

**“Groyne Field : Erosion threat to Kalpakkam Nuclear Plant?”**



**GROYNE FIELD: EROSION THREAT TO KALPAKKAM NUCLEAR PLANT?**

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THERE is an imminent threat of erosion to nuclear power plants in Kalpakkam. The State Fisheries Department is building a groyne field (a row of stone structures laid vertically into the sea from the coast) at Pudupattinam village in Chengalpattu district without obtaining the mandatory Coastal Zone Regulation (CRZ) clearance. Pudupattinam is located on the southern end of the township at Kalpakkam, and is only a few kilometres from the Indira Gandhi Centre for Atomic Research (IGCAR) and Madras Atomic Power Station (MAPS), which are critical installations undertaking projects of national importance.

Totally, a row of seven groynes of varying measurements are planned. When *Express* visited the site recently, the work on four of the groynes was nearing completion and preparation was underway to commence work on the fifth one. These are hydraulic structures constructed to tackle coastal erosion, but in most cases groynes only transferred the problem of erosion towards the north of these structures — much like the breakwaters. Here, north of



The Kalpakkam shoreline where groyne fields are currently being built | SPECIAL ARRANGEMENT

these structures is the Kalpakkam township and further up north comes the nuclear power plant. As per design given by the Ocean Engineering Department of IIT Madras, the northernmost groyne will be built very close to the Kalpakkam township.

When contacted, senior officials at IGCAR also expressed fear that erosion may aggravate and affect the coastline after construction of these groynes. “During the 2004 tsunami, 46 people died in Kalpakkam township. Our school, staff quarters, CISF barrack etc., are all located very close to the beach.” To a query, an official said the fisheries department did not inform IGCAR about the project.

Environmental activist Saravanan Kasi said the project was totally illegal. The Comprehensive Shoreline Protection Management Plan was yet to get the nod from the Union Ministry of Environment, Forests & Climate Change (MoEF&CC). P7

**AS PER RULES...**

According to Coastal Regulation Zone Notification 2011, the stretch where groynes are being built falls under areas where construction activity is prohibited without clearance from the State Coastal Zone Management Authority

**News Item in The New Sunday Express newspaper, Late City Edition dated 27th June 2021**

**Groyne field built near Kalpakkam nuclear plant without CRZ clearance triggers controversy**

**CHENNAI:** The state fisheries department is building a groyne field (a row of stone structures laid vertically into the sea from the coast) in Pudupattinam village in Chengalpet district without obtaining mandatory Coastal Zone Regulation (CRZ) clearance. Pudupattinam is located on the southern end of the

township at Kalpakkam and is only a few kilometres from the Indira Gandhi Centre for Atomic Research (IGCAR) and Madras Atomic Power Station (MAPS), which are critical installations undertaking projects of national importance.

Totally, a row of seven groynes of varying measurements are planned. When The New Indian Express visited the site, work on four groynes was nearing completion and preparation was underway to start work on the fifth. These are hydraulic structures constructed to tackle coastal erosion, but in most cases groynes only transferred the problem of erosion towards the north of the structures--much like the breakwaters. Here, north of these structures is Kalpakkam township and further north comes the nuclear power plant. As per the design given by the Ocean Engineering Department of IIT Madras, the northernmost groyne will be built very close to the Kalpakkam township. When contacted, senior officials at the Indira Gandhi Centre for Atomic Research (IGCAR) also expressed concern that erosion may affect the coastline after the construction of these groynes. "During the 2004 tsunami, 46 people died in Kalpakkam township. Our school, staff quarters, CISF barrack etc are all located very close to the beach," said an official. To a query, the official said the fisheries department did not inform IGCAR about the project.

### **Project is illegal, say activists**

Environmental activist Saravanan Kasi said the project was illegal. The Comprehensive Shoreline Protection Management Plan proposed by the Tamil Nadu government was yet to get approval from the Union Ministry of Environment, Forests and Climate Change (MoEF&CC). Also, according to Coastal Regulation Zone (CRZ) Notification 2011, the beach area in which groynes are being built, falls under CRZ IV (water body) and CRZ IB (intertidal zone), wherein construction activity of any kind is strictly prohibited without obtaining prior CRZ clearance from the Tamil Nadu State Coastal Zone Management Authority (TNSCZMA). Also, there is an order from the National Green Tribunal preventing the Public Works Department or any other agency from proceeding with any work on shore protection until further orders till the approval of the Comprehensive Shoreline Protection Management Plan / Scheme by MoEF&CC.

Officials in the fisheries department told The New Indian Express that the project was recommended by the District Coastal Zone Management Authority, which is headed by the collector. "Our application for CRZ clearance is currently pending before TNSCZMA, which will be considering it in its next meeting," said an official. An executive engineer said Pudupattinam and Uyyalikuppam, which are two traditional fishing villages, were facing severe sea erosion of late. "Several houses and fishing landing areas were swallowed by the sea. To arrest the erosion, the state government has approved a project costing Rs 163 crore, which includes construction of groynes, two auction halls, two net mending rooms, two fish landing platforms and toilets. The work started in January this year and will be completed in another two months. Getting CRZ clearance got delayed due to Covid-19. We want to finish building groynes before this monsoon to minimise the problems for fishermen." Asked how construction commenced before obtaining CRZ clearance, Commissioner of Fisheries M Karunakaran said he would inquire into the matter.

### **Are better soft solutions available?**

In 2016 and 2018, the fisheries department constructed a groyne field in Kovalam, about 30km from Chennai on East Coast Road. But although it helped create a new beach in Kovalam, about 400 metres of beach on the northside got eroded. During the same period, the Chennai-based National Institute of Ocean Technology (NIOT) has deployed a wedge-shaped nearshore artificial reef in Pondicherry to fight sea erosion. It was the first of its kind eco-friendly design developed and successfully implemented in India. These submerged soft structures unlike groynes allow the sand to bypass, thereby helping beach formation on the either sides. After nearly two decades, now there is about 300 metres of beach in Pondicherry restoring some of the lost glory. Also, compared to groynes, soft structures are feasible. It cost only Rs 25 crore for the NIOT project in Pondicherry. Scientists are exploring similar measures to arrest erosion in India's spaceport Sriharikota.