CHAPTER III

ORGANISATIONAL STRUCTURE OF TAMILNADU WATER
SUPPLY AND DRAINAGE (TWAD) BOARD AND
ITS DEVELOPMENT

3.1 INTRODUCTION

Organised efforts by the Government to provide water supply and drainage schemes was initiated in Tamil Nadu towards the end of the nineteenth century. Initially, the local bodies were entrusted with the task of providing the amenities of water supply and drainage schemes. Subsequently it was felt essential to have an organisation comprising of fully trained and experienced personnel on the Government side for bringing up a satisfactory standard, at minimum cost, in the execution and maintenance of water supply and drainage schemes. Therefore, the Sanitary Engineering Branch of the Madras Public Works Department was entrusted with the task of the investigation, design, execution and maintenance of the water supply and drainage schemes of all the local bodies in the state.

In the year 1962, the Sanitary Engineers circle and the Public Health Execution Circle were brought under the control of a separate Public Health Engineering and Municipal Works Department. In the year 1966, the Public Health Engineering Department was reorganised on a territorial basis, with a view
to cope with the increased work load and to ensure speedy execution of the schemes, when a number of water supply and drainage schemes were taken up. Accordingly two Public Health Engineering circles were formed at Madras and Madurai, headed by separate Superintending Engineers, with exclusive jurisdiction to investigate, design, execute and maintain all urban water supply and drainage schemes.

### 3.2 ORIGIN OF TWAD BOARD

The Government of Tamil Nadu with the object of providing water supply and sewerage facilities to the public within a reasonable time frame initially constituted, the Tamilnadu Water Supply and Drainage (TWAD) Board as a non-statutory body during 1969.¹ Statutory status was given to the Board with effect from 14.4.1971 by an enactment passed by the Tamil Nadu State Legislature.² The Tamil Nadu Water Supply and Drainage Board is the first of its kind in India. All the employees of the erstwhile Department of Public Health Engineering and Municipal works became the employees of the Board.

**Objectives of Forming the Board**

The preamble to the Act says that it is an Act to provide for the establishment of water supply and drainage facilities and the regulation and

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development of drinking water and drainage in the State of Tamil Nadu. The statement of objects and reasons runs as follows.

The importance of providing for protected drinking water and adequate drainage facilities to urban and rural areas alike engaged the attention of the Government for quite sometime past. At the moment matters connected with drinking water supply and drainage schemes were being dealt with by several departments. The Government considered that for effective planning and execution of drinking water and drainage schemes, it was essential that these were brought under the purview and control of a single agency for the purpose of investigating, preparing and executing water supply and drainage schemes. Accordingly, the Government constituted a Board to achieve these objects.

Government were of the view that if the Board could be set up as an autonomous body on a statutory footing, it would conducive to speedier planning, investigation and execution of schemes and also enable it to raise substantial resources from financial institutions and in the open market. The bill provided for the constitution of an autonomous Board to be entrusted with the powers to execute water supply and drainage schemes throughout the state and matters connected therewith.
Management of Tamilnadu Water Supply and Drainage (TWAD) Board

The affairs of Tamilnadu Water Supply and Drainage (TWAD) Board are managed by a Board, which is a body corporate and has perpetual succession and a common seal. The Board consists of

a) A Chairman;

b) A Managing Director,

c) Five Directors to represent respectively the departments of the Secretariat of the Government dealing with –

i) Finance,

ii) Health and Family Planning,

iii) Municipal Administration and Water Supply,

iv) Public Works, and

v) Rural Development Departments.

d) A whole time Director of the Madras Metropolitan Water Supply and Sewerage Board constituted under the Madras Metropolitan Water Supply & Sewerage Act, 1978, nominated by the Board, ex-officio;

e) The Chairman, Chamber of Municipal Councils, ex-officio.

f) The President, Tamil Nadu Panchayat Union, ex-officio.

g) Technical Director, a person with wide experience in the field of public health engineering with reference to water supply or drainage or
disposal of industrial waste who is not employed by the Government or a local authority or a Corporation owned or controlled by the Government.

Subsequently during the year 1985, the Engineering Director, the TWAD Board and Finance Director, the TWAD Board, were included as Directors of the Board.

**Powers and Functions of the Board**

The Board shall perform all or any of the following namely.³

a) at the instance of the Government or a local authority:
   i) Investigating the nature and type of schemes that can be implemented in the area of local authority for the provision of drinking water and drainage facilities.
   ii) Planning and preparation of schemes, including schemes covering areas falling within the jurisdiction of more than one local authority for the purpose of providing the water supply of drinking water or drainage facilities.
   iii) Executing such schemes under a phased programme for the provision of drinking water and drainage facilities within the areas of local authorities to which such schemes relate;

b) Providing technical assistance or giving advice to local authorities in the execution and maintenance of water supply and drainage works.

c) Establishing and maintaining schemes incidental to water supply and drainage such as testing of water, designing of plant for purification of water, conducting research relating to water supply and maintaining farm schemes.

d) Any other matter which is supplemental, incidental or consequential to any of the above functions; and such other functions as may be prescribed.

3.3. ORGANISATIONAL STRUCTURE

An organisation is a place, where individuals come together to attain an organisational goal. There should be co-ordination between the individuals to attain that common goal. This can be achieved only when there is a defined flow of activities.\(^4\) Hence, to achieve the defined objectives, a formal organisational structure is vital. An Organisational structure is a formal system of working relationships that both separates and integrates tasks. The separation of duties makes it clear who should do what. The integration of duties tells people how they should work together. Organisational structure helps employees work together effectively by (i) assigning human and other resources to tasks; (ii)

clarifying employees responsibilities and how they should mesh using job descriptions, organisation charts, and lines of authority; (iii) letting employees know what is expected of them through rules, operating procedures, and performance standards, and (iv) devising procedures for collecting and evaluating information that will help managers make decisions and solve problems.\(^5\)

The TWAD Board has a well defined organisational structures with role clarity and they same are explained here.

**Chairman**

The Chairman shall preside over the meetings of the Board. In the case of equality of votes, he shall exercise a second or casting vote.

**Managing Director**

The Managing Director is the Chief Executive of the Board. Subject to such regulations as may be framed by the Board, the Managing Director shall exercise supervision and control over the acts and proceedings of all the officers and servants of the Board. In the absence of the Chairman of the Board, the Managing Director shall preside at any meeting of the Board. The Managing Director may, in cases of emergency, direct the execution of any work, or the doing of any act which requires the sanction of the Board, if the immediate

execution or the doing of which is, in his opinion, necessary for the service or safety of the public and may also direct that the expenses of executing the work or of doing the act shall be paid from the funds of the Board.\textsuperscript{6}

The Managing Director may, subject to the control of the Board,

a) institute, defend or withdraw from legal proceedings instituted under this Act or any rules or regulations made thereunder;

b) Compound any offence against this Act or any rules or regulations made thereunder which, any law for the time being in force or the rules prescribed by the Government, may lawfully be compounded;

c) Admit, compromise or withdraw any claim made under this Act or any rules or regulations or schemes made thereunder; and

d) Obtain such legal advice and assistance as he may from time to time think it necessary or expedient to obtain, or as may be desired by the Board to obtain, for any of the purposes referred to in the foregoing clauses of this section, or for securing the lawful exercise or discharge of any power or duty vested in or imposed upon the Board or any officer or servant of the Board.

\textsuperscript{6}TWAD Board Act, Section 11.
Joint Managing Director

The Government has posted a Joint Managing Director (JMD) to the TWAD Board during 6/2002. He is incharge of the World Bank Project, the Sector Reform Project, the Information, Education and Communication Programme (IEC), the NRCD schemes, the NABARD schemes and computerisation.\(^7\)

Secretary

The Secretary, TWAD Board, is a statutory post\(^9\) and has well defined duties and functions as provided for in the TWAD Board Act, 1970, the TWAD Board Service Regulations, 1972, Discipline and Appeal Regulations, 1972, and the TWAD Board (Conduct of Meeting) Regulations, 1972. The functions are enumerated as below:

1) All debentures shall be signed by the Secretary, (2) The Secretary shall cause the report of the Auditor to be printed and forward a printed copy thereof to each Director and shall bring such report before the Board for consideration at its next meeting. (3) The Board may, by general or special order in writing, delegate to the Secretary such of its powers and functions, as it may deem necessary. (4) All orders and decisions of the Board shall be authenticated by the signature of the 

\(^8\)TWAD Board Office Order No.3, dated 18.6.2002.  
\(^9\)Section 9 of the TWAD Board Act, 1970.
Secretary. (5) The Secretary is the appointing authority for Superintendents, Confidential Stenotypists including Stenotypists, Junior Assistants, Telephone Operators, Daffadars, Basic Servants, Drivers, Record Clerks and Junior Accounts Officers. (6) He is the competent authority to effect intersectional transfer of Board staff. (7) He has powers to grant leave for Record Assistants, Record Clerks, Last grade servants and Junior Accounts Officers in consultation with the Chief Accounts Officer. (8) He is the competent authority to impose penalty of censure for Superintendents; Assistants, Junior Assistants, Confidential Stenotypists, Record Clerks. (9) He shall circulate the Board agenda and supplementary agenda among the Board of Directors and record, compile and communicate the minutes of the Board meeting.

**Manager (IAC)**

The Public Relations Manager post, held by a Deputy Director, on deputation from the information Department to the Government was abolished during 7/2002.\(^\text{10}\) To coordinate the Information, Education and Communication activities in the districts, where sector reform projects have been implemented, a separate cell namely the IEC Advisory Cell was constituted\(^\text{11}\) an headed by an Assistant Executive Engineer, designated as Manager, (IAC). He is in-charge of

\(^{10}\text{B.P. Ms.No.95, dated 6.7.2002.}\)

works relating to arrangements for meetings and protocol, allotment of vehicles advertisements, etc.

**Manager (EDP)**

The Manager (EDP) is responsible for all the functions at the computer wing. He has to improve the systems of the Board and identify the new systems suitable to the TWAD Board functions. The following functions are to be implemented with the aid of computer, stage by stage namely (1) Finance and accounting, (2) Personal administration, (3) Project monitoring, (4) Materials management.

**Vigilance Wing**

The internal vigilance machinery of late has become part and parcel of the administrative machinery of the public sector undertakings/Board type organisations. It is essential so that the public administration is carried on efficiently, honestly and with integrity with a view to ensure the objective of purity in public administration. The Tamil Nadu State Government has appointed vigilance officers in Government and public undertakings, with the following duties.\(^\text{12}\)

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1) To review and streamline the working procedures which appear to offer scope for corruption and malpractices and to initiate measures for detection and punishment of corruption and malpractices, (2) to keep track of the progress of disciplinary cases. (3) to offer remarks about the general reputation of various officers, (4) to maintain liaison with the Vigilance Commission and the Directorate of Vigilance and Anti-Corruption, (5) to encourage responsible members of the public to come with information about the corruption and malpractices in the various organisations. (6) to help the Head of the Department to determine the nature of disciplinary proceedings to be initiated against defaulters to ensure the quick disposal of disciplinary cases in the departmental proceedings and to that purpose ensure the appearances of witnesses and production of records in time.

Accordingly, a centralised vigilance cell is functioning in the TWAD Board headed by officers of the Indian Police Service holding the rank of the Inspector General of Police/ Deputy Inspector General of Police/ Superintendent of Police in various spells of time. The Chief Vigilance Officer is assisted by a Vigilance Officer, holding the rank of the Chief Engineer/ Superintending Engineer/ Executive Engineer deputed from the Public Works Department in different spells of time.
Chief Vigilance Officer

The Chief Vigilance Officer is responsible for the following functions.

a) To enquire into the allegations of malpractices against the officers and employees of the TWAD Board and submitting the findings to the Managing Director. (b) To suggest improvements to the system wherever necessary to avoid malpractices. (c) To have liaison with the officers of the State Vigilance and Anti-Corruption Department in conducting preliminary and detailed enquiries against the TWAD Board officers and employees and (d) Suggesting preventive measures to control the irregularities and plug the loopholes in the system in order to ensure quality in all works.

Development of Vigilance in Tamilnadu Water Supply and Drainage (TWAD) Board

As the organisation has witnessed an enormous growth, the work in the vigilance cell increased and there was an overwhelming increase in the number of allegation petitions being received in the Vigilance Cell against the staff at various levels of the Board.

It became exceedingly difficult for the Vigilance Cell, with a minimum staff strength, to investigate all the cases. Hence from 1992 onwards all the Chief Engineers and Superindending Engineers of the TWAD Board were instructed to
personally go into details of the allegation petitions forwarded to them by the Chief Vigilance Officer for enquiry. They were requested to sincerely and expeditiously conduct a foolproof enquiry and send a clear cut report of their findings to the Vigilance cell.

Since in many departments, several regional offices have been established subsequently under the charge of second level officers, it was considered necessary by the Government to appoint the regional officers as Vigilance Officers in addition to their normal duties.\(^\text{13}\) In compliance with the orders of the Government the Board has nominated Vigilance Officers in all the regions and circles and they have to perform the vigilance function in addition to their normal functions.\(^\text{14}\)

In each region - The Executive Engineer, Monitoring cell.

In each circle – The Deputy Superintending Engineer.

The officers shall report to the Managing Director through the Chief Vigilance Officer. Their duties are as below.\(^\text{15}\)

a) Should review the procedures so as to streamline the administration and eliminate the scope for corruption and malpractices. (b) Collect information on the


\(^{15}\)Ibid.
general reputation of various officers and relevant information about them so as to take note of them before posting in a sensitive post. (c) Liase with the Chief Vigilance Officer, the TWAD Board, and watch officers of doubtful integrity, (d) prepare a list of points and places of corruption in association with the Vigilance Cell of the TWAD Board and make surprise checks at such points themselves or with the officers of the Vigilance Cell, record the results and send them to the Chief Vigilance Officer, the TWAD Board.

Legal Cell

The Legal Cell in the Board was formed in the year 1989 to look after the legal matters pertaining to the TWAD Board service matters, contracts to settle the labour disputes, etc., with a Law Officer in the cadre of an Under Secretary to Government on deputation from the Law Department of the Government, one Assistant Section Officer with law qualification and one Assistant (M) with law qualification. A number of files were referred for opinion of the Law Officer. In the Law Department of the Government, only the Deputy Secretary is competent to offer opinion. Hence the Law Officer post was upgraded to the rank of Deputy Secretary to Government\(^{16}\) and one Assistant Law Officer post was created, apart from creating a Legal Assistant post and retaining the Assistant (M) post.

Law Officer

The duties and responsibilities of the Law officer are as follows:\(^17\)

1) Scrutinizing the draft counter affidavits received from the Board’s Legal Advisers and Advocates and obtain the approval of the Managing Director thereon. (2) Assisting the Legal Advisers (Advocates) whenever the services of the Law Officer is required by them. (3) Briefing the Senior Counsels whenever their services are engaged by the Board. (4) Offering legal opinions on the files referred to the Law Officer.

Further the Law Officer should be consulted on all matters\(^18\) dealing with:

1) Court cases (Lower Court & High Court), (2) Arbitration cases, (3) Conciliation between the staff and the administration before the Labour Commissioner, (4) Clearance of major agreements with funding agencies and major contracts and (5) Any matter with a legal angle.

Assistant Law Officer (In the Grade of Section Officer)

1) Scrutinising the parawar remarks and affidavits and submit the files to the Law Officer. 2) Assisting the Legal Advisers (Board’s Advocates) and Law Officer in the preparation of fair counter affidavit and hand over the counters to the Advocates for filing in the High Court. (3) Matters relating to the Writ

\(^17\)Office Order No.1, dated 26.5.1993.
Appeals, Special Leave Petitions and Writ Petitions pertaining to the period 1983 to 1989. (4) Supervision work of the Legal Cell.

**Deputy Law Officer**

During 11/94, one Assistant Executive Engineer with law qualification was posted to the Legal Cell with the functional designation as Deputy Law Officer and all the Legal Cell files were ordered to be routed through him.

In B.P. Ms No. 108 dated 19.4.1995 all the temporary posts in the Legal Cell were discontinued, except the Law Officer post. However, the Deputy Law Officer post was continued on diversion, apart from diverting a Superintendent, an Assistant Engineer, (non-legally qualified), an Assistant (legally qualified) from the Head Office sanction.

During 7/95, the Law Officer post was upgraded and a Deputy Secretary on promotion as Joint Secretary from the Law Department was posted as Law Officer. Consequently on promotion of the incumbent as Additional Secretary, he continued to hold the post of Law Officer, till the completion of his deputation period. (31.7.97).

Till 7.2.2000, for a period of more than 2 ½ years, the Law Officer post was vacant and the Deputy Law Officer, held charge of the Law Officer post. During 2/2000 a Deputy Secretary to the Government Law Department on
promotion as Joint Secretary was deputed the Law Officer to the TWAD Board. He was promoted to the rank of Additional Secretary to Government in 2/2002 and continuing as Law Officer of the TWAD Board.

The present organisational set up of the Legal Cell is comprised of a Law Officer (Additional Secretary to Government), and a Section Officer. Under the Section Officer there are seven dealing members from various cadres both legally qualified and non-legally qualified.

**Hydrogeology Wing**

A well equipped full fledged Hydrogeology Wing is functioning in the TWAD Board Head Office under the leadership of a Senior Hydrogeologists, assisted by two Hydrogeologists, three Deputy Hydrogeologists and 11 Assistant Hydrogeologist. In the field offices of the TWAD Board, the Territorial Circles and Fluoride Circle are represented by a Deputy Hydrogeologist and the division offices (RWS, P.F. and fluoride division) are represented by an Assistant Hydrogeologist.

The Hydrogeology Wing is entrusted with the responsibility of locating potable, perennial and dependable sources of water supply for the various water supply schemes executed under rural, urban, CWS schemes, etc. and locating groundwater source for drought relief works and drilling compensatory borewells.
In addition to the above, the under-mentioned activities are carried out systematically.

i) Preparation of micro level maps for all the taluks of Tamil Nadu using the aerial photos on 1:1 mile/1:50,000 scale (first generation maps); (ii) To get feedback on the usage of the above maps from the field; (iii) Selection of hardcore and difficult blocks in Tamil Nadu. (iv) Preparation of Hydrogeomorphology maps for these blocks using aerial photos, IRS data, (v) incorporation of rainfall, water levels and borewell details; (vi) Delineation of potential zones for future geophysical investigations; (vii) Preparation of base maps and pilot theme maps for selected watersheds on a project basis and (viii) To interact with the PWD (GW) Remote Sensing Units, the IRS Anna University, the NRSA.

**Chief Water Analyst**

The duties and responsibilities and functions of the Chief Water Analyst are enumerated below.\(^{19}\)

i) He is the head of the laboratory located at Chennai. (ii) Overall management and technical control of all the TWAD Board laboratories for their smooth functioning and potential. (iii) Periodical inspection of laboratories for

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\(^{19}\)B.P.Ms.No.414, dated 29.9.1997.
maintaining and improving their functioning. (iv) Updating the skill, knowledge and potential of the existing laboratories. (v) Streamlining the analytical procedures to follow uniform procedures for repeatability and reliability of test results in all laboratories. (vi) As a final authority for all disputed samples. (vii) Inspect water sources for all water supply schemes and certify their suitability of water quality for such schemes. (vii) Inspect CWSS for maintaining their water quality and to improve their functioning and efficiency. (ix) Monitor suspected pollution zones in the state and take appropriate action for taking advanced action to protect drinking water sources from pollution. (x) Streamlining and maintaining a central purchasing system through the M.M. Wing, the Head Office for the availability of chemicals, glass wares and other consumables for the laboratories. (xi) Arrange for creation of an effective Water Quality Data Bank System in the TWAD Board and the preparation of water quality maps for proper dissemination of reports and data for filed use and for future schemes. (xii) Arrange for effective training for water analyst and other training programmes for Engineers and Geologists in the field of quality management and source finding with respect to water quality. (xiii) Arrange for conducting studies/research works to solve water quality problem and make appropriate recommendations. (xiv) Participating in high level committees for representing the water quality problems and solutions. (xv) Presenting the case of the TWAD Board at state and national levels in the field of water quality problems and solutions. (xvi) Establishing
technical links with other organisations and academic institutions to adopt the latest techniques and know how for the Board’s needs.

**Quality Assurance Cum Technical Audit Cell**

Before 1.4.1999, the materials supplied for the schemes were subjected to pre-delivery inspection by a third party and the civil works executed by the contract system were supervised by the field engineers. The supply and works were measured and check measured by the field level Engineers JE/AE & AEE respectively and the high level Engineers test checked them. In order to ensure quality and to introduce another check, the Quality Assurance Cell was formed at the Head Office with effect from 11.10.1996.\(^\text{20}\)

From 1.4.1999, all the schemes are executed under the turn key system. In this system, the system of procuring materials by the TWAD Board was dispensed with and both the execution of works and the supply of materials are done by the contractors under the supervision of departmental officers. With a view to have a vigil over the quality standards, both in execution and in materials used, to enhance the effectiveness and to ensure adequacy of quality control measures at site, the QAC structure was restructured with effect from 1.6.2002.\(^\text{21}\)

**Contract Management Wing**

Prior to 31.12.1998, a materials management wing, headed by a Joint Chief Engineer, was in existence for the purpose of procuring the entire materials required for the execution of schemes all over the state. The Board has introduced turnkey system from 1.4.99 onwards in awarding contracts, whereby the procurement of materials required for the execution of schemes becomes the responsibility of the contractor concerned. Consequently, the nomenclature of the Materials Management Wing was changed as Contract Management Wing with effect form 1.1.1999.\(^22\) The Contract Management Wing is headed by a Joint Chief Engineer. The duties and responsibilities of the CM Wing are as follows.

i) All the residual works pertaining to the procurement of materials so for made and the balance materials to be procured till 31.3.1999 was attended by the CM wing. (ii) Wetting and clearing the tender schedules prepared by the regional Chief Engineers for all works costing more than Rs.1.00 crore, at the Head office level, (ii) Preparation of tender schedules, floating of tenders and finalisation of agencies, etc for all works costing more than Rs.5.00 crores at the Head office level.

Under these above arrangements, the tender schedules for works costing more than Rs.1.00 crore (value of tender) have to be prepared at the regional level.

and sent to the Head Office (CM Wing) together with the relevant detailed estimates and connected records for wetting and clearance at the Head Office. In respect of works costing more than Rs.5.00 crores (value of tender) the technically sanctioned estimate along with the relevant plan folio and connected records have to be sent to the Head Office (CM wing) for the preparation of tender schedules and floating tenders.

3.4 ORGANISATIONAL DEVELOPMENT AND THE ROLE OF INTERVENTIONISTS

An organisation as a system can be changed and developed to achieve the goals in the best possible way. The goals of an organisation, generally are: survival, stability, profitability, growth and service to society. The organisation can achieve its goals if it is able to respond to changes within the external environment. Organisational Development (OD) may be defined as a systematic, integrated and planned approach to improve the effectiveness of the enterprise. According to Knootz, it is designed to solve problems that adversely affect operational efficiency at all levels.

In the words of Wendell L. French, OD interventions are a set of structured activities in which selected organisational units (target groups or individuals) engage in a task or a sequence of tasks where the task goals are related directly or indirectly to organisational improvement. The O.D. practitioner is a professional
versed in the theory and practice of O.D. The practitioner brings four sets of attributes to the organisational setting; a set of values, a set of assumptions about people, organisations, and interpersonal relationships; a set of goals and objectives for the practitioner and the organisation and its members, and a set of structured activities that are the means for achieving the values, assumptions and goals. These activities are what we mean by the word interventionists. The OD strategy is an overall plan for relating and integrating different organisational improvement activities over a period of time to accomplish objectives.

The TWAD Board as a Board type of organisation with a vertical hierarchy of officials and staff has undergone many a change in the course of its existence for more than three decades. The OD interventionists have played a vital role in transforming the basic structure of the organisation and contributed to growth, development and change.

In the context of these afore said principles of O.D. intervention, it is worthwhile to study the intervention activities carried out in the TWAD Board during the past two decades.
A.F. Ferguson and Company Report

In 1981, the TWAD Board appointed M/s. Ferguson & Co as consultant to review the organisational structure, system, procedure and regulations. The objective of the study is to review the existing organisation and to identify ambiguities and gaps in functional responsibilities, including detection and recommendations for improvements with regard to (i) communication gaps, (ii) duplication of actions and efforts, (iii) definition of duties and responsibilities, departmental and individual, (iv) departmental structures and co-operations, (v) delegation of responsibilities, (vi) reporting channels, (vii) monitoring and taking of corrective steps, (viii) periodical meeting versus sporadic meetings, (ix) planning of training at all levels and (x) job satisfaction, awarding and promotion.

Accordingly, the consultant has conducted a detailed study and made recommendations in respect of (i) organisational structure, (ii) staffing plan, (iii) delegation of powers, (iv) materials system, (v) accounting system, (vi) personal areas and (vii) project monitoring system.

The major findings are grouped as follows:

i) The engineering and finance functions in the TWAD Board should be given higher status by inducting the heads of these functions to be designated as

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Engineering Director and Finance Director respectively to the Board. The Engineering Director should be responsible for project formulation, project execution and monitoring, materials and personnel management for field and technical staff.

ii) In view of the substantial increase in the annual outlays the project execution function should be the direct responsibility of two Chief Engineers. The two Chief Engineers could be allocated either separate regions, ie North/South or separate functions ie (Urban/Rural). It was recommended that there should be two Regional Chief Engineers each looking after a geographical region.

The project formulation function should continue to be headed by a Chief Engineer (Project Formulation). He should be responsible for planning, design, project formulation, project appraisal and maintenance. The practice of the TWAD Board handing over projects to local bodies for operations and maintenance should be modified to ensure better maintenance and longer asset life. For urban schemes, the TWAD Board should henceforth be responsible for operations and maintenance of water supply head works, transmission mains and service reservoirs. The distribution system and house connections should be maintained by local bodies, to whom the TWAD Board should send second Engineers for this purpose.
Materials: The Central Purchase and Stores Organisation (CPSO) headed by the Superintending Engineer, should continue to be responsible for the procurement and stocking of all listed items. Unlisted items should continue to be purchased by the execution divisions. Materials for operation and maintenance should be procured by the O&M Engineers. The existing stores organisation should be revamped with a central stores at Madras and two regional stores in each of the regions.

Finance: The finance and accounting function should be assisted by a Chief Accounts Officer, who should supervise the budgeting, commercial and finance functions, the audit function which is now split between several officers should be decentralised and consolidated under one Audit Officer responsible for two to three circles. The Audit Officers should report to the Chief Audit Officer, who in turn should report to the Finance Director. There should be one Regional Accounts Officer under each Regional Chief Engineer to assist him in budgeting, analysis of financial progress, funding, cash flow, etc.

Computerisation: The possibility of extending computerisation to more accounting applications should be examined. An Electronic Data Processing Manager should be appointed if it is proposed to acquire an in-house computer.

Personnel: The personnel function should continue to be bifurcated under the Senior Deputy Chief Engineer, for all field staff and technical personnel of the
Head office, and the Secretary for non-technical Head Office personnel. The Senior Deputy Chief Engineer should now report to the Engineering Director. The position of the Executive Engineer (Training) should be created to meet the training requirements of the staff.

Secretariat: The secretariat, headed by a Secretary and supported by a Deputy Secretary and an Assistant Secretary, should continue without any major change.

Delegation of Powers: In view of the change in the organisational structure, the consultant has recommended the delegation of powers to suit the hierarchy.

Material Planning: The consultant has recommended an annual materials planning exercise, a procurement policy, the standardisation of procurement procedures, improvement in inventory control, the simplification of materials-at-site account with a view to make the Assistant Engineer/ Junior Engineer responsible only for quantity accounts and not for value account also.

Accounting System: It suggested certain changes in accounting policy, systems and strategies for better implementation.
Reorganisation of Stores

The materials management system in the TWAD Board has been changing from 1976 onwards based on the recommendations of the Consultants who undertook studies at various points of time. Prior to 1976, all urban and rural water supply divisions were holding a ‘Reserve stock’ besides a ‘Project stores’ that is, “Materials at Site (MAS)”. A study of the stores system was entrusted to Thiru S. Parthasarthy, then Project Co-Manager, UNDP, for suggesting inventory and control procedures. Based on his recommendations a Centralised Purchase and Store Organisation (CPSO) at the headquarters with two stores divisions one at Madras and another at Madurai were formed. In the context of the implementation of the World Bank assisted projects, M/s A.F. Ferguson & Co. were entrusted with a consultancy assignment in 1986, covering all areas of the TWAD Board’s operations, including a ‘Review of the Materials Management. It was also felt by the Board that the Inventory Management needed to be streamlined. M/s. A.F. Ferguson & Co submitted a report on the materials management, classification and codification. Accordingly the functions of the CPSO were streamlined. As recommended by the consultant, the Board has resolved to establish divisional stores, provide the infrastructure facilities in a phased manner and to sanction a definite pattern of staff to man the divisional stores.
An analysis of the stores reorganisation shows that the Board has established a well defined store framework, with adequate staff, enunciated the principles governing the purchase of materials, annual material budget, classification of materials and the procedures for maintenance of the divisional stores were laid down. Further, the duties and responsibilities of the officers and staff were prescribed elaborately. This reorganisation has helped to relieve the Assistant Engineer in-charge of sections, who had to maintain the stores at the section without adequate staff.

**Sector Plan Study**

A sector plan study was conducted by the TWAD Board, during 1992, through the joint efforts of a team of consultants and the Sector Plan Study Cell at the TWAD Board. This study was funded through the World Bank as part of the credit line for the restructured Tamil Nadu Water Supply and Sanitation Project. It was supported and further illustrated by reports from individual members of the team of consultants separately submitted to the TWAD Board. The objectives of the study include, (i) to provide a basis for making changes in the legislative heritage of water supply and sewerage disposal, (ii) to assist the Government of Tamil Nadu and the TWAD Board to allocate scarce resources between competing demands, (iii) to identify sectoral problems and constraints, (iv) to

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analyse existing goals and make alternative suggestions, and (v) to recommend changes to the existing institutional framework and policies.

The team conducted an extensive study in the sectors of (1) Operation and Maintenance (2) Human Resources Development and Training, (3) Corporate Finance and Economics, (4) Water Quality and Environment and (5) Solid Waste Management, and set the agenda with a long term strategy for action with salient recommendations.

1. Operation and Maintenance

Overall responsibilities for the O & M of drinking water and sanitation facilities throughout the state of Tamil Nadu currently rests with three statewide organisations, whilst implementation is carried out by a large number of local bodies, non-governmental organisations and the TWAD Board. The state-wide departments include the Department of Rural Development, the Department of Town Panchayats and the Department of Municipal Administration. Thus no one body has overall responsibility for the sector but each has a small or major uncoordinated role.\(^25\) The report pointed out that there exists no meaningful concept of O & M with any of the organisations currently working in this field. Front line staff are appointed without any clear purpose or goal and receive no support or guidance from knowledgeable senior staff. They maintain some so

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called data, the purpose of which is not known to almost all levels, Repair work is carried out on an adhoc basis without any meaningful analysis directed towards the identification and remedying of the causes. Care for the life of the assets and the cost of operation and maintenance has no place under the present set up. The fault has to be remedied from the top and if this is not done there can be little prospect of an improvement in this woeful situation in the foreseeable future.\textsuperscript{26} Accordingly, the report identified four options, viz (i) Option which involve a continuation of the present situation in which,, TWAD Board remains responsible for planning, design and installation of new works and local bodies take over responsibility for their operation and maintenance and the provision of customer services including revenue collection, (ii) Option in which the TWAD Board take over additional responsibilities including operation and maintenance, (iii) Option in which a new organisation is created which takes responsibility for operation and maintenance of water and waste water facilities, (iv) A new and independent public sector organisation dedicated to the needs of all water users throughout a river basin or group of river basins responsible for the planning, design, installation, operation and maintenance of all water facilities.\textsuperscript{27}

\textsuperscript{26}\textit{Ibid}, p.19.
Human Resource Development and Training

The study report elaborately analysed the existing scenario in respect of training, assessed the training needs, developed a strategy for training and dwelt at length on the effect of possible institutional changes. Further, the report dealt with the career development, recruitment policy, promotion policy, job enrichment, man power planning, performance appraisal, etc.\(^\text{28}\)

Financial Management and Economic Assessment

Extensively analysing the funding pattern of the water supply sector, the study report identified that there was an absence of internal financing from the local bodies because of the weak financial position of the local bodies. The dependence of the sector was mainly on domestic and international funding agencies accounting for about 70-80 per cent of the overall financing. The single major source was the lending by the World Bank. The entire financing was due to the Government underwriting the borrowing and with the given performance of the agencies in the water supply sector it would not be possible to mobilise resources independently.

Organisation and Management

Based on the overall assessment of the sector, the study report enumerated the immediate organisational issues as follows:

i) The need to clarify the role and responsibilities of the TWAD Board in terms of O & M of installed schemes; (ii) the need to adapt the organisation set up to the demands of river basin management; (iii) the need for enhancing the professional capacity of the TWAD Board to deal with the increasing range of issues thrown up by the overall water resource crunch as well as by the pollutant load on water as such.

Organisational Restructuring of Board Committee

While the aforesaid being the recommendations of the centage study report, the Tamil Nadu State Government constituted a committee\textsuperscript{29} of Directors comprising the Managing Director, the Joint Managing Director, the Finance Director and the Engineering Director of the Board to review the existing staff strength of officers/ staff/ workers in all categories and consider the possibilities of reducing the staff by 30% wherever possible over a period of five years as in the case of Government Departments.

\textsuperscript{29}Finance (BPE) Department Lr.No.7734/BPE/2002-1, dated 8.5.2002.
In the meanwhile, the continuance of temporary posts in TWAD Board upto 30.4.2003 was examined by the Board. It was proposed to disband 1117 entry level posts which were considered not required, due to (i) reorganisation of stores sub divisions, ie number of stores sub divisions have been reduced from 18 to 4, (ii) condemnation of rigs, (iii) handing over of schemes to local bodies (iv) better utilisation of existing staff and (v) investment on computer hardware and software personnel. Accordingly orders were issued to disband the 1117 posts and the anticipated savings per annum was revealed as Rs. 825.51 lakhs. Further, as per the interim recommendations of the committee mentioned above, the Board has reviewed the staff position and decided to abolish 822 posts in a phased manner.

An analysis of the Board Proceedings No 131, dated 21.12.2002 indicated the following findings of the Committee.

1. The Chief Vigilance Officer post in the TWAD Board was held by an I.P.S. officer in the rank of IG, DIG and S.P in different spells of time. It seemed to top heavy considering the duties and responsibilities attached to this post in the TWAD Board. The committee recommended that the post of the Chief Vigilance Officer might be downgraded to that of the Deputy Superintendent of Police, apart from abolishing one post of Senior Audit Officer.

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2. In respect of the Engineering Wing there were six sanctioned posts of Chief Engineer. The Committee recommended abolishing the post of the Chief Engineer (Planning and Design), apart from downgrading the Chief Engineer (HRD) post into that of a Superintending Engineer grade, even though the HRD wing was at the moment funded by the Government of India. In this respect, the top heavy set up in the Engineering hierarchy was sought to be downsized.

There were 11 Joint Chief Engineers, seven in the Head office and one in each region with 12 Superintending Engineers in the field. It was recommended by the Committee to abolish the post of the Joint Chief Engineer (Contract Management) in the Head Office and to attach it to the Joint Chief Engineer (O&M) and to redesignate the new post as Joint Chief Engineer (Contracts, Operation & Maintenance). The Nilgris Circle was supervising the work of only one RWS division at Ooty. It was recommended to abolish the circle, and the division could be attached to the Coimbatore circle. The Special Urban Division, Coimbatore, headed by a Superintending Engineer might be downgraded as an urban division, whereby rendering one Superintending Engineer surplus. Altogether three posts of Superintending Engineers, out of 30 Engineers in the grade of Superintending Engineer was sought to be abolished.
In respect of Executive Engineer post, two posts were proposed to be abolished. Out of the 479 posts of AEEs, 12 posts were identified to be dispensed with.

Another salient feature of the recommendations was that the Committee identified the Assistant Draughtsman and Blue Print Operator posts as irrelevant in the context of the advent of computer aided design (CAD). Out of the 152 posts of Assistant Draughtsman, 53 were vacant which might be abolished and some of the incumbents in the remaining 99 posts might be promoted as Junior Draughting Officers depending upon eligibility. However all the posts of AD man might be treated as abolished as and when vacancies arose due to retirements and promotions. The 58 incumbents in the Blue Print Operator posts could be posted as Record Clerks and the posts of Blue Print Operator might be abolished as and when the incumbents are diverted to the post of Record Clerks or due to retirement.

Similarly, the committee analysed the Hydrogeology Wing, Water Analysis Wing, Accounts Wing, Administrative Wing, EDP Wing, and Mechanical Banch of the TWAD Board and identified the surplus category of employees and suggested diversion, abolition of posts, etc. However the Committee identified that the maintenance branch needs to be strengthened.