

# Framework for Ethical Development and Management in Water Sector

**Hiralal Mendhegiri,**

*Secretary (WRM & CAD), Water Resources Department, Government of Maharashtra,*  
[hiralal.mendhegiri@gmail.com](mailto:hiralal.mendhegiri@gmail.com)

**Pravin Kolhe**

*Executive Engineer, Water Resources Department, Government of Maharashtra, [pravinkolhe82@gmail.com](mailto:pravinkolhe82@gmail.com)*

## KEYWORDS

Ethical values, water governance, code of conduct, water management

## ABSTRACT:

Water is the most vital substance upon which all life depends. Water is a renewable resources. Climate change, rapid industrialization and urbanization, continuing population growth and mismanagement of water resources cause unprecedented water distress. The access and use of water by humans and ecosystems is a concern for government organizations, which are responsible for its efficient development and management. Ethics is a branch of philosophy that is based on morality. Water ethics as part and parcel of this specific and distinct philosophical field, is still emerging in academic arenas, professional discussions, and dialogues on water governance. The ethical development and management in water sector is being increasingly discussed in policies and practices of water resource management. The aim of this paper is to explore the literature to understand the concept of water ethics so as to bring good water governance. It will also help to reveal gaps in existing knowledge, by providing a cross-cultural review of the issue, to educate readers and authority on water ethics, and to present policy options to governments at all levels. The application of ethical concepts has a direct practical relevance in water resource management as it can support the decision making process, which is a very complex issue involving a range of scientific domains (hydrology, groundwater, precipitation and runoff, water quality), and requires simultaneous consideration from different areas of water use, both from the supply and demand side (an integrated approach to water resource management), and their integration with socio-economic aspects. Water is at the heart of many religions and culture and hence cultural traditions, indigenous practices and societal values determine how people perceive and manage water, and provide useful references for water ethics. The preventive and responsive measures for promoting ethics in water sector, discussed in present paper includes, strong political support and commitment, implementable code of conduct, effective legal framework, independent financial audits, service related reforms in recruitment, posting and promotion of officials, capacity building and training, government process re-engineering for system reforms, adoption of e-governance initiatives in procurement, contract management and irrigation management, feedback from customer, public-private partnership, transparent, accountable and participatory approach. It is necessary to build comprehensive networks of actors, from the local, national, regional and international level and from all spheres of society: private, public, civil society and media in order to create awareness about ethics. The water ethics has the potential to be far more effective, cheaper and acceptable than some existing means of 'regulation', but transformation of personal and societal ethics need time because the changes to ethical values are slow. In a nutshell, framework proposed in present paper will help public organisation to bring reforms in water sector to enhancing integrity and ethical behaviour of all stakeholders which will result in improved efficiency. An attempt has been made in present paper to evaluate different policies related to ethics and propose practical framework for ethical development and management in water sector, by targeting good water governance & ethical behaviour in water sector.

## 1. INTRODUCTION

### 1.1 Society, Government and Administrative Challenges:

Society is an association of human beings, which historically evolved its own rules and regulations in the interest of maintenance of social order and avoiding conflict. Emergence of formal government as a regular and professional arm of the state took a long time in history. Government emerged as the sovereign public authority superseding and overseeing all other social formations (family, church, guilds etc.). Bureaucracy or administration is a usually a group of civil servants recruited on merit and serving under contract with stipulated conditions of service. Administration in the present globalisation era, is opening itself up under the pressure from educated citizens and active organisations to become

more accountable, transparent, people-centric, efficient and democratic. Alongside, recourse of advanced management techniques of Business Process Re-engineering (Hammer & Champy, 1999), New Public Management (Gruening, 2001), Entrepreneurial Government (Osborne & Gaebler, 1992), Good Governance (UNESCAP, n.d.) is being sought once again. The role of administration is changing in view of the demands of liberalisation, privatisation, globalisation, de-bureaucratisation, disinvestment, decentralisation, e-governance, democratic citizenship and participatory decision making. The growing emphasis on constitutional reforms, legal reforms, conflict resolution, community participation and ethical practices is demanding viable solutions for the challenges faced by the administration. Presently, administration accords primacy to the 'values' of equity, justice, humanism, human rights, gender equality and compassion. The movement of Good Governance, initiated by the World Bank in 1992, lays stress, inter alia, on the ethical and moral conduct of administrators. While the New Public Management movement is more concerned with administrative effectiveness, the New Public Administration focuses on administrative ethics in its broader manifestation. Both the movements are complementary to each other.

In order to simplify the complex issues in the society, government is divided in several departments and ministries. The role and responsibility of each department is fixed at ministerial level. Throughout the world, all natural resources are owned by the state. The management of these natural resources are rest with the respective departments created for that purpose. In present paper, emphasis is given to ethical behaviour in water sector for good water governance. Ethical aspects in development and management in water sector are discussed in detailed and framework is also proposed.

## **1.2 Water is Life:**

It can be a matter of life and death, depending on how water occurs and how it is managed. If it is managed properly, it can act as instrument for economic and social survival. Water ensures food security, feeds livestock, maintains organic life and fulfils domestic and industrial needs. Besides the engineering and scientific angle, the present water situation has political, legal, environmental, social, economic and even religious connotations. The increasing gap between demand and availability of water is becoming a crucial issue which divides people in to 'haves' and 'have not' in every nation. Further, to add pressure, apart from geographical demarcations, water divided people from urban and rural, rich and poor. Without efficient water management and optimum utilisation of this essential, scarce and valuable commodity, our ecosystem will experience water crisis in future due to increasing water demand verses decreasing per capita water availability. The global crop production is not keeping pace with population growth. By 2050, population of world will be nine billion. To feed and water this population the world food production shall be increased by twice. Around 90 percent of the water is consumed to produce food. Since limited water is available for irrigation purpose and non-irrigation water use is also increasing at alarming rate, it will be difficult to satisfy the food need of the world. Water scarcity is acute in many parts of the world, and ten percent of the world's major rivers no longer reach the sea all year round. Water scarcity is a worldwide problem, as estimated 1.8 billion people will live in regions with absolute water scarcity by 2025, and two-thirds of the world population might suffer water stress. Water wars could escalate into global conflict. Climate change will worsen the situation. Thus, development and management of water is a crucial issue for government. Therefore, ethical behaviour is of prime importance in this sector as well.

## **2. DEFINING ETHICS**

It is difficult to define 'ethics'. Unethical behaviour exists in all societies, to varying degrees and in different forms. Some practices that might be regarded as unethical in one country might be legally and socially acceptable in another. Thus, there is no universally agreed upon definition for ethics. Indeed, attempts to develop such a definition invariably encounter legal and political issues. The meaning, nature and scope of ethics have expanded in the course of time. 'Ethics' is a system of accepted beliefs, morals and values, which influence human behaviour. The Latin origin of the word 'ethics' is ethicus that means character. The ethical concerns of governance have been underscored widely in Indian scriptures and other treatises such as Ramayana, Mahabharata, Bhagvad Gita, Buddha Charita, Arthashastra, Panchatantra, Manusmriti, Kural, ShukraNiti, Kadambari, Raja Tarangani, and Hitopadesh. At the same time, one cannot ignore the maxims on ethical governance provided by the Chinese philosophers such as Lao Tse, Confucius and Mencius. In the Western

philosophy, there are three eminent schools of ethics, first inspired by Aristotle, second subscribed to mainly by Immanuel Kant, and third is the Utilitarian viewpoint. The Western thought is full of ethical guidelines to rulers, whether in a monarchy or a democracy. These concerns are found in the writings of Plato, Aristotle, Thomas Jefferson, Alexander Hamilton, Thomas Penn, John Stuart Mill, Edmund Burke, and others (MPA-011).

### **3. CONTEXT OF ETHICS IN WATER SECTOR**

Ethics, whether in an entire society, or in a social sub-system, evolves over a long period of time and is influenced, during its nurturance and growth, by a variety of environmental factors. Ethics in water sector is no different. It is the product of several contextual structures and it never ceases to grow and change. It has been estimated that due to the lack of access to clean water five million people dies worldwide every year. Further, on a global scale there is an increase in competition for quantity and quality of water and is becoming crucial management issue. Further, poor governance in water sector results in unnecessary, unsuitable and defective work which reduces productivity of water and sometimes results as a threat to life and property. It also affects time and cost over-run in completion of projects, inflated cost of projects, sub-standard quality of works, discrepancy in management like, who gets what water when, where and how. Following are the some of the contextual factors that influence ethics in the water sector.

#### **3.1 Historical Context:**

The history of a country marks a great influence on the ethical character of the governance system. Unfortunately, India has witnessed a long history of unethical practices in the governance system. Kautilya's Arthashastra mentions a variety of corrupt practices in which the administrators of those times indulged themselves. The Mughal Empire and the Indian princely rule were also afflicted with the corrupt practices of the courtiers and administrative functionaries, with 'bakashish' being one of the accepted means of selling and buying favours. The East India Company too had its share of employees who were criticised even by the British parliamentarians for being corrupt. Water sector was no exception to this, but there are instances of ethical practices being adopted by the rulers and by the society. Several instances of best water management practices are mentioned in 'History of Irrigation Development and Management in India' (CWC, 2012).

#### **3.2 Socio-cultural Context:**

Presently society prefers wealth to any other value and in the process of generating wealth, the means-ends debate has been side lined. Unfortunately, ends have gained supremacy and the means do not command an equal respect. The cultural system of any country, including its religious orientation, appears to have played a significant role in influencing the work ethics of its people. The relationship between water and culture is intimately related to the sensibilities, representations and mentalities which create feelings and collective identity, and which can also be a source of potential conflict, or a powerful catalyst for creating solidarity and therefore social and territorial cohesion. Both water and culture are fluids - the first one being concrete, and the second immaterial - which gives life and unifies all members of the human society. (Berteaud, 2003). Water is essential for life on this earth, but its mismanagement results in destruction, floods and drought situation causing danger to the ecology. For centuries, water has been a social and cultural element of individual and social identity. The allocation and distribution of water in daily life was carried out by adequate institutions, legislations and ethical rules written or un-written. According to latest UN World Water Report, the root cause of poor water governance is not technical or natural, rather it stem from a 'crisis of social responsibility' or a 'crisis of water governance' (UNESCO, 2006).

#### **3.3 Legal-Judicial Context:**

The legal system of a nation determines the efficacy of the ethical concerns in governance system. A neatly formulated law, with a clear stress on the norms of fair conduct and honesty, is likely to distinguish chaff from grain in the ethical universe. Conversely, nebulous laws, with confusing definitions and its explanations would not be able to in still the fear of law among those violating the laws of the land and mores of the society. Besides, an efficient and effective judiciary with fast-track justice system will prove a roadblock to immorality in public affairs. Conversely, a slow-moving

judiciary, with a concern for letter rather than the spirit of the law, will dither and delay and even help the perpetrators of crimes by giving them leeway through prolonged trials and benefits of doubt. The overall purpose of ethical legal water policy is to serve as the means for establishing and maintaining the enabling environment necessary for efficient water development and management. From a governance perspective, involving all relevant stakeholders in the policymaking process is as important as the definition of policy objectives and mechanisms themselves. Legislation is the mechanism for incorporating policy into national political and legal frameworks, setting water quality standards, protecting individual and communal water rights, managing conflict resolution and, perhaps most importantly, for specifying the roles and responsibilities of sector institutions.

### **3.4 Political and Administrative Context:**

The political leadership, whether in power or outside the power-domain, is perhaps the single most potent influence on the morals and values of citizens. The rulers do rule the minds, but in a democracy particularly, all political parties, pressure groups and the media also influence the orientation and attitudes on moral questions. If politicians act as authentic examples of integrity or as examples of gross self-interest, the administrative system cannot remain immune to the levels of political morality. It is generally argued that the government employees emerges from the society itself. Naturally, therefore, the mores, values and behavioural patterns prevalent in the society are likely to be reflected in the conduct of administrators. To expect that the administrators will be insulated from the orientations and norms evidenced in the society would be grossly unrealistic. In current political system, crucial decisions about development and management of water, such as large dams, water conservation, water allocation, inter-basin water transfers, privatisation of essential water sources etc. are taken and implemented by the administrators, with little involvement and participation of water users and citizens. Therefore, democratic water governance is a need of situation.

### **3.5 Economical Context:**

The level of economic development of a country has a positive correlation with the level of ethics in the governance system. Even when a causal relation between the two is not envisaged, a correlation cannot be ruled out. With the advent of liberalising economic regime in developing nations, there is a growing concern about following the norms of integrity in industry, trade, management and the governance system on account of the international pressures for higher level of integrity. Water is not a classical commercial commodity, although its storage, delivery and management requires services such as domestic water supply, irrigation supply and industrial water supply. One of the four sustainable water management principle defined at the International Conference on Water and the Environment held in Dublin in 1992 states that water has economic value in all its uses and should therefore be recognised as an economic good (Dublin Water Principles, 1992). Therefore, pricing of water become crucial issue. Since in many countries, water is being managed by public organisation, generally, operation and maintenance cost component is taken as base for water pricing. But in present scenario of liberalisation, globalisation and privatisation, part of capital cost is also considered during fixing the water pricing strategy. Economical ethics are necessary in order to sustain the ecology and from water rights perspective. There is need of selecting optimum solution considering economic dimension of cost of water services and social dimension of water rights. For example, in France, water is treated as a public service, often managed by private partner.

World Bank's report recommended several measures for effective water management including treating water as economic good, strengthening allocation capabilities, increasing reliance on market forces, revive the payment culture, ensure financial self-sufficiency, promote decentralised decision structure, and encourage the adoption of modern technology and information inputs (Saleth & Dinar, 1999)

### **3.6 Work Ethics**

Economic development of any nation is largely contributed by the infrastructure development. Most of the infrastructure projects are planned and implemented by public organisations with the help of private partners by entering in to a contract. Water sector is one of the important infrastructure sector along with transport, energy and real estate sectors. The construction of infrastructure projects in water sector covers several works and is an important dimension of ethics. It represents a commitment to the fulfilment of official responsibilities with a spirit of dedication, involvement and

sincerity. It also implies that a stakeholders would love their work and not treat it as a burden or a load. The efficiency, productivity and punctuality will be the hallmark of administrative behaviour. Punctuality and promptness in administrative affairs must be valued and along with the quality of work performed; these should become the criteria for reward and punishment in organisations.

Since civilisation, water need of society is fulfilled by small and mega projects constructed for storage, diversion, flood protection, hydropower generation purpose. It has been estimated that 20 to 70 per cent of resources could be efficiently saved if transparency were optimised. Focus of water infrastructure sector is on construction, having inherent characteristics, like competition for contracts, numerous levels of official approvals and permits, the uniqueness of the projects, opportunities for delays and overruns, and the need for rapid work (Shordt, Stravato, & Dietvorst, 2006). Estache and Koussai in their study found that nearly two third of operating cost of water utility companies in Africa were due to corruption (Estache & Kouassi, 2002). Several attempts has been made to highlight the grey areas in water sector, important work among them is carried out by Jennifer Davis (Davis, 2004), Esther Duflo (Duflo, n.d.) and OCSE – Organization for Security and Co-operation in Europe (OSCE, 2004).

The share of public procurements in the form of contracts is about 20 percent of government expenditure worldwide and according to the study conducted by ADB and OCED, more than 25 percent of this expenditure is estimated to be lost due to unethical practices. The unethical practices can occur in the identification of projects, in the financing of projects, during planning and design phases, during the pre-qualification and tendering process, during the project execution and during the operation and maintenance.

In the era of globalisation and privatisation, some reforms like decentralisation and privatisation are advocated by international agencies to improve efficiency and reduce corruption. But as per study carried out by Barlow, it has been observed that these solutions in water sector created some new challenges for society and government (Barlow & Clarke, 2004). Further, Kolstad and Fjeldstad show that the relation between decentralization and corruption is complex, depending on other variables such as the degree of social and economic equity, the complexity of the services, the flexibility and simplicity of regulatory systems, local capacity. In a study conducted by Asthana in India, showed that decentralization can result in the local elite capturing the services. For example, where the government requires a 10 per cent contribution for new water services local leaders can pay and appropriate the services for their own convenience (Asthana, 2004).

#### **4. ASPECTS OF ETHICS:**

The notion of ethics has expanded itself to involve all major realms of human existence. The salient aspects of ethics for good water governance can be listed as below (MPA-011)-

- i) *Legality and Rationality:* It is duty of officer to follow rules that are framed to govern and guide various categories and policies.
- ii) *Responsibility and Accountability:* Every person working in water sector shall not hesitate to accept responsibility for his decision and actions. Further, he shall be willing to be held accountable to his higher authorities and to the people who are the ultimate beneficiaries of his decisions and actions.
- iii) *Work Commitment:* An officer shall be committed to his duties and perform his work with involvement, intelligence and dexterity. As Swami Vivekananda observed: "Every duty is holy and devotion to duty is the highest form of worship." This would also entail a respect for time, punctuality and fulfilment of promises made. Work is considered not as a burden but as an opportunity to serve and constructively contribute to society.
- iv) *Excellence:* An officer shall ensure the highest standards of quality in administrative decisions and action and would not compromise with standards because of convenience or complacency.
- v) *Fusion:* An officer would rationally bring about a fusion of individual, organisational and social goals to help evolve unison of ideals and imbibe in his behaviour a commitment to such a fusion. In situation of conflicting goals, a concern for ethics should govern the choices made.
- vi) *Responsiveness and Resilience:* An officer shall respond effectively to the demands and challenges from the external as well as internal environment. He shall adapt to

environmental transformation and yet sustain the ethical norms of conduct. In situations of deviation from the prescribed ethical norms, the administrative system would show resilience and bounce back into the accepted ethical mould at the earliest opportunity. A positive and healthy approach to services entails courtesy and politeness in administrative behaviour, a desire to help resolve their problems, and satisfy them even when, extra help cannot be rendered and matters have to be disposed of in accordance with the legal and formal requirements of the system. A citizen-centric administration would be strengthened through such an attitude.

- vii) *Utilitarianism*: While making and implementing policies and decisions, an administrator will ensure that these lead to the greatest good (happiness, benefits) of the greatest number.
- viii) *Compassion*: An officer, without violating the prescribed laws and rules, would demonstrate compassion for the poor, the disabled and the weak while using his discretion in making decisions. At least, he would not grant any benefits to the stronger section of society only because they are strong and would not deny the due consideration to the weak, despite their weakness. Compassion involves a sense of empathy. It does not end with pity. It invokes sensibilities to understand and even feel the pain of others and motivates one to be truly helpful in overcoming this pain. Hence, administrative ethics in public affairs envisages that the domain of feelings and the universe of rationality should find a happy blending in thought as well as actions of civil servants.
- ix) *National or public Interest*: Though universalistic in orientation and liberal in outlook, a civil servant, while performing his duties, shall keep in view the impact of his action on his nation's strength and prestige.
- x) *Justice*: Those responsible for formulation and execution of policies and decisions of governance would ensure that respect is shown to the principles of equality, equity, fairness, impartiality and objectivity and no special favours are doled out on the criteria of status, position, power, gender, class, caste or wealth.
- xi) *Transparency*: An officer will make decisions and implement them in a transparent manner so that those affected by the decisions and those who wish to evaluate their rationale, will be able to understand the reasons behind such decisions and the sources of information on which these decisions were made. Even when a grievance of citizen cannot be redressed, at least a citizen needs be given an explanation as to why it cannot be redressed. What is important is a positive approach in dealing with people and being helpful to them, and not avoiding them or considering them as burdensome. Ethics entails a respectful attitude to the citizens.
- xii) *Integrity*: An officer shall undertake an administrative action on the basis of honesty and not use his power, position and discretion to serve his personal interest and the illegitimate interests of other individuals or groups.

## 5. GOOD WATER GOVERNANCE:

It has been estimated that due to the lack of access to clean water five million people dies worldwide every year. Further, on a global scale there is an increase in competition for quantity and quality of water and is becoming crucial management issue. Further, poor governance in water sector results in unnecessary, unsuitable and defective work which reduces productivity of water and sometimes results as a threat to life and property. It also affects time and cost over-run in completion of projects, inflated cost of projects, sub-standard quality of works, discrepancy in management like, who gets what water when, where and how.

According to UNDP, governance is the exercise of economic, political and administrative authority to manage a country's affairs at all levels. It comprises the mechanisms, processes and institutions through which citizens and groups articulate their interests, exercise their legal rights, meet their obligations and mediate their differences. According to Global Water Partnership, water governance refers to the range of political, social, economic and administrative systems that are in place to develop and manage water resources, and the delivery of water services, at different levels of society. The intervention of human in nature's activity of water management gave rise to several issues. Water has been playing vital role in the development of the society and is considered as a gift from God in many religions, and access to safe water is widely considered as a human right. Indeed, in order to manage this precious resource optimally, this need was felt since long time. Poor water governance is acting as a catalyst for flood and drought situations across the globe. The spatial and temporal

availability of water and its equitable distribution to all stakeholders is a matter of concern for the governing organisation. The challenges for efficient water governance are - availability of water to all stakeholders, water pollution, water conflict, flood, droughts, agriculture sustainability, shortfall and inequitable allocation and distribution, legal issues, water rights, water pricing and climate change. The poor water governance will lead to havoc on the environment and strive up conflict from village to international level. Hence, equitable and ecologically sustainable water management is very crucial for effective water governance.

Good water governance means different things to different people. For some, it is an administrative instrument or technical toolkits that can be used for implementing particular water policy. For others, it is a democratic process, where several alternative are debated so as to explore competing values, interests and claims to the common good, rather than assuming that the ends are obvious and that working out the best means to achieve them is just a technical matter. Further, some see water as a common good and essential water services as a human right that cannot be governed through the market principles of supply and demand. Others take the quite opposite view that water is primarily an economic resource, essential water services are a private good and a commodity, and so the governance of water and water services must centre on free-market principles. Therefore, good water governance necessarily address the viewpoints of diverse stakeholders.

## **6. PRACTICAL MECHANISMS FOR PROMOTING ETHICS IN WATER SECTOR:**

This section provides some practicable measures that will promote the ethical development in water sector.

### **6.1 Code of Ethics:**

Practically, even though no ethical code can provide a sure shot answer for every decisional dilemma, such a code can certainly provide broad guidelines while dealing with critical moral paradoxes in administrative decisions and actions (Dhameja, 2003). Surely, it may not be possible to draft comprehensive or exhaustive ethical codes for administrative decision-making, yet efforts can be made to make them as inclusive as possible. More importantly, such codes should be drawn up by the administrators themselves and not imposed from above. Associations of the employees shall come forward for preparation and implementation of such code of ethics. These have to strike a balance between what is ideal and what is possible. Extremities are generally resisted in the empirical world of human affairs. The conduct rules should not be confined to the 'don'ts' of administrative behaviour but should also be helpful in resolving ethical dilemmas. A code shall include basic principles for enhancing social and economic responsibility on the use and management of water and behaviour of officials. It shall provide guidelines for the ethical behaviour in water use and management, by expressing the social rights and responsibilities of stakeholders for the sake of maintaining water resources, and protecting it from pollution and depletion. Furthermore, the code topics should be subject to researched work and then to a candid dialogue in seminars and workshops. This would be targeted to various groups, including children, women, youth, as well as various stakeholders of water use and management.

### **6.2 Education and Awareness:**

It is assumed that the ethical behaviour and morality cannot be taught through training. Still there is a scope for organising ethical training. Already, national and international training institutions have prepared modules on this theme. As for the on-the-job training, the impact on the mind-set of a government functionary of the immediate work-environment around him is immense. Principled and honest superiors and members of the peer group are bound to promote morality in the conduct of a government servant. Conversely, if the official ambience encourages ethical laxity and compromises, it becomes easier for the personnel to join the bandwagon of immorality. The training shall be imparted to both – internal and external stakeholders in the water sector. Externally, the curricula should systematically introduced from elementary school to university which include courses on surface water and groundwater, their significances, and the ethics of their uses and protections. These fundamental courses should be complemented by continuous training in the scientific bases of surface water and groundwater management designed for practitioners, policy-makers, economists, sociologists, and

other representatives of disciplines having a role in water management, and by actions of awareness-raising of the public. Professionals such as engineers or scientists who control the great power of knowledge must uphold highest standards of professional ethics as well as general virtue of human beings in order not to increase the risk of the world.

The identified target groups for promoting their awareness in water use ethics include communities of: scientific researchers, farmers, industrialists, decision makers, universities, students, women, and youth. Moreover, serious awareness activities should be targeted at children, as well as, other stakeholders in the agricultural and energy fields, tourism, municipal and local government fields. This can be done through publishing and disseminating bulletins and newsletters that publicize activities of the stakeholders; and monitor its work and special program for educating youth and students in schools and libraries, as well as colleges and universities in cooperation with NGOs and the government.

### **6.3 Legal Mechanism and monitoring:**

As mentioned in the Second Report of Administrative Reform Commission, Government of India, politics and those engaged in it, play a vital role in the legislative and executive wings of the State whose acts of commission and omission in working the Constitution and the rule of law become the point of intervention for the judiciary (Government of India, 2007). Policies and regulations and its monitoring mechanism shall be developed for protecting water quantity and quality. Consultative process involving all interested parties shall be carried out while framing, amending and implementing legal mechanism. Reforms like policy changes, appropriate acts, rules, implementation methodology, involvement of NGO, participation of stakeholders and community, coalitions, research, tools etc. will enhance the transparency and encourage ethical behaviour. Strong political support and commitment is necessary in this regards.

### **6.4 Promoting Anti-Corruption Initiatives and Third Party Audits:**

This strategy helps in promoting the individuals and organisations that are willing to enhance transparency. The activities can be case studies of best practice, surveys of the current situation, action research identifying optimum approaches to community management or design of water schemes, preparation and advocacy of minimum plans/indicators without which a later project cannot be undertaken. Several stringent anti-corruption initiatives shall be implemented to promote ethical behaviour in water sector. Third party audits are also necessary in order to guard the guardians.

### **6.5 e-Procurement and System Reforms:**

Public procurement enable organisations to purchase goods and services, with the intent to select the most advantageous proposal from fair and competitive market, with best value product or service to the customer. Public procurement is highly exposed to corruption, since there is a weak links, human interventions and scope for bending the rules and policies. e-Procurement seals all possible loop holes, by way of enhanced real time publicity, audit trails and through mechanised, rigid process. Government Process Re-engineering shall be carried out on important processes, in order to remove redundancies, minimise human touch points, removing non value added activities and bringing transparency and accountability. Service related reforms in recruitment, posting and promotion of officials, their capacity building and training and promotion of ethics and integrity in public and private organizations is of utmost importance in order to promote ethical behaviour.

### **6.6 Collaboration and Partnership:**

Water sector worldwide is controlled and managed by government in most of the countries in a monopolistic manner. Public private partnership shall be explored in water sector through appropriate business case. Collaboration and participation in water resources management encourages interests groups, especially the poor and under-represented groups, for presenting their views. Through education, open publication of water data, community hearings, and internet fora and discussions, individuals and groups can be involved in water using and managing processes and present their needs and concerns. Appropriate reforms in the private sectors, and transparent, accountable and participatory approach of administrator in order to build comprehensive networks of actors, from the local, national, regional and international level and from all spheres of society: private, public, civil



society and media is a crux of matter.

### **6.7 Water Pricing:**

Low water prices are one of the leading factors contributing to excessive water use in agriculture. The methods of determining the water price should be sufficient to meet operation and maintenance costs. Take China as an example, water pricing is generally based on irrigated land area or only based on the electricity used. The water prices applied for industrial and domestic uses do not reflect the actual cost of water either. The fourth guiding principle proposed during Dublin conference reads: "Water has an economic value in all its competing uses and should be recognized as an economic good. Within this principle, it is vital to recognize first the basic right of all human beings to have access to clean water and sanitation at an affordable price." The accounting and audit for water use needs to be transparent and open, and we could suggest people become aware of their "water fingerprint" in the same way as the term "carbon fingerprint" has become popular.

### **6.8 Integrated Water Resources Management (IWRM):**

The concept of IWRM has been coined and advocated since the early 1990s, and it gained wide acceptance as an appropriate approach and management tool for rational governance of water resources and improved delivery of water and sanitation services. IWRM is an ecosystem-based approach that takes into consideration the interrelationships between natural resources systems and socio-economic objectives, and attempts to integrate them in sustainable management of water resources. The IWRM approach broadens water resources management to take account of factors outside the water sector such as national development and poverty alleviation objectives. Therefore, IWRM offers a shift away from the traditional sectorial approach to water management that has led to the deterioration and lack of sustainability of services in many areas of the world. The multiple objectives of balancing economic efficiency, socio-economic equity, and environmental sustainability are all reflected in the IWRM.

## **7. CONCLUSION**

Ethics is a branch of philosophy that is based on morality. Accordingly, ethics looks at the meaning, therefore, of statements about the rightness or wrongness of actions; at motives; at blame; and fundamentally at the notion of good or bad. Water ethics as part and parcel of this specific and distinct philosophical field, is still emerging in academic arenas, professional discussions, and dialogues on water governance.

The ethical development and management in water sector is being increasingly discussed in policies and practices of water resource management. An attempt has been made in present paper to explore water ethics so as to bring good water governance. The application of ethical concepts has a direct practical relevance in water resource management as it can support the decision making process, which is a very complex issue involving a range of scientific domains (hydrology, groundwater, precipitation and runoff, water quality), and requires simultaneous consideration from different areas of water use, both from the supply and demand side (an integrated approach to water resource management), and their integration with socio-economic aspects. The historical, socio-cultural, legal-judicial, political and administrative, economical and work ethical contexts were discussed in the present paper. Further, discussion has been carried out on principles of water ethics and the policies for enhancing transparency and accountabilities were explained. In order to help organisations for preparation of effective framework for ethical development and management of water sector, gaps in existing knowledge in ethics is examined and accordingly practical mechanisms for promoting ethics in water sector were proposed.

Further research in ethical behaviour, humanistic nature, capacity building innovations and organisation development activities from ethical perspectives are necessary to address existing gaps in understanding and approaches to governance and ethics in water sector. The authors also call for future research to better implementation of theoretical concepts in water sectors involving all

stakeholders and through Integrated Water Resources Management approach.

## REFERENCES

- Asthana, A. N. (2004). Corruption and decentralization: evidence from India's water sector. *Proceedings of the 30th WEDC International Conference, held at Laos*. Loughborough, London, WEDC.
- Barlow, M., & Clarke, T. (2004). *Water Privatization: The World Bank's Latest Market Fantasy*. Ottawa, Ontario Canada,.
- Berteaud, P. (2003). Water and cultural Diversity: An examination of water in Japanese, Arabic, European, and African Cultures. . *Publication on the occasion of the 3rd World Water Forum*, Kyoto, Japan.
- Brelet, C. (2004). *Best Ethical Practice in Water Use*. Paris, France: COMEST Publications. World Commission on the Ethics of Scientific Knowledge and Technology (COMEST).
- CVC, G. (2002). *Problem Areas of Corruption in Construction*. New Delhi: Central Vigilance Commission, Government of India.
- CWC. (2012). *History of Irrigation Development and Management in India*. Ministry of Water Resources, Government of India.
- Davis, J. (2004). *Corruption in Public Service Delivery: Experience from South Asia's Water and Sanitation Sector*. UK: World Development, Vol. 32, no. 1, pp53-71.
- Dhameja, A. (2003). Role of Ethics in Public Administration. *Ethics and Accountability in Government and Business, Aalekh, Jaipur*.
- Dublin Water Principles. (1992). The Dublin Statement on Water and Sustainable Development, International Conference on Water and the Environment. Dublin. Retrieved from <http://www.undocuments.net/h2o-dub.htm>
- Duflo, E. (n.d.). *A Case Study of Corruption: Canal Irrigation in South India*. Retrieved from <http://web.mit.edu/14.773/www/Wade.pdf>
- Estache, A., & Kouassi, E. (2002). *Sector organization, governance, and inefficiency of African water utilities*. Washington, U.S.: The World Bank Institute.
- Fried, J. (2008). Water Governance, Management and Ethics: New Dimensions for an Old Problem. *Symposium Keynote Address, 6 Santa Clara J Int'l L.1*. Retrieved from <http://digitalcommons.law.scu.edu/scujil/vol6/iss1/1>
- Government of India. (2007). *Ethics in Governance-Second Administrative Reforms Commission Report*. New Delhi.
- Gruening, G. (2001). Origin and theoretical basis of New Public Management. *International Public Management Journal*.
- Hammer, M., & Champy, J. (1999). *Reengineering the Corporation: A Manifesto for Business Revolution*.
- María González de Asís, O'Leary, D., Ljung, P., & Butterworth, J. (2009). *Improving Transparency, Integrity, and Accountability in Water Supply and Sanitation Action, Learning, Experiences*. Washington DC: The World Bank Institute and Transparency International.
- MPA-011. (n.d.). *State, Society and Public Administration*. IGNOU, New Delhi.

- Osborne, D., & Gaebler, T. (1992). *Reinventing Government: How the Entrepreneurial Spirit is Transforming the Public Sector*. Addison-Wesley Publishing Company.
- OSCE. (2004). *Best Practices in Combating Corruption*. Vienna, Switzerland: Organisation for Security and Co-operation in Europe.
- Pope, J. (2000). *Confronting Corruption: The Elements of a National Integrity System*. London: TI Berlin.
- PricewaterhouseCoopers. (2003). *Global Economic Crime Survey*.
- Saleth, R. M., & Dinar, A. (1999). *Evaluating water institutions and water sector performance*. Washington DC: World Bank Technical Paper 447.
- Selborne, J. (2000). *The ethics of freshwater use*. UNESCO-COMEST.
- Shordt, K., Stravato, L., & Dietvorst, C. (2006). *About Corruption and Transparency in the Water and Sanitation Sector*. Delft, The Netherlands: IRC International Water and Sanitation Centre.
- Sohail, M., & Cavill, S. (2006). Corruption in construction Projects. *Proceedings of the CIB W107 Construction in Developing Countries Symposium "Construction in Developing Economies : New Issues and Challenges"*. Santiago, Chile.
- Swardt, C. (2005). *Global Corruption Report 2005– 6: Key developments in corruption across countries*. Berlin, Germany.
- Transparency International. (2003). *Global Corruption Report*. London: Profile Books.
- Transparency International. (2005). *Press Release for TI's Global Corruption Report*.
- UNESCAP. (n.d.). *What is Good Governance?* Retrieved from <http://www.unescap.org/sites/default/files/good-governance.pdf>
- UNESCO. (2006). *Water: a shared responsibility*. Paris and New York: UNESCO and Berghahn Books.