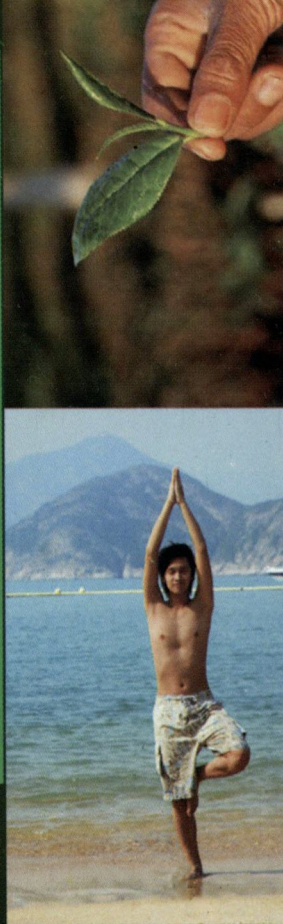


Agriculture Food Security Nutrition and Health in North East India

**Debashis Basu
B Francis Kulirani
B Datta Ray**



A Mittal Publication

According to current statistics and estimates, approximately 36 per cent of the people of North-East India are below the poverty level. In Meghalaya, for instance, 50 per cent of the households are below the poverty level. This, according to the editors of this volume, implies that those who live below poverty level are unable to buy enough food. In almost all the states of North-East India the availability of all the food items taken together are much below the standard as recommended for a healthy life.

The immediate objective of policy makers and official agencies is, thus, to make standard food available to the people. Unfortunately, this remains uncertain in North-East India, and the situation is alarming. A natural corollary of this situation is widespread nutrition deficiency and at least 250 million people in India suffer from varying degrees of malnutrition: out of 100 deaths in rural India, 58 are of children and seven million children are affected by blindness because of nutrition deficiency. The picture of North-East India is dismal in this context.

In view of the above state of affairs the public distribution system has an important role which has, so far, failed to reach the target groups in the countryside. This volume contains 37 papers from eminent experts on aspects of public distribution system, the overall agricultural scenario, food security, nutritional security and the related population and health issues in different parts of North-East India.

Some case studies of various constituents of the region throw adequate light on the existing conditions and are useful in finding solutions to the very acute problems in North-East India in the context of the issues covered by this comprehensive book.

DEBASHIS BASU (b. 1961) did his M.Sc (Physical Anthropology), M.A. (Addl.) (Social Anthropology) and Ph.D from Pt. Ravishankar Shukla University, Raipur, Chhattisgarh. He has carried out field works in connection with different projects on socio-economic condition, tribal medicine, physical growth and development, nutritional status, Population Genetics, DNA Polymorphism, etc. among the tribal and non-tribal populations in different districts of Bihar, Jharkhand, Orissa, West Bengal, Chhattisgarh, Meghalaya, Nagaland, Assam and Arunachal Pradesh. A book (edited with Prof. R.K. Das) on *North-East India in Perspective: Biology, Social Formation and Contemporary Problems* and about 26 research papers published both in national and international journals of repute, are to his credit. He is the life member of different scientific societies namely, North East India Council for Social Science Research (NEICSSR), Indian Confederation of Academy of Anthropologists (INCAA) and Indian Society of Human Genetics (ISHG). Presently he is posted in Anthropological Survey of India, NERC, Shillong, as Research Associate (Physical).

B. FRANCIS KULIRANI (b. 1952) is Superintending Anthropologist and Head of Office of the North-East Regional Centre (Shillong), Anthropological Survey of India. He has carried out extensive anthropological research in Kerala while being posted at the Southern Regional Centre (Mysore) of An.S.I. He has a couple of books to his credit and many articles in Indian and foreign journals. In the *People of India Kerala* series, published by An.S.I, he is one of the editors. His areas of research interest comprise village / agrarian studies, sustainable community (indigenous/tribal) development through heritage tourism, ethnography and cross cultural studies and museum anthropology.

B. DATTA RAY (b. 1922), author of *Administrative History of North-East India; Tribal Identity and Tension in North-East India*, and the editor of more than twelve books on North-East India, is founder Secretary of North-East India Council for Social Science Research since 1974. He, along with different scholars, also edited several books on North-East India. He is a veteran freedom fighter and a Tamrapatra awardee.

ISBN 81-7099-975-8

AGRICULTURE, FOOD SECURITY, NUTRITION AND HEALTH IN NORTH-EAST INDIA

Edited by

DEBASHIS BASU
B. FRANCIS KULIRANI
B. DATTA RAY



MITTAL PUBLICATIONS
NEW DELHI (INDIA)

No part of this work may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical photocopying, recording or otherwise, without the prior written permission of the copyright owners and the publishers.

First Edition 2006

© Debashis Basu, B. Francis Kulirani and B. Datta Ray
All rights reserved

ISBN 81-7099-975-8



006090

Published and printed by Krishan Mittal for Mittal Publications,
4594/9, Daryaganj, New Delhi - 110002, India.

Phone: 23250398 Telefax: 91-11-25351521

E-Mail: mittalp@ndf.vsnl.net.in Gram: Mittalbox

website: www.mittalbooks.com

CONTENTS

<i>Acknowledgement</i>	v
<i>Introduction</i>	vii
<i>List of Contributors</i>	xi
<i>List of Tables</i>	xix
<i>List of Figures</i>	xxv

PART I: AGRICULTURE, FOOD AND FOOD SECURITY

1. Agriculture, Food and Public Distribution System in North-East India — <i>J.B. Ganguly</i>	3
2. WTO and Agricultural Development in Backward Regions — <i>A.K. Neog</i>	7
3. Agrarian Developments and Food Security in the North-East Region — <i>A.C. Mohapatra</i>	13
4. Food Security Policy and Practice — <i>Asok Kumar Ray</i>	21
5. Agricultural Backwardness and Poverty of North-East India—An Alternative Proposition — <i>Banhi Chakraborty & C.R. Pathak</i>	27
6. Foodstuffs and Population of North-East India — <i>Rituparna Bhattacharyya</i>	51
7. Surplus of Food or Hunger —An Analytical Note on Food Security in India and its North-East — <i>Gorky Chakraborty</i>	57
8. Strategy for Food and Nutrition Security in North-East India — <i>Zahid Husain</i>	81
9. Food Production, Food Problem and Public Distribution System in North-East India — <i>B.K. Sarma & P.P. Pal</i>	91
10. Food and Related Issues in the North-East — <i>Sukhendu Mazumder</i>	101

11. Role of Agricultural Mechanization in Achieving Food Security 111
—*R.K.P. Singh, K.K. Satapathy & M.M. Pandey*
12. Food and Nutritional Security in the North-Eastern States—An Analysis 121
—*R.K.P. Singh, K.K. Satapathy & Gurmukh Das*
13. Interrogating the Concept of Food Security 133
—With Reference to Assam
—*Keya Sen Gupta*
14. Food Security and the Related Issues 145
—Some Reflections on the State of Tripura
—*Utpal Kumar De*
15. Food and Food Security in Arunachal Pradesh 163
—*R.P. Bhattacharjee*
16. An Aspect of Food Security on the High Altitude Region of the Eastern Himalayas 169
—A Case Study on the Thingbu-pas of Arunachal Pradesh
—*Bibhash Dhar*
17. Food Security—A Case Study of Assam 173
—*Susmita Priyadarshini*
18. Effectiveness of Targeted Public Distribution System 185
—A Case Study of Silchar Town of South Assam
—*Keya Sen Gupta*
19. Spatial Distribution and Socio-Economic well being of Scheduled Tribe Population in Assam 199
—*Momita Goswami & Lakhahira Datta*
20. Production of Agricultural Crops and its Security in Manipur 207
—*Rajmani Singh*
21. The Food Problem and PDS in India 213
—National and State Scenario
—*N. Tejmani Singh*
22. Food Security and Regional Planning 219
—*Amalesh Banerjee*
23. North-Eastern India, 2021, Population Growth, Food-Grain Requirement and Food Security 229
—Related Issues
—*Dulal Bhuiyan*

24. Food and Nutrition Security—An Overview 237
 —*Madhurima Chaliha Kalita, Mridula Saikia Barooah & Mamoni Das*
25. Scarcity and Insecurity in the Food Front in 249
 Kokrajhar District with Special Reference to the
 Serfanguri Bodo Relief Camp
 —*Sujata Bhadra*

PART II: NUTRITIONAL SECURITY, NUTRITION AND HEALTH

26. Nutrition and Food Insecurity 259
 —A Problem of New Millennium in North-East India
 —*P.C. Dutta & B.C. Pradhan*
27. Under-Utilized Crops for Household Food and 283
 Nutritional Security
 —*B.K. Sarma & Malini Barthakur*
28. Opportunities for Processing and Utilization Soybean 295
 to Increase Nutritional Security in North-East India
 —*R.K.P. Singh & K.K. Satapathy*
29. A Study on Knowledge of Rural Women 309
 Regarding Conservation of Nutrients
 —*Rulima Bharali, Juliana Sarmah & Manju Dutta Das*
30. Nutritive Value of Maize and its Diversified Uses 313
 —*D.K. Verma & B.K. Sarma*
31. Nutrient Consumption Pattern in North-Eastern States 321
 of India
 —*S.B. Singh, K.K. Datta, K.B. Singh & K.H.N. Vincent*
32. Food Habit and Nutritional Deficiency among the 329
 Scheduled Caste Population in Kamrup District of
 Assam
 —*Momita Goswami Barooah & Lakshahira Datta*
33. Medical Biotechnology in Human Health and Disease 333
 in North-Eastern India—A Commitment Towards the
 Betterment of Society
 —*R.S. Balgir*
34. Health as Governmentality Deconstructing the 347
 Myth of Good Health—A Case Study of the
 North-Eastern Region of India
 —*B.S. Butola*
35. Nutritional Anthropometric Assessment of Nutrients' 363
 intakes in the Dimasa Kachari Adult Population
 of Assam
 —*Debashis Basu*

36. Anthropometrical Study among the Agricultural Wokers of Meghalaya --S. Biswas, K.K. Satpathy, R.K.P. Singh, K.N. Agarwal and P. Choudhury	383
37. Effects of Nutritional Status on Fertility and Mortality Among Slum Women of Guwahati —Kanta Chakrabarty	405
<i>Index</i>	413

INTRODUCTION

Food, Nutrition and Food Security in North-East India are grave social issues involving the whole society. The economy of North-East India is based on agriculture and our agricultural productivity is low. The agrarian sector is technologically poor. The average productivity as a result is quite low. Manipur Valley's productivity per unit is higher than that of Assam, but we may take Assam as representative of the whole of North-East India. Cereals, being the source of calories, dominate in the food composition of all states in the region. Arunachal Pradesh has the highest per capita consumption of 609 grams per day and state of Meghalaya has a minimum consumption level of 210 grams per head per day. The minimum recommended level is 403 grams per capita per day. While Mizoram has a consumption of 31 grams per head per day of pulses, a source of poor persons protein. Meghalaya's consumption is only 3 grams, the lowest in North-East India. The national recommended level is 104 grams. According to current estimates, approximately 36 per cent of the people of North-East India are below the poverty level. In Meghalaya, fifty per cent of the household are below the poverty level. This implies that those who live below poverty level are unable to buy enough food. In almost all the states of North-East India, the availability of all the food items taken together are much below the standard as recommended for healthy life.

The objective of all production is the assured welfare and good life of the people by raising the standard of living condition. Our immediate objective is to make standard food available to the people. This remains uncertain even today in North-East India. The growth of food grain productivity in the region except Mizoram is below all India average of 2.78 per cent per year. The lowest annual growth rate is less than 1 per cent in state of Meghalaya. The disturbing situation in the states of Manipur, Meghalaya and Tripura is that the population growth rate is more than that of growth of food grains production. This situation in North-East India, a food deficit area is as a whole alarming. The problem has to be handled in the

formulation of short-term and long-term basis. Apart from macro-economic policies, particularly of agricultural policies, a number of direct intervention such as public distribution systems of food items is relevant for achieving food security. In the present state of agriculture in North-East India, when the rate of growth is slow and the demand is growing, the equilibrium can hardly be brought about by market mechanism. In the region, the food grain production is short by 2 million tonnes of the total demand of 8 million tonnes. Although literacy is high, the poverty level is not any way low, as a result, nutritional level is extremely low in North-East India.

It has been estimated by National Nutritional Monitoring Board that atleast 250 million people in India suffer from varying degrees of malnutrition. As a result, out of every 100 deaths in rural India, 58 are children, 7 million children are affected by blindness because of nutrition deficiency. Health care picture of the country is dismal. We spend a meagre of 6 per cent of the per capita gross Domestic Product on health. The North-East picture is dismal.

Under this condition, the public distribution system has important role. To reach the target groups through the Public Distribution system is an important policy of any welfare state. But in the present set up, it has failed to reach the target groups in the countryside. The rising price inhibits the poor people to lift the food items from the ration shops. The open market prices are often manipulated by the dealers and agents. The off-take of food grains from the ration shops in rural areas has been often much low. The stock position does not indicate the scarcity situation for the needy. Price, quality, underweight and lack of infrastructure in the form of road and communication system are the deterring factors. Isolation and inaccessibility are to be tackled to met the target groups in the rural areas for the Public Distribution System, more so in the hill states of North-East India.

Under the present circumstance the Public Distribution System and the Food Corporation of India have a significant role to fulfil welfare objectives. A full network of Public Distribution system, procurement quality and pricing of food items by the Food corporation of India are the prime duty needed to assure food security of the people. Although in recent years, efforts were made in North-East India. Particularly in the plain areas to bring self-sufficiency in food grains, the gap between production of food and the consumption demand remains big. In North-East the supply of

food grains from distant Punjab and Haryana is uncertain and costly due to inadequate surface transport. Regional plan could be made for the purchase of food grains from our neighbours like Bangladesh, Myanmar and South Asian countries by developing the proposed Asian Highway network.

We need the prioritization of policy towards food and nutritional security in the twenty first century. We need to take bold strides for rural and agricultural development involving land reforms and development of agriculture to realise the National Agricultural Policy to attain an annual growth rate of 4 per cent plus. We are world leader in milk production and the second largest producer of fruits and vegetable. We are to take integrated dairy development projects in North-East India. Fish farmers must be encouraged. Horticulture should play an important role in rural development.

The global policy follow up activities have been liberalization of the agricultural sector, monetary and fiscal compression, cut in social sector spending, free trade, and marketization, corporate land lordism, privatization, promotion of bio-technology and genetic engineering, revamping of marketing policy for promoting private sector intervention and free trade in agricultural products. All these, in fact, provided better scope to private sector market forces in food grains in the country. Poor delivery mechanism of Public Distribution System, poor infrastructure and inadequate coverage in the tribal and hill regions exposed the poor to open market forces through denial of social sector benefit squeeze. The post globalization follow up for dismantling the Public Distribution System pose greater threat to the poor. The regional and state disparity in food grains share, fall in off take, higher prices and dual pricing are found in many places. This has resulted in denial of adequate quantum of energy, protein and nutrition to a very large number of rural poor in North-East India. There is a need for appropriate strategy to face the challenges of globalization.

The threats of market economy and globalization, change in consumption pattern, poverty, illiteracy, lack of defined concerted efforts—further accentuated the food security risk in North-East India. Food and Nutrition safety not should accompany social development investment in health, education, water, sanitation and housing. Public investment in human capital, women participation and increased role of public action are of utmost importance for ensuring food and nutritional security. In view of strong gender bias,

women and child nutrition deserve adequate attention. The policy issues on Public Distribution System is of great importance.

There is a necessity of state intervention for revamping Public Distribution System by associating local democratic bodies at various level. It is necessary to take a holistic view of the improved agricultural production which can only be achieved by genuine land reforms. The fractured public policy towards land reforms, agriculture, food, health and nutrition has a tilt towards the market forces and this has to be resisted.

DEBASHIS BASU
B. FRANCIS KULIRANI
B. DATTA RAY