The Indian EXPRESS
JOURNALISM OF COURAGE

How India ‘added’ more than 3,500 km to its coastline

The length of India’s coastline used to be 7,516 km, something that was ascertained in the 1970s. But this coastline has now been measured to be 11,098 km

Written by Amitabh Sinha Follow
New Delhi | Updated: June 28, 2025 06:37 IST

5 min read

Coastlines are highly irregular structures. Increasing the resolution of data is like reducing the ruler being used for measurement. (Photo: Reuters)

India’s coastline is now far longer than it used to be, almost 50% more than the previous length. This increase has happened not because of any acquisition of territory, but due to more accurate measurements that have recently been carried out.

Additionally, the number of islands in India has increased slightly. This rise in the number has taken place due to India’s reassessment and recount of its offshore islands.

The increase in the length of the coastline and the number of islands is interesting and significant from administrative and strategic perspectives. However, there has been no change in the ground situation.

Longer coastline

The length of India’s coastline used to be 7,516 km, something that was ascertained in the 1970s. But this coastline has now been measured to be 11,098 km, an increase of 3,582 km, or nearly 48%. The main reason for such a big difference is in the scale of data used for measurement.

Length of India’s coastline along states

State/UT	Coastline length (in km)
Gujarat	2,340.62
Maharashtra	877.97
Goa	193.95
Karnataka	343.3
Kerala	600.15
Tamil Nadu	1,068.69
Andhra Pradesh	1,053.07
Odisha	574.71
West Bengal	721.02
Daman and Diu	54.38
Pondicherry	42.65
Lakshadweep	144.8
Andaman and Nicobar	3,083.50

Source: Ministry of Ports, Shipping and Waterways

The earlier measurement was based on data that were of the scale of 1:4,500,000 (one to forty-five lakh), or smaller. However, with time, much better resolution data has become available, making the measurements more accurate. The recent exercise calculated the length of the coastline using data that had a scale of 1:250,000 (one to 2.5 lakh).

Coastlines are highly irregular structures. Increasing the resolution of data is like reducing the ruler being used for measurement. A one-km ruler, for example, will ignore many small irregularities in the land structure that a one-metre ruler will be able to map.

Higher resolution data can capture the coastline, its bends and curves, in more intricate details. In low-resolution data, these details get smoothened out, and appear as straight lines. The loss of bends and curves would shorten the length.

Also, the previous estimation was a result of more conventional and manual calculations. These have now been replaced with modern GIS software, which is able to capture the irregularities of the landmass much more accurately.

Another reason for the increase has been the inclusion of coastlines of many off-shore islands that had been left out of previous calculations. Some of these islands were either not visible in smaller-scale data or were omitted due to the practical constraints of manual methods of measurement.

The coastline paradox

While the new length of India’s coastline is a much more accurate estimate, it is still not the actual length. In fact, the actual length of India’s coastline, or any other coastline for that matter, can not be measured. This is the famous coastline paradox. Highly irregular features like a coastline do not have a finite length. Their length depends on the scale or resolution at which they are being measured. They can always be observed, and measured, in more detail, which will lead to a longer length.

The coastline paradox extends to many other similar natural features such as river networks and mountain ranges. The path that a river takes, for example, is very irregular. The banks of a river are not a straight line. Calculating the length of a river along its

banks would lead to the same kind of problem as in measuring the coastline. However, river lengths are mostly calculated along the main stream, and not along the banks.

It is not surprising therefore that the length of India’s coastline has changed significantly. The length is a factor of the precision of measurement used, and as greater precision becomes available due to technological advancements, this length would increase further. For this reason, this exercise has now been mandated to be carried out every ten years.

Other countries do it as well. Reassessment of coastlines becomes necessary also on account of natural processes such as **coastal erosion** and human interventions like land reclamation.

New islands

Unlike the coastline, the number of islands does not lend itself to a measurement problem. But there are other kinds of ambiguities. For example, a location might be an island during high tide but connected to the land during low tide.

Offshore and inshore islands in states

State/UT	Offshore islands	Inshore islands	Total
Gujarat	108	36	144
Maharashtra	105	15	120
Goa	39	2	41
Karnataka	88	12	100
Kerala	7	--	7
Tamil Nadu	26	2	28
Andhra Pradesh	20	12	32
Odisha	13	3	16
West Bengal	14	9	23
Daman and Diu	9	--	9
Lakshadweep	33	--	33
Andaman and Nicobar Islands	836	--	836
Total	1,298	91	1,389

Source: Office of Surveyor General of India

In 2016, an exercise by the Office of the Surveyor General of India listed 1,382 offshore islands in India. However, a count by state governments, and some other agencies like the Coast Guard and Indian Navy had yielded a lesser number of 1,334.

A subsequent data reconciliation exercise removed the ambiguities in definitions and standardised the classifications to arrive at a new number of offshore islands in the country, 1,298. This exercise also listed 91 inshore islands. The total number of islands is 1,389. These do not include the large number of river islands in states such as Assam and West Bengal.

Also in Explained | Why does sea level rise matter?

Implications

Since the ground situation has not changed, the new numbers, for the islands or the length of the coastline, are largely academic in nature. Nothing much changes at the international level, for example.

But these are not irrelevant details. The new numbers result in a better understanding of India’s territory and terrain. There surely are administrative, developmental and security implications. However, these can have operational significance as well.

For example, the new coastline could impact the areas covered by Coastal Zone Regulations (CRZ) in some places. Efforts to check coastal erosion, or to strengthen the coastline to make it more resilient from climate change threats, would also be impacted. Tourism and infrastructure development are also likely to be affected.

This article went live on June twentieth, twenty twenty-five, at fifty-two minutes past seven in the evening.

TAGS: **Express Explained** **Express Premium**