

**Cost & Land Area Effective, 600 cusecs (1468 MLD) Green Field Canal Linking Pumping Station set up in Ultra Low Time of just 65 Days; helps sustain Drinking Water for 2/3<sup>rd</sup> of Gujarat**

**65 DAYS ONLY**



## Scenario : Summer 2018

- Abysmally low rainfall in Narmada basin in contrast to excellent rainfall in Mahi basin
- Water level in Narmada Dam depleted to record low resulting into reduction of Water Supply into NMcanal (which primarily feeds 'state's drinking water -grid) adversely affecting upto 4Crore Gujaratis.

# 'Horrorific crisis lies ahead for state if monsoon fails'

Kapil Dave | TNN | Updated: Apr 18, 2018, 10:53 IST

## Gujarat Has No Contingency Plan Except For Using Groundwater

**GANDHINAGAR:** The Sardar Sarovar Narmada Dam project has rightly been called the lifeline of Gujarat, but the state is taking a big risk by making itself totally dependent on the Narmada and not developing other sources, as a contingency for unforeseen crises. Two consecutive bad monsoons would wreak havoc in state as 70% of its population and geographical area is now directly dependent on Narmada water. Seven of the state's eight municipal corporations, (large cities) directly depend on Narmada water, apart from 160 municipalities and 8,000 villages where the Narmada is the single main source of water for all needs.

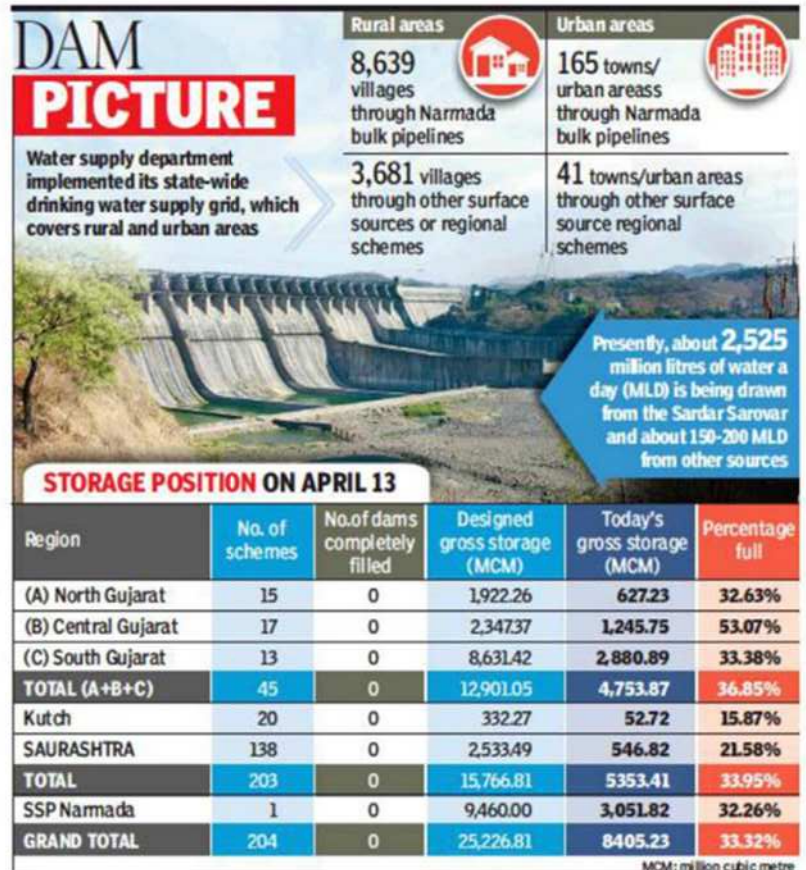
Last year, Gujarat received reasonably good rains, however Madhya Pradesh, the catchment area of the SSP, had insufficient rain. Thus MP and Gujarat are facing a major water crisis. If there is a poor monsoon this year, there will be an unimaginable water crisis in the state and the state doesn't have a Plan B. Eighty per cent of catchment area of the Tapi, from where Surat and its surrounding region gets its water, is in Maharashtra, which also had insufficient rain last year.

The state has water in the Narmada to last only till June-end at the maximum till July 15. Experts warn that the state is staring at a major crisis if monsoon is delayed or fails. If like last year, Madhya Pradesh and Maharashtra do not get enough rain, Gujarat will face major water supply crisis.

The Sardar Sarovar Narmada dam and all other major sources will likely be exhausted by June 30 or July 15. The state will then have to use groundwater and less rain here could make the situation worse.

B N Nawalavala, the chief minister's advisor on water resources and former secretary in the ministry of water resources, said, "It is a fact that no one can deny that we have water only till July at the maximum. Though all forecasts predict normal rain, if there is a drought or the monsoon is delayed, we have no other option groundwater use, which is also not possible everywhere, where the water table is already very deep, or the groundwater is not potable. The state government has decided to promote sea water desalination plants, but that will take time and the volume will be too little to meet our needs. Smaller plants can help in coastal areas. Considering the changing rain patterns, the state needs cut its dependence on the Narmada and rejuvenate local sources quickly. Over dependency on the Narmada is certainly risky in case of a prolonged drought."

Sagar Rabari, an farmer activist and social worker, said, "The Narmada dam was planned for irrigation only. It has now been turned into a drinking water project, as the CAG also observed that the state government did not develop alternative sources. The Narmada is now an over-exploited source. Farmers don't get Narmada water as the state has no other drinking water sources. Because of its massive corruption, the government has not focused on developing new resources. It is high time the state government ends this criminal negligence and works on long-term plans to ensure the water security of the state."



## Solution



In a novel attempt, the GoG entrusted SSNNL to set up a Green Field Pumping Station of 600 cusecs (1468 MLD) to Lift Surplus water from Mahisagar River Basin's Mahi Right Bank Canal (MBRC) to the Narmada Main canal

## Constraints

- **Ultra Short Time:** to sustain uninterrupted flow in the NMC; The PS had to commissioned phase wise:
  - i. 1st phase of 105cuses within 15days
  - ii. 2nd phase of 300cuses within additional 20days thereof -i.e. 35days
  - iii. 3rd phase of 600cuses within additional 20days thereof -i.e. 55days
- **Limited Land:** At Narmada/ Mahi canal crossing land (Area) available was limited & possibility of Additional Land Acquisition was nearly nil.
- **Difficult Terrain:** The Narmada MC is in Embankment (*i.e. water flowing above Natural Ground level*) & hence any Excavation in its vicinity even for pipeline laying was risky..!
- **Fluctuating & Shallow Water depth** in source MRBCanal

**SubCF based Pumping Station** was the natural choice, as it requires:

- i. Ultra Short Time,
- ii. Less Land,
- iii. SubCF pumpsets can be installed directly in Existing MRBCanal thereby Eliminating Deep Excavation Sumps
- iv. Tolerates Shallow water depth of source canal being horizontal (*further aided by restricting the use of larger flow rate pumps*)
- v. Least Cost



**Green field site at 19<sup>th</sup> March 2018**



**Finished site on 22<sup>nd</sup> May 2018**







## Sardar Sarovar Narmada Nigam Limited

(A wholly owned Government of Gujarat Undertaking)

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No. NPCMD/PB/ELECT/ 488

Date: 20-08-2018

### Certificate

#### To whomsoever it may concern

This is to certify that the work of:

Supply, Installation, Testing & Commissioning of Submerged pumpsets with accessories and allied equipments for lifting of **600 cusecs** raw water from Mahi (MRBC) Canal to Narmada Main Canal chainage 149.816 km near Padal village, Ta-Galteshwar, Dist-Kheda with 06 months O&M works has awarded to M/s AQUA Machineries Pvt Ltd, Ahmedabad dtd. 17-03-2018.

The Electro Mechanical works of lifting 600 cusecs (i.e. 35 cusecs X 8 nos and 40 cusecs X 8 nos = 600 cusecs, using AQUA make submerged centrifugal pumps sets) raw water from Mahi (MRBC) Canal to Narmada Main Canal chainage 149.816 km near Padal village has been commissioned on date 25/05/2018 by M/s AQUA Machineries Pvt. Ltd., Ahmedabad and is working satisfactorily till date.

*Rajiv P. P.*  
 Executive Engineer,  
 N.P. Canal Mechanical Division,  
 SSNNL, Gandhinagar.

● PAGE ONE ANCHOR

## NOW, MAHI RIVER FEEDS NARMADA MAIN CANAL TO MEET DRINKING WATER NEEDS

AVINASH NAIR  
 PADAL, (KHEDA), MAY 5

IN A novel attempt to satiate the drinking water requirements of two-thirds of Gujarat's population, the state government, for the first time, has begun diverting water from Mahi river basin to the Narmada main canal, which primarily feeds the state's drinking water grid.

Faced with acute shortage of Narmada water, the government has started an inter-basin transfer of water, by "lifting" over 350 cusecs (cubic feet per second) from the Mahi right bank canal (lying in east-west direction) and dumping it into the Narmada

### NARMADA RATIONING THE LIFELINE

main canal, which passes 22 metres above Mahi canal in north-south direction at Padal village of Kheda district, located about 90 km from Ahmedabad district.

"About four crore people in Gujarat or two-thirds of the state's population currently get Narmada water. Now, water from Mahisagar river is being used for the first time to feed the Narmada-based drinking water system. This water transfer is taking place by drawing water



from Mahi Right Bank Canal using submersible pumps and releasing it into the Narmada Main canal at Padal where both these canal systems intersect each other," MB Joshi, General Manager (Technical), Sardar Sarovar Narmada Nigam Ltd, told The Sunday Express. The new infrastructure costs over Rs 26 crore. This is in addition to an ex-



Water from the Mahi river being lifted and drained into Narmada canal that supplies drinking water to two-thirds of Gujarati population. Jitendra Raju

isting system through which excess Narmada water is drained into the Mahi canal.

"Just like we have a structure to release water from the Narmada main canal into the Sabarmati river, similarly, here too we had built an escape structure to release excess water from the Narmada main canal into the Mahi canal. This year, since it is a distress year for Narmada, we do not have much water in the Narmada main canal. But we have excess water in Mahi and so we have built a new infrastructure at the same spot to lift Mahi water and put it into the Narmada main canal," Joshi added, referring to the existing two radial gates (which cur-

rently lie shut) built on the Narmada main canal that control the flow of excess Narmada water into the Mahi irrigation canal.

Mahi right bank canal that emanates from the Wambori dam and irrigates the Mahi command area in Kheda and Anand districts is under the control of the water resources department of the state government while the Narmada canal is under the Sardar Sarovar Narmada Nigam Limited (SSNNL). This round-the-clock transfer of water from the Mahisagar river basin is meant to help supplement the scarce water resources of the 56,000-km-long Narmada canal network that is

currently supplying only drinking water to 165 urban centres and over 8,824 villages. Currently, only 800 km of this network contain water which includes 458 kilometers of Narmada main canal. The rest has been shut due to water scarcity.

Compared to the 31 per cent water in the Sardar Sarovar Dam (as on April 27, 2018), the water level in Kadana dam located further upstream (beyond Wambori) on the river Mahisagar stands at 59 per cent of the total gross storage of 1,249 MCM (million cubic metre). Officials at Kadana currently have an inflow of 395 cusecs and about 460 cusecs is being released into the Mahi canal network. "This transfer will help us to be less dependent on the dead water of Narmada dam which is currently being used," Joshi said.

At Padal, about nine submerged centrifugal pumps attached to a similar number of freshly painted blue pipes are drawing water from the Mahi irrigation canal and discharging it into the Narmada main canal.

"The work on the project began towards the end of March and we started pumping Mahi water into the Narmada canal from April 13," said Kalpesh Javajani, a mechanical engineer of Ahmedabad-based Aqua Machinery Pvt Ltd, which has been given the work of installing the new system at Padal.

Full report on www.indianexpress.com



Mrinal Sen, one of the foremost filmmakers of our time who matched his strident politics with breathtaking storytelling, turns 95 on May 14

## Three militants shot in Srinagar, police car runs over youth

Govt says incident 'looks deliberate', militant given gun salute at grave



A woman inspects her damaged house, where the militants hid out during the encounter in Srinagar on Saturday. 71

## Questions ICICI chief's husband

NARAYAN

ICICI Department Deepak Kochhar, Chief CEO of ICICI Kochhar, in connection with investments by two new entities in over 100 companies in a week before a loss of Rs 1,250 Crores Group in May 4, the



likely to continue not work, the sources said. Kochhar and his firms have come under the scanner of the CBI and the Registrar of Companies, with the federal anti-corruption agency registering a preliminary enquiry into the alleged nexus between Kochhar and Vileswarn Group chairman Venugopal Dhoti.

He questioned for an May 4, the his was the first actioned by any agency on the ground by the investigating was

## Mirwaiz and mother get passports for Umrah

NAVEED IQBAL SRINAGAR, MAY 5

IN AN encounter that lasted six hours, three militants were killed and an assistant commander of the CRPF injured in Chamul area of Srinagar city on Saturday. As protests broke out in the area after the encounter, a 22-year-old militant, Asif Ahmad Vaino, was crushed by a police vehicle. While the state government said the "wrecking crew" the youngster looks deliberate, the J&K Police called it an "accident" and said it had initiated proceedings against the driver of the vehicle, a bullet-proof bus.

He criticised the three militants as belonging to the Jammu & Kashmir, and said they had launched a co-ordinated and search operation in the Chamul area at 4 am on Saturday following lead

## Mirwaiz and mother get passports for Umrah

LIZ MATHEW NEW DELHI, MAY 5

THE CENTRE has issued passports to J&K separatist leader Mirwaiz Umar Farooq and his mother with permission to visit one country, South Arabia, for pilgrimage.

Sources said while the government was initially reluctant to grant the passports to Mirwaiz, the leader of the moderate faction of the Hurriyat Conference, it later agreed to his request to "take his mother for pilgrimage to Mecca".

## Adopted by Swedish parents as a child, man finds her twin brother in Surat

NEW DELHI

AN OLD Kiran who was born in India but was adopted by Swedish parents in Surat last year for her biological parents.



Kiran Gustafsson as a child (left); in Surat on Saturday. Express



newborn to Nari Gustaf in her employ did not allow her to work in the city. She quit the job for another opportunity that promised better pay. However, she would still visit her children at the Nari Gustaf and spend time with them.

After some time, the superintendent of Nari Gustaf advised her to register her children up for adoption after there were regular inquiries. When he was three months old, Kiran gave her name to a local lawyer for his "better future", says Pooja, who has been handling the case since Kiran contacted her to help find her biological parents.

A year later, a Swedish couple, Kjell Ale Gustafsson and Maria Gustafsson, adopted the Kiran on April 27, 1987, and after completing the court procedures, flew to Mumbai with Kiran.



## SARDAR SAROVAR NARMADA NIGAM LTD.



Work of supply, Installation, Testing & Commissioning of Submerged pumpsets with accessories and allied equipments for lifting of 600 cusecs raw water from Mahi (MRBC) Canal to Narmada Main Canal chainage 149.816 km near Padal village, Ta-Thasara, Dist-Kheda with 06 months O&M works.

<b>Owner</b>	: EE, N.P. Canal Mech. Division, SSNNL
<b>Agency</b>	: Aqua Machineries Pvt. Ltd.
<b>Date of Commencement of Work</b>	: 20/ 03/2018
<b>Date of Completion of Work</b>	: 22/ 05/2018
<b>Work Value</b>	: 2610.00 Lakh
<b>Rating</b>	: 600 Cusecs (1468 MLD)
<b>Pumpsets :</b>	
<b>Type</b>	: Submerged Centrifugal
<b>Rating</b>	: [8nos x 35 cusecs x 350 kW] + [8nos x 40 cusecs x 375 kW] x 24 m
<b>Power Supply</b>	: 2 x 4 MVA (11kV), MGVCL
<b>Transformers</b>	: 4 x 2750 kVA (11 kV to 0.433 kV)
<b>Pipe lines</b>	: M.S. Pipe [5R x Ø1200 mm + 1R x Ø700 mm]