

Preface

The breakup of the Soviet Union and collapse of the socialism in Eastern Europe in the late 1980s and early 1990s had major ramifications for the structure of societies, economies, and the way people used their land. Collectivized farms have transitioned to privately owned fields. Many arable lands have been abandoned and urban centers experienced substantial changes, both growth and decay, depending on the country, as manifested by space observations of nighttime lights. Forests damaged by industrial pollution in Soviet era recovered towards the end of the twentieth century. At the same time, satellite observations have been accumulated during the last 20–25 years to provide data-rich time series over land surfaces, allowing systematic analysis of the changes in land cover and land use observed from space.

This book describes and analyzes the effects of the collapse of socialist governance and management systems on land cover and land use in various parts of Eastern Europe including the countries of the former Soviet block, former Soviet Union republics, and European Russia. This book is a compilation of results from studies on land-cover and land-use changes and their interactions with carbon cycle and environment, effects of institutional changes on urban centers and agriculture, as well as changes in wildlife populations. The book is a truly international interdisciplinary effort written by an international team consisting of scientists from the USA, Europe, and Russia under the auspices of the Northern Eurasia Earth Science Partnership Initiative (NEESPI) supported by the NASA Land-Cover/Land-Use Change Program.

This book is of interest and directed to a broad range of scientists within natural and social science, involved in studying recent and ongoing changes in Europe, be they senior scientists, early career scientists, or students. The chapters of this book summarize analyses of the dramatic changes in land uses triggered by the abrupt change in the economies of the region and in land management. The satellite data used for these studies were mostly from optical sensors, including night lights observations, with both coarse and medium spatial resolution. The volume includes analysis of the drivers of agricultural land abandonment, forest changes in Black

Sea region, an extreme drought event of 2010, impacts of fires on air quality and other land-cover/land-use issues in Eastern Europe.

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