

INDIA

PHYSICAL ENVIRONMENT

TEXTBOOK IN GEOGRAPHY FOR CLASS XI

© NCERT
not to be republished



राष्ट्रीय शैक्षिक अनुसंधान और प्रशिक्षण परिषद्
NATIONAL COUNCIL OF EDUCATIONAL RESEARCH AND TRAINING

ISBN 81-7450-538-5

First Edition

March 2006 Phalgun 1927

Reprinted

November 2006 Kartika 1928

December 2007 Pausa 1929

December 2008 Pausa 1930

January 2010 Pausa 1931

January 2011 Magha 1932

January 2013 Magha 1934

January 2014 Pausa 1935

December 2014 Pausa 1936

February 2016 Magha 1937

February 2017 Phalgun 1938

January 2018 Pausa 1939

PD 100T HK

© National Council of Educational
Research and Training, 2006

₹ 60.00

Printed on 80 GSM paper with NCERT
watermark

Published at the Publication Division
by the Secretary, National Council of
Educational Research and Training,
Sri Aurobindo Marg, New Delhi 110 016
and printed at SRG Traders Pvt. Ltd.,
B-41, Sector-67, Noida - 201 301 (U.P.)

ALL RIGHTS RESERVED

- ❑ No part of this publication 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 permission of the publisher.
- ❑ This book is sold subject to the condition that it shall not, by way of trade, be lent, re-sold, hired out or otherwise disposed of without the publisher's consent, in any form of binding or cover other than that in which it is published.
- ❑ The correct price of this publication is the price printed on this page, Any revised price indicated by a rubber stamp or by a sticker or by any other means is incorrect and should be unacceptable.

**OFFICES OF THE PUBLICATION
DIVISION, NCERT**

NCERT Campus
Sri Aurobindo Marg
New Delhi 110 016

Phone : 011-26562708

108, 100 Feet Road
Hosdakere Halli Extension
Banashankari III Stage
Bengaluru 560 085

Phone : 080-26725740

Navjivan Trust Building
P.O.Navjivan
Ahmedabad 380 014

Phone : 079-27541446

CWC Campus
Opp. Dhankal Bus Stop
Panihati
Kolkata 700 114

Phone : 033-25530454

CWC Complex
Maligaon
Guwahati 781 021

Phone : 0361-2674869

Publication Team

Head, Publication Division : M. Siraj Anwar

Chief Editor : Shweta Uppal

Chief Business Manager : Gautam Ganguly

Chief Production Officer (In-charge) : Arun Chitkara

Editor : R.N. Bhardwaj

Production Assistant : Mukesh Gaur

Cover
Shweta Rao

Illustration
Dilip Kumar

Cartography
Cartographic Design
Agency

FOREWORD

The National Curriculum Framework (NCF), 2005, recommends that children's life at school must be linked to their life outside the school. This principle marks a departure from the legacy of bookish learning which continues to shape our system and causes a gap between the school, home and community. The syllabi and textbooks developed on the basis of NCF signify an attempt to implement this basic idea. They also attempt to discourage rote learning and the maintenance of sharp boundaries between different subject areas. We hope these measures will take us significantly further in the direction of a child-centred system of education outlined in the National Policy on Education (1986).

The success of this effort depends on the steps that school principals and teachers will take to encourage children to reflect on their own learning and to pursue imaginative activities and questions. We must recognise that, given space, time and freedom, children generate new knowledge by engaging with the information passed on to them by adults. Treating the prescribed textbook as the sole basis of examination is one of the key reasons why other resources and sites of learning are ignored. Inculcating creativity and initiative is possible if we perceive and treat children as participants in learning, not as receivers of a fixed body of knowledge.

These aims imply considerable change in school routines and mode of functioning. Flexibility in the daily time-table is as necessary as rigour in implementing the annual calendar so that the required number of teaching days are actually devoted to teaching. The methods used for teaching and evaluation will also determine how effective this textbook proves for making children's life at school a happy experience, rather than a source of stress or boredom. Syllabus designers have tried to address the problem of curricular burden by restructuring and reorienting knowledge at different stages with greater consideration for child psychology and the time available for teaching. The textbook attempts to enhance this endeavour by giving higher priority and space to opportunities for contemplation and wondering, discussion in small groups, and activities requiring hands-on experience.

The National Council of Educational Research and Training (NCERT) appreciates the hard work done by the textbook development committee responsible for this book. We wish to thank the Chairperson of the advisory committee for textbooks in Social Sciences, at the higher secondary level, Professor Hari Vasudevan and the Chief Advisor for this book, Professor M.H. Qureshi for guiding the work of this committee. Several teachers contributed to the development of this textbook; we are grateful to their principals for making this possible. We are indebted to the institutions and organisations

which have generously permitted us to draw upon their resources, material and personnel. We are especially grateful to the members of the National Monitoring Committee, appointed by the Department of Secondary and Higher Education, Ministry of Human Resource Development under the Chairpersonship of Professor Mrinal Miri and Professor G.P. Deshpande, for their valuable time and contribution. As an organisation committed to systemic reform and continuous improvement in the quality of its products, NCERT welcomes comments and suggestions which will enable us to undertake further revision and refinement.

New Delhi
20 December 2005

Director
National Council of Educational
Research and Training

© NCERT
not to be republished

TEXTBOOK DEVELOPMENT COMMITTEE

CHAIRPERSON, ADVISORY COMMITTEE FOR TEXTBOOKS IN SOCIAL SCIENCES AT THE HIGHER SECONDARY LEVEL

Hari Vasudevan, *Professor*, Department of History, University of Calcutta, Kolkata

CHIEF ADVISOR

M. H. Qureshi, *Professor*, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi

MEMBERS

Aparna Pandey, *Lecturer*, DESSH, NCERT, New Delhi

Ashok Diwakar, *Lecturer*, Government P.G College, Sector 9, Gurgaon

B. S. Butola, *Professor*, Centre for the Study of Regional Development, Jawaharlal Nehru University, New Delhi

Beena Srikumar, *PGT*, CRPF Public School, New Delhi

Noor Mohammad, *Professor*, Delhi School of Economics, Delhi University, Delhi

MEMBER-COORDINATOR

Tannu Malik, *Lecturer*, DESSH, NCERT, New Delhi

ACKNOWLEDGEMENTS

The National Council of Educational Research and Training acknowledges the contribution of Bhagirathy Jhingran, *Teacher*, Pathways World School, Gurgaon in the development of this textbook; the National Bureau of Soil Survey and Landuse Planning (under ICAR), Government of India, for providing input for the chapter on Soils. Special thanks are due to Savita Sinha, *Professor and Head*, Department of Education in Social Sciences and Humanities for her valuable support at every stage of preparation of this textbook.

The Council is thankful to the Survey of India for Certification of Maps given in the textbook. It also gratefully acknowledges the support of individuals and organisations as listed below for providing various photographs used in this textbook — M.H. Qureshi, *Professor*, CSRD, JNU for Figure 2.4, 5.4, 5.5, 6.1 and 6.4; B.S. Butola, *Professor*, CSRD, JNU for Figure 7.1, 7.5, 7.7 and 7.9; M.V. Srinivasan, *Lecturer*, DESSH, NCERT for Figure 7.3; ITDC/Ministry of Tourism, Government of India for Figure 2.1, 2.3, 2.8, 2.11, 2.12, 2.13, 2.14, 3.1, 3.3, 4.4, 5.7 and 6.6; Ministry of Environment and Forest, Government of India for Figure 2.9, 5.1 and 5.6; *Social Science* Textbook for Class VII, Part II (NCERT, 2005), for Figure 5.3 and *Social Science* Textbook for Class VIII, Part II (NCERT, 2005), for Figure 2.10 and 6.5.

The Council also gratefully acknowledges the contributions of Anil Sharma and Arvind Sharma, *DTP Operators*; Sameer Khatana and Amar Kumar Prusty, *Copy Editors*; Bharat Sanwaria, Shreshtha and Deepti Sharma, *Proof Readers*; Dinesh Kumar, *Computer Incharge*, who have helped in giving a final shape to this book. The contribution of the Publication Department, NCERT is also duly acknowledged.

The following are applicable to all the maps of India used in this book

© Government of India, Copyright 2006

1. The responsibility for the correctness of internal details rests with the publisher.
2. The territorial waters of India extend into the sea to a distance of twelve nautical miles measured from the appropriate base line.
3. The administrative headquarters of Chandigarh, Haryana and Punjab are at Chandigarh.
4. The interstate boundaries amongst Arunachal Pradesh, Assam and Meghalaya shown on this map are as interpreted from the "North-Eastern Areas (Reorganisation) Act.1971," but have yet to be verified.
5. The external boundaries and coastlines of India agree with the Record/Master Copy certified by Survey of India.
6. The State boundaries between Uttaranchal and Uttar Pradesh, Bihar and Jharkhand, and Chhattisgarh and Madhya Pradesh have not been verified by the Governments concerned.
7. The spellings of names in this map, have been taken from various sources.

CONTENTS

| | |
|---|---------------|
| FOREWORD | iii |
| UNIT I : INTRODUCTION | 1-6 |
| 1. India — Location | 2 |
| UNIT II : PHYSIOGRAPHY | 7-31 |
| 2. Structure and Physiography | 8 |
| 3. Drainage System | 21 |
| UNIT III : CLIMATE, VEGETATION AND SOIL | 32-75 |
| 4. Climate | 33 |
| 5. Natural Vegetation | 57 |
| 6. Soils | 68 |
| UNIT IV : NATURAL HAZARDS AND DISASTERS: CAUSES, CONSEQUENCES AND MANAGEMENT | 76-93 |
| 7. Natural Hazards and Disasters | 77 |
| APPENDICES | 94-98 |
| I. STATES, THEIR CAPITALS, NUMBER OF DISTRICTS, AREA AND POPULATION | 94 |
| II. UNION TERRITORIES, THEIR CAPITALS, AREA AND POPULATION | 95 |
| III. IMPORTANT RIVER BASINS | 96 |
| IV. STATE/UNION TERRITORY WISE FOREST COVER | 97 |
| V. NATIONAL PARKS OF INDIA | 98 |
| GLOSSARY | 99-100 |

CONSTITUTION OF INDIA

Part III (Articles 12 – 35)

(Subject to certain conditions, some exceptions
and reasonable restrictions)

guarantees these

Fundamental Rights

Right to Equality

- before law and equal protection of laws;
- irrespective of religion, race, caste, sex or place of birth;
- of opportunity in public employment;
- by abolition of untouchability and titles.

Right to Freedom

- of expression, assembly, association, movement, residence and profession;
- of certain protections in respect of conviction for offences;
- of protection of life and personal liberty;
- of free and compulsory education for children between the age of six and fourteen years;
- of protection against arrest and detention in certain cases.

Right against Exploitation

- for prohibition of traffic in human beings and forced labour;
- for prohibition of employment of children in hazardous jobs.

Right to Freedom of Religion

- freedom of conscience and free profession, practice and propagation of religion;
- freedom to manage religious affairs;
- freedom as to payment of taxes for promotion of any particular religion;
- freedom as to attendance at religious instruction or religious worship in educational institutions wholly maintained by the State.

Cultural and Educational Rights

- for protection of interests of minorities to conserve their language, script and culture;
- for minorities to establish and administer educational institutions of their choice.

Right to Constitutional Remedies

- by issuance of directions or orders or writs by the Supreme Court and High Courts for enforcement of these Fundamental Rights.