

No. 4/5/2017-CED/694-729

भारत सरकार/Government of India
केन्द्रीय जल आयोग/Central Water Commission
तटीय प्रबंधन निदेशालय/Coastal Management Directorate

कक्ष संख्या 906 (द०), सेवा भवन,
राम कृष्ण पुरम, नई दिल्ली 110606
दिनांक/dated 31st July, 2017

To

CPDAC Members/Invitees
(as per list attached)

Subject: Agenda for 15th meeting of Coastal Protection and Development Advisory Committee (CPDAC) to be held at CWC, New Delhi on 17th August, 2017.

Sir,

Please find enclosed herewith agenda note for the 15th CPDAC meeting scheduled to be held at CWC, New Delhi on **17th August, 2017**.

Venue: Conference Hall, 5th Floor, Central Water Commission, R.K. Puram, New Delhi-66

Time : 11:00 AM

Date: 17th August, 2017

The maritime States /UTs/ Departments may look for the actionable points included in the agenda pertaining to them for further needful action. The follow up action taken by them on the minutes of 14th meeting of CPDAC held at Goa during 27-28th Feb, 2014 may also be communicated. (The minutes of 14th CPDAC meeting were circulated vide this office letter No. 4/5/2014-CED/160-91 dated 13th March, 2014 and also available at CPDAC Website <http://cwc.gov.in/CPDAC-Website/index.html>)

It is requested to kindly make it convenient to attend the meeting and confirm your participation latest by **10th Aug, 2017** by e-mail/fax to this office.

Encl: As above

भवदीय / Yours faithfully,
21021-2
31/07/2017
(शरद चंद्र)

(Sharad Chandra)

निदेशक/Director

Telefax 011-29583288

Copy with request to nominate suitable officer for attending the meeting:

1. Surveyor General of India, Office of Surveyor General of India, Hathibarkala Estate, New Cantt Road, Dehradun — 248001 (refer para **15.2.1** of Agenda Note)
2. Director, National Centre for Sustainable Coastal Management, Koodal Building, Anna University Campus, Chennai — 600025 (Tamil Nadu). refer para **15.2.2** of Agenda Note)

Copy for kind information to:

- i. PPS to Chairman, CWC, Sewa Bhawan, R.K. Puram, New Delhi **with request to kindly book the conference room for full day on 17th Aug, 2017**
- ii. PPS to Member (RM), CWC & Chairman, CPDAC, Sewa Bhawan, R.K. Puram, New Delhi

List of addressee for 15th CPDAC Meeting Notice

- | | |
|---|--|
| <p>1 Commissioner (FM),
Ministry of Water Resources, River
Development and Ganga Rejuvenation
8th Floor, Block -11
CGO Complex, Lodhi Road,
New Delhi-111003.</p> <p>3 Engineer-in-Chief (Irrigation),
Water Resources Department,
D.No. 48-10-9/1 NH Feeder Road,
Currency Nagar, Vijayawada-520008</p> <p>5 Development Advisor (Ports),
537,Transport Bhawan,
Ministry of Shipping,
1, Parliament Street,
New Delhi- 111001.</p> <p>7 Chief Engineer (C&SR),
Central Water Commission,
Sangamam,
Gandhimaanagar, Peelamedu P.O.,
Coimbatore – 641 004</p> <p>9 Director,
National Institute of Oceanography,
Dauna-Paula,
Goa- 403001.</p> <p>11 Chief Engineer,
Irrigation&Admn.,
Govt. of Kerala,
Thiruvananthapuram- 695033</p> <p>13 Chief Executive Officer, (Commissioner,
Water Transport)
Maharashtra Maritime Board,
Indian Mercantile Chamber (3rd Floor)
Ramajibhai Kamani Marg,
Ballard Estate, Mumbai - 400 001.</p> <p>15 Chief Engineer (P&D) ,
Central Water Commission,
901(S), Sewa Bhawan,
R.K. Puram, New Delhi-66.</p> <p>17 Secretary,
Irrigation & Waterways Deptt.,
Govt. of West Bengal,
Jalsampad Bhawan, Salt Lake,
Kolkata- 700091.</p> | <p>2 Joint Secretary/ Advisor
(Impact Assessment)
Ministry of Environment , Forest and
Climate Change
Indira Paryavaran Bhawan,
Jor Bagh Road, Aliganj
New Delhi-110003</p> <p>4 Advisor (NRE),
NTTI Ayog,
Sansad Marg,
New Delhi-111001.</p> <p>6 Chief Engineer,
Water Resources Organisation
PWD.,Govt.of Tamil Nadu
Madurai region,
Thallakulam, Madurai-625 002.</p> <p>8 Chief Engineer (Water Resources),
Sinchai Bhawan, Alto porvorim,
Goa-403001</p> <p>10 Secretary,
Narmada, Water Resources &
Water Supply Department,
Govt. of Gujarat,
Block No. 9, Sardar Bhawan,
Sachivalaya, Gandhinagar- 382011.</p> <p>12 Director,
Central Water & Power Research Station
(CWPRS),
P.O. Khadakwasla,Pune - 411124.</p> <p>14 Engineer-in-Chief (Water Resources),
Secha Sadan, Govt. of Odisha,
Bhubaneshwar - 751101.
(Odisha)</p> <p>16 Head of the Department
Marine Wing, GSI Complex,
Bhu Bijnan Bhavan, 9th. floor
Block: DK-6, Sector-II, Salt Lake
Kolkata-700091
(West Bengal)</p> <p>18 Head,
Geo Sciences Division,
Space Application Center,
Ambawadi Vistar P.O.,
Ahmedabad –380015</p> |
|---|--|

19 Chief Hydrographer to the Govt. of India,
Directorate of Hydrography
West Block IV, Wing -5, R.K. Puram, Sec-1
New Delhi-110 066

21 Superintending Engineer,
Lakshadweep, PWD,
Kavaratti, Lakshadweep-682555

23 Member (Planning),
Ganga Flood Control Commission,
Sinchai Bhawan 3rd Floor,
Patna – 800015.

20 Chief Engineer, APWD,
Andaman & Nicobar Administration,
Port Blair-744111

22 Chief Engineer, PWD,
34, Lal Bahadur Shastri Street,
Pondicherry-605001

24 Director (Ports & I.W.T.),
Baithkol, Uttara Kannada,
Karwar – 581302
Karnataka.

Permanent /Special Invitees:

25 Economic Adviser
Ministry of Water Resources
Room No. 7, B Wing
Shashtri Bhawan
New Delhi – 110001

26 Director,
National Institute of Ocean Technology
(NIOT)
Velachery-Tambaram Main Road,
Pallikaranai,
Chennai – 600100

27 Director,
National Centre for Earth Science Studies,
Akkulam,
Thiruvananthapuram - 695 031
(Kerala)

28 Project Director & Sci G
ICMAM Project Directorate
NIOT Campus,
Velachery-Tambaram Main Road,
Pallikaranai,
Chennai – 600100

29 Director,
Beach Erosion Directorate,CWC
"Jaladhara", 27/1927-A,
Kasturba Nagar, Kochu-Kadavanthra,
P.O.Kadavanthra, Kochi - 682 020.

30 Director,
Indian National Centre for Ocean
Information Services(INCOIS),
"Ocean Valley" Pragathi Nagar (BO),
Nizampet (SO) ,Hyderabad - 500 090

Invitee for 15th CPDAC Meeting

31 Director
WS&RS and INCSW Secretariat,
CWC, New Delhi

32 Deputy Team Leader,
Climate Resilient Coastal Protection
and Management Project CRCP&MP
(through e-mail:
dr.mbaba@gmail.com)

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15.1 CONFIRMATION OF THE MINUTES OF 14TH MEETING

The minutes of 14th CPDAC meeting held at Goa during 27-28th February, 2014 were circulated vide this office letter No. 4/5/2014-CED/160-91 dated 13th March, 2014 and is also available at <http://cwc.gov.in/CPDAC-Website/index.html> (under CPDAC meetings link). No comments were received on the same. Hence, the minutes of 14th CPDAC meeting may be confirmed.

15.2 STATE WISE COASTAL LENGTHS AND COASTAL ATLAS

15.2.1 STATE WISE COASTAL LENGTH

During 14th CPDAC meeting, after detailed discussion and presentation by representative from National Hydrographic Office (NHO), Dehradun, the methodology for arriving the coastline length and the length as computed by NHO was accepted with the suggestion that the length of Odisha may be discussed and sorted out by Govt. of Odisha and NHO. The representative from Water Resources Department (WRD), Odisha mentioned that the coastline length of the State as per their record is around 477 Km which was arrived at based on the Survey of India maps during 1970s, is having significant variation in comparison to the coastline length of 667.12 km mentioned by NHO. Later, Govt. of Odisha vide letter No. FF&FRM-19/2015-27940 dated 04.08.2016 (enclosed as [Annexure - I](#)) has conveyed its acceptance to the coastline length of Odisha to be 667.12 Km as computed by NHO. Thus, the details of the accepted coastline length and methodology to compute the same, is given in [Annexure - II](#). Also, based on the request of Lakshadweep, NHO has provided the Island-wise coastline length for Lakshadweep as per [Annexure - III](#).

Committee, in particular Representative of NHO, Dehradun and invitee from of Survey of India (SoI) may discuss, accept and finalize the steps regarding mode of promulgation of new coastline length of the country. SoI and NHO may also indicate if the District-wise/ taluk-wise coastline length can be evaluated from the available data set and what further information would be required for this purpose.

15.2.2 SHORELINE CHANGE ATLAS OF THE INDIAN COAST

At the behest of CPDAC, Ministry of Water Resources, River Development & Ganga Rejuvenation (MoWR, RD & GR), Government of India (GoI), New Delhi, a project titled, "Shoreline Change Atlas of the Indian Coast", was initiated in 2010 by Space Applications Centre (SAC, ISRO), Ahmedabad, in collaboration with Central Water Commission (CWC). The major objective of this activity was to prepare a digital shoreline change atlas in GIS environment on 1:25, 000 scale using satellite data (time frame 1989-91 and 2004-06). The Status of shoreline protection measures have also been depicted in the Atlas as per the information provided by the maritime State/UT agencies through CWC. The publication of the Shoreline Change Atlas of Indian Coast was accepted by the CPDAC in its 14th Meeting (February, 2014) and was published in the Brain-Storming Workshop on "Implementation of Coastal Management Information System" held at CWC, New Delhi in May, 2014. This Atlas can be accessed from <https://vedas.sac.gov.in/vedas/node/61>. A link to this has also been provided to CPDAC-website and steps are also being taken to provide a link to India-WRIS as per the decision taken during the 14th CPDAC meeting. The hard copies of the Atlas have been sent to respective maritime States/UTs for their

utilization. The salient findings of the Shoreline Change Atlas have been summarized in tables given in **Annexure - IV**.

During the 14th CPDAC Meeting, it was also envisaged that the Shoreline Change Atlas of Indian Coast will be updated at regular intervals of five years and for undertaking the first updation based upon data of 2012-13. SAC has informed that the atlas is being updated on time frame of 2016-17 and is expected to be completed in this financial year. Works for States such as Gujarat etc. has been already completed. The States/UTs have been requested to provide the locations of the coastal protection works carried out for the depiction in the Atlas. Till date, the State Govt. of Gujarat has provided the information which has been provided to SAC for incorporation in the Atlas.

Representative of SAC is requested to apprise the latest status of the updation of Atlas to the Members of CPDAC. Sample Maps under preparation may be shown to Committee members for improvement, if any. All the maritime States/UTs (except Gujarat) are requested to provide the location of coastal protection works as per the format given in Annexure - V.

In addition, CPDAC secretariat has been informed that Shoreline Change Assessment at 1:25000 scale has been done by Integrated Coastal Marine Area Management, Project Directorate (ICMAM-PD) under Ministry of Earth Sciences (MoES). They are also requested to provide the outcome of the exercise and sharing of the information with concerned agencies in maritime States/UTs. Methodology for assessing the Shoreline Change, input satellite data may also be elaborated.

In addition to above, the preparation of shoreline change maps using aerial photography/satellite imageries on 1:10000 scale has also been taken up for the entire coast of the country by National Centre for Sustainable Coastal Management (NCSCM), Chennai. They are requested to kindly provide the information about the outcome of the exercise and procedure to share the information with maritime States/UTs for their utilization.

Three agencies viz. SAC, ICMAM-PD and NCSCM may share their work done and the views/ comments of SAC may be obtained thereupon. Further, CPDAC may discuss ways to utilize the available information with various agencies and suggest ways so that there is no duplication of the effort and at the same time user agencies are informed about the latest information without any hindrance. Option of sharing of input satellite data for Shoreline Change Assessment can also be elaborated.

15.3 DATA COLLECTION, COMPILATION, ANALYSIS AND PUBLICATION

15.3.1. REPORT OF THE SUB-COMMITTEE OF CPDAC ON COASTAL DATA COLLECTION, COMPILATION AND PUBLICATION

Based on the decision taken in 13th CPDAC meeting and nominations received from member organizations, the **Sub-committee of CPDAC on Coastal**

Data Collection, Compilation and Publication was constituted vide this Office Memo. No. 4/5/2013-CED/53-73 dated 15th January, 2013. The first meeting of the sub-committee was held on 7th October, 2013 at New Delhi. The summary records of discussion of the meeting were accepted by CPDAC in its 14th meeting. Based on the inputs/material available/received from the members, a Draft Report of the Sub-Committee has been prepared by the Sub-Committee Secretariat as per the complete ToR. The Draft Report of sub-committee was shared with sub-committee members along with other institutes such as Survey of India, GSI and IMD for suggestions/improvement and is also available at <http://cwc.gov.in/CPDAC-Website/index.html> (under What's New link).

Draft Report of the sub-committee after incorporations of the suggestions may be considered and accepted by CPDAC.

15.3.2 It is also noted that State Specific Coastal Management Information System (CMIS) is being developed in States of **Maharashtra** and **Karnataka** under ADB Assistance programme. CMIS has been developed and hosted on website in both the States. These can be accessed through following URLs.

- <https://mahammb.maharashtra.gov.in/1155/Geographic-Information-System-Portal>
- <http://scpmipk.org/coastal-management-information-system-cmis/>

The representative of both states may share the details of the CMIS and the present status of implementation in their States.

15.3.3 Representative of Gujarat has intimated the CPDAC secretariat that Government of Gujarat has constituted a Task Force for coastal erosion works. **Further updates on the same may be provided by the representative of State Govt. of Gujarat.**

15.3.4. National Water Mission (NWM)

MoWR, RD & GR has launched National Water Mission as one of the eight National Missions, which forms the core of the National Action plan for Climate Change (NAPCC), launched by the Hon'ble Prime Minister. Under NWM, States/UTs are to develop State Specific Action Plans for Water Sector aligned with the State Action Plan on Climate Change formulated by the States under NAPCC. These State Action Plans needs to focus in the **coastal areas** as well.

The concerned representatives from maritime States/UTs may apprise about the status of development of the State Specific Action Plans for Water Sector in reference to the problems/remedies associated with the coastal areas as well as nodal officer in maritime states/UTs for this specific task. Under NWM, collection of data related to Coastal and estuarine water, salinity and tidal water levels and changing discharges in both directions in estuarine areas, establishment/strengthening of ground water monitoring network for coastal aquifers have been suggested. Maritime States/UTs may inform the committee about the action taken in this regard.

15.3.5 Coastal Management Information System at Central Level

Considering the importance of collection of data on coastal processes relevant for evolving plans towards coastal protection measures, a new component in the XII Plan for creation of "Coastal Management Information System (CMIS)" has been

approved by MoWR, RD & GR, GoI under the Plan Scheme “Development of Water Resources Information System (DWRIS)”. CMIS is to be implemented by Central Water Commission (CWC).

The preferred implementation model for CMIS was decided to be through signing of a tripartite Memorandum of Understanding (MoU) wherein, CWC would be the ‘Project Implementer’, the expert agency would be the ‘Project Executor’ and the concerned State/ UT Government would be the ‘Project Facilitator’.

MoWR, RD& GR has approved signing of tripartite MoU for implementation of CMIS among CWC with IITMadras, Chennai and State Govts. of Tamil Nadu, Kerala and UT of Puducherry and the same is under implementation. Other expert institutions viz. NIO, Goa, CW&PRS, Pune, etc. have also been approached. A proposal from NIO, Goa is under examination.

Other maritime States/UTs are requested to collaborate in this regard. They may suggest suitable institutes which can play the role of Project Executor in their State/UT for development of CMIS. States/UTs are also requested to provide the prioritized list of vulnerable sites with brief history of coastal erosion problem at the site for this purpose.

15.3.6 OPTIMIZATION OF RIVER DATA COLLECTION NETWORK IN COASTAL AREAS

CWC as well as the maritime States/UTs have network of data collection for the Riverine Data. **Committee Members are requested to suggest ways so that existing network can be fine-tuned and optimized for data collection in coastal areas so that the data can be used for addressing the coastal management issues such as Coastal Erosion, Flooding, Salinity ingress, river mouth/tidal inlet closing, and estuarine pollution, etc.**

15.4 STUDIES AND RESEARCH

15.4.1 Progress made in matter related to **four** research proposals by Tamil Nadu to Indian National Committee on Hydraulics (INCH) Secretariat (now INCSW) may be informed by INCSW Secretariat. Also, the status of funding of research proposal titled “Field Investigation for shoreline erosion and management along the coastal stretch between Bheemunipatnam and Appikonda, AP coast” by AU College of Engineering, Visakhapatnam may be informed to the CPDAC.

15.4.2 INCSW Secretariat may also inform about the R&D scheme of the MoWR, RD & GR and procedure for submission of the research proposal seeking central assistance/Grant.

15.4.3 Under Climate Resilient Coastal Protection and Management Project (CRCPMP), three research studies have been conducted by the Indian Institutes.

Specialist Institute	Study Performed
Indian Institute of Technology Bombay (IITB), Mumbai	Analysis of the downscaled Climate Change Parameters for Wind, Air Temperature and Rainfall from the CORDEX-South Asia Domain.
National Institute of	Sea level rise trends and Waves projections

Oceanography (NIO), Goa	
Indian Institute of Technology (IIT), Delhi	Storm Surge Projections

Representative of above institutes/ CRCPMP Consultant Team is requested to inform Committee about the outcome of above studies.

15.4.4 Other institutes/Members of committee may inform the committee about any significant research/study conducted by them.

15.5 TRAINING, WORKSHOPS AND SEMINARS

15.5.1 Under CRCPMP, a Climate Change Adaption Guideline for Coastal Protection and Management in India is being prepared. Three training courses in the use of the Guidelines for the maritime States/UTs and other concerned agencies were organized.

28-29th July, 2016	Training of Trainer (ToT) Programme
20-22nd Feb, 2016	Training programme for West Coast states/UTs
25-27 th April 2017	Training programme for East Coast states/UTs

15.5.2 Following events were intimated to CPDAC secretariat by organizers which were circulated to CPDAC Members for participation.

- Indo-Japan Workshop on River Mouths, Tidal Flats and Lagoons held at IIT Madras during 15-16th September, 2014
- Brainstorming Workshop for Implementation of Coastal Management Information System (CMIS) held at CWC, New Delhi on 13th May, 2014

15.5.3 Based on the decision taken in 14th CPDAC meeting various institutes were approached to share their Annual Training Programmes. One of the institutes, National Institute of Hydrography (NIH), Goa has intimated that institute does not conduct any training related to coastal protection and development.

Other institutes such as CW&PRS, NIOT, ICMAM, IIT Chennai, NHO, INCOIS, NIO, Goa etc. may inform the members about specialized training programme being organized by them for utilization in future. The training modules developed may be shared with CPDAC secretariat for its uploading on CPDAC-website. States/UTs may discuss and indicate for any other specialized/customized training programme from these institutes, if any required.

CRCPMP team may also indicate any further future training programme/ workshop under the project. It is also requested to highlight any proposal related to study tour (domestic/ foreign) for visiting innovative projects/ best practices related to coastal protection works.

15.6 COASTAL MANUAL/GUIDELINES

15.6.1 A manual on “Protection and Control of Coastal Erosion in India” was published by National Institute of Oceanography (NIO), Goa in 1980. The work of updating of this manual has been entrusted to NIO, Goa in 2004-05 at the behest of CPDAC. The completion of work is still pending for last many years. In June 2017, NIO Goa has provided the Draft and informed that the performance reviews of the existing coastal protection measures are to be incorporated as part of update. In this regard, the performance review carried out by the sub-committee of CPDAC has been made available for incorporating in the guideline.

Representative of NIO, Goa may provide the draft of the updated work to committee. Salient features may also be informed to the Committee.

15.6.2 A Technical Assistance (TA) programme has been signed by Government of India for TA 8652-IND: Climate Resilient Coastal Protection and Management Project (CRCP&MP) to support mainstreaming of climate change consideration into coastal protection and management at the national level and in the two focal states (of Karnataka and Maharashtra) where the Sustainable Coastal Protection and Management Investment Programme (SCP&MIP) is already operational under external assistance from Asian Development Bank(ADB). The implementation of this TA is financed by a grant amounting to two million USD (\$) from Global Environment Facility (GEF) & administered by ADB. One of the major objectives of this TA is to analyze the climate change impacts into coastal areas and based on the same planning & design criteria and guidelines for coastal climate change adaptation are to be prepared.

CRCPMP Project consultant team may inform the committee about the Climate Change Adaption Guideline for Coastal Protection and Management in India.

15.7 REVIEW OF THE EXISTING WORKS

15.7.1. The Sixth meeting of the CPDAC- Sub-Committee on performance evaluation of coastal protection works was held on 18th June 2015 at Surat. The performance evaluation of coastal protection works in South Gujarat Districts of Surat, Navsari and Valsad were taken up. The field inspection of the coastal areas of these districts was carried out on 18th (AN) and 19th June 2015.

During the visit, the sub-committee noticed following three types of anti-sea erosion measures:-

- Rubble Mound Sea (RMS) wall,
- Retaining wall with stone filled Poly Propylene Rope Gabions as toe
- Stone-filled P.P Rope Gabions

Out of above, first two types of works were found to be satisfactory in terms of performance. However, the anti-sea erosion measures using stone-filled P.P. Rope Gabions alone, executed at Onjal Machhivad and Nani-Danti-MotiDanti were found to have got damaged due to various reasons. Pilferage and cutting of ropes by local people has led to dislodging of the stones and consequent collapse. Further, the overtopping of the gabions during high wave conditions has inflicted major damages.

Sub-committee suggested that, for future projects experiencing similar coastal environment, the design solution of using stone-filled P.P. rope Gabions as anti-sea erosion measure has to be critically reviewed in view of the experience in South Gujarat.

The Report of the Sub-committee is placed at CPDAC-website. Director (Beach Erosion), CWC, Kochi and Member Secretary of the sub-committee may present the details for consideration of the Committee.

15.7.2 Two projects namely Ullal Coastal Erosion & Inlet Improvement Project in Karnataka and Mirya Bay Coastal Erosion and Protection Project in Maharashtra were taken up under ADB aided Sustainable Coastal Protection and Management Investment Programme- Tranche 1. Construction of one Offshore Reef and Beach Nourishment have been taken up in Mirya Bay whereas in Ullal, construction of two offshore reefs and nearshore structures have been taken up under these projects.

Representatives from State of Karnataka and Maharashtra associated with SCPMIP may provide the latest status of implementation of respective projects as well as performance of executed works to CPDAC and share their experiences.

15.7.3 Under World Bank aided Integrated Coastal Zone Management Project (ICZMP) in State of Odisha, coastal protection works using geo-tubes have been taken up at **Pentha**.

Representative of the Odisha may inform the committee about the salient features of the project as well with regard to its performance.

15.8 MASTER PLAN FOR COASTAL PROTECTION

15.8.1 It is noted that under ADB Assistance programme, preparation of **Shoreline Management Plan** was contemplated in States of Maharashtra and Karnataka. A draft SMP for district of Sindhudurg was prepared in the State of Maharashtra. For preparation of SMP for other districts, Maharashtra Maritime Board was contemplating for hiring suitable consultants.

In the State of Karnataka separate Shoreline Management Plans have been prepared for all the three coastal districts of the State as well as the State.

SMP for	Status
Dakshina Kannada	Approved
Udupi	Approved
Uttara Kannada	Draft
Karnataka	Draft

The representatives of these States may share the content/methodology for the preparation of such plan along with the latest status on the progress of preparation.

In 2005, IIT Madras had prepared a Report titled '**Protection Measures for Tamil Nadu Coast**'. Though it has been emphasized in the Report that the contents of this report should serve only as a guideline for the preliminary planning and budgeting. Similarly during year 2007, IIT Madras has prepared a report titled "**Planning of Coastal Protection Measures along Kerala Coast**". The State Govt. of Kerala has provided the copy of the same however indicating that to be draft. The Both Reports are being hosted on CPDAC website.

Status of Master Plan/Shoreline Management Plan preparation by other State/UT may be discussed during the meeting. States/UTs who have such master plan may share and discuss it during the meeting for the benefit of other States/UTs.

15.9 CENTRAL ASSISTANCE FOR COASTAL PROTECTION WORKS

During XII Plan, two schemes of Ministry of Water Resources, River Development and Ganga Rejuvenation were in operation for providing Central Assistance for undertaking Flood Management works including Anti-Sea Erosion works.

Scheme Name	Type of scheme	Applicable for
Flood Management Programme	State Sector Scheme	Maritime States
River Management activities and Works Related to Border Areas and Union Territories (RMBA)	Centrally Sponsored Scheme	Maritime UTs

States/UTs were requested to seek central funding for undertaking coastal protection works, however, except Kerala, none of the States/UTs submitted the proposal under above schemes. Above schemes are under reformulation under a consolidated scheme namely National Flood Management Programme (NFMP) for period 2017-20.

States/UTs may prioritize the area requiring protection from Sea Erosion and may submit schemes for central assistance under reformulated scheme, once it is approved. It is suggested that mandatory clearances including Coastal Regulation Zone (CRZ) clearance etc. may be taken in advance for the approval of coastal protection projects.

15.10 ANTI SEA EROSION MEASURES IN LAKSHADWEEP

The expert team of CPDAC under leader-ship of Chief Engineer (Flood Management), CWC visited the Lakshadweep during 16-20th April, 2013 and sent its report including recommendations to concerned authorities in Lakshadweep Administration in May, 2013 for needful action. The set of recommendations included review of design criteria for coastal protection works by CW&PRS, Pune. In this regard, UT of Lakshadweep has requested CW&PRS, Pune to review the design of

the present method of anti-sea erosion works and deposited an amount of Rs. 18 lakh. CW&PRS had conducted field visits for this purpose.

Representative of Lakshadweep and CW&PRS may apprise the committee in respect of Action Taken on recommendations of Expert Team in its report.

15.11 ANNUAL REPORT OF CPDAC

During 2016, CPDAC Secretariat brought out a publication titled 'Status Report of Coastal Protection and Development in India'. This was circulated to all the CPDAC Members/Invitees as well as is hosted on <http://cwc.gov.in/CPDAC-Website/index.html> (under Publication link).

Going forward it is proposed that CPDAC would bring an Annual Report which will have details of activity carried out by the Member organizations in line to assigned function of the Committee. Since, the coastal sector is a multi-disciplinary sector involving various stakeholder agencies, such a compilation would be unique as well valuable for bringing diverse set of information under one document in regular and time bound manner. Broad framework for the content of the Annual Report is given in **Annexure-VI. Committee may consider the above proposal for bringing out the Annual Report and finalize the Broad framework for the content of the Annual Report.**

15.12 PRESENCE ON SOCIAL MEDIA

CPDAC Secretariat would try to have presence on the Social Media via sites as FaceBook, Twitter, etc. Members may collaborate and share pertinent information through these platforms as well. Information about upcoming Seminar, Conference, and Training Programmes, etc. may be shared on such platforms as early as possible for wider circulation and increased participation.

The above may be considered by Committee and Members/Invitee Organizations having accounts on Social Media may link to proposed Social Media accounts of CPDAC.

15.13 REVIEW OF COMPOSITION AND FUNCTIONS OF CPDAC

Based on the recommendations of 14th CPDAC meeting and subsequent recommendations for selection of non-official members by Chairman (CPDAC), proposal for re-constitution of CPDAC was sent to Flood Management Wing of Ministry of Water Resources, River Development and Ganga Rejuvenation. Recommended list of non-official members are as under.

1. Dr. Vallam Sundar, IIT, Madras, Chennai
2. Dr. J. S. Mani, Professor (Retd.), IIT Madras, Chennai.
3. Dr. G. S. Dwarkish, Professor, Department of Applied Mechanics & Hydraulics, National Institute of Technology Surathkal, (P.O.), Srinivasnagar, Karnataka.

NITI Ayog (erstwhile Planning Commission) has requested to change the nomenclature of its representing Member as Adviser (Natural Resources and Environment), NITI Ayog instead of Adviser (Water Resources), Planning Commission. During 14th CPDAC meeting, various changes were suggested in the

composition of the committee. In line to above proposal for reconstitution of CPDAC was sent to MoWR, RD & GR.

Commissioner (FM), MoWR, RD and GR may inform the committee about the re-constitution of CPDAC and issue of letter to selected non-official members of CPDAC. It is noted that after reorganization of AP & Telangana, Water Resources Department of AP has been reorganized/ relocated which may require amendments in the composition of CPDAC. Other Members may intimate the change in name of designation/department so that same may also be included in the revised composition.

It may be noted that CPDAC was constituted in 1995 (copy of the resolution can be accessed at <http://cwc.gov.in/CPDAC-Website/index.html>) and many of its functions may need review in the changed scenario. Members may like to review and suggest changes, if any.

15.14 VENUE OF THE NEXT MEETING OF CPDAC

As per GoI resolution regarding constitution of CPDAC, its meeting needs to be organized twice (at least) in a year. The same could not have been achieved in the past due to various reasons including delays in seeking consent from maritime States/UTs for hosting of the meetings.

Now, it is proposed to conduct one of the meetings of CPDAC in a year at CWC, New Delhi, whereas the 2nd meeting may be organized on rotational basis in each maritime State/UTs. Members may decide the venue of the 16th CPDAC meeting (2nd meeting in the year 2017-18) after consultation/ agreement with maritime States/ UTs, sometime during last week of February, 2018.

Above proposals may be considered by the committee.

15.15 ANY OTHER ITEM WITH THE PERMISSION OF CHAIR

Annexure-I
(to para 15.2.1)

**Office of the Engineer-in-Chief,
Water Resources, Odisha, Bhubaneswar.**

No.FF&FRM-19/2015-
From

27940

/Dated, 04.08.16

To

Er. Janakiballav Mohapatra,
Engineer-in-Chief, Water Resources,
Odisha, Secha Sadan, Bhubaneswar.

The Director,
Coastal Erosion Directorate,
Central Water Commission,
Room No. 906 (S), Sewa Bhawan,
R.K.Puram, New Delhi-110606.

Sub:- Finalisation of Coastline of Odisha.

Ref:- Letter No.HO/H/1501/12 Dtd. 17th June 2016 of Director of Hydrography (Operations) for Chief Hydrographer to the Govt. of India.

Sir,

With reference to the captioned subject, it is to intimate that Odisha hereby conveys its acceptance to the coastline length of Odisha to be 667.12 KM as computed by the National Hydrographic Office.

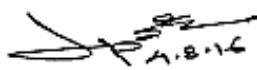
Yours faithfully,


Engineer-in-Chief, W.R.

Memo No.

/Dated,


Copy forwarded to the Director of Hydrography (Operations) for Chief Hydrographer to the Govt. of India, National Hydrographic Office, Post Box No.75. 107-A, Rajpur Road Dehradun-248001 for information with reference to his letter No. HO/H/1501/12 Dtd. 17th June 2016.


Engineer-in-Chief, W.R.

Memo No.

/Dated,

Copy submitted to the Principal Secretary to Government of Odisha, Department of Water Resources, Rajiv Bhawan, Bhubaneswar for favour of kind information.


Engineer-in-Chief, W.R.

Annexure-II
(to para 15.2.1)

Coastline Length and Methodology

<u>Sl. No.</u>	<u>STATES & UT</u>	<u>COASTLINE (Km)</u> <u>(Ungeneralised)</u>
1.	GUJRAT	2,125.82
2.	MAHARASTRA	896.98
3.	KARNATAKA	309.59
4.	KERALA	597.43
5.	TAMIL NADU	1,064.98
6.	ANDHRA PRADESH	1,272.55
7.	ODISHA	667.12
8.	WEST BENGAL	662.90
9.	GOA	181.48
10.	DAMAN & DIU	63.10
11.	PONDICHERRY, KARAIKAL, YANAM & MAHE	42.11
12.	A&N ISLANDS	3,078.52
13.	LAKSHADEWEEP & MINICOY ISLANDS	121.92
TOTAL (Km)		11,084.50

METHODOLOGY ADOPTED FOR COMPUTATION OF THE COASTLINE LENGTH

- The Sources of data are viz., Electronic Navigation Charts (ENC's), Large Scale Navigation Charts and digital hydrographic surveys of National Hydrographic Office (NHO).
- The data was compiled using state-of-the-art GIS software projected in geodetic coordinates in WGS 84 datum.
- Whilst evaluating the length of coastline, the mouths of creeks have been closed along the general direction of the coast.
- Mangroves on the fringes of the coasts and Islands have been considered for computation.
- The coastline computed is not generalized i.e. the actual shape on ground of the coastline has been considered for computation.
- State boundaries were extracted from available information at NHO.
- The high water line was accepted as coastline.
- The base year for computation is 2011.

Annexure - III

Coastline length of islands of Lakshadweep

Sl. No.	NAME OF ISLAND	COASTLINE LENGTH(Km)
1	AGATTI	16.21864
2	AMINI	6.862255
3	ANDROTH	10.673781
4	BINGARAM	4.080968
5	BITRA	1.566219
6	CHENYAKARA	2.590885
7	CHERIYAM	6.849524
8	CHETLAT	5.860045
9	KADMAT	18.72813
10	KALPENI	12.137045
11	KALPENI 1	0.293673
12	KALPENI 2	0.408156
13	KALPENI 3	0.752918
14	KALPENI 4	0.450196
15	KALPITTI	1.680422
16	KAVARATTI	11.748644
17	KILTAN	7.863827
18	PARALI	0.906384
19	PARALI 1	0.429031
20	PITTI	2.39659
21	PITTI ISLAND	1.833907
22	TINNAKARA	4.066495
23	TINNAKARA 1	0.805907
24	VELIYAKARA	2.714102
	TOTAL COASTLINE LENGTH(Km)	121.917744
	Rounded Off (Km)	121.92

Annexure - IV

Status of Coastal Erosion/ Accretion as per Shoreline Change Atlas of the Indian Coast prepared by SAC and CWC using satellite data of 1989-91 and 2004-06 time frames

State / UT*	Erosion Length^ (km)	Accretion Length^ (km)	Stable Length^ (km)	Total Length^ (km)
Gujarat, Daman & Diu*	486.43	297.99	697.71	1482.13
Maharashtra	449.5	244.47	48.29	742.26
Goa	27.03	46.98	81.38	155.39
Karnataka	106.12	118.65	73.31	298.08
Kerala	218	294	73.6	585.6
Tamil Nadu & Puducherry*	281.56	514.11	29.25	824.92
Andhra Pradesh	443.88	186.94	340.45	971.27
Odisha	199	205	32.1	436.1
West Bengal	115.06	19.46	147.68	282.2
Lakshadweep Islands*	72.03	63.24	1.01	136.28
Andaman Islands*	740.37	944.84	36.83	1722.04
Nicobar Islands*	690.1	68.3	19.23	777.63
Total	3829.1	3004	1580.8	8413.9
%	45.51%	35.70%	18.79%	
^Length does not include river mouth, creeks etc.				

State/ UT*	Area Under Accretion (Sq km)	Area Under Erosion (Sq km)	Net gain/ loss (Sq km)
Gujarat, Daman & Diu *	43.45	27.28	16.17
Maharashtra	5.08	7.83	-2.75
Goa	1.53	0.771	0.759
Karnataka	6.26	5.16	1.1
Kerala	9.54	5.31	4.23
Tamil Nadu & Puducherry *	42.64	17.19	25.45
Andhra Pradesh	25.14	46.89	-21.75
Odisha	13.3	13.8	-0.5
West Bengal	1.52	11.63	-10.11
Lakshadweep Islands*	0.83	1.7	-0.87
Andaman Islands*	27.09	17.93	9.16
Nicobar Islands*	0.77	94.72	-93.95
Total	177.15	250.211	-73.061

Annexure - V

Format for providing details of coastal protection works

Sr. No.	Name of work	Village	Taluk	District	Length in Meter	Year of construction	Type of Work ¹	Starting Point of Work		End point of Works	
								Latitude ²	Latitude ²	Latitude ²	Latitude ²
1											
2											

1- Seawall/groyne/bund/jetty/ Saline Embankment/Breakwater, etc.

2- Longitude and Latitude may be provide upto **two decimal accuracy** for second e.g. 93° 50' 28.57"E , 6° 46' 19.28" N

Annexure-VI

Broad Framework for Annual Report of CPDAC

1-History, function and composition of CPDAC

2-Details with respect to activities carried out by Members/Invitees from **Central Govt.**

- Organogram of Member's organization dealing with coastal protection and development
- Research activity carried out wrt functions of CPDAC and information related Open Access research papers
- Workshop, Training/Seminars organized
- Infrastructure available like Numerical Modelling, Physical modelling , availability of Instrument for coastal data collection
- Design of coastal protection and development works
- Activities with respect to coastal data collection and Its Inventory
- Significant coastal events having recurpussion on coastal erosion and protection
- Any other relevant information

3-Details with respect to activities carried out by Members/Invitees from **States/UTs.**

- Organogram of Member's organization dealing with coastal protection and development
- Extent of coastal erosion problem in the State/UT, district-wise
- Erosion hotsopts/vulnerable sites
- Coastal Protection work carried out
- Physical and Financial Progress for coastal protection works
- List of Proposed Protection Works in the vulnerable areas & tentative source/requirement of funding for Coastal Protection Works
- Research activity carried out wrt functions of CPDAC
- Workshop, Training/Seminars organized
- Availability/Update of Schedule of Rates applicable for coastal protection works
- Damages due to coastal erosion
- Status of development of Shoreline Management Plan/Master Plan for coastal protection
- List of sites for coastal data collection
- Coastal Data Inventory
- Infrastructure available like Numerical Modelling, Physical modelling , availability of Instrument for coastal data collection