

# SENATE OF PAKISTAN



## REPORT NO. 3 OF 2019

### REPORT OF THE SENATE STANDING COMMITTEE ON SCIENCE AND TECHNOLOGY

ON

"THE POINTS OF PUBLIC IMPORTANCE ON SEA INTRUSION AND EROSION  
RAISED BY SENATORS SASSUI PALIJO AND DR. SIKANDAR MANDHRO IN THE  
SENATE ON 6<sup>TH</sup> MARCH 2019, AND REFERRED BY THE HOUSE TO THE  
COMMITTEE FOR CONSIDERATION AND REPORT"

**PRESENTED BY:**  
**SENATOR MUSHTAQ AHMED**  
**CHAIRMAN (COMMITTEE)**

## SENATE SECRETARIAT

### REPORT OF THE STANDING COMMITTEE ON SCIENCE AND TECHNOLOGY ON "THE POINTS OF PUBLIC IMPORTANCE ON SEA INTRUSION AND EROSION RAISED BY SENATOR SASSUI PALIJO AND SENATOR DR. SIKANDAR MANDHRO IN THE SENATE ON 6TH MARCH 2019"

I, Senator Mushtaq Ahmed, Chairman Standing Committee on Science and Technology, have the honor to submit, on behalf of the Committee, this report on the Points of Public Importance on sea intrusion and erosion raised by Senator Sassui Palijo and Senator Dr. Sikandar Mandhro in the Senate on 6<sup>th</sup> March 2019 and referred to the Committee for consideration and report.

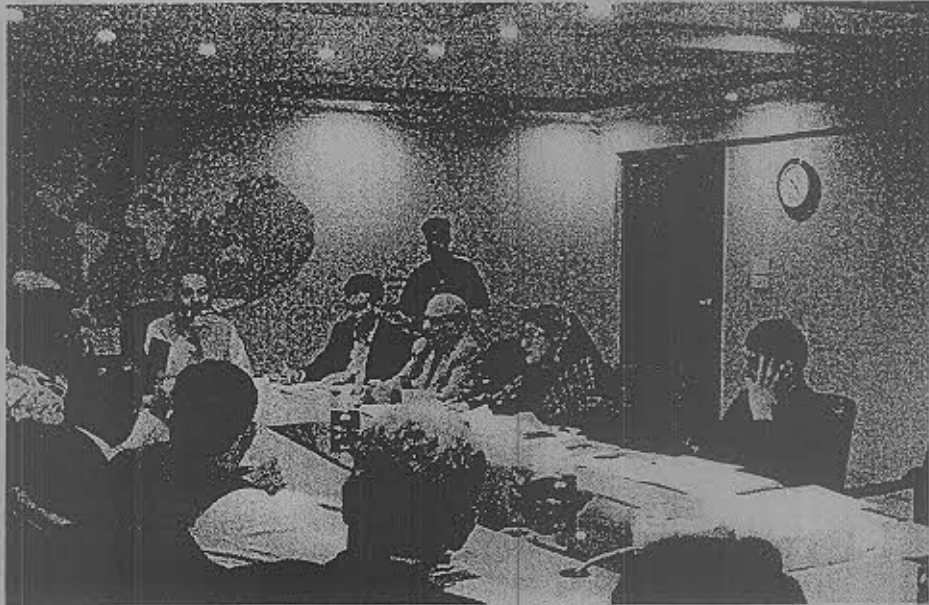
2. The composition of the Committee is as under:-

1.	Senator Mushtaq Ahmed	Chairman
2.	Senator Muhammad Azam Khan Swati	Member
3.	Senator Gul Bashra	Member
4.	Senator Nuzhat Sadiq	Member
5.	Senator Syed Muhammad Sabir Shah	Member
6.	Senator Gianchand	Member
7.	Senator Sassui Palijo	Member
8.	Senator Dr. Sikandar Mandhro	Member
9.	Senator Sarfaraz Ahmed Bugti	Member
10.	Senator Kamran Michael	Member
11.	Senator Hilal-ur-Rehman	Member
12.	Minister Incharge for Science and Technology	Ex-Officio Member

3. The Committee visited Karachi, held a meeting at National Institute of Oceanography (NIO) and took a boat tour to the sea intrusion affected coastal areas of Sindh on 20<sup>th</sup> March 2019, which was attended by the following:-

1.	Senator Mushtaq Ahmed	Chairman
2.	Senator Dr. Sikandar Mandhro	Member / Mover
3.	Senator Nuzhat Sadiq	Member
4.	Senator Hilal ur Rehman	Member

4. During meeting at NIO, the Committee was given a detailed briefing by NIO, SUPRACO and Pakistan Navy on the issue of sea intrusion and erosion. It was informed that due to the phenomenon of sediment starvation – a situation when rivers carry minimal sediments to the delta areas – the deltas have gone in compaction phase, which can be characterized as sinking of the delta area. Together with rise in sea level, it is causing sea intrusion. The Committee was briefed that out of sixteen creeks of Indus Delta,



only one Khobar Creek now transfers water from the main river to the sea. When the British built irrigation system, many creeks were plugged. Therefore only release of more water into the river system will not work rather we will have to think of other solutions as well. At the same time, proper assessment and cost-benefit analysis of extracting silt deposits from Tarbela and Mangla dams also need to be carried out. It was added that a very high level of wave energy and little or no sediment contribution from the Indus River is transforming the delta into a wave dominated one. SUPARCO representative informed that comparison of satellite imagery from early 1970s to the present shows significant loss of land to sea intrusion. Moreover, sand dunes are eroding which are natural defenders against sea intrusion. If these sand dunes are lost, soil and mud areas will be exposed, which will easily submerge under sea water. On 15 November 2016, super moon phenomenon caused high waves and satellite imagery showed sea intrusion upto 80-100 km inside the hinterland. Mangrove vegetation in the deltaic area is rapidly depleting. In the coastal areas of Balochistan, non-deltaic areas, factors leading to sea intrusion are different, such as human made structures of jetties, protective walls at the coast without proper environmental impact assessment.

5. Senator Dr. Sikandar Mandhro pointed out that in the 1991 Water Accord, it was decided that 10 million acre feet of water shall flow downstream Kotri all the way to sea in order to avoid sea intrusion. Later on a study by IUCN found that 27 million acre feet of water flow was required for this purpose. However, practically below Kotri water flow is zero in most years as a result of which sea intrusion has reached alarming proportions. He also held that hundreds of

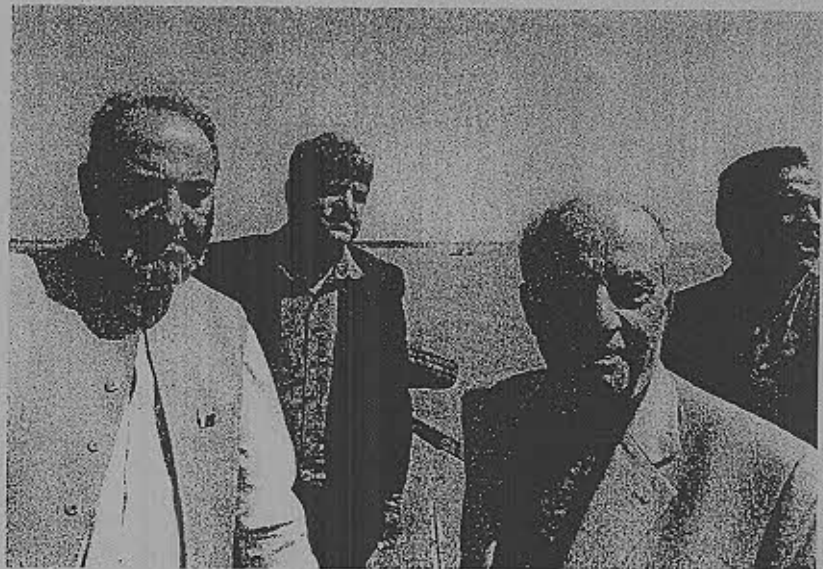
thousands of acres of fertile land in Indus Delta has been lost to sea intrusion, affecting 1.4 million population and displacing thousands. He added that surface water is no more available, ground water has become saline and all this is leading to a major human catastrophe. He also



cited concluding remarks of a study that war against climate change has to be fought and won in coastal areas. Senator Mandhro said India built roads in all its deltaic areas. Roads not only served as embankments but also generated economic activity in the areas, leading to better living conditions and hence improvement preparedness against sea intrusion.

He also underscored the need to take local population on board so as to benefit from the local wisdom. Chairman Committee noted that data of water flow in Indus River, especially downstream Kotri, over the years was needed to have a clearer picture of the situation.

6. When inquired about steps taken for addressing the situation, the Committee was informed that as per recommendations of Senate Standing Committee on Planning, Development and Reform after its visit to coastal areas in March 2016, NIO prepared and submitted a PC-1 in collaboration with SUPARCO, Pakistan Navy and PCRWR, titled "Monitoring the Sea Water Intrusion, Sea Level Rise, Coastal Erosion & Land Subsidence along Sindh and Balochistan Coast" at a total cost of Rs.650.050 million. The CDWP approved the project on 19<sup>th</sup> March 2018 however later on Ministry of Planning, Development and Reform (MoPD&R) issued a reduced authorization of 411.050 million, in which many key project components of satellite imagery and surveys have been omitted. Chairman and members of the Committee expressed displeasure at this approach of MoPD&R.



Chairman Committee emphasized that sea intrusion is a serious matter, which shall not be ignored as done by MoPD&R, nor it could be covered in a meeting rather it requires dedicated focus, joint efforts of multiple departments/organizations, persistence and mobilization of all available resources. He held that departments of Revenue, Forest, Irrigation, P&D, coastal development authorities, Flood Commission, MoPD&R and M/o Finance also need to be called in to brief on the matter. He also announced that he will recommend to the Chairman Senate to arrange a Committee of the Whole meeting on the issue of sea intrusion so that all Senators are made aware of the critical situation, the House conducts a comprehensive debate and makes concrete recommendations for triggering composed and persistent action at the highest level.

7. Thereafter the Committee visited different sea-intrusion affected coastal areas of Sindh by boat. NIO and Pakistan Navy officers briefed the Committee about affected areas and pointed out to locations that have been affected the most.

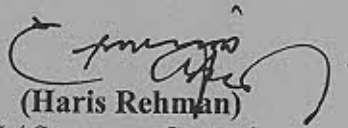


#### RECOMMENDATIONS / DIRECTIVES OF THE COMMITTEE

- i. Sea intrusion is a serious matter, which shall not be ignored as done by MoPD&R while reducing the allocation for a joint project aimed at analyzing and addressing sea intrusion.
- ii. Addressing the problem of sea intrusion requires dedicated focus, joint efforts of multiple departments/organizations, persistence and mobilization of all available resources.
- iii. Departments of Revenue, Forest, Irrigation, P&D, coastal development authorities, Flood Commission, MoPD&R and M/o Finance need to be called in for briefing on the matter.
- iv. Recommendations made by Sub-Committee of Senate Standing Committee on Planning, Development and Reform in March 2016 regarding sea intrusion shall be implemented in letter and spirit by all concerned, especially MoPD&R and M/o Finance, so that repetition and duplication of efforts is avoided.
- v. The Committee strongly recommends that a Committee of the Whole meeting of the Senate may be convened on the issue of sea intrusion so that all Senators are made aware of the critical situation, a comprehensive debate is done in the House and concrete

recommendations are made for triggering composed and persistent action at the highest level.

- vi. The Committee further recommends that a Special Committee may be constituted specifically on the issue of sea intrusion and chairpersons of Standing Committees on Science and Technology; Finance, Revenue and Economic Affairs; Planning, Development and Reform; Climate Change; Maritime Affairs; Water Resources should be members of proposed Special Committee on sea intrusion.



(Haris Rehman)

D.S / Secretary Committee



(Senator Mushtaq Ahmed)

Chairman Committee

Islamabad,  
The 3<sup>rd</sup> April, 2019