CHAPTER II
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SURVEY OF LITERATURE

In the preceding chapter an attempt has been made to discuss the sustainability and development of water resources. The present chapter entitled, “Survey of Literature” is related to studies conducted in the field of water resources development which shows that several researches have been conducted in this field in India and abroad. In the following pages an attempt has been made to review these studies conducted by various researchers of India and even foreign countries.

K. Gogoi (1973) remarked in his project, that drinking water to people in rural areas is a major problems in India, and particularly of Assam. The main sources of drinking water in rural areas of Assam are tube wells, ring wells, ponds etc. owned by individuals. According to him pond water, is not safe for drinking in summers because of frequent flood, this spreads water borne diseases. The rivers in the area of Assam are not deep, and their water is not clean. So it is not fit for drinking purposes.

Special correspondent of Kurukshetra (1979) while discussing rural water supply programme stated that UNICEF has provided drilling rigs, terrameters / resistivity meters, compressors, jeeps, moter cycles, pick up vans etc. to Tamil
Nadu Government under Rural Water Supply Programme. Apart from this they have also supplied pick up vans, land pumps, pump heads etc. to Tamil Nadu Water Supply and Drainage Board for the maintenance and rejuvenation programmes of land pumps.

He further stated that “UNICEF” has also proposed to provide potable, perennial and protected water supply to all the needy villages, with the financial help from Government of India under Accelerated Rural Water Supply Programme.

S. Bala Krishna (1980) has studied the Rural Water Supply in Andhra Pradesh and found that Gram Panchayats in Andhra Pradesh are responsible to maintain the various rural water supply schemes. But progress is not satisfactory, because of inadequate financial resources to meet the expenditure on repairs, lack of technical know how, lack of ready supply of the required parts for replacement, lack of ready availability of skilled workers to attend to the job and the remoteness of several of these villages.

Jag Mohan Mathur (1986) has reported in his paper that as a result of concerted efforts under the Sixth Five Year Plan and the revised 20 Point Programme, Government could provide safe drinking water to as much as 83 per cent of the 2.31 lakh problem villages, efforts were made during the Seventh Plan to cover the remaining 17 per cent of them.
Navin Chandra Joshi (1986) has focused that drinking water supply in rural communities for human consumption and for the cattles is the most serious problem. Water is usually obtained from wells, ponds, tanks, rivers etc. At many places women folk have to fetch water from far-off places. In many areas, water in wells and other natural sources is saline because of dissolved salts and other impurities. In such areas water should be supplied through tankers as in the absence of which women folk have to bear the burden of carrying drinking water over tiresome distance.

Dilip Kumar Mund (1986) has studied Rural Water Supply in the successive Five Year Plans. During the first five year plan, schemes of Rural Water Supply did not make satisfactory progress due to shortage of materials, inadequate infrastructure facilities and absence of adequate public health engineering staff in the state to implement the schemes. But after the end of first plan, i.e. during the second, third, fourth, fifth, sixth and seventh plans the schemes of Rural Water supply have made satisfactory progress.

Nirmal Gangully (1988) pointed out that the rural water supply during the plan periods has been an important component of the amenity scheme of the community development programme. But during the fourth, fifth and sixth plans, the amenity scheme of the community development programme could not play a vital role in the supply of drinking water to rural areas.
M.M. Datta (1988) in his research paper "Rural Drinking Water Supply in India" has brought out clearly that there are many dimensions to the problems of rural water supply in SAARC Nations. Frequent exchange of data including field visits of the National Technology Mission on drinking water in India will, perhaps, be a result oriented co-operation among the SAARC countries. Nine areas have been identified to conduct a comprehensive study on rural water supply problems that confront SAARC countries in varying degrees. The identified areas in the field of rural water supply are as follows:

a. Development of indicators to judge the O & M status and its effectiveness for Rural Water Supply Scheme.

b. Financial and Manpower dimension of O & M system existing status, deficiency and suggestion for further improvement.

c. Access of the rural poor and disadvantaged community to the water supply facilities already provided.

d. Need for design of an appropriate information and feed back system for effective O & M of Rural Water Supply Programme.

e. Involvement of the voluntary agencies in the maintenance of Rural Water Supply System.
f. Integration of Rural Water Supply Programme with that of Rural Sanitation, Health Education, Environment.

g. Women's Involvement and awareness Programme for Rural Water Supply and Sanitation System.

h. Use of local available materials in Rural Water Supply and Sanitation Programme and its present status, future scope in SAARC Countries.

i. Identification of sensitive areas of operation and maintenance of Rural Water Supply Schemes and suggest remedial technological measures for better O & M of Rural Water Supply System.

G. Ghosh (1988) in his paper entitled, "Towards a new direction for Rural Water Supply" published in Kurukshetra has found that non availability of water is one of the main reasons for migration of people from rural to urban areas. This is also creating problems for small and marginal farmers to base their development and livelihood on agricultural land. In the long run this inequitable distribution can completely damage our economy unless we take certain measures immediately. The measures may be bitter today but will bear sweet fruits tomorrow.

Amlan Home Chowdhury (1990) has highlighted that supply of drinking water in the rural areas is high on the national agenda. Since Independence, earnest efforts were made to tackle the problem. The main objective was to ensure
at least one source of potable water in all the problem villages by the end of the VII Plan.

Special correspondent of Yojana (1993) has concluded in his paper that provision of safe drinking water facilities in rural areas is the prime responsibility of State Government. While Central Government with joint efforts of States and Union Territories under the state sector Minimum Need Programme (MNP) and the Central assistance under Accelerated Rural Water Supply Programme (ARWSP) is providing safe drinking water facilities to rural areas.

K Pushpangadan and G Murugan (1998) have observed deeply in their study that Financial resources needed for sustainable rural drinking water are estimated from expenditure data for all states in India. The estimates show that user financing becomes essential for sustainability of the system. Since user financing affects weaker sections adversely, a subsidy from consumers above poverty line to those below is incorporated in the tariff design along the Faulhaberian principles. The rate so arrived at, indicates that public subsidy is still needed for some states with high cost of provision due to their hydro geological and topographical conditions. Analysis of institutions based on cooperative action among users suggests that they have several advantages over the other polar alternatives, states ownership and privatization, in providing potable water. Participatory management inherent in such institutions also enables the government to change its role from provider to facilitator.
Ramaswamy R. Iyer (1998) has summarized in his paper that water resources planning in India has largely meant irrigation development through big dam projects. Over the years a powerful movement has emerged against such projects. The paper spells out the issues involved and the opposing views. There is a sharp polarization of attitudes on this matter. The World Commission on Dams established by the World Bank and the World Conservation Union in order to resolve this impasse is expected to submit its report shortly. A crucial question in this context would be whether there are effective alternatives to large dams for meeting the future needs of water and energy. There have been some very successful local initiatives in watershed development and socials transformation, which seem to indicate that significant results can be achieved through these means. Need of the hour is a major reorientation in the approach to water resource policy.

Marcus Moench (1998) represented in his study a preliminary effort to identify a social basis for groundwater rights reform in India and to identify governance structures capable of ensuring that stakeholder values are reflected in the water allocation decision making processes. This is done by first examining basic philosophical divides between the treatment of water as a commodity versus a common heritage. Customary and statutory rights structure governing groundwater and surface water in India are discussed next followed by current debates over reforms. In conclusion, the author argues that governance structures
must be designed to create a balance of power in water use decisions between private (either individual or group) right holder and common rights that reflect the common heritage nature of water resources.

Amita Shah (1998) studied that conservation of rain water and checking soil erosion is central to the attainment of economic as well as financial sustainability of dry land agriculture. Integrated Watershed Development Programme is the major policy instrument for achieving this goal. The approach, though quite comprehensive, however, has come at a time when the global environmental concerns have become quite strong. In turn, this has exerted significant influence in changing the central thrust as well as the composition of watershed development programmes in India. It is the contention of this paper that the global environmental concerns have diverted attention for productivity concerns and thereby resorting to some of the softer options emphasizing indigenous technology, low cost measures and participatory institutional development. It is argued that external forces have deviated the policies from making substantial investments in land which farmers otherwise cannot afford to make on their own. Also, a participatory approach for project implementation perse, may not bring desired results in terms of enhancement of productivity and livelihood security. Finally, given the options, farmers prefer yield augmenting technologies and are willing to pay for the cost. This in turn also helps bringing more effective (interactive) participation in the SWC-programme.
B.N. Navalawala (1999) pointed out in his research paper that the adequate availability, equitable and efficient use of irrigation water are essential for converting the green revolution into an evergreen revolution. All this can be sustained if the performance of the irrigation system can be maintained at a satisfactory level for which regular and timely physical servicing of irrigation systems and structures is a pre requisite.

K. Kannan and S. Gurumurthy (1999) has described in his study that there is an urgent need to utilize the available water resources in more efficient and cost effective manner by increasing the yield per unit of water used.

B.N. Navalawala (1999) has highlighted in his another study that the efficiency of water use can be improved dramatically. With latest technology and methods, water consumption can be curtailed in agriculture, industries, and cities without sacrificing economic output or quality of life.

The special correspondent of The Hindu (1999) reported that the world is facing a global water crisis. People numbering 1.2 billion in developing countries lack access to safe drinking water, 2.9 billion people do not have adequate sanitation and water related diseases kill 4 million children a year. Over exploitation of ground water, promoting user participation in water use and planning, facilitating the sustainable access of the poor people to potable water, water pollution and water quality were the common issues highlighted by him. He
further said that only 37 per cent agriculture was under irrigation, the rest was rainfed. To bring more areas under irrigation, the Government has just launched a Rs. 75,800 crore project for saturation with rain water harvesting in 100 districts to start with. He said water as a resource was under tremendous pressure from population growth, rapid urbanization, industrialization and environmental degradation. A long term perspective planning of water resources was the need of the hour to meet the various competing demands on water.

He also stressed the need for a "quantum jump" in harnessing hydro-power potential. The schemes with regard to major, medium and minor irrigation projects were location specific and could not be replaced by numerous minor irrigation schemes due to topographic and hydrologic conditions. At the same time, there was no competition between major, medium, minor projects or between surface and ground water schemes. We have to harness all the potential to meet future demands in 2050 and a clear vision and an action programme will have to be prepared to achieve this objective.

Srivastava, H.C. (2000) in his research paper entitled "Water Resources – On the threshold of National Disaster", summerises that a revised and revitalized National Water Policy is the first urgent step and the State Government, particularly the riparian states must clearly realize that time has already run out. Any further delay would only add to the detriments of their constituents. He further opined that we need, within a common framework of first principles of
such a policy, variants suited to different regions and communities and to understand that privatization mantra taken as a universal panacea, and traditional knowledge and practices, will be as harmful as treating water an absolutely free and renewable natural resource. The states role will have to be redefined from that of an absolute provider to enabler, guide, regulator and technical supporter with the accent or public participation, openness and accountability.

S.C. Pramanik, R.P. Dubey, N. Ravishankar and A.K. Naiyer (2000) submitted in their paper entitled, “Development of Water Resources and Irrigation Potential in A & N Islands.”, published in Yojna, that the most important strategy would be to harvest the excess run off in dug out ponds and use for supplemental irrigation to the crops during day period.

D.N. Tiwari (2000) suggested in his study that besides extracting the best performance from the existing investment system let us manage our surface and groundwater resources in an integrated manner by creating social awareness, public participation and ensuring dedication of implementing agencies.

Conclusion :

In the foregoing pages, a review of various researches conducted on different issues related to water resources has been done. It has been concluded that of course many researches have been conducted in the field of water resources but so far no specific work has been done on the sustainability and
development of water resources in Uttar Pradesh with special reference to Bulandshahr District. It is in this background the study undertaken by me on the theme of water resources will not be an addition to what has been attempted in various studies but will also provide an opportunity for highlighting recent happenings in this particular field with special reference to a micro level study conducted in Bulandshahr district of Uttar Pradesh. The succeeding part of the research project will particularly cover up the sustainability and development of water resources in Uttar Pradesh with Special reference to Bulandshahr District. In the next chapter our aim will be to examine the sustainability and development of water resources in India, just as to prepare the background for the study of sustainability and development of water resources in Uttar Pradesh with special reference of Bulandshahar District.

SELECTED REFERENCES