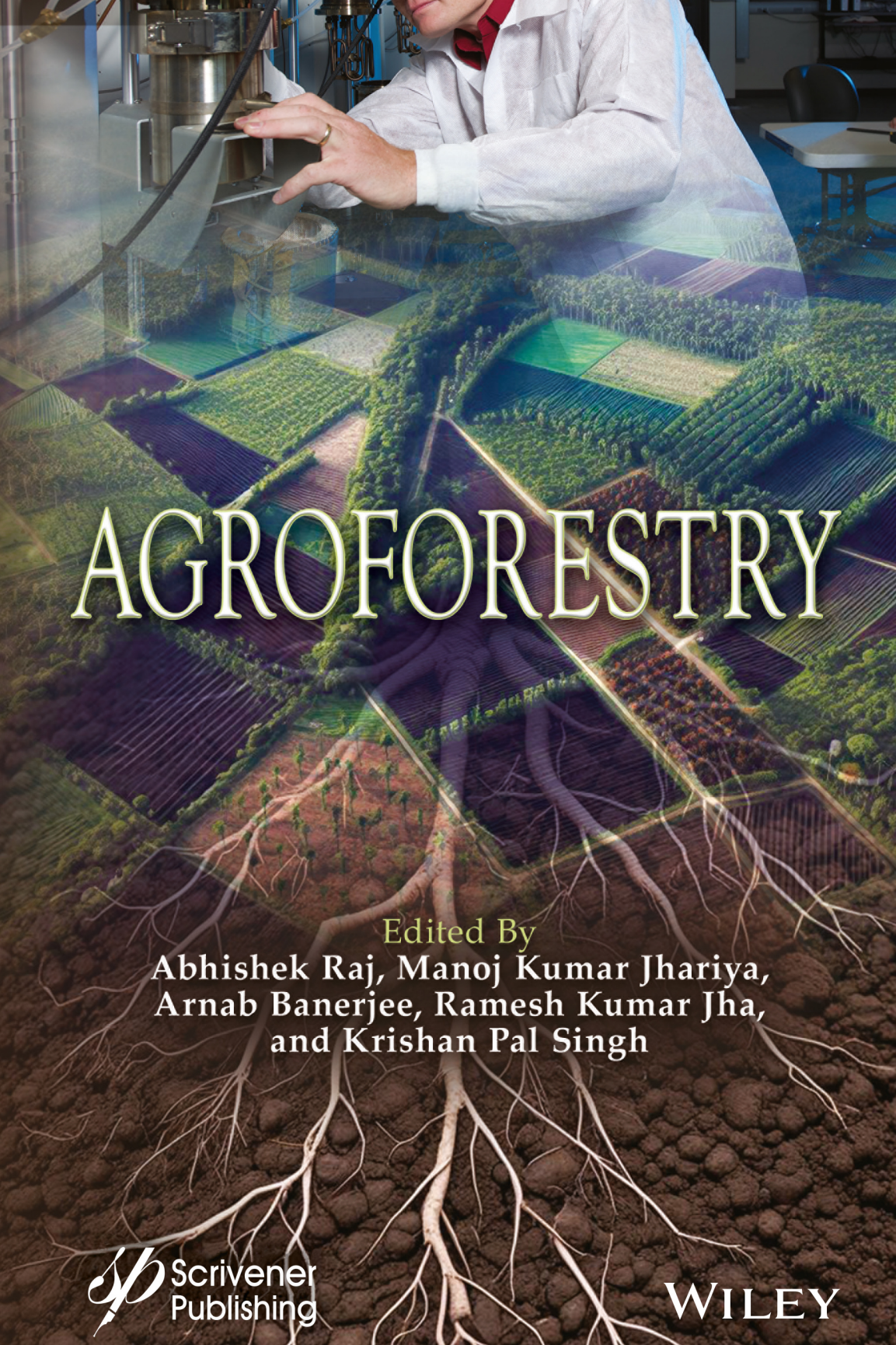
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Preface

Agroforestry (AF) is a suitable land-use practice covering 1.6 billion hectacres (78% in the tropics and 22% in the temperate regions) that enhances plant diversification and productivity and maintains eco-restoration. It ensures socioeconomic upliftment and people's livelihoods and various ecosystem services for sustainable development in today's climate, which is today's key topic popularized among policymakers, stakeholders, scientists, ecologists, and climate supporters globally. Agroforestry provides tangible and intangible benefits in sustainable ways in the world. Modifying tree–crop interaction also plays a key role in plant productivity in different agroforestry systems (AFs) in the tropics, which further ensure socioeconomic development and livelihood security. However, more than 75% of the world's poor directly depend on natural resources for their livelihoods. Adopting climate-resilient AF not only maximizes productivity and farmer's socioeconomic status but also mitigates climate change issues through carbon sequestrations for better carbon management in the tropics. However, various anthropogenic factors lead to natural resources degradations that induce climate change issues with maximizing carbon footprints. Farmers adopting sustainable farming practices especially AFs in the tropics, in the long run, not only are benefitting from the additional income that they can generate via selling these carbon credits but also are improving their soil health, yield quality, acreage, and profitability. The carbon trading in the tropical AF is seen as a way to provide financial incentives for farmers to adopt environmentally friendly practices, which helps to mitigate climate change. Moreover, AF importance and services are not on pause due its huge potentials that fulfill nine out of the 17 Sustainable Development Goald (SDGs). Poverty reduction (SDG-1), zero hunger policy (SDG-2), health improvement and good well-being (SDG-3), gender equality (SDG-5), economic growth and nation development (SDG-8), reduction inequality (SDG-10), greater productivity (SDG-12), climate action plan (SDG-13), and life on land (SDG-15) are the key nine goals addressed in SDGs that can be achieved through sustainable AFs.

Therefore, scientific management strategies in AF would maximize plant diversity; intensify ecosystem services, greater plant productivity, and higher socioeconomic and livelihood generation; and maximize carbon restoration along with many other environmental services for sustainable development.

The present book addresses the outlooks on major AFs along with AF management for livelihood security and sustainable development in the world. Ecological interactions and productivity in tropical AFs ensure that greater ecosystem services and livelihood resilience under a changing climate are also discussed. Building livelihood resilience through monetization of carbon credits in AF in the tropics is also discussed. Livelihood and its sustainability-based policy in AF; its challenges and future roadmap are also included. It would also focus on new insights related to updated research, development, and extension activities for combating climate change through carbon sequestration in AF that enhance intensify greater productivity, livelihood, and ecosystem services for ensuring the goal of sustainable development. This further ensures soil, food, and climate security through adoption of sustainable AF management approach.

Textbooks are available on the global market that address specific issues on agriculture, as well as its production and environmental consequences. The present title would integrate all the concepts into a single dimension from which various scientists, research scholars, academicians, and policymakers can benefit, with updated information. New insights are very much important in this particular aspect as our very existence depends on AF sustainability, ecosystem services, and environmental management. The present book consists of some specific research case studies considering traditional agroecosystems of Northeast India and their role in climate change mitigation. Case studies on different AF practices and its impacts on fauna (from arthropod to large mammals) in Malaysia are also included. Different modeling tools for AF management and its sustainability are briefly discussed. Carbon storage and dynamics in different AFs are also incorporated in this book. Carbon trading in AF and its monetization for farmer's benefits along with various economic studies for livelihood security are especially described. Intensive agriculture practices, deforestation activities, climate change risks, and related consequences along with its mitigation and adaptation are present in this book. These would provide new insights into the field of AF services and environmental management. Some titles update the reader about the current scenario on AFs India/Asia/Europe/world, afforestation activities, food security, carbon storage, sustainable intensification, resource conservation, sustainability and services, and soil and plant management. Therefore, the present title would help to

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