

# **WATER SUPPLY STATISTICS**

## **1. Introduction**

Water is a vital commodity. Like electricity, water is usually regarded as a public good to be produced and distributed by a corporation or an agency with virtual monopoly.

Production of potable water on a large scale involves the acquisition of capital needed for the withdrawal and processing of raw water as well as for its distribution. The heavy investment involved normally makes Government the only potential investor, particularly in a developing country.

Water production and distribution account for a very small proportion of Nigeria's gross domestic products. They average less than half per cent annually. It is pertinent to add that captive water as well as commercialised production of water account for not less than 50 per cent of total daily consumption of water in the country.

## **2. Coverage, Scope, Uses and Users of Water Supply Statistics**

Water supply covers collection, purification and distribution to household, industrial, commercial or other users. It excludes irrigation system operation for agricultural purposes; this aspect is being covered under Water Resources and Rural Development.

Water supply statistics are time-series observations in respect of a geographical area on the three activities Stated above. Specifically, such data are observations on activity variables relevant to the collection, purification and distribution of water for the users specified above. They cover such aspects as inputs, outputs, design and effective capacities, efficiency, quality and adequacy of service.

Like the statistics of other utilities and social services, water supply statistics are useful for planning and research. They are also important for computing social indicators for both intra- and international comparisons of the quality of life.

Reliable statistical information at regular periods on the key variables relating to a community's water supply situation is essential

for assessing the state of community's well-being, and the amount of work that has to be done to achieve UNICEF'S set goals of water and sanitation.

### **3. Sources and Methods of Compiling Water Supply Statistics**

The bulk of water supply statistics is generated operationally on a routine basis as water is dispensed to the consumers. Some components are, however, produced through surveys and censuses.

In Nigeria, as in most other countries, the Water Corporations or Water Boards are the major sources of information on water supply. They are State agencies with production/pumping stations and offices located in different parts of their areas of jurisdiction.

The Local Government Headquarters also constitute sources of information on water supply. Such data are in respect of rural water supply schemes involving the sinking of boreholes and tube-wells with hand-operated pumps; in some cases with the support of international agencies.

The surveys- or census-based data on water supply are produced by the NBS in the National Integrated Survey of Households (NISH) and in the National Integrated Survey of Establishments (NISE) where questions are asked on access to different sources of water.

The Water Boards also often conduct ad hoc water consumer surveys to estimate demand for water by different categories of consumers and to obtain consumers' opinions on their services and tariff policies.

The following types of data on water boards and consumers are generated by these sources:

(a) **Equipment and Facilities:** treatment plants, storage tanks, water pumps, tankers, water valves, generating sets (number, design and operational capacities, status and rate of use).

(b) **Services Provided:** rates and volumes of water delivered to categories of consumers, number of consumers connected/disconnected by categories, pipeline extensions/replacements, length and gauge.

(c) **Station's Operational Status and Volume of Water Withdrawn/Discharged, Sources:** high/low lift, treatment plant, booster station or water hydrant, sources of water (borehole, spring, river).

(d) **Personnel:** number, remuneration by sex and professional categories administration, engineers, technicians, billing staff and meter readers, others.

(e) **Costs and Revenue:** capital and recurrent expenditures, grants or subventions, receipts from consumers, etc.

These items of data are recorded on daily, weekly or monthly time-series by each reporting unit. The water corporation/board of each State collates the data for each water work under its management. Information on the following items is made available:

**Design capacity, average production, number of consumers (categories), average consumption, employment, wage bill (categorised), costs (chemicals, fuels, electricity), other costs, revenue (itemised for major sources).**

It will then be possible to compute aggregates or proportions of each item for the State and consequently for the nation as a whole.

It is expected that the survey/census results will yield proportions (e.g of consumers) with access to stand pipes, tube wells, served by boreholes, with metered premises. Such proportions can be used with appropriate population parameters to compute desired estimates.

#### 4. **Current Methods of Data Storage and Dissemination**

There is at present no reporting system for water supply statistics in Nigeria. Data on water supply are available in bits and pieces, in hard copies in files and occasional reports of water corporations and summaries of activities at water treatment plants and pumping stations which have the ability to keep such records. Hence, retrieval and transfer follow the same pattern of hard copies of data storage.

Although each water corporation is expected to keep detailed records of activities in each of its water works, the National Bureau of Statistics may only be able to store aggregate or average information for all water works in each State on its data base.

## **5. NBS Data Base Coding System for Water Supply Statistics**

The database coding system for Water Supply Statistics shows the structure of data as contained in National Bureau of Statistics's (NBS) Time-Series Database (TSDB). The Water Supply Statistics are structured into two Divisions as follows:

(a) Design Capacity and Average Production by Water Works: States.

(b) Water Production, Usage and Other Financial Statistics on water.

The United Nations International Standard Industrial Classification (ISIC) Divisional Code which NBS assigned to Design Capacity and Average Production by water works is 41. Water Production, Usage and Other Financial Statistics on Water are coded 42.

There are thirty-seven (37) Data items code 4101-4137 as indicated in Design Capacity and Average Production by Water Work: States and 23 data items codes 4201-4223 for Water Production, Usage and Other Financial Statistics.

### **Items and Detail Codes**

While efforts have been made to ensure that the Division Code or the first two digits of the code assigned to each variable conforms as much as possible to the ISIC, the items and details codes which form the last four digits of the code assigned to each variable are arbitrarily determined. The Division-Item-Detail (DID) coding system is the basis for coding NBS's datasets. Generally, the National Bureau of Statistics (NBS) is using a six-digit code for attributes (variables) in its data base with the first two digits as the division code, 3rd and 4th as the items code and the last two (5<sup>th</sup> and 6<sup>th</sup>) as the details code.

Based on this coding system, the NBS data structure for Water Supply is as shown below:

## **6. CONCLUDING REMARKS**

State Water Corporations/Boards used to have the monopoly of distributing potable water to consumers, but the inadequacy and inconsistency of supply by these agencies have led to increased participation of the private sector. Their supplies are purchased from the agencies or drawn from private boreholes, tube wells and other sources.

A recent survey has shown that 80 per cent of boreholes in a locality in Nigeria are privately-owned and are selling water to the public. Most wealthy Nigerians with houses in the semi-urban and especially rural areas sink their own boreholes, while not less than 50 per cent of households sink theirs or have access to tube wells as supplementary (to water corporations supply) or sole sources of potable water supply.

For health reasons and statistical purposes, it is desirable to compel operators of such boreholes to maintain records similar to those kept at the water corporations/boards.

The National Agency for Food and Drugs Administration and Control [NAFDAC] also has a role to play in ensuring that the quality of potable water dispensed to the consumer does not fall below an acceptable minimum standard. The Agency should have access to a data base with information on quality of potable water in different locations if it is to play this role effectively.