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Hyper Urban Growth and Impact of Land Use Change on Hydrological Profile of Lucknow Region

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Introduction

Water is a prime natural resource, a basic human need and a precious national asset. It is an integral part of the ecológical cycle and is finite in its presence yet infinite because of its recycling properties through hydrological cycle. It is abundantly available; and human kind consumes only a fraction of it for sustenance. Water is the source of life and, right from the origin, human being is using it for various purposes. The ancient civilizations had developed in river valleys. This is also true about medieval township and other developments, and all modern developments that they are related directly or indirectly to water. The main concern is that by using water, humans have influenced both its quantity and quality. Earlier the influence of human activity on water resources was limited but now this has become a major problem of environmental degradation throughout the world. However, there are many ways in which humans influence water, for example, by direct



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channel manipulation, modification of watershed characteristics, pollution, and reduction in the level of water table.

Objective of the Study

The present research aims to study primarily the nature and impact of Land use change on the surface as well as Sub Surface Water Resources in Lucknow and secondly to recognize the depletion and shrinkage of Water Bodies and its management through formulation of future strategy for conservation of Water Resource.

Study Area and Research Methodology

The study area Lucknow, the fastest growing city of the India and is situated about 500 km southeast of New Delhi in the heart of the state. It is known for its cultural refinement and patronage to art and literatures is spread evenly on both sides of river Gomati (Fig 1). It falls in Survey of India Toposheets no 63 B/13, 63B/14. It encompasses an area of 2528 sq km and accommodates a population of about 27, 63,000.

Lucknow has witnessed a radial growth – greater along the Faizabad Road and the Trans Gomti area in recent years. The position of the city as the only large urban centre amidst a number of small towns in the surrounding districts makes it an attractive destination for job seekers and people in need of education and health facilities. One of the features of the city's growth has been an decrease in the number of slums. Lack of data hampers the efforts to address service delivery challenges in the city.

Lucknow city falls in the Central Gangetic Plain and is part of Sai Gomati Sub Basin. It is almost a flat area with Natural Depression around Bakshi Ka Talab, Janki Puram, Sahel Nagar etc., the general slope of the area is from

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ISBN-13: 978-93-5125-202-3 (Set) 978-93-5125-203-0 (Vol. 1) 978-93-5125-204-7 (Vol. 2) 978-93-5125-205-4 (Vol. 3) 978-93-5125-206-1 (Vol. 4) 978-93-5125-207-8 (Vol. 5)

First Published 2017

Published and Printed by



Concept Publishing Company Pvt. Ltd.

Regd. Office:

Since 1974 A/15-16, Commercial Block, Mohan Garden,

New Delhi-110059 (INDIA)

Phones: 25351460, 25351794, Fax: 091-11-25357109

Email: publishing@conceptpub.com Website: www.conceptpub.com

Editorial Office: H-13, Bali Nagar, New Delhi-110 015, India.

Cataloging in Publication Data—DK Courtesy: D.K. Agencies (P) Ltd. <docinfo@dkagencies.com>

Regional development: theory and practice: Professor R.P. Misra felicitation volumes / editors, B. Thakur, H.S. Sharma, Suresh Misra, S. Chattopadhyay and Surendra Singh.

Communalism from Indian perspective / Sarajit Kumar Chatterjee.

volumes cm

Includes bibliographical references and index.

Contents: volume one. Concept of regional development - volume two. Measuring development -volume three. Development patterns and structures — volume four. Development policies — volume

five. Development challenges. ISBN 9789351252023 (set) ISBN 9789351252030 (vol. 1) ISBN 9789351252047 (vol. 2)

ISBN 9789351252054 (vol. 3) ISBN 9789351252061 (vol. 4)

ISBN 9789351252078 (vol. 5)

1. India—Economic conditions. 2. India—Social conditions. 3. Rural development—India. 4. Regional planning—India. I. Misra, R. P., 1930- honouree. II. Thakur, Baleshwar, editor.

HC435.R44 2017

DDC 330.954

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