

# Water Resource Management and Water Ethics in Tirunelveli District

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## Abstract

*No sector of the society is value free and immune to ethic consideration, water sector is not an exception. Questions of access and deprivation underlie most water decisions. Current water resource management approaches are facing various ethical dilemmas. The purpose of this paper is to focus some are crucial to water resource management. One of the future challenges for water professionals is to find out logical linkages between water uses, water policies and ethics to achieve an effective, efficient, efficient and sustainable water resource development and management.*

## Introduction

From the local to the global level, values are central to ordering water for the purposes of ethics of water resource management. Values are personal or cultural and agriculture standers that give intrinsic or extrinsic the sphere of moral consideration. The paper considers the role of values in water ethics. Because there is no universally agreed upon code of the ethics as the concept of ethics is as diverse as the communities that promote them, policy reforms promoting water ethics must naturally embrace legal pluralism. According to Rutgers Beelens, professor and researcher of water management. Legal pluralism provides important insights

for the understanding of water right. Water resources... are often used and managed under legally plural conditions, in which rules and principles of different origins legitimated by different legal and normative frameworks coexist and interact. If baleens is correct in asserting that water can be managed using a legal pluralist paradigm, sovereignties then need to identify what segments of society do not have legitimized water norms and incorporate those norms in to a management scheme

## Objectives

- To study the Water Resource Management and water ethics used by agriculture and home sources in Tirunelveli.
- To give an overview about water ethics.
- To offer suggestions to improve the water resource management.
- To Economic and social development of water ethics management In Tirunelveli District.

## Agriculture

Tirunelveli district is predominantly an agricultural district. The district has mainly two cropping seasons, viz., Kar, the first crop (June to September) and Pishanam, the second crop (October to February).

### Cropping Pattern

Tirunelveli has fertile soils only in scattered regions. Less fertile red soils are found distributed over most of the regions. The network of the irrigation system marks full use of the water resources; the natural deficiency has been overcome to a greater extent. The cropping pattern of the district is essentially of the type characterizing dry regions. It normally varies from taluk. In dry regions, diversified cropping patterns exist and no single crop claims a large share of the gross cropped area. Dry cultivation which characterizes these regions is also basically

Millet and cash harvest cultivation. Even in dry regions wherever water is available, it is the paddy crop that is sown by the farmers. Paddy occupies the largest area of cultivation, followed by cotton. Paddy is cultivate mainly in Tirunelveli, Shenkottai, Ambasamudram Palayamkottai, Tenkasi and Nanguneri Taluks. Other crops grown in the district are groundnut, gingelly, coconut, cumbu, ragi, pulses, , chillies and indigo. Portions of Sankarankoil Taluk have the rich, fertile black soil which is highly suitable for cotton cultivation. Factors such as type of soil, climatic conditions, irrigation facilities etc., determine the cropping pattern in a region. Most of the rain fed is as are cultivated in both the seasons. Most of the crops are on the Ground for three or four months except chillies and cotton which take more than five months.

### Scope of the Study

The scope of the study is to analyze 'Water Resource Management and Water Ethics in Tirunelveli District

### Research Methodology

Research Type: Descriptive Research, Type of Data / Data Source Used: Both Primary Data and Secondary Data. Primary data are collected by conducting field investigation with the help of well – designed

questionnaire and personal interview. It is mainly collected to know about the quality of work life of teachers in aided colleges. The questionnaire was distributed among 60 sample respondents in Tirunelveli region. The participants were instructed to answer the questions posed in the questionnaire to the best of their Knowledge. In this study the researcher has collected the secondary data from books, magazines, newspapers, journals, catalogues, articles and websites.

### Data analysis and Interpretation

Sample Profile: Demographic features of faculties of colleges in the palayamkottai, are exhibited with the help of table 1 below:

**Table 1**

Demographic Variable	Categories	Counts	Percentage %
Gender	Male	48	70
	Female	12	30
Age	20 – 25 years	12	20
	26 – 30 years	15	25
	31 – 35 years	09	15
	Above 35 years	24	40
Educational Qualification	Primary	15	25
	Hr.Sec. School	12	30
	Graduation	33	45
Designation	Farmer	28	46.6
	Officer	10	17
	Self-employee	22	36.6
Marital Status	Married	36	60
	Unmarried	24	40
Family Status	Nuclear	32	53
	Joint	28	47

### Source: Primary Data

From the above table, it is clear that among the 60 respondents only 12 respondents are female and 48 respondents are male. 40% of the respondents are above the age of above 35 years and 45% of the respondents have completed Gradation and 46.6% of the respondents are farmer and 60% of the respondents are married. 53% of the respondents are nuclear family.

**Table -2**

Particulars	Frequency	Percentage %
Shallow hand pumps	03	5
Public Tap	15	25
Community Tank	10	16.7
Deep bore well	05	8.3
Individual piped connection	07	11.7
Private Lorry supply	-	-
Bottled water (can water)	20	33.3
Tanker (Municipal supply)	-	-
<b>Total</b>	<b>60</b>	<b>100</b>

**Source: Primary data**

From the above table it is inferred that 5% of the respondent's Shallow hand pumps. 25% of the respondents Public Tap. 16.7% of the respondents Community Tank, 8.3% of the respondents Deep bore well. And 11.7% of the respondent's Individual piped connection and 33.3% respondents Bottled water (can water). Feel that their sources of drinking water.

## Uses of Water

### 1. Agricultural water use

Agricultural use of water for irrigation life stock fisheries and agricultural is estimated as the coos of 71 percentages of total water withdrawal. This number is higher in low and middle income countries between 15-35% of withdrawal of water for irrigation is unsustainable. The effective use of water is an ethical issue that could reduce the water usage related to crop and animal production. Compared to the increase of cultivated land by about 25 percentages the size of irrigated areas more than doubled from 1970 to 1995. About 70% of the worlds irrigated land is in Asia, where it accounts for 35% of cultivated land. The democratic people's republic of Korea has the highest level, with 73% of cultivated and under irrigation, followed by Japan with 65% and china with 55%. Bangladesh, Nepal, republic of Korea and Viet name have more than 40% of cultivated land under irrigation. Some tropical countries of south Asia and the islands have an average between 20-25% of their cultivated land under irrigation.

### Industrial water use

It is estimated that 15% of world-wide water use is for industrial purposes. a number of countries in Asia are developing their economies by industrial investment.11percentage some industrial users include power plants, which use water for cooling or as a power source,are mining, 12 oil refineries, which use water in

chemical processes, and manufacturing plants, which use water as a solvent. The portion of industrial water usage that is consumptive varies widely, but as a whole it is lower than agricultural use.

### **Environmental Water Use**

Environmental Water Use is for the benefit of ecosystems or the environment, rather than the human benefit. Explicit environmental water use is a small but growing percentage of total water use, including artificial wetlands, artificial lakes intended to create, fish ladders around dams, and water releases from reservoirs timed to help fish spawn. Like recreational usage, such environmental usage is generally non-consumptive but may reduce the availability of water for other users at specific times and places. We can expect an increase in this use as bio centric and ecocentric value systems are adopted more, so that water is provided to nature reserves and national parks away from competing human needs.

### **Household Water Use**

The world wide water use for household purposes is around 15%. These include drinking water, bathing, cooking sanitation and household gardening. Basic household water requirements have been estimated by Peter Gleick at around 50 litres per person per day, excluding water for gardens. Of these 50 litres, Gleick estimated 2L for drinking, 20 Liters for sanitation services, 15L for bathing, and 10L for cooking and kitchen. However, if we examine the water consumption for food and energy in most countries, these exceed the direct consumption of water.

### **Water Ethics**

#### **Roles of water ethics**

This topic of water ethics is being increasingly discussed in policies and practices of water resource management, these reports use the term management rather than access to cover all aspects of water use access to utilization, allocation, quality, production, etc. We explore different frameworks for water ethics referring also to knowledge gained through several studies that illustrate use of ethical models, and highlight ethical issues that are often ignored or underplayed in management of water resources, suggesting policy options that can be developed.

In this complex environment with different variables, the role of ethics is to provide operational assistance and conceptualization of different perspectives while helping to keep a focus “whether on the action, the consequences, or the motives, which examine the concepts of rights and duties, or effects and outcomes.”<sup>42</sup> From this perspective, the precautionary principle or cost benefit analysis for example, are useful.

## Frameworks for water ethics

Unesco previously examined the question of water ethics through working group meetings organized under the auspices of the world commission on the ethics of science and technology and the international hydrology programme in 1998. This led to the publication of a series of 14 essays 43 and the report best ethical practice in water use which also included 5 case studies.

## Water Resource Management

There are ethical issues imbedded in all aspects of water management decision making, including planning, regulating, operating, financing and investing, designing, and implementing. Ethical considerations concerning decision-making and management tend to revolve around the following are the decisions they participate in? Do they have access to formulating options or only to reacting to options already formulated? How and what type of opportunity costs are considered? What is the basis of valuing, implicit or explicit, in trade-off decisions? What level and type of information is open to the public? To what extent are environmental, economic and other impacts included, and how are they characterized? In what way do professionals interact with non-professionals in the use of technical and professional information? Decision-makers should understand the linkage between improvement strategies and issues of water allocation, supply and pricing, and consider decisions in the context of macro-economic national and regional strategies. Decision-makers must also understand that their decisions have hidden implications for people who have limited options because of poverty. They have an ethical duty to understand such implications and to equitably mitigate effects of their decisions.

## Findings and Suggestions

Based on the findings of the study, the following suggestions are given:

- 70% of the respondents are male.
- 40% of the respondents have their disciplined of Graduation.
- 60% of the respondents have married.
- 46.6% of the respondents have their designation of farmer.
- 33.3% of the respondents have water sources used on bottled water (can water).
- The water resource management used on agriculture once on again water ethics.
- Used the water industrial, agriculture, environmental, house hold water use.

## Conclusions

The aim of this report is to illustrate how water ethics can make a difference to water related practices. The purpose is to reveal gaps in existing knowledge to researchers and funders of research, to examine linkages between research and policy making. It provide a cross-cultural review of the issue, to educate readers on water ethics, and to present policy options to government at all levels. More studies are needed to address existing gaps in our understand and approaches to governance and ethics of water to link the extensive agreements on water sharing to change consumption patterns within and between countries. The authors also call for future research to better understand the complex foresight studies involving water use in various sectors including agriculture, energy and industry, under the framework of the ethics of climate change.

