UNECE

Natural Resource Nexuses in the ECE region





UNECE

Natural Resource Nexuses in the ECE region



Requests to reproduce excerpts or to photocopy should be addressed to the Copyright Clearance Center at: copyright.com

All other queries on rights and licenses, including subsidiary rights, should be addressed to:

United Nations Publications 405 East 42nd Street S-09FW001 New York, NY 10017 United States of America

Email: permissions@un.org
Website: https://shop.un.org

The findings, interpretations, and conclusions expressed herein are those of the author(s) and do not necessarily reflect the views of the United Nations or its officials or Member States.

The designation employed and the presentation of material on any map in this work do not imply the expression of any opinion whatsoever on the part of the United Nations concerning the legal status of any country, territory, city or area, or of its authorities, or concerning the delimitation of its frontiers or boundaries.

Links contained in the present publication are provided for the convenience of the reader and are correct at the time of issue. The United Nations takes no responsibility for the continued accuracy of that information or for the content of any external website.

Photo credits: The images in this publication have been taken from Pexels (<u>www.pexels.com</u>) and are subject to a Creative Commons Zero license

ECE/INF/2020/2

UNITED NATIONS PUBLICATION

Sales No. E.20.II.E.42

ISBN 978-92-1-117258-4

eISBN 978-92-1-005292-4

© 2021 United Nations

All rights reserved worldwide

United Nations publication issued by the United Nations Economic Commission for Europe

FOREWORD

The 2030 Agenda for Sustainable Development provides an ambitious and comprehensive framework that opens new perspectives for policymaking and international cooperation. While there has been progress in implementation, current efforts are far below the scale needed to deliver on the sustainable development goals (SDGs) within the next ten years. Ambitious, forward-looking action on the goals has become even more important in the context of the response to the COVID-19 pandemic: recovery that leads to greener, more inclusive economies and stronger, more resilient societies is essential.

ECE supports our member States in implementation of the 2030 Agenda through concrete and results-oriented activities in our eight sub-programmes: environment, transport, statistics, economic cooperation and integration, sustainable energy, trade, timber and forestry, and housing, land management and population. ECE's multi-sectoral structure has allowed us to support SDG implementation in an integrated manner, in line with the interlinked character of the SDGs, and to adopt a new way of working that cuts across sectoral boundaries. Four nexus areas have been defined where multiple SDGs converge:

- Sustainable use of natural resources
- Sustainable and smart cities
- Sustainable mobility and smart connectivity
- Measuring and monitoring progress towards the SDGs

In each of these areas, a cross-sectoral, inter-divisional team of ECE experts has undertaken an in-depth substantive analysis of current and future challenges and needs of ECE member States and has identified ways and means to address them, thus assisting member States to design and implement integrated policies in these areas. The findings of these analyses and corresponding policy recommendations are set out in a series of four flagship publications.

This report on the *Natural Resource Nexuses in the ECE region* describes the complex interactions and feedback loops between human and natural systems affecting the natural resource base such as energy, food, land, materials, and water. Two other sectors that are relevant to the nexuses, namely, transport and trade, also are considered here. A nexus approach ensures integrated and sustainable approaches to natural resource management that can be applied at all scales and that extend beyond the traditional sectoral "silos". This report identifies and analyses seven nexus hotspots that showcase specific challenges and opportunities for a nexus approach, considering core ECE expertise and products within a broader analytical framework that embraces regional megatrends and the SDGs.

The current patterns of linear, unlimited use of natural resources are starting to breach the carrying capacity of the planet. The seven key hotspots highlighted in this report are by no means exhaustive but demonstrate how total transformation of use and reuse of resources can be achieved through a holistic, systems approach. I invite member States to test and adapt the ideas put forward herein and to strengthen national capacities to tackle sustainable resource management through comprehensive approaches, especially given the challenge of building back better from the COVID-19 pandemic.

Olga Algayerova

Mgazerna

Under-Secretary-General of the United Nations
Executive Secretary of the United Nations Economic Commission for Europe

TABLE OF CONTENTS

	For	ewor	α	. III
	Ack	now	ledgements	viii
	List	of A	cronyms	. ix
	Key	Mes	sages	. x
NA	TUR	AL R	ESOURCE NEXUSES IN THE ECE REGION: SUMMARY	
	Del	iverii	ng Nexus Competences for Natural Resources in the ECE region	xiii
			us Hotspots	
NA	TUR	AL R	ESOURCE NEXUSES IN THE ECE REGION: MAIN REPORT	
	PAF	RT 1:	INTRODUCTION	
	1	Cha	llenging the unsustainable use of natural resources in the ECE region	. 1
		1.1	Why do we need a nexus approach?	1
		1.2	Background and objectives	2
		1.3	Establishing an interdisciplinary team using the nexus approach	2
		1.4	What is Natural Resource Nexus?	3
		1.5	Structure of the report	3
	PAF	RT 2:	STATUS AND TRENDS OF NATURAL RESOURCE USE IN THE ECE REGION	
	2	Stat	us and Trends of Natural Resource Use in the ECE Region	. 7
		2.1	Natural resource management	
			2.1.1 Definition of natural resources and sustainable management	7
		2.2	Management, production and use of natural resources in the ECE region	
			2.2.1 A regional perspective of the Natural Resource Nexus2.2.2 Energy	
			2.2.3 Food	
			2.2.4 Land	
			2.2.5 Materials	
			2.2.6 Water	. 17
		2.3	Interlinkages across the nexus nodes: Transport and Trade	. 18
		2.4	Looking ahead: Global and regional trends	. 21
			Continued population growth and urbanisation	
			Increasing competition for natural resources	
			Continued economic growth	
			Growing pressures on ecosystems	
			Increasing environmental pollution	
			Public health and natural resource use	
		2.5	Setting the stage for the ECE region	. 24

PART 3: THE NEXUS APPROACH FOR NATURAL RESOURCE USE

3	The	Nexus Approach for Natural Resource Use	27
	3.1	Seven Nexus Hotspots	. 27
	3.2	Food Loss and Waste. 3.2.1 Defining the Nexus Hotspot on food loss and waste. 3.2.2 Why a nexus focus on the food loss and waste challenge? 3.2.3 Intersectoral areas of work affecting food waste and loss 3.2.4 What is the ECE doing to address the food loss and waste challenge? 3.2.5 ECE tools and approaches relevant in the area of food loss and waste.	29 32 32
	3.3	Life Cycle of Vehicles 3.3.1 Defining the Nexus Hotspot on the life cycle of vehicles 3.3.2 Why focus on the life cycle of vehicles? 3.3.3 Intersectoral areas of work affecting transport 3.3.4 What is the ECE doing to address sustainable transport? 3.3.5 ECE tools and approaches relevant in the area life cycle of vehicles	37 41 41 43
	3.4	Land Value Capture. 3.4.1 Defining the Nexus Hotspot on land value capture	46 49 50 51
	3.5	Natural resource use in transboundary basins 3.5.1 Defining the Nexus Hotspot on natural resource use in transboundary basins 3.5.2 Why focus on the transboundary natural resource management and use? 3.5.3 Intersectoral areas of work affecting transboundary water management. 3.5.4 What is the ECE doing to address natural resource management and use in transboundary basins? 3.5.5 ECE tools and approaches relevant in the field of natural resource management and use in transboundary basins.	53 57 57 59
	3.6	Measuring the use of natural resources with the System of Environmental-Economic Accounting (SEEA) 3.6.1 Defining the Nexus Hotspot on measuring the use of natural resources with the System of Environmental-Economic Accounting (SEEA)	61 65 65 67
	3.7	Forest Landscape Restoration 3.7.1 Defining the Nexus Hotspot on forest landscape restoration 3.7.2 Why focus on the forest landscape restoration approach? 3.7.3 Intersectoral areas of work affecting forests. 3.7.4 What is the ECE doing to restore degraded landscapes? 3.7.5 ECE tools and approaches relevant in the area of forest landscape restoration	69 73 73 75
	3.8	Integrated Management of Energy and Mineral Resources 3.8.1 Defining the Nexus Hotspot on the integrated management of energy and mineral resources 3.8.2 Why focus on integrated sustainable energy? 3.8.3 Intersectoral areas of work affecting sustainable energy systems. 3.8.4 What is the ECE doing to support integrated and sustainable energy production? 3.8.5 ECE tools and approaches relevant in the field of integrated management of energy resources.	78 81 82 83

PAI		Nexus Thinking and the Circular Economy. Reduction of food loss and waste through a circular approach Transportation in a circular economy. Cities and urban areas in the circular economy. Water use in the transition towards a circular economy. Data demands for a Circular Economy. Forests and the circular economy. Circularity in an energy system. THE ECE REGION AND THE NEXUS AREAS	. 85 . 85 . 86 . 86 . 87 . 87
4 Natural Resource Nexus Areas and the ECE region: Pathways to integrative		ural Resource Nexus Areas and the ECE region: Pathways to integrative	
		ural resource management	91
	4.1	Existing ECE tools	91
	4.2	Developing nexus-relevant tools 4.2.1 Building capacities for nexus implementation	. 95 . 96
	4.3	Recommendations	. 97 . 97
		in member States: developing and strengthening the activities described under the nexus hotspots \dots	
5	Ref	erences	01
LIST OF	вох	ES	
Box i:		Nexus hotspots on food and energy from the circular perspective	xvi
Box 1:		The Nexus Hotspots in a nutshell	27
Box 2:		Snapshot case: Food Loss and Waste in Fish Value Chains	32
Box 3:		Snapshot case: Climate impact of electric cars	40
Box 4:		Snapshot case: Green Finance	49

预览已结束,完整报告链接和二维码如下:

https://www.yunbaogao.cn/report/index/report?reportId=5_650



