

Salt Affected Soils: Reclamation and Management

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PREFACE

To ensure equitable distribution of water and to meet the ever increasing demand for domestic, industrial and agricultural sectors of the arid and semiarid region, India decided to develop its water resources in an integrated manner. The approach called for storage, diversion and transportation of water from excess to deficit water regions. The approach initially led to increased production and productivity and provided needed food security to the nation. The benefits reaped as a result of this approach are not unblemished. The most conspicuous adverse environmental effects appeared in the form of water logging and soil salinity adversely impacting the productivity of the land and the water resources. The vast stretches of once productive agricultural lands went out of cultivation leading to the development of ‘wet deserts’.

The problem of water logging and soil salinity is not confined to irrigated lands but large chunks of land in coastal sub-humid and humid regions are also affected by twin problems due to varied reasons. It has been estimated that overall about 6.73 million ha of agricultural land is suffering due to water logging and/or soil salinity. Researchers in the country have come out with sound technical and economically viable technologies for the reclamation and management of waterlogged salt affected lands. These technologies have been well received by the stakeholders and the planners. More than 1.85 million ha of waterlogged salt affected soils have so far been reclaimed. The food grains produced on these lands is valued at Rs. 13.5 billion per annum. However, the technical breakthrough achieved in the reclamation and management of waterlogged saline soils has not yet been translated on a desirable scale more so in far flung areas habited by resource poor communities. It could be due to non-availability of these technologies in practical terms or due to resource crunch.

Realizing this, an attempt was made by the authors to collate the existing technologies and put them in a print form so that people could grasp the intricacies of these technologies. The book titled “Crop Production in Waterlogged Saline Lands” was published more than 10 years hence. Since the publication of this book, many innovative cost

effective solutions have emerged to reclaim waterlogged salt affected soils. In order to provide the latest information it has been decided to thoroughly revise the book and spread its canvass to include reclamation of both the saline and the alkali soils. All the chapters have been fully revised and reorganized to address the new challenges and their solutions. The title of the book has also been revised to Salt Affected Soils : Reclamation and Management.

The first chapter of the book discusses the extent, distribution and nature of the problems including diagnostic analysis procedures. Technologies to improve field drainage in humid/sub-humid and semiarid/arid regions are discussed in chapter 2. The basics of soil salinization of the root zone, which is often cited as the root cause of environmental degradation in irrigation commands forms the subject matter of chapter 3. The principles of leaching of saline/alkali or saline water irrigated lands also form the part of this chapter. Principles and package of practices to reclaim alkali, inland saline and coastal saline soils have been included in chapters 4, 5 and 6 respectively. The Differences in approaches to reclaim these kinds of soils have been explicitly highlighted. Finally the socio-economic aspects to decide the economic viability and social acceptability of reclamation projects have been included in chapter 7.

We hope that this book will be immensely useful to researchers, teachers and students, officers of command area development authorities, extension workers and above all the farming community of India. Any progress made in land reclamation programs with the help of this book will give us immense satisfaction. We would welcome suggestions to improve upon the contents and layout of the book.

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