Preface

The 2021 10th International Conference “Forest ecosystems in the conditions of climate change: biological productivity and remote sensing” (FORECO) was held 28-29 September 2021 in the Zoom format. Since 2010 FORECO has become an annual international conference on the application of remote sensing technologies for monitoring and assessment of forests. The conference is aimed at promoting the exchange of new research ideas and practices on the use of remote sensing in estimation of forest cover and tackling the issues of climate change. The Conference was organized by the staff of Centre of Sustainable Forest Management and Remote Sensing of the Volga State University of Technology (Yoshkar-Ola, Russia).

Meeting website: https://feucc.volgatech.net/

Number of participants: 78

Countries represented: Austria, Finland, Greece, Russia, China, South Africa, Vietnam, Estonia, Italy, Australia.

Sponsors: International Union of Forestry Research Organizations, SUFOGIS ERASMUS+ project of the European Union, GEMOECO BRICS project.

The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

Background information:

The event touched upon topical issues of research and practice, including the remote monitoring of forest cover, international projects and technologies in the field of forest ecosystems in a changing climate. While essential progress has been achieved in the field, there remains a critical need for integrated understanding of the resilience and vulnerability of the forest ecosystems at the regional and global scale.

Key issues discussed:

• Forest fires – fast detection, mapping, monitoring with EO
• International initiatives in forest monitoring with EO
• Carbon assessment by remote sensing
• Forest productivity and remote sensing
• Climate implications for forests in relation to droughts, vitality, ecological functions

Conclusions:

The FORECO conference program included keynote addresses presented by a distinguished scientific committee, plenary talks, and panel discussions. Presentations covered a wide range of
disciplines, from forestry to ecology, Silviculture and nature management emphasizing the importance of the Remote Sensing and EO in estimation the consequences of Climate change on the global environment. The conference participants presented a number of local, national and international research programs to monitor impact of Global changes on vegetation (forest) cover in different parts of the world and globally. After hearing and discussing the presented reports, the conference participants noted the timeliness and relevance of the issues of monitoring and reproduction of forests in the conditions of climate change discussed at the forum. Conference participants concluded that the scientific community has built a solid basis in summarizing the Remote Sensing techniques to develop maps of the extreme events and observing their direct impact on forested and agricultural systems. However, there is a need for more research to enhance our understanding of the impacts and explore approaches for the mitigation of similar events in the future.

Finally, we would like to express our deepest appreciation to all conference participants for their contributions to this volume of proceedings. We also highly appreciate the assistance of IOP Publishing in producing this volume of the collected papers.

With the kindest regards on behalf of the organizing committee,

Editors of the FORECO 2021

Eldar Kurbanov, Ioannis Gitas

Scientific committee

Coordinator:

Prof. Eldar Kurbanov, Center of sustainable forest management and remote sensing, Volga State University of Technology, Guest Editor (Russia)

Members:

Prof. Ioannis Gitas, Aristotle University in Thessaloniki (Greece), Guest Editor
Ass.- Prof., Dr. Manuela Hirschmugl, coordinator of the IUFRO Scientific division 4.02.05 Remote Sensing (Austria)
Prof. Sergey Bartalev, Space Research Institute (Russia)
Dr. Xiaomei Li, Fujian Normal University (China)
Prof. Timo Tokola, University of Eastern Finland
Dr. Abraham Thomas, Council of Geosciences (South Africa)
Dr. Dimitris G. Stavroukoudis, Aristotle University in Thessaloniki (Greece)
Prof. Jinliang Wang, Yunnan Normal University (China)