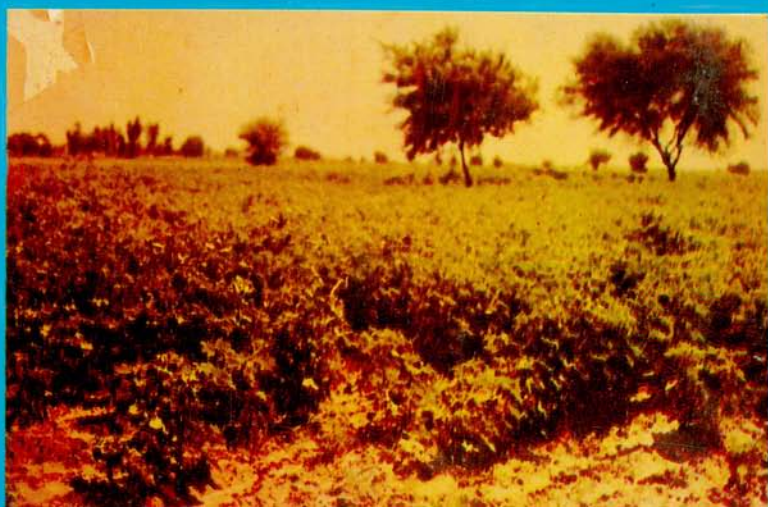


# ALKALI WASTELANDS ENVIRONMENT AND RECLAMATION



I.C. Gupta  
D.P. Sharma  
S.K. Gupta



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## PREFACE

The arid and semi-arid zones occupy 31.7 and 95.7 mha area, respectively and thus cover more than a third of the landmass of India. The introduction of canal irrigation in such areas, without adequate provision for drainage and scientific water management, has often led to waterlogging and consequently salt affected soils, reported for the first time in 1858 in Western Yamuna canal command at Munak (Haryana), these soils today occupy 12 mha in different states of the country costing more than Rs. 15,000 million per annum. This includes 4 mha of alkali wastelands, also called as sodic soils, posing a serious threat to environment. Alkali problem in agriculture is becoming more serious every year because normal soils are being more intensively and extensively exploited through irrigation.

India's population has reached the 896.6 million mark and will grow to 140 million by 2025 AD, the largest increase in the world, according to 'State of World Population Report 1994'. The latest World Watch Institute Report predicts massive grain deficits over the next 40 years on the Indian Subcontinent, if population continue to grow as projected. This is due to some of the following factors : irrigation water is becoming increasingly scarce, industrialisation is taking a heavy toll of crop land, and additional fertiliser use is no longer raising crop outputs. Since 1984, grain output per person has fallen roughly 1 per cent per year. By way of comparison, the annual per capita grain use in 1990 was 800 kg in the US compared to 200 kg in India. In order to cope up with the food requirement in the near future, agricultural production has to be stepped up substantially. The only feasible option is to increase the cultivable area by bringing under cultivation the approximate 100 mha of so-called wastelands which include 8 mha of saline and 4 mha of alkali wastelands.

Reclamation of alkali wastelands is essential as not only do these soils occupy significant areas, but these lands are potentially fertile. Experience acquired through research and experimentation in laboratories and fields in the reclamation and management of alkali soils shows that a major part of the alkali lands can be utilised for growing several selected crops, if these are managed scientifically. Several institutions have generated a wealth of information on this subject as a result of which it has been possible to collect, synthesize, critically evaluate and

disseminate the available information in this book. It is hoped that bringing information together in one volume will not only contribute to the advancement of knowledge but also help to solve the food problem of the country. This book will be immensely useful to researchers, teachers, extension specialists, progressive farmers, land use planners and post-graduate students.

Authors

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