

**MINUTES OF 11TH MEETING
OF
COASTAL PROTECTION & DEVELOPMENT ADVISORY COMMITTEE (CPDAC)**

The 11th meeting of the Coastal Protection & Development Advisory Committee (CPDAC) was held in Chennai during 4-5th January, 2010, under the Chairmanship of Shri R.C. Jha, Member (River Management), CWC, & ex-officio Additional Secretary to the Govt. of India. List of participants is enclosed at Annexure-I.

After presentation of bouquets and lighting of the lamp, Shri S. Jeyaraman, Engineer-in-Chief, W.R.O. Govt. of Tamil Nadu welcomed the Chairman and delegates of the CPDAC. Shri R.C. Jha, Member (River Management), CWC & Chairman, CPDAC, in his presidential address reminded the participants about the magnitude of coastal erosion around Indian coast, factors contributing to coastal erosion and emphasized the importance of identifying causes of erosion for tackling the problem. He briefly explained about the Beach Erosion Board and CPDAC and apprised the members regarding ADB aided Technical Assistance Programme for the states of Karnataka, Maharashtra and Goa.

The inaugural session concluded with a vote of thanks proposed by Shri S. Rustham Ali, Chief Engineer, Design Research and Construction Support, Govt. of Tamil Nadu. He also gave brief introduction about the activities performed by Institute of Hydraulics & Hydrology (IHH), Poondi and informed about their ability to extend consultancy services to other maritime states.

Thereafter agenda was taken up by Shri Rajesh Kumar, CE (P&D), CWC & Member-secretary, CPDAC.

11.1 CONFIRMATION OF THE MINUTES OF 10th MEETING

The minutes of 10th Coastal Protection Development Advisory Committee meeting, held at Visakhapatnam (Andhra Pradesh) during 18-19th January 2007 were circulated to all the members of CPDAC vide letter no. 4/5/2007-CED/ 57-94 dated 12/02/2007. No comments were received. With the permission of Chair, the minutes of 10th CPDAC meeting were confirmed.

11.2 STATEWISE COASTAL LENGTHS AND COASTAL ATLAS

Commodore K.M. Nair, Principal Director, Directorate of Hydrography, who was representing NHO in the meeting, informed the committee that a comprehensive exercise of re-evaluating coastal length is being taken up in the wake of methodological changes based on Survey of India maps. He urged the states to report the length along with the methodology adopted. Shri K. B. Rabadia, S.E., Surat, Gujarat informed that there are so many creeks in Gujarat and excluding them the coastal length of Gujarat is 1290.86 km. Shri R.C Jha Chairman, CPDAC emphasized that while evaluating the Coastal length, creeks should not be considered and requested State Govts to provide the coastal length and the

methodology adopted to NHO. Dr. Nalini Bhat, Adviser, MoEF emphasized the importance of proper determination of coastal length as protection works and coastal zone management depends on it and suggested that NHO should document standardized procedure for evaluating the coast line and same should be circulated to state authorities and suggested for specific timeline for this whole exercise. She also mentioned that in recent studies conducted by MoEF in the state of Gujarat, coastline was found to be more than 2000 km. Commodore K.M. Nair informed that the proposed exercise of evaluating the coastline will be done closing the river mouth and treating offline islands as separate entity.

As per Chairman's decision Coastal Atlas (agenda item 11.4) was discussed along with item **11.2 State-wise Coastal Lengths** as Coastal Atlas may be used for verifying the length of the Coastline. Shri Rajesh Kumar, Member secretary, CPDAC gave information about the SAC's earlier proposal for which funding could not be materialized. It was informed that SAC has further submitted a revised proposal amounting to 60 lakh to CPDAC secretariat. Dr. A.S Rajawat, Scientist **SG+**, SAC gave information on the modified proposal submitted in January 2010. He informed the committee about digitization of maps done under the project **Coastal Zone Studies+** funded by MoEF. The present proposal is for **Shoreline Change Atlas** using existing database of 1989-91 and 2004-06. Shorelines will be classified as eroding, stable or accreting in quantified manner. Status of coastal protection measure will also be incorporated in the atlas. Additionally, 2008-09 data will be used for identifying critically eroding sites. Shri R.C Jha, Chairman, CPDAC queried about the schedule for the project and whether it can be phased in a manner so that some deliverables can be completed by the next meeting of CPDAC. SAC informed that the schedule spans for 18 month and atlas is being prepared in five volumes where each volume covers group of states. Prioritization of the volumes can be done to facilitate validation of Coastal Length. He also requested that as MoEF is custodian of some of the data required for the project, it should be included in the sub-committee for Preparation of Coastal Atlas. It was decided that the sub-committee for preparation of Coastal Atlas would be re-constituted by including members from SAC, MoEF, CWC, ICMAM, NHO and Sol.

Chairman asked CPDAC Secretariat to pursue and make funds available for preparation of Coastal Atlas at the earliest.

(Action: NHO, Coastal States/UTs, SAC, CPDAC Secretariat)

11.3 DATA COLLECTION, COMPILATION, ANALYSIS AND PUBLICATION

Shri M. D. Kudale, Joint Director, CW&PRS gave a presentation on **Field Data Collection for Coastal Protection Works**. In his presentation he discussed about different types of data to be collected and steps for analysis of coastal erosion problem. Establishment of rate of erosion, cause of erosion and design of coastal protection work should be carefully planned based on proper baseline, chart datum and contour plans. He elaborated upon the collection of data pertaining to waves, tides, tidal current, depth and beach profile.

Shri M. D. Kudale further informed about the status of the National Coastal Data Bank. Shri S. Rustham Ali, Chief Engineer, DR&CS, Govt. of Tamilnadu informed that they are submitting the data in required format regularly to CW&PRS for state of Tamilnadu.

Shri R.C Jha ,Chairman opined that telemetry system and automation could be employed to counter work-force limitation for field data collection .He suggested that ICMAM and CW&PRS can formulate a plan for data collection and requirement including instrumentation for entire coastline of the country. However, some of the participants in the meeting observed that such plans will not be feasible due to local nature of erosion problem and constraint of limited staff. Shri R.K. Ghosh, Chief Engineer, PWD, A&N Island suggested that a single agency should be entrusted for this work. However this suggestion was not agreed by members considering the enormosity of the problem. Prof. V. Sundar, IIT Madras mentioned that we should be very clear on what and why we want such data and suggested that many agencies have collected data which can be developed as data bank. Chairman enquired about the status of the data available with departments under Ministry of Earth Sciences (MoES). Dr. B.R. Subramanian, Project Director, ICMAM informed about the data availability with them and told committee that data inventory has already been submitted to the CPDAC secretariat. It was also suggested that all data inventory should be first uploaded to CPDAC website. He also informed that both National Institute of Oceanography (NIO) and Indian National Centre for Ocean Information Services (INCOIS) are having vast set of data but sharing may not be possible due to contractual obligations. Chairman observed that such impediment related to data sharing should be avoided for the benefit of all other agencies including INCOIS and NIO and requested CW&PRS & ICMAM to coordinate this activity.

(Action: Agencies involved in data collection, CW&PRS, ICMAM & CPDAC secretariat)

11.4 RESEARCH AND DEVELOPMENT

11.4.1 RESEARCH PROPOSALS

It was informed to the committee that INCH secretariat has been shifted to CW&PRS Pune. Shri M. D. Kudale, Joint Director, CW&PRS, Pune informed that it has received 3 proposals from National Institute of Technology, Surathkal, Karnataka. One has been cleared and other two also have been accepted in-principle. Shri S. Rustham Ali, Chief Engineer, DR&CS, Govt. of Tamil Nadu informed that four proposals were submitted to INCH and requested for Chairman's recommendation. Shri R.C. Jha Chairman, CPDAC requested all member States to submit research proposals to MoWR/INCH and informed that there is no dearth of funding for such research proposals and requested CW&PRS to co-ordinate in this regard.

(Action: Coastal States/UTs, CW&PRS)

11.4.2 INSTITUTIONAL STRENGTHENING

11.4.2.1 ORGANISATIONS

Shri S. Rustham Ali, Chief Engineer, DR&CS, Govt. of Tamil Nadu stated that the division which was engaged in the data collection and research work has been assigned some other work by Govt. of Tamil Nadu and urged Chairman CPDAC to recommend the continuation of the division for work of data collection and research work. Chairman, CPDAC asked Shri S. Rustham Ali, CE to submit the details to the committee which shall be looked into by Member Secretary, CPDAC.

11.4.2.2 TRAINING AND STUDY TOURS

Shri M.D. Kudale, CW&PRS, requested for help from CPDAC for conducting training courses. Chairman, CPDAC expressed that CW&PRS may collaborate with National Water Academy (NWA), Pune for training arrangements.

(Action: CWPRS/ CPDAC Secretariat)

11.5 COASTAL MANUAL

11.5.1 PREPARATION OF INDIAN SHORE PROTECTION MANUAL

The necessity of such a manual was discussed. Chairman was of the view that such manual should be prepared considering the Indian condition. However no progress was made in this regard since last meeting of CPDAC. Member from NIO was not present in the meeting. Committee was informed about the latest communication from NIO wherein it was stated that draft version of manual will be submitted by December 2010. Dr. B.R. Subramanian, Project Director, ICMAM volunteered that he will discuss with the person concerned at NIO to expedite the process of preparation of Indian Shore Protection Manual.

(Action: NIO, CPDAC Secretariat)

11.5.2 MANUAL ON CONSTRUCTION TECHNIQUES OF COASTAL PROTECTION WORKS

Shri M.D. Kudale, CW&PRS, informed the Committee that guidelines for design and construction of Sea wall is in draft stage and awaiting approval. Chairman opined that the guidelines can be submitted to the committee in the draft stage itself for the comments of the members.

(Action: CW&PRS)

11.6 REVIEW OF THE EXISTING WORKS

Director, Beach Erosion, CWC, Cochin, informed the Committee that the site visit for performance evaluation of existing coastal protection works could not be taken up since 9th meeting of the CPDAC. Chairman desired that CW&PRS should take more initiative on the same. Shri R.K. Ghosh, Chief Engineer, PWD, A&N Island stressed

that performance evaluation should be part of the planning process itself. Chairman, CPDAC agreed in-principle to the proposal.

(Action: C.E., C&SRO, CWC/ Director, Beach Erosion Dte, CWC & CW&PRS)

11.7 NATIONAL COASTAL PROTECTION PROJECT (NCP)

A presentation was made by ADB consultant, Dr. Joseph Mathew. In the presentation he gave information about the ADB initiated Technical Assistance (TA) programme to prepare an investment programme for Sustainable Coastal Protection and Management Project in the States of Goa, Maharashtra and Karnataka. Under this proposal Ullal sub-project in Karnataka was discussed in detail. Shri S. Ramasundram, Principal Secretary, PWD, Tamil Nadu enquired about the financial aspects of the proposed solution vis-à-vis traditional solution. He also expressed apprehensions about the higher cost using patented technology and degree of technology transfer from such projects. ADB consultant clarified and informed about the technology transfer, being imparted in the ongoing Kovalam project in Kerala.

NEW TECHNOLOGIES IN COASTAL PROTECTION WORKS

Dr. Joseph Mathew, ADB Consultant made a presentation on Strategic Alternatives for Coastal Protection: Multipurpose Submerged Reefs, their design criteria and advantages.

11.8 MASTER PLAN FOR COASTAL PROTECTION

This agenda was discussed during the review of the progress of CPDAC against assigned functions. Members agreed that maritime states should take initiative.

(Action: Coastal States/UTs)

11.9 COMPOSITION OF CPDAC

In view of proposed ADB aided project, it was decided to include Economic Adviser, MoWR as permanent invitee to the committee. Nomination for non official members received from State Planning Commission, Tamil Nadu was discussed in the meeting. Members felt that the proposed persons had no exposure to coastal protection works. None of the other states had submitted any nomination. Chairman, CPDAC sought proposals from the members present in the meeting. Names of Prof V. Sundar Professor, IIT Madras, Shri D. K. Maiti retd. Secretary, Public Works, West Bengal and Shri M.M Kamath, Chairman State TAC Karnataka were proposed by the members and accepted by the committee.

(Action: CPDAC Sectt)

11.10 STATUS OF COASTAL PROTECTION WORKS IN MARITIME STATES

Project Director, ICMAM (PD) mentioned that the status of coastal erosion is required to be submitted to the Parliamentary Standing Committee. Director Coastal Erosion, CWC informed that some of the states have not given the updated information regarding coastal erosion. Shri A. Muralidharan, Sr.R.O. (W.R), Planning Commission emphasized on the importance of availability of such information in project proposals to be included in centrally aided schemes. Chairman, CPDAC directed all the states to share latest information.

(Action: Coastal States/UTs, CPDAC Secretariat)

11.11 FLOOD MANAGEMENT PROGRAMME

While discussing Flood Management Programme, Shri Reading Shimray, Director Coastal Erosion, CWC informed that one proposal estimated to approximately Rs. 8.0 crore from Gujarat has been sent to Planning Commission. Shri A. Muralidharan, Sr.R.O. (W.R), Planning Commission was of the opinion that schemes related to coastal erosion are not inter-state issue and hence they need not be sent to Planning Commission. He was requested by Director, Coastal Erosion, CWC to supply latest Guideline/document of Planning Commission for reference.

11.12 ANY OTHER ITEM WITH THE PERMISSION OF CHAIR

Chairman initiated review of the function/ Terms of Reference of CPDAC and progress made so far. Progress was discussed against item wise function. Functions of CPDAC are enclosed as Annexure-III.

Progress on item **i**, **ii** and **iii** were noted and CW&PRS was asked to co-ordinate further. On Item **iv** & **x**, it was noted that the assignment has been given to Beach Erosion Dte, CWC. On Item **v** it was noted that International Agencies are being involved through ADB aided project. On Item **vi**, **vii**, **viii** and **ix** it was noted that maritime states need to take initiative. Requirement of the item **xi** was noted though related to project proposals only.

Chairman CPDAC observed that all the efforts of the concerned ministries/department should be well co-ordinated and communicated to others in order to avoid redundancy of the work.

10.15 VENUE OF THE NEXT MEETING

It was agreed to hold next meeting of CPDAC at Bhubaneshwar in Orissa before the end of 2010.

(Action: Orissa, CPDAC Secretariat)

Presentation by Sontek.

A brief presentation was made by representative of Sontek regarding Advanced Doppler Technology for unmanned monitoring of flow. He gave information about Bi-directional Flow measurement using Index velocity method which is suitable for estuaries.. Chairman informed the committee that earlier version of ADCP gave good results with high water levels but there is some deficiency at low water levels. Sontek representative gave information about technological advancement like ~~M~~-9qmid range system which is capable of working with low water levels as well.

SITE VISIT

A site visit to Ennore Port was arranged on 5th Jan, 2010. CPDAC members visited the northern break water of the port. At the site Shri M. D. Kudale, Joint Director, CW&PRS, Pune gave brief history and design parameters of the port. It was informed that this port was earlier envisaged as Satellite port but due to its importance later given the status of ~~M~~Majorqport. The length of the northern break water is 3.2 km and that of southern break water is 1.1 km. Specially designed ~~Accropodeq~~were shown on the round head portion of northern break water which results in saving of 40% of quantity of cement. Currently there is no sand by passing system in place. Huge amount of sand deposition (around 0.5 million m³ per year) is taking place near to southern break water which indicates the direction net long shore sediment transport.

Annexure-I**Participants of 11th CPDAC Meeting**

S.N	Name & Designation
1.	Shri R.C. Jha, Member (RM), CWC & Chairman, CPDAC.
2.	Shri Rajesh Kumar, Chief Engineer (P&D), CWC & Member-Secretary, CPDAC.
3.	Shri Reading Shimray, Director, Coastal Erosion, CWC, New Delhi.
4.	Shri K.S. Jacob, Director, Beach Erosion, CWC, Kochi.
5.	Shri R.N. Singh, Dy.Director, CWC, New Delhi
6.	Shri Shiv Sunder Singh Assistant Director, CWC, New Delhi
7.	Dr. Nalini Bhat, Adviser, MoEF, Gol
8.	Dr. A. Senthil Vel, Addl. Director, MoEF, Gol
9.	Shri A. Muralidharan, Sr.R.O.(W.R), Planning Commission, Gol
10.	Commodore K.M. Nair, Principal Director, Directorate of Hydrography, NHO, Gol
11.	Shri M. D. Kudale, Jt. Director, CW&PRS, Pune
12.	Dr. A. S. Rajawat, Scientist %G+, SAC(ISRO) Ahmedabad
13.	Dr. B.R. Subramanian, Project Director, ICMAM, MoES, Gol.
14.	Dr.R.S. Kankara, Sc.+E+, ICMAM, MoES, Gol
15.	Dr.M.V. Ramanamurthy, Sc.+F+, NIOT, MoES, Chennai.
16.	Dr. V. Sundar, Professor, Deptt of Ocean Engg., IIT, Madras, Chennai
17.	Shri S. Ramasundram, IAS, Principal Secretary to Govt., PWD, Tamil Nadu
18.	Shri S. Jeyaraman E.I.C. WRO, PWD,TamilNadu
19.	Shri S. Rustham Ali, CE, DRCS, WRO, PWD, Chennai.
20.	Shri S. Kumaresan, Chief Engineer Plan Formulation, WRO, PWD,Chennai
21.	Shri D. Anbalagan, CE, Chennai Region, WRO
22.	Shri A. Selvarajah, Director, IHH, Poondi, Chennai
23.	Shri D. Khaleel Ahamed, Dy. Director, IHH, Poondi, Chennai
24.	Shri P. K. Suresh ,IHH, Poondi, Chennai
25.	Shri T.G. Chandran, Special Chief Engineer, PWD, Chennai.
26.	Dr.(Ms.) Lavanya, State Planning Commission, Tamil Nadu
27.	Shri Harish Chandra Behera, Eng-in-Chief, Water Resources, Orissa
28.	Shri Ashok Kumar Mahapthra, CE, LM Basin, Water Resources, Orissa
29.	Shri K. B. Rabadia, SE, Surat,Gujarat
30.	Shri S.P. Nadkarni, C.E. Irrigation, Goa
31.	Shri H.M. Rangarajan, Executive Engineer, WR, Goa.
32.	Shri R. Unnikrishnan, S.E. Kerala Irr.Deptt, Thrissur, Kerala
33.	Shri Vinoth George, Executive Engineer, Irr Deptt, Kerela
34.	Shri B.S.N. Reddy, E-in-C, I&CAD, A.P.
35.	Shri A.T. Patkar, Coastal Engineer, PWD Maharashtra
36.	Shri P. P. Darade, Harbour Engineer, PWD, Maharashtra.
37.	Shri R.K. Ghosh, Chief Engineer, PWD, A&N Island
38.	Shri M. Ganesha, Director (Ports & IWT), Karnataka
39.	Shri T.S. Rathod, Ports Engineer, (Ports & IWT), Karwar, Karnataka

Annexure-II**STATUS OF COASTAL PROTECTION WORKS IN MARITIME STATES**

(Length in km)

Sl. No.	Description	Andhra Pradesh	Goa	Gujarat	Karnataka	Kerala	Maha-rashtra	Orissa	Tamil Nadu	West Bengal	A&N Islands	Laksha-dweep	Pondi-cherry	Total
1	Total coastal length													
2	Total length of coastline affected by sea erosion													
3	Total length of coastline protected up to X plan													
4	Total length of coastline protected during XI plan													
5	Total length of coastline yet to be protected													
6	Expenditure incurred in XI plan (in Rs. crore)													

Note: Sum of Sl.No. 3, 4 and 5 for respective states should be equal to that of Sl. No. 2

Functions
of
Coastal Protection and Development Advisory Committee (CPDAC)

- (i) To organise a co-ordinated programme of collection, compilation, evaluation and publication of data relating to various natural phenomena in coastal processes, which affect the coastline, through Coastal Engineering Research Centre and other State organisations.
- (ii) To organise general investigation, studies and research with the help of Central and State Coastal Engineering Research Institutions.
- (iii) To lay down principles in construction techniques of coastal protection measures for the guidance of State Authorities.
- (iv) To review the performance of the works carried out by States and evolve improved design techniques based on such experience from time to time.
- (v) To inter-act with international agencies engaged in the work of coastal protection and technology transfer in the field of coastal protection.
- (vi) To identify the coastal zone to be developed behind the coastal protection works with the help of State Governments.
- (vii) To identify the development potential in various techno-economic activities and advise the concerned State Govts. to prepare programme for development.
- (viii) To draw up long-term and short-term plans for coastal protection and development of the coastal zone.
- (ix) To appraise and recommend various coastal protection and development works for inclusion in State plans.
- (x) To arrange effective and timely monitoring of the coastal protection & development projects.
- (xi) To review the action plan for rehabilitation and resettlement of the coastal development affected people and monitor the progress on rehabilitation and resettlement.