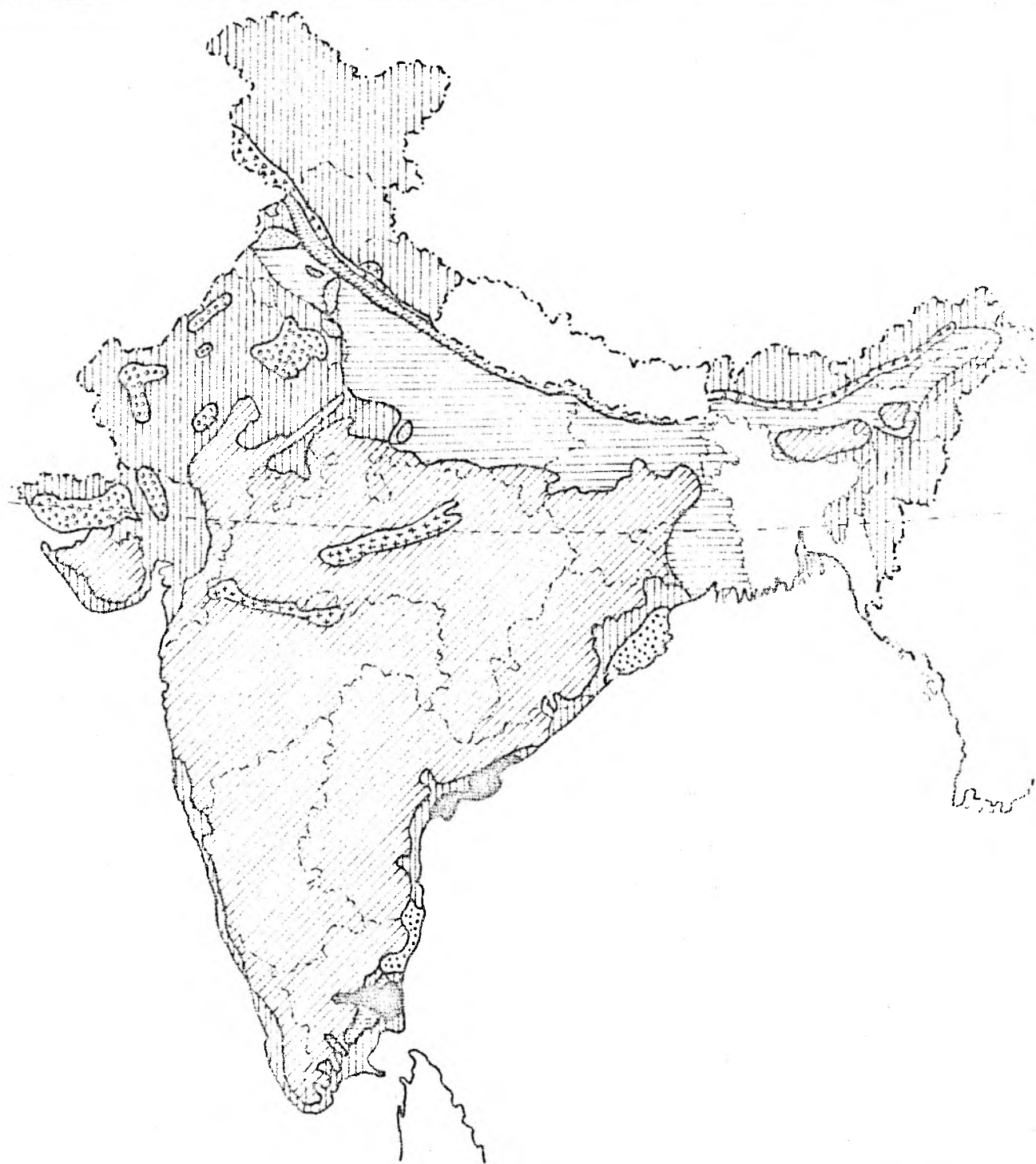


CHAPTER I

INTRODUCTION

The water resources of the country are limited and unevenly distributed, resulting in seasonal abundance in some areas and drought in other large tracts. There is a large gap between the net available water for irrigation and the amount required for intensive crop production. It is, therefore, essential to fill up this gap by improving the irrigation efficiency and by tapping the unexplored water resources of the country. Ground water is the most vital and dependable source of supply for irrigation. The net recharge available for ground water development in India is about 26.75 million hectare-metres per annum (10). The working group of the Planning Commission's Task Force on Ground Water Resources (41) estimated that the total usable ground water potential would be only 75 to 80 per cent of the net ground water recharge available and recommended a figure of 20.36 million hectare-metres per annum as the long term potential for the ground water development in India. The status of ground water resources in India, prepared by the Central Ground Water Board (10) is presented in Fig.1.1.

Though the ground water supply is available in many parts of the country, deep tubewells are scanty because of a very high initial investment. An average farmer, with a holding of less than 10 hectares, prefers to go for an






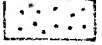


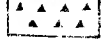
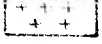
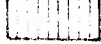
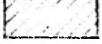
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|--|--|---|---|
|  | ARID AND SEMI-ARID ZONE -
GROUNDWATER RESERVOIRS
WITH LIMITED RECHARGE. |  | ARTESIAN GROUNDWATER RESER-
VOIRS WITH FAIRLY LARGE SCOPE
FOR RECHARGE. |
|  | GROUNDWATER RESERVOIRS WITH
SCOPE FOR RECHARGE. |  | COASTAL GROUNDWATER RESERVOIRS |
|  | GROUNDWATER RESERVOIRS WITH
AMPLE SCOPE FOR RECHARGE. |  | DELTAIC GROUNDWATER RESER-
VOIRS UNDER ACTIVE EXPLOITATION |
|  | GROUNDWATER RESERVOIRS WITH
AMPLE SCOPE FOR RECHARGE
ALONG THE SUBMOUNTAIN TRACTS. |  | GROUNDWATER RESERVOIRS WITH
FAIRLY CLOSED BOUNDARIES. |
|  | STATUS OF INFORMATION NOT
ENOUGH ON THE RESERVOIRS. |  | GROUNDWATER BASINS IN HARD
AND CONSOLIDATED ROCKS. |

FIG.1.1 MAP OF INDIA SHOWING GROUND WATER RESERVOIR
(REDRAWN FROM REFERENCE 10)