

## **WATER GOVERNANCE AND MANAGEMENT SYSTEM IN ENGLAND, GERMANY AND FRANCE**

**Biharilal. R. Patel<sup>1</sup> Kuldeep. B. Patel<sup>2</sup> and Madhusudan M. Parikh<sup>3</sup>**

<sup>1</sup> Sr. Associate Professor (Engineering), Department of Soil & Water Engineering, Navsari Agricultural University, Navsari-396450, India  
E-mail: [biharilal\\_pht@yahoo.co.in](mailto:biharilal_pht@yahoo.co.in)

<sup>2</sup> Temporary Lecturer, Water Resources Engineering & Management Institute, The M.S. University of Baroda, Samiala-391410, India  
E-mail: [kbp\\_9999@yahoo.co.in](mailto:kbp_9999@yahoo.co.in)

<sup>3</sup> Sr. Associate Professor (Engineering), Department of Soil & Water Engineering, Navsari Agricultural University, Navsari-396450, India  
E-mail: [mmp\\_guj@yahoo.in](mailto:mmp_guj@yahoo.in)

### **ABSTRACT**

In England, France and Germany extreme water problems, such as drought or excessive floods are less common than elsewhere in the world, although severe weather conditions occasionally create problems. However, flood protection by dikes and dams can be found in many places in these countries. Water borne diseases (Cholera, malaria, bilharzias etc.) are rare nowadays. Risks of cholera outbreaks still exist in some parts, whenever sanitary conditions break down as a result of natural or man-made disasters (earthquake, war). Waters are not yet optimal. Although pollution from scientific sources (waste water disposal from industry) has been reduced, pollution by diffuse sources (e.g. drainage effluents from agricultural land containing fertilizer and pesticide residues) still remains a problem. Administrative set up for water management activities differs from country to country. However, the basic concept of water management is almost the same in all these countries. An attempt has been made in this paper to present water governance and management systems in three bigger and most active countries in the western Europe, i.e. France, Germany, and England.

### **INTRODUCTION**

Management of water in Europe is in most cases a complicated affair. European member states have their own and sometimes contradictory views on environmental issues and water quality protection. Industrialization and population growth made that water problems are often crossing state boundaries. For instance, in the last decades, the issue of cross boundary water pollution has emerged. Industries discharge wastes effluents in open river water, which is used in downstream states for drinking purposes. In this way upstream interventions certainly have negative effects on the water quality elsewhere in Europe or in the world. Luckily, co-operation between

European states is gaining more and more international support. At institutional level, political and strategic progress can be noted. In this paper an attempt has been made to present the water management systems followed in three major countries in the Europe: France, Germany and the England.

## **ORGANIZING WATER MANAGEMENT**

The following issues may serve as indicators on how water management is organized in these countries:

- Division of responsibilities between ministries
- Improvement of national, regional and local administration levels
- Use of public and private capital in water services
- Mechanisms for public involvement
- Opportunities for appeals against regulatory decisions

## **STATUS OF EUROPEAN WATERS**

European waters are not yet optimal. Although pollution from scientific sources (waster water disposal from industry) has been reduced since the first European Water Directive in 1975, pollution by diffuse sources (e.g. drainage effluents from agricultural land containing fertilizer and pesticide residues) still remains a problem. The status of European surface water can be summarized as follows:

1. About 20 % of all surface waters is being seriously threatened by pollution. Considerable improvements in the worst polluted rivers can be noticed, however.
2. There is an increase in the biological pollution by algae in rivers, lakes, reservoirs and marine waters, caused by nitrate effluents produced by the agricultural sector.
3. The emission of phosphates has reduced by 4 to 60 % during the last five years, due to measures taken by industry and increased use of phosphate-free detergents.
4. Approximately 65 % of all European drinking water is extracted from ground water. The ground water quality is being threatened by high concentrations of nitrates, pesticides, heavy metals, carbon hydroxides and chlorated carbon hydroxides. It will take many years before the ground water quality will improve again.
5. Big differences exist in water use by the various sectors between the European countries.

## **WATER POLICY DEVELOPMENTS**

Water policy is amended time to time. The water Framework Directive- 29 June 2000 is expected to yield the following results:

- Improved quality of the aquatic ecosystems
- Increased sustainable use of water based on the long-term protection of available water sources
- Safeguarding that the right amount of water is available whenever and wherever required
- Protection of all European waters (surface water, groundwater, estuaries and coastal waters)
- Maintaining “watersheds” as the basic reference unit for all water queries
- Incorporation of all related costs in the price of water
- Involving the European citizen more closely in water management
- Streamlining jurisdiction.

A key characteristic of the Directive is the regulation of water management according to river basins and river basin districts. A river basin is the area of land from which all surface run-off flows through a sequence of streams, rivers, and possible lakes into the sea at a single river mouth, estuary or delta. A river basin district is the administrative area of lands and sea, made up of one or more neighboring river basins together with their associated ground waters and coastal waters, which is considered to be the main unit for river basin management.

## WATER MANAGEMENT SYSTEM IN FRANCE

France is a centralized democracy with two sovereign entities: the central state, and the municipalities or *communes*. The central state (government) is represented at regional level through *Departments*, headed by *Prefects*. Since the 1960s there is an intermediate administration level exists: called the *Region*, each one covering a group of departments. The responsibilities on water management per level of administration are as follows:

- **Central state:** Police powers on water resources (abstraction, discharge permits) scattered between several ministries: Agriculture, Industry, and Public Health.
- **Regions:** (22 Nos.): Territorial services of the ministry of Environment (DIREN). They monitor water quality and quantity, river contracts etc. Coordination of water plans exceeding the size of departments, integrated pollution control through DIRE.
- **Basin:** (6 Nos.): Coordinating water planning at departments level, in particular environmental and biological matters. Approving the water master plan.
- **Department (prefect):** (95 Nos.): supervising the enforcement of the state water policy. Coordinating actions by the water police groups (different ministries involved). Sanctioning non-statutory actions e.g. river contracts.
- **Municipalities:** Direct police power on pollution, flood emergency etc. Responsible for water services, including through privatization.

Management of water resources is the responsibility of the ministry of Environment, which supervises six basin agencies. According to the Water Act of 1964, these agencies operate as autonomous public authorities, determine water policy in their hydrographical regions, are financially self-sufficient and co-ordinate all water management actions at regional level and local level. Each basin agency has a steering committee, in which area committees, water users, state and environmental groups are represented. This committee decides about water policy issues and prepares and adopts water master plans. They are financially self-sufficient. They coordinate all the actions at the regional and local levels. These include project implementation to operation and maintenances through subsidies, loans, studies and technical advices. The ministry of agriculture deals with the rural areas, irrigation, drainage, fisheries and river quality. In this ministry's Planning Directorate, the service is responsible for agricultural water needs and drainage. The National Water Board advises the government on water management policies.

At local level, four categories of water management organizations can be distinguished:

- a) **The municipalities**, 37,000 in nos. Often associated into larger urbits;
- b) **The irrigation Water Users' Associations** in the south of France. Already existing since the 12<sup>th</sup> century, size between 500 to 5000 ha. Own source of income. Water rights and memberships are related to the land, not to the owner. All farmers within the irrigation command area are entitled to vote. Payment for water use is per area and compulsory for all land, whether water is used or not.
- c) Local organizations for water management in the northwest of France. Area is approximately 100,000 hectares. Also existing since the 12<sup>th</sup> century, when the watering was created to reclaim and drain wetland areas. They operate autonomously, also financially. Membership is for land owners with more than 4 ha property. Tenants may participate with written consent of the land owner. Election period for committee members is 6 years. There are 12 sections with their own management boards, united in the union. Like in other parts of the Europe, land use is a point of discussion between agriculturists and nature conservationists / environmentalists. Waterings predominantly deal with water quantity instead of water quality, have a decreasing agricultural support and do not have office facilities.
- d) Semi-public rural development companies, existing since the fifties, dealing with regional development. The companies are responsible for rural development projects and the operation and maintenance of water infrastructure and systems bringing water to the farm, to towns and to industries.

In general it can be concluded that French water management has changed and improved considerably since the 1960s. All categories of water have been put under trust; all water use is regulated. A weak point is that the water management approach is mainly of technical nature. Notwithstanding the high technical quality of water systems, social and environmental aspects are to be incorporated more. This is also the case for the urban water supply and sewerage system. The centralization of power and decision still is an obstacle for really participatory and comprehensive solutions.

## **WATER MANAGEMENT SYSTEM IN GERMANY**

The Federal Republic of Germany consists of 16 rather independent administrative units: Lander, which have their own legislation that is often older than the federal laws. Water policy and water laws are therefore predominantly decentralized matters: each Lander has in principle its own water regulations. The Federal Water Management Act, in operation since 1957 and revised in 1986, provides the legal framework for all Lander, their legislation and the Effluent Changes Act (1976, revised in 1994). The water and soil Association Act (1991) is a legal framework for property owners, companies, public law organizations and other private parties to establish independent consortia for land and water management, sometimes covering large areas. There are about 12000 of such institutions in Germany, all with a board or a president and a general assembly.

At Federal level, the ministries and delegations to federal agencies or institutes belong to the first category. At Lander level, water management responsibility is assigned to the Environment ministries. An important coordinating role on water management, policy and legislation is reserved for the (federal) Lander Working Group on Water (LAWA, established 1956). The ministry of Food, Agriculture and Forestry (MAF) is responsible for all water management matters related to irrigation and drainage. At the lowest administrative level, there are Water and Land Management Associations (WLAs).

### **Characteristics of a WLAs:**

- Initiation in 13<sup>th</sup> Century, to unite against floods
- Responsibilities: Water resources use, waterway maintenance, flood protection and management of water for agriculture, nature conservation and recreational purposes.
- Service-and non-profit organization, operating on voluntary basis.
- Members are individual and /or legal persons, public bodies or corporate bodies. Membership is linked to usage of land.
- General assembly develops and approves internal rules and regulations

Integrated water management in Germany is oriented towards water quality and environment and tuning water resources protection requirements to the various sector interests of water users. Public water supply is given highest priority. Public participation and information is well organized, citizens are involved in decision-making concerning technical rules and standards, through appeal and protest facilities. Conflicts on water use are resolved through mediation and arbitration panels that can be called in by either conflicting party.

Strengths and weaknesses of the way in which water management is arranged in Germany are as follows:

**Advantages:**

- Water administration and operation of water services are separated. The state administration has no direct interest in water use. So conflicts with private interests do not occur.
- Self-governance and financial autonomy: The system of water management associations – which may cover more than one municipality – proves to be effective in flood control, irrigation and drainage development etc. Membership contributions provide cost recovery and eventually financial independence.
- Municipal integration of services and operational autonomy: Combination of water management and other activities in the municipal service is effective and efficient with regard to resource use (physical, human and financial). Operators of municipal services can act independently both legally and financially.
- Co-operation in technical and scientific associations: There is a high rate of expert knowledge in the associations, and therefore high technical competence which is recognized also internationally.

**Limitations:**

- Insufficient environmental policy integration: Through regulations and measures point pollution was reduced considerably. Diffuse pollution is still a problem to be tackled. Water resources protection is not effective, due to different decision-making levels, and discrepancies between national, federal and international policies.
- Shortcomings in sewerage organization: Traditional administration does not offer the scope for effective and comprehensive sewerage systems, which are expensive in construction and maintenance.
- A weak water industry: Privatization is low, and water supply is therefore not market oriented or competitive. On the other hand the water industry is a stable and balanced organizational entity.

**WATER MANAGEMENT SYSTEM IN ENGLAND AND WALES**

The administrative conditions for water and environmental management are the same in England and Wales. There are private companies and national regulatory authorities. In Scotland, regional and island councils provide water services, and river purification authorities are responsible for pollution control. In Northern Ireland water management is centralized under the Northern Ireland Office. Water management in England and Wales is as old as British civilization. Already during the Roman era wet land was reclaimed for agricultural purposes. The first Drainage Board was established as early as the 12<sup>th</sup> century. During a land reform in the 17<sup>th</sup> century, new private firms and estates were provided with drainage systems. Nowadays, there are about 250 drainage boards with flood protection and drainage as their main tasks.

The basic principles of water management in England and Wales are:

- A strong framework

- Water and sewerage services provided by private companies; economic regulation and performance auditing by the government
- Integrated water management by a national authority with catchment based regions
- National regulation by agencies, operating under the different Ministries
- Very limited power or responsibility for local authorities generally
- Public relation, local participation, information control and other services are controlled by law.

The land Drainage Act (1991) and the Water Resources Act (1994) regulate the national and regional water management responsibilities on flood protection and land drainage, and strengthen the legal status of the drainage board.

Four basic principles underline the Act:

- Responsibility for land drainage rests first and foremost with the individual riparian owner.
- Land drainage powers should be permissive rather than mandatory.
- Land drainage is predominantly a local problem and decisions about it should be taken locally.
- Those who benefit from land drainage or create a need for it should pay accordingly.

Furthermore, the following institutions play an important role at regional and local level:

- (a) National River Authority, established in 1989, is responsible for water regulation and enforcement of regulation policies in particular on water quality. In 1996 the NRA made way for the Environmental Agency (EA), a merge of NRA, Inspectorate of pollution, Wastes Regulation Authorities and units from the department of Environment (DoE). The EA is responsible for pollution prevention and control, waste water minimization, management of water resources, flood defense, improvement of salmon and freshwater fisheries, conservation, navigation and use of inland coastal waters for recreation.
- (b) Internal Drainage Boards (IDB), public institutions with clearly defined task of flood protection, surface water level management, and O&M of local systems. There are approximately 230 IDBs in England and Wales, covering 3 million acres of land. IDBs operate catchment based. IDBs consist of both elected (farmers) and nominated members (levy-paying councils), appointed for 3 years.

Integrated water management is becoming more and more common in England and Wales. The official policy line is to centralize management responsibilities (less decision centres) and to follow a river basin approach as well (decentralized). The role of local administration (municipalities) has, however, become less important.

In 1989 water sources as well as services on water supply, sewerage and sewage disposal were privatized. Local drainage boards, however, still operate as before. It is not clear how decentralization of responsibilities and centralization of decision-making on water resource management will develop in future.

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