

No. 4/5/2014-CED/160-91
भारत सरकार/Government of India
केन्द्रीय जल आयोग/Central Water Commission
तटीय अपरदन निदेशालय/Coastal Erosion Directorate

कक्ष संख्या 906 (द०), सेवा भवन,
राम कृष्ण पुरम, नई दिल्ली 110606
Room No.906 (S), Sewa Bhawan,
R.K. Puram, New Delhi-110606
दिनांक/dated 13th March, 2014

To
(as per list attached)

Subject: 14th meeting of Coastal Protection and Development Advisory Committee (CPDAC) –Forwarding of Minutes- reg.

Sir,

Please find enclosed a copy of the minutes of 14th meeting of Coastal Protection and Development Advisory Committee (CPDAC) held in Goa, during 27-28th February, 2014. Your comments, if any, may kindly be communicated at the earliest.

It is also requested to take follow-up action on the items concerning your State/Department and send a report in this regard to this office.

Encl: As above

Yours faithfully

राजेश यादव
13/03/2014
(राजेश यादव)

(Rajesh Yadav)

निदेशक/Director

टेलीफोन/Tel. 011-26195513

फैक्स/ Fax 011-26175862

Copy to:

PPS to Member (RM), CWC & Chairman, CPDAC, Sewa Bhawan, R.K. Puram, New Delhi

सं. 4/5/2014-सीईडी/160-91

भारत सरकार
केन्द्रीय जल आयोग
तटीय अपरदन निदेशालय

कक्ष संख्या 906 (द०), सेवा भवन,
राम कृष्ण पुरम, नई दिल्ली 110606
दिनांक 13 मार्च, 2014

सेवा में,
(संलग्न सूची के अनुसार)

विषय : तटीय संरक्षण एवं विकास सलाहकार समिति की 14वीं बैठक का कार्यवृत्त

महोदय,

तटीय संरक्षण एवं विकास सलाहकार समिति की 14 वीं बैठक जो कि 27-28 फरवरी, 2014 के दौरान गोवा में आयोजित की गयी थी, का कार्यवृत्त पत्र के साथ संलग्न किया जा रहा है। कृपया कार्यवृत्त पर आपके टिप्पणी को शीघ्र भेजा जाए।

आपसे यह भी अनुरोध है कि अपने राज्य/ विभाग से संबंधित मद पर अनुवर्ती कार्यवाही की जाए और उस संबंध में इस कार्यालय में रिपोर्ट किया जाए।

संलग्नक : उपरोक्त

भवदीय

राजेश यादव
13/3/2014
(राजेश यादव)
निदेशक

टेलीफोन- 011-26195513

प्रतिलिपि:

सदस्य (नदी प्रबंध), केन्द्रीय जल आयोग एवं अध्यक्ष (तटीय संरक्षण एवं विकास सलाहकार समिति) के
प्रधान निजी सचिव

List of addressee for minutes of 14th CPDAC Meeting

- | | |
|---|---|
| 1 Commissioner (Ganga),
Ministry of Water Resources,
8 th Floor, Block -11
CGO Complex, Lodhi Road,
New Delhi-111003. | 2 Joint Secretary/ Advisor
(Impact Assessment)
Ministry of Environment & Forests,
Room No. 418, Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi-111003. |
| 3 Engineer-in-Chief (Irrigation)
Irrigation & CAD Department,
Errum Manzil,
Hyderabad - 500 082 (AP) | 4 Advisor (WR),
Planning Commission,
Yojna Bhawan, Sansad Marg,
New Delhi-111001. |
| 5 Development Advisor (Ports),
537, Transport Bhawan,
Ministry of Shipping,
1, Parliament Street,
New Delhi- 111001. | 6 Chief Engineer,
Water Resources Organisation
PWD., Govt. of Tamil Nadu
Madurai region,
Thallakulam, Madurai-625 002. |
| 7 Chief Engineer
C&SRO, Central Water Commission,
Sangamam,
Gandhimaanagar, Peelamedu P.O.,
Coimbatore – 641 004 | 8 Chief Engineer (WR),
2 nd Floor, Junta House,
Annexe, Panaji- 403001.
(Goa). |
| 9 Director,
National Institute of Oceanography,
Dauna-Paula,
Goa- 403001. | 10 Secretary,
Narmada, Water Resources &
Water Supply Department,
Govt. of Gujarat,
Block No. 9, Sardar Bhawan,
Sachivalaya, Gandhinagar- 382011. |
| 11 Chief Engineer,
Irrigation&Admn.,
Govt. of Kerala,
Thiruvananthapuram- 695033 | 12 Director,
Central Water & Power Research
Station (CWPRS),
P.O. Khadakwasla, Pune - 411124. |
| 13 Chief Executive Officer, (Commissioner,
Water Transport)
Maharashtra Maritime Board,
Indian Mercantile Chamber (3 rd Floor)
Ramajibhai Kamani Marg,
Ballard Estate, Mumbai - 400 001. | 14 Engineer-in-Chief (Water Resources),
Secha Sadan, Govt. of Odisha,
Bhubaneswar - 751101.
(Odisha) |
| 15 Chief Engineer (FM) ,
Central Water Commission,
901(S), Sewa Bhawan,
R.K. Puram, New Delhi-66. | 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 |
| 17 Secretary,
Irrigation & Waterways Deptt.,
Govt. of West Bengal,
Jalsampad Bhawan, Salt Lake,
Kolkata- 700091. | 18 Dr. A.S. Rajawat
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</p> | <p>20 Chief Engineer, APWD,
Andaman & Nicobar Administration,
Port Blair-744111</p> |
| <p>21 Superintending Engineer,
Lakshadweep, PWD,
Kavaratti, Lakshadweep-682555</p> | <p>22 Chief Engineer, PWD,
34, Lal Bahadur Shastri Street,
Pondicherry-605001</p> |
| <p>23 Member (Planning),
Ganga Flood Control Commission,
Sinchai Bhawan 3rd Floor,
Patna – 800015.</p> | <p>24 Director (Ports & I.W.T.),
Baithkol, Uttara Kannada,
Karwar – 581302
Karnataka.</p> |
| <p>25 Chief Engineer,
PWD, Daman
Union Territory of Daman & Diu
Opp. Secretariat, Fort Area, Moti Daman,
DAMAN-396 220</p> | |

Permanent /Special Invitees:

- | | |
|--|--|
| <p>26 Economic Adviser
Ministry of Water Resources
Room No. 7, B Wing
Shashtri Bhawan
New Delhi – 110001</p> | <p>27 Director,
National Institute of Ocean Technology
(NIOT)
Velachery-Tambaram Main Road,
Pallikaranai,
Chennai – 600100</p> |
| <p>28 Director,
Centre for Earth Science Studies,
Akkulam,
Thiruvananthapuram - 695 031
(Kerala)</p> | <p>29 Project Director & Sci G
ICMAM Project Directorate
NIOT Campus,
Velachery-Tambaram Main Road,
Pallikaranai,
Chennai – 600100</p> |
| <p>30 Director,
Beach Erosion Directorate, CWC
"Jaladhara", 27/1927-A,
Kasturba Nagar, Kochu-Kadavanthra,
P.O.Kadavanthra, Kochi - 682 020.</p> | <p>31 Director,
Indian National Centre for Ocean
Information Services(INCOIS),
"Ocean Valley" Pragathi Nagar (BO),
Nizampet (SO) ,Hyderabad - 500 090</p> |

MINUTES OF 14TH MEETING
OF
COASTAL PROTECTION & DEVELOPMENT ADVISORY COMMITTEE (CPDAC)

The 14th meeting of the Coastal Protection & Development Advisory Committee (CPDAC) was held at Goa during 27-28th February, 2014 under the Chairmanship of Shri K.N. Keshri, Member (River Management), Central Water Commission & ex-officio Additional Secretary to the Government of India. List of participants of the meeting is enclosed at **Annexure-I.**

After presentation of bouquets and lighting of the lamp, Sh. C. P. Singh, Chief Engineer, Flood Management Organization, CWC & Member-Secretary to the Committee in his introductory remarks gave the background of the CPDAC (erstwhile Beach Erosion Board), functions of CPDAC and details of initiatives taken under aegis of CPDAC such as Shoreline Change Atlas of the Indian coast and finalization of coastline length of maritime states/UTs etc. He further requested the members to keenly follow the activities such as preparation of Shoreline Management Plan & Development of Coastal Management Information System under the ADB assisted programme being planned in the State of Maharashtra and Karnataka.

Subsequently, Sh. K. N. Keshri, Member (River Management), CWC & Chairman, CPDAC in his presidential address welcomed all the participants and gave the background information in respect of CPDAC. While discussing the characteristics of the Indian Coastline, he highlighted the different setup at eastern coastline in comparison to western coastline and requirement of different approach for the problems associated with the Indian Islands in comparison to the Mainland. In background of extreme events such as last year's tropical cyclones namely PHAILIN etc., he emphasized for adaptive strategy and more emphasis on sustainable design of coastal infrastructures etc.

He urged the member States/UTs to take opportunity of fund availability from various sources such as Govt. of India schemes, Finance Commission Grants and external assistance to develop suitable proposal in association with central/expert agencies such as CW&PRS, NIOT, ICMAM, NIO etc. for addressing the problem of sea erosion in critically affected areas and utilize CPDAC platform to share their difficulties. He requested Members to provide more impetus on Research and Development in this sector, active participation in the various conferences /workshop /training programme/study tour being organized by various institutes. He highlighted the importance of common platform such as CPDAC to share, discuss and co-ordinate the various activities occurring in Coastal Zone for best possible solutions of coastal protection.

Afterwards, Sh. S.T. Nadkarni, Chief Engineer (WR), Govt. of Goa, welcomed the participants and presented the details of sea erosion in Goa. He mentioned that the problem of sea erosion is serious considering very high density of population in coastal areas of the State. He said that the problem of sea erosion is evident from North to South Goa. He also highlighted the different type of protection measures adopted in consultation with CW&PRS, Pune such as Stepped Seawall, Rubble Mound Seawall,

Seawall with gabions, Tetrapods, Sand Nourishment, Concrete hollow blocks, laying of geotubes etc.

After the inaugural session, Sh. C.P Singh, Member-Secretary to the Committee requested Director, Coastal Erosion Directorate, CWC, New Delhi to take up the agenda items for discussion. Accordingly, point-wise agenda items were taken up and discussed as detailed hereunder.

14.1 CONFIRMATION OF THE MINUTES OF 13TH MEETING

Sh. Rajesh Yadav, Director (Coastal Erosion), CWC, New Delhi informed the committee that the minutes of 13th CPDAC meeting held at Mangalore (Karnataka) during 9-10th February, 2012 were circulated to all the members of CPDAC vide this office letter No. 4/5/2012-CED/164-98 dated 27th February, 2012. Following changes were suggested in the Minutes.

Para	Existing Text	May be read as
13.5.2	<i>The manual on Construction Technique of Coastal Protection works prepared by CWPRS was accepted by the Committee</i>	The Technical Memorandum on "Guidelines for Design and Construction Technique of Sea Wall" prepared by CW&PRS was accepted by the committee.
13.11	<i>Sh. Saleem Ali, Environmentalist and Ecologist from Coimbatore from Ministry of Environment & Forests</i>	Representative from Salim Ali Centre for Ornithology and Natural History, Coimbatore

Thereafter, the minutes of the 13th meeting were confirmed by the committee with above changes.

14.2 STATE WISE COASTAL LENGTHS AND COASTAL ATLAS

14.2.1 STATE WISE COASTAL LENGTH

Director (Coastal Erosion), CWC, New Delhi gave the background of 13th CPDAC meeting wherein representative from National Hydrographic Office (NHO), Dehradun presented the provisional coastline length of various maritime States/UTs of the Country and methodology adopted for the computation. He informed that member states were requested to provide feedback after their verification. The response from States of **Gujarat, Tamil Nadu, Kerala** and **UT of A&N Islands** as received was summarized as under.

States/UTs	Provisional Coastline Length in Km (NHO)	Remark on Coastline Length by the maritime States/UTs
Gujarat	2125.82	Accepted to consider the provisional coastline length
Tamil Nadu	1064.98	State Govt. of TN has informed that coastal length given by State Fisheries Department

		and Anna University is 1076 km and the same may be taken.
Kerala	597.43	State Govt. of Kerala has informed that as per their record the coastline length is 568.564 km.
A&N Island	3078.52	A&N Administration has informed that there is discrepancy of approximately 250 km in the provisional coastal length furnished by NHO (i.e. 3078.52 km) and the coastal length available with the A&N Administration.

In above background, Capt. Peush Pawsey, Director (Operations), NHO, Dehradun was again requested to appraise the members with the methodology adopted for computation of the coastline length. Capt. Peush Pawsey, Director (Operations), NHO, Dehradun made a detailed presentation of the methodology for arriving at the coastline length along with the coastline maps of individual States/UTs.

Sh. Jugal Kishore Tripathy, Executive Engineer, 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. Capt. Peush Pawsey, Director (Operations), NHO, Dehradun clarified that the assessment of NHO is done based on the actual coastline surveys at base year 2011 undertaken through latest survey techniques which accounts for smaller details, curvature, outcrops and indentation along the coastline.

The methodology and coastline length of all the maritime States/UTs as computed by NHO, Dehradun and submitted to CPDAC for further consideration by the committee is given at **Annexure-II**. Representative of CW&PRS, Pune and NIOT, Chennai opined that the coastline length may differ based on the difference in the methodology adopted for computation by various agencies. It was decided that the methodology needs to be same for assessment of coastline at country level.

After detailed discussion, the methodology and coastline length as computed by NHO was accepted by the committee with the suggestion that the length of Odisha may be discussed and sorted out by Govt. of Odisha and NHO latest by 15th of April, 2014.

(Action: NHO, Govt. of Odisha)

14.2.2 SHORELINE CHANGE ATLAS OF THE INDIAN COAST

Sh. Rajesh Yadav, Director (Coastal Erosion), CWC, New Delhi informed the committee that after 13th CPDAC meeting, information related to Status of Coastal Protection works from remaining States were made available to Space Application Centre (SAC), Ahmedabad for incorporation in the Atlas. He informed that Atlas has been prepared by SAC in six volumes as detailed below.

Volume 1 covering Gujarat, Daman & Diu,
Volume 2 covering Maharashtra & Goa,
Volume 3 covering Karnataka & Kerala,
Volume 4 covering Tamil Nadu, Puducherry & Andhra Pradesh,
Volume 5 covering Odisha & West Bengal
Volume 6 covering Lakshadweep & Andaman & Nicobar islands

Sh. Ratheesh Ramakrishnan, Sci./Engr. SD, SAC, Ahmedabad, representing SAC, Ahmedabad was requested to make a presentation in the meeting to appraise the latest status of the Atlas to the Members of CPDAC. Sh. Ratheesh Ramakrishnan gave presentation on the key features of the Shoreline Change Atlas of the Indian Coast including sample maps. He informed the committee that this digital atlas has been prepared by Space Application Centre in association with Central Water Commission in GIS environment on 1:25, 000 scale using satellite data of two time-frames i.e. 1989-91 and 2004-06. He further mentioned that the observations of CWC have been incorporated in the Atlas and the same is ready for publication.

After discussion, the committee accepted for the publication of Shoreline Change Atlas of the Indian Coast. Chairman, CPDAC suggested that the soft copy of Atlas may also be made available on the website of WRIS project which has been developed in association with ISRO.

Further, Committee also accepted the recommendation made by the Sub-committee of CPDAC on Coastal Data Collection, Compilation and Publication for updating of Shoreline Change Atlas of the Indian Coast at regular intervals of five years and also for undertaking first updation based upon data of 2012-13. Chairman, CPDAC requested all maritime states that details of Coastal protection works other than those which has been incorporated in the Atlas may be made available to SAC, Ahmedabad in the prescribed proforma used earlier under intimation to the CPDAC secretariat.

SAC, Ahmedabad to take further action in consultation with CPDAC Secretariat regarding publication & circulation of the Shoreline Change Atlas of the Indian Coast .

(Action: SAC, Ahmedabad, Maritime States/UTs, CPDAC Secretariat)

14.3 DATA COLLECTION, COMPILATION, ANALYSIS AND PUBLICATION

14.3.1. Sh. Rajesh Yadav, Director (Coastal Erosion), CWC, New Delhi informed the committee that 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 record of discussions of the meeting was circulated to all the Members of the CPDAC for consideration by CPDAC.

It was noted in the meeting of the sub-committee that no information/data was furnished by most of concerned maritime State/UTs with respect to ToR of sub-committee as decided in 13th meeting of CPDAC for preparation of the report.

The summary record of discussions of the above sub-committee meeting dated 07-10-2013 was accepted by the Committee.

Chairman, CPDAC requested all the maritime States/UTs to furnish the required information/data to CPDAC secretariat as per the ToR of the sub-committee decided in 13th CPDAC meeting by 15th April, 2014 so that sub-committee may complete its mandated task.

(Action: Maritime States/UTs, CPDAC Secretariat)

Director (Coastal Erosion), CWC, New Delhi requested the representative of CW&PRS, Pune to provide the present status of coastal data collected/compiled so far. Sh. M. D. Kudale, Joint Director, CW&PRS gave the details of data submitted by various State/UTs to CW&PRS and mentioned that this data is mainly on beach profile and site specific. He mentioned that this data is old and may not be useful in its current form. Sh. K. N. Keshri, Chairman, CPDAC mentioned that at this stage CPDAC is interested in maintaining the metadata of already collected data in the form of inventory rather than the full data. **He urged all the members including CW&PRS to prepare the inventory of data and submit to CPDAC secretariat at the earliest for publishing on website.**

(Action: All Maritime States/UTs, CW&PRS, other central agencies)

Sh. K. N. Keshri, Chairman, CPDAC requested Sh. J.C. Iyer, Chief Engineer (C&SRO), CWC to give details about the activities proposed under data collection programme to be implemented by CWC to the Members of CPDAC. Sh. J.C. Iyer, Chief Engineer (C&SRO), CWC gave background of data collection programme and requested the members/participants to share the details of coastal data collected and location of collection in respective States/UTs to CPDAC secretariat. He further requested the State/UTs to identify the potential site and assess the availability/requirement of resources in terms of man-power etc. for starting data collection programme and send the details to CWC as under.

- Details of already collected data
- Identification of potential site and their inter-se priority
- Assessment of resources for data collection
- Engagement of expert agencies and entering into tripartite arrangement along with CWC

Chairman, CPDAC stated that implementation of such data collection programme would also develop the capacity of States/UTs to undertake the work for data collection programme on their own in future and asked the maritime States/UTs to provide above information by **15th April, 2014.**

(Action: Maritime States/UTs., CPDAC Secretariat)

14.3.2 Sh. Rajesh Yadav, Director (Coastal Erosion), CWC, New Delhi informed the committee that State Specific Coastal Management Information System (CMIS) is being developed in States of **Maharashtra** and **Karnataka** under ADB Assistance programme. The representative of Karnataka was not available in the meeting to give detail of above programme.

Committee decided that the States of Karnataka and Maharashtra may provide the details of State Specific Coastal Management Information System (CMIS) to CPDAC Secretariat so that the same is circulated amongst concerned for their information.

(Action: Karnataka, Maharashtra, CPDAC Secretariat)

14.3.3 Director (Coastal Erosion), CWC, New Delhi informed the committee that Government of Gujarat has constituted a Task Force for coastal erosion works. Further updates on the same were requested from the representative of State Govt. of Gujarat. Sh. M.K. Jadav, Chief Engineer (S. G.), Govt. of Gujarat informed the committee that this Task Force is headed by Sh. M. Baba, Director (Retd.), CESS, Thiruvananthapuram, Kerala and as of now there are no further updates. Any subsequent development would be shared to CPDAC.

(Action: Gujarat)

14.4 RESEARCH DEVELOPMENT

14.4.1 RESEARCH PROPOSALS

Director (Coastal Erosion), CWC, New Delhi informed the committee that during the 13th CPDAC meeting, the matter of submission of **four** research proposals by Tamil Nadu to Indian National Committee on Hydraulics (INCH) Secretariat was discussed. He asked Govt. of Tamil Nadu to expedite its action on refund of unutilized central fund amounting to Rs. 5.58 lakh provided to the State for one of its R&D proposal in 2005. He further informed that INCH and few other such committees have now been subsumed under newly constituted **Indian National Committee on Surface Water (INCSW)** under the Chairman-ship of Chairman, CWC and Rehabilitation & Resettlement (R&R) Directorate, CWC, New Delhi as its secretariat. Further, Ministry of Water Resources has issued new guidelines for formulation and submission of research proposals under R&D programme of MoWR in October, 2013 and the same is available on Ministry's website.

The Member-Secretary of the Committee suggested that all the maritime States/Research Institutions may formulate research proposals, if any, as per new guidelines to seek funding for research proposals during 12th Plan. The already submitted proposals may also need to be revisited in line with MoWR guidelines on subject.

(Action: Tamil Nadu and other Maritime State/UTs)

14.4.2 INSTITUTIONAL STRENGTHENING

TRAINING AND STUDY TOURS

Director (Coastal Erosion), CWC, New Delhi informed that a training programme on “Coastal Erosion Protection & Integrated Coastal Zone Management” was organized at National Water Academy (NWA), Pune during 24-28th Sep, 2012. 22 participants from different Central/State agencies were trained under this programme. Further, during the years 2010-11 and 2011-12, 37 officers from Central/State agencies were trained under above programme.

Capt. Peush Pawsey, NHO informed that National Institute of Hydrography (NIH), Goa conducts courses for civilian participants and the details of such programme are available on the website of NIH/NHO.

Chairman, CPDAC requested all the expert agencies to share their training programme to CPDAC secretariat so that the same can be widely circulated amongst the Member organizations. He also requested all the agencies who impart training programme to come up with Annual Training Calendar and share the same with CPDAC secretariat.

(Action: CW&PRS, NIOT, ICMAM-PD, NIOT, NHO/NIH, IIT Madras)

14.5 COASTAL MANUALS

Director (Coastal Erosion), CWC, New Delhi informed the committee that 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. Representative of NIO, Goa was requested to inform the committee about the present status of updating of manual and the constraints, if any.

Sh. D. Ilangoan, Sr. Principal Scientist, NIO, Goa informed the committee that first draft is ready; however there is need of updating at some places because of usage of old data. He stated that first draft would be submitted to CPDAC secretariat so that it can be reviewed by the expert committee involving representation from CW&PRS, NIOT etc. He emphasized that this may be termed as Guidelines instead of Manual as suggested in previous CPDAC meetings

Director(Coastal Erosion), CWC emphasized that while updating the manual/guideline it should be ensured to have consistency with already accepted Technical Memorandum on “Guidelines for Design and Construction Technique of Sea Wall” prepared by CW&PRS. He also informed that there exists a steering committee to oversee and guide the updating of this manual/guideline.

Chairman, CPDAC suggested that representative from CESS and NIOT may also be included as invitee in the steering committee. Representative from NIO, Goa

requested for the copy of Technical Memoranda prepared by CW&PRS, Pune and the details of coastline length presented by NHO.

After discussion NIO, Goa, agreed to provide the draft to CPDAC, Secretariat by 30th April, 2014 for further necessary action in the matter.

(Action: NIO, Goa & CPDAC Secretariat)

14.6 REVIEW OF THE EXISTING WORKS

It was informed to the committee that there exists a sub-committee of CPDAC on "Performance Evaluation of Coastal Protection Works" which was further reconstituted in March, 2012 with updated Terms of Reference.

Sh. R. Thangamani, Director (Beach Erosion), CWC and Member-Secretary of above sub-committee informed the committee that so far **five** meetings of sub-committee have been organized and the last meeting was held in 2011 in Tamil Nadu. He also informed that recently Gujarat has agreed for the visit of sub-committee during month of May, 2014. The details of protection works, design criterion and other details have been sought from the Govt. of Gujarat in this regard.

Member-Secretary, CPDAC urged all the Member States/UTs to facilitate the visit/meeting of sub-committee and to look it as an opportunity for learning and upgrading our design and construction techniques with the experience gained from the already executed works.

(Action: Beach Erosion Dte., CWC & All Maritime States/UTs)

14.7 NATIONAL COASTAL PROTECTION PROJECT(NCPP)

It was informed to committee that NCPP was initiated with a view to explore the possibility of funding coastal protection works through external assistance. Currently two projects namely Ullal Coastal Erosion & Inlet Improvement Project in **Karnataka** and Mirya Bay Coastal Erosion and Protection Project in **Maharashtra** are under implementation under ADB aided Sustainable Coastal Protection and Management Investment Programme.

The representative of Karnataka was not available in the meeting to give detail of progress. Sh. Deore Sudhir, Dy. Engineer, Maharashtra Maritime Board informed the committee about the Status of work in Mirya Bay. He mentioned that after getting clearance from CW&PRS for the revised design, the work has been initiated towards taking up construction of Mirya Bay artificial reef. The same is scheduled to be completed by May, 2014. The Beach Nourishment would be taken up subsequently.

Committee decided that both the States would provide the updated status of implementation of works of the respective pilot projects to CPDAC secretariat within a month.

(Action: Karnataka, Maharashtra, CPDAC Secretariat)

14.8 MASTER PLAN FOR COASTAL PROTECTION

Director (Coastal Erosion), CWC informed the committee that under ADB Assistance programme, **Shoreline Management Plan** is being prepared in States of Maharashtra and Karnataka.

Committee decided that both the States would provide the details about Shoreline Management Plan to CPDAC secretariat within a month.

(Action: Karnataka, Maharashtra, CPDAC Secretariat)

Based on the discussion of previous CPDAC meetings, it was informed that State of Kerala and Tamil Nadu have master plans which were prepared in aftermath of Tsunami Event of 2004. Representative from both the States were requested to share the same with the CPDAC Secretariat.

(Action: Kerala, Tamil Nadu, CPDAC Secretariat)

Chairman, CPDAC informed the committee that States may also consider **Flood Management Programme (FMP)**, a state sector scheme of Government of India for funding of coastal protection works. The scheme has been approved for continuation during XII plan in October, 2013 and the FMP guidelines have been issued and are available on website of Ministry of Water Resources (<http://wrmin.nic.in>). UTs may consider Centrally Sponsored Scheme namely **River Management activities and Works Related to Border Areas and Union Territories (RMBA)** for funding of coastal protection works under their jurisdiction. The scheme is awaiting its approval.

(Action: Maritime States/UTs)

14.9 COMPOSITION OF CPDAC

14.9.1 New Addition

The nomination of Chief Engineer (PWD), UT of Daman & Diu as proposed by the Administration of UT of Daman & Diu for representation in CPDAC was **accepted by the committee**.

14.9.2 Non-Official Members of CPDAC

The three non-official members of CPDAC were selected by MoWR vide O.M. No. 3(1)/2010-EA (WB)(Pt.) dated 19th October, 2010 for a period of three years from the date of Issue of O.M. which has already expired.

- I. Dr. Vallam Sundar, IIT, Madras, Chennai
- II. Sh. M.M. Kamath, Chairman, TEC Anti-Erosion Works in Karnataka
- III. Sh. D.K. Maiti, MD, West Bengal Fisheries Corp Ltd (Retd. Secretary)

All the three outgoing non-official members conveyed their willingness for next tenure as non-official member. In addition to above, two more nominations were received by CPDAC secretariat, one each from the State of Kerala and Tamil Nadu.

The committee discussed the suitability of all the nominations received by the CPDAC Secretariat.

Out of above, committee accepted the nomination of Dr. Vallam Sundar, IIT, Madras, Chennai for the next tenure of three years. It was also decided by the committee that further nominations, if any, may be provided by all the members to secretariat within a period of 2 months for taking decision by Chairman, CPDAC regarding other two vacancies of non-official members.

(Action: CPDAC Secretariat & all Members of CPDAC)

14.9.3 Review of composition of CPDAC

A) Space Application Centre (SAC), Ahmedabad and Govt. of Tamil Nadu were requested to review their representation in CPDAC. Information received regarding change from them were accepted by the committee

S.N.	Designation/Department of Members of CPDAC as per Existing Gazette Notification	Accepted Changes
1	Shri Shailesh Nayak, Head, Marine and Water Resources, Division, Ahmedabad	Dr. A.S. Rajawat Head, Geo Sciences Division, Space Application Centre, Ahmedabad
2	Part Time Member, State Planning Commission, Govt. of Tamil Nadu, Madras	Chief Engineer, Water Resources Department, PWD, Govt. of Tamil Nadu, Madurai Region

B) Following changes which have primarily arisen due to changes in the Designation/name of Departments of the concerned Members of CPDAC were accepted by the committee.

S.N.	Designation/Department of Members of CPDAC as per Existing Gazette Notification	Accepted Changes
1	Advisor(I&CAD), Planning Commission, New Delhi	Advisor(Water Resources), Planning Commission, New Delhi
2	Development Adviser (Ports) M/o Surface Transport, New Delhi	Development Adviser (Ports), Ministry of Shipping, New Delhi
3	Commissioner(ER), Ministry of Water Resources, New Delhi	Commissioner(Ganga), Ministry of Water Resources, New Delhi
4	Deputy Director General O.M.E.&M.G. Wing, GSI, Ratnakar Building, 4-Chowringhee Lane, Calcutta-700016	Head of the Department Marine Wing, GSI Complex, Bhu Bijnan Bhavan, 9th. floor Block: DK-6, Sector-II, Salt Lake Kolkata-700091 West Bengal

5	Commissioner,(Water Transport) Maharashtra State Indian Mercantile Chambers, 3rd Floor, Ballard Estate, 14, Ramajibhai Kamani Marg, Bombay - 400 038.	The Chief Executive Officer, Maharashtra Maritime Board, Indian Mercantile Chamber (3rd Floor) Ramajibhai Kamani Marg,Ballard Estate, Mumbai - 400 001
6	Engineer-in-Chief (Irrigation) ,Govt. of Orissa, Bhubaneswar	Engineer-in-Chief (Water Resources) Govt. of Odisha, Bhubaneswar
7	Engineer-in-Chief (Irrigation) ,Govt. of Goa, Panaji-Goa	Chief Engineer (Water Resources), Govt. of Goa, Panaji-Goa
8	Chief Engineer (River Morphology), Central Water Commission, R.K. Puram, New Delhi (Member-Secretary)	Chief Engineer (Flood Management), Central Water Commission, R.K. Puram, New Delhi (Member-Secretary)

14.10 STATUS OF COASTAL PROTECTION WORKS IN MARITIME STATES/UTs:

Director (Coastal Erosion), CWC informed the committee that a “Status Report on Coastal Protection and Development in India” is being prepared by CPDAC Secretariat for which information has been requested from all the maritime States/UTs. He informed the committee that information from the State of **Tamil Nadu** in the desired format have been received just before the meeting. Information from State of **Gujarat** was provided during the meeting.

Chairman, CPDAC decided that rest of States/UTs may also provide the information to CPDAC Secretariat by **30th May, 2014** on following aspect.-

1. Extent of coastal erosion problem in the State, district-wise (as per Table 1 given in **Annexure-3**)
2. Specifics of Coastal Region in the State/UT - Wave Climate, Tidal Regime, Geology/Geo-morphology etc.
3. List of Coastal Protection Works executed in affected areas/district with expenditure and source of funding (as per Table 2 given in **Annexure-3**)
4. List of Proposed Protection Works in the vulnerable areas & tentative source/requirement of funding for Coastal Protection Works during XII plan (as per Table 3 given in **Annexure-3**)

(Action: All Maritime States/UTs except Tamil Nadu and Gujarat)

14.11 ANTI SEA EROSION MEASURES IN LAKSHADWEEP- EXAMINATION OF MALDIVIAN MODEL FOR SHORE PROTECTION

As decided in the 13th CPDAC meeting, an inter-ministerial team consisting of nine members 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.

During CPDAC meeting, the members expressed their desire to know regarding the follow-up action taken on these recommendations and performance of new type of measures suggested therein.

(**Action:** UT of Lakshadweep)

14.12 VENUE OF THE NEXT MEETING OF CPDAC

It was agreed that next meeting of CPDAC may be organized in **Gujarat**.

(**Action:** Gujarat & CPDAC Secretariat)

The deliberations of the meeting were followed by presentations by the following agencies:

1. "Recent Development in Coastal Protection Works" by Sh. M.D. Kudale, Joint Director, CW&PRS
2. "Application of Geo-synthetic in Coastal Protection Works" by C.Nanda Kishore, Tencate Geosynthetics Asia Ltd.

The meeting ended with a vote of thanks to the chair by Sh. J.C. Iyer, Chief Engineer (CSRO), CWC, Coimbatore.

The meeting was followed by site visit to Anjuna and Keri beach on 28th February, 2014 where Coastal protection works were being executed by the Govt. of Goa

Annexure-I**List of Participants of 14th CPDAC Meeting held at Goa during 27-28th February 2014**

S.N	Name & Designation
CWC	
1.	Sh. K.N.Keshri, Member (RM), CWC & Chairman, CPDAC
2.	Sh. C.P.Singh, Chief Engineer (FM), CWC, New Delhi.
3.	Sh. J.C. Iyer, Chief Engineer C&SRO, CWC, Coimbatore.
4.	Sh. Rajesh Yadav, Director (Coastal Erosion) CWC, New Delhi.
5.	Sh. R.Thangamani, Director(Beach Erosion),CWC, Cochin, Permanent/Special Invitee
6.	Sh. S.Balaiah, Executive Engineer, UKD, CWC, Pune.
7.	Sh. S. Sasidaran, Sub Divisional Engineer, CWC, Goa
Members	
8.	Sh. S.T.Nadkarni, Chief Engineer (WR), Govt. of Goa.
9.	Sh. M.K.Jadav, Chief Engineer (S.G.), Govt. of Gujarat representing Secretary, Narmada, Water Resources & Water Supply Department
10.	Smt. Lathika. P, Chief Engineer (Irrigation & Admin), Kerala.
11.	Sh. E. Tamilarasan, Chief Engineer, PWD, Madurai, Govt. of Tamil Nadu
12.	Sh. M.D. Kudale, Joint Director, CW&PRS, Pune representing Director, CW&PRS
13.	Sh. D. Ilangovan, Senior Principal Scientist, NIO, Goa representing Director, NIO
14.	Capt. Peush Pawsey, Director (Operations), NHO, Dehradun, representing Chief Hydrographer to the Government of India
15.	Sh. Ratheesh Ramakrishnan, Sci./Engr. SD, SAC, Ahmedabad representing Head, Geo Sciences Division, SAC
16.	Sh. Jugal Kishore Tripathy, Executive Engineer, WRD, Odisha representing Engineer-in-Chief, WRD
17.	Sh. Deore Sudhir, Dy. Engineer, Maharashtra Maritime Board, Mumbai representing CEO, MMB
18.	N.Nandakumar, Executive Engineer, PWD, UT. of Lakshadweep representing SE, PWD
Permanent / Special invitees	
19.	Dr. K.M. Sivakholundu, Scientist-F, NIOT, Chennai representing Director, NIOT
Others	
20.	Sh. Prabhavalkar, Superintending Engineer, WRD, Govt. of Goa & Nodal Officer for the meeting.

21.	Smt. Vijayasree, Deputy Chief Engineer (I & A), Kerala.
22.	Dr. Jayakumar S, Principal Scientist, NIO, Goa
23.	Sh. R.Manimurali, NIO, Goa
24.	Sh. Prabhavalkar, Superintending Engineer, WRD, Govt. of Goa
25.	S.H.Nagarajaiah, Executive Engineer, WRD, Goa
26.	Pramod Badami, Executive Engineer, WRD, Goa
27.	S.B. Ghantkar, Asst. Survey of Works, WRD, Goa
28.	Ravlu. P.S. , Assistant Engineer, WRD, Goa

Coastline Length and Methodology

<u>S. NO.</u>	<u>STATES &U/T</u>	<u>COASTLINE (KMS)</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
PROVISIONAL TOTAL (KM)		11,084.50

(* to be finalized by NHO in consultation with Govt. of Odisha as recorded in para 14.2.1 of the minutes of 14th CPDAC meeting)

METHODOLOGY ADOPTED FOR COMPUTATION OF THE COASTLINE LENGTH

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

Annexure-III
(to para 14.10)

Table 1- Extent of coastal erosion problem in the State, district-wise

S.No.	Name of Village/Taluka/District	Length of coastline Affected by Erosion/Vulnerable Reach (In Km)

Table 2- List of Coastal Protection Works executed in affected areas/district

S.No.	Name of Place/Protection Work	Length (in Km)	Type of Work	Year of Construction	Expenditure (Rs. Crore)	Funding Sources
(Sample)	Village A, Taluka B, Dist. C	2.0	Sea Wall/Groyne etc.	1980	0.55	<ul style="list-style-type: none"> State Govt. Central Govt. External Assistance Finance Commission Grant etc.

Table 3 - List of Proposed Protection Works as per vulnerable areas (for 12th Plan)

S.No.	Name of Place/Protection Work	Length (in Km)	Type of Work	Estimated Cost (Rs. Crore)	Funding Sources
(Sample)	Village A, Taluka B, Dist. C	1.0	Sea Wall/Groyne etc.	6.50	<ul style="list-style-type: none"> State Govt. Central Govt. External Assistance Finance Commission Grant

Table 4- Summary

1	Length of Coastline of the State/UT (km)	
2	Length Coastline Affected by Erosion (Vulnerable Reach) (Km)	
3	Length of coastline Protected by Protection works (Km)	
4	Length of coastline Yet to be Protected (km) (row 2-3)	