

Neue Studie: Die Küste von Bangladesch hat sich seit 1990 um 2677 Quadratkilometer seewärts ausgedehnt

geschrieben von Chris Frey | 20. November 2024

[Kenneth Richard](#)

Ein weiteres alarmistisches Narrativ über den Anstieg des Meeresspiegels und die Überflutung der Küsten bricht unter dem Gewicht der Beobachtungsdaten zusammen.

Im Jahr 1989, dem Jahr, in dem die Vereinten Nationen den späteren IPCC zusammenstellten, **warnte** ein „hochrangiger UN-Umweltbeamter“, dass die Staats- und Regierungschefs bzw. Politiker der Welt bis zum Jahr 2000 Maßnahmen zur „Lösung des Treibhauseffekts“ ergreifen müssten. Wenn die Regierung nicht innerhalb von zehn Jahren Maßnahmen ergreift, um den globalen Erwärmungstrend umzukehren, „könnten ganze Nationen durch den Anstieg des Meeresspiegels von der Erdoberfläche verschwinden“.

U.N. Predicts Disaster if Global Warming Not Checked

PETER JAMES SPIELMANN June 29, 1989

UNITED NATIONS (AP) – A senior U.N. environmental official says entire nations could be wiped off the face of the Earth by rising sea levels if the global warming trend is not reversed by the year 2000.

Coastal flooding and crop failures would create an exodus of "eco-refugees," threatening political chaos, said Noel Brown, director of the New York office of the U.N. Environment Program, or UNEP.

He said governments have a 10-year window of opportunity to solve the greenhouse effect before it goes beyond human control.

As the warming melts polar icecaps, ocean levels will rise by up to three feet, enough to cover the Maldives and other flat island nations, Brown told The Associated Press in an interview on Wednesday.

Coastal regions will be inundated; one-sixth of Bangladesh could be flooded, displacing a fourth of its 90 million people. A fifth of Egypt's arable land in the Nile Delta would be flooded, cutting off its food supply, according to a joint UNEP and U.S. Environmental Protection Agency study.

Quelle: [AP News](#)

Ein besorgniserregender regionaler Hintergrund war damals Bangladesch, ein Land mit 90 Millionen Menschen in Küstennähe. In der Warnung hieß es, dass „ein Sechstel von Bangladesch überflutet werden könnte, wodurch ein Viertel“ der Küstenbevölkerung (20-25 Millionen Menschen) vertrieben werden würde.

Aber die alarmistischen Warnungen waren natürlich völlig falsch. Das Gegenteil ist eingetreten.

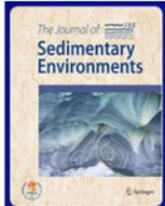
Eine neue [Studie](#), die sich auf Fernerkundungs- und geografische Informationssystemdaten stützt, kommt zu dem Ergebnis, dass sich die gesamte Landfläche Bangladeschs von 134 382 km² im Jahr 1990 auf 137 656 km² im Jahr 2022 vergrößert hat, was einer Nettozunahme der Landfläche von 3 274 km² entspricht.

Der überwiegende Teil dieser Landausdehnung ist die Folge des Rückgangs des relativen Meeresspiegels entlang der Küsten und des synchronen Wachstums des Küstenlandes in Richtung Meer.

Im Jahr 1990 betrug die Küstenfläche von Bangladesch entlang des Golfs von Bengalen 17 653 km². Bis 2022 hatten sich die Küsten Bangladeschs auf 20.330 km² ausgedehnt, was einer seewärtigen Küstenausdehnung von 2.677 km² (13,2 %) entspricht.

Die Küstenbevölkerung wurde nicht nur nicht durch den Anstieg des Meeresspiegels verdrängt, sondern Tausende von Quadratkilometern Land befinden sich nun über dem Meeresspiegel. Die Bevölkerung Bangladeschs ist auf 173 Millionen Menschen angewachsen (2023).

SPRINGER NATURE Link



32 years of changes in river paths and coastal landscape in Bangladesh, Bengal Basin

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In 1990, the primary land area of Bangladesh, excluding offshore regions, was calculated to cover 134,382 km² using the surface geological map of the Geological Survey of Bangladesh (Fig. 4a). By 2022, the total land surface has expanded to 137,656 km² (Fig. 4b). These findings indicate a net land-growth of 3,274 km², equating to an overall increase of land area of 2.44% compared to the original extent in 1990. By comparing the 1990 base map with 2022 Sentinel-2 imagery, the study found that riverbank and coastal erosion had engulfed 2,399 km² land area of Bangladesh over 32 years (Fig. 4c). Whereas the combined extent of the newly mapped unit of undifferentiated Quaternary deposit was measured at 6,022 km² (Fig. 4d). Around rivers and coastal areas, a total land increase of 5,673 km² was observed, accounting for roughly 94% of the new Quaternary deposit. The remaining 6% of this new unit is mainly situated in Chittagong Hill Tracts with undefinable conditions. Statistical mapping also revealed that the Bangladesh coastal area was approximately 17,653 km² in 1990, notably expanding to 20,330 km² by 2022.

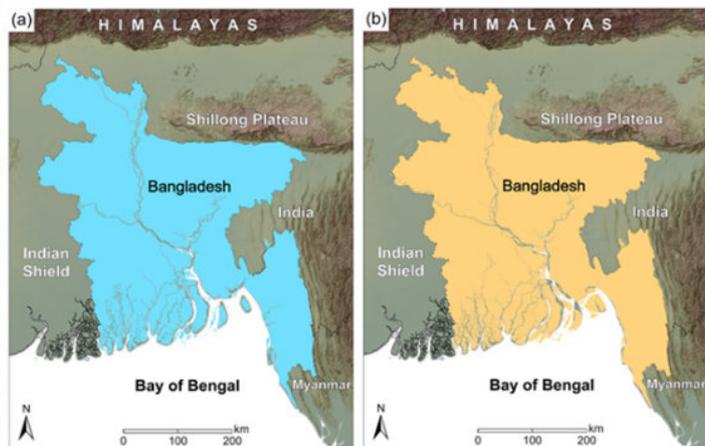


Fig. 4 Satellite data-based mapping revealing landscape evolutions in Bangladesh between 1990 and 2022. **a** The extent of mainland Bangladesh in 1990 was 134,382 km² based on the

surface geological map of the Geological Survey of Bangladesh. **b** The 2022 assessment revealed an expansion in total land surface area to 137,656 km², **c** despite a loss of 2,399

Quelle: [Shahid et al., 2024](#)

Das Wachstum der Küstenflächen findet nicht nur in Bangladesch statt, sondern [Satellitendaten](#) zeigen, dass seit den 1980er Jahren die Küsten „weltweit wachsen“.

Ein Beispiel für eine Riffinsel im Korallendreieck (zwischen Südwest-Sulawesi und der Straße von Makassar) zeigt, dass „das Vorrücken der Küstenlinie insgesamt zu einer Inselfläche von fast 23 ha geführt hat, was eine Zunahme von ~13 % in den letzten 24 Jahren bedeutet“ ([Kappelmann et al., 2024](#)).

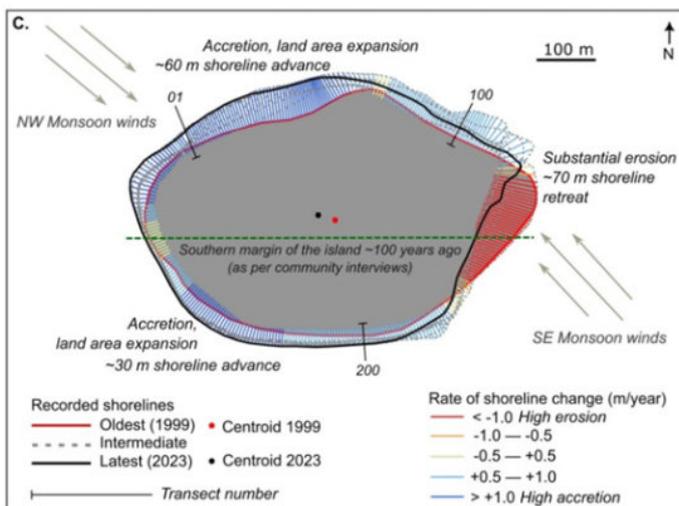
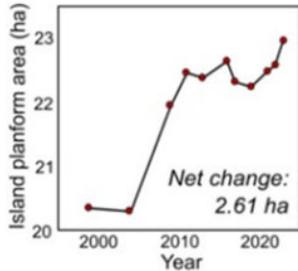
Ein Vergleich zwischen der relativen Größe der Insel im Jahr 1897 und 2023 (Bild unten rechts) zeigt, wie viel mehr Landfläche in dieser

Region heute über dem Meeresspiegel liegt als vor 125 Jahren.

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Island accretion within a degraded reef ecosystem suggests adaptability to ecological transitions

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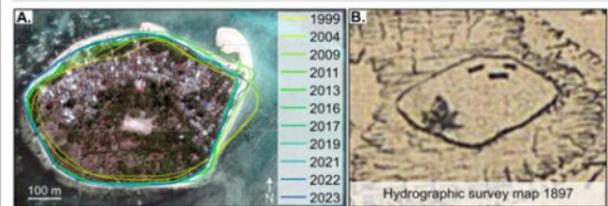


As summarized by Duvat (2018) shoreline studies in the Pacific and Indian Ocean found that islands larger than 10 ha are mainly stable (89%) and a growth rate of >3% area per decade is rare (11%). Based on this classification, the spatial expansion of a large island like Langkai at a rate of >5% area per decade is particularly noteworthy.

The centennial comparison of shorelines suggests that the island shape has evolved significantly since the late 19th century. The map from the hydrographic survey undertaken in 1897 (Fig. 3B) is in line with communications by locals stating that the southern island edge one century ago was located close to where the central sports field is found currently (Fig. 1C, 3C). This suggests that the W-E transect is close to the southern shoreline from the late 19th century when the island was more lens-shaped (Fig. 4M1) and significantly accreted in southward direction according to the locals in the 20th century (Fig. 4M2).

The shoreline analysis from the recent decades reveals that the island is predominantly in an accreting state. Despite intermittent net area erosion between e.g. 2016 and 2017 (Fig. 3A, C), overall shoreline advance has led to a total island area of nearly 23 ha, indicating an increase of ~13% over the past 24 years (Fig. 3).

A total of 306 analyzed digital transects reveal that accretion was significant in 84.97% of the transects, whereas 14.05% eroded and 0.98% remained stable between 1999 and 2023 (Fig. 3). The prevailing accretion resulted in a marked expansion of the island area to 22.95 ha in 2023, indicating a net increase of 2.61 ha (12.8%) since the start of the 21st century (Fig. 3E). The highest rates of shoreline advance are reported along the north and northwest margins (~60 m), as well as in the south (~30 m), where mean annual accretion rates are well above 1.0 m year⁻¹ (Fig. 3C). The eastern part of the island shows widespread erosion, where the shoreline retreated by ~70 m. Intermediate accretion and subsequent erosion are found in the northeast of Langkai, however over the time analyzed this part of the island is characterized by net accretion. The imbalance in the magnitude of erosion and accretion around the island margin led to the migration of the island footprint on the reef platform, with the centroid of Langkai having moved by 30.92 m toward the NW within the last 24 years (Fig. 3C).



Quelle: [Kappelmann et al., 2024](#)

In den Deltagebieten sind über 40% der weltweiten Mangroven zu finden. Eine weitere neue Studie zeigt nun, dass sich 80% der Mangrovengebiete zwischen 1986 und 2020 seewärts ausdehnen.

„Wir haben festgestellt, dass die Gesamtfläche der Mangrovenwälder im Zeitraum 1986-2020 mit einer durchschnittlichen Änderungsrate von 80,8 ha/Jahr deutlich zunimmt.“

Darüber hinaus weisen die Küstenlinien der Mangrovenwälder in den letzten 35 Jahren eine Expansionsrate von 18,9 m/Jahr auf.

Geophysical Research Letters^{*}

Overestimation of Mangroves Deterioration From Sea Level Rise in Tropical Deltas

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Here we present new evidence on demonstration that mangrove forest extent and associated seaward/landward migration between 1986 and 2020 in deltas along the Northwest Pacific coast could experience distinct changes despite SLR. Deltaic regions host most of the world's mangrove forest by accounting for about 40.5% (54,972 km²) of the total mangrove area (Giri et al., 2011; Lovelock et al., 2015; Worthington et al., 2020).

Approximately 80% of the mangroves' shorelines are expanding seaward, with a percentage of 92%, 81%, 80%, and 69% in Naliu, Beilun, Red, and Mekong delta, respectively, showing that deltas dominated by different dynamics are still expanding seaward in spite of SRL (Table S10 in Supporting Information S1).

Here, four deltaic mangrove forests are investigated, which represent riverine, wave and tidal end-members of world deltas (Dalrymple et al., 1992) (Figure 1a). We found that the total area of mangrove forests display a significant gain with average change rate of 80.8 ha/yr during 1986–2020 (Figure 2a), in contrast to previous work that reports a global loss of mangroves at a yearly rate of 34,700 ha between 1990 and 2020 (FAO, 2020). Further, the mangrove forest shorelines present an expansion rate of 18.9 m/yr over the past 35 years. Between 1986 and 2020, the area of mangrove forests in the tide-dominated Naliu delta increased 25.31 ha/yr, while the mangroves of the Mekong, Red, and Beilun deltas have increased of 245.07, 45.03, and 7.66 ha/yr, respectively (Figure 2a and Table S7 in Supporting Information S1).

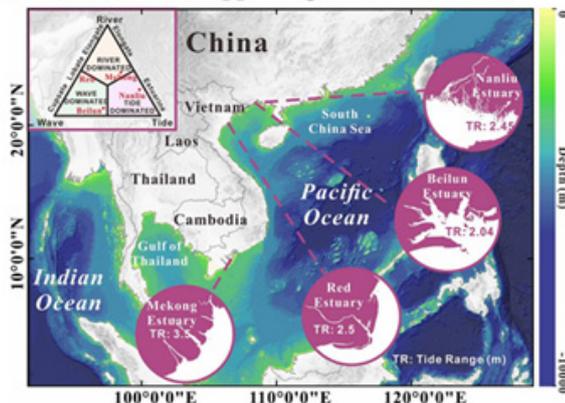


Figure 1. Map of study area along the Indo-Pacific.

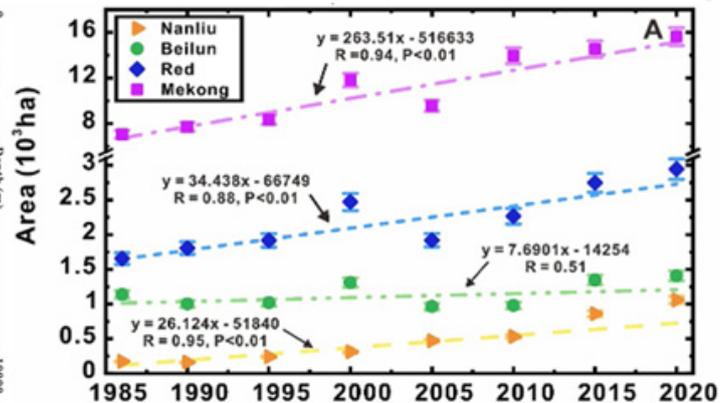


Figure 2. Changes of mangrove forest in four typical deltas (Nanliu, Beilun, Red, and Mekong) during the period of 1986–2020. (a) Changes in

Quelle: [Dai et al., 2024](#)

Link:

<https://notrickszone.com/2024/11/15/new-study-bangladeshs-land-coast-has-expanded-seaward-by-2677-square-kilometers-since-1990/>

Übersetzt von Christian Freuer für das EIKE