teristic such as bulk density, porosity, moisture holding capacity and texture were also studied. Potwar area in the Rawalpindi district was selected which is a subcatchment of Indus river through Soan nullah. Seven soil samples were obtained for each land use.

The results indicated that forest land has maximum permeability as compared to those of other land uses. The infiltration capacity (permeability) for surface and sub-surface soil of forest land, range land and agricultural land were 21.8 cm/hr, 2.0 cm/hr and 2.7 cm/hr and 4.0 cm/hr 7.6 cm/hr and 1.9 cm/hr respectively. The higher in-filtration capacity (permeability) of forest land was considered to be due to vegetation cover, litter layer and micro organism activities. The properties of soil under different land uses were also found to confirm with the permeability results. The bulk density of soil was minimum and its porosity maximum on site under forest as compared to range and agricultural soils. Thus permeability was directly related with porosity and inversely related with bulk density.

The results of the study further indicated that forestry was the best land use in scrub zone for reducing surface runoff, increasing base flow and controlling soil erosion. Cultivation and overgrazing adversely affected the land in this regards.

BOOK REVIEWS


The role of plantation forestry is becoming more important in meeting the increasing demand for wood and wood products, as human populations grow and natural forests are cleared for agriculture, become degraded and unproductive, or are unavailable for wood production. The use of good quality seed and vigorous planting stock are two most important factors for establishing and maintaining commercial tree plantations. Taking into considerations these points, the booklet, 'Tree nurseries - an illustrated technical guide and training manual' written by Peter Posehen (ILO Industrial Activities Branch), contains all the necessary information needed to set up and successfully run tree nurseries. It is useful for the developing countries where most of the nursery works are carried out manually.

The book has been divided into 7 chapters dealing with selection of sites; collection and procurement of quality seed; raising of nurseries; stump planting; grafting and nursery management. All operations have been extensively illustrated to make it an easily understandable document for the nurserymen. The booklet is equally useful to foresters and forestry students as well as to farmers interested in growing forest and fruit trees.


Earlier, most of the literature on agroforestry was scattered in journal, pamphlets, brochures, newsletters, etc. However, as the science and art of agroforestry develops with more and more government organizations, universities and research institutions world over joining the efforts, this literature is coming in the book forms. The book under review as well as the one below are useful additions to this body of literature. "Planning for Agroforestry" is a compilation of selected contributions in international symposium "Planning for Agroforestry" held at Washington State University, Pullman, Washington, U.S.A. on April 24 - 27, 1989, under the auspices of ISOMUL (International Study group on Multiple Use of Land).

The contributions are presented in introductory and 14 Chapters covering 4 general topics and 11 case studies of Kenya, Sudan, Pacific Island, India, Costa Rica, Indonesia and Malawi. There is a great deal of emphasis on integration of agroforestry within rural land uses and farming methods to meet global challenges of population growth and environmental degradation. In addition, land uses and farming methods are fastly changing due to influences of world economy on local situation (Chapter I). Wiersum in this chapter evaluates the concept of sustainable land use and compares the characteristics of agroforestry to the proportion of this concept. In Chapter II, Raintree explains agroforestry diagnosis and design methodology evolved at ICRAF over the years.

Amongst the 11 case studies, 4 are concerned with Kenya, 2 with Sudan and one each with Indonesia, Malawi, India, Costa Rica and Pacific Islands. These studies bring out planning principles for agroforestry which have been evolved in different countries and from one project to the next within the same country under a variety of climate, soil and socio-economic conditions. These presentations provide useful insights into planning.
processes adopted under these conditions and should serve as useful guide for planners of agroforestry programmes in developing countries.


Agroforestry is a relatively new applied science and research in this discipline has to incorporate concepts of both agriculture and forestry. Further, it should be remembered that agroforestry research was started first by person of forestry back-ground which was later on taken up by social scientists. There was noticeable lack of interest on the part of agricultural scientists in matters concerning agroforestry research. This situation continues to-date. Consequently, management of agroforestry research poses special problems. This book should assist managers of this research. Section 1 consists of six chapters dealing with agroforestry research directions, problems, programmes, written study plans, research implementation and evaluation. A supplementary section written by Drs. Sallich M. Nor and Hashim M. Noor discusses the agroforestry challenge in Asia. Few books on management of agricultural research are available in the market and almost none concerning forestry or agroforestry research. Therefore, this book should serve a useful reading for research scientists of agroforestry, whose numbers is increasing in developing countries. It will not only help them in defining the problems and finding directions but will also provides them guidelines for preparation of study plans.