

# Policies on Water: An Analytical Study on Water Allocation Priorities

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## Introduction

“Water is life” such proverbs have been read and discussed quite often however how much of this has been understood and implemented in real practice requires careful analysis. The importance of water being one of the most important natural resource can never be denied. It is fundamental to our existence that is for life, food security, livelihood and sustainable development. India’s case seems to be quite peculiar as she has to sustain around 17% of the world’s population having just around 4% of world’s renewable water resources and 2.6% of the world’s total land area.

Water scarcity is not just a geographical problem based on the uneven distribution of water resources in the country that is flood prone areas and drought prone areas. The scarcity of water is also an ecological problem in the context of changing patterns of precipitation mainly attributed to climate change, a social problem in terms of having access to safe, clean and sufficient water resources to obviating all social discrepancies: It is a political problem as well when comes to the role of Government that is Central and State in the federal setup like India to settle the issues pertaining to distribution of water resources between the various stakeholders and to lay down the policies and programs having uniformity yet leaving sufficient scope for adjustments to the future challenges of universal availability of water.

India’s rising population coupled with the fast paced urbanisation has created further strain on the availability of water. Mismanagement, wastage, pollution and lack of awareness are the major challenges

before the effective utilization of limited water resources.

Water being a State subject the role of the Central Government in laying down a policy framework for water management in the country becomes extremely difficult because of the socio-cultural and ecological diversity. However, an integrated approach in this direction was required to have the national perspective on policy front and at the institutional level as well.

## Constitutional Position

The Constitution of India lays down the legislative and functional jurisdiction of the union, state and local Governments regarding ‘Water’. Under the scheme of the Constitution, ‘Water’ is basically a state subject and the Union comes in only in the case of inter- state river waters. List II of the Seventh Schedule, dealing with subjects regarding which states have jurisdiction, has the following as Entry 17:

“Water, that is to say, water supplies, irrigation and canals, drainage and embankments, water storage and water power subject to the provisions of Entry 56 of List I Entry 56 of List I (Union list), reads as follows: “Regulation and development of inter- state rivers and river valleys to the extent to which such regulation and development under the control of the Union, is declared by Parliament by law to be expedient in the public interest”.

The Constitution has a specific article (Article 262), dealing with adjudication of disputes relating to matters of inter- state rivers or river valleys, which reads as follows:



Article 262 (1): Parliament may by law provide for the adjudication on any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-state river or river valley.

(2) Notwithstanding anything in this Constitution, Parliament may by law provide that neither the Supreme Court nor any other Court shall exercise jurisdiction in respect of any such dispute or complaint as is referred to in clause (1).

The recent 1992 amendments to the Constitution regarding Panchayats and Municipalities introduced the following entries in the schedules listing the subject-areas in which the State Governments and legislatures may devolve functions to such bodies, so as to make them evolve as local self-governing institutions: In the Eighth Schedule (Part IX) dealing with Panchayats, the subjects, "Minor irrigation, Water management and Watershed development", "drinking water" and "maintenance of community assets" are listed. In the Twelfth Schedule (Part IX A) dealing with municipalities, the subjects "water supply of domestic, industrial and commercial purposes" is listed. Functional responsibilities are, thus, visualised for local Governments in respect of several aspects of water use. The two laws enacted by the Union under Article 262 and Entry 56 of List I are the Inter-State Water Disputes Act, 1956 (as amended up to 1980) and the River Boards Act, 1956.

In recent years since the Constitution does not have an entry relating to 'Environment', using the residual powers, the Union has enacted laws on environment and control of pollution, which have effect on water use including ground water and its exploitation. A large number of Acts dealing with irrigation, canals and their maintenance, water rates and cess, command area development and maintenance of tanks are in force in each state. Some of the Acts are as old as the 1860s and 70s. (CWC)<sup>1</sup>.

<sup>1</sup> Central Water Commission (CWC)

## India Water Resources

Geographical area	329 M. ha.
Area as % of world area	2.4 %
Forest cover	20.97 %
Population as % of world population	17.2 %
Annual rainfall (2005)	1208 mm
Major river basins	12
(catchment area > 20,000 sq. km)	253 M. ha.
Medium River Basins	46
(catchment area < 20,000 sq. km.)	24.6 M. ha.
<b>Water Resources</b>	
Average annual precipitation	4000 BCm
Avg. precipitation during monsoon (Jun-Sept)	3000 BCm
Natural Runoff	1986.5 BCm
Estimated utilizable surface water resources	690 BCm
Total utilizable ground water resources	433 BCm
Total annual utilizable water resources	1123 BCm
Per capita water availability	1720.29 cum

## The Policy framework

**"Water policies around the world are in urgent need of reform" OECD**

### National Water Policy (NWP) 1987-Some Reflections

The concerted effort in regard to water management was taken in the year 1987 in the form of National Water Policy (NWP) 1987. According to the policy the following guidelines were laid down for sectoral allocation of water-

## Water Allocation Priorities

In the planning and operation of systems, water allocation priorities should be broadly as follows:

- Drinking water
- Irrigation
- Hydro-power
- Navigation
- Industrial and other uses.

However, these priorities might be modified if necessary in particular regions with reference to area specific considerations.

**Drinking Water:** “Adequate drinking water facilities should be provided to the entire population both in urban and in rural areas by 1991. Irrigation and multipurpose projects should invariably include a drinking water component, wherever there is no alternative source of drinking water. Drinking water needs of human beings and animals should be the first charge on any available water”

**Irrigation:** “Irrigation planning either in an individual project or in a basin as a whole should take into account the irritability of land, cost-effective irrigation options possible from all available sources of water and appropriate irrigation techniques. The irrigation intensity should be such as to extend the benefits of irrigation to as large a number of farm families as possible; keeping in view the need to maximize production. Water allocation in an irrigation system should be done with due regard to equity and social justice”

**Analysis of NWP 1987:** As far as the drinking water supply is concerned the access to safe drinking water sources in urban areas of India was about 90% in the year 1990 and 93% in the year 2000 and this has improved to about 96% by the year 2008. In rural India, access to safe drinking water sources has increased from about 58% in 1990 to about 73% in the year 2008.

As far as Irrigation development is concerned out of 329 million hectare (mha) of geographical area of the country, total cultivable area is about 182 mha out of which net sown area is only about 140 mha. Only about

62 mha, which is slightly over 44% of the cropped area, is reported as irrigated. There is a need to bring more cropped area under assured irrigation to increase agriculture productivity and production. The ultimate irrigation potential of the country has been estimated to be about 140 mha out of which about 76 mha could be from surface water and about 64 million hectare from ground water sources. More than 107 mha of irrigation potential has since been created against the irrigation potential creation of about 22.6 mha at pre-Plan stage in 1951.

## National Water Policy 2002- Some Reflections

NWP 2002 was introduced in regard to the rapidly changing scenario in the domain of water to address the newly emergent issues and providing critical policy inputs. It emphasised upon the fact that the water is a prime natural resource, a basic human need and a precious national asset. Planning, development and management of water resources need to be governed by national perspectives. Availability of water is highly uneven in both space and time.

Water is a scarce and precious national resource to be planned, developed, conserved and managed as such, and on an integrated and environmentally sound basis, keeping in view the socio-economic aspects and needs of the States. It is one of the most crucial elements in developmental planning. As the country has entered the 21st century, efforts to develop, conserve, utilise and manage this important resource in a sustainable manner, have to be guided by the national perspective.

Growth process and the expansion of economic activities inevitably **lead to increasing demands for water for diverse purposes: domestic, industrial, agricultural, hydro-power, thermal-power, navigation, recreation, etc. The drinking water needs of people and livestock have also to be met. Domestic and industrial water needs have largely been concentrated in or near major cities.** However, the demand in rural areas is expected to increase sharply as the development programmes improve economic conditions of the rural masses. Demand for water for hydro and thermal power generation and for other





industrial uses is also increasing substantially. As a result, water, which is already a scarce resource, will become even scarcer in future. This underscores the need for the utmost efficiency in water utilisation and a public awareness of the importance of its conservation. As per the NWP2002 the sectoral water allocation priorities are as follows-

### Water Allocation Priorities

In the planning and operation of systems, water allocation priorities should be broadly as follows:

- Drinking water
- Irrigation
- Hydro-power
- Ecology
- Agro-industries and non-agricultural industries
- Navigation and other uses.

However, the priorities could be modified or added if warranted by the area / region specific consideration

**Drinking Water:** Adequate safe drinking water facilities should be provided to the entire population both in urban and in rural areas. Irrigation and multipurpose projects should invariably include a drinking water component, wherever there is no alternative source of drinking water. Drinking water needs of human beings and animals should be the first charge on any available water.



Source: OECD work on water



**Irrigation:** Irrigation planning either in an individual project or in a basin as a whole should take into account the irrigability of land, cost-effective irrigation options possible from all available sources of water and appropriate irrigation techniques for optimising water use efficiency. Irrigation intensity should be such as to extend the benefits of irrigation to as large a number of farm families as possible, keeping in view the need to maximise production. Disparities in the availability of water between head-reach and tail-end farms and between large and small farms should be obviated by adoption of a rotational water distribution system and supply of water on a volumetric basis subject to certain ceilings and rational pricing.

**Analysis of NWP 2002:** However, the newer portion added to the NWP1987 in the NWP 2002 regarding the irrigation is the recognition of irrigation being the largest consumer of fresh water; the aim should be to get optimal productivity per unit of water. Scientific water management, farm practices and sprinkler and drip system of irrigation should be adopted wherever feasible. Reclamation of water logged / saline affected land by scientific and cost-effective methods should form a part of command area development programme.

**In a clear contrast to the NWP 1987 no timeline has been specified** and the focus remains on both the urban and rural areas. In this regard it can be safely concluded that the policy continuum has been displayed as far as both the policies of 1987 and 2002 are concerned up to a great extent however, the circumstances did change in the 15 years period from 1987 to 2002 therefore the policy



needed to take these changing scenarios into the consideration. The water sources as far as drinking water is concerned have improved to about 96% by the year 2008 in urban areas. In rural India, access to safe drinking water sources has increased from about 58% in 1990 to about 73% in the year 2008. However, the policy remained silent on allocation of water for hydro-power, navigation and industrial and other uses.

## NATIONAL WATER POLICY (2012):

### Some Reflections

The NWP 2012 as recommended by National Water Board appears to be more comprehensive and progressive in the content and orientation. It has discussed almost every aspect of water management including the climate change, water pricing, water framework law and Institutional arrangements in a holistic way along with providing for the basic principles for the Public Policy on water resources.

**The Basic Principles:** talks about the water allocation as mentioned below

(vi) Water, after meeting the pre-emptive needs for safe drinking water, sanitation and high priority allocation for other domestic needs (including needs of animals), achieving food security, supporting sustenance agriculture and minimum eco-system needs, may be treated as economic good so as to promote its conservation and efficient use.

Water using activities need to be regulated keeping in mind the local geo-climatic and hydrological situation. In The NWP 2012 it seems that the water allocation priorities in a sectoral manner as mentioned in the two previous policies that is in NWP-1987 and NWP -2002 have been largely overlooked. In the Basic Principle category entry (vi) does talk about some kind of sectoral allocation beginning from the drinking water however clear cut allocation seems to be lacking.

The policy also lays stress on water governance in every state of the country by framing suitable policies, laws and regulation on water by mentioning about water framework law which should define the management of water and laying a framework for its use and allocation. The policy

also highlights the linkage between the allocation and pricing on economic principles as the draft policy states “**WATER PRICING**” For the pre-emptive and high priority uses of water for sustaining life and ecosystem for ensuring food security and supporting livelihood for the poor, the principle of differential pricing may have to be retained. Over and above these uses, water should increasingly be subjected to allocation and pricing on economic principles.

**A Water Regulatory Authority (WRA) should be established in each state.** The Authority, inter-alia, will fix and regulate the water tariff system and charges, in general, according to the principles stated in this Policy in an autonomous manner. Such tariff will be periodically reviewed.

The information data base and data bank is essential to have the clarity in regard to the water usage patterns, availability of water and sector wise allocation hence in the comparison of all the three National Water Policies that is NWP 1987, The NWP 2002 and NWP 2012 given below the information system has been mentioned along with the description on maximizing availability and allocation priorities. The NWP 2012 seems to be a drastic departure in terms of clearly mandating the water allocation priorities as specified in the previous two policies. In NWP 2012 these water allocation priorities have been blurred up to a great extent.

**Water Allocation Priorities and Sectoral Water Demand:** Water allocation priorities should broadly be governed on the basis of local conditions and requirements (Table -1):

**Domestic Use:** Sufficient and proper drinking water facilities should be provided to the entire population both in urban and in rural areas. Irrigation and multipurpose projects should invariably include a drinking water component, but these should only supplement locally developed sources of drinking water. Drinking water needs of human beings and animals should be the first charge on any available water. The community should have the first right to use rainfall directly, store and recharge groundwater wherever possible. In 1991 the annual per capita availability of water was 2731 cubic metres. In 2020, this is expected to

## Estimates of Sectoral water demand in India

Category	1990 billion cubic meters (per cent)	2010 billion cubic meters (per cent)	2025 billion cubic meters (per cent)	2050 billion cubic meters (per cent)
Irrigation	460 (88.6)	536 (77.3)	688 (73)	1008 (70.9)
Industries + Energy	34 (6.6)	41.4 (6)	80 (8.5)	143 (10.1)
Total (including others)	519	693	942	1422

**Source :** National Commission for Integrated Water Resources Development Plan, Ministry of Water Resources, 1999, as cited in Centre for Science and Environment [CSE] (2004)

be just over 2000 cubic metres and by 2050, 1403 cubic metres (Indian Water Resources Society, 1999). The allocation of water for each hydrological zone should be based on the principle of providing at least 1000 cubic metres per capita per annum (for all uses). The surplus water over and above this amount can be allocated by mutual agreement between different hydrological zones.

**Industrial use:** In India, industry is the second highest consumer of water. The main sources of water for the industrial sector are groundwater and surface water. Groundwater has emerged as an important source to meet the water requirements of industries. Choice of source of water depends on the availability of sufficient and regular supply of water and the cost of water from the source. While the running cost of surface water is mainly the price paid to the supplier—the municipal bodies; the cost of groundwater is the extraction cost –energy used (electricity/diesel). Since the prices of all the inputs, water, electricity, and diesel are administered or regulated by the government, the inefficient use of water remains a normal practice. Since the surface water supply from municipal sources is not sufficiently guaranteed, industrial units tend to depend on groundwater.

**Hydropower use:** India is endowed with estimated hydropower potential of more than 1,50,000 mega watts. However, only about 21% of the potential has been developed so far. About 10% of hydropower potential is being developed. The main reasons for slow development are: reportedly difficult potential

sites; rehabilitation, environmental and forest related issues; and inter-state issues. In addition, long gestation period and geological surprises are important issues which need to be addressed.

The “National Commission for Integrated Water Resources Development (NCIWRD)” has assessed that about 83% of water is used for irrigation and remaining for domestic, industrial and other purposes. The Commission has assessed the projected demand as 1180 bcm for the high demand scenario for the year 2050. While making the assessment, NCIWRD has assumed improvement in the efficiency of both surface water and ground water systems and also in the efficiency of water use in agriculture and other sectors. Although the requirement for irrigation water would increase over the time, the share of irrigation water in the overall demand has been estimated to reduce from the present level of about 83% to about 69% by the year 2050.

As such there are no accurate estimates of water consumption by the industrial sector in India. Different agencies report different figures of water use by the industrial sector. For example, according to the Ministry of Water Resources, the industrial sector accounts for about six per cent of the total freshwater abstraction at the beginning of this century, and the Central Pollution Control Board (CPCB) reports that the figure may be eight per cent. However, the World Bank estimates that the current industrial water use in India is about 13 per cent of the total freshwater withdrawal in the country and the water demand for industrial uses and energy production will grow at a rate of 4.2 per cent per year, rising from 67 billion cubic metres in 1999 to 228 billion



Source: Energy for Mankind

cubic metres by 2025. All these estimates reveal that the industrial water demand is not negligible in India and that it is bound to grow in the coming years as the pace of India's economic development is witnessing rapid advancement growing industrialisation is inevitable.

## Rajiv Gandhi National Drinking Water Mission (RGNDWM) and Bharat Nirman: Some reflections

The Central Government introduced a variety of policies and programs throughout the Five Year Plans to address the issue of drinking water. The first ever national water supply and sanitation program was introduced during 1951-56 as part of the Government health plan. The first major push to rural water supply came with the Accelerated Rural Water Supply Programme (ARWSP) in the 1970s, which gave full grant to the State Governments for implementing water supply schemes in problem villages. By March 1981, the coverage of rural water supply was 30.8 per cent. Following the International Drinking Water Supply & Sanitation Decade (IDWSSD-1981-91), the second major push came with the launching of the National Drinking Water Mission (NDWM) that was later renamed as Rajiv Gandhi National Drinking Water Mission (RGNDWM).

It is noteworthy to mention Bharat Nirman, a programme to build rural infrastructure, was launched by the Government of India in 2005. Rural drinking water is one of the six components of Bharat Nirman. To achieve drinking water security at village/ habitation



level, conjunctive use of water i.e. judicious use of rainwater, surface water and ground water is promoted. The irrigation component of Bharat Nirman aimed at creation of irrigation potential of 10 million hectare (mha) during four years i.e., from 2005-06 to 2008-09.

**Challenges in Water Sector:** We face multiple challenges in the water sector as given below

- Reducing per capita availability of water (From 5177 cubic meter in 1951 to 1650 cubic meter now) due to increasing population, urbanization and industrialization deterioration in quality.
- Overexploitation of ground water resources leading to decline in the ground water table in some cases.
- Sub-optimal utilization of the created facilities and relatively lower efficiency.
- Increasing demand for water for various purposes is increasing due to population growth, urbanization and industrialization.
- Impact of climate change in quantitative terms and plan adaptation measures.
- Water is the principal medium through which climate change impacts on natural and human systems will be felt as shown in the figure.

## Conclusion

However, the policy analysis of the three policies on water reveals the lacuna in our policies. The domestic and industrial sectors are among the largest entities in





Source: OECD

terms of water usage. However, no concrete measures have been taken to curb the wastage of water. Lack of proper regulations in the policy itself creates a hurdle in the preservation of water. Water pricing is also related to the use and misuse of the water specially for urban domestic population and the industrial sector. The municipal water supply the prime source of water availability in the cities clearly reflect the under pricing of water which affect the infrastructure related to water supply and water quality as well because of the under recovery and further leads to misuse of water as people in general hardly bother about the quantity of water being wasted. Provision of metered water supply for our cities in the policy is a welcome step. The success of the national water policy will depend entirely on the development and maintenance of a national consensus and commitments to its underlying principles and objectives.

**The stake holders participation is necessary at various levels in planning, design, development and in management of water resources.** water being a national resource hence multiple stake holders are ought to be involved in its management that is the Central government, State government and Local government apart from that the partnership of the users that is people in general and NGO's ,civil society



Source: IBN7

organisations in particular is to be promoted for constructing a participatory approach to water resources. All existing Acts, such as Indian Easements Act, 1882, Irrigation Acts, etc., may have to be modified accordingly in as much as it appears to give proprietary rights to a land owner on groundwater under his/her land.

Our policies also appear to be more tilted towards the normative mode rather than in empirical mode. Policies without provisions for strict penalties have not yielded the result which was desired. Strict provisions and their strict implementation are essential for policy to be successful. The linkage of water usage with that of water pricing appears to be moving in the right direction from the general perspective as cheap or almost free water supply has resulted in not only more and more wastage of the water resources but also an increased demand in various sectors as there is no disincentives involved in demanding more water allocation. As far as competing claims of Industries are concerned on water allocation the pace of development cannot be retarded by not fulfilling the water requirements of Industries however the demand from other sectors needs cannot be ignored as well. Policy provisions in regard to water resources will always be fruitful for laying a positive trajectory for water management and its allocation in India.

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