

Nagarjunasagar Dam



When the golden jubilee of the Nagarjunasagar dam across the Krishna in Andhra Pradesh was celebrated on December 10, 2005, the event epitomised a variety of goals accomplished. It was on this day 50 years ago that Jawaharlal Nehru laid the foundation stone for its construction.

Nagarjunasagar was the earliest in the series of "modern temples" taken up to usher in the Green Revolution and build a new India without foreign dependence for food grains. Laying the stone amidst a galaxy of leaders from Andhra Pradesh, including the then Chief Minister Neelam Sanjiva Reddy, Panditji said : "*This is a stepping stone for India's prosperity and a symbol of the series of modern temples taken up.*"

BRIEF HISTORY

The multipurpose Nagarjunasagar Project on the river Krishna near the then Nandikonda village (now Hill Colony), Peddavoora Mandal, Nalgonda District, is the pride of Andhra Pradesh. It is one of the Modern Temples of free India.

The Project was originally conceived by the erstwhile Government of Hyderabad and put forth under the name "LOWER KRISHNA PROJECT" (Nandikonda site).

The Planning Commission appointed the Khosla Committee to examine and report on the optimum and most beneficial utilisation of Krishna River waters. The recommendations of the Committee, which were later endorsed by the Planning Commission in December, 1952, are to construct Nandikonda Dam across Krishna River with full reservoir level at +590.00 feet with canals taking off on either side. Water allocated to the Project is 281 TMC.

The foundation stone of the Dam was laid by the late Pandit Jawaharlal Nehru, the first Prime Minister of India on December 10, 1955.

The Nandikonda Project was renamed as Nagarjunasagar Project under the inspiring name of the great Buddhist Savant, Acharaya Nagarjuna and construction commenced from the year 1956 and Dam construction was completed in the year 1969 and water was first let out partially in the canals during the year 1967. Erection of gates on spillway was completed during the year 1974.

CONSTRUCTION OF NAGARJUNA SAGAR DAM

The Nagarjunasagar Dam, standing like a mountain against the rapids of one of India's bigger rivers, also symbolises the sacrifices made by thousands of workmen and engineers. At any point of time during its construction from 1955, not less than 50,000 labourers worked on the dam, most of them brought from Hospet in Karnataka after they had completed the construction of the Tungabhadra dam. The human labour that went into the dam for 15 years made it the world's highest masonry dam with a volume three times that of all the pyramids in Egypt put together.



*A breathtaking view even to **Jawaharlal Nehru** and **John Kenneth Galbraith**, then U.S. Ambassador to India, who during a visit to the site around that time, were touched by the sight and their eyes became moist.*

In all, 162 persons died during construction, including eight engineers. Makeshift towns cropped up all around the dam. Workers in these colonies never seemed to sleep for 15 years as the work continued day and night.

As the construction rose to a certain height, the massive structure resembled an anthill with thousands of labourers carrying construction material on the complex maze of scaffoldings. Unlike any other project in the world, Nagarjunasagar is built with human labour. The Sagar's stature is such that its pictures are found in Egypt where Nasser built a similar dam on the Nile, High Aswan, taking a cue from Nehru, and in China which built the gigantic Three-Gorges.

There were many brains behind the construction. K. Sujatha Rao, senior IAS officer in the A.P. Government and daughter of K.L. Rao, engineer-statesman, recalls how not a single day passed without her father coming home late night from the workspot. Mir Jaffer Ali, its chief engineer for eight crucial years of construction, was invariably coated with a fine layer of dust. The statues of these two visionaries have been installed now at the site, marking the jubilee.

An engineering marvel with three galleries embedded at different elevations, Nagarjunasagar withstands the pressure of the water it contains, by its sheer weight. Even after 50 years of existence, its performance is astounding. All its safety parameters like uplift pressure, stress, deflection and tilt are found to be within the safe limits by the 206 gadgets that work round the clock.

The dam cheats the naked eye by tilting forward by a fraction of an inch during heavy floods but swings back to normal position. During the recent floods, the spillway discharged an enormous quantity of seven lakh cusecs, still four lakh cusecs short of its designed capacity.

It were the Nizams who originally proposed the dam at the present site, then tiger-infested forests, naming it as "Nandikonda" project after two villages Nandi and Konda which were to be submerged in the reservoir later. When the new state of A.P. took over the project, it was re-christened after Acharya Nagarjuna, Buddhist sage who lived in the Nandikonda valley centuries ago running a university on a riverbank, now called Anupu.

FROM ARID LAND TO GRANARY

Water from the dam was first released by his daughter and the then Prime Minister Indira Gandhi in 1967 heralding the conversion of Andhra Pradesh into a rice granary by serving a huge command area of over 40 lakh acres. Arid zones in six districts — Nalgonda, Prakasam, Khammam, Guntur, Krishna and West Godavari have been transformed.



Families of farmers, who could not afford one square meal a day, not only turned rich but provided employment to lakhs of idle hands across the countryside. Today, Andhra rice is exported even to Myanmar (Burma). The agony of Vijayawada, Macherla, Amaravathi and numerous other places caused by floods every season ended. Being a major source of power generation with an installed capacity of 960 MW, and ensuring drinking water to over 1,000 villages and to cities like Hyderabad, Nalgonda, Miryalguda, Guntur, Ongole and Chilakaluripet, the dam has become the State's lifeline.

The value of the agriculture produce in the areas served by the dam is estimated at over Rs. 1 lakh crores annually. The paddy boom was such that as many as 50 rice mills came up at Miryalaguda, the largest number at any single place in Asia. Nearly 600 thousand million cubic feet (tmcft) of water flows from the dam to fields in the six districts.

Nagarjunasagar's reservoir, considered the largest man-made lake in the world, accounts for 408 tmcft at full level. Families cruise the waters up to Srisaïlam, 100 kilometres away, to savour the spectacular view of the Nallamala forests on either side of the Krishna. The prosperity generated is immeasurable. Nagarjunasagar indeed is a temple. It was built at a cost of Rs. 91 crores. At present rates, a dam of this size would have cost over Rs. 30,000 crores.

After high floods of 1937, Sir M. Visveswararya gave proposal for detailed investigation for storage reservoirs in Mahanadi basin to tackle problem of floods in Mahanadi delta, In 1945, it was decided under the chairmanship of Dr. B.R. Ambedkar, the then Member of Labour in Govt. of India that the potentialities of river Mahanadi should be fruitfully and expeditiously investigated for multipurpose use. Central Water- ways Irrigation and Navigation Commission took up the work. **The foundation stone of Hirakud Dam was laid by Sir Howthorne Lewis, the then Governor of Orissa on March 15, 1946.** The project report was submitted to Government in June 1947. The first batch of concrete was laid by Pandit Jawaharlal Neheru on 12th April 1948. The project was formally inaugurated by Prime Minister Pt. Jawaharlal Nehru on 13th, January 1957. Power generation along with supply for irrigation started progressively from 1956 and full potential was achieved by 1966.

“THOUSAND-YEAR LIFESPAN” ?

In spite of the wear and tear all these years, the dam is strong. "It will have at least a 1,000-year lifespan," says chief engineer, Y. Abdul Basheer. Nagarjunasagar has emerged as an example to follow to authorities managing other such large dams in the world such as High Aswan in Egypt and Three Gorges in China.

Nagarjunasagar has an assured life, performance-wise too. Its maximum storage continues unaffected at 408 tmcft for many years to come. This is because the Krishna is relatively free from siltation, a problem due to which projects on the Godavari have become dry. The latest example is Nizamsagar. Sriramsagar on the Godavari was designed to store 112 tmcft but because of siltation, its capacity has come down to 91tmcft. The Krishna flows through rocky terrain cutting through the canyons in granite while the Godavari collects huge quantities of black cotton soil en route.

NO MAINTENANCE

The giant, however, is ageing. Efforts for its proper maintenance are wanting. Practically no major initiative has been taken for all these years for proper upkeep of the dam. A portion of the earthen dam on the right side sank in 1986, forcing the then Chief Minister, N.T. Rama Rao, to rush to the spot. Many elegant lamps that adorned the posts on either side of the road atop the dam are missing. Sometime ago, water leaked from the right flank of the solid structure.

In terms of water availability, Sagar is making a tenacious battle for survival following the Almatti factor and increased commitments, a result of clashing regional claims over the Krishna water. As a way out, the Government proposed two links to divert waters from the Godavari from where nearly 3,000 tmcft flows into the sea, to the Krishna river. If implemented, these links will facilitate inter-basin transfer, perhaps for the first time in the country.

The Government has proposed to modernise Nagarjunasagar and its canals with Rs. 3,000 crores. Of this, Rs 60 crores alone will be spent to rehabilitate the dam. The canal network, once modernised, is expected to sustain the water management by farmers, a system introduced by creating water users' associations.