

CONTENTS

GEOGRAPHICAL ASPECTS OF SUSTAINABLE DEVELOPMENT OF REGIONS

CHAPTER 1

THE CURRENT STATE OF LAND USE AND LAND USE TECHNOLOGIES IN THE KULYKIV TERRITORIAL COMMUNITY OF LVIV DISTRICT, LVIV REGION

(Voitkiv P. S., Ivanov Ye. A., Kornus A. O.)	2
1. Natural and geographical conditions of land resources formation	3
2. Anthropogenic load on the environment	5
3. Current state of land use.....	8
4. Technologies and methods of efficient land use (on the example of agricultural land)	20

CHAPTER 2

EXPERIENCE OF TOURISM DEVELOPMENT IN THE UAE: PROSPECTS OF APPLICATION

FOR UKRAINE (Zavarika H. M., Lytvynenko L. I.)	30
1. Assessment of the current state of tourism in the United Arab Emirates.....	31
2. The impact of tourism on key aspects of the UAE's socio-economic development.....	39
3. Opportunities and prospects for tourism development in the UAE, experience for Ukraine.....	47

CHAPTER 3

SOCIO-GEOGRAPHICAL FEATURES OF THE DEVELOPMENT OF THE HOTEL INDUSTRY IN UKRAINE (Zarubina A. V.)

(Zarubina A. V.)	55
1. Territorial organization of hotel enterprises in Ukraine	57
2. Features of hotel industry development in the Kirovohrad region	60
3. Peculiarities of utilizing the potential of the hotel industry during the full-scale invasion.....	65
4. Main problems and prospects for the development of the hotel industry in Ukraine	68

CHAPTER 4

RENEWABLE ENERGY IN UKRAINE IN THE POST-WAR PERIOD: THE INTERACTION OF MAN AND THE ENERGY

(Ivanov Ye. A., Lopushanska M. R., Ostapyuk V. L.)	79
1. The concept of «energy landscape»	81

2. Study the past so as not to make mistakes in the future.....	82
3. View of the landscape through its energy potential.....	86
4. Geographical factors of formation of new energy landscapes in Ukraine (on the example of Lviv region)	90
5. Problems of formation and functioning of energy landscapes around Yavoriv and Rozdil reservoirs.....	96

CHAPTER 5

CONSTRUCTIVE AND GEOGRAPHICAL ASSESSMENT OF WATER AND SAPROPEL RESOURCES OF LAKES AND ARTIFICIAL RESERVOIRS OF UKRAINIAN POLISSYA

(Ilyina O. V., Ilyin L. V.).....	106
1. Assessment of water resources of Ukrainian Polissya.....	107
2. Assessment of lake sapropel resources of Ukrainian Polissya	113

CHAPTER 6

THE CURRENT STATE OF DISTRIBUTION OF NATURAL PHENOMENA DURING THE COLD PERIOD OF THE YEAR IN UKRAINE DURING 2020–2023. VERY HEAVY SNOWFALLS (Pyasetska S. I.).....

(Pyasetska S. I.).....	126
1. Territorial distribution of cases of very heavy snowfall on the territory of Ukraine during 2020–2023.....	128
2. Centers of very heavy snowfall on the territory of Ukraine during 2020–2023	134
3. Episodes of supernatural snow on the territory of Ukraine from 2020–2023	139
4. Area-hourly distribution of episodes of widespread and heavy snowfalls on the territory of Ukraine during 2020–2023	141

CHAPTER 7

REGIONAL POLICY OF SUSTAINABLE DEVELOPMENT OF TOURISM OF THE KYIV REGION

(Shelemetieva T. V., Aleksandrova V. V.).....	147
1. Characteristics and policy of the Kyiv region in the field of domestic tourism.....	149
2. Monitoring of the main indicators of the sustainable development of tourism in the Kyiv region before the start of a full-scale invasion	158
3. Study of indicators used in the strategy of sustainable development of tourism in the Kyiv region	167

ENVIRONMENTAL ASPECTS OF SUSTAINABLE DEVELOPMENT OF REGIONS

CHAPTER 8

BACTERIOCINS AS ECOLOGICALLY SAFE ANALOGUES OF ANTIBIOTICS AND CHEMICAL PESTICIDES

(Balko O. B., Balko O. I., Shelkova N. G.)	176
1. General characteristics of bacteriocins	177
2. Bacteriocins of phytopathogenic bacteria	180

CHAPTER 9

MONITORING OF THE SOIL COVER OF WESTERN OPILYA FOR PROVISION OF MICROELEMENTS

(Glovyn N. M., Pankiv N. M.)	199
1. Analysis of the soil cover of Western Opilya on the mobility of microelements.....	200
2. Study of the environmental factor as a link between plant resistance to stress and nutrients in the cultivation of agricultural crops.....	208

CHAPTER 10

THE EXPANSION OF THE TERRITORY OF THE NATURE RESERVE FUND OF UKRAINE AS A GUARANTEE OF SUSTAINABLE DEVELOPMENT OF THE STATE (Danylchenko O. S.)

(Danylchenko O. S.)	222
1. The structure and current state of the nature reserve fund of Ukraine	223
2. The reserve and index of territorial concentration of the nature reserve fund of Ukraine in terms of administrative-territorial units.....	227
3. The location of natural territories and objects across the territory of Ukraine	230
4. The impact of military operations on nature reserve objects of Ukraine.....	251

CHAPTER 11

ENVIRONMENTAL ASPECTS OF SUSTAINABLE DEVELOPMENT IN ZHYTOMYR REGION

(Demchuk L. I., Uvaieva O. I., Alpatova O. M.)	260
1. The emergence of prerequisites for environmental aspects of sustainable development in the Zhytomyr region	262
2. Assessment of environmental problems of sustainable development in scientific and methodological literature	266
3. Assessment of methods for solving environmental problems of sustainable development in Zhytomyr region	268

CHAPTER 12

ENVIRONMENTAL CONSEQUENCES OF MILITARY OPERATIONS IN UKRAINE ON THE EXAMPLE OF THE KHARKIV REGION (Krainiuk O. V., Buts Yu. V., Barbashyn V. V.)275

1. Infrastructure and facilities affected by hostilities278
2. Analysing satellite data and remote sensing280
3. The impact of military operations on the ecosystem of Dvorichansky National Park: analysis of changes in vegetation cover and prospects for ecological restoration282
4. Strategic measures for ecological restoration: the role of state policy and public initiatives294

CHAPTER 13

ECOLOGICAL ASPECTS OF SUSTAINABLE DEVELOPMENT OF UKRAINE'S REGIONS: INTEGRATION OF HEAT PUMPS AND RENEWABLE SOURCES OF ENERGY (Ostapenko O.).....300

1. Ecological aspects of sustainable development of Ukraine's regions ...300
2. Ecological aspects of integration of heat pumps and renewable sources of energy306

CHAPTER 14

METHODS OF CONTROL OF CHEMICAL ENVIRONMENTAL POLLUTANTS

(Khyzhnyak S. V., Samkova O. P., Voitsitskiy V. M.).....337

1. General characteristics of environmental pollutants.....338
2. Physical and physicochemical methods of determining environmental pollutants342

EDUCATION FOR SUSTAINABLE REGIONAL DEVELOPMENT

CHAPTER 15

ENSURING THE QUALITY OF GENERAL SECONDARY EDUCATION ON THE BASIS OF SUSTAINABLE DEVELOPMENT: STRATEGIC PRIORITIES AND WAYS TO IMPLEMENT THEM (Alieksieva S. V.)362

1. The system of quality assurance of general secondary education in Ukraine.....363
2. Strategic priorities for ensuring the quality of general secondary education on the basis of sustainable development and ways to implement them.....369

CHAPTER 16	
STEM-BASED TEACHING CHEMISTRY FOR SUSTAINABLE DEVELOPMENT GOALS IN LEARNING (Babenko O.)	376
1. Theoretical Foundations of STEM Education.....	377
2. Methodology of STEM Education Implementation in Chemistry Teaching.....	382
3. STEM Education as a Tool for Implementing Sustainable Development Goals.....	387
CHAPTER 17	
ENVIRONMENTAL EDUCATION FOR SUSTAINABLE DEVELOPMENT (Demchuk L. I., Davydova I. V., Rusetska N. M.)	402
1. Environmental education: philosophical aspect.....	404
2. Environmental education of students for sustainable development.....	408
3. Experimental study of students' environmental education.....	411
CHAPTER 18	
INNOVATIVE METHODS OF MUSIC EDUCATION FOR SUSTAINABLE DEVELOPMENT (Dudyk R. V.)	418
1. Using modern technologies (applications, online platforms) to popularize regional music.....	420
2. Project activities as a means of developing creativity and entrepreneurial skills through music y.....	427
CHAPTER 19	
PROBLEMS OF REGULATORY AND SUSTAINABLE DEVELOPMENT CULTURAL SIGNIFICANCE DURING THE WAR (Ilynska L. V.)	435
1. The complexity of the normative-sustainable development of provisions culturally significant sphere in the circumstances of the war.....	436
2. “Strategic Interpretation” of Normative-Sustainable Analysis of modern Ukrainian artistic experience.....	441
CHAPTER 20	
CONTINUING SOCIAL EDUCATION AS A FACTOR IN THE INNOVATIVE DEVELOPMENT OF TERRITORIAL COMMUNITIES IN THE TRANSITIONAL PERIOD IN UKRAINE (Kovalchuk G. O.)	449
1. Continuing social education and social inclusion in the context of innovative territorial development: content and current trends.....	450

2. The importance of continuing education for territorial communities and local communities in the current conditions of the transitional period in Ukraine	454
3. Quality management of continuing social education – organizational approaches	463

CHAPTER 21

VALUE CONCEPTS AND GUIDELINES OF A SOCIETY OF SUSTAINABLE DEVELOPMENT AS COMPONENTS OF DESIGN EDUCATION IN THE CONDITIONS OF INTEGRATION OF UKRAINE TO THE EUROPEAN UNION (Krasovska O. O., Kolesnyk N. Ye., Krasovska O. O.)

1. Analysis of the Global Sustainable Development Goals and their implementation in the content of domestic design education	491
2. Implementation of the Global Goals of sustainable development in the professional activity of the future designer	497

CHAPTER 22

PSYCHOLOGICAL AND PEDAGOGICAL ASPECTS OF SOCIALIZATION AND SOCIAL INTERACTION OF PERSONS WITH INTELLECTUAL DISABILITIES (Lukanova L. O.)

505	
1. Background of the problem and formulation of the problem	506
2. Factors for optimization of socialization and social integration of children with special educational needs	510
3. Peculiarities of psychological correction and social integration of persons with special needs during the war	515

CHAPTER 23

SCHOOL-BASED EDUCATION FOR SUSTAINABILITY IN UKRAINE: ACHIEVEMENTS AND CHALLENGES (Pometun O. I., Remekh T. O., Sierova G. V.)

529	
1. The formation of education for sustainable development in the Ukrainian context	531
2. The methodological underpinnings of school-based education for sustainable development as exemplified by the “Lessons for Sustainable Development” initiative	535
3. Contemporary trends and challenges in sustainable development education within Ukraine	542

CHAPTER 24

THEORY AND PRACTICE OF SUPERVISION IN PRESCHOOL EDUCATIONAL INSTITUTIONS OF THE ZHYTOMYR REGIONS OF UKRAINE (Sytniakivska S. M., Litiaha I. V.)..... 557

- 1. Theoretical foundations of supervision in socio-pedagogical activities 558
- 2. Socio-pedagogical activities in preschool educational institutions of Ukraine 580
- 3. Technologization of the supervision process in preschool educational institutions of the Zhytomyr region of Ukraine 589

CHAPTER 25

CRITICAL THINKING AS ONE OF THE SKILLS OF EDUCATION FOR SUSTAINABLE DEVELOPMENT (Stepanova N. M.)..... 610

- 1. Critical thinking as a soft skill: content and main characteristics 611
- 2. Methods and techniques of critical thinking as skills for sustainable development..... 615

CHAPTER 26

SUSTAINABLE DEVELOPMENT OF LOCAL COMMUNITIES IN PRESERVING CULTURAL HERITAGE AND NATURAL RESOURCES THROUGH RURAL (GREEN) TOURISM (Tymchuk S. V.) 624

- 1. Principles of sustainable development and their integration into green tourism 625
- 2. Effective models and the impact of sustainable tourism on the development of local communities..... 631
- 3. Challenges, barriers, and opportunities for the development of sustainable tourism in Ukraine 636

CHAPTER 27

THE EDUCATIONAL POTENTIAL OF MULTICULTURAL EDUCATION (ON THE EXAMPLE OF THE UKRAINIAN REGION OF BUDZHAK) (Shevchuk T. S.) 648

- 1. Problem's Preconditions and Its Formulation 648
- 2. Scientific Methods for Solving the Problem 651
- 3. Ethnocultural Specifics of the Ukrainian Region of Budzhak 652
- 4. Principles of Intercultural Communication in the Educational Environment..... 654
- 5. Project-Based Activities..... 655