval and illiteracy) and household poverty. Also, infant feeding and sanitation were poor overall and the distance from health facilities and opportunity cost losses were reasons for not availing services of healthcare services. It was also found that programmes for tribal peoples were not constrained by budgets, but these were simply not need-based. 'Nutrition' activities were being missed out in tribal and allied sub plans, and weak inter-sectoral coordination existed as an underpinning throughout. Overall, nutrition data on tribal children was scarce and nutrition schemes that trickled down often overlooked the fact that nutrition cannot be decoupled from poverty and poor legislative enforcement for protection of tribal rights.

We realized that for addressing stunting among tribal children, the focus on scaling up proven nutrition interventions in the first two years of life and maternal nutrition becomes even more critical. Programmatically, emphasis was needed on some key factors. These included making 'nutrition of tribal children' a political and bureaucratic priority; supporting inter-ministerial coordination and accountability for tribal nutrition-sensitive plans and budgets; strengthening Integrated Tribal Development Agencies (ITDAs); coupling livelihood generation with nutrition promotion; partnering with federations of Self-Help Groups, and grass-roots and faith-



based organizations; and figuring out disaggregated tribal nutrition data. Importantly, the core reasons fuelling poverty and hunger in tribal peoples also needed attention through strict vigilance against poor legislative enforcement to protect their land, forests and administrative autonomy, and by investing in tribal leadership and employment.

Soon, after a year, the next step during April to July 2014 was to take forward the evidence of the UNICEF report on 'Nourishing India's Tribal Children' through #I.Commit's series of advocacy, programming and partnership efforts. Firstly, as household poverty emerged as the key predictor of stunting in tribal children, a new partnership was forged with the Ministry of Rural Development's poverty alleviation programme under the 'Swabhimaan' initiative to avoid stunting—in-utero—by focusing on improving women's nutrition in the phase of preconception and during pregnancy.

Secondly, headway was made with MoTA for inter-ministerial coordination on the issue of nutrition of tribal children. States started advocacy in one-to-one meetings with Scheduled Caste/Scheduled Tribe departments, through several meetings and letters, at all levels. Drawing inspiration from the active Scheduled Tribe departments of Andhra Pradesh and Maharashtra, states like Chhattisgarh, Odisha, and Rajasthan initiated dialogue on nutrition as well. Unlike in the past, nutrition now started featuring as one of their key discussions.

Thirdly, efforts to overcome the media blackout of tribal nutrition, which was one of the findings of the research, were made for continuing national public advocacy with the print, social and electronic media. This was done through the following activities: i) highlighting the problem and solutions with a no-cost collaboration with the Seminar magazine in two special issues ('The Malnourished Tribal', September 2014; and 'Nourishing Tribals', May 2016);<sup>3</sup> ii) eleven advocacy films, on promising practices and viewpoints of tribal think tanks on solutions to address stunting among tribal children, were made available on online public forums; iii) journalists were facilitated to make field visits to states that have undertaken

initiatives to improve the quality of nutrition programmes in tribal areas; iv) partnerships with leading dailies like Amar Ujalato bring out in-depth stories to ensure the interest in this issue were sustained; v) op-eds on the issue were published in leading national newspapers; and vi) the Web link on UNICEF's website capturing the action so far was also made available. These advocacy films, briefs and messages on media platforms through influencers, practitioners and frontliners across social, print and electronic media all helped trigger a periodic discourse in the public domain to prompt leadership, especially in MoTA, to be proactive.

Fourthly, in January 2015, UNICEF collaborated with MoTA held a national conclave on 'Nourishing India's Tribal Children'. It was organized along with five ministries: (i) Ministry of Rural Development; ii) Ministry of Public Distribution and Civil supplies; iii) Ministry of Health & Family welfare; iv) Ministry of Women & Child Development; and v) Ministry of Drinking Water and Sanitation); and the Prime Minister's Office. The two-day conclave brought together nearly 300 practitioners, frontliners, academics, civil society, policymakers, media and legislators. They took stock of the nutrition situation of tribal children belonging to the nine states with Schedule Five blocks, where the child stunting numbers are the highest to discuss 'what works and how' and how departments of various states can coordinate, contribute and collaborate to address nutrition challenges in tribal areas. The National Conclave was followed by a State Conclave in five of the nine states.

During 2015–16, some states have developed action plans of universalizing hamlet-based crèches (Chhattisgarh) and initiated programmes for preventing stunting at birth by focusing on women's nutrition before and after pregnancy in (Chhattisgarh and Odisha) and initiated spot feeding programmes for women (Madhya Pradesh and Chhattisgarh).

Besides, expanding partnerships beyond traditional ministries has been explored, such as the Department of Agriculture and Rural Development to link nutrition promotion with food security issues.

In addition, engagement with the judiciary and the Parliamentarians Group for Children on tribal nutrition issues has been initiated.

In summary, our work through the #I.Commit campaign has helped us learn how to accelerate coverage and quality of nutrition services and entitlements for tribal children and their mothers using three approaches, which we feel are promising and merit a try:

- Strengthening tribal focus in existing nutrition programmes of line ministries like Health & Family Welfare and Women & Child Development: It is done through special strategies and missions for improving reach and quality of services in tribal areas and supporting budgeting and monitoring of tribal nutrition services within existing annual plans of these ministries.
- Emphasizing on ‘nutrition focus’ in ministries like MoTA and Ministry of Rural Development and Panchayati Raj to address root causes of undernutrition in tribal children. This is an effort to link nutrition promotion and service provision with food security and poverty alleviation schemes, and influence nutrition governance in tribal areas through MoTA.
- Continued evidence-based public national discourse using tribal disaggregated data and information to stir pressure via media, think tanks, tribal alliances and Parliamentarians Group for Children: It is to position nutrition of tribal children as a political and bureaucratic priority so as to influence governance and accountability for improving nutrition of tribal children.

#I.Commit has helped us look at new opportunities and partnerships with new optics wherein we learn as we try keeping our focus on ushering services and entitlements for the youngest, poorest and most vulnerable, which is a moral obligation—right in principle, right in practice.

## Notes

- <sup>1</sup> Ministry of Women and Child Development, and UNICEF, India. 2014. Rapid Survey on Children 2014. Available at: <http://wcd.nic.in/sites/default/files/RSOCpercent20FACTpercent20SHEETSperscent20Final.pdf>.
- <sup>2</sup> The Census of India 2011. Available online at: <http://www.census2011.co.in/scheduled-tribes.php>.
- <sup>3</sup> The Seminar. Monthly Symposium. Version 1 November 2016. Available online at: <http://www.india-seminar.com/semframe.html>.

Multiple states

## Today's Parliamentarians Focus on Tomorrow's Children

*The Parliamentarians' Group for Children aims to  
put tribal nutrition on the national agenda.*

Ninong Ering, Purvi Malhotra and Astha Alang

Acknowledging that children are tomorrow's demographic dividend, a group of like-minded, senior Parliamentarians joined hands to form the Parliamentarians' Group for Children (PGC) in August 2013. Currently, the group has an active membership of thirty-three MPs and MLAs. As leaders of constituencies and representatives of different political parties, PGC members recognized the need to keep in mind children while making laws and policies.

The primary vision of the PGC is to champion children's causes on the floor of the Parliament and outside. To that effect, the group facilitates a wider exchange of views and fosters opportunities for learning from promising practices and successful models that can be replicated in their respective constituencies and elsewhere.

The PGC also aims to mobilize positive action towards the implementation of the National Policy for Children, 2013, and highlight the responsibility of every state actor, public functionary and community.

Since its launch, the members of the PGC have been engaging with people's representatives at all levels of governance—national, state and constituency levels, including the Panchayati Raj Institutions (PRIs)—to advocate for better policies for children. In order to understand and demystify the issues of children for itself, PGC invited UNICEF India as a technical partner to help members get access to specialist knowledge and advice, practical experiences and learnings through promising practices from across the globe.

During the past year, the PGC has taken some significant strides like organizing three regional meetings that have motivated members across parties to take up initiatives for children in their constituencies and states. The group has focused on issues related to sanitation, open defecation-free communities, maternal and child health, Amendments to the Child Labour Amendment Bill (Prohibition and Regulation), 2012, disaster risk reduction and, most importantly, undernutrition in tribal communities.

While the primary vision of the PGC is to champion children's causes, it has formed a subgroup on tribal nutrition. Most of its members are MPs from tribal dominated states like Chhattisgarh, Jharkhand and Madhya Pradesh. The members of PGC, who are part of the tribal nutrition subgroup, have met twice since its inception in 2015. Taking recommendations forward from previous meetings, regular work plans for the PGC are drawn up. Their progress is monitored in the larger group.

The subgroup facilitates a wider exchange of views and fosters opportunities for learning from promising practices and successful models for improving nutrition among tribal children that can be replicated in their respective constituencies and elsewhere, too.

For instance, Nand Kumar Sai, a Rajya Sabha MP from Chhattisgarh, recently proposed to showcase schemes meant for tribal children in his region to other leaders through a study tour to address the issue of undernutrition and facilitate better understanding of the ground realities.

Four more MPs joined in—Chhaya Verma (INC), Heena Gavit (BJP), Husain Dalwai (INC) and Lakhan Lal Sahu (BJP)—and took part in the two-day study tour to Chhattisgarh, organized by PGC with the technical support of UNICEF.

The MPs were visibly impressed by the Jan Swasthya Sahyog (Health Care for the People) model, which is being implemented in Ganiyari of Bilaspur in Chhattisgarh. Jan Swasthya Sahyog is a collective of professionals and workers engaged in health programmes in tribal dominated states of central India.

The study tour helped the MPs to appreciate the need to focus on policies to address undernutrition in children under three and also pregnant and lactating mothers. They also saw merit in developing a programme that ensures a full meal for pregnant tribal women to prevent low birth weight. They understood the multisectoral nature of nutrition and felt the need to have a mechanism of convergent actions.



MPs on a visit to the Jan Swasthya Sahyog project site in Ganiyari, Bilaspur: Getting first-hand experience (Source: UNICEF India)

The MPs appreciated the key roles played by the local governments and civil society organizations engaged in the task of addressing these challenges and aiding in the reduction of chronic undernutrition among children.

Some of the schemes for the benefit of tribal children in Chhattisgarh generated immediate interest among the group members. These schemes included:

- **Nawa Jatan:** The scheme focuses on identifying moderately and severely underweight children through supervised weighing carried out by trained health professionals.
- **Wajan Tyohar:** The weighing festival records weight of children to assess the situation of undernutrition and its impact on children and address it.
- **Mahtari Jatan:** The scheme focuses on providing a hot meal as spot feeding for pregnant women in Anganwadi Centres to prevent the cycle of undernourishment.
- **Mukhyamantri Bal Sandarbh Yojana:** It provides for medical check-ups and, if needed, reference to Nutritional Rehabilitation Centre.
- **Sneh Shivr:** The initiative organizes special camps for saving children from undernutrition.

Besides, the PGC members are also tapping into global practices. Earlier, a few members of the PGC participated in 'The Power of Nutrition for Development: The Role of Parliamentarians', a regional event organized by UNICEF a day after the Inter-Parliamentary Union (IPU) Assembly concluded in April 2015 in Hanoi, Vietnam. Parliamentarians from East and South Asia participated to enhance the understanding of issues related to undernutrition, stunting and early childhood development and to pay particular attention to Parliament's role in addressing the health of young children.

The event was also an opportunity for deeper understanding and rethinking on the differential programming strategies, budgets and



government accountability mechanisms. Interactions gave a sense of how to budget for this population and how to monitor the situation at the state, constituency and national levels.

Now, the PGC plans to undertake the following steps in the near future. It would begin with regularly visiting marginalized regions to understand the ground realities and organize briefing sessions on tribal nutrition to spread awareness. It would be also taking measures to press for legislation and legal entitlements to ensure provision of nutrition to tribal children. Monitoring for better implementation of existing legal rights and entitlements of tribal communities would be undertaken to facilitate proper accessibility.

There would be advocacy for adequate budgetary allocation for tribal nutrition programmes. As many states, instead of ensuring additional resources as top-up in tribal areas, switch the state allocation with the central allocation, keeping the overall quantum of funds almost unchanged. It would help in monitoring of resource allocation from the Centre to the states so as to concentrate on the worst-hit states.

Leadership in states and constituencies would be mobilized and motivated to work towards the goals of improving tribal nutrition. Attempt would be also made to influence the allocation of resource support from the Member of Parliament Local Area Development (MPLAD) fund to community-based tribal nutrition and care centres. Existing government mechanisms would be encouraged to have countrywide tribal nutrition data. The members would individually also complement the whole process by supporting and accelerating community-based nutrition and day-care centres in their respective constituencies.

Even though improving 'nutrition of tribal children' is under the bandwagon of the larger nutrition programme, it needs to be looked at separately and specifically. Only then will it find space in the development dialogue. Currently, there is no prioritization of tribal undernutrition within the larger nutrition programme. This lens of 'last child first', where one targets the marginalized first,

has had prior success in programmes related to health services and immunization. It would be the lens to wear when accelerating these multisectoral commitments for improving nutrition of India's tribal children.

The PGC and its subgroup on tribal nutrition represent an important platform, where Parliamentarians across party lines collectively commit to voice both on the floor of Parliament and in their respective constituencies that tribal children have equal chances to develop and grow to their full potential.



Andhra Pradesh

## Positive Discrimination for Equal Development

*Affirmative actions bridge the gap between tribal peoples  
and socio-economically advanced groups.*

Vadrevu Ch Veerabhadru



Andhra Pradesh has been a pioneer in the sphere of tribal development. Comprising approximately 6 per cent of Andhra Pradesh's population, Scheduled Tribes (ST's) with their poor socio-economic conditions inhabit districts like Srikakulam, Vizianagaram, Visakhapatnam, East Godavari and West Godavari, which come under Scheduled Areas.<sup>1</sup>

Taking note of their dismal state of affairs, Andhra Pradesh became the first state in the country to operationalize the Tribal Sub Plan (TSP) by allocating certain proportion of state plan funds for tribal development during the Second Five-Year Plan. The state began by allocating 2 per cent of plan funds for tribal development.

The Government of India itself launched the TSP strategy from Fifth Five-Year Plan onwards in 1975. TSP has two main objectives, which include improving the socio-economic conditions of tribal peoples by strengthening of infrastructure in tribal areas, as well as



protecting and promoting interests of tribal peoples through legal and administrative support.

Both the Government of India and the erstwhile Planning Commission had suggested that funds in each Annual Plan be earmarked to accelerate socio-economic development of Scheduled Tribes (STs) and Scheduled Castes (SCs) through TSP and Scheduled Castes Sub Plan (SCSP). The aim is to bridge the gaps in the development indicators for SC/ST groups and socio-economically advanced groups.

The Andhra Pradesh Cabinet sub-committee, constituted in 2012, reported that the state had failed to achieve this objective. Tribal communities continue to languish in abject poverty not only in Andhra Pradesh but other states as well. Lack of vision, proper planning and monitoring are to blame. Also, fund allocation has not been proportionate to population and has frequently got diverted or remained underutilized. Hence, the committee recommended legislation.

Thus, the Andhra Pradesh Scheduled Castes Sub Plan and Tribal Sub Plan (Planning, allocation and Utilization of financial Resources) Act, 2013, came into effect, with the intention to accelerate development of SCs and STs geared towards equality in ten years. It planned allocations proportionate to the SC/ ST population in the state and set up effective institutional mechanisms to implement performance-based awards and penalties.

A nodal agency was constituted for the TSP where District Monitoring Committees (DMCs) were set up for gap analysis, planning and implementation. DMCs would review, monitor and coordinate, ensuring transparency and accountability, and facilitate social audits, third party physical verifications and prepare annual reports as part of the implementation of the TSP.

All state departments were allocated around 7 per cent of their planned budget for tribal development programmes and, after state bifurcation in 2014, the Andhra Pradesh government has allocated 5.53 per cent of state plan resources for this purpose. Areas of tribal concentration were marked and nine Integrated Tribal Development

Agencies (ITDAs) were established. Besides, four Modified Area Development Approach (MADA) pockets and six clusters were added. Twelve out of thirty-four tribal groups were identified, which included seven Particularly Vulnerable Tribal Groups (PVTGs). The tribal peoples outside the purview of ITDA, MADA, and Cluster were then classified as Dispersed Tribal Groups (DTGs).

In terms of innovative approaches, the programmes include those implemented directly by Tribal Welfare Department and those implemented by line departments under TSP. The Tribal Welfare Department directly implements programmes on residential education, support to PVTG mothers and children under Comprehensive Child Development Programme (CCDP). The line departments implement programmes related to women's welfare and child development, school education, National Rural Health Mission (NRHM) and the Sarva Shiksha Abhiyan (SSA).



Mid-Day Meal being served: Improving the nutritional status of schoolchildren (Source: Tribal Welfare Department, Andhra Pradesh)

Prioritizing education, the state supports eligible children from poor tribal families and provides universal access to education up to upper primary level in tribal areas. It has set up Girijana Vidya Vikas Kendras (tribal welfare primary schools), Maabadi (alternate schools), integrated hostels, Ashram schools and residential schools, along with various scholarships (both pre- and post-matric). The line departments focus particularly on the Mid-day Meal programme, Integrated Child Development Services (ICDS) and the Giri Gorumuddalu, a programme designed to address severe undernourishment among tribal children.

Andhra Pradesh has strong ITDAs, with even the monitoring of ICDS under them. The state government has built strong institutional mechanisms and is known for good practices like single-line administration in tribal areas and the appointment of District Medical and Health Officers (DMHO) and Deputy DMHOs as point persons for tribal areas.

In addition to tribal health service and ITDAs, health societies under the National Health Mission have been set up. In Scheduled Areas, posts of Auxiliary Nurse Midwife (ANMs), Anganwadi Workers (AWs) and a number of other categories are fully reserved for local tribal workers. Further, there are 4265 Community Health Workers (CHWs) who are all local tribal women. They are tasked with two-fold objectives of treating minor ailments locally and directing cases to referral hospitals. Also many local institutions are manned by tribal peoples, thus preventing youth from joining extremist groups and creating a sense of ownership. Programme Monitoring Units (PMUs) have been set up under the National Health Mission, Sarva Shiksha Abhiyan, Mahatma Gandhi National Rural Employment Guarantee Scheme, etc.

There is also community-based monitoring where tribal women are organized into strong Self-Help Groups as Village Organizations at the village level, and also in administrative units like Mandals and federations like Zilla Samakhyas, to involve them actively in the entire development process as the TSP Act allows reallocation of budgets

as per the need of the target groups. It provides for mid-course correction to address tribal priorities, but it is not practically feasible. Constitutional remedies to enable re-planning and course correction can strengthen TSP in Andhra Pradesh, but one cannot re-appropriate budget from capital to a revenue head as the classification of capital and revenue heads is a constitutional direction. This could be re-examined keeping in view the change in trends and development needs. One way of looking at this is to treat the allocations and expenditure under TSP as social capital. Otherwise health and nutrition related plans come under the revenue head, and it may be a challenge to plan under the TSP. Such a classification provides the way for reallocation under TSP among various line departments.

Another issue about the non-lapsable aspect of the budget is that technically the budget remains a financial statement that is voted by the legislatures on an annual basis. Hence, it is difficult to treat the unspent allocations under TSP in a given year as non-lapsable and to carry them forward to next year. A possible alternative has been worked out by the Karnataka government, wherein the Act provides for adding the unspent amounts under TSP in a given year to be added to the allocations for the next year, but is not carried forward beyond that year. But there has to be a better and a legally valid solution for TSP allocations so that these don't lapse.

The active involvement of Gram Sabhas in planning and implementing TSP at micro level would enable better implementation of the TSP. Allocation of the TSP funds directly to the Gram Sabhas, as is done in Maharashtra, is a better alternative.

The TSP legislation enables compulsory allocation of a definite proportion of the plan funding towards the development of tribal peoples, which is equal to the proportion of their population. But this is not adequate to bridge the critical gap in the level of development between Scheduled Areas and general areas. A one-time special package could be considered as a support by the Union Government under Article 275(1) of Constitution of India, followed by annual TSP allocations.

Besides, care has to be taken to provide drinking water, road connectivity, development of minor irrigation, agricultural credit, consumption loans, training programmes, etc. Special effort needs to be made to strengthen primary education and healthcare in tribal areas.

Depletion of forests and displacement has also exacerbated livelihood problems. Therefore, ITDAs must facilitate delivery of public goods and services, and particularly implement schemes that ensure livelihood. Further capacity building will enable Gram Sabhas to make informed decisions. These village institutions also need to proactively defend the rights of forest dwellers.

This experience tells us that following a policy of positive discrimination favouring these communities and backing it up consistently with special development programmes promise to further improve the quality of their life.

## Notes

- <sup>1</sup> Tribal Welfare Department, Government of Andhra Pradesh. Available at: <http://aptribes.gov.in/statistics.htm>.



Jharkhand

## Rooting for Forest Rights

*Mass awareness holds the key to successful implementation  
of the Forest Rights Act, 2006.*

Johnson Topno

Land is not only an economic resource for tribal peoples, but also a source of cultural identity. But tribal peoples have been alienated and displaced from their land since the modern development paradigm started gaining currency. Interestingly, areas where tribal communities live have rich forests and wide biodiversity. In fact, alienation of such communities has led to degradation of natural resources, emergence of mono-culture, distress migration, human trafficking and low productivity. Even the UN Sustainable Development Goals cannot be realized by isolating the tribal and forest-dwelling communities from the prevalent development models.

In this context, transformation of a million lives of the tribal and forest dwelling communities as envisaged by recognizing their pre-existing rights under the Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, or the Forest Rights Act (FRA) has been a dream come true. Tribal peoples have depended upon forests for their livelihoods. They cultivate and

collect forest produce like wood, fruits and nuts for self-consumption or income-generation.

The Act gives forest dwelling Scheduled Tribes (STs) and other traditional forest dwellers, who have been living in forests but without any records, the forest rights and occupation of forest land. Apart from the rights to hold and live in the forest land for habitation or for self-cultivation for livelihood, the Act also grants rights to ensure their control over forest resources, including the right of ownership, access to collect, use and dispose minor forest produce, habitat rights to primitive tribal groups and pre-agricultural communities, right to protect, regenerate, conserve or manage community forest resource as they had been doing traditionally.

As per this Act, the Gram Sabha has the lead role in ensuring and protecting the rights of the forest dwellers, decision-making, planning and management. However, in the context of Jharkhand, the Gram Sabhas continue to remain inadequately informed and educated about the provisions of the Act. That is one of the key reasons why Jharkhand has been lagging behind in FRA implementation.

To give a further push to FRA implementation, the Poorest Areas Civil Society (PACS), a DFID programme, focuses on strengthening the implementation of FRA in the state. To push the agenda of FRA in the state, PACS entered into a tripartite agreement with the Tribal Cooperative Development Corporation (TCDC) in 2014 for carrying out required interventions on FRA, based on mutual sharing of financial, logistical and human resources. The FRA campaign in Jharkhand was jointly conceptualized by PACS and Department of Welfare, Government of Jharkhand.

To help the initiative establish an institutional support mechanism at the state level, Forest Right Committees (FRCs), Sub-divisional Level Committees (SDLCs) and District-level Committees (DLCs) were formed. In addition, in 2015, district level trainings on FRA provisions were organized for 880 persons representing different stakeholders, including the government and Panchayati Raj representatives.



A Khunti Gram Sabha (Gonsuli Panchayat) meeting in progress: Wide participation (Source: PACS)

The programme supports civil society efforts to claim their rights and entitlements by strengthening FRCs with representation from socially excluded groups. The PACS-supported civil society organizations focus on intensive mass-awareness drives and also concentrate on establishing community cadres in the form of Jharkhand Van Adhikaar Mitras to support Gram Sabhas discharging their functions.

Van Adhikaar Mitras are linked with Jharkhand Van Adhikaar Manch, which is a forum of twenty-one civil society organizations spearheading a campaign at the state level and engaging with policy-makers, line departments, academia and media. The FRA campaign has engaged Gram Sabhas, CBOs and FRCs by building their capacities to understand the FRA provisions.

Most of the Jharkhand Van Adhikaar Mitras are either members of FRCs or individuals who have an understanding, interest and willingness to work for the community as volunteers. They have been identified at the Panchayat level by civil society representatives through the process of community meetings.

Being locally rooted, they play a pivotal role in facilitating creation of a conducive environment at the village level to help tribal peoples claim their rights. These volunteers are well-equipped with pertinent information on the Act and training materials. More than 500 Van Adhikaar Mitras have been identified, trained and engaged. They provide support to Gram Sabhas and FRCs in claim generation.

The Van Adhikaar Mitras—through the Gram Sabha meetings—focus on several aspects, including facilitating formation of the FRC in the village, if not formed, and identifying active and willing individuals as Van Adhikaar Mitras in case the cadre is not selected. It also gives a lot of weightage to collection of basic information pertaining to understating of the community on FRA, status of Gram Sabhas, on orienting the Gram Sabha members and FRC members on FRA provisions and enlisting potential claimants to mention a few.

The CSOs, along with the Van Adhikaar Mitras, are involved in identifying claimants in the most potential geographical pockets through intensive claim-generation drives in villages.

Since 15 June 2016, PACS and PHIA Foundation, a public trust, are managing the FRA campaign in thirteen districts of Jharkhand. The campaign involves five civil society organizations that are covering forty-five blocks with the financial support from the Department of Welfare. Tribal peoples and the other traditional forest dwellers have joined the FRA campaign through Gram Sabhas.

The ongoing FRA campaign has become a major platform for communities, FRCs, Gram Sabhas, civil society organizations and the administration to work together for the determination and recognition of the rights of the tribal peoples and other forest dependent communities. More than 1 lakh (100,000) acres of land has been given to the communities up to June 2016, as per the Department of Welfare.

One of the major lessons learnt as part of the FRA experience is that rules and enactments are not enough for claimants to get their



The Khunti Gram Sabha (Kalet Panchayat) meeting on community forest rights: Building awareness (Source: PACS)

due rights. The government has to allocate adequate resources for operationalizing each and every provision of the Act in favour of the communities and sort out bureaucratic bottlenecks.

The government and civil society have to work as a team in empowering Gram Sabhas with rights perspectives. Besides, it is imperative to create community cadres like Van Adhikar Mitras to handhold FRCs for performing their roles with due diligence. Also, in a technology-driven era, use of GPS/GIS would hasten up the process of mapping and tracking progress with the information made available on a Web portal for larger public use. Setting up FRA cells at the district and state level to monitor the process should be a continued focus.

Maharashtra

## Betting on Gram Sabhas

*Decentralization secures buy-in of welfare initiatives by local communities.*

Dattatray Gurav

Undernutrition is a big concern in Maharashtra, which has a large tribal population of about 10 per cent.<sup>1</sup> Despite the well-intentioned Tribal Sub Plan (TSP), a large number of tribal children aged zero to twenty-three months continue to be in the grip of undernutrition in the state.<sup>2</sup>

The Central government notified Scheduled Tribal (ST) zone in the state covers 15 per cent of its entire area including 5809 villages and sixteen towns across twelve districts. There are in all forty-seven Scheduled Tribes (STs) in the state. The main tribal communities are the Bhills, Gonds, Mahadeo Kolis, Pawras, Thakurs and Warlis. The Kolams (Yavatmal District), Katkaris (mainly in Thane and Raigad Districts) and Madia Gonds (Gadchiroli District) have been notified as Particularly Vulnerable Tribal Group (PVTGs) by the Government of India.

Out of thirty-five districts in the state, the tribal population is largely concentrated in the western hilly districts of Dhule, Nandurbar, Jalgaon, Nashik and Thane (Sahyadri region) and the eastern forest

districts of Chandrapur, Gadchiroli, Bhandara, Gondiya, Nagpur, Amravati and Yavatmal (Gondwana region).

The TSP and the Additional Tribal Sub Plan (ATSP) embrace the entire Scheduled Area as also some parts of Raigad, Bhandara, Gondia, Chandrapur, Yavatmal and Pune. Also, villages with a population of more than 10,000 comprising at least 50 per cent from tribal communities fall under the purview of the Modified Area Development Approach (MADA). Together the MADA and Mini MADA jurisdictions cover fifty-seven areas across the state.

Focused on key areas like road development, education, health, water supply and nutrition, government programmes have helped tribal communities improve their living by giving them access to sustainable livelihood opportunities. As the well-being of tribal communities is tied to forests, conservation of forests is a key component of these programmes. Legislations like the Panchayat Raj Extension to Scheduled Areas Act, 1996 (PESA) empower Gram Sabhas to preserve the traditions, customs, cultures and identities of tribal communities.

The legislation acknowledges the existence of a natural relationship between tribal communities and their unique ecosystem comprising forests and rivers. Besides, the government reserves seats for tribal children in institutions to encourage them to pursue higher education.

However, despite being well-intentioned, the benefits of these schemes are yet to percolate down to tribal communities. Life for many of them, therefore, continues to be an unending struggle for even basic needs. The fact is that the government does not have adequate machinery needed to meaningfully address the issue of nutrition among tribal children. Under the PESA Act, out of the total thirty-six districts in Maharashtra, thirty-four districts have a dedicated officer, called the PESA coordinator. Thirteen out of thirty-six districts and fifty-nine out of 351 blocks have large tribal populations. In all, there are 2835 Panchayats in these areas.



Women sharing their experiences at a Gram Sabha meeting: Mainstreaming gender issues (Source: RSCD)

The PESA coordinator does not have a separate machinery to implement his mandate of propagating the PESA Act and making tribal peoples familiar with it and its provisions. The TSP outlay of 5 per cent allocated to Gram Panchayats as untied fund for meeting local needs adds up to a paltry INR 350 (\$5) per person per year.

Every Gram Sabha has a committee set up with the intent of checking undernutrition among children aged six months to six years by ensuring that they get well cooked mid-day meals. However, given the fact that the villages are widely dispersed, it is difficult for this committee and its Anganwadi Workers to reach children in deep tribal pockets.

The state government of Maharashtra runs a fortnight-long campaign every year against undernutrition in tribal areas through its Department of Women and Child Development. The campaign collects data on the nutritional needs of tribal peoples, which is used for better annual planning. Villages with zero incidence of undernutrition are recognized for their efforts with a cash reward



of INR 25,000 (\$373). However, positive efforts in tribal villages are rewarded with equal amount of additional award translating into a total cash reward of INR 50,000 (\$746). The campaign is successfully conducted with the help of villages, blocks and district-level authorities. The campaign coordinates with National Rural Health Mission (NRHM) schemes as well.

In Maharashtra, there is a provision of Mahila Gram Sabha at the Panchayat level because women are sometimes reluctant to share their issues during a general Gram Sabha. Therefore, a Mahila Gram Sabha plays an important role in apprising the Gram Sabha on women's issues, but the latter is often reluctant to entertain their issues. This is an attitude that has become an obstacle in dealing with the task of women's empowerment and child malnourishment.

The Right to Services Act, 2015, mandates that all concerned officials must brief Gram Sabhas about their entitlements, reversing the earlier situation. Such interactions help the government make a better assessment of the needs of tribal peoples.

The minimum number of days of employment guaranteed by schemes like the Mahatma Gandhi National Rural Employment Guarantee Act (MNREGA) has helped provide livelihood to people and enhance their capacity to spend on better nutrition for children. However, of late, it has become difficult for people to get the guaranteed 150 days of work, eroding the purchasing power of poor tribal families in rural areas.

Going beyond the provisions of the 73rd Constitutional Amendment Act (CAA), the Maharashtra Act has provided for reservation to backward classes including Scheduled Castes (SCs) and Scheduled Tribes (STs). A quota of seats in proportion to their population has been reserved for the SC/ ST communities in the Panchayat. This is not only enhancing the representation of this section at the local level, but is also giving the government a better understanding of their needs and aspirations.



Women at a workshop: Learning by sharing (Source: RSCD)

Also, at the grass-roots level, the reserved seats are rotated among various wards in the Panchayat. 50 per cent of the seats are reserved for women, including of SC and ST communities. The seats of chairpersons are also to be reserved for members of SC and ST communities, as they are for elected representatives. There is a provision of seat rotation among different Panchayats, Panchayat Samitis and Zilla Parishads (ZPs).

But there is a need to address the gap between the entitlements provisioned for tribal peoples and their actual delivery to targeted groups. This can happen only if local decision-making bodies like Gram Sabhas are allowed a larger say. No big schemes can succeed until they match the aspirations of the people they are meant for.

Many such schemes have been plagued by corruption at local levels, but that should not become a reason for withholding them. The government should strive to improve the efficiency of the officers involved in the machinery by enhanced training, innovative interventions and adopting a more inclusive approach.

## Notes

- <sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013;1–448. Available online at: [www.tribal.nic.in](http://www.tribal.nic.in).
- <sup>2</sup> International Institute of Population Sciences. Comprehensive Nutrition Survey of Maharashtra Report (CNSM). Available online at: [http://iipsindia.org/cnsm\\_report.htm](http://iipsindia.org/cnsm_report.htm).



Multiple states

## Nutrition-Sensitive Tribal Sub Plan

*Need-based and problem-share allocations are needed in the absence of nutrition-specific schemes.*

Chandrika Singh and Vani Sethi

The Union Government of India addresses nutrition deprivation through various Centrally Sponsored Schemes (CSSs) that cater to all children, including tribal children. However, there is another budgetary gap fill fund—Tribal Sub Plan (TSP)—that has been catering to tribal children since the Fifth Five-Year Plan (1974–75). TSP is a non-divertible and non-lapsable fund to be spent by state departments on tribal peoples and in identified tribal pockets. A total of twenty-eight central ministries and state departments have an obligation to earmark funds for TSP from their Plan budget, which is 24 per cent of total budget, at least in proportion to Scheduled Tribe (ST) population of the total population of the country and the state, respectively.<sup>1</sup> The TSP fund can also be tapped for gap filling of food, nutrition, health and other civic services provisioning in these areas. However, relevance of tapping TSP for gap-filling of schemes, or initiating new schemes that directly or indirectly improve nutrition outcomes, needs to be considered keeping a few caveats in mind.



Firstly, not all ministries and state Plans earmark recommended funds for TSP.<sup>2</sup> Secondly, most TSP items are infrastructure-focused with negligible nutrition service provisioning activities or infrastructure-building for nutrition services. Thirdly, with effect from financial year 2017–18, there is a proposed merger of Plan and Non-Plan budgeting system. Presently, the TSP earmarking was done under Plan budgets, but with this merger the denominator for calculating the TSP earmarking is lost and till now no formula has been communicated to ministries for the TSP earmarking in the 2018–19 budget.<sup>3</sup> Fourthly, in February 2016, NITI Aayog expressed its inability to monitor TSP as it was not within its mandate, potentially reducing already low earmarking of TSP. Fifthly, after the 14th Finance Commission, the state share in a majority of CSSs has been increased by the Union government, which has adversely affected the TSP earmarking by Central ministries as well. For instance, the TSP earmarking of the Ministry of Women & Child Development decreased from 8.7 per cent of its Plan budget in 2014–15 to 8.4 per cent in 2016–17 BE (from INR 15,970 million in 2014–15 to INR 14,180 million in 2016–17 BE).<sup>4</sup>

We reviewed Union budgets (of seven ministries) and state budgets (of the topmost tribal-dominated state—Madhya Pradesh) to ascertain if mandated Union ministries and their state departments, which run nutrition related programmes, were earmarking recommended funds for TSP. The seven different ministries studied included Agriculture & Farmers Welfare, Drinking Water and Sanitation, Health & Family Welfare, Human Resource Development, Consumer Affairs, Food & Public Distribution, Rural Development, and Women & Child Development.

For each of the seven ministries, the figures of funds earmarked for TSP was collated from appropriate budget documents for three consecutive financial years (2016–17 BE, 2015–16 RE and 2014–15 AE). For these three consecutive financial years, the TSP earmarking for Madhya Pradesh was collated from all expenses under the Minor Head 796 (Tribal Sub Plan) of the state budget 2016–17 by

seven departments. (BE means Budget Estimates and indicates the projected expenditure in the approaching/ongoing financial year. RE means Revised Estimates and indicates revised projections after six months of the concerned financial year are over. AE means actual expenditure of the financial year.) TSP earmarking is ‘all inclusive’, and considers all expenses undertaken by the concerned departments.

The insights and programme implications emerging from the results are described herewith.

Firstly, Union ministries’ TSP earmarked budgets have been below the recommended level for five of the seven ministries. For example, the Ministry of Women & Child Development has reduced it from 9.6 per cent to 8.2 per cent. The Ministry of Tribal Affairs’ (MoTA) mandate to convene inter-ministerial dialogue to advocate for appropriate earmarking requires to be urgently exercised or else NITI Aayog requires to reconsider its role in monitoring TSP and supporting MoTA in clearing administrative logjams, which are preventing it from exercising its convening capacity.

In Madhya Pradesh, line departments are to earmark 21 per cent of their Plan budget for TSP. The TSP earmarking by the departments of Women and Child Development Department, and Health and Family Welfare have been below 21 per cent and have decreased during the study period in percentage terms. Similarly, earmarking for school education decreased from ~30 per cent in FY 2014–15 to 26 per cent in FY 2016–17. Agriculture and Farmer Welfare Department has increased the percentage earmarked in TSP (from 12 per cent in 2014–15 to 22 per cent in 2016–17). The allocations by the Ministry of Rural Development, and Department of Water and Sanitation have considerably increased in last three financial years.

Secondly, studying Plan budgets alone masks the TSP earmarking. For example, the Department of Food and Public Distribution’s Plan budgets shows <1 per cent earmarking for TSP. A large proportion of the Ministry of Food and Civil Supplies budget is classified as Non-Plan expenditure (for FY 2016–17, the Plan outlay

was INR 1500 million, and the total outlay for this ministry for FY 2016–17 was INR 14,01,500 million, from this the Plan outlay was only INR 1500 million). Therefore, the TSP earmarking should be taken from the total outlay and not Plan outlay.

Thirdly, one funnel of routing of TSP funds at the state level is required to improve accountability and ease fund flow. At present, TSP funds are earmarked ministry-wise in the states under separate heads. In most states the Scheduled Caste-Scheduled Tribe welfare department is the nodal agency for monitoring TSP, but there is no single Demand Number for SC/ST department to receive funds for TSP. At the same time, district level authorities managing TSP do not necessarily convene (or have the power or capacity to convene) need-based planning before submitting their Sub Plans to the district project level committee. Often this Sub Plan is prepared at the district or state level. Section 4(m) vii of The Panchayats (Extension to Scheduled Areas) Act, 1996 (PESA) ensures to the Panchayats at the appropriate level and the Gram Sabhas control over Plans for the TSP area funds, but there is hardly any example of these provisions being followed in letter and spirit. To achieve it, district-level committees need strengthening, resources and support to anchor such an initiative.

Fourthly, it is also debatable whether studying TSP alone is sufficient for studying the complete kitty of tribal funds. The answer is both No and Yes. It is No because line ministries, within their own State Plans/Non-Plan budgets, have flexible norms for tribal areas and have adopted differential strategies. We may note here that a major portion of the National Rural Health Mission funds are transferred to the states through Reproductive and Child Health (RCH) Mission Flexible Pools, which also has a tribal RCH component. The overlap in tribal RCH and flexi-pools do not give a clear picture on funding in TSP blocks. Yes, as apart from this, the line ministry (Health & Family Welfare) has a dedicated chapter for tribal peoples in its Plans, and the annual reports of the line ministries only mention the proportion of budgetary allocation to TSP and do not mention any coverage for tribal children. Most schemes targeting poor households assume that

tribal concerns are tangentially addressed since Scheduled Tribes are over-represented amongst this target group. Each line ministry should be mandated to have a separate chapter for tribal peoples in their Plans. TSP and expenditures need to be publicly available and open to social audit to increase accountability.

Finally, TSP is based on the assumption that spending money will automatically lead to development of tribal peoples. This assumption underplays the role of effective enforcement of legislations to protect tribal interests (such as rights over land, forest and forest produce) and hence, parallel efforts have to be continued in the latter direction as well.

To conclude, TSP is a progressive handle for gap-filling in tribal areas. Mandated departments require strict vigilance by the NITI Aayog. After the merger of Plan and Non-Plan classification of the budget, an appropriate new benchmark for overall TSP allocation needs to be set by the government and simplified routing of TSP requires to be explored and adopted.

## Notes

- 1 Ministry of Women and Child Development and UNICEF, India. Rapid Survey on Children 2014.
- 2 MoTA. Annual Report 2015–16. Available from: <http://tribal.nic.in/WriteReadData/CMS/Documents/201606060452201526687EnglishAR.pdf>.
- 3 Department of Economic Affairs. Ministry of Finance. Guidance Note on Plan & Non-Plan Merger. Available from: [http://mib.nic.in/writereaddata/documents/Guidelines\\_Note\\_on\\_Merger\\_of\\_Plan\\_and\\_Non\\_Plan\\_classification.pdf](http://mib.nic.in/writereaddata/documents/Guidelines_Note_on_Merger_of_Plan_and_Non_Plan_classification.pdf).
- 4 Government of India. Scheduled Castes Sub Plan/Tribal Sub Plan. Expenditure Budget Vol. I, 2016–2017. Statement 21A. Available from: <http://indiabudget.nic.in/ub2016-17/eb/stat21a.pdf>.



Madhya Pradesh

## Live Experiments in Social Labs

*Leadership programmes connect government functionaries  
and marginalized communities.*

Sunita Gupta

Every society has people who have a genuine aptitude for social work, with a high drive to achieve results. It was with this understanding that the Chief Minister's Community Leadership Development Programme (CMCLDP) was launched by the Madhya Pradesh government in July 2015 to develop leadership skills at the community level and create social capital.

The need for such a programme emerged because there is a palpable distance between the government social schemes and its beneficiaries as in other parts of the country. Despite institutions like the Tribal Welfare Department and the Department of Public Health & Family Welfare being in place, states like Madhya Pradesh have not been able to address the nutritional needs of children, especially in tribal pockets.

Complementing ongoing measures, the state government, of late, has decided to engage the stakeholders not only as passive beneficiaries but as active agents of change, who can effectively bridge the gap between government functionaries and end beneficiaries,

creating a catalytic environment for delivery of social sector schemes. The programme is roping in students for taking its schemes to tribal communities. Its USP is that one-third of the trained personnel belong to these very tribal communities and work in their own geographical areas.

While the programme was conceived by the Tribal Welfare Department, the initial support for the state-wide roll-out was provided by the United Kingdom's Department for International Development (DFID) through the Technical Assistant and Support Team of Madhya Pradesh. Under this programme, Satna-based Mahatma Gandhi Chitrakoot Gramodaya University implements the Bachelor of Social Work (Community Leadership) course. Taking after the distance education model, the course aims at channelling the potential of tomorrow's leaders to produce rich dividends for the communities, especially in remote tribal areas. The three-year course not only offers to participants structured learning on various aspects of the development sector, but also helps them build soft skills.

In addition, the course also aims at providing continuous in-service education to the frontline functionaries (Anganwadi Workers), Supervisors, and Child Development Project Officers (CDPOs) of the Department of Women and Child Development.

Focusing on both theoretical and hands-on learning, the course has eighteen modules, including development, legal literacy, leadership development, communication skills, life-skills education, community organization and mobilization, and basic accounting. It also focuses on documentation and record management, basic computer skills, Panchayati Raj and rural development, rural technologies, nutrition and healthcare, child development, protection and education, and women's rights and empowerment, to mention a few.

The distance education programme is held at the block headquarters and District Headquarters in school premises, every Sunday with each batch comprising approximately thirty to forty students. Half the seats are reserved for women to further the cause of women's empowerment. Besides, reservation is granted to candidates

from Scheduled Castes (SCs) and Scheduled Tribes (STs). The course is only for candidates from the state. Lateral entry is not allowed.

For the underprivileged communities, including tribal communities, exemption is granted in the form of fee waiver. As an additional incentive, tribal candidates are also reimbursed a part of their travel and food. However, the general category students have to bear their own expenditure along with payment of a stipulated course fee.

People between eighteen and forty-five years can apply for the course. Candidates need to have an aptitude for social work and must have passed Class XII. Eligible candidates are selected from applications invited for the course. Once enrolled, candidates have to select a village for their project work. Generally, students are assigned a village they belong to. That way they are not only better aware about the ground realities, but can also perceive the priorities of the village. Qualifying through practical training constitutes 50 per cent weightage in their final evaluation. Along with practical exposure, the candidate has to take the annual examination (five modules) conducted by the University. The theory papers carry the weightage of the remaining 50 per cent for the final evaluation.

To qualify in the examination, a candidate has to secure a minimum score of 33 per cent separately, in both theory and practical examinations. They are expected to submit ten assignments monthly. The remaining marks are for the project work where a village serves as a practical lab and the project focus is on development issues. For example, in 2015 the project focused on Total Sanitation Campaign, while in 2016 it is on Total Literacy Campaign.

There are provisions for certification if students happen to drop out due to unforeseen circumstances. For example, if a student is able to complete only one year of the Bachelor of Social Work (Community Leadership) course, he or she is given a Certificate in Community Leadership. Similarly, students completing only two years of the course are awarded a Diploma in Community Leadership.

There are about 12,000 students enrolled for the course. And, almost one third of the students are working in tribal areas. Interestingly, half of the students enrolled are women. Initially, the course was rolled out in eighty-nine tribal blocks on the recommendations of the Department of Tribal Welfare, today it is run in all 313 blocks, including in 224 non-tribal blocks of thirty districts, by Jan Abhiyan Parishad.

Each block has a mentor to guide students in their respective areas by taking their classes on Sundays. A mentor with the minimum qualification of a postgraduate degree exposes students to different sectors like education and agriculture during the Sunday classes. There are about 1878 mentors in the state.

The programme is still at its nascent stage, but it has the potential to improve the community's development index. It can realize multiple objectives like employing the youth in rural areas without dislocating them. It also has the potential to bridge the gap between the aspirations of people in tribal areas wherein well-educated, trained and oriented youth come to understand the needs in the current context.

The component of field work gives students an opportunity to come up with local solutions to resolve issues affecting the quality of life of villagers. It is because, in the selected village, the student works closely with the community, which enables her or him to understand the issues, deliberate, consult and come up with viable solutions.

With the local youth trained in the practical aspects of the welfare schemes, they also serve as a resourceful link between the state government and marginalized sections including tribal communities, women and children. It also bestows a greater sense of responsibility on the youth in the region and they act as informed ambassadors of the government in taking welfare schemes to the people.

While the government reaches out several welfare schemes to tribal peoples, at times the latter fail to realize their full potential because of the challenges that surface in the form of ignorance and

apathy towards such schemes. The programme has the potential to connect policymakers to the people on the ground and seek a buy-in.

The programme will also be helpful in bringing a positive synergy between various departments of the government for an integrated approach to address the challenges of tribal peoples. Such an approach will not only retain the local talent in these areas but would also save the big cities from an exodus resulting in unplanned slums, derailing the urban planning. This programme could indeed become a microcosmic model of the prevailing situation before decision-makers at the Central level look at scaling it up in the form of a national plan.

# GOOD GOVERNANCE



Multiple states

## Time to Break Down Departmental Silos

*Government agencies need to rally together to formulate tribal-friendly policies and service delivery.*

N.C. Saxena

India has over 11 million tribal children, half of whom are chronically undernourished. More than 70 per cent of the tribal peoples reside in the central region.<sup>1</sup> Despite being resource-rich, the region is inhabited by the poorest people. India's social and economic development has bypassed this segment. Anti-tribal communities, market-oriented forest policies, depletion of gatherable biomass and forced displacement from ancestral lands compound their miseries.

More than half the tribal adults have Body Mass Index (BMI) below 18.5.<sup>2</sup> Women and children cut a more dismal figure. Nearly three quarters of the tribal women in Jharkhand are undernourished to some degree. The risk of delivering low birth weight babies and other pregnancy complications, therefore, only increases. Tribal women suffer due to their inadequate diet, early marriage, poor access to health services and frequent illness, and their unhygienic surroundings and practices. Undernutrition of mothers is usually passed onto children.



A UNICEF report reveals that barely 2 per cent of tribal children in the 6–11-months age group were fed complementary food in recommended quality and frequency.<sup>2</sup> Half the children surveyed in a block in the Nandurbar district of Maharashtra turned out to be undernourished, girls even more so. Infant mortality rate was high and there were many severe cases. Activists found tribal children were not welcome at Anganwadi Centres (AWCs) that ran the Integrated Child Development Services (ICDS). A Supreme Court order in 2004 advised all new AWCs to come up only in tribal areas. Yet many tribal villages in Khandwa district of Madhya Pradesh do not have AWCs.

Studies blame widespread poverty, illiteracy, absence of safe drinking water and sanitary conditions, poor maternal and child health services, and ineffective coverage of national health and nutritional programmes for this dismal state of affairs. Tribal communities in central India also suffer from many communicable, non-communicable and silent killer genetic diseases.<sup>3</sup> Their geographical isolation and remoteness further impedes development. Qualified health workers are reluctant to work in these areas.

Improved delivery of ICDS plays a key role in reducing undernutrition among tribal children. Contrary to belief, undernutrition is not caused simply by scarcity of food. Poor health and lack of care can wreak equal damage. Tribal areas need more Nutrition Rehabilitation Centres (NRCs). Also, patients must not relapse once NRCs discharge them. So, mothers and other caregivers have to be taught what to feed the child at home and how to optimally care for the child. Lack of sanitation also checks growth of tribal children. Open defecation in tribal areas must stop immediately.

The ICDS programme has to be redesigned to focus on children under three when undernutrition is best tackled. The Planning Commission, which is now known as NITI Aayog, too suggested that ICDS should invest more funds on children in this age group. Focus has to be more on home feed and childcare practices, improving household water and sanitation, strengthening referrals to the health system and providing micronutrients. Simply running Anganwadi

Centres (AWCs) will not be enough, and there has to be an outreach programme. Such young children are best attended at their home. Also, during these home visits, not just the mother but the entire family needs to be sensitized and counselled.

ICDS faces many operational challenges. There is lack of accountability due to oversight and an irresponsible reporting system. Even its resources are very limited. State governments encourage districts to report inflated figures than expose actual ground status. National Family Health Survey (NFHS-3) reveals that about 40 per cent of children were underweight in 2005–06, of which about 16 per cent were severely undernourished. However, the state governments in 2009 reported merely 13 per cent as underweight, of which 0.4 per cent were severely undernourished.

Although, reporting has improved since then, the government website still shows that in March 2015, only about 2 per cent was severely undernourished.<sup>4</sup> Evaluation by UNICEF showed this figure to be more than 9 per cent. States like Uttar Pradesh and Rajasthan reported less than 0.5 per cent. Ground staff is clearly not reporting correct data. For transparency, all district and centre records should be posted on a website. Frequent field inspections by independent teams comprising experts, nutritionists and grass-roots workers will also make systems more accountable and evaluations objective.

Supplementary Nutrition Provisioning (SNP) is plagued by irregularities. In many states (Maharashtra, Karnataka, Uttar Pradesh and Gujarat), ICDS has engaged contractors. The National Human Rights Commission reports how the ICDS in Gorakhpur even violated the Supreme Court orders. Instead of hot cooked meals, these centres supplied packaged ready-to-eat food only, containing a mere 100 calories as against the specified 500 calories. Over 63 per cent of food and funds got diverted. Most of this ready-to-eat food was produced under unhygienic conditions and was unpalatable, half of which would end up as cattle feed.

Moreover, distribution of manufactured 'ready-to-eat' food is rife with corruption. It must be discouraged at all levels. Unfortunately,

tendering is now common for take-home rations (an alternative to cooked meals for young children). Minimum nutritional norms are laid down, including micronutrient fortification. This gives a dangerous foothold to all those food manufacturers and contractors, who are constantly trying to exploit child nutrition programmes. With most ICDS centres not doing well, results are likely to be more dismal in tribal regions.

Staff shortage and bureaucratic inefficiency mars delivery of government programmes, especially in tribal areas. Massive vacancies exist in tribal regions as government servants are reluctant to work there. A study by UNICEF highlights how lack of skilled manpower constrains the National Rural Health Mission in Jharkhand.<sup>5</sup> In the two surveyed districts, Sahibganj has less than half of the positions in place, while East Singhbhum, with superior infrastructure, fares marginally better at 54 per cent. The Ministry of Tribal Affairs (MoTA) needs to regularly monitor governance in tribal areas and push other ministries and state governments to perform. Tribal peoples, when exploited, suffer silently or resort to aggressive agitation. Equipping them to find answers to their unique problems and start participating in decision-making is the only way forward.

There are many examples to learn from and are worth following. Several emerging economies have shown that child undernutrition can be drastically reduced. Thailand has been outstanding. In 1980, half of its children were undernourished. By 1988, it reduced to a quarter.<sup>6</sup> Intensive growth monitoring and nutrition education, strong supplementary feeding, community participation, providing iron and Vitamin supplements and iodized salt, along with primary healthcare, worked.

Similarly, between 1990 and 2006, Brazil reduced child undernutrition by 75 per cent (from 20 per cent to 5 per cent). China figures plummeted by 68 per cent (from 25 per cent in 1990 to 8 per cent in 2002).<sup>7</sup> Even Vietnam witnessed a drop from 41 per cent in 1996 to 25 per cent in 2006.<sup>8</sup> Nutrition improvement at national scale is thus possible. Economic growth must be coupled

with effective policy and budgetary action, particularly for the most vulnerable—the youngest, the poorest and the excluded.

MoTA frequently brushes off responsibility saying undernutrition and ICDS programmes fall outside its domain. But the ministry needs to expand its scope, not restrict itself to distribution of scholarships and NGO grants. An ostrich-like attitude defeats the purpose for which the ministry has been created.

MoTA and state tribal departments need to evolve. Simply spending their own budget through narrow departmental schemes is not enough. They must coordinate with other ministries to pursue tribal concerns, highlight how poor tribal peoples cannot access basic services, and pressurize concerned departments and state governments to ensure better policies and delivery in tribal regions. Finally, National Institution for Transforming India (NITI Aayog) needs to regularly monitor the impact of existing nutrition policies on tribal peoples and accordingly engage with the concerned ministries

## Notes

- <sup>1</sup> United Nations Children's Fund (UNICEF). Nutrition and Adivasis. A report on the nutrition situation of India's tribal children. New Delhi: UNICEF, 2014.
- <sup>2</sup> Das S., Bose K. Nutritional deprivation among Indian tribals: A cause for concern. *Anthropol Notebooks*. pp. 2012; 18: 5–16.
- <sup>3</sup> Balgir R.S. Tribal Health Problems, Disease Burden and Ameliorative Challenges in Tribal Communities with Special Emphasis on Tribes of Orissa. Available at: [http://www.rmrc.org/files\\_rmrc\\_web/centre's\\_publications/NSTH\\_06/NSTH06\\_22.RS.Balgir.pdf](http://www.rmrc.org/files_rmrc_web/centre's_publications/NSTH_06/NSTH06_22.RS.Balgir.pdf).
- <sup>4</sup> All India Status of ICDS Scheme. Available online at: <http://icdswcd.nic.in/icds/Qpr0314forwebsite23092014/currentstatus.htm>.

- <sup>5</sup> UNICEF 2008: Gaps & Opportunities in Implementation of Flagship Schemes for Children in Jharkhand, A Rapid Assessment Study, UNICEF office of Jharkhand, Ranchi.
- <sup>6</sup> Abstract IL, Coupons F. Reducing Child Malnutrition: Thailand Experience (1977–86). Public Health. 2007. Available at: <http://www.righttofoodindia.org/data/garg-nandi07thailand-reducing-child-malnutrition.pdf>.
- <sup>7</sup> UNICEF India. Child Undernutrition in India: A Gender Issue. Available at: <http://www.unsystem.org/scn/Publications/SCNNews/scnnews36.pdf>.
- <sup>8</sup> UNSCN. Accelerating the reduction of maternal and child undernutrition. 35th SCN Sess June 2008, Hanoi. 2008. Available at: <http://www.unsystem.org/scn/Publications/SCNNews/scnnews36.pdf>.



Multiple states

## Government Schemes Fortify Traditional Nutrition

*The Ministry of Tribal affairs coordinates with Union ministries and state departments to revive old dietary practices.*

Manoj Kumar Pingua



The Ministry of Tribal Affairs is coordinating all central and state government efforts aimed at socio-economic development of Scheduled Tribes (STs), since 1999. The Ministry's focus is on improving the health, education, agriculture and livelihood status of these marginalized sections of the society that largely inhabit remote areas. Operating with an annual budget of INR 48 billion (\$716.42 million), the ministry helps implement schemes for tribal welfare.

The ministry is, however, not the sole agency engaged in tribal development in the country. Its task is in fact limited to strengthening and supplementing existing state government schemes in this field. The ministry can provide top-up grants to state departments for meeting gaps in their development programmes. Around INR 12.5 billion (\$186.57 million) can be given as Special Central Assistance (SCA) and INR 14 billion (\$208.96 million) in grants mandated under the Constitution. The



respective state governments do all the planning and determine the finances of the Tribal Sub Plans (TSP).

Since it depends on twenty-eight sectoral ministries and their state departments to implement the state plans and TSP, the Ministry of Tribal Affairs has little control over how the states execute their Sub Plans.

Besides providing financial assistance, a major role of the ministry is to guide and support state departments and central ministries to ensure all round welfare and development of tribal peoples. The role of the ministry is primarily one of advocacy across various central ministries and state governments. A number of schemes for tribal peoples launched by other ministries are based on the inputs of the Ministry of Tribal Affairs.

For instance, a Sub-Health Centre normally caters to 5000 people. The number, however, has been reduced to 3000 for tribal areas. This relaxation done on the basis of inputs from the Ministry of Tribal Affairs has enhanced access of tribal peoples to these health facilities. Even in the case of Primary Health Centres, the norm is 30,000 people for general population, but it has been reduced to 20,000 in tribal areas.

The ministry ensures close coordination among the related ministries and guides all programmes meant for tribal communities. In particular, the ministries of Rural Development; Consumer Affairs, Food and Public Distribution; Health and Family Welfare; Women and Child Development; and Drinking Water and Sanitation look up to the Ministry of Tribal Affairs for direction and supplementary inputs.

The issue of nutrition is of particular interest to the Ministry of Tribal Affairs. The ministry advocates for provision of adequate nutrition to tribal women and children. The result is that many state schemes are also focusing on addressing the gaps in nutrition. Close coordination with the state and field agencies helps the ministry assess the ground needs related to undernutrition and direct concerned ministries accordingly.



Healthcare officials at a tribal hospital: Service with a smile (Source: MoTA)

The tribal undernutrition is not due to lack of carbohydrates or proteins, but due to deficiency of micronutrients, which is caused because tribal communities are abandoning their traditional dietary habits. The green revolution and the interventions related to high-yielding varieties have come at a cost. The race for more production had weaned tribal peoples away from crops like millets—jowar (sorghum), bajra (pearl millet) and ragi (finger millet)—that they earlier cultivated for consumption. After consulting various stakeholders, the Ministry of Tribal Affairs has sought to figure out solutions that would address these issues. One of the important solutions proposed has been to include local-produce-based nutrition in the training curriculum of Auxiliary Nurse Midwives (ANMs) and Anganwadi Workers (AWWs).

The Ministry of Tribal Affairs has also urged its twenty Tribal Research Institutes (TRIs) to run campaigns in tribal areas advocating the beneficial aspects of growing and consuming crops like chakoda bhaji (cassia tora), a dicot legume growing after the rainy season, which is also known to be a cure for filaria. To bring back these good nutritional practices, the ministry has begun documenting the



benefits of a number of tribal herbs through TRIs. The idea is to also record good practices that are scattered all over the place.

TRIs across the country help the ministry work for tribal development. These TRIs are based in places like Andaman and Nicobar Islands, Andhra Pradesh, Assam, Bihar, Gujarat, Kerala, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, West Bengal, Uttar Pradesh, Manipur and Tripura. Besides conducting research and evaluation studies, codifying customary law and holding seminars and workshops to train, these institutes also help state governments plan their tribal programmes and outlay.

The Ministry of Tribal Affairs has special schemes for the development of Particularly Vulnerable Tribal Groups (PVTGs). Drives against undernutrition are run under the Conservation-cum-Development (CCD) Plan for PVTGs. A fund of around INR 1200 million (\$17.91 million) has been set aside to support NGOs working for tribal development. States come up with their own annual action plans, which they then refer to the Ministry of Tribal Affairs.

A multipronged approach is pursued by the ministry to tackle multiple issues plaguing these marginalized communities. High dropout rate among tribal schoolchildren is one major problem, which is closely linked to the children's state of nutrition. Undertaking a series of measures, the Ministry of Tribal Affairs tries to address the nutritional aspect of the problem. Minor millets have been introduced in school meals. This traditional favourite had long disappeared from the community palate. Also, it has been suggested that dal be made of *casa tora*. Tribal schools have been encouraged to have kitchen gardens, apart from conducting periodic deworming and ensuring safe drinking water.

The ministry is also promoting kitchen gardens around tribal households and hostels so that people have a supply of fresh vegetables for daily consumption. Also, the ministry is encouraging households to set up hatcheries in their backyards, advocating its dual benefits. Breeding fish would not only improve the nutrition of women and children, but also boost household income and tribal economy.

The ministry has been also promoting screening of students for sickle cell anaemia. Anyone showing symptoms is examined for it. Different colour cards have been introduced to identify affected people and even to indicate an individual's level of vulnerability to the disease. These cards are presented to couples during marriage counselling. White card is issued if all is clear. A carrier gets a card that is half yellow and half white. A person fully affected with sickle cell anaemia gets a full yellow card. Carrier couples are advised against marrying each other. Such identification has checked the spread of the disease and also helped people with sickle cell anaemia avail timely health assistance from the many government health schemes.

Besides, the central ministry is also trying to pinpoint and bridge development gaps between general population and tribal communities. For instance, the Ministry of Tribal Affairs' ambitious Vandbandhu Kalyan Yojana seeks to improve infrastructure and raise the human development indices (HDI) in tribal areas. A pilot project, it was launched in 2014 in each of the Scheduled Five states, in blocks having the lowest literacy. The idea is to bring the tribal population on par with other social groups, enabling them to actively contribute in the overall progress of the country. A sum of INR 100 million (\$1.49 million) has been earmarked for each block, which includes demonstrating the existing nutrition initiatives for tribal children.

At an institutional level, a Coordination Committee has been set up for monitoring, planning and recording progress of the schemes/programmes being implemented for overall development of STs. With the Secretary of Ministry of Tribal Affairs as its chairman, the committee includes senior representatives from the ministries of Human Resource Development, Women & Child Development, Labour & Employment, Drinking Water and Sanitation, Health and Family Welfare; Rural Development, Health and Family; and NITI Aayog. Many of the initiatives undertaken by the Ministry of Tribal Affairs have come about because of the suggestions

provided at the committee meetings. Going forward, there is a scope to strengthen the coordination with related ministries and departments to synergize our efforts to achieve better results for tribal development.

Andhra Pradesh

## New Mission to Take on Legacy Challenges

*The Nutrition Mission sets ten-year targets to reduce all forms of undernutrition in women and children.*

Deepak Kumar Dey

Andhra Pradesh is home to 6.2 million children under five.<sup>1</sup> Despite a thriving economy with 11 per cent growth in Gross State Domestic Product (GSDP) during 2015–16, about 31 per cent or 1.1 million under five are stunted, 31 per cent are underweight, and 17 per cent are wasted.

At the same time, the state aggregates mask the district disparities in the state. The latest National Family Health Survey (NFHS-4) data has shown that there is a wide variation in the prevalence of stunting across various districts, ranging from 22 per cent in Guntur to 44 per cent in Kurnool.<sup>2</sup> In terms of absolute burden, three of the thirteen districts—Anantapur, Kurnool and East Godavari—account for 34 per cent of the stunted children in Andhra Pradesh. Besides, the disparities among socio-economic groups persist with little improvement of the undernourished children in the state, according to a longitudinal study (2006–13) carried out by Young

Lives, a collaborative research project coordinated by a team based at the University of Oxford. Children from tribal communities, the poorest households, rural areas, and children whose mother have little or no education are the worst affected.

In June 2016, the Andhra Pradesh government launched its Nutrition Mission with UNICEF as a partner to accelerate reduction of all forms of undernutrition in women and children. Aiming to deliver evidence-based nutrition services at scale and with equity, the Nutrition Mission is seeking to effect a holistic and sustainable response to improve child nutrition by strengthening linkages between and among line ministries, coordinating partnerships and combining nutrition-specific and nutrition-sensitive interventions.

The Nutrition Mission has three-fold objectives. Firstly, the Nutrition Mission seeks to focus on improving nutrition during the first 1000 days of life—targeting adolescent girls, pregnant and nursing women, and children below two years. Secondly, it gives priority to tribal districts, blocks and urban slums with high level of child undernutrition. Thirdly, it provides the oversight in the delivery of essential nutrition interventions at scale and with equity.

The Nutrition Mission has also set targets to be achieved by 2026. With the baseline figures from NFHS-4 (2015–2016), the mission's targets are to:

- increase breastfeeding in children under three years within one hour of birth by 25 per cent points, up from 40 per cent;
- increase exclusive breastfeeding rates by 20 per cent points, up from 70.2 per cent;
- increase the number of children receiving solid and semi-solid foods and breast milk by 20 per cent points, up from 56 per cent;
- increase in the number of infants aged six to twenty-three months receiving adequate diet (four food groups), by 25 per cent points, up from 7.6 per cent;

- reduce the prevalence of stunting by 15 per cent points, up from 32 per cent;
- reduce the prevalence of anaemia among women of reproductive age by 20 per cent points from 60 per cent; and
- reduce the prevalence of low birth weight by 10 per cent points, up from 19 per cent.

To achieve its ten-year target to reduce the prevalence of stunting by 15 per cent points from 32 per cent, exclusive targets for all seven indicators for every district have been set. For example, Anantapur has to reduce the prevalence of stunting by 16 per cent points (from 40 per cent to 24 per cent). Kurnool's target, too, is to reduce the prevalence of stunting by 16 per cent points (from 44 per cent to 28 per cent). Smaller, exclusive targets and five-year action plans for districts are expected to help make steady headway in the achievement of ten-year targets.

The Nutrition Mission will be the institutional mechanism that will plan, implement and monitor the nutrition interventions to their last detail and will shoulder the responsibility for implementing the multisectoral Nutrition Plan of Action (PoA). The Nutrition Mission is being implemented through the Department of Women Development and Child Welfare. At the state level, the Steering Committee, which is the main decision-making body, is chaired by the chief minister. Besides, the Nutrition Mission is guided by an Advisory Committee chaired by the Chief Secretary, which reviews allocations for nutrition interventions made under each member department. At the implementation level, the Minister for Women Development and Child Welfare chairs the Nutrition Mission Monitoring and Implementation Committee. The Director-General of the mission is the convener of the committee, which has representation of senior officers from concerned sectoral departments.

The District, Mandal, Urban Local Bodies (ULBs) and Gram Panchayat level monitoring committees have the District Collector, Mandal Praja Parishad, Municipal Chairperson or Mayor and the

Sarpanch respectively as their Chairpersons. Besides, the mission is to be monitored at the administrative and community levels, using participatory mechanisms.

While pursuing newer pathways, the Nutrition Mission will also seek to build on the progress made in the state so far. The Nutrition Mission will take cognizance of the areas and components that are already included in the existing design of schemes and programmes. For example, the Nutrition Mission will strengthen existing systems like the Integrated Child Development Services (ICDS) by ensuring that comprehensive food models meet the daily calories/protein/RDA requirements in all districts category wise. It will also support existing schemes and scale up community-based initiatives under the supplementary nutrition component of the ICDS like the 'Take Home Rations' for pregnant women and lactating mothers and 7–36-month-old children; the 'One Full Meal' initiative for pregnant women and lactating mothers at the Anganwadi Centres (AWCs); and the Gorumuddalu programme of model menus, which enables mothers to feed their children every two hours with calorie-rich food.

Other initiatives that would be on the Nutrition Mission agenda would include the Mana Bhavitha programme, which works to strengthen health care and nutrition services behaviour change, particularly on critical issues like the age of marriage, early initiation of breastfeeding, complementary feeding, early registration of pregnancy and other maternal and child health areas. Strengthening the name-based tracking system will support the frontline workers in alerting the beneficiaries for availing various services. Similarly, data would be analysed on a monthly basis at block, district and state level to understand the progress and gaps to help the policymakers and administrators to review the programme.

Also, by transforming AWCs as vibrant centres, starting with enhancing skills of Anganwadi Workers (AWWs), the Nutrition Mission will pitch for community-based events to be celebrated across the state to sensitize the community to the needs of pregnant women, and infant and young child feeding practices. In districts

like East Godavari, partnerships with the corporate sector have been struck to improve the state of AWCs. The Nutrition Mission will also leverage information and communication technology for obtaining real time monitoring data with smartphones and the World Bank-supported ICDS Systems Strengthening and Nutrition Improvement Project (ISSNIP), which seeks to reduce undernutrition and create awareness among communities, particularly high-risk women and undernourished children.

Most importantly, building on established linkages with the Smart AP Foundation and its 9600 registered partners to support the implementation of the Smart Village-Smart Ward initiative offers the Nutrition Mission an entry point for ensuring that some of the essential nutrition interventions are closely monitored and the targets met. Eleven of the twenty non-negotiables including undernutrition-free villages connect well with the intent of the Nutrition Mission.

The complexity of addressing nutrition challenges combined with the multiplicity of issues, in terms of demand, supply and quality, calls for a coordinated, coherent and integrated response. This is what the Nutrition Mission would seek to do in its pursuit of making the state undernutrition-free.

## Notes

- <sup>1</sup> Ministry of Home Affairs. Government of India. Census of India 2011. Available from: <http://www.censusindia.gov.in/2011census/C-series/C-14.html>.
- <sup>2</sup> International Institute of Population Sciences. National Family Health Survey 2015–16 (NFHS-4): NFHS-4 District Fact Sheets for Key Indicators Based on Final Data. Available from: [http://rchiips.org/nfhs/districtfactsheet\\_NFHS-4.shtml](http://rchiips.org/nfhs/districtfactsheet_NFHS-4.shtml).



Multiple states

## Winning on a Sticky Wicket

*Strategy lessons from one-day cricket offer practical solutions to address undernutrition.*

Satish B. Agnihotri

Given that child undernutrition and obsession with cricket are two areas where India stands out, one can possibly help understand the other. This could help draw up a blueprint for overcoming the challenge of undernutrition.

As it is, eliminating child undernutrition is like chasing a high score in a limited overs cricket match. The target run rate is tough at this stage, given the rather high levels of undernutrition in most parts of the country.<sup>1</sup> In this scenario, there is a need to strategize and focus on reducing the number of underweight children, increasing weighing efficiency and covering the target population. Only good teamwork can help win the game, but it requires good convergence within departments and ministries.

Achieving the targets in tribal areas is akin to batting on a low-scoring pitch. It calls for even better coordination, innovation and teamwork. The target gets tougher in so-called adverse weather conditions. Open defecation, routine immunization dropouts, and anaemic and underweight mothers compound the challenge further.

To tackle undernutrition, there is a need to first ensure that mothers are healthy. That is best indicated by the percentage of adolescent girls with Body Mass Index (BMI) above eighteen. A woman's weight gain during pregnancy is the next important parameter, followed by the number of low birth weight (LBW) babies. Once this is taken care of, the nutritional status of the child in the first six months becomes important, which is indicated by exclusive breastfeeding. A good performance at this stage is akin to building a good opening score.

The first six months are usually not a cause for concern. The problem starts in the 7–36-month age group, with a visible decline in nutrition status among children in the age groups of 7–12, 13–24 and 25–36 months. Though a mild recovery can be noted in the 37–72-month age group, it is not enough to compensate for the earlier drop.

To address these issues, an innovative approach is required. Firstly, while chasing a given nutritional target, the performance of the 'middle order'—7–36 months in this case—is important. If it is steady, then the chances of growth faltering in the 37–72-month age group are low.

In order to ensure the desired stability, intervention strategies for the 7–36-month age group need almost total coverage, 90 per cent or above weighing efficiency, and timely reporting of the nutritional status. Preventive measures including deworming and immunization, sanitation measures, and special attention to specific groups are imperative as well. Third-party audits and incentives for good performance also help.

Secondly, better nutritional status in the first six months—in cricket parlance, a good score by openers—helps. It depends on exclusive breastfeeding, timely immunization, infection-free environment and special measures for LBW babies.

Thirdly, for a better opening partnership, one needs to avoid low birth weight (or LBW). For this, it is important to first do mapping and zero in on areas that need intervention including adequate

weight gain by the mother, timely antenatal check-ups, timely tetanus injections to mothers and identifying high-risk mothers.

Fourthly, if girls with BMI below eighteen are few and their age during first pregnancy is higher, it is equivalent to winning the toss. Last but not least, good convergence and teamwork between departments and ministries can ensure a smooth and easy win.

However, every state has its own share of issues, as highlighted by national surveys.<sup>2</sup> It reveals that better nutritional status during zero to thirty-six months can be achieved even in places like Goa, Punjab and Himachal Pradesh where adolescent BMI and LBW are unsatisfactory.

On the other hand, it shows how the advantage of satisfactory birth weight (Chhattisgarh, Jharkhand, Meghalaya and Gujarat) or better nutritional status during zero to six months (Rajasthan, Gujarat and Arunachal Pradesh) has been wasted away in the later months in some states. But, as it reveals, the nutritional status in seven to thirty-six months almost matches that of the zero to thirty-six months. Even if it were possible to maintain the nutritional status enjoyed by the zero to six-month age group, half the battle would be won.

So, the best bet is to get the 6–36-month age group right. This is because even if pregnancy and the newborn's first six months are managed well, factors such as infection, faltering growth or even inappropriate feeding practices can cause a collapse of the middle order. This is the 'middle order' that can be and should be strengthened. On the other hand, even if the feeder source performs poorly, it is still possible to check severe and moderate undernutrition.

However, for drawing up the future roadmap, it is necessary to project each state's share of the burden of undernutrition in absolute numbers. Improvement in nutritional status of children in a state like Uttar Pradesh will have a larger impact than a similar reduction in Manipur.

This is because Uttar Pradesh has a larger proportion in the zero to thirty-six-months age group population.<sup>2, 3</sup> This does not in any

way undermine the need to battle undernutrition in Manipur, but only puts the burden of the problem in the right perspective. It is, therefore, not enough to make a league table showing percentage of undernourished children.

If we go by the relative weight of the burden of each state, it appears that three states (Bihar, Madhya Pradesh and Uttar Pradesh) account for almost half the undernourished children in the country. While Maharashtra, Rajasthan, West Bengal and Gujarat house nearly a quarter, the four southern states contribute nearly 12 per cent.<sup>2,3</sup>

States boasting better nutritional numbers should aim to be 'undernutrition-free' by the target year. For example, Sikkim has less than 5000 children to attend to. In most states, it is possible to pinpoint the district leading the drive.

It is imperative to get distinct projections. Data needs to be tabulated separately for distinct age groups (zero to six months and seven to thirty-six months), given the major dip in nutritional status after babies turn six months old. Incidence of the LBW, too, should be plotted similarly.

Data from NFHS or the District Level Household Survey (DLHS) can be used for this purpose. Communicating with states gets easier when there is graphical data indicating the nature and magnitude of the problem and also the achievements so far. Apart from setting a healthy competition among them, viable solutions could be debated at the regional level instead of taking the 'one size fits all' approach, which is typical to central planning.

It is also necessary to disaggregate various datasets on the National Sample Survey Organisation (NSSO) platform. There are eighty-eight NSSO regions, and it is seen that the Infant Mortality Rate (IMR) data traces striking variations across different regions in a state. The four stereotypes require four different approaches: i) Low IMR—rapid reduction; ii) Low IMR—sluggish reduction or stagnation; iii) High IMR—rapid reduction; iv) High IMR—sluggish reduction. The same holds true for undernutrition. It is very

important to bring the NFHS, DLHS and NSSO data on a common platform for use in research, policy and action.

Such an approach will let us start without having to wait for the Expenditure Finance Committee (EFC), budget, or the roll-out of the proposed Nutrition Mission. If the name of the undernourished child is 'NOW', then that is where we must begin, without losing any more time. One needs to improve the overall run rate; a very slow run rate may cost the match and lives of many children.

## Notes

- <sup>1</sup> Government of India. Ministry of Statistics and Programme Implementation. Available at: [http://mospi.nic.in/mospi\\_new/upload/Children\\_in\\_India\\_2012.pdf](http://mospi.nic.in/mospi_new/upload/Children_in_India_2012.pdf).
- <sup>2</sup> Based on author's estimates, data derived from International Institute of Population Sciences. National Family Health Survey 2005–06 (NFHS-3): Available online at: [http://rchiips.org/nfhs/nfhs3\\_national\\_report.shtml](http://rchiips.org/nfhs/nfhs3_national_report.shtml). NFHS 3.
- <sup>3</sup> Based on author's estimates, data derived from: The Census of India 2011. Available online at: [http://www.censusindia.gov.in/vital\\_statistics/srs\\_report/9chapter\\_cent202per\\_cent20-per\\_cent202011.pdf](http://www.censusindia.gov.in/vital_statistics/srs_report/9chapter_cent202per_cent20-per_cent202011.pdf).

Jharkhand and Odisha

## NGOs Demonstrate, Government Scales Up

*Integrating complementary healthcare initiatives is key to  
their scaling up and replication.*

Prasanta Tripathy

Many tribal communities live in the remotest of forest areas, cut off from all development initiatives. The rough hilly terrain and poor transport network make scattered tribal hamlets almost inaccessible. Such isolation leads to their low socio-economic status, which is also reflected in their poor health. For example, 42 per cent of tribal children under five years are stunted, according to Rapid Survey On Children.<sup>1</sup> The dismal health of tribal peoples can be blamed on factors like widespread poverty, illiteracy, lack of water and sanitation facilities, undernutrition, poor maternal and child health services, and ineffective coverage of national health and nutritional services.

Considering the ground reality, the Indian government runs programmes for tribal development and empowerment through cooperatives, government and NGOs and civil society. Over the years, the approach of the government and NGOs towards tribal development has shifted from welfare in the 1950s to development

in the 1970s and empowerment in the 1990s. The Eleventh and Twelfth Five-Year Plans went a step further to focus on faster, more inclusive and sustainable development. This opened the gate for wider participation by civil society, giving them an impetus to effectively involve tribal peoples in participatory development.

NGOs are required to play a critical role in service delivery—challenging the state when schemes do not get delivered, especially in tribal areas—and create alternative development and healthcare models. But despite their extensive presence in tribal areas, NGOs, too, face an uphill task in tackling undernutrition.

A complex challenge, tackling undernutrition requires a multisectoral approach. Accordingly, many NGO-run pilot programmes are engaging communities in newer ways to solve the issue of undernutrition in a comprehensive and sustained manner.

Collaborating with civil society, national and international academic institutions, researchers and students, Ekjut, an NGO, tries to promote a culturally suitable approach and empower tribal peoples to help them understand their rights and entitlements.

For the past fourteen years, Ekjut has worked with tribal communities in Jharkhand and Odisha. In these two states, two-fifths of the population live below the poverty line, and over 40 per cent belongs to Scheduled Tribes (STs) and Scheduled Castes (SCs).<sup>2</sup>

Ekjut focuses on improving the maternal and newborn health in tribal communities. The journey started in 2004–05 when the NGO monitored births and deaths in over 200 villages of Jharkhand and Odisha.

In pockets where more than 70 per cent of families were from the tribal community, fifty-eight out of 1000 newborn infants were dying in the first month, which was much more than the state averages (forty-nine and forty-five for Jharkhand and Odisha, respectively), and substantially more than the national average (thirty).<sup>3</sup> Maternal deaths were also high.

To address these challenges, Ekjut started work on Participatory Learning and Action (PLA) with women's groups in 2005–08.<sup>4</sup>

Women's groups came together to identify common problems in pregnancy, delivery and after-birth. They discussed the social and medical causes, identified and implemented strategies, and evaluated the impact. The groups also organized meetings with their communities to request support for their strategies. This gave tribal women voice and recognition—both in their groups and in the wider community.

This intervention reduced neonatal deaths by one third in areas with groups compared to similar areas without groups within three years. Most Panchayats with women's groups had lower Neonatal Mortality Rate (NMR) compared to baseline levels. Most Panchayats, which did not have women's groups conducting PLA meetings, had higher NMR.<sup>2</sup>

This promising intervention has been endorsed by a World Health Organization recommendation and is now being scaled up across several states with support from the National Health Mission.<sup>2</sup>

The organization's next step was to see if this approach could also be applied to reduce undernutrition. There were already many cases where mothers suffered from anaemia and complications during birth and many babies were born with low birth weight.



Ekjut group meeting underway in Mayurbhanj, Odisha: Identifying common problems and their solutions (Source: Ekjut)



Ekjut is collaborating with the University College London and Public Health Foundation of India, an autonomous public-private foundation, to conduct an action research study (Community Action Research to Improve Nutrition and Growth or CARING trial). The objective is to see if an extra nutrition worker modelled on second Anganwadi Worker could conduct PLA meetings, visit homes and counsel mothers of children under two to have greater dietary diversity and prevent childhood illnesses. The people at the helm of running Integrated Child Development Services (ICDS), too, have been thinking of introducing a second Anganwadi Worker in high-burden districts. The impact of this work is being evaluated.

In parallel, a collaborative project—Action Against Malnutrition (AAM)—was launched by Ekjut, Child In Need Institute (CINI) and the Public Health Resource Society in Jharkhand and Odisha.

The AAM model has three components—strengthening of government systems and services for health and nutrition, PLA groups to address determinants of undernutrition in homes and community, and crèches for children between six months and three years to improve access to quality nutrition and stimulation and reduce women’s workload. This initiative is being supported by the Tata Trusts.

The crèches provide good nutrition in a protective and smokeless environment along with demonstration of hygienic feeding practices, stimulation, and regular growth monitoring. Children requiring special nutritional care and those with faltering growth get extra care and nutrition. The community plays an important role at every level—identifying the location for crèches, providing space, deciding menus and also managing and supervising care. Health check-ups are organized with government support. Children are encouraged to access ICDS and other health services. Participatory women’s groups help to strengthen demand for health and nutrition services, and improve healthful practices in the home.



Children at an Ekjut crèche, West Singhbhum: Nutrient-rich food in a good environment makes the difference (Source: Ekjut)

In AAM, as in other NGO-supported programmes, it was important not to duplicate services offered by the state government. For this reason, existing state government protocols for treatment of undernutrition were followed. Similarly, when the Public Health Resource Society hosted the project management unit, inputs for running the crèches came from NGOs like Jan Swasthya Sahyog and Mobile Crèches.

Ekjut helped build their capacity for measuring anthropometry and in designing of a structured PLA meeting cycle. It also laid down the design for home visits for counselling job aides, build capacity of facilitators to conduct PLA meetings and counselled mothers during home visits. An advisory group of experienced individuals and partner organizations periodically reviews this project.

The activities under AAM mobilized communities to make preventive, promotional and curative efforts. Based on the findings of these programmes, the consortium has been trying to influence policy for tackling undernutrition.

A full-fledged research protocol and MIS has been developed to monitor and review this project. While the MIS enables tracking of improving nutritional status of children in the crèches, an end-line survey allows comparison between different areas of the intervention blocks. Analysis of the advantages of additional layers of interventions, such as participatory women's groups and home visits and running of crèches for children between age of six months to three years, shows reduction in the proportion of children who were underweight or wasted in the vulnerable pockets of five blocks. It included three blocks in Jharkhand (Khuntpani in West Singhbhum, Ratu in Ranchi, and Gola in Ramgarh) and two blocks in Odisha (Saharpada in Keonjhar and Thakurmunda in Mayurbhanj).

This positive result meets an important programme objective in demonstrating a successful model that can be scaled up through public programmes such as ICDS. Findings from AAM evaluation are expected to be published soon.

The Ekjut model of PLA, which has been proven to improve maternal and newborn health at low cost, can be further adopted to complement nutrition-sensitive and nutrition-specific interventions for a synergistic outcome.

This can be combined with supportive efforts to strengthen government services for health and nutrition, support convergent thinking and delivery at the local level, and test innovative services such as crèches. NGOs can also provide independent monitoring of health and nutrition in underserved tribal areas to hold services to account.

## Notes

- <sup>1</sup> India, Ministry of Women and Child Development, and UNICEF, India. 2014. Rapid Survey on Children 2013.
- <sup>2</sup> Government of India. Press Information Bureau. Poverty Estimates for 2004–05 New Delhi, India. Available at: <http://planningcommission.nic.in/news/prmar07.pdf>.

- <sup>3</sup> Tripathy P., Nair N., Barnett S., Mahapatra R., Borghi J., Rath S., Rath S., Gope R., Mahto D., Sinha R., Lakshminarayana R., Patel V., Pagel C., Prost A., Costello A. Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: a cluster-randomised controlled trial. Available online at: [http://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(09\)62042-0/abstract](http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(09)62042-0/abstract).
- <sup>4</sup> World Health Organization. WHO recommendation on community mobilization through facilitated participatory learning and action cycles with women's groups for maternal and newborn health. Available at: <http://apps.who.int/iris/handle/10665/127939>.

Maharashtra

## Mission against Undernutrition

*The government nutrition mission synergizes efforts of concerned agencies and communities.*

Vandana Krishna

With tribal peoples comprising about 10 per cent of Maharashtra's population, the government has initiated many schemes to provide nutritional support to them.<sup>1</sup> But, sometimes, even the best-intended message can be misread by people in the context of their reality. The Khawati Karz Yojana (KKY) is an example. While the programme offers incentives to the family of an undernourished child, people concluded that they would not benefit under the government scheme unless they had undernourished children, and they started underfeeding their children. Such schemes need to be modified to avoid misplaced understanding.

The top-down or the welfare approach, too, is faulty, turning the government into the 'giver' and the tribal peoples into the 'beneficiary'. Consequently, most of the entitlement benefits stay on paper for lack of identity proof and land title.

In addition, the migration issue of tribal peoples has not been addressed adequately. There are several lapses when it comes to food and nutrition security issues, too. The current cropping pattern

is heavily dependent on one crop a year despite the possibility of growing two or three crops. This is essential for dietary diversity. Programmes need to focus more on availability of milk, eggs and other nutritious local foods for children and pregnant or nursing mothers. Every summer, despite green leafy vegetables getting scarce in tribal areas, promotional efforts for cultivation of vegetables, local medicinal herbs and plants are lacking.

While Accredited Social Health Activists (ASHAs) offer contraceptives only against medical prescriptions, no awareness campaigns target early and frequent pregnancies. Tribal women find that cumbersome. Social pressures, myths and misconceptions and lack of capacity-building in mothers slow down all family planning initiatives.

Maharashtra has 1100 residential ashram schools imparting secondary education to tribal children, but none offers life-skills training to adolescents. Besides, they are not integrated with mainstream schooling. Remote locations and lack of connectivity in tribal areas still remain poor, with the staff reluctant to work in these areas.

The Integrated Child Development Services (ICDS) scheme is the chief crusader against undernutrition in tribal children, but its officials stay preoccupied monitoring ICDS indicators and servicing Anganwadi Centres (AWCs) that cater mostly to three- to six-year-olds. But to check undernutrition, focus should be on the much younger age group—from birth to two years, and even during pregnancy. Also, ICDS is designed for overall development of a child. Preventing undernutrition is just one of its diverse goals.

Moreover, ICDS has a limited supplementary nutrition budget of INR 4–5 (6–7 cents) per child, per day, which meets only 400 of the 1200 calories required daily. In the first few critical months and for the two years that a child is usually breastfed, ICDS cannot contribute much. During this time, focus has to be on home-based care and childcare practices followed by mothers or caregivers at home.



Children eating eggs: Enhancing the intake of proteins, vitamins, minerals and micronutrients (Source: Rajmata Jijau Mother–Child Health and Nutrition Mission)

This created a window for setting up Rajmata Jijau Mother–Child Health and Nutrition Mission in 2005, which is focused exclusively on reducing undernutrition. The mission team conducts field visits, fact-finding studies, regular district and block-level meetings and monitoring visits. They have frequent interactions with the overall administration, including the Anganwadi Workers (AWs), supervisors, Auxiliary Nurse Midwives (ANMs), Child Development Programme Officers (CDPOs), and Medical Officers (MOs). The focus is on better coverage, survey and weighing of all children, and regular grading and identification of underweight children, particularly of the marginalized sections.

With the understanding that training and awareness building for mothers constitute the first step, the team conducts regular programmes on childcare, nutrition, and care during illness. Awareness programmes on the importance of breastfeeding and weaning are conducted through Information, Education and

Communication (IEC) campaigns. All these interventions focus on the period starting with conception to two years after delivery.

Maharashtra has also developed a model of Village Child Development Centres (VCDCs) that engages the community to manage children with Severe Acute Malnutrition (SAM) and Moderate Acute Malnutrition (MAM). This three-tier system of VCDCs, Child Treatment Centres (CTCs) and Nutrition Resource Centres (NRCs) substantially reduces wasting and child mortality. For better identification of SAM and MAM children, weight-to-height and Mid-Upper Arm Circumference (MUAC) measurements are taken in addition to weight-to-age measurements. While thousands of such children are identified and treated in month-long camps under VCDC, their mothers are trained in child feeding practices.

The National Rural Health Mission (NRHM) has contributed about INR 18 crore (\$2.69 million) for VCDCs and another INR 20 crore (\$2.9 million) for other initiatives. There is a good convergence between NRHM and ICDS, with Anganwadi Workers identifying undernourished children and treating them in VCDCs, with NRHM funding the scheme. Many local initiatives have come up at the district level like home-based VCDCs for managing SAM and MAM children at home, model Anganwadi Centres, and the 'Muthi Bhar Dhanya' (Handful of Grains) model, wherein the village community donates foodgrains and facilitates adoption of undernourished children by village functionaries.

In 2012, the state government commissioned a survey to assess the improvement in children's nutrition since 2006, and to identify priority areas for future policy and action. Stunting in children under two had declined from about 39 per cent in 2006 to about 24 per cent in 2012, according to the Comprehensive Nutrition Survey in Maharashtra (CNSM-2012 conducted by Indian Institute for Population Sciences).<sup>2</sup> It was a remarkable feat, more so because the national stunting level is mostly static. Maharashtra, the second



largest state in India, with a population of over 112.37 million people, had defied the norm.<sup>3</sup>

CNSM-2012 showed that the nutritional status of children in the state had improved over the last six to seven years. Cases of underweight, wasting and stunting in children below two had dropped sharply. This can be attributed to several initiatives under NRHM, the expansion of the Anganwadi network and the efforts of the nutrition mission.

Widespread Infant and Young Child Nutrition (IYCN) training to check chronic undernutrition has also helped reduce stunting. The institutional deliveries, too, have increased by 90 per cent.

Major improvements are visible in maternal health through schemes like Janani and Shishu Suraksha Karyakram, free delivery services, free transport and food, free antenatal care check-ups during pregnancy, and weekly visits of gynaecologists to primary health centres for check-up of pregnant women.

Going forward, developing kitchen gardens near Anganwadis and homes through Public Private Partnership (PPP) model is desirable. It would also be helpful to make interventions at ashram schools (training adolescents in life-skills, kitchen gardening, etc.) through the state nutrition mission, SHGs, NGOs, etc. What would finally make the difference is strengthening Poshan Chalwal, which is a nutrition campaign for influencing community behaviour and building capacity of government functionaries with Public Private Partnership (PPP) support.<sup>4</sup>

Such supplementary initiatives would strengthen the nutrition mission's targeted approach of focusing on managing undernourished children, their treatment and nutrition. This approach has already brought about significant reduction in wasting and child mortality in the state.

## Notes

<sup>1</sup> TA. Statistical Profile of Scheduled Tribes in India. 2013; 1-448. Available from: [www.tribal.nic.in](http://www.tribal.nic.in)

- <sup>2</sup> International Institute of Population Sciences. Comprehensive Nutrition Survey of Maharashtra Report (CNSM). Available online at: [http://iipsindia.org/cnsm\\_report.htm](http://iipsindia.org/cnsm_report.htm).
- <sup>3</sup> The Census of India 2011. Available online at: [http://censusindia.gov.in/2011census/censusinfodashboard/stock/profiles/en/IND027\\_Maharashtra.pdf](http://censusindia.gov.in/2011census/censusinfodashboard/stock/profiles/en/IND027_Maharashtra.pdf).
- <sup>4</sup> Government of Maharashtra. Rajmata Jijau Mother–Child Health and Nutrition Mission. Available at: <https://www.mahnm.in/poshan-chalwal>.



# APPENDICES



## Fact Sheets

The following fact sheets for India and nine states (Andhra Pradesh, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan and Telangana) have been compiled from the National Family Health Survey-3 and Rapid Survey on Children.

### **National Family Health Survey (NFHS 3)**

The 2005–06 National Family Health Survey (NFHS-3) is the third in a series of national surveys. Earlier NFHS surveys were carried out in 1992–93 (NFHS-1) and 1998–99 (NFHS-2). All three surveys were conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Sciences, Mumbai, serving as the nodal agency. ORC Macro, Calverton, Maryland, USA, provided technical assistance for all three NFHS surveys. NFHS-1 and NFHS-2 were funded by the United States Agency for International Development, with supplemental funding from UNICEF.

### **Rapid Survey on Children (RSOC)**

A Rapid Survey on Children was commissioned by the Union Ministry of Women and Child Development across twenty-nine states during November 2013 with technical and financial assistance from UNICEF India. The key objective of the survey was to assess the situation of children and women in the country with special emphasis on access and utilization of services under the Integrated Child Development Services (ICDS) and to provide baseline data for the restructured ICDS Scheme.

## Scheduled Tribe children in India: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 11546326*

Indicator	Scheduled Tribe (%)		National average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	53.9	42.3	48	38.7
Severely stunted (height for age below -3 SD)	29.1	19.5	23.7	17.3
Wasted (weight for height below -2 SD)	27.6	18.7	19.8	15.1
Severely wasted (weight for height below -3 SD)	9.3	5.3	6.4	4.6
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	17.6	20.6	23.1	23.6
Received two or more TT shots	61.90	86.10	76.30	89.80
Received full ANC *		15.00	52.00	19.70
Institutional delivery	17.7	70.1	38.7	78.7
Delivery by a skilled health provider	25.4	72.7	46.6	81.1
With birth weight less than 2.5 kg (of those who were weighed)		21.6	21.5	18.6
Weighed within 24 hours of birth		63.70	34.10	68.70
With birth weight less than 2.5 kg (of those who were weighed)		21.6	21.5	18.6
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	31.3	55.7	43.5	65.3
Children aged 0–23 months breastfed within 1 hour of birth	28.5	54.7	24.5	44.6
Children 0–5 months who were exclusively breastfed	2.9	64.3	46.4	64.9
Children 6–8 months who were fed complementary foods		45.5	52.7	50.5
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	42.4	37.8	43.7	36.3
Had a minimum dietary diversity	23.9	16.6	36	19.9
Use of iodized salt 15 ppm or more	36.70	62.10	51.10	67.40
<b>Early marriage</b>				
Married adolescent girls 10–19 years		6.40		6.40
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		49.2	46.8	44.7
<b>Use of ICDS (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	36.9	55.6	20.5	40.7
Lactating women	32.3	53.8	16.5	42.4
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		85.3	87.9	91
Using improved sanitation facility		22.20	29.10	41.80

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup

NFHS 3 (2005–06): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Andhra Pradesh: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 523399*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	54.9	34.5	42.7	35.4
Severely stunted (height for age below -3 SD)	27.8	13.3	18.7	12
Wasted (weight for height below -2 SD)	10.7	16.9	12.2	19
Severely wasted (weight for height below -3 SD)	3.1	4.4	3.5	6
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	31.6	34.6	41.2	47
Received two or more TT shots	85.90	94.50	85.30	97.10
Received full ANC *	67.50	28.10	85.40	38.20
Institutional delivery	27.3	79.2	64.4	91.1
Delivery by a skilled health provider	48.5	80.7	74.9	93.3
With birth weight less than 2.5 kg (of those who were weighed)		25.2	19.4	18.4
Weighed within 24 hours of birth		86.10	62.70	91.80
With birth weight less than 2.5 kg (of those who were weighed)		25.2	19.4	18.4
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	26.7	65.3	46	74.1
Children aged 0–23 months breastfed within 1 hour of birth	26.5	59.1	24.6	49.8
Children 0–5 months who were exclusively breastfed		61.3	64.6	69.2
Children 6–8 months who were fed complementary foods			62.3	40.1
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	19.4	25.1	29.7	24.1
Had a minimum dietary diversity	25	18.1	29.1	17.8
Use of iodized salt 15 ppm or more	18.10	35.40	31.00	54.60
<b>Early marriage</b>				
Married adolescent girls 10–19 years		15.00		7.80
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		49	44.7	54.8
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	27.2	75.8	22.9	78.3
Lactating women	21.9	67.3	17.4	60.1
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		85.7	94	85.2
Using improved sanitation facility		26.00	30.00	52.20

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits



## Scheduled Tribe children in Chhattisgarh: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 819540*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	51.6	44.4	52.9	43
Severely stunted (height for age below -3 SD)	26.2	17.6	24.8	16.4
Wasted (weight for height below -2 SD)	26.5	15.5	19.5	12.9
Severely wasted (weight for height below -3 SD)	8.1	3.3	5.6	2.4
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	19.3	22.7	20.7	22.1
Received two or more TT shots	67.80	89.60	74.60	92.20
Received full ANC *	47.80	17.60	54.20	18.80
Institutional delivery	3.9	51	14.3	56.1
Delivery by a skilled health provider	18.2	57.8	41.6	64.2
With birth weight less than 2.5 kg (of those who were weighed)		20.1	17.5	16.9
Weighed within 24 hours of birth		62.00	22.60	67.60
With birth weight less than 2.5 kg (of those who were weighed)		20.1	17.5	16.9
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	42.2	63.6	48.7	67.2
Children aged 0–23 months breastfed within 1 hour of birth	26.2	47.2	25	44.9
Children 0–5 months who were exclusively breastfed	5.6	85.9	83.8	82.3
Children 6–8 months who were fed complementary foods		56.8	49	59.9
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	57.2	63.2	53.2	57.5
Had a minimum dietary diversity	25.7	8.1	34.2	8.6
Use of iodized salt 15 ppm or more	41.30	63.70	54.90	68.70
<b>Early marriage</b>				
Married adolescent girls 10–19 years		3.30		3.40
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		41	51.6	43
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	79.6	65.8	64.1	65.4
Lactating women	80.1	85.6	63.2	81.5
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		84.1	77.9	89.8
Using improved sanitation facility		10.50	14.60	18.40

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Gujarat: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 1008264*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	60.9	41.9	51.7	41.6
Severely stunted (height for age below -3 SD)	32.6	19	25.5	18.3
Wasted (weight for height below -2 SD)	28.3	21.7	18.7	18.7
Severely wasted (weight for height below -3 SD)	10.1	7.5	5.8	6.7
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	24.4	33.8	37	31.2
Received two or more TT shots	60.40	84.20	80.40	87.60
Received full ANC *	53.20	23.70	67.50	25.70
Institutional delivery	21.3	88.5	52.7	87.9
Delivery by a skilled health provider	30.8	89.6	63	89.6
With birth weight less than 2.5 kg (of those who were weighed)		21.1	22	19.5
Weighed within 24 hours of birth		89.20	53.20	87.90
With birth weight less than 2.5 kg (of those who were weighed)		21.1	22	19.5
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	39.5	44.3	45.2	56.2
Children aged 0–23 months breastfed within 1 hour of birth	36.1	50.9	27.8	44.9
Children 0–5 months who were exclusively breastfed	5.2	72.2	49.7	74.4
Children 6–8 months who were fed complementary foods		28.9	54.1	43.4
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	50	29.7	44.7	30.4
Had a minimum dietary diversity	22.9	13.3	35.3	20.2
Use of iodized salt 15 ppm or more	32.60	69.50	55.70	80.20
<b>Early marriage</b>				
Married adolescent girls 10–19 years		3.50		6.00
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		73	54.3	52.6
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	24.5	53.1	19.1	49
Lactating women	16.1	59	12.1	49.4
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		94.3	89.8	96.6
Using improved sanitation facility		29.20	44.20	55.20

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup

NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Jharkhand: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 989863*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	54.5	53.4	49.8	47.4
Severely stunted (height for age below -3 SD)	29.9	29.8	26.8	23.7
Wasted (weight for height below -2 SD)	39.6	19.9	32.3	15.6
Severely wasted (weight for height below -3 SD)	11.9	4.4	11.8	3.7
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	15.3	13	14.2	10.3
Received two or more TT shots	54.10	86.90	67.60	90.60
Received full ANC *	25.80	6.60	35.90	6.90
Institutional delivery	7.8	46.7	18.3	56.6
Delivery by a skilled health provider	15.1	50.8	27.8	61
With birth weight less than 2.5 kg (of those who were weighed)		13.7	19.1	14.7
Weighed within 24 hours of birth		48.20	16.90	55.90
With birth weight less than 2.5 kg (of those who were weighed)		13.7	19.1	14.7
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	28.9	59.1	34.2	64.9
Children aged 0–23 months breastfed within 1 hour of birth	9.8	37.4	10.7	32.7
Children 0–5 months who were exclusively breastfed	3.4	58.8	60.4	64.3
Children 6–8 months who were fed complementary foods		61.3	60.2	53.7
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	47.3	42.3	44.3	35.7
Had a minimum dietary diversity	25.1	14.1	28.5	17.8
Use of iodized salt 15 ppm or more	45.00	54.40	53.60	54.90
<b>Early marriage</b>				
Married adolescent girls 10–19 years		8.50		7.30
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		41.1	47.8	43.3
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	54.1	56.8	34.7	47
Lactating women	55.4	82.8	35.9	72.9
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		69.4	57	70
Using improved sanitation facility		5.20	15.10	15.00

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Madhya Pradesh: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 1964255*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	56.4	49.7	50	41.5
Severely stunted (height for age below -3 SD)	33.9	25.3	26.3	18.5
Wasted (weight for height below -2 SD)	41	19.5	35	17.5
Severely wasted (weight for height below -3 SD)	16.7	6.4	12.6	5.4
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	7.7	15.7	7.1	19.6
Received two or more TT shots	51.70	83.80	70.60	88.90
Received full ANC *	25.90	5.50	40.70	12.10
Institutional delivery	8	63.1	26.2	78.1
Delivery by a skilled health provider	12.6	64.1	32.7	79
With birth weight less than 2.5 kg (of those who were weighed)		20.8	23.4	23.1
Weighed within 24 hours of birth		38.90	22.30	61.00
With birth weight less than 2.5 kg (of those who were weighed)		20.8	23.4	23.1
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	22.3	44.3	40.3	53.5
Children aged 0–23 months breastfed within 1 hour of birth	11.7	52.1	14.9	43.1
Children 0–5 months who were exclusively breastfed	0.7	73.1	21.6	74.8
Children 6–8 months who were fed complementary foods		35.4	46	46.3
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	43.4	40.3	45.7	37.8
Had a minimum dietary diversity	10.4	17.4	23.5	20.9
Use of iodized salt 15 ppm or more	16.00	43.00	36.30	56.70
<b>Early marriage</b>				
Married adolescent girls 10–19 years		4.50		4.20
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		41.5	47.4	45.8
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	34.3	66.5	31	47.7
Lactating women	27.9	47	26.9	54
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		85.9	74.2	87.7
Using improved sanitation facility		8.40	18.70	29.50

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Maharashtra: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 1081487*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	57.8	38.7	46.3	35.4
Severely stunted (height for age below -3 SD)	30	12.2	19.1	10
Wasted (weight for height below -2 SD)	18.9	21.9	16.5	18.6
Severely wasted (weight for height below -3 SD)	5.6	6.4	5.2	6.3
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	22.4	26	18.6	28.7
Received two or more TT shots	75.90	85.80	85.10	89.90
Received full ANC *	44.50	21.30	75.10	24.40
Institutional delivery	24.2	76.7	64.6	90.3
Delivery by a skilled health provider	32	83.2	68.8	93
With birth weight less than 2.5 kg (of those who were weighed)		21.2	22.1	20.6
Weighed within 24 hours of birth		80.20	70.30	88.40
With birth weight less than 2.5 kg (of those who were weighed)		21.2	22.1	20.6
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	39.3	66.2	58.8	77.4
Children aged 0–23 months breastfed within 1 hour of birth	39.7	63.6	51.8	55.9
Children 0–5 months who were exclusively breastfed	3.2	85.4	53	73.4
Children 6–8 months who were fed complementary foods		57.7	45.5	53.4
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	17.5	32.6	35.9	34
Had a minimum dietary diversity	14.5	21.7	20.4	19.2
Use of iodized salt 15 ppm or more	33.10	60.80	61.00	78.80
<b>Early marriage</b>				
Married adolescent girls 10–19 years		2.50		4.70
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		59.3	52.1	54.2
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	32.4	61.5	25.8	47.4
Lactating women	26.6	41.3	17.5	42
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		95.7	92.7	95.1
Using improved sanitation facility		25.90	31.60	43.50

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Orissa: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 1034126*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	57.2	46.1	45	38.2
Severely stunted (height for age below -3 SD)	28.4	22.1	19.6	15.5
Wasted (weight for height below -2 SD)	27.6	22	19.5	18.3
Severely wasted (weight for height below -3 SD)	8.2	5.8	5.2	4.9
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	31.6	19.9	33.8	28.9
Received two or more TT shots	73.30	89.60	83.30	95.80
Received full ANC *	46.00	14.70	61.80	24.60
Institutional delivery	11.7	60.1	35.6	81.3
Delivery by a skilled health provider	17.3	63.7	44	83.7
With birth weight less than 2.5 kg (of those who were weighed)		18	20.6	18.9
Weighed within 24 hours of birth		65.50	36.70	85.20
With birth weight less than 2.5 kg (of those who were weighed)		18	20.6	18.9
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	30.4	61.9	51.8	62
Children aged 0–23 months breastfed within 1 hour of birth	52.2	78.6	54.8	73.3
Children 0–5 months who were exclusively breastfed	4.8	76	54.1	68.5
Children 6–8 months who were fed complementary foods		37.1	65.5	55.5
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	54.2	42.8	56.3	41.9
Had a minimum dietary diversity	24.3	21.2	44.9	25.8
Use of iodized salt 15 ppm or more	30.00	77.10	39.60	85.70
<b>Early marriage</b>				
Married adolescent girls 10–19 years		4.50		4.10
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		37.3	44.9	51.8
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	61.5	67.7	44.6	60.6
Lactating women	50.8	81.6	39.8	76.5
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		83.3	78.4	87.1
Using improved sanitation facility		4.10	15.30	17.00

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Rajasthan: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 1167568*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	48.8	45.9	43.7	36.4
Severely stunted (height for age below -3 SD)	30.9	24.7	22.7	17.3
Wasted (weight for height below -2 SD)	27.8	22.8	20.4	14.1
Severely wasted (weight for height below -3 SD)	8.4	5.3	7.3	2.9
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	5.2	9.3	13.1	11.6
Received two or more TT shots	49.90	80.30	65.20	82.60
Received full ANC *	28.60	5.40	41.20	8.60
Institutional delivery	24.7	81.6	29.6	82.7
Delivery by a skilled health provider	29.6	84.9	41	85.8
With birth weight less than 2.5 kg (of those who were weighed)		31.5	27.5	23.2
Weighed within 24 hours of birth		50.60	20.90	57.80
With birth weight less than 2.5 kg (of those who were weighed)		31.5	27.5	23.2
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	3.3	49	26.5	60.7
Children aged 0–23 months breastfed within 1 hour of birth	9.9	34.2	14.1	38.6
Children 0–5 months who were exclusively breastfed	2.1	47.8	37.8	49.9
Children 6–8 months who were fed complementary foods		34.5	38.7	45.9
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	37.1	43.7	38.7	45.8
Had a minimum dietary diversity	16.3	6.9	20.8	14.5
Use of iodized salt 15 ppm or more	35.40	51.80	40.80	64.10
<b>Early marriage</b>				
Married adolescent girls 10–19 years		12.90		11.30
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		63.6	48.7	60.2
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	16.4	33.1	17	33.5
Lactating women	10.5	45.6	12.4	35.5
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		78.9	81.8	88
Using improved sanitation facility		7.70	19.30	31.10

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup  
 NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits

## Scheduled Tribe children in Telangana: Key nutrition indicators

*Number of Scheduled Tribe children less than five years (as per Census 2011): 523399*

Indicator	Scheduled Tribe (%)		State average (%)	
	NFHS -3 2005-06	RSOC 2013-14	NFHS -3 2005-06	RSOC 2013-14
<b>Nutritional status of children</b>				
Stunted (height for age below -2 SD)	54.9	34.5	42.7	35.4
Severely stunted (height for age below -3 SD)	27.8	13.3	18.7	12
Wasted (weight for height below -2 SD)	10.7	16.9	12.2	19
Severely wasted (weight for height below -3 SD)	3.1	4.4	3.5	6
<b>Maternal care</b>				
Consumed 100 or more IFA tablets/syrup	31.6	34.6	41.2	47
Received two or more TT shots	85.90	94.50	85.30	97.10
Received full ANC *	67.50	28.10	85.40	38.20
Institutional delivery	27.3	79.2	64.4	91.1
Delivery by a skilled health provider	48.5	80.7	74.9	93.3
With birth weight less than 2.5 kg (of those who were weighed)		25.2	19.4	18.4
Weighed within 24 hours of birth		86.10	62.70	91.80
With birth weight less than 2.5 kg (of those who were weighed)		25.2	19.4	18.4
<b>Childcare</b>				
Fully immunized (BCG, Measles, 3 doses of DPT and Polio)	26.7	65.3	46	74.1
Children aged 0–23 months breastfed within 1 hour of birth	26.5	59.1	24.6	49.8
Children 0–5 months who were exclusively breastfed		61.3	64.6	69.2
Children 6–8 months who were fed complementary foods			62.3	40.1
<b>Breastfed children 6–23 months</b>				
Fed a minimum number of times	19.4	25.1	29.7	24.1
Had a minimum dietary diversity	25	18.1	29.1	17.8
Use of iodized salt 15 ppm or more	18.10	35.40	31.00	54.60
<b>Early marriage</b>				
Married adolescent girls 10–19 years		15.00		7.80
Girls aged 15–18 years with BMI <18.5 kg/m <sup>2</sup>		49	44.7	54.8
<b>Use of ICDS services (supplementary food for 21 or more days in the last month preceding the survey)</b>				
Pregnant women	27.2	75.8	22.9	78.3
Lactating women	27.2	67.3	17.4	60.1
<b>Access to safe drinking water and sanitation</b>				
Access to improved drinking water		85.7	94	85.2
Using improved sanitation facility		26.00	30.00	52.20
Undivided Andhra Pradesh estimates used				

\* Received full ANC defined in:

RSOC (2013–2014): Receipt of 3 ANC visits, 2 doses of TT and consumption of 100 IFA tablets/3 bottles of IFA syrup

NFHS 3 (2005–2006): Percentage of pregnant women, who went for three or more ANC visits





## Definitions

### **Adult Underweight**

Moderate: Below minus two standard deviations from median weight for age of reference population.

Severe: Below minus three standard deviations from median weight for age of reference population.

### **Average Annual Rate of Reduction**

AARR is used for the analysis for monitoring and evaluation of the global trend in stunting prevalence.

(<http://scalingupnutrition.org/wp-content/uploads/2012/10/140702-SUN-Statistics-Technical-Note-2013.pdf>)

### **Body Mass Index**

Body Mass Index (BMI) is a simple index of weight-for-height that is commonly used to classify underweight, overweight and obesity in adults. It is defined as the weight in kilograms divided by the square of the height in metres ( $\text{kg}/\text{m}^2$ ).

(WHO)

### **Chronic Hunger**

The Food and Agricultural Organization (FAO) of the United Nations defines chronic hunger as undernourishment caused by not ingesting enough energy to lead a normal, active life. The definition of hunger has

- been a subject of debate, especially as it is linked to food security.  
Retrieved at <http://www.fao.org/docrep/018/i3434e/i3434e00.htm>.
- Consumed 100 or more IFA tablets/syrup**  
Pregnant women who consume 100 or more IFA Tablets/Syrup equivalent.
- Children 6–8 months who were fed complementary foods**  
Complementary feeding is defined as the process starting when breast milk alone is no longer sufficient to meet the nutritional requirements of children aged six to eight months, and therefore other foods and liquids are needed, along with breast milk.
- Fully immunized (BCG, Measles, 3 doses of DPT and Polio)**  
Children aged 12–23 months (Receiving full vaccination)—BCG, 3-injection of DPT, 3 doses of polio (excluding polio zero) and measles.
- Fed a minimum number of times**  
Proportion of breastfed and non-breastfed children 6–23 months of age, who receive solid, semi-solid, or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times.
- Girls aged 15–18 years with BMI <18.5 kg/m<sup>2</sup>**  
Percentage of adolescent girls aged 15–18 years with low BMI (< 18.5 kg/m<sup>2</sup>).
- Had a minimum dietary diversity**  
Proportion of children 6–23 months of age who receive foods from four or more food groups.
- Infant Parasite Rate**  
The percentage of infants below one-year-old who show parasites in their blood films. If the infant parasite rate is zero for three consecutive years in a locality, it is regarded as absence of local transmission, provided that the survey is done every year and enough slides have been examined.  
(<http://www.malaria.org/malariaglossary.html>)

**Integrated Child  
Development Services  
(ICDS)**

ICDS scheme is an Indian-government welfare programme in rural areas which provides food, preschool education and primary healthcare to children under six years of age and their mothers through Anganwadi Centres.

(<http://icds-wcd.nic.in/icds/>)

**Institutional Delivery**

Institutional delivery refers to the childbirth at a technology-equipped medical facility under supervision of skilled medical staff. In an institutional delivery, various medical tools and technologies are used to ascertain that the health of the neonate or mother is not compromised.

**Malnutrition\***

Malnutrition is a broad term commonly used as an alternative to undernutrition but technically it also refers to overnutrition. People are malnourished if their diet does not provide adequate calories and protein for growth and maintenance or they are unable to fully utilize the food they eat due to illness (undernutrition). They are also malnourished if they consume too many calories (overnutrition).

(<http://www.unicef.org/progressforchildren/2006n4/malnutritiondefinition.html>)

**Mid-Upper Arm  
Circumference**

MUAC is the circumference of the left upper arm, measured at the mid-point between the tip of the shoulder and the tip of the elbow (olecranon process and the acromium). In children, MUAC is useful for the assessment of nutritional status.

(<http://www.unsystem.org/scn/archives/adults/ch06.htm>)

### **Mid-day Meal**

The Mid-Day Meal Scheme is a school meal programme of the Government of India designed to provide cooked mid-day meals with minimum 300 calories and 8–12 grams of protein to all children studying in classes one to five in government and aided schools as well as Education Guarantee Scheme (EGS) and Alternative Innovative Education (AIE) centres (<http://mdm.nic.in/>).

### **Millennium Development Goals**

In September 2000, building upon a decade of major United Nations conferences and summits, world leaders came together at the United Nations Headquarters in New York to adopt the Millennium Declaration. The Declaration committed nations to a new global partnership to reduce extreme poverty, and set out a series of eight time-bound targets - with a deadline of 2015 - that have become known as the Millennium Development Goals (MDGs):

Goal 1: Eradicate extreme poverty and hunger

Goal 2: Achieve universal primary education

Goal 3: Promote gender equality and empower women

Goal 4: Reduce child mortality

Goal 5: Improve maternal health

Goal 6: Combat HIV/AIDS, malaria and other diseases

Goal 7: Ensure environmental sustainability

Goal 8: Develop a global partnership for development

([http://www.undp.org/content/undp/en/home/sdgoverview/mdg\\_goals.html](http://www.undp.org/content/undp/en/home/sdgoverview/mdg_goals.html))

**Mahatma Gandhi  
National Rural  
Employment  
Guarantee Act/Scheme  
(MGNREGA/ MGNREGS)**

MGNREGA is an Indian labour law that aims to enhance livelihood security in rural areas by providing at least 100 days of wage employment in a financial year to every household whose adult members volunteer to do unskilled manual work.  
(<http://nrega.nic.in/netnrega/home.aspx>)

**Malaria-Induced-  
Malnutrition**

Malaria and undernutrition are closely related, as malaria usually affects families that are both poor and undernourished. The months of the 'hunger gap', when undernutrition is at its peak, often coincides with the rainy season, when mosquitoes breed and the number of malaria cases shoots up. The diseases combine in a vicious circle: undernourished children have weak immune systems, so their bodies are less able to fight diseases such as malaria, while children sick with malaria are more likely to become dangerously undernourished.

**Maternal Mortality  
Ratio**

Annual number of maternal deaths to women aged 15–49 per 100,000 live births.

**Married adolescent  
girls 10–19 years**

Early marriage, better known as child marriage, is defined as marriage carried below the age of 18 years, before the girl is physically, physiologically and psychologically ready to shoulder the responsibilities of marriage and childbearing. Many factors interact to place a child at risk of marriage.

**Neonatal Mortality  
Rate**

It is the number of neonatal deaths per 1000 live births. A neonatal death is defined as a death during the first 28 days of life (0–27 days).

([https://www.measureevaluation.org/prh/rh\\_indicators/specific/nb/neonatal-mortality-rate-nmr](https://www.measureevaluation.org/prh/rh_indicators/specific/nb/neonatal-mortality-rate-nmr))

### **National Family Health Survey 3 (NFHS 3)**

The 2005–06 National Family Health Survey (NFHS-3) is the third in a series of national surveys; earlier NFHS surveys were carried out in 1992–93 (NFHS-1) and 1998–99 (NFHS-2). All three surveys were conducted under the stewardship of the Ministry of Health and Family Welfare, Government of India, with the International Institute for Population Sciences, Mumbai, serving as the nodal agency. ORC Macro, Calverton, Maryland, USA, provided technical assistance for all three NFHS surveys. NFHS-1 and NFHS-2 were funded by the United States Agency for International Development, with supplemental funding from UNICEF. NFHS-3 funding was provided by the United States Agency for International Development, the Department for International Development (United Kingdom), the Bill and Melinda Gates Foundation, UNICEF, the United Nations Population Fund, and the Government of India. Assistance for the HIV component of the NFHS-3 survey was provided by the National AIDS Control Organisation and the National AIDS Research Institute. (<http://rchiips.org/nfhs/nfhs3.shtml>)

### **Peoples**

The term ‘peoples’ has been used in the context of tribal populations and communities because one of the meanings of people is ‘a group of people who belong to the same culture, ethnicity, nation, or race’. When more than one such group is being referred to people becomes peoples.

**Promising practice**

A 'promising practice' is defined as one which:

- adds value and/ or addresses gaps in the state flagship programmes for maternal and child nutrition and is implemented at scale or with 'scalability' as part of its design, and
- has shown results with qualitative or quantitative evidence of positive change

**Protein Energy Undernutrition**

Protein Energy Undernutrition is an energy deficit due to deficiency of all macronutrients. PEU can be sudden and total (starvation) or gradual. Severity ranges from subclinical deficiencies to obvious wasting (with oedema, hair loss, and skin atrophy) to starvation. Multiple organ systems are often impaired. Diagnosis usually involves laboratory testing, including serum albumin. Treatment consists of correcting fluid and electrolyte deficits with IV solutions, then gradually replenishing nutrients, orally if possible. PEU is graded as mild, moderate, or severe. Grade is determined by calculating weight as a percentage of expected weight for length or height using international standards (normal, 90 to 110 per cent; mild PEU, 85 to 90 per cent; moderate, 75 to 85 per cent; severe, <75 per cent).

(Merck Manual)

**Parasite load**

Parasite load is a measure of the number and virulence of the parasites that a host organism harbours.

**Plasmodium falciparum cases**

Plasmodium falciparum is a protozoan parasite, one of the species of Plasmodium that cause malaria in humans. It is transmitted by the female anopheles mosquito. This species causes the disease's most dangerous form, malignant or falciparum malaria.



**Public Distribution System** PDS is a government-sponsored chain of shops entrusted with the work of distributing basic food and non-food commodities to the needy sections of the society at very cheap prices.

(<http://pdsportal.nic.in/main.aspx>)

**Particularly Vulnerable Tribal Groups**

Ministry of Tribal Affairs has seventy-five tribal groups identified and categorized as Particularly Vulnerable Tribal Groups (PVTGs), which were earlier known as Primitive Tribal Groups, located in the states and union territories of Andaman & Nicobar Islands, Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Odisha, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh, Uttarakhand and West-Bengal.

**Participatory Learning and Action**

Participatory Learning and Action (PLA) is an approach for learning about and engaging with communities. It combines an ever-growing toolkit of participatory and visual methods with natural interviewing techniques and is intended to facilitate a process of collective analysis and learning. The approach can be used in identifying needs, planning, monitoring or evaluating projects and programmes. Whilst a powerful consultation tool, it offers the opportunity to go beyond mere consultation and promote the active participation of communities in the issues and interventions that shape their lives.

(<http://idpkeyresources.infocollections.org/index/assoc/0000/d04267/000.pdf>)

**Panchayats (Extension to Scheduled Areas) Act, 1996**

Panchayats (Extension to Scheduled Areas) Act, 1996 or PESA is a law enacted by the Government of India for ensuring self-governance through traditional Gram Sabhas for people living in the Scheduled Areas of India.

**Received two or more TT shots**

Percentage of pregnant woman who received two or more shots of the Tetanus Toxoid (TT) vaccine, which is given during pregnancy to prevent the risk of tetanus to pregnant mother as well as her unborn baby.

**Received full ANC**

The percentage of women aged 15–49 with a live birth in a given time period that received antenatal care three or more times.

**Stunting**

Moderate stunting: Children below five years of age below minus two standard deviations from median height for age of reference population.

Severe stunting: Children below five years of age below minus three standard deviations from median height for age of reference population.

**Severe Acute Malnutrition**

Severe acute malnutrition is defined by a very low weight for height (below  $-3z$  scores of the median WHO growth standards), by visible severe wasting, or by the presence of nutritional oedema (Source: WHO)

(<http://www.who.int/nutrition/topics/malnutrition/en/>)

**Scheduled Areas**

The term Scheduled Areas has been defined in the Indian Constitution as such areas as the President may by order declare to be Scheduled Areas. Paragraph 6 of the Fifth Schedule of the Constitution prescribes following procedure for scheduling, rescheduling and alteration of Scheduled Areas.

(<http://tribal.nic.in/Content/DefinitionofScheduledAreasProfiles.aspx>)

### **Sustainable Development Goals**

The Sustainable Development Goals (SDGs), otherwise known as the Global Goals, are a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity. These 17 Goals build on the successes of the Millennium Development Goals, while including new areas such as climate change, economic inequality, innovation, sustainable consumption, peace and justice, among other priorities. The goals are interconnected—often the key to success on one will involve tackling issues more commonly associated with another.

(<http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>)

### **Tribal Peoples**

The term Scheduled Tribes first appeared in the Constitution of India. Article 366 (25), which defined Scheduled Tribes as such tribes or tribal communities or parts of or groups within such tribes or tribal communities as are deemed under Article 342 to be Scheduled Tribes for the purposes of this constitution.

(<http://tribal.nic.in/Content/DefinitionpRrofiles.aspx>)

### **Tribal Sub Plan**

The Tribal Sub Plan strategy of tribal development is a concept intended to address the issues of backwardness in tribal areas and tribal population in an integrated way by earmarking funds proportionate to their population percentage in the Plan budget. It is a methodology to ensure minimum flow of funds to tribal areas from the Plan for all-round tribal development. Each department of state government as well as Union government has to earmark funds on this principle.

(<http://tribal.nic.in/Content/DefinitionATDevelopment.aspx>)

**Targeted Public  
Distribution System**

Targeted Public Distribution System was introduced in 1997. It envisages identifying the poor households and giving them a fixed entitlement of foodgrains, rice and/or wheat, at the rate of 20 kg per household per month (from April 2000) at specially subsidized prices.

Retrieved at <http://dfpd.nic.in/public-distribution.htm>.

**Undernutrition\***

Undernutrition is defined as the outcome of insufficient food intake and repeated infectious diseases. It includes being underweight for one's age, too short for one's age (stunted), dangerously thin for one's height (wasted) and deficient in vitamins and minerals (micronutrient malnutrition).

(<http://www.unicef.org/progressforchildren/2006n4/undernutritiondefinition.html>)

**Underweight**

Moderately underweight: Children below five years of age below minus two standard deviations from median weight for age of reference population

Severely underweight: Children below five years of age below minus three standard deviations from median weight for age of reference population

**Under-Five Mortality  
Rate**

Probability of dying between birth and exactly five years of age expressed per 1000 live births.

(Census 2011)

**Use of iodized salt  
15 ppm or more**

The percentage of households that use iodized salt 15 ppm or more

**Using improved  
sanitation facility**

Percentage of households with access to facilities that ensure hygienic separation of human excreta from human contact.

**Vector-Borne Diseases**

Vector-borne diseases are illnesses caused by pathogens and parasites in human populations (WHO)

**Wasting**

Moderate wasting: Children below five years of age below minus two standard deviations from median weight for height of reference population

Severe wasting: Children below five years of age below minus three standard deviations from median weight for height of reference population

**With birth weight less than 2.5 kg (out of those who were weighed)**

Percentage of live births that weigh less than 2.5 kg. It is the number of live-born neonates which weigh less than 2.5 kg at birth divided by the number of live births.

**Z score**

The Z-score system expresses the anthropometric value as a number of standard deviations or Z-scores below or above the reference mean or median value. A fixed Z-score interval implies a fixed height or weight difference for children of a given age. For population-based uses, a major advantage is that a group of Z-scores can be subjected to summary statistics such as the mean and standard deviation.

(WHO)

\* 'Malnutrition' and 'undernutrition' have been used interchangeably to connote 'chronic undernourishment'.

## Contributors

**A.V. Swamy** is a member of Parliament, Rajya Sabha. He was elected as an independent member from Odisha. Best known for espousing the cause of tribal peoples, he is a member of various committees on the welfare of scheduled castes and scheduled tribes, science and technology, environment and forests and water resources.

**Dr Abner Daniel** is a nutrition specialist at UNICEF Chhattisgarh. A postgraduate in community medicine, he has over ten years of experience in policy formulation, design and implementation, and the advocacy of maternal and child-health programmes. His work involves advocating for nutrition-specific intervention in states, and he now manages public health and nutrition in disaster areas and areas affected by conflict.

**Ajay Parida**, PhD, a cytogeneticist and molecular biologist, is a senior fellow at the M.S. Swaminathan Research Foundation. Earlier, he served as its executive director (2009–15). He is also an elected fellow of the National Academy of Agriculture Sciences and the National Academy of Sciences of India, and has been a recipient of the Padma Shri.

**Akanksha Dutta** is an independent consultant. A trained social worker with ten years of experience in the not-for-profit sector, she has extensive field experience in resource-scarce and conflict-prone

areas on the Rajasthan–Gujarat border and in Nepal and Bangladesh. Her interest lies particularly in developing strategic communication tools and products.

**Alok Pandey**, PhD, is deputy director at the Society for Participatory Research in Asia (PRIA), an NGO. A development practitioner for over eighteen years, he is experienced in micro-planning, institutional analysis, capacity building, integrated district planning and democratizing local governance. His main research areas include local governance and tribal development.

**Arti Ahuja**, an Indian Administrative Service officer, is joint director of the Lal Bahadur Shastri National Academy of Administration. She earlier served as the principal secretary of the Health & Family Welfare Department, Government of Odisha. She holds a master's in public health from the Harvard School of Public Health, as well as a master's in public policy, with a certificate in health policy from the Woodrow Wilson School, Princeton University.

**Arvind Ojha** is the CEO of Urmul Rural Health, Research and Development Trust. He has worked for over three decades with the desert communities in Rajasthan. He has conceived and executed many health, education, livelihood, youth leadership and cooperative programmes. He was previously the Rajasthan state adviser to the National Commission for Protection of Child Rights.

**Astha Alang** is a communication and advocacy consultant with UNICEF India, and engages in advocacy with parliamentarians on key child-rights issues such as tribal nutrition, water sanitation and hygiene, child labour, etc. She has a master's in international relations and globalization from London Metropolitan University. She has also worked with organizations like the *Economic Times* and *India Today*.

**Bhavani R.V.** is programme manager, Leveraging Agriculture for Nutrition in South Asia (LANSA) research programme consortium. An economist and former banker, she has previously worked at the M.S. Swaminathan Research Foundation for over a decade,

focusing on food and livelihood security issues. Between 2004 and 2006, Bhavani was on deputation as officer on special duty with the National Commission on Farmers.

**Bichitra Biswal** is a postgraduate in social work specializing in nutrition forest management practices. He has hands-on experience of about nineteen years and is currently leading the Living Farms portfolio on reorienting agricultural practices on nutrition sensitivity. He is also experienced in mobilizing tribal communities to self-address their maternal and child malnutrition issues.

**Bijoy Basant Patro** is a New Delhi-based journalist, writer and communications and community-media specialist with experience in working across countries in South Asia. He is associated with the OneWorld Foundation India, where he pursues his interests in media and its convergence with research and documentation as well as engagement with the community radio network in India.

**Chandrika Singh**, a budget and nutrition specialist, is a consultant with the Centre for Budget and Governance Accountability. She has earlier worked at the Institute of Development Studies, Jaipur. She has also been a lecturer in economics and has written papers for the National Centre for Advocacy Studies, Pune.

**Dattatray Gurav** is an elected panchayat member, state-level trainer and expert in Panchayati Raj. He is also the state coordinator for Savitri Academy, which is run by the Resource & Support Centre for Development. He is a state member of the Community-Based Organization (CBO)-Panchayati Raj Institution (PRI) Convergence Committee formed by the Maharashtra State Rural Livelihoods Mission, Government of Maharashtra.

**Debjeet Sarangi** is the managing trustee of Living Farms. He is also a sustainability fellow at the University of California, Irvine. An expert in process facilitation, he has trained in permaculture, ecological agriculture and nutrition. He works with tribal and other rural communities to reclaim sovereign food systems and



make state-sponsored food and agriculture programmes nutrition-sensitive.

**Deepak Kumar Dey**, PhD, is a social policy specialist at the UNICEF Hyderabad field office, covering Andhra Pradesh, Karnataka and Telangana. He has extensive experience in cross-sectoral issues of social protection for vulnerable populations, public finance for children and decentralization for community empowerment. He has worked in nine states of India over sixteen years of professional engagement in the development sector.

**Dr Dhiren Modi** has been working with SEWA Rural since 2007. He is credited with introducing a new mobile phone technology application ImTeCHO for improving maternal and child health and nutrition by empowering ASHAs in tribal and remote areas of Gujarat in 2013. A community health physician, he is well-recognized for his leadership in the family-centred safe-motherhood and newborn-care project.

**Dr Ganapathy Murugan** is the executive director of Public Health Resource Society (PHRS), New Delhi. He has over a decade of experience in advocacy, training and project management. He is also closely associated with Jan Swasthya Abhiyan. Prior to joining PHRS, he was a research fellow with the Public Report on Health (PRoH) located at the Council for Social Development, Delhi.

**Geetanjali Master** is a communication specialist at the UNICEF India country office. Her work includes managing partnerships with key stakeholders like the government, media, academia, etc. She has initiated communication campaigns for furthering the rights of children for survival, nutrition and protection. In partnership with Oxford University and Reuters Foundation, she has also conceptualized and launched the first-of-its-kind capacity development programme for the media in India.

**Gobinda Dalai** is the co-founder of Yuva Vikas in Bhubaneswar, Odisha. He bagged the IndiAfrica Young Visionaries Fellowship

in 2014 for his innovation named Gram Nirman, which connects entrepreneurial youth and their native villages for rural transformation. He has also been a consultant to the Odisha government for district planning and a UNICEF consultant on the right to education.

**Idhries Ahmad** is communications officer at UNICEF India and manages digital networks for the same. He has been working for more than a decade and a half with various UN agencies and media in the areas of digital media, social media, content management, research and journalism. Prior to joining UNICEF, he worked as a journalist and researcher in various organizations. He has a master's in communication and journalism with an advance diploma in digital communication and media management.

**J.C. Reddy**, PhD, works in the policy and advocacy cell of Naandi Foundation. An economist with over sixteen years' experience in development, he led the HUNGaMA Survey (2011). He was the monitoring and evaluation officer for Care India as well as the senior research associate at the Central Research Institute for Dryland Agriculture.

**Jayesh Joshi** is the secretary of the Voluntary Association of Agriculture General Development Health and Reconstruction Alliance (VAAGDHARA). He has been working with tribal communities for over twenty years. He is an expert on sustainable livelihoods, natural resource management, innovative agriculture development and child development and protection.

**Joe Madiath** is the founder and chairman of Gram Vikas, which has been working since 1979 to promote the development of the poorest communities in Odisha. Gram Vikas has focused mostly on water and sanitation solutions for the rural poor. He is currently engaged in advocating healthy living practices and promoting renewable energy, especially biogas and solar energy.

**Dr John Oommen** is deputy medical superintendent at the Christian Hospital, Bissamcuttack, Odisha. He leads its Mitra community health and education initiative, where his work includes clinical medicine, consultancy and administration. Trained at CMC Vellore, he has worked with fifty tribal villages over two decades, evolving effective community-based strategies for malaria control.

**Johnson Topno** is state manager, Poorest Areas Civil Society (PACS), a DFID programme, in Jharkhand. Before joining PACS, he worked with the Foundation for Ecological Security (FES) for more than ten years and led initiatives on forest governance, watershed management, community property rights and village institutions, and climate-resilient livelihood options in Andhra Pradesh.

**Laxmi Bhawani**, PhD, is the chief of UNICEF Gujarat. Apart from coordinating and managing UNICEF programmes in the state, she undertakes policy dialogue and advocacy with the government and other partners for the enhancement of the rights of children and women.

**Manish Raikar** has experience in working on nutrition projects, including the HUNGaMA Survey (2011) at Naandi Foundation. He has also led the implementation of a Hindustan Latex Family Planning Promotion Trust project in the coastal districts of Vishakhapatnam and Vizianagaram, Andhra Pradesh. He has over fifteen years of experience in public health, nutrition and research.

**Manoj Kumar Pingua**, an Indian Administrative Services officer, is joint secretary in the Ministry of Information & Broadcasting, Government of India. He was previously joint secretary in the Ministry of Tribal Affairs. He also served as the divisional commissioner of the Naxal-affected tribal division of Bastar, the managing director of Chhattisgarh State Antyavasai Nigam (an organization for developing tribal entrepreneurship), and as secretary, Scheduled Caste & Scheduled Tribe Development Department, Government of Chhattisgarh.

**Dr Manohar Agnani** is an Indian Administrative Service officer. He is presently posted as commissioner, Sagar. He was formerly

commissioner, Food, Civil Supplies & Consumer Protection, secretary, Health & Family Welfare, and controller, Food and Drugs Administration, Government of Madhya Pradesh.

**Meera Mishra** is the country coordinator for the International Fund for Agricultural Development (IFAD), a specialized agency of the United Nations. She was also a senior policy specialist for the United Nations Development Programme (UNDP). For over twenty-five years she has been working in the social development sector.

**N.C. Saxena**, PhD, is an Indian Administrative Services officer. He is a former secretary, Planning Commission; secretary, Ministry of Rural Development; and secretary, Minorities Commission. He also served as a director of the National Academy of Administration, Mussoorie. Representing the Supreme Court, he monitors hunger-based programmes in India.

**Neerja Chowdhury** is a journalist and writes extensively on issues related to women and children. She was the first civil rights correspondent for the *Statesman* as well as the political editor of the *Indian Express* for ten years. She has done political reporting covering eight prime ministers, political parties, Parliament and successive national and state elections. She won the first Chameli Devi Award as the best woman journalist in the country and the Prem Bhatia Award for the best political reportage. She is also member of the Citizens' Alliance against Malnutrition.

**Dr Neeru Singh** is director at the National Institute for Research in Tribal Health, Jabalpur. She has thirty years' research experience in epidemiology and vector control (tribal malaria and forest malaria). She received many awards and is member of the steering committee on the empowerment of scheduled tribes. She is also a part of the technical working group of NIH (Washington) for iron and malaria.

**Ninong Ering** is a member of Parliament (Lok Sabha) from the Indian National Congress, representing the Arunachal East constituency. He has also served as the Union minister of state for

minority affairs. Earlier he served as deputy Speaker and as minister of state in Arunachal Pradesh.

**Dr Pankaj Shah** is the managing trustee, SEWA Rural, which provides health and educational services to tribal communities in Bharuch and Narmada. Apart from managing the Jhagadia Primary Health Centre (Gujarat), he has also introduced the mHealth application ImTeCHO. He was also the 2007 recipient of the MacArthur Award for Creative & Effective Institutions.

**Dr Pavitra Mohan** is director of health services at Aajeevika Bureau. He has set up basic healthcare services for migrant populations as well as AMRIT clinics in Rajasthan. He has also worked as a senior programme officer with UNICEF India (2003–12), leading expansion of its key maternal and child health programmes.

**Pradeep Patra** leads the Living Farms team on reviving traditional cropping and farming systems. He is an agroecology expert working towards the creation of locally appropriate nutrition-sensitive food systems. A graduate in chemistry and trained in ecological agriculture with almost fifteen years of work experience, he is helping reorient agricultural practices to become more nutrition-sensitive.

**Prasanta Tripathy**, PhD, is co-founder of Ekjut. He is also a Leadership for Environment and Development (LEAD) fellow, the ASHOKA fellow for social entrepreneurship and is a member of the mission steering group of the National Health Mission. He is known for his contribution to the communitization of public health. He focuses on the empowerment of marginalized women to strengthen the demand side of healthcare mechanisms in rural India.

**Pratibha Sharma** is a child development project officer for Orchha Block, under the Ramakrishna Mission Ashram, Narainpur, and manages the Integrated Child Development Services (ICDS). She has twenty-five years of experience in this field. She manages the programme in coordination with the health, education, agriculture and horticulture departments of the Ramakrishna Mission.

**Purvi Malhotra**, a communications officer at UNICEF India, has worked extensively in the area of advocacy and communication on issues related to children in India. She was previously a journalist with *India Today* and holds a postgraduate diploma in social communications media from Maharashtra University and a master's degree in science, society and development from the Institute of Development Studies, University of Sussex.

**Rajashree Joshi**, PhD, is a thematic programme executive at BAIF Development Research Foundation, Pune. She focuses on holistic tribal development and generating natural resource management-based livelihoods for tribal communities. She was the recipient of the Junior Research Fellowship from the University Grants Commission, Government of India. She is a DPhil in economics and rural development from the University of Pune.

**Rajendra Singh** has been working to encourage community water-conservation practices and reconnect indigenous people with their traditional cropping patterns. He runs an NGO called Tarun Bharat Sangh (TBS), which has enabled villagers near the Thar Desert look after their water management. Called the 'waterman of India', he was awarded the Ramon Magsaysay Award in 2001 and the Stockholm Water Prize in 2015.

**Rajnarayan Indu**, PhD, is the director of INREM Foundation since 2007. His earlier assignment was with Agro Economic Research Centre in Gujarat. He has had a long and distinguished career in agricultural economics; his research in water institutions and interest in culture and medicine have led him to make contributions in the area of public health.

**Dr Ramani Atkuri** is presently working on maternal and child health, and infectious diseases like tuberculosis and malaria in the states of Rajasthan and Uttarakhand. She also has extensive experience in working closely with marginalized communities in states like Chhattisgarh, Madhya Pradesh and Odisha over the last twenty-five years.

**Rohini Mukherjee** is heading the policy and advocacy cell at Naandi Foundation, and leading the nutrition team as well as Project Nanhi Kali, which focuses on providing ten years of quality education to girl children from economically disadvantaged families. She has specialized in cross-sector partnership at Cambridge University.

**Sachin Kumar Jain** is the founder-director of Vikas Samvad, which works with journalists, grass-roots organizations and stakeholders of the social-change process. He has authored forty-eight publications, published more than 1300 articles and facilitated 190 training programmes in the last sixteen years. He is also a Madhya Pradesh state adviser to the Supreme Court commissioners in the right to food case.

**Satish B. Agnihotri**, PhD, is an Indian Administrative Services officer. He is a professor at the Centre for Technology Alternatives in Rural Areas (CTARA), Indian Institute of Technology Bombay (IIT Bombay). He is a former secretary (Coordination & Public Grievances) of the cabinet secretariat, and is chairman, National Chemical Weapons Authority.

**Shubhranshu Choudhary** is founder of CGNet Swara and works with tribal peoples in central India. In his earlier role as a journalist he worked for the BBC's South Asia bureau for eight years and the *Guardian's* South Asia bureau for two years. He also spent five years as a reporter at the Hindi-language daily *Deshbandhu*.

**Siddharth V. Patel** is projects and technical manager at WASMO, Gujarat, where he helps implement the National Rural Drinking Water Programme. Besides monitoring, developing policy framework and field implementation, he is heading the Management Information System (MIS) unit and is helping build strategic partnerships.

**Dr Somesh Kumar** is deputy country director and head of programmes at Jhpiego India. He has extensive national and international experience as senior technical adviser to public health programmes. His particular interests lie in maternal, neonatal and child health issues and concerns. Dr Kumar has also worked as a

senior technical adviser for Maternal, Newborn and Child Health (MNCH) with the Norwegian government.

**Sonia Sarkar** is communication officer, advocacy and communication, UNICEF India. A social anthropologist, she has several years of experience in capacity development, risk communication training for Adverse Events Following Immunization (AEFI) and new vaccines training for the media. She has been the focal person in piloting Critical Appraisal Skills (CASP) in all its stages in India.

**Sourav Bhattacharjee**, an accredited expert in maternal and child nutrition, is currently working as a nutrition specialist with UNICEF Odisha for facilitating and influencing the state government's policy and planning for enhancing child nutrition, survival and development at scale. He has about eighteen years of progressive and multisectoral experience of working with UNICEF, CARE, corporates and government agencies across several states.

**Dr Suhas Kadam** is programme coordinator for Jan Swasthya Sahyog. A public health professional, he develops, coordinates and manages public health programmes for marginal communities. He was previously the urban health planning consultant and district programme manager for the National Urban Health Mission in Rajasthan. He has a master's in public health from the Tata Institute of Social Sciences.

**Sunderrajan Krishnan**, PhD, is the executive director of INREM Foundation, a research institution, since 2007. At the foundation he focuses on societal issues concerning water, public health, agriculture and the environment. He is also a member of the Indian Council of Medical Research (ICMR) task force for fluorosis.

**Sunita Gupta**, PhD, is a zonal coordinator at Jan Abhiyan Parishad, Planning, Economic & Statistics Department, Government of Madhya Pradesh. She is working as a task manager (training cell) with the chief minister's Community Leadership Development Programme (CMCLDP) for tribal blocks in Madhya Pradesh.



**Sweta Banerjee** works with Welthungerhilfe India, supporting food and nutrition security projects spread out over six states of India. She has been working in the public health nutrition sector for the last twenty years, particularly at the community level. She was also a consultant and technical assistant for UNICEF, where her work focused on severe acute malnutrition.

**Vadrevu Ch Veerabhadru** is the additional director at the Tribal Welfare Department, Andhra Pradesh. He assists with all planning, including of the Tribal Sub Plan. Earlier, he was the district tribal welfare officer and project officer, Integrated Tribal Development Agency (ITDA), for the Chenchus, a primitive tribal group of Nallamalai forest.

**Vandana Krishna**, an Indian Administrative Services officer, is director general, Rajmata Jijau Mother–Child Health and Nutrition Mission, Maharashtra. She is a former principal secretary of Women and Child Development, and secretary of the Family Welfare and Public Health departments. She has rich experience in public sector management and policy analysis.

**Vani Sethi**, PhD, works as a nutrition specialist—women’s nutrition and nutrition-sensitive sectors—with the Child Development and Nutrition Section, UNICEF India country office, New Delhi. She is currently leading India’s first-ever multisectoral community cash-grant nutrition demonstration programme. An expert in public health nutrition, she has more than twenty peer-review publications to her credit.

**Vinay Kumar** is regional director, Asia and global initiatives, at Digital Green. He has extensive experience of over thirty years in the public, private and non-profit sectors. Prior to Digital Green, he worked with Program for Appropriate Technology in Health (PATH), IntraHealth International Inc., JPS Associates, a management consulting firm, and the Reserve Bank of India.

**Virginus Xaxa** is currently Professor of Eminence at Tezpur University. Previously he was professor and deputy director at the

Tata Institute of Social Sciences, Guwahati campus, and professor of sociology at the Delhi School of Economics. He is the author of *State, Society and Tribes: Issues in Post-Colonial India* (2008) and co-editor of *Social Exclusion and Adverse Inclusion: Adivasis in India* (2012).

**Vishal Dev**, an Indian Administrative Services officer, is commissioner-cum-secretary, Women and Child Development, and also commissioner-cum-secretary, Sports & Youth Services, Government of Odisha. He is an alumnus of the Indian Institute of Technology, Varanasi (BHU), and the Indian Institute of Management Lucknow.

**Dr Yogesh** Jain has founded and runs the community health programme at Jan Swasthya Sahyog, which provides primary healthcare to 2500 villages across Bilaspur in Madhya Pradesh. He is engaged in research, developing health technology, training and lobbying.

### Editorial Team

**Ashok Kumar** is deputy editor with OneWorld South Asia. He is also a blogger at the HuffingtonPost.com. During the early stage of his journalistic career, he worked with the *Indian Express*, All India Radio and Doordarshan News. An alumnus of the Indian Institute of Mass Communication, he is also an MPhil in English literature from the University of Rajasthan.

**Dr Kakoli Roy** is a researcher with OneWorld Foundation India. A homeopathic doctor, she has more than four years of experience in public health, with a major focus on health, water, sanitation and hygiene. She has a master's in health sciences from the Queensland University of Technology, and has done her bachelor's in homeopathic medicine from the National Institute of Homeopathy.

**Rajiv Tikoo** has worked in senior editorial and management positions in OneWorld Foundation India, OneWorld South Asia, United Nations Millennium Campaign, the Indian Express Group and the India Today Group. He is also a former fellow of the Cambridge

Programme for Sustainability Leadership, the International Federation of Red Cross and Red Crescent Societies, and Panos. He has written extensively on development issues.

**Sridhar Raman** is a media and communication expert with over three decades of experience in leadership roles in editorial, publishing and marketing communication functions at premier mainstream and new-media organizations. He has served as a resident editor at the *Times of India*, features editor at the *Indian Express* and senior editor at *Businessworld*.

**Surbhi Bhalla** has more than seven years of work experience in the field of public health. She has worked primarily in the areas of maternal and child health, malnutrition in tribal children, capacity building and school health programmes with organizations including UNICEF and the Public Health Foundation of India. She holds a master's degree in foods and nutrition. She was also a Grassroutes Rural Fellow.

**Tej Prakash Yadav** is a development communication professional with over six years of experience at OneWorld Foundation India. An alumnus of the Indian Institute of Mass Communication, he has previously worked with All India Radio. He has hands-on experience in working with community media organizations, mainstream audiovisual media and communities to use media tools and handle strategic communication.

### Cover Illustration

**Saisha Vasudeva** is a fourteen-year-old tenth grader from the Shri Ram School, Mousari. Her tenacious interest in art from the age of three has led her to develop a fondness towards portraits, which she enjoys making through media like ink and charcoal.

## Index of Organizations that Have Contributed to This Book

- Action Against Malnutrition (AAM), xiii, xxxi, 56–61, 260–61, 262
- Basic HealthCare Services (BHC), xiii, xxxii, 80, 81, 82, 84
- Bharatiya Agro Industries Foundation, xiii, 24–28
- CGNet Swara, xxxiv, 187–88, 306
- Christian Hospital Bissamcuttack (CHB), xiv, xxxii, 85, 86, 87, 302
- Digital Green, xxxii, 103–08, 308
- Ekjut, xxxv, 57, 61, 258–62, 304
- Gram Vikas, xxxiii, 143–48, 301
- INREM Foundation, 163, 305, 307
- International Fund for Agricultural Development (IFAD), xv, xxix, 18, 31, 33, 34, 303
- Jan Swasthya Sahyog (JSS), xv, xxx, xxxii, 52, 54, 57, 90–94, 202, 261, 309, 307
- Johns Hopkins Program for International Education in Gynecology and Obstetrics (Jhpiego), xv, xxxii, 126–28, 306
- Living Farms, xxix, 3–8, 299, 304
- Ministry of Tribal Affairs (MOTA), xvi, xxv, xxviii, xxxv, 55, 69, 161, 137, 194, 196–98, 225, 227, 238–39, 241–45, 292, 302
- Naandi Foundation, xxxii, 109–13, 301, 302, 306
- National Institute for Research in Tribal Health (NIRTH), xvi, 115–17, 303

- OneWorld Foundation India,  
xxxiv, 299, 309–10
- Professional Assistance for  
Development Action  
(PRADAN), xvii, xxix, xxx,  
19–21
- Resource and Support Centre for  
Development (RSCD), xvii,  
xxxv, 219, 221
- SEWA Rural, xxxii, 97, 99, 102,  
300, 304
- Society for Participatory Research  
in Asia (PRIA), xvii, xxxiii,  
157–59, 298
- Tarun Bharat Sangh, xxxiii, 134–  
35, 305
- Tribal Welfare Department,  
Government of Andhra  
Pradesh, 208, 211, 229, 308
- UNICEF, xxiii, xxv, xxvi, xxviii,  
xxxiv, xxxv, xxxvi, 55, 67,  
71, 74, 96, 102, 142, 164,  
176–78, 194, 196–97, 199,  
201–03, 227, 236–40, 248,  
262, 273, 290, 295, 297–98,  
300–02, 304–05, 307–08,  
310
- Vikas Samvad, xxxiv, 172–73, 306
- Water and Sanitation Management  
Organisation (WASMO), xix,  
xxxiii, 150–54, 306
- Welthungerhilfe, xxx, 8, 36, 38,  
308

'I sincerely hope that the solutions suggested  
[in the book] will receive the attention of  
conscientious citizens, besides the governments  
in the states and at the Centre.'

JUAL ORAM, Minister of Tribal Affairs, Government of India



'The book is undeniably the need of the hour.  
It focuses on the indigenous practices, success stories  
and community value system of the tribal peoples,  
while exploring opportunities for collective development.'

KAILASH SATYARTHI, Nobel Peace Prize Laureate



[www.penguin.co.in](http://www.penguin.co.in)



E-book available