MINUTES OF THE 160th (Day 1) MEETING OF MAHARASHTRA COASTAL ZONE MANAGEMENT AUTHORITY HELD ON 5th AUGUST, 2022

The 160th of the Maharashtra Coastal Zone Management Authority (MCZMA) was held under the Chairmanship of Principal Secretary (Environment). In view of present pandemic situation of COVID-19, it was decided to appraise the proposals by using information technology facilities. Hence, the proposals were appraised through Videoconferencing technology on Cisco WebEx platform on 5^{th} AUGUST, 2022

List of members present in the meeting is at Annexure-I.

Item No.5:

Proposed construction of anti-sea erosion bund at Shree Krishna Temple to Moreshwar Temple, Dandi, Tal. Malvan, Dist. Sindhudurg by PWD, Sindhudurg

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed Construction of Anti-Sea Erosion Bund at Shree Krishna Temple to Moreshwar Temple, Dandi, Tal: Malvan, District Sindhdurg. Length of the bund is 220 meter. The PWD official presented that bund is required to protect the human settlement residing along the coastline.

The site of coastal protection works falls in CRZ I(B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s Enkay Enviro Services Pvt Ltd). The EIA report states that biodiversity of the area in and around the project site is dominated by tree species followed by herb and then shrubs.

The Authority observed the live google image and noted that there is no directly impacted and vulnerable dense human settlement seen on the backside of the proposed anti-sea erosion bund. Instead, there is thick tree cover near the site. Expert Members, MCZMA presented that there is a pristine beach at the site which is having considerable width for tidal wave energy to dissipate. Thus, the said beach area itself would provide protection to the shoreline by absorbing the tidal wave energy.

The Authority after deliberation opined that hard structure in the form of seawall as anti-sea erosion bund, would disturb the sediment transport balance of the beach thereby upsetting its coastal environment/ecology. The Authority opined

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that when there is directly impacted and vulnerable dense human settlement and danger to life & livelihood of local residents, then hard structures could a possible solution for protection against coastal erosion.

In the light of above, the authority directed PP to resubmit the proposal with following:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 1. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

Item No.6: Proposed construction of anti-sea erosion bund at Four (4) sites in Ratnagiri District by PWD, Ratnagiri

The PWD official (Harbour Engineering Division, Ratnagiri) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at Four (4) sites in Ratnagiri District:

- 1. Mandavi- 125 meter
- 2 Kalbadevi 130 meter
- 3. Nandiwade- 140 meter
- 4. Sandhkhol- 125 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report M/s Terracon Ecotech Pvt Ltd.

The Authority observed the live google image and noted that:

- 1. At site of Kalbadevi, Nandiwade and Sandhkhol, there is no directly impacted and vulnerable dense human settlement seen on the backside of the proposed anti-sea erosion bund.
- 2. At the site of Sandhkhol, there is thick cover of coconut & vegetation cover along the coastline.
- 3. At the site of Mandvi, thick terrestrial vegetation is seen along the coastline.

The Authority noted that in all 4 locations, there is no vulnerable human settlement is observed on the backside of the proposed bund.

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The Authority further noted that the PP has submitted the combined proposal for 4 coastal stretches with one single combined EIA report, even though the sites are located at a considerable distance from each other. The PWD need to submit the each site specific proposal with separate EIA report and explore the soft measures for the coastal protection work.

In the light of above, the Authority directed PP to resubmit the proposal with following:

- 2. Separate proposal for each coastal stretch site
- 3. Site specific EIA report prepared by NABET Accredited Consultant
- 4. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

<u>Item No.7:</u> Proposed construction of anti- sea erosion bund at Eight (8) sites in Ratnagiri Districtby PWD, Ratnagiri

The PWD official (Harbour Engineering Division, Ratnagiri) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at Eight (8) sites in Ratnagiri District:

- 1. Someshwar 2370 meter
- 2. Pomendi 2431.43 meter
- 3. Juve 1366.56 meter
- 4. Varvade Babiwadi- 450 meter
- 5. Gavade Ambere- 250 meter
- 6. Murkar House to Fadanaik House Near Ghera Purnagad- 350 meter
- 7. Golap Mohalla 300 meter
- 8. Nandiwadi part 2-760 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by M/s Terracon Ecotech Pvt Ltd. The Authority observed the live google image and noted that:

1. The Someshwar, Pomendi and Juve are having mangrove vegetation. Expert Member, MCZMA informed that the said coastal stretch is known for best mangrove vegetation in the Ratnagiri District.

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- 2. At site of Varvade Babiwadi, there is no directly impacted and vulnerable dense human settlement seen along the coastline. Agricultural lands area observed at the backside of proposed bund.
- 3. At site of Gavade Ambere and Near Ghera Purnagad, there is no directly impacted and vulnerable dense human settlement seen along the coastline.
- 4. At the site of Golap Mohalla, there is directly impacted and vulnerable dense human settlement along the coastline seen along the coastline.
- 5. At the site of Nandiwadi part 2, there is prestine beach.

The Expert Members presented that the first 3 sites namely, Someshwar, Pomendi and Juve are known for good mangrove vegetation and suggested that plantation of local species of the Mangroves, especially *Sonerata Apetala etc* is the best soft solution for arresting the coastal erosion at the sites.

The Authority further noted that the PWD need to explore the Soft measures at the site located at Gavade Ambere and Near Ghera Purnagad, Nandiwadi part 2 for coastal protection works

The Authority noted that at site of Golap Mohalla, there is directly impacted and vulnerable dense human settlement and in order to protect the life of the human settlement, the PWD could propose the hard structures (anti-sea erosion bund) at the site. The Authority opined that when there is directly impacted and vulnerable dense human settlement and danger to life & livelihood of local residents, then hard structures could a possible solution for protection against coastal erosion.

The Authority further noted that the PP has submitted the combined proposal for 8 coastal stretches with one single combined EIA report, even though the sites are located at a considerable distance from each other. The PWD need to submit the each site specific proposal with separate EIA report and explore the soft measures for the coastal protection work.

In the light of above, the Authority directed PP to resubmit the proposal with following:

- 1. Separate proposal for each coastal stretch site
- 2. Site specific EIA report prepared by NABET Accredited Consultant
- 3. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

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Accordingly, the current proposal is delisted from the records of the MCZMA.

<u>Item No.8:</u> Proposed construction of anti-sea erosion bund at Nine sites in Ratnagiri District by PWD, Ratnagiri

The PWD official (Harbour Engineering Division, Ratnagiri) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at Nine (9) sites in Ratnagiri District:

- 1. Guhaghar Bazarpeth 450 meter
- 2. Jaigad Akbar Mohalla to Jetty 700 meter
- 3. Jaigad Sakhar Mohalla 550 meter
- 4. Sandhkhol village- 450 meter
- 5. Kalbadevi village- 569.48 meter
- 6. Mandvi village- 390 to 715 meter
- 7. Pawas 350 meter
- 8. Malvlange 550 meter
- 9. Sitapewadi to Kharaviwade 300 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by M/s Terracon Ecotech Pvt Ltd.

The Authority observed the live google image and noted that:

- 1. At the site of Jaigad Akbar Mohalla to Jetty, Jaigad Sakhar Mohalla and Sitapewadi to Kharaviwade, directly impacted and vulnerable dense human settlement seen along the coastline.
- 2. At the site of Guhaghar Bazarpeth, Sandhkhol, Kalbadevi, Mandvi, Pawas, Malvlange, there is no directly vulnerable human settlement seen along the coastaline

The Authority further noted that the PP has submitted the combined proposal for 8 coastal stretches with one single combined EIA report, even though the sites are located at a considerable distance from each other. The PWD need to submit the each site specific proposal with separate EIA report and explore the soft measures for the coastal protection work.

In the light of above, the Authority directed PP to resubmit the proposal with following:

- 1. Separate proposal for each coastal stretch site
- 2. Site specific EIA report prepared by NABET Accredited Consultant

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3. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

<u>Item No.9:</u>
Proposed construction of anti-sea erosion bund at village Bhogve, Tal. Vengurla, Dist. Sindhudurg by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed construction of anti-sea erosion bund at village Bhogve, Tal. Vengurla, Dist. Sindhudurg. Length of the anti-sea erosion bund (Sea Wall) is 125 meter.

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report.

The Authority observed the live google image and noted that there is no directly impacted and vulnerable dense human settlement seen along the coastline

The Authority further noted that the PP need to submit the EIA report for the said site prepared by the MoEF-NABET Accredited consultant and explore the soft measures for the coastal protection work.

In the light of above, the Authority directed PP to resubmit the proposal with following:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. As per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the $\mbox{MCZMA}.$

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Item No.10:

Proposed construction of anti-sea erosion bund at village Nivti Kochara, Tal. Vengurla, Dist. Sindhudurg by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed construction of anti-sea erosion bund at village Nivti Kochara, Tal. Vengurla, Dist. Sindhudurg. Length of the anti-sea erosion bund (Sea wall) is 110 meter. The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. _The PP has submitted the EIA/EMP report prepared by MoEF&CC accredited consultant.

The PWD has submitted the report of the CWPRS, Pune which states that the proposed site is located at about 3.5 km on the east side of the Nivti Fort. The residential properties of the villagers experiencing damages especially in the monsoon period during the higher wave/ tidal action. In view this, to protect the existing residential properties along the shoreline, harbour Engineer, Sindhudurg sought advice of CWPRS for the design of coastal protection works at Nivti Kochara. Proposed coastal protection works is about 210 m. Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions. The design of the seawall was evolved based on the desk studies such as empirical formulae, existing conditions at the site and previous in house extensive wave flume studies conducted by CWPRS for hydraulic stability of marine structures.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement seen along the coastline. The Authority opined that in order to protect the human settlement, the hard structure (Sea wall) is a requirement at the site and hence the proposal could be allowed.

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In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti-sea erosion bund is proposed on landward side of the High Tide Line of the coastline
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

<u>Item No.11:</u>
Proposed construction of anti-sea erosion bund at village Navabag, Tal. Vengurla, Dist. Sindhudurg by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at at village Navabag Tal: Vengurla District Sindhdurg. Length of the anti sea erosion bund (Sea Wall) is 190 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report.

The Authority observed the live google image and noted that there is no directly impacted and vulnerable dense human settlement seen on the backside of the proposed anti-sea erosion bund. Expert Members, MCZMA presented that there is a pristine beach at the site which is having considerable width for tidal wave energy to dissipate. Thus, the said beach area itself would provide protection to the shoreline by absorbing the tidal wave energy.

The Authority after deliberation opined that hard structure in the form of seawall as anti-sea erosion bund, would disturb the sediment transport balance of the beach thereby upsetting its coastal environment/ecology. The Authority opined that when there is directly impacted and vulnerable dense human settlement and

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danger to life & livelihood of local residents, then hard structures could a possible solution for protection against coastal erosion.

The Authority observed that the PWD need to explore soft measures/ solutions for protection against the coastal erosion at the site.

In the light of above, the Authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

<u>Item No.12:</u> Proposed construction of anti-sea erosion bund at village Sagreshwar, Tal. Vengurla, Dist. Sindhudurg by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at village Sagareshwar Ta: Vengurla District Sindhdurg. Length of the anti-sea erosion bund (Sea Wall) is 125 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report.

The Authority observed the live google image and noted that there is no directly impacted and vulnerable dense human settlement seen on the backside of the proposed anti-sea erosion bund. The Authority opined that soft measures could a possible solution at the site for arresting the coastal protection at the site. The Authority observed that the PWD need to explore soft measures/ solutions for protection against the coastal erosion at the site.

In the light of above, the Authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order

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dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

Item No.13: Proposed coastal protection works at village Kunkeshwar, Tal. Devgad, Dist. Sindhudurg by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed coastal protection works (Soft measures - Sand filled Geo Container bund) at village Kunkeshwar, Tal. Devgad, Dist. Sindhudurg. Length of the anti-sea erosion bund (Sand filled Geo Container bund) is 200 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report.

The Authority observed the live google image and noted that there is no directly impacted and vulnerable dense human settlement seen on the backside of the proposed anti-sea erosion bund. Further, it was noted that anti sea erosion bund is proposed in the middle of the beach which is pristine and having considerable width. The Authority discussed that the purpose of the bund at the site is not clear. The Authority noted that the proposed bund need not be required at the site. The Expert Member, MCZMA opined that the proposed anti-sea erosion bund may adversely impact the natural geo-morphology and aesthetics of the beach area.

In the light of above, the Authority after deliberation decided to reject the proposal from CRZ point of view.

<u>Item No.14:</u>
Proposed construction of anti-sea erosion bund at village
Talashil Sea side in front of Shri Rajan C. Kochrekar House,
village Talashil, Tal. Malvan, Dist. Sindhudurg by Harbour
Engineer, PWD

The PWD official (Harbour Engineering Division, Sindhdurg) presented the proposal before the Authority. The PWD has proposed construction of anti-Sea Erosion bund at village Talasheel from Savalram Dhaku Chodnekar to Shri Rajan Chodnekar House, village Talasheel, Tal: Malvan, District Sindhdurg. Length of the

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anti sea erosion bund is 390 meter. The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP.

The PWD officials presented that anti sea erosion bund is proposed in continuation with existing old bund at the site in order to mitigate the coastal erosion.

The Authority observed the live google image and noted that the site is ideal for implementing the soft measures for protection of the coastline. Expert Members opined that taking support of the existing bund, sand filled bags could be placed along with plantation which would stabilize the coastline.

The Authority observed that the PWD need to explore soft measures/ solutions for protection against the coastal erosion at the site.

In the light of above, the Authority directed PP to resubmit the proposal with following:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

Item No.15: Proposed construction of anti-sea erosion bund at Dahanu, Dist. Palghar by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Palghar) presented the proposal before the Authority. The PWD has construction of Anti-Sea Erosion bund at Dahanu, Palghar. Length of the anti sea erosion bund (Sea wall) is 1000 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that the existing bund at Dahanu village was built around 15 years back by MMB at the south end, is damaged due to the severe wave action. Coastline villages from Jivandandi to Satipada are home for fishermen and Advivasi people and used for various purposes such as drying fish, anchoring boats etc. However, the area being prone to erosion and the bund proposed is for protection from erosion the project considered only for Dahanu village. The EIA report further states that proposed

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project involves construction of an anti-sea erosion bund. The project does not involve any reclamation. Therefore, the project would not lead to any impact on the landuse and land cover of the region during construction as well as operation phase of the project. Proposed anti-sea erosion bund will be constructed towards high tide line of the intertidal area. The bund will be constructed using natural material such as armour rocks.

The PP has submitted the CWPRS report which states that, the project officials informed that the offshore detached bund using stone filled gabions constructed 15 years back and undergone damages due to the severe wave action. However, the offshore detached bund severs its purpose throughout its life span and successfully deposit sand on the lee side. The concern officials also informed that also informed that the shoreline has been shifted towards the village by about 50 meters and causing threat to the existing properties and establishment. In view of this, Harbour Engineer Division Mumbai have a proposal for the construction of seawall to combat the erosion at Dahanugoan and sought advice of CWPRS for the design of the seawall. It was also informed by the project officials that the proposed length of the coastal protection work is about 440 meter. Due to gradual erosion of Dahanu Beach the existing beach is degraded. The beach is also engaged in the tourist's recreational activities. Therefore, it was decided that the coastal protection work in the form of seawall at shore and an offshore detached bund with sand filled geo-containers will be provided about 50 m away from the shore. This will help to reduce the beach erosion as well as to elevate beach level. Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions.

The CWPRS report dated 28.2.2022 further states that the offshore detached bund in the form of geo-containers area suggested for the proposed 440 m coastal protection work. The distance from shoreline to the offshore bund is about 50 m. Total 7 Nos. of bunds having a length of 50 m each and gap width about 15 m in between bunds are suggested for the proposed 440 m length.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement seen on the backside of certain stretch of the proposed anti-sea erosion bund. The CWPRS has recommended the offshore detached bund in the form of geo-containers area for the proposed 440 m coastal protection work.

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The PWD official informed that 440 meter distance of the proposed bund from mouth of the creek upto Par Naka location. The Authority observed directly impacted and vulnerable dense human settlement is seen along the said stretch.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement seen along the coastline. The Authority opined that in order to protect the human settlement, the hard structure (Sea wall) is a requirement at the site and hence the proposal could be allowed.

In the light of above, the Authority after deliberation decided to recommend the proposal of 440 m length of bund as suggested in CWPRS report dated 28.2.2022 from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti sea erosion bund of length 440 m only is proposed on landward side of the High Tide Line of the coastline upto Par Naka near Mouth of the creek, where vulnerable human settlement is seen along the coastline.
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

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Item No.16: Proposed construction of anti-sea erosion bund at Kihim, Tal. Alibag, Dist. Raigad by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has construction of Anti-Sea Erosion bund at village Kihim in Ta: Alibag, District Raigad. Length of the anti-sea erosion bund (Sea wall) is 210 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that proposed project involves construction of an anti-sea erosion bund. The project does not involve any reclamation. Therefore, the project would not lead to any impact on the landuse and land cover of the region during construction as well as operation phase of the project, proposed anti-sea erosion bund will be constructed towards high tide line of the intertidal area. The bund will be constructed using natural material such as armour rocks.

The Authority noted that the PWD has submitted the proposal for 210 meter. However, during the meeting, the PP presented that the bund is proposed for 4.8 km.

In the light of above, the Authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. As per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

<u>Item No.17:</u> Proposed construction of anti-sea erosion bund at Adgaon, Tal. Shrivandhan, Dist. Raigad by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at village Adgoan, Shrivardhan in Tal: Shrivardhan, District Raigad. Length of the anti-sea erosion bund (Sea wall) is 180 meter.

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The PP has submitted the CWPRS report which states that village Adgoan is located along coastline at about 19 km north of shrivardhan town. The residential properties and farms of the villagers are situated abutting to the coastaline and facing higher wave action during the monsoon. In view of this, to protect the existing residential properties near the shoreline, harbour engineer, Mumbai sought advice of CWPRS for the design of coastal protection work at Adgoan. The proposed coastal protection work is about 180 m long

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that proposed project involves construction of an anti-sea erosion bund. The project does not involve any reclamation. Therefore, the project would not lead to any impact on the landuse and land cover of the region during construction as well as operation phase of the project, Proposed anti-sea erosion bund will be constructed towards high tide line of the intertidal area. The bund will be constructed using natural material such as armour rocks.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

The PWD officials presented that there is cemetery of local village near the coastline, which needs to be protected for the tidal water entering into its premises.

The Authority observed the live google image and opined that in order to protect the cemetery of local village, hard structure (Sea wall) may be required at the site and hence the proposal could be allowed.

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In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti-sea erosion bund is proposed on landward side of the High Tide Line of the coastline.
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

Item No.18: Proposed construction of anti-sea erosion bund at Korlai, Dist. Raigad by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has construction of Anti-Sea Erosion bund at village Korlai in District Raigad. Length of the anti-sea erosion bund (Sea wall) is 680 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that proposed antierosion bund is proposed towards south side of the Korlai Fort for prevention of coastal erosion. The project does not involves any reclamation activity for construction purpose. The anti-sea erosion will be constructed towards high tide line of the inertial area. The distance between high tide and low tide level is approximately 40-60 m, the bund will be constructed using natural material such armour rocks. Considering the location of bund which is more towards landward side of the beach there are no impacts anticipated on water and sediment quality. The impact is anticipated to be less significant as the project involves small area of coastline and construction activity will take place more towards the landward side where the inundation or water reaches once very fortnight.

The PP has submitted the CWPRS report which states that Coastal erosion site is located at about 4 km southern side of the Korlai Fort. The affected erosion site

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is directly facing the Arabain Sea and situated adjacent to the headland Korlai. The coast at Korali is experiencing erosion due to severe wave action occurring during the monsoon period. Fish processing activities at fish landing centre are affected due to erosion of the shoreline. In this regard, Harbour Engineer, Mumbai sought advised of the CWPRS for design of coastal protection work at Korlai. Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions. The design of the seawall was evolved based on the desk studies such as empirical formulae, existing conditions at the site and previous in house extensive wave flume studies conducted by CWPRS for hydraulic stability of marine structures.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement along the coastline. The PWD officials presented that there is a village road along the coastline which is threatened by the strong tidal waves of the sea. There is a danger of washing away of the road due to strong wave action of the sea.

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti sea erosion bund is proposed on landward side of the High Tide Line of the coastline.
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.

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6. All other required permission from different statutory authorities should be obtained

Item No.19: Proposed construction of anti-sea erosion bund at Koliwada Alibag, Tal. Alibag, Dist. Raigad by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has construction of Anti-Sea Erosion bund at village Alibag Koliwada in Ta: Alibag, District Raigad. Length of the anti-sea erosion bund (Sea wall) is 1900 meter

Accordingly to CWPRS report, a coastal protection work scheme was implemented for the length of about 1901 m along the coast to protect the shoreline properties form teh coastal erosion. Recently, it is understood that due to the assail waves in higher tides especially in the monsoon, existing seawall have been suffered damages at several places. The cyclone "Nisarg" (1 June 2020) struck coastline of Alibag, causing severe damages to the existing seawall. The coastal erosion was also aggravated due to the cyclone. In this regard, Harbour Engineer sought advice of the CWPRS for the restoration of existing damaged seawall at Alibag. The restoration work is proposed from Ch. 892 m to Ch. 1901 m (Near DSP bungalow). Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions.

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that proposed project is only for strengthening. The project does not involve any construction activity beyond intertidal area. It would not lead to any impact on the landuse and landcover of the region during construction as well as operation phase of the project.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

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The PWD official presented that there is existing bund along the coastline and strengthening the bund is proposed.

The Authority observed the live google image and noted that directly impacted and vulnerable dense human settlement is seen along the coastline. Expert Member raised concern that PWD has proposed bund in the water area i.e. CRZ IV area. The PWD officials submitted that only strengthening of the exiting bud is proposed to protect the human settlement residing along the coastline.

The Authority opined that only strengthening of the exiting bund could be permitted, for protection of human settlement against the coastal erosion. No new construction of bund is allowed.

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that only strengthening of the exiting bund. No new/ fresh construction of bund is allowed.
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

<u>Item No.20:</u> Proposed construction of anti-sea erosion bund at Dandi Uccheli, Tal. & Dist. Palghar by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at village Dandi Ucheli, District Palghar by Office of Harbour Engineering, PWD. Length of the anti-sea erosion bund (Sea wall) is 330m meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited

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consultant (M/s building environment). The EIA report states that proposed project involves construction of an anti-sea erosion bund towards north directions as an extension to the already constructed seawall by the MMB. The project does not involve any reclamation. Therefore, the project would not lead to any impact on the landuse and land cover of the region during construction as well as operation phase of the project, Proposed anti-sea erosion bund will be constructed towards high tide line of the intertidal area. The bund will be constructed using natural material such as armour rocks. Bund is proposed on landward side of the beach.

The PP has submitted the CWPRS report which states that it is understood that Dandi Ucheli village is suffering from erosion due to the direct wave action during the higher tidal levels. The village have densely habitats and private properties located along the coastline. In this connection, Harbour Engineer Division Mumbai have a proposal to provide coastal protection works to combat the coastal erosion at Dandi Ucheli and sought advice of CWPRS for the design of the coastal protection works. It was informed by the project officials that the construction of 480 m long seawall was administratively approved by Govt of Maharashtra. The project officials also informed that the earlier seawall was constructed by MMB form Ch. O to Ch, 380 m on southern side. The proposed coastal work is in continuation of the existing seawall from Ch. 380 m to 860 m on the northern side. Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

The Authority observed the live google image and noted that directly impacted and vulnerable dense human settlement is seen along the coastline on the southern side (till uchala mata area) only. However, on northern side, there is no human settlement is observed. As per the PWD letter dated 5.8.2022, on southern side, human habitation / village is upto Shri Uchhala Mata ground having length 515 meter. The said letter further clarifies that there is existing bund of length 640 meter on the northern side.

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The Authority opined that proposed bund of length 515 meter could be permitted on southern side, for protection of human settlement against the coastal erosion. No new construction of bund is allowed on northern side.

In the light of above, the Authority after deliberation decided to recommend the proposal of bund of 515 meter on southern side from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that proposed bund could be permitted on southern side, for protection of human settlement against the coastal erosion. No new construction of bund is allowed on northern side.
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

Item No.21: Proposed construction of anti-sea erosion bund at Sakhar jetty to Akshi beach, Tal. Alibag, Dist. Raigad by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at village Akshi in Ta: Alibag, District Raigad. Length of the anti-sea erosion bund (Sea wall) is 210 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that proposed project involves construction of an anti-sea erosion bund. The project does not involve any reclamation. Therefore, the project would not lead to any impact on the landuse and land cover of the region during construction as well as operation phase of the project, Proposed anti-sea erosion bund will be constructed towards high tide line of the intertidal area. The bund will be constructed using natural material such as armour rocks.

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The PP has submitted the CWPRS report which states that Akshi is located at the southern side of Alibag Coastline and Sakhar creek divides the Alibag and Akshi Coastline. The residential properties and farms of the villagers are situated along the shoreline and facing higher waves action during the monsoon. Shoreline is experiencing gradual erosion which causes damages to the properties, farms, trees along the shoreline. In view of this, to combat erosion and to protect the existing residential properties and agricultural field near the shoreline, harbour engineer, Mumbai sought advice of CWPRS for the design of coastal protection works at Akshi. The proposed coastal protection work is 210 meter long. Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions.

The Authority noted that the PWD has submitted the proposal for 210 meter. However, during the meeting, the PP presented that the bund is proposed for 2.1 km.

In the light of above, the Authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. As per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

<u>Item No.22:</u> Proposed construction of anti-sea erosion bund at Gorai, Mumbai by Harbour Engineer, PWD

The PWD official (Harbour Engineering Division, Raigad) presented the proposal before the Authority. The PWD has construction of Anti-Sea Erosion bund at village Gorai in Ta: Alibag, District Mumbai Suburban. Length of the anti-sea erosion bund (Sea wall) is 450 meter

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s building environment). The EIA report states that construction of bund will be carried out towards north as an extension and repairing of existing

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bund constructed by MMB in the southern end of the beach. However, the area being prone to erosion and the bund proposed is for protection of Gorai village. The proposed project involves construction of an anti-sea erosion bund as on extension to the already constructed seawall by MMB. The project does not involve any reclamation. Therefore, the project would not lead to any impact on the landuse and land cover of the region during construction as well as operation phase of the project,

The Authority observed the live google image and noted that there is no directly impacted and vulnerable dense human settlement is seen along the coastline. The Expert Members opined site soft measures could be implemented at the site for protection of the coastline.

In the light of above, the Authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

Item No.23: Proposed construction of anti-sea erosion bund at Arnala Gaon, Tal. Vasai, Dist. Palghar by Harbour Engineer, PWD

The PWD officials (Harbour Engineer, Palghar Division) presented the proposal before the Authority. The PWD has proposed construction of Anti sea erosion bund (Sea wall) at Arnala Goan, Tal: Vasai, District Palghar. The bund is parallel to Navapur beach road. Length of the anti-sea erosion bund (Sea wall) is 190 meter with height 8 meter.

The site of coastal protection works falls in CRZ I(B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s Mahabal Enviro Engineers Pvt Ltd). The EIA report states that Arnala village is experiencing erosion due to sever wave action during the last several years. The shoreline has been shifted towards the village by about 50 meter and sea water causing inundation and damaged to the properties of residents. Consequently, coastal erosion studies have been done for the Arnala Goan coastal stretch by Harbour Engineering office and CWPRS and got the

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approval of PWD for the construction of Anti - Sea Erosion control measures. The EIA report further states that project site of anti-sea erosion bund is at sea face which is open land, no vegetation clearing activity is involved so that there is no chance of impact on biological components due present activity. The report further states that as per the CWPRS design, there is no excavation activity involved during the proposed activity. Minor modifications will be done on the bed profiles at the time of execution of the work.

The PP has submitted the CWPRS report as per which, the design of the seawall was evolved based on the desk studies such as empirical formulae, existing conditions at the site and previous in house extensive wave flume studies conducted by CWPRS for hydraulic stability of marine structures. Design of the sea wall or anti sea erosion protection bund is based on the data such as beach profile, tides, waves and existing conditions.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement seen along the coastline. The Authority opined that in order to protect the human settlement, the hard structure (Sea wall) is a requirement at the site and hence the proposal could be allowed.

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti sea erosion bund is proposed on landward side of the High Tide Line of the coastline
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.

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- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

<u>Item No.24:</u> Proposed construction of anti-sea erosion bund at Madh, Mumbai by Harbour Engineer, PWD

The PWD officials (Harbour Engineer, Mumbai Division) presented the proposal before the Authority. The PWD has proposed construction of Anti-Sea Erosion bund at Madh, Mumbai, District Mumbai Suburban. Length of the anti-sea erosion bund (Sea wall) is 300 meter with height 7.5 meter. The proposed project site is approchable by the 12 meter wide Madh Marve Road which further connects to 12 m Madh Jetty Road and 9 m wide internal Navanagar Road and Dongarpada Road.

Accordingly to CWPRS report the design of the seawall was evolved based on the desk studies such as empirical formulae, existing conditions at the site and previous in house extensive wave flume studies conducted by CWPRS for hydraulic stability of marine structures. Design of the sea wall or anti-sea erosion protection bund is based on the data such as beach profile, tides, waves and existing conditions.

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s Mahabal Enviro Engineers Pvt Ltd). _The EIA report states that most of the villagers are belonging to the fishermen community at Madh village. Due to low lying area, village is susceptible to flash floods during the monsoon. The proposed construction of seawall would provide coastal protection for unprotected stretch, adequate space for berthing and protection to the community and residential infrastructure situated abutting to the coastal line.

The EIA report further states that project site of anti sea erosion bund is at sea face which is open land, no vegetation clearing activity is involved so that there is no chance of impact on biological components due present activity. The report further states that as per the CWPRS design, there is no excavation activity involved during the proposed activity. Minor modifications will be done on the bed profiles at the time of execution of the work.

Member Secretary

The Authority noted that as per para 5 of the CRZ, 2019, erosion control measures is a permissible activity. Activities proposed in CRZ I and CRZ IV area, requires clearance from the MoEF&CC, New Delhi.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement seen along the coastline. The Authority opined that in order to protect the human settlement, the hard structure (Sea wall) is a requirement at the site and hence the proposal could be allowed

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to MoEF&CC, New Delhi subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti-sea erosion bund is proposed on landward side of the High Tide Line of the coastline
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

Item No.25: Proposed construction of anti-sea erosion bund at Shirgaon, Dist. Palghar by Harbour Engineer, PWD

The PWD officials (Harbour Engineer, Mumbai Division) presented the proposal before the Authority. The PWD has proposed construction of Anti sea erosion bund (Sea wall) at village Shirgoan, Tal and District Palghar. Length of the anti-sea erosion bund (Sea wall) is 3000 meter with height 8 meter

As per the Office of Harbour Engineering, PWD, the beach at Shirgoan experiences strong wave action during monsoon which causes beach erosion and also poses risk from strong surges to village inhabitants. Proposed bund will serve dual purpose as it will not only help to prevent coastal erosion but also provide protection to village habitation from natural disaster like floods and cyclones.

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The site of coastal protection works falls in CRZ I(B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s Mahabal Enviro Engineers Pvt Ltd). The EIA report states that During monoon shirgoan beach experiences flash floods due to which the sea water inclusion in residential area and farms abutting to the beach. Coastal stretch of shirgoan is showing eroding trends and become endanger to the existing properties along the shoreline. Hence, Harbour Engineering Division has proposed coastal protection works by constructing a seawall at Shirgoan, Tal & District Palghar. Proposed seawall design has been carried out by the CWPRS. _The EIA report further states that project site of anti-sea erosion bund is at sea face which is open land, no vegetation clearing activity is involved so that there is no chance of impact on biological components due present activity. The report further states that as per the CWPRS design, there is no excavation activity involved during the proposed activity. Minor modifications will be done on the bed profiles at the time of execution of the work.

The Authority observed the live google image and noted that on north side, there is directly impacted and vulnerable dense human settlement seen along the coastline. In order to protect the said stretch, hard structures could be used. However, on southern side, there is mouth of the creek, the PWD need to explore soft measures for protection from coastal erosion.

In the light of above, the Authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

Item No.26:

Proposed construction of anti-sea erosion bund at Devbag - 1) Near Kudalkar house to Velankani, 2) Near Madhali Christion Wadi, 3) Near Mondkar Rapan sangh, 4) Near Vitthal Mandir in Devbag, Tal. Malvan, Dist. Sindhudurg by PWD, Sindhudurg

The PWD officials (Harbour Engineer, Sindhudurg Division) presented the proposal before the Authority. The PWD has proposed construction of anti-Sea Erosion bund at village village Devbag at 4 locations, Tal: Malvan, Sindhudurg:

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- Near Kudalkar House to Velankani
- Near Madhali Christian Wadi
- Near Mondkar Rapan Sangh
- Near Vitthal Mandir in Devbag

Length of the anti-sea erosion bund is 140 meter

The PWD has submitted the CWPRS report as per which, the proposed site is located at about 10 km south of Malvan town. The proposed stretch is at the mouth of Karli Creek along the coastline of the Devbag. CWPRS officers visited the site on 8.2.2022 along with project officials. The coastline is engaged with the fishing activities. It has been informed that, that the coastline is unprotected and observed higher wave attack during the monsoon. The properties of the local residents are affected due to the higher wave action especially in the monsoon. In view of this, Harbour Engineer, Sindhdurg sought advice of CWPRS for the design of coastal protection work at Devbag. The proposed coastal protection work is about 450 meter. Accordingly, desk studies area conducted for evolving the tentative cross section of the coastal protection work in the form of seawall based on the data such as beach profiles, tides, waves and existing site conditions.

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF&CC accredited consultant. Report states that there will not be any major impact on terrestrial ecology of the project site due to construction activities. However, it will prevent coastal erosion at the Devbag Beach.

The Authority observed the live google image and noted that there is directly impacted and vulnerable dense human settlement seen along the 4 locations of the coastal stretches situated in the same Devbaug village.

The Authority noted that as per para 4(i) (f) of the CRZ, 2011, erosion control measures is a permissible activity. As per amended CRZ Notification dated 28th November, 2014 published by MoEF, For the projects specified under 4(i) (except with respect to item (d) thereof relating to building projects with less than 20,000 sqm of built up area) and for the projects not attracting EIA Notification, 2006, clearance from SEIAA is required based on the recommendation from MCZMA. Therefore, proposal requires permission from SEIAA based on MCZMA recommendation.

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In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. PWD to ensure that anti-sea erosion bund is proposed on landward side of the High Tide Line of the coastline
- 3. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 4. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 5. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 6. All other required permission from different statutory authorities should be obtained

Item No.28: Proposed Coastal Protection Work under Maharashtra
Sustainable Climate Resilient Coastal Protection and
Management Investment Program (MSCRCPMIP) at Kashid Dist

Raigad by MMB

The Chief Engineer, Maharashtra Maritime Board (MMB) presented the proposal before the Authority. The proposal is for coastal protection works using soft measures of development of dunes and nourishment at village Kashid, District Raigad under the Maharashtra Coastal Protection & Management Investment Program (MSCRCPMIP). Length of the coastal stretch is 3 km, along which sand dunes development and beach nourishment is proposed at Kashid.

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s Ecofootward).

The EIA report states that Dune regeneration is an alternative form of a soft engineering coastal defence. Dune regeneration involves creating or restoring sand dunes around the shoreline. The purpose of these dunes between the waves and landward settlements acting as a barrier to absorb wave energy. Vegetation is planned in the dunes to help stabilize the dune, also further increasing its ability to absorb wave energy. IN order to allow these plants to grow without being disturbed by human activity, the dunes are sometimes temporarily fenced off, or wooden walkways are built over them so human can avoid stepping on the sand.

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Chairperson Chairperson

Similarly, to beach nourishment, dune regeneration is accepted socially and environmentally as it often improves the sight of the coast while re-using unwanted materials. However, dune regeneration and plantation will provide extra vegetation which improves the sustainability of the coastal defence

The Authority noted that the MMB has proposed coastal protection works using soft measures of development of dunes and nourishment at village Kashid, District Raigad. MMB officials informed that similar beach protection activity has been carried out at Bhatey, beach Ratnagiri and result of the same is encouraging.

The Authority appreciated the proposal and observed that such kind of proposal wherein soft measures are implemented would rejuvenate the beach areas are natural way to combat the coastal erosion. The Authority suggested that MMB need to document the details of the proposal with on ground results, so that it could a case study and similar works could be replicated on other coastal stretches.

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 3. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 4. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 5. All other required permission from different statutory authorities should be obtained

Item No.29:

Proposed Coastal Protection Work under Maharashtra Sustainable Climate Resilient Coastal Protection and Management Investment Program (MSCRCPMIP) at Ganapatipule Dist Ratnagiri by MMB

The Chief Engineer, Maharashtra Maritime Board (MMB) presented the proposal before the Authority. The MMB has proposed Coastal protection works (Nearshore reef and Beach Nourishment) at Ganapatipule, District Ratnagiri

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Project activity consists of construction of a nearshore reef which is 200 m long and 300 m offshore at Ganapatipule using steel caissons each 25 m long, 9 m wide and 6.4 m high, 80 kg stones will be used for the toe stability.

Nourishment source: In addition to the reef, a salient will be built in the lee of the reef with nourishment using 40,000 Cu.m. The goal of building salient is to ensure that there are no effects immediately downstream of the reef during the period of beach adjustment, which may last 1-2 years depending upon the wave climate. Analysis has shown that the river entrance sand spit is closely connected and part of beach itself. Dredging of sand from the spit and placement at the Temple would have no longer term benefit for the beach. Thus, it's recommended that sand be taken from the river, inside the entrance.

Sr No.	Item	Description				
1	Building of offshore reef	 200 m long reef using steel caissons 300 m offshore in front of Ganepatipule Temple 				
2	Beach Nourishment	A total 40,000 m3 of sand will be dredged from the Ganaptipule river.				

The site of coastal protection works falls in CRZ I (B) area, as per approved CZMP.

The PP has submitted the EIA/ EMP report prepared by MoEF&CC accredited consultant (M/s Ecofootforward). The report states that, various alternative analysed for coastal protection works. Soft solution, artificial reef construction is the most suitable in combination with beach nourishment. The project activity being primarily conducted in the nearshore and beach area no impact is envisaged on the terrestrial ecology. Beach formation due to reef will enhance the surface area for benthic organisms. For the temporary displaced marine fauna during execution, it will be helpful for the beach ecology. The sand that is going to be used for nourishment of beach is from the mouth of the adjoining creeklet and with no difference in the composition as of the beach area. Therefore no impact is envisaged in terms of species diversity being disturbed.

The Authority noted that the EIA report states that, various alternative analyzed for coastal protection works. Soft solution, artificial reef construction is the most suitable in combination with beach nourishment. The project activity being

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primarily conducted in the nearshore and beach area no impact is envisaged on the terrestrial ecology. Beach formation due to reef will enhance the surface area for benthic organisms

The Authority noted that recently MoEF&CC, New Delhi in its July, 2022 Office Memoranum has encouraged the Nearshore reef as effective coastal protection works. The Authority suggested that MMB need to document the details of the proposal with on ground results, so that it could a case study and similar works could be replicated on other coastal stretches.

In the light of above, the Authority after deliberation decided to recommend the proposal from CRZ point of view to SEIAA subject to certain conditions:

- 1. Proposed activity should in accordance with provision of the CRZ Notification, 2011 (amended from time to time
- 2. Natural geo-morpholical features like sand dune, turtle breeding sites, if any should not be disturbed.
- 3. Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 4. Debris generated during the project activity should not be dumped in CRZ area. It should be processed scientifically at a designated place.
- 5. All other required permission from different statutory authorities should be obtained

Item No.34: Proposed coastal Protection Work with Sea shore development at S. No. 1759 at village Murud, Tal. Murud, Dist. Raigad by Murud Janjira Municipal Council

The Chief Officer, Murud Janjira Municipal Council presented the proposal before the Authority. The proposal is for coastal protection work (Anti sea erosion bund) with sea shore development at S. No. 1759 at village Murud, Taluka: Murud, District Raigad. Proposed project is coastal protections works under Maharashtra Coastal Protection & Management Investment Program (MSCRCPMIP) at Murud Beach.

Proposed activities involves:

- Coastal protection works- 340 meter
- Parking Area Development 18 m wide, 150 m length
- Walkway and sitting arrangement- 12 m wide, 200 m length

• Toilet Bock- Single story

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Residential properties of the villagers and town roads are situated abutting to the coastaline and facing higher waves action during the monsoon. Proposed project will protect erosion of existing coastline hence, coastal protection works have been suggested to prevent the erosion and potential damage to the coastal properties.

The site of coastal protection works falls in CRZ I area, as per approved CZMP. The PP has submitted the EIA/ EMP report prepared by MoEF Accredited consultant (M/s Ecofootward). The EIA report states that CWPRS has conducted desk studies for evolving the design cross section of coastal protection works based on the data such as beach profiles, tides, waves and the existing site conditions. A typical cross section is evolved at Ch. 150 m high Water Level (HWL) of + 4.5 m and Low Water Level (LWL) of +0.00 meter area considered for the design of protection works.

The Authority noted that The EIA report states that this is likely to result in a loss of part of the productive sand beach area. Adding sand or sediment to beaches to combat erosion and increase beach width. Physical changes to the seafloor geomorphology can take place. Loss of the strata during construction of the project at site.

The Authority observed the live google image and opined that beach area could be reduced due to proposed anti-sea erosion bund. Further the MJMC has proposed parking lot on the beach are which is not allowed as per CRZ Notification, 2011. The Authority observed that the PWD need to explore soft measures/ solutions for protection against the coastal erosion at the site.

In the light of above, the authority directed PP to resubmit the proposal with followings:

- 1. Site specific EIA report prepared by NABET Accredited Consultant
- 2. Soft measures as per guidelines of the MCZMA prepared in the instant meeting regarding coastal protection works read with Hon'ble NGT order dated 11.4.2022 in O.A. No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors

Accordingly, the current proposal is delisted from the records of the MCZMA.

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Discussion Item: GUIDELINES FOR COASTAL PROTECTION WORKS ALONG MAHARASHTA COAST

The MCZMA noted that Government organizations like Harbour Engineering Division, PWD, Maharashtra Maritime Board (MMB), Local bodies are submitting a flurry of proposals for Coastal Protection Works to protect the coastal stretches of the State from the danger of erosion. During the deliberations on said proposals, the Authority observed that proposals submitted mainly involves construction of anti-sea erosion bunds in the form of Seawall along the coastline which is assumed to be an only available solution to prevent / mitigate the coastal erosion.

- 2. The Authority observed that the above said organizations by default opt for hard structures in the form of seawall along the coastline as convenient and "business as usual" approach to protect the coastline, even at the cost of coastal environment. The Authority has observed that even at locations where there are pristine beaches and no vulnerable settlements are observed, the seawall is proposed, without even exploring other possible soft solutions for coastal protection works. The Expert Members, MCZMA deliberated that hard structures such as Seawall, gryones along the coastline interferes with the natural coastal processes and disturbs the sediment transport and causes littoral drift along the coastline, thereby posing the danger of further serious erosion of coastline and complete disappearance of beaches in the long run.
- 3. The Authority further noted took note of the order dated 11.4.2022 passed by the Hon'ble National Green Tribunal (NGT) in the matter of Original Application No. 04/2013 (SZ) with Appeal No. 18/2017 (SZ) S.H. Balamohan Versus Union of India and Ors wherein Hon'ble NGT has described the impacts of Hard structure like seawall and gryones along coastline and recommends the adoption of soft engineering measures. Certain extracts of the said Hon'ble NGT order are as follows:

"The coastal environment is a highly dynamic and therefore the scientific community is of the opinion that particularly on the coast it is preferable to "work with Nature" rather to try to "fight against Nature". This approach is also akin to the approach of the Precautionary Principal which advocates that if the coastline is eroding particularly due to human induced causes, it is preferable to address the root cause of the problem and try to return to the original, natural, stable state of coastline, rather than to attempt to re-engineer the coastal environment which results in perpetual alteration of the coastal environment which all its accompanying negative impacts"

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"The natural flow of sediment and beach sand along the coast is an essential phenomenon and process which supports natural habitats, flora and fauna, human populations and their fundamental right to life and livelihood. Coastal sediment is a public good that forms the very foundation of the sandy coastal environment, without which one of the sandy coastal environments can be sustained. The human induced loss of sediment form the coast and the resulting erosion and destruction of coastal habitats thereof directly results in the violation of the fundamental right to life and livelihood of all that which is dependent on coastal sediment. Just as water, food, air, lights etc are an essential part of the life and livelihood of every citizen of this country, similarly coastal sediment is equally an essential public good which is a part of the life and livelihood of all that which depends on the coastal environment. The human induced loss of coastal sediment within and even across state boundaries"

"Armouring of the coast with seawalls and groynes also result in the destruction of intertidal habitat that is required by marine flora and fauna such as planktons, crustaceans, bi-valves, mollusks, other invertebrates and even fishes. These flora and fauna also form part of the marine flood chain which supports fish stocks. The destruction of intertidal habitat thereof impacts large numbers of marine species and ecosystems. Without the beach providing the crucial sandy buffer between the sea and the land, erosion of the seabed at the coastal marine has resulted in salt water infiltration into the local aquifers"

"Soft engineering measures such as beach nourishment which is environmentally and socially friendly and increasingly adopted worldwide, should be adopted to tackle coastal erosion, especially to mitigate and reverse human induced coastal erosion"

- 4. The Authority observed that the Government agencies like PWD, MMB, Local bodies etc (project proponents) need to change their approach fundamentally and adopt the worldwide recognized and adopted practices of soft engineering measures for coastal protection work as first possible solution at the level deciding Strategy, Planning, designing.
- 5. The Authority after detailed discussion and long deliberations decided that certain guidelines / pointers could be formulated in this regard. The Government agencies like PWD, MMB, Local bodies etc (project proponents) at the level deciding strategy, Planning, designing for coastal protection works along the coast, shall take into consideration following guidelines and accordingly formulate their proposals for coastal protection works for submission before the MCZMA:

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- 1) Upholding the principal of "working with Nature", project proponent should always explore soft engineering measures, as its first option of measures for coastal protection work to address the issue of coastal erosion in the CRZ areas. Soft engineering measures shall include Beach Creation/ Beach Nourishment, Creation / protection of sand dunes and plantation of coastal vegetation for tabulation of sand dunes, Nearshore Artificial reefs, Sand filled Geo tubes etc. Plantation of local special of Mangroves wherever feasible could also be examined as a preferred option. Anticipating the fact that such alternatives have given best results at various locations, proponents are advised to refer to such case studies with site specific micro planning.
- 2) Government agencies like PWD, MMB, Local bodies with the help of organizations working in coastal engineering/science such as CWPRS, NIO etc shall generate / collate empirical historical data of coastal processes such as waves, currents, tidal flux, storm/surges, shoreline change pattern, so that such empirical data could be put in practice while planning and designing best possible and feasible coastal protection measure in order to combat the coastal erosion in CRZ areas.
- 3) Ecologically and Geo-morphologically sensitive features such as Mangroves, Beaches, sand dunes, backwaters, Turtle breeding beach sites etc acts as a natural buffer between marine and terrestrial environment and acts as an absorber of tidal wave energy and helps in dissipating the tidal wave energy naturally. Such features should be protected and replenished as soft measures to combat the coastal erosion etc.
- 4) At locations, where there is directly impacted and vulnerable dense human settlement present along the coastline and there is danger to life and livelihood and properties of local communities along coastline and there is history of erosion episodes, in such cases, coastal protection works in the form of Hard structure may be worked as a last resort against the coastal erosion and in order to save the life and livelihood and properties of local communities from extreme events.
- 5) Project proponents should plan, design the coastal protection work considering holistic approach, instead of proposing the works in piecemeal manner to ensure a wider spatio-temporal in situ environmental benefits.

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- 6) CWPRS, being the prominent Govt organization well known for designing the coastal protection works, while suggesting the best possible workable solution, shall also look into the aspect of coastal processes such as shoreline change and other local coastal environment settings. The role of CWPRS is crucial so far as suggesting the Right and Holistic measure for coastal protections works to project proponents. Understanding ecological perspective beyond civil structure policy may please be suggested as an site specific alternative.
- 7) If the project proponents opts for Hard structures (Seawall) for coastal protection work as a last resort, then the proposed work should be strictly on landward side of the Beach Area and High Tide Line of seafront and tidally influenced water bodies.
- 8) The coastal environment settings along estuary, mouth of the creek is sensitive and delicate. If coastal protection work is utmost necessary along such areas, then Project proponent should exercise extra precaution and explore soft measures first and if hard measures are indispensable in such locations, then, such measures should be strategically planned without disturbing the local coastal environment settings including aesthetics.
- 9) Natural stream, creeklets and natural water bodies should not be disturbed and reclaimed while implementing the coastal protection works.
- 10)Project proponent shall submit the proposal to MCZMA for coastal protection works with clear purpose/objective, Location, report as a need analysis supported by the recommendations by competent organizations CWPRS, NIO, IIT etc. Certificate stating that soft measures are explored as first option of measures for coastal protection work to address the issue of coastal erosion, Site specific EIA & EMP prepared by NABET Accredited consultant etc.

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Annexure I

List of members/officials present in the online meeting:

- 1. Mr. Mirashe, Representative from the Industry Dept, Member MCZMA
- 2. Dr. Mahesh Shindikar, College of Engineering, Pune, Expert Member, MCZMA
- 3. Dr. Anish Andheria, Expert Member, MCZMA
- 4. Dr. A. K. Chaubey, Ex Regional Director NIO, Expert Member, MCZMA
- 5. Mr. Maruti Kudale, Ex Director, CWPRS, Expert Member, MCZMA
- 6. Mr. Narendra Toke, Director, Environment &CC and Member Secretary, MCZMA.

Meeting	ended	with	vote	of	thanks	to	chair

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