

celebration of World Water Day
Swarnim Seminar

Water for Inclusive Growth



સ્વામિ ગુજરાત
1960 - 2010

22 March, 2011

Gandhinagar, Gujarat, India



Organised by



Sardar Sarovar Narmada Nigam Ltd.
(Government of Gujarat)



Narmada, Water Resources,
Water Supply and Kalpsar Department
Government of Gujarat

In Association with



Central Board of Irrigation & Power
New Delhi

Knowledge Partners:



ICID-CIID



The Institution of Engineers (India)
GUJARAT STATE CENTRE

McKinsey & Company



Invitation



S. Jagadeesan, IAS

Water sustains human life and Energy develops it further. Long term Water and Energy security is vitally important for development – both in terms of GDP as well as HDI. Sardar Sarovar Project is one of the greatest endeavours in the history of mankind towards harnessing the interlinkages of Water and Energy and even at part completion stage it has proved to be the lifeline for millions of people. Amidst ongoing Golden Jubilee celebration in Gujarat State, we have decided to have special celebration on the World Water Day (22nd March 2011) in the form of Swarnim Seminar. This will provide us a platform to share our experiences and

future strategies and also to learn from others' experience in different parts of the globe.

On behalf of Sardar Sarovar Narmada Nigam Ltd., Govt. of Gujarat undertaking, I take great pleasure in extending a cordial invitation to you for the **Swarnim Seminar** on ***“WATER FOR INCLUSIVE GROWTH”*** to be held in India at **Gandhinagar, Gujarat** on **22 March, 2011** - ***“World Water Day”***.

It is in this backdrop that I invite Water Managers, Agriculture & Hydropower Experts, Policy makers, Financial experts, Engineers, Consultants, Academicians, Researchers, Scientists and Manufacturers to the deliberations. Experts from different parts of the globe have already confirmed their participation in the Seminar, the proceedings of which, it is hoped, will lead to furthering our knowledge in developing the vital sectors of Water and Energy.

We look forward to welcoming you at Pandit Deendayal Petroleum University, Raysan, Gandhinagar and hope that your visit will be fruitful.

S. Jagadeesan, IAS

Managing Director
Sardar Sarovar Narmada Nigam Limited

INTRODUCTION

In course of 60 years of planned economic development, India has taken tremendous strides in agriculture sector. India, which had to depend upon imports to feed even a population of 350 millions at the time of Independance, has attained a position of self sufficiency with some exportable surplus even with a population of over 1 billion. This has been made possible by harnessing waters of major rivers of the country with a chain of large multipurpose projects starting from Bhakara Nangal, Hirakud, Nagarjuna Sagar, Tungabhadra etc. India's population continues to grow notwithstanding all out efforts on family planning front. Harnessing entire water resources of the country is the only way to sustain self-sufficiency in basic requirement of food and energy security. Sardar Sarovar (Narmada) Project, across river Narmada in the State of Gujarat assumes a special national importance in this perspective.

Sardar Sarovar Project (SSP) is a multipurpose river valley project currently under construction across the river Narmada to irrigate 18.45 lakh hectare annually in the state of Gujarat. Sardar Sarovar (Narmada) Project will be one of the largest multi-purpose river valley projects of India. The project envisages construction of a large concrete gravity dam with 1210 meters (3970 feet) in length and with a maximum height of 163 meters above the deepest foundation level, is under construction across river Narmada,, hydro power complex of 1450 MW from river bed and canal head hydro-power plants and very large network of canals and drainage channels as required to irrigate about 18,45,000 hectares of land out of 34,28,000 hectares of gross command area.

The Narmada Main Canal (NMC), one of the largest lined irrigation canals in the world, off-takes from the Pond No.4 downstream of the Sardar Sarovar dam. It will carry a design discharge of 1,133 cumecs which would taper down to 71 cumecs at the tail end to the neighbouring state of Rajasthan in a distance of about 460 km. NMC would annually convey 11.1 billion cubic meter of water (including the share of Rajasthan). There will be 38 branches off-taking from the Narmada Main Canal with a discharge varying from 320 cumecs to 3 cumecs. In Sardar Sarovar Project, it is planned to construct about 74626 km long network of canals.

Present Status of the Project :

The present height of the dam (121.92 meter achieved in 2006) has made available live storage of 1565.8 million cubic meter (MCM). With a very modest beginning of diverting just 705 MCM water in the canal system in 2001, the diversion spectacularly increased to 6194 MCM in 2004 and during last year (2009) it was 5870 MCM. Till the end of December 2010, 17924 million kWh of electricity has been generated through two hydropower stations having installed capacity of 1450 MW.

Overcoming all the hurdles, to quench the thirst of Gujarat and Rajasthan, 458 km long Narmada Main Canal with its 630 structures has been completed and water has been flowing all through since March 2008. It is envisaged to use this canal not only for conveyance but also for storage of water to improve the response time of the system. The Narmada Main Canal alone has the capacity to store a 220 MCM of water.

A canal network of length 19,248 km has already been completed by the end of December, 2010. Apparently this gives an impression that only one fourth of the canal network has been completed, but even this achievement is not a small one by any means. This completed canal network is more than eleven times the distribution network (upto minors) envisaged in Indira Sagar Project. With its already constructed 26 branch canals and several distributaries has become a perennial water grid for the state which has otherwise got only 8 perennial rivers out of total 185 and all of them are located in just one quarter of the land (southern). What is even more important is the fact that the water from the water-abundant south Gujarat transferred to parts of north Gujarat, Saurashtra and Kachchh, through these canals has already started reducing the water supply-

demand imbalance due to uneven endowment of water resources across the four regions of the state. With nearly 300 MCM of water being supplied to Rajasthan through the NMC, the farmers in one of the driest regions of that state irrigate nearly 60,000 ha of land through sprinkler systems using Narmada waters!

Considering the canal network upto minors, irrigation potential developed is 0.5 million hectare, 6513 villages and 114 urban centres in the state have already started getting benefits of Narmada water and as a result the number of villages being supplied drinking water through road tankers has reduced significantly.

SSP is the first project where Environment Impact Assessment (EIA) was carried out prior to the approval of the project. The challenging task of analyzing the several recommendations made in the EIA studies and formulating a comprehensive plan was attended at the beginning. The planners had identified the areas of impact viz. Forestry, Agricultural, Wild life, Health and Fisheries. SSP in its efforts has already completed treatment in the catchment area of 29157 ha lying within Gujarat. Compensatory afforestation in 13950 ha of forest & non-forest area and Dam vicinity plantation in 550 ha have been completed. Also more than 4300 ha is afforested so far in the completed reaches of the canals.

ABOUT ORGANISERS

- **Sardar Sarovar Narmada Nigam Limited**

The Sardar Sarovar Narmada Nigam Limited has been established in 1988. It is wholly owned Government of Gujarat Company established under the provisions of the Company Act.

Main objects to be pursued by the company on its incorporation is, to execute, operate and maintain the Sardar Sarovar (Narmada) Project, across river Narmada in the State of Gujarat; a canal system emanating from the Sardar Sarovar impounded by the construction of the said dam; power house at the foot of the said dam and at the canal head and all other works incidental or ancillary to the said project, in accordance with the direction of the Government of Gujarat.

The Sardar Sarovar Narmada Nigam Limited has developed expertise in the areas of survey and investigations, designs and execution of major hydraulic structures like dam, power houses, canal structures like; aqueduct and siphons, canal cross regulators and head regulators and bridges. The company has developed a capacity to carry out all the technical designs in house. Some of the structures executed by the company are of unprecedented nature and company has built its capacity to successfully execute its structure by adopting state of the art construction technology.

- **Central Board of Irrigation & Power**

The Central Board of Irrigation & Power (CBIP), since its inception in 1927, is engaged in the dissemination of information regarding recent technological advancements in the twin disciplines of water resources and power. Besides, it provides a forum for exchange of experiences, facilitating flow of technology through the organisation of symposia, seminars, workshops, training courses both at national as well international levels, in liaison with international organisations.

The CBIP acts as the secretariat for many international organisations like International Commission on Large Dams (ICOLD), International Geosynthetics Society (IGS), International Tunnelling and Underground Space Association (ITA), International Water Resources Association (IWRA), etc., in addition to International Society for Rock Mechanics (ISRM).

The CBIP also took the initiative to form International Association for Small Hydro.

Some of the major activities organised by CBIP, related to water sector, during the last one decade, under the auspices/sponsorship of international organisations (**indicated in bracket**) are:

- 60th International Executive Council Meeting and 5th Asian Regional Conference of International Commission on Irrigation and Drainage (ICID), December 2009, New Delhi (**ICID**)
- Third International Conference on “Water Quality Management”, February 2008, Nagpur (**IWRA**)
- 12th World Water Congress of IWRA on “Sustainable Development of Water - towards Innovative Solutions”, 2005 (**IWRA**)
- First International Specialised Conference on “Water Quality and its Management”, 1998 (**International Association on Water Quality**)

DATES AND VENUE

The Seminar will be held at Pandit Deendayal Petroleum University (PDPU) Auditorium, Gandhinagar (Gujarat), on 22 March 2011- “World Water Day”

PROVISIONAL PROGRAMME AT A GLANCE

0800 – 0930 Hrs.	Registration	
0930 – 1100 Hrs.	Plenary Session	<ul style="list-style-type: none"> • Inauguration and Release of Comprehensive Publication on “The Growth and Evolution of Sardar Sarovar Project”
1100 – 1130 Hrs.	Tea	
1130 – 1300 Hrs.	Technical Session I: Water for Inclusive Growth	<ul style="list-style-type: none"> • Charting Our Water Future • Water Resources in Gujarat – Past, Present and Future • An Overview of International Development and Sustainability Performance • Sardar Sarovar Project - The Planning Framework • SSP – An Engineering Perspective
1300 – 1400 Hrs.	Lunch Break	
1400 – 1600 Hrs.	Technical Session II: Water – The Elixir of Life	<ul style="list-style-type: none"> • Indian Water Scenario and The Way Forward • Water Efficiency Management for Business and Domestic Sectors - Towards Green Economy • Water and Human Health • Reaching the Unreached - Narmada based Drinking Water Master Plan • Urbanization – Major Challenges to Water Management and Potential Prospects for Private Sector Participation • SSP – the Savior for Water Scarce Regions of Saurashtra and Kachchh • Rural Water Supply and Sanitation – The Key to Human Development
1600 – 1630 Hrs.	Tea/Coffee Break	

1630 – 1800 Hrs.	Technical Session III: Innovative Approaches in Water Management	<ul style="list-style-type: none"> • Innovative Approaches in Water Management • Water Scarcity – Desperate Solutions – Balancing the Needs • Water Management in Agriculture Sector • Legislative/ Regulatory Framework in Water Sector • Water Economics • Harnessing the State of the Art Technology in Water Management
1800 – 1930 Hrs.	Valedictory Session	<ul style="list-style-type: none"> • Panel Discussion • Presentation of the Seminar Report and Recommendations • Feedback from the Participants • Vote of Thanks
2000 – 2130 Hrs.	Cultural Programme and Dinner	

The keynote lectures on the identified topics will be delivered by the eminent experts, including the following:

- Dr. Refaat **Abdel-Malek**, President, International Hydropower Association
- Prof. Henning **Bjornlund**, University of South Australia
- Prof. Ngai Weng **Chan**, Member, Executive Board, International Water Resources Association and Professor, Universiti Sains Malaysia
- Mr. M. **Gopalakrishnan**, Secretary General, International Commission on Irrigation and Drainage (ICID)
- Mr. Rajat **Gupta**, Director, McKinsey & Company, India

REGISTRATION FEE

The registration fee for participation in the Seminar is as follows:

	In `	In US\$
Professionals	1,000	100
*Students	500	50

***To avail the student concession, the registration form/request would have to be submitted along with proof of being a student.**

The registration fee covers the cost of registration kit, proceedings, and lunch and tea in-between the technical sessions. The participants will have to make their own arrangements for travel and stay. No financial support will be provided by the organizers.

The last date for the receipt of filled in registration form is 15 March 2011. Photocopies of the registration form can be used for additional requirements, if any. Spot registration facilities will also be available, provided the prior information is received.

Fee once paid will not be refunded normally. However, if a registrant is unable to attend the event and claims refund by 15 March 2011, fee will be refunded after deducting the service charges of 25 per cent. After this date, no request for refund will be entertained.

Payment of registration fee is required to be made to the organisers along with the prescribed registration form. For mode of payment, refer the section “Payments”.

SPONSORSHIP OPPORTUNITIES

The Seminar provides an excellent opportunity to government organisations, power utilities, independent power producers, public sector undertakings, industrial organisations, equipment

manufacturers, entrepreneurs, financial and funding institutions, consulting organisations and construction organisations in India and abroad to publicise their services/products by being a co-organiser or supporter of the Seminar. The fees payable and entitlements are mentioned below :

S. No.	Sponsorship Category	Sponsorship Amount	Complimentary Facilities
1.	Co-organiser	₹ 5,00,000/ US\$ 10,000	<ul style="list-style-type: none"> • 25 complimentary nominations • Full page colour advertisement on an inner page of the souvenir • Free distribution of promotional literature among the participants
2.	Supporter	₹ 2,00,000 US\$ 5,000	<ul style="list-style-type: none"> • 15 complimentary nominations • Full page colour advertisement on an inner page of the souvenir

For further details, please contact the Seminar Secretariat.

CALL FOR ADVERTISEMENTS

A limited space for insertion of advertisements in the proceedings is available at the following rates:

Position	Charge for Black & White Advertisement	
	In ₹	In US\$
Back cover page	25,000	650
Second/Third cover page	15,000	400
Full page (20cm × 13cm)	10,000	250

For printing in colour, 25% extra per colour will be chargeable. Only full page (20 cm × 13 cm) advertisements will be accepted. **Please note that the advertisement on Back page is available in colour only.** The artwork of the advertisement, together with the payment is required to be sent before 07 March 2011.

Note :

- Material required: Artwork/negative/positive with back-up
- Only full page (20 cm × 13 cm) advertisements will be accepted.
- The artwork of the advertisement, together with the payment is required to be sent before 07th March 2011.

OFFICIAL INVITATION

The invitation contained in this bulletin should generally suffice to plan travel formalities. However, should an official invitation is needed; the same can be sent to the participants on request.

TRAVEL AND VISA

The participants will have to make their own arrangement for travel and are advised to obtain the requisite visa from the Indian Embassy/High Commission in their country.

PAYMENTS

All payments can be made by one of the following methods:

- Bank draft/cheque payable at par in New Delhi in favour of “Central Board of Irrigation and Power”
- Directly depositing the cheque drawn in favour of the “Central Board of Irrigation and Power” in

the account No. 034601000738 (Branch Code ICIC0000346, MICR Code 110229052) in any branch of the ICICI Bank Ltd. The full details of such payments shall be sent through mail/fax/post.

- By bank transfer in favour of “Central Board of Irrigation and Power”, as per details given below:
 - Name of Bank : ICICI Bank Limited, 16/48, Malcha Marg Shopping Centre, New Delhi 21
 - Account No. : 034601000738
 - MICR Code No. : 110229052
 - Account Holder Name : Central Board of Irrigation and Power
 - Swift Code : ICICINBBCTS
 - IFSC Code : ICIC0000346
 - Branch Code : ICIC0000346

In case of payments by bank transfer, bank commission, as applicable, will have to be borne by the concerned. The details of such transfer should be mailed to the Seminar Secretariat, to update the payment records.

HOTEL ACCOMMODATION

Following hotels are offering concessional rates for the delegates of the Seminar:

S. No.	Name & Address of Hotel	Room Type	Special Tariff for Delegates of the Seminar, including Buffet Breakfast (in `)	
			Single	Double
1	**** Fortune Inn Haveli Plot No. 235, Sector 11, Gandhinagar Tel: +91 79 3988 4422 Fax: +91 79 3984 2121 E-mail: haveli@fortunehotels.in Web: www.fortunehotels.in	Standard	2600	3000
		Fortune Club	3400	3800
		Executive Suite	5200	
2.	***** Fortune Landmark Ashram Road, Ahmedabad 380 013 Tel: +91 79 3988 4444/ Fax: +91-79 3001 4445/ E-mail: landmarkahmedabad@fortunehotels.in Web: www.fortunehotels.in/ www.fortunelandmark.com	Standard	4500	5500
		Fortune Club	5500	6500
		Executive Suite	6500	7500
		Presidential Suite	12500	
3.	*** Country Inn & Suits Surdhara Circle, Off Drive In Road Ahmedabad 380 054 Tel: +91 79 3011 2222/ Fax: +91 79 30112233 E-mail: reservations@cisahmedabad.in Web: www.countryinns.com	Deluxe	3600	4200
		Superior	4200	4800
		Executive	5100	5100

Please contact the hotels for your accommodation requirement.

For detailed list of hotels, please visit www.gujarattourism.com

SEMINAR SECRETARIAT

Central Board of Irrigation & Power

Malcha Marg, Chanakyapuri, New Delhi 110 021, India

Contact Person: Mr. V.K. Kanjlia, Secretary

Phone : +91-11- 2611 5984/2611 1294 Fax : +91-11- 2611 6347

E-mail : uday@cbip.org; cbip@cbip.org; Web : <http://www.cbip.org>

LOCAL CO-ORDINATOR

Dr. M.B. Joshi

Superintending Engineer

Sardar Sarovar Narmada Nigam Ltd.

Narmada Project Design Circle, 4th Floor, Block No. 12, Sardar Bhavan

New Sachivalaya Complex, Gandhinagar 382 010

E-mail: dr.mbjoshi@gmail.com

GENERAL INFORMATION

India – The Host Country

India is endowed with towering mountain ranges, rolling hills, lofty plateaus and extensive plains, which have played their role in shaping its cultural, economic and political history. The most outstanding characteristics of India, and probably one of its greatest charms, is undeniably, its diversity. India is a country with a sense of individuality and rich heritage ; its civilization is unique in vitality and antiquity. It offers the visitor something special everywhere, and in everything. It is a land of treasures, temples, palaces, forts and magnificent scenery. Those seeking footprints of history will find that India has been a vast arena, where races and cultures have battled and blended, creating sublime achievements in art, religion and philosophy.

Gujarat – The Host State

Gujarat – The Land of the Legends, stands bordered by Pakistan and Rajasthan in the north east, Madhya Pradesh in the east, and Maharashtra and the Union Territories of Diu, Daman, Dadra and Nagar Haveli in the south. The Arabian Sea borders the state both to the west and the south west.

The State took its name from the Gurjjars, who ruled the area during the 700's and 800's. Stone Age settlements around Sabarmati and Mahi rivers indicate the same time as that of the Indus Valley Civilization while Harappan centres are also found at Lothal, Rampur, Amri and other places.

Rock Inscriptions in the Girnar Hills show that the Maurya Emperor Ashoka, extended his domain into Gujarat in about 250 BC. With it's fall, the control of the region came under the Sakas or Scythians. During the 900's the Solanki Dynasty came to power and Gujarat reached it's greatest extent.

Then followed a long period of Muslim rule. Ahmedshah, the first independent Muslim ruler of Gujarat, found Ahmedabad in 1411. The Mughal Emperor Akbar conquered Malwa and Gujarat in 1570s. The British East India Company set its first footsteps in Surat in 1818 and the State came in control of their rule.

Gujarat was divided into princely states. After the Indian Independence in 1947, all of Gujarat except Saurashtra and Kutchh became part of Bombay State until May 1, 1960, when the Government split Bombay state into the States of Maharashtra and Gujarat.

Ahmedabad became the chief city of the new State and housed the State Government Offices. They remained there until they were transferred to Gandhinagar in 1970.

Gandhinagar - The Host City

Named after Mahatma Gandhi, the father of Nation, Gandhinagar is the capital of Gujarat state, since 1970. Gandhinagar lies on banks of the Sabarmati river and is well known for its Educational and Research Institutes. Gandhinagar is known as second planned city in India after Chandigarh. There are 30 sectors around the Secretariat complex. Each sector having its own shopping centre, health centre, schools and community centre.

Major tourist attraction of Gandhinagar is the famous Akshardham temple and recently inaugurated Mahatma Mandir. Other attractions are Children's Park, Sarita Udyan and Capital Complex.

How to Reach the Venue from Ahmedabad International Airport Terminal



- | | |
|---|----------|
| 1. Turn right at Sardar Vallabhbhai Patel International Airport | 140 m |
| 2. At the roundabout, take the 1st exit | 850 m |
| 3. At the roundabout, take the 2nd exit onto Airport Road Pass by ICTC - Improve Computer Training Centre (on the left in 1.2 km) | 1.6 km |
| 4. Continue straight onto Indira Bridge | 750 m |
| 5. At the roundabout, take the 2nd exit | 2.7 km |
| 6. Turn left at Gandhinagar Ahmedabad Road Go through 1 roundabout Pass by Vrundavan Restaurant (on the left in 3.0 km) | 4.9 km |
| 7. Head toward Gandhinagar Ahmedabad Road west on PDPU Road | 1.6 km |
| Total distance from Airport to Pandit Deendayal Petroleum University | 12.54 km |



Celebration of World Water Day

Swarnim Seminar

Water for Inclusive Growth

22 March, 2011

Gandhinagar, Gujarat

REGISTRATION FORM

(To be filled in block letters preferably typed)

1. Delegate _____

(Surname) (First Name) (Prefix Prof./Dr./Mr./Mrs./Ms.)

Mailing Address _____

City _____

State _____

Country _____ ZIP _____

Phone _____ Fax _____

E-mail _____

2. Passport details (only for foreign delegates)

<i>Name</i>	<i>Passport No.</i>	<i>Date of issue</i>	<i>Place of issue</i>	<i>Valid till date</i>
1.				
2.				
3.				

3. Arrival Details

<i>Arrival at Ahmedabad/Gandhinagar</i>	<i>Departure from Ahmedabad/Gandhinagar</i>
Date	Date
Flight/Train No.	Flight/Train No.
Time	Time
From City	To City

4. Payment Details

• Registration Fee -Delegate	US \$/^
• Sponsorship/Advertisement Charges	US \$/^
Total	US \$/^

5. Mode of Payment:

- (i) Bank Draft/Cheque No. _____ dated _____ for US\$/^
_____ drawn on Bank _____ is
enclosed/is being sent separately.
- (ii) Payment has been transferred to _____ Account No. ____ on _____

Dated _____

Signature _____

Notes:

1. Registration Form duly filled in, together with necessary payments to be mailed to Mr. V.K. Kanjlia, Secretary, Central Board of Irrigation and Power, Malcha Marg, Chanakyapuri, New Delhi 110 021.
2. Last date for the receipt of the registration forms is 15 March 2011. Spot registration facilities will also be available, provided prior information is received.