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A Study of Irrigation projects

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Abstract: The concept of irrigation implies the existence of a source of water and an arrangement to regulate the supply of water from the source to the crops raised in the fields [1]. Irrigation is an age-old art, as old as the agriculture itself and also a sine qua non to the agriculture. The middle-eastern country of Egypt has the world's oldest irrigation dam, 355 feet long and 40 feet high, built 5000 years ago. An ancient Queen of Assyria, also in the modern-day middle-east, who had lived 4000 years ago, is credited to have first introduced State intervention into the irrigation, while diverting the water of the river Nile to irrigate the desert lands of Assyria. Her tombstone reads, "I constrained the mighty river to flow according to my will and let its waters fertilize lands that had before been barren and without inhabitants". Basin irrigation introduced on the river Nile in those times still plays an important role in the Egyptian agriculture.

KEYWORDS:

Irrigation, Agriculture, Farmer

INTRODUCTION:

Introduction:

One of the laws of King Hammurabi (c. 2000 B.C.) states that if a man neglects to strengthen his bank of the canal and waters carry away the meadow, the man in whose bank the breach is opened shall render back the corn which he has caused to be lost [2]. In ancient China, the success of kings was measured by their wisdom in water-control activities. King Yu of Hsia Dynasty (2200 B.C.) was elected as king by the people as a reward for his outstanding work in water control. The famous Tu-Kiang Dam was built by one Li and his son during Chin Dynasty's reign (200 B.C.). The dam even today provides irrigation water to half-a-million acres of rice fields.

On the Indian Subcontinent, in Sri Lanka, there are irrigation reservoirs more than 2000 years old. Indian literature of 300 B.C. indicates that irrigation had brought about prosperity of the whole country because of the double harvests people were able to reap each year [3]. Historically thus, the progress of civilization has followed the progress of agriculture and irrigation.

Importance of Irrigation:

Agriculture in India has traditionally been largely at the mercy of monsoons. Hence, 'irrigation' was an attendant activity of the Indian agriculturist's even millennia ago for countering the monsoon's vagaries. The importance of irrigation is well stated by N. D. Gulati as, "Irrigation in many countries is an old art, as old as civilization; but for the whole world, it is a modern science, the Science of Survival" [5]. In India, building of large dams peaked with the national priority of increased agricultural production coupled with greater availability of aid and soft loans from multilateral and bilateral agencies. Accordingly, irrigation has played a crucial role in the remarkable growth of agricultural production in India. Massive

investment in irrigation and the consequent creation and expansion of irrigation facilities have enabled the country to keep with the growth of food production ahead of the growth of population and attain self-sufficiency in food production. Assuredly, irrigation will continue to play a key role in the future strategy of growth in agricultural production in India [6].

Development of Irrigation in India:

Beginning with the First Plan, irrigation has been accorded top priority in the country's development programmes. Consequently, the irrigation potential has increased from 22.6 million hectares in 1950-51 to 85.7 million hectares in 1994-95, implying an increase of more than 285 per cent. The Plan-wise development of irrigation potential is as shown in Table 1.1 below.

Plan-wise Development of Irrigation Potential Created
(million hectares)

Sr. No.	Plan	Major & Medium Projects	Minor Projects	Total Potential Developed
1.	First Plan (1951-56)	12.20	14.06	26.26
2.	Second Plan (1956-61)	14.33	14.75	29.08
3.	Third Plan (1961-66)	16.57	17.00	33.57
4.	Annual Plans (1966-69)	18.10	19.00	37.10
5.	Fourth Plan (1969-74)	20.70	23.50	44.20
6.	Fifth Plan (1974-78)	24.72	27.30	52.02
7.	Annual Plans (1978-80)	26.61	30.00	56.61
8.	Sixth Plan (1980-85)	27.70	37.52	65.22
9.	Seventh Plan (1985-90)	29.92	46.61	76.53
10.	Annual Plans (1990-92)	30.74	50.35	81.09
11.	Eighth Plan (1992-97) (Prov.)	32.96	56.60	89.56
12.	Annual Plans (1997-2000)	103.51	175.80	279.31

Irrigation in Maharashtra:

After the State of Maharashtra came into being in 1960, the Government of Maharashtra appointed an Irrigation Commission, under the chairmanship of S.G.Barve, an economist and then Minister for Irrigation in the State, to enquire into the problems and prospects of irrigation in the State. The Commission submitted its report in 1962. The report indeed laid the foundation for the State's irrigation policy and gave a certain direction to the development of irrigation potential in latter years. On another front, during the period from 1955 to 1980, agricultural technology had made strident advances - hybrid varieties of crops, chemical fertilizers, insecticides and weedicides had come in wider use. Consequently, production of crops was on the rise from year to year. Simultaneously, the know-how for building high-rise earthen and stone masonry dams was evolved within the State. Heavy earthmoving equipment was brought in extensive use in dam and canal construction.

The State of Maharashtra is endowed with about 380 large and small rivers with a collective length of about 20,000 kilometres. The geographical area of the State is basically divided among the valleys of four large rivers, namely, the Godavari, the Krishna, the Tapi and the Narmada. In addition, there are narrow valleys of 22 westward flowing short-length rivers in the Konkan region [7].

The Warana Irrigation Project is situated in the Krishna Valley, which may be briefly described as follows. The geographical region situated between Mahadeo Hill Ranges and Sahyadri Mountain Ranges is known as the Krishna valley. In Maharashtra, the Krishna valley admeasures 69,032 sq.km. The Krishna originates at Mahabaleshwar in the Western Ghats at a mean sea level of 1,337 mt. and flowing eastwards for 1,401 km., passes through Maharashtra, Karnataka and Andhra Pradesh before meeting the Bay of Bengal. Bhima is the chief tributary of the Krishna [8].

Table 1.2
Development of Irrigation Potential in Maharashtra (1951-1997)

Sr. No.	Years	Irrigation Potential Developed (Lakh Hectares)	Percentage of Developed Potential to Cultivable Area (%)
1.	1951 (Pre-Plan)	2.74	1.22
2.	1951-56 (First Plan)	3.14	1.39
3.	1956-61 (Second Plan)	3.98	1.77
4.	1961-66 (Third Plan)	5.70	2.53
5.	1990	26.31	11.67
6.	1995	29.42	13.05
7.	1996	31.20	13.84
8.	1997	32.28	14.32

(Source: Report of the Maharashtra Water and Irrigation Commission (1999): Vol.I, p.203)

Evidently, during the period of fifty years between 1947 and 1997, the irrigation potential in Maharashtra has recorded a 12 times increase.

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- 6) Deshpande, V.S., op.cit., p.2.
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