Sustainable Agriculture

A Vision for Resilience Future Volume II















SUSTAINABLE AGRICULTURE: A VISION FOR RESILIENCE FUTURE

Volume II

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About the Editors



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Dr. D. K. Patel

Dr. D. K. Patel currently holds the position of Associate Professor and Head, State Council of Agricultural Universities, Krishibhavan, Gandhinagar, Gujarat. With over 33 years of dedicated experience in teaching, research, and extension Dr. Patel is a leading figure in the field and Administration. From his role as an Agriculture Supervisor to his advancement to Associate Professor, he has been instrumental in various key areas of agricultural development and university administration. His significant contributions include All India Coordinated Research Project (AICRP) for Dryland Agriculture and pioneering research on drip irrigation techniques for arid fruit crops. He also developed and secured approval from the Government of Gujarat for the "Project on Floriculture," enhancing the state's agricultural initiatives. As a Technical Officer of Joint/Additional Secretary of the Government of Gujarat, he played a crucial role in establishing and strengthening a separate Agriculture Council office and managing a wide range of responsibilities, including scheme approvals, project planning, new constructions, and the establishment of a new colleges. He oversaw PG admissions, participated in Universities Board meetings, and coordinated with other State Agricultural Universities. He held various roles in committees and councils at SAUs, KU and Gujarat Natural Farming Science University. He has received best thesis award for his Ph. D. Thesis by GAAS, Gujarat. He published 20 research papers in international and national high repute scientific journals. He has published 02 books, 07 book chapters, 15 booklets/ Folders, 12 abstracts in International and National Conferences/ Symposiums/ Seminars. He has attended 17 international and National conferences/seminars. He has guided several PG students of Agronomy including 09 M. Sc. (Agri.) and 01 Ph.D. students. He has well experience of research in Intercropping, Rainfed and Dry land Agriculture, Pulses, Arid fruits and Fodder production. As Principal Investigator (PI) and Co-PI, he has spearheaded over 08 recommendations that have influenced farming community. Overall, his contributions have been vital in advancing both agricultural research and university administration.

PREFACE

In the ever-evolving narrative of our planet's sustainability journey, agriculture emerges as both protagonist and solution. Welcome to the second volume of **"Sustainable Agriculture: A Vision for a Resilience Future,"** where we continue to explore the dynamic interplay between human ingenuity and ecological harmony. As we stand at the intersection of environmental crisis and agricultural innovation, the need for sustainable practices has never been more urgent. Climate change, soil degradation, water scarcity, and biodiversity loss threaten the very foundation of our agricultural systems. Yet, amidst these challenges, lies an opportunity for transformation, resilience, and regeneration.

As we turn the pages of this volume, we delve deeper into the fertile soil of sustainable agriculture, unearthing insights, strategies, and stories that illuminate the path towards a resilient future. This volume serves as a beacon of hope, offering insights, strategies, and case studies from across the globe. From regenerative farming techniques that restore ecosystems to innovative technologies that enhance efficiency and reduce waste, each chapter presents a piece of the puzzle towards a more sustainable agricultural future.

In these pages, you will encounter the voices of farmers, scientists, educators, scholars, policymakers, and activists who are pioneering the way forward. Their stories inspire us to reimagine our relationship with the land and to cultivate a future where agriculture is not just sustainable but regenerative—a future where every seed planted is a promise of abundance for generations to come.

Whether you are a seasoned agronomist, a curious enthusiast, or simply a concerned citizen eager to make a difference, this book is for you. It is a roadmap, a manifesto, and a call to action—a call to join hands in building a world where agriculture is not just a vocation but a veneration, where the soil beneath our feet is the foundation of a resilient future.

So, dear readers, as you embark on this journey, may the stories within these pages ignite your imagination, inspire your actions, and ignite a flame of hope for a brighter tomorrow—a tomorrow where sustainable agriculture stands as a beacon of hope in an uncertain world.

"Cultivating Tomorrow: Sustainable Agriculture for a Greener Future"

With anticipation and gratitude,

Y. B. Vala M. H. Chavda C. K. Patel P. P. Chaudhari D. K. Patel

Acknowledgment

The journey of bringing "Sustainable Agriculture: A Vision for Resilience Future" to fruition has been one marked by the collaboration, inspiration and unwavering support of many remarkable individuals and organizations. It is with deep gratitude that we acknowledge their contributions, which have been instrumental in shaping this work.

First and foremost, we wish to extend our heartfelt thanks to our family for their unwavering support and encouragement throughout this period. To the esteemed experts, researchers, educators and practitioners in the field of sustainable agriculture, your pioneering work and tireless efforts have laid the groundwork for this book. A special thank you goes to the reviewers and contributors who provided invaluable feedback and constructive criticism. Your suggestions have helped refine and enhance the vision presented here.

We are profoundly grateful to the Sardarkrushinagar Dantiwada Agricultural University, Gujarat for its pivotal role in the development of this book. SDAU unwavering commitment to advancing sustainable practices and research has been instrumental in shaping the vision presented here. We're truly grateful.

To all chapter authors and publishing team, your professionalism and attention to detail have ensured that this book reaches its full potential. We sincerely appreciate your dedication and hard work. Thank you.

Lastly, we would like to acknowledge the broader community of individuals and communities working towards sustainable agriculture. Your passion and resilience continue to inspire and drive positive change in the world.

Finally, to you, the readers, who embark on this journey with us, we extend our deepest appreciation. Your interest and engagement are the driving forces behind this work. This book is a testament to the collective effort of many, and we honored to contribute to the ongoing dialogue on building a resilient and sustainable future.

[Editors]

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ABOUT THE BOOK

Welcome to a journey into the heart of sustainability. A journey that transcends the mere cultivation of crops to embrace a profound ethos of stewardship and resilience. **"Sustainable Agriculture: A Vision for Resilience Future"** is not just a book; it's a manifesto for change, a testament to our collective commitment to nourishing the planet while safeguarding its future.

In the pages that follow, we embark on a journey of exploration and discovery. A journey that transcends the boundaries of conventional farming to embrace a holistic vision of sustainability. Here, sustainability is not merely a buzzword; it is a guiding principle, a moral imperative, and a beacon of hope in a world beset by environmental challenges and social inequalities. This book is more than just a compendium of practices and techniques; it is a call to action—a call to reimagine agriculture as a force for positive change in the world. So, dear reader, I invite you to join us on this journey—a journey towards a future where agriculture is not just sustainable, but regenerative; not just productive, but enriching; not just a means of survival, but a celebration of life in all its diversity and abundance.

For policymakers, farmers, students, educators, researcher and consumers alike, **"Sustainable Agriculture: A Vision for Resilience Future"** offers inspiration, guidance, and a roadmap towards a brighter tomorrow one where agriculture becomes a beacon of hope and healing for the planet and all its inhabitants.



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