EXPLAINING SUSTAINABILITY OF SHIMLA CITY:

DEVELOPING ENVIRONMENTAL AND SOCIO-ECONOMIC INDICES

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by

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CERTIFICATE

This is to certify that the thesis entitled **'Explaining Sustainability of Shimla City: Developing Environmental and Socio-economic Indices'** submitted by Ms. **Renuka Thapliyal** to the Indian Institute of Technology Delhi, for the award of the degree of **DOCTOR OF PHILOSOPHY** in Humanities and Social Sciences is a record of bonafide research work carried out by her under our supervision and guidance. She has fulfilled the requirements for the submission of the thesis, which is best of our knowledge, has reached the requisite standard.

The material contained in this thesis has not been submitted, in part or in full to any other University or Institute for the award of any degree or diploma.

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Explaining Sustainability of Shimla City:

Developing Environmental and Socio-economic Indices

Renuka Thapliyal

Abstract

This study is an attempt to assess the sustainability of Shimla, the capital of Himachal Pradesh, located in north-western Himalayas. Sustainability of city has become a very important challenge in the present context due to the rapid depletion of natural resources and pressures of urbanisation. Every individual aspires to improve his/her quality of life but the city as a whole should remain sustainable while the quality of life of its citizens improves despite the resource constraints set by the carrying capacity. The quality of life of the citizens can be measured/assessed in terms of Environment and Biophysical and Socio-economic Well-being indicators which are both objective (Non-perception) and subjective (Perception). Since the quality of life of people directly impacts resource consumption, it is important to integrate the two in every study that is related to city sustainability. In my view, 'Sustainable city' can be assessed in terms of improvement in the quality of life of its citizens who are constrained by the carrying capacity (supporting systems i.e., forests, land and water). The city should try to harmonize the use of resources keeping the interest of both present and future generations of its inhabitants.

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ABBREVIATIONS

Abbreviations	Full Form
BAU	Business as Usual
CBD	Central Business District
CBRI	Central Building Research Institute
CDMPS	City Disaster Management Plan Shimla
CDP	City Development Plan
CIDA	Canadian International Development Agency
CIESIN	Center for International Earth Science Information Network
COI	Census of India
DMSP OLS	Defence Meteorological Satellite Program's Operational Line scan System
DSR	Driving force-state Response
EEA	European Economic Area
EF	Ecological Footprint
ESI	Environmental Sustainability Index
EWI	Ecosystem Well-Being Index
GDP	Gross Domestic Product
GIS	Geographic Information System
GNP	Gross National Product
GOSD	Gazetteer of the Shimla District
GPI	Genuine Progress Index
HDI	Human Development Index
HPSTDP	Himachal Pradesh Sustainable Tourism Development Policy 2013
HWI	Human Well-being Index
IDP	Interim Development Plan
IISD	International Institute of Sustainable Development
IPCC	Intergovernmental Panel on Climate Change
IPH	Irrigation and Public Health
ISEW	Index of Sustainable Economic Welfare
IUCN	International Union for the Conservation of Nature
IUCN	International Union Conservation of Nature
JNNURM	Jawaharlal Nehru National Urban Renewal Mission
JNU	Jawaharlal Nehru University
LPG	Liquefied Petroleum Gas
MBF	Main Boundary Fault
MC	Municipal Corporation
MCT	Main Central Thrust
MSS	Multispectral Scanner

NSSO	National Sample Survey Organisation
OECD	Organisation for Economic Co-operation and Development
PGA	Peak Ground Acceleration
PSR	Pressure-state-response
QOL	Quality of Life
RBASCDR	Rapid Baseline Assessment Shimla City Draft Report
RICS	Royal Institution of Chartered Surveyors
RTO	Regional Transport Office
SADA	Shimla Area Development Authority
SC	Scheduled Caste
SENSOR	Sustainability Impact Assessment: Tools for Environmental, Social and Economic Effects on Multifunctional Land use in European Regions
SOER	State of Environment Report
SOI	Survey of India
SPOT	French Satellite Pour l'Observation de la Terre (Satellite for Observation of Earth)
ST	Scheduled Tribe
TES	Total Environmental Stress
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNHCR	United Nations High Commissioner for Refugees
USGS	United States Geological Survey
WCED	World Commission On Environment And Development
WDR	World Development Report
WEF	World Economic Forum
WHO	World Health Organisation
WI	Well-Being Index
WWF	World Wide Fund for Nature
YCELP	Yale Center for Environmental Law and Policy