

INTRODUCTION

Water is a precious natural resource. Development of surface as well as ground water for increasing the agricultural production to meet the growing requirement of the country is very important. Despite large scale industrialisation during the plan periods more and more emphasis has been given on increasing agricultural production. It is essential to mobilise all efforts to maximise the productivity of agricultural land. One of the major impediments of full exploitation of the possibility of intensive agriculture is the lack of assured and dependable irrigation water supply throughout the year. The rainfall in large parts of the cropped area is low and uncertain in its distribution. Therefore, there is a strong need for irrigation. The average yield, which is dependent on effective irrigation, is usually low with high fluctuations from year to year.

The area under irrigation has increased substantially during the post independence period and construction of a large number of major, medium and minor irrigation projects have contributed to this to a large extent. The minor irrigation schemes provide the farmers with controlled and timely irrigation which the new high yielding varieties of seeds demand. These schemes are labour intensive, less implementation period and involve reasonable investments for their commissioning. As part of various development programmes, innumerable new schemes are being taken up in the States/UTs.

As the surface water projects alone are not able to meet the full demand of water, farmers install wells and tube-wells in their command area to provide supplementary irrigation.

MINOR IRRIGATION SCHEMES

All ground water schemes and surface water schemes (both flow and lift) having culturable command area up to 2000 ha. individually are classified as Minor Irrigation Schemes. Ground water schemes comprise of dug wells, dug-cum-bore wells, borings, private shallow tubewells, filter points and deep tubewells. The command area of private ground water schemes varies from 1 to 5 hectares. The State Governments provide assistance in installation of such schemes which confines mainly to technical guidance, custom service for boring and arrangements for credit facilities at reasonable rates of interest. The subsidies are also made available for installation of these schemes to weaker sections of farmers. The construction, operation and maintenance of these schemes are done by the farmers themselves. The deep tubewells which extend up to the depth of 200 meters or more are designed to give a discharge of 100 to 200 cubic meters per hour.

The surface water schemes comprise of surface flow schemes and surface lift irrigation schemes. The surface flow schemes typically consist of tanks, check dams, structures and can serve as water conservation cum ground water recharge scheme.

The structures are generally prevalent in hilly regions. These are known as Kuhl in Jammu & Kashmir and Himachal Pradesh, Gul in Uttar Pradesh, Ahars and Pynes in Bihar and low Khones and Dongs in north-eastern region. The small storage tanks are owned by community or local bodies and generally have command areas up to 40 hectares. The large storage tanks alongwith the distribution system having command area varying from 40 to 2000 hectares are constructed by State Government Department. Details of various types of MI schemes is given in Concept & Definition (Appendix-I), Para 2.

MINOR IRRIGATION STATISTICS

The National Commission on Agriculture examined in detail the status of minor irrigation in India and observed that although many State governments publish some information on the principal irrigation sources namely wells, tube wells, tanks, etc. in their agricultural statistics reports but no complete information is available at all India level.

A detailed census of minor irrigation schemes was first recommended by a sub-committee on irrigation statistics set up by the Planning Commission in 1970. The National Commission on Agriculture had recommended that a census of irrigation sources be undertaken along with the Agricultural Census once in five years. The Technical Committee on Agricultural Census 1980-81 discussed the list of items in respect of data relating to minor irrigation proposed to be collected along with the agricultural census in 1980-81. It was considered that the agricultural census data are being compiled from the existing land records in various States and the information as required do not figure in the land records, and it would not be possible to collect this information through the main agricultural census.

The scheme of Improvement of Irrigation Statistics was launched in 1980-81 by the Department of Agriculture. Although census of minor irrigation works was to be taken up under this scheme, it could not be conducted till 1985-86. While discussing various issues and problems in the irrigation sector in the Planning Commission in 1986, it was stressed that census of minor irrigation schemes be conducted quinquennially.

SOURCES OF DATA

The main sources of minor irrigation statistical data are (i) Land Use Statistics (LUS) of Ministry of Agriculture, (ii) Periodical Progress Reports from State Government Departments, (iii) Annual Administrative Report compiled by the State Government Departments (iv) Ad hoc reports prepared by various agencies from time to time on the basis of sample survey to assess the performance of minor irrigation works.

Land Use Statistics

The information on area irrigated is an ancillary product from the Land Use Statistics. The net area irrigated by the government canals, private canals, tanks, tube wells, other wells and other sources are compiled for village/tehsil/district and the State level. Similarly, area irrigated more than once under different crops are also compiled. The Directorate of Economics and Statistics, Ministry of Agriculture, Government of India publishes regularly the national level information with time lag of about 3 to 4 years. The primary data for LUS are collected by village patwaris in prescribed forms by plot to plot enumeration in certain States and are estimated on the basis of sample surveys in other States. The basic enumeration forms are not the same in the States and the instructions for obtaining details of area under irrigation and its sources are inadequate. In a few States, no separate columns for the sources of irrigation have been provided in the prescribed Khasra forms.

Classification of sources of irrigation does not provide data on irrigated area by important sources like private tubewells, dugwells, deep tubewells, diversion schemes and surface lift irrigation schemes. The gross irrigated areas according to different sources in most of the States are also not being compiled in LUS. In case of cropped area irrigated by two different sources, say canal and well, it is recorded under canal only. The Patwaris who are primarily responsible for data collection generally are not able to devote enough time required for collection of LUS data. Data are also based on sample surveys and ad hoc assessments in certain areas which introduce limitations in its reliability. Besides, the LUS data do not give information on the number of minor irrigation structures.

Periodical Progress Reports

Minor irrigation programs in the States are dealt by different departments under different development sectors. The progress reports relating to minor irrigation programs received from different departments at the Centre are used for compilation of minor irrigation data for the State. There has not been a single nodal department in the State to compile the minor irrigation statistics for the entire State. The structures installed by the farmers from their own efforts are generally not recorded. The irrigation potential of groundwater schemes is usually reported on the basis of certain assumed yardsticks. Usually no efforts have been made at the State level to provide a scientific basis for such yardsticks. In case of State irrigation works the irrigation potential and utilisation are usually estimated on the basis of such assumed duties/water allowances. The reported figures of irrigation potential created by certain schemes during a particular period might have been reduced over a period of time but no depreciation etc, has been taken into account in reporting the figures of cumulative irrigation potential created. The figures in respect of private minor irrigation works installed totally by the efforts of the farmers are usually not based on any positive

enumeration or sample survey. However, the main source is figures indicated by States/UTs during annual plan discussions.

Annual Administrative Report

In certain States there are no field agencies in the minor irrigation department to collect data relating to minor irrigation programs for their annual administrative reports. Further since minor irrigation program is dealt by more than one department of the State, the annual administrative report of irrigation department gives the statistics pertaining to works maintained by that department only.

Ad hoc Reports

The *ad-hoc* surveys are sometimes intended to throw light upon the socio-economic impact in certain areas for improving agricultural activities etc. The data collected on irrigation works under such surveys have a definite purpose and accordingly the priorities and weightage given to irrigation data for such minor irrigation statistics suffer from several deficiencies between the sets of progressive figures compiled on the basis of these statistics.