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Toward blue justice in blue growth: Insights from local discourses on coastal megaprojects in Bangladesh

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ABSTRACT

Recent blue growth has included various megaprojects in the coastal regions of many countries. Amidst such rapid developments, insights into the values, perceptions, and priorities of coastal communities, particularly in the Global South, are often overlooked. Bangladesh has shown a growing interest in blue growth following the resolution of maritime boundary disputes with neighbouring countries in the last decade. Maheshkhali Island, situated off the southeastern coast of Bangladesh, is a key blue growth hub, hosting numerous coastal megaprojects in energy, trade, and tourism sectors. Our study aims to understand the subjective viewpoints of a frequently underrepresented stakeholder group in blue economy development: small-scale resource users. Using Q methodology, we delineate three distinct discourses on blue growth among the resource users: *1. Injustice in growth: Discontent over development that overlooks local concerns*, *2. Development within bounds: Need for development that safeguards local interests*, and *3. Just compensation and safety: Advocating for equity amidst change*. These discourses highlight risks including displacement, livelihood damage, human health impacts, environmental degradation, and unjust compensation. We trace elements of concern about recognitional, procedural, and distributive justice within these perspectives, and offer insights for achieving blue justice in the context of coastal megaprojects. This study contributes to the broader understanding and development of equitable blue growth planning and implementation, particularly in the South Asian context. We emphasise the need for policymakers and practitioners to engage meaningfully with local discourses to ensure just and sustainable blue growth outcomes in Bangladesh and similar coastal regions worldwide.

1. Introduction

Blue growth is a concept that calls for holistic management of marine social-ecological systems, while also recognising the economic potential of ocean and coastal uses and services (Eikeset et al., 2018). Popularised by the European Union over the last decade as part of its Integrated Maritime Policy, blue growth seeks to foster sustainable economic growth in marine and maritime sectors particularly aquaculture, tourism, offshore energy, and biotechnology, contributing to the overall blue economy (Soma et al., 2018). Complementary to the concept of blue economy, blue growth is widely promoted as a pathway to balance development and sustainability using marine and coastal resources (Martínez-Vázquez et al., 2021). This viewpoint has influenced numerous nations to integrate blue growth strategies into national economic and development frameworks (Wenhai et al., 2019). However, recent work has shown that the planning and implementation of blue growth often reveals contradictions across governance scales. In practice, while growth objectives prevail at national levels, local social and environmental equity concerns remain unaddressed (Das, 2023).

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1.1. Coastal megaprojects: A disguise within blue growth

Megaprojects are large-scale infrastructural projects characterised by ambitious objectives, extensive scale, high investments, and the involvement of diverse stakeholder interests (Flyvbjerg, 2014). In the coastal and marine context, such large-scale infrastructure projects are increasingly framed as instruments of blue growth, aiming to balance economic development with marine and coastal sustainability (Jouffray et al., 2020). Typical coastal megaprojects include seaports, power plants, and desalination plants situated directly on the coast (Abu Qdais, 2008; Felsenstein et al., 2014; Oskarsson et al., 2021) and deep seaports, transport and connectivity infrastructure, offshore energy terminals, offshore windfarms, and tourism parks extending into the wider coastal zones (Lamas-Pardo et al., 2015; Susman et al., 2021; Chan and Kaczmarski, 2024).

Although coastal megaprojects have been implemented globally since the early 20th century, their alignment with blue growth principles has gained momentum in recent years as nations pursue their economic aspirations alongside the Sustainable Development Goals (OECD, 2016). Many of these megaprojects adopt the rhetoric of the blue economy and blue growth without fully embedding their sustainability principles, often prioritising economic outputs over ecological and social considerations (Brent et al., 2020). Overlapping objectives such as urbanisation, economic growth, infrastructural needs, and perceived economic benefits have led to numerous coastal megaprojects across nations, all within the grip of competing national and global investments (Delphine et al., 2019). For instance, megaprojects are seen to serve as catalysts for economic development by creating jobs, boosting trade, and attracting investments (Flyvbjerg, 2014). Employment opportunities generated during the construction, operation, and maintenance phases of these projects can provide vital economic lifelines, particularly in areas with high unemployment (Mega, 2016).

Despite these benefits, megaprojects often fail to meet cost estimates, time schedules, and socio-economic outcomes due to the complexities involved in planning and execution (van Marrewijk et al., 2008). Conflicts, risks, and injustices typically arise from competing demands for limited coastal spaces and resources, as megaprojects require extensive land and environmental resources (Susman et al., 2021). This often leads to the displacement of Indigenous and other local communities, restricted access to traditional fishing grounds, and the loss of public spaces (Bennett et al., 2021; Engen et al., 2021; Mirza, 2022). Additionally, coastal megaprojects frequently degrade critical ecosystems such as mangroves, coral reefs, and seagrasses, undermining ecosystem services such as shoreline protection and stabilisation, fisheries productivity, and carbon sequestration (Mulazzani and Malorgio, 2017). Industrial megaprojects, including coal power plants and petrochemical refineries, compound these impacts by releasing pollutants into air, land, and water systems, posing serious public health risks (Mishra, 2004; Mokarram et al., 2021). Without meaningful inclusion of local stakeholders and their perspectives, these risks will continue to add to the vulnerabilities of fragile coastlines and their residents (Engen et al., 2021).

1.2. Why engage local perspectives in coastal megaproject development?

Blue growth is increasingly prominent in the current global development discourses. The European Commission introduced blue growth to highlight the economic potential of maritime sectors (Ecorys, 2012). Globally, the need to balance economic growth with improved social equity and livelihoods through the sustainable management of oceanic and coastal systems was emphasised by the FAO Blue Growth Initiative (FAO, 2018). However, many national blue growth strategies, particularly in the Global South, are driven by priorities such as enhancing maritime trade, energy security, tourism, and fisheries, while paying limited or no attention to social and environmental justice concerns (Cohen et al., 2019; Das et al., 2024a). This growth-driven economic race, sometimes combined with the rhetoric of poverty alleviation (Farmery et al., 2021), has pushed many countries to pursue coastal mega-development for blue growth (Jouffray et al., 2020). Such rapid development of coastal megaprojects across various maritime sectors can lead to significant social and economic changes for the communities involved.

The power dynamics between different stakeholders such as governments, private sector, international donors, and local communities, play a critical role in shaping the outcomes of these projects (Das et al., 2024b). The top-down governance that dominates coastal megaprojects often marginalises local community perspectives, resulting in an unequal distribution of the benefits and risks associated with coastal megaprojects (Delphine et al., 2019). While states, individuals in powerful positions, and investors reap economic benefits, local actors frequently bear socio-environmental costs, including displacement, loss of livelihoods, and disruption of traditional economies (Kumar et al., 2014).

The concept of blue justice emerges as a response to these challenges, aiming to achieve equitable and sustainable outcomes in blue growth planning and implementation (Blythe et al., 2023). Blue justice is defined as a just and inclusive blue economy or blue growth centred around the three dimensions of justice; recognitional to recognise the plurality of people's values, goals, and perspectives, procedural for inclusive governance, and distributional for equitable benefit sharing (Bennett et al., 2021). It is widely accepted that recognitional justice is a prerequisite for procedural and distributional justice in sustainability (Martin et al., 2016; Bennett et al., 2019; Engen et al., 2021). Therefore, engaging local stakeholders and their perspectives is critical for just and sustainable blue growth. It ensures that diverse voices are heard and incorporated within coastal development (Cisneros-Montemayor et al., 2021; Evans et al., 2023). In coastal megaproject development, the inclusion of local perspectives, particularly in the planning phase, can inform risk management and the effectiveness of the benefit sharing (Jayaraman et al., 2024). Risks such as displacement, loss of livelihoods, and disruption of local economies could be minimised if the opinions of the local communities are documented and integrated (Bennett et al., 2021). Meaningful engagement through participatory approaches and consultative processes can also help identify vulnerable communities and ecosystems, ensuring development initiatives are more responsive to local needs and priorities (Burgess et al., 2018).

1.3. Coastal megaprojects in Maheshkhali Island: A South Asian case study

Bangladesh, a densely populated and low-lying country highly dependent on its coastal and marine resources, has embraced blue growth as a pathway to economic development (Islam and Shamsuddoha, 2018). Following the resolution of maritime disputes with India and Myanmar in 2010, Bangladesh gained exclusive access to 118,813 km^2 of maritime territory, which accelerated its blue growth agenda (Hussain et al., 2017). The *8th Five-Year Plan (2020–2025)* emphasises leveraging Bangladesh's oceanic and coastal resources to accelerate economic growth, attract foreign investment, foster industrialisation, and meet the Sustainable Development Goals (SDGs) (Planning Commission of Bangladesh, 2020). The blue growth agenda has been set to play a pivotal role in the nation's ambitious target to reach the High-Income Country status (as per IBRD classification) by 2041. As a part of this national strategy, the Government of Bangladesh has established 97 economic zones[1] to drive industrial diversification, increase production and exports, and accelerate development (BEZA, 2022).

[1] The economic zones are planned, established, and governed by the Bangladesh Economic Zones Authority (BEZA) under the Bangladesh Economic Zone Act 2010. Details of specific sites of the economic zones can be found at https://beza.gov.bd/economic-zones-site/.

Maheshkhali Island, covering 362.18 km^2 off the southeastern coast of Bangladesh, is designated as a major economic hub under this plan, hosting 6 out of 97 economic zones (Fig. 1). Its strategic location along the Bay of Bengal and proximity to deep-sea routes have made it the site for many large-scale infrastructure projects aimed at transforming the island into an energy, trade, and connectivity hub (Ferdous and Islam, 2020). Some of the key megaprojects on the island include a deep-sea port, coal-based power plants, petrochemical refineries, Liquified Natural Gas terminals and pipelines, and a tourism park. Small islands (<20, 000 km^2) like Maheshkhali are complex social-ecological systems with high vulnerability to external pressures and rapid change (Glaser et al., 2018). Maheshkhali's population of 320,000 primarily depends on resource-based livelihoods, such as fishing, aquaculture, salt cultivation, agriculture, and subsistence farming (Selim et al., 2024). Such communities with deeply rooted cultural ties to the island, often face challenges in sustaining livelihoods amid large-scale changes (Das et al., 2022; Poti et al., 2022). Social and cultural sensitivities, limited space and resources, fragile ecosystems and endemic biodiversity, and vulnerabilities to climate-related risks (Glaser et al., 2018; Connell, 2018; Scandurra et al., 2018; Russell and Kueffer, 2019) require innovative and context-specific approaches when planning large-scale transformations on small islands.

These dynamics have triggered growing concerns around equity and justice in Maheshkhali Island (Selim et al., 2024). Similar tensions are evident in other small island transformations across the South Asian region. For instance, India's Great Nicobar Island (GNI) project involves coastal megaprojects that threaten Indigenous communities and ecosystems of Nicobar Island in the eastern Indian Ocean (Sekhsaria, 2024). The Maldives has been implementing numerous mega projects, including the Greater Male Connectivity Project (GMCP), that prioritises elite tourism over local coastal community welfare (Thakur, 2023). These examples highlight the challenges of aligning such growth with the principles of social and environmental justice in island contexts (Bogadóttir, 2019). In this paper, we position Maheshkhali Island as a critical case study to examine how blue growth initiatives unfold on small islands in the South Asian region. Focusing on three key megaprojects, Matarbari Coal-based Power Plant, Matarbari Deep Sea Port, and Sonadia Tourism Park, we adopt a discourse analytical approach to capture the perspectives of small-scale resource users (hereafter resource users) on this island in Bangladesh.

1.4. Objectives

The overall objective of this study is to highlight often-overlooked local narratives and discourses in blue growth discussions and provide insights for engaging such discourses for equitable blue growth transformations. The specific objectives of this study are to:

(i) Identify the diverse discourses held by resource users regarding coastal megaprojects,
(ii) Analyse the values, attitudes, concerns, and recommendations within the discourses, and
(iii) Identify the points of agreement and disagreement across different discourses.

2. Methodology

Q methodology (Q) is used to systematically explore subjective viewpoints among diverse stakeholders on specific topics. Combining quantitative and qualitative approaches, Q provides a statistically robust technique supported by qualitative reasoning to delineate and study people's perspectives (Robbins and Krueger, 2000). Since Q focuses on studying the variety of stakeholders' perceptions and not the extent of representativity of the perceptions within a population, it provides a well-defined procedure to engage a small number of respondents (Brown, 1993). This makes it an appropriate method to explore public opinions on politically sensitive and highly conflictive topics, including megaprojects or large-scale infrastructure projects and their impacts (Cuppen et al., 2016; Lee, 2019; Ullah et al., 2019; Proksik et al., 2023). Q has been widely used to uncover underrepresented stakeholder perspectives in ocean and coastal management across numerous case studies (Hagan and Williams, 2016; Bueno and Schiavetti, 2019; Furqan and Schlüter, 2023; Mafaziya Nijamdeen et al., 2024). By exploring stakeholder viewpoints, Q is used to study conflict resolution, management planning, policy planning and appraisal, and critical reflection in sustainability sciences (Zabala et al., 2018). Here, we use Q to understand the varied discourses held by resource users regarding coastal megaproject developments on a small island in Bangladesh. Data collection and analysis followed the steps outlined in Fig. 2.

2.1. Q-set preparation

A concourse,[2] which is the body of development related to our topic of interest was developed through information compiled using a scientific and grey literature review. The literature search for peer-reviewed articles was carried out on Google Scholar using the following keywords: *'Coastal-megaprojects', 'Matarbari Coal Power Plant', 'Matarbari Deep Seaport', 'Sonadia Tourism Park' Sonadia Eco-tourism Park' 'Moheshkhali' island, 'Maheshkhali island', 'Sonadia island', 'Bangladesh'*. Additionally, relevant information related to the topic of investigation from institutional reports, blogs, and newspaper articles were incorporated into the concourse. A structured filtering process was undertaken to reduce an initially developed concourse of 60 statements into 44 statements (Appendix A) under six thematic categories: *1. Megaproject development, 2. Governance System, 3. Economy, 4. Communities and livelihoods, 5. Ecosystems and biodiversity, and 6. Formal and Informal Rules.* The thematic categories were selected based on their alignment with the specific objectives outlined in the *Perspective Plan for 2020–2041* within the National Development Plan of Bangladesh (GED, 2020). The 44 statements were then translated into Bengali and Chittagonian dialect spoken on the island ensuring inclusive participation, by minimising linguistic and cultural limitations.

2.2. Selection of respondents

To investigate the resource user discourses of coastal megaprojects in Maheshkhali Island, this study specifically focused on small-scale resource users. This purposive focus is a follow-up to our previous study on stakeholder perceptions of blue economy governance in Bangladesh, in which coastal communities were not included (Das et al., 2024b). To identify the various categories of small-scale resource users dependent on the natural resources of Maheshkhali Island, we carried out a scoping literature review using Google Scholar with the following keywords: 'small-scale', 'resource use', 'resource user', 'livelihood', 'Moheshkhali Island', and 'Maheshkhali Island'. This led to the identification of 16 resource user categories on the island. A list of these resource use categories with a short description is provided in Supplementary Table 1. A purposive sampling technique was used to opportunistically identify respondents representing different categories of resource users across different areas of Maheshkhali Island. To reach respondents of certain underrepresented or less commonly encountered resource user groups, such as crab collectors, oyster collectors, and seaweed cultivators, we additionally employed a snowball sampling approach (Vance-Borland and Holley, 2011).

[2] In Q methodology, a concourse refers to the comprehensive collection of opinion statements about a specific topic. It encompasses all possible views held by diverse stakeholders.

Fig. 1. Coastal megaprojects in Maheshkhali Island. (A) Administrative map of Maheshkhali Island showing the locations of key coastal megaprojects. (B) Matarbari Coal Power Plant. (C) Matarbari Deep Sea Port. (D) Sonadia Island. Images B–D were taken by the authors. Map created using ArcGIS Pro (ver. 3.4.0).

2.3. Q-sort interviews

The interviews were conducted between August to December 2023 on-site in different parts of the island. Respondents (n = 32) representing different categories of resource users from the island took part in the in-person interview individually. The respondents were asked to sort (rank) the 44 statements on a sorting grid or 'Q-sort grid' based on a forced distribution on a 9-point scale (−4, −3, −2, −1, 0, +1, +2, +3, +4), where −4 represents strong disagreement and +4 represents strong agreement (Fig. 2). The respondents read each statement and placed them on a single cell of the Q-sort grid based on their level of agreement. In the process of sorting, the respondents had the opportunity to compare and shift the statements across the Q-sort grid. After the 44 statements were sorted to fill the Q-sort grid completely (one statement per cell), the respondents were given time to take a final look and reevaluate their arrangement of statements to make changes if needed. After sorting the statements in the Q-sort grid, a post-sorting interview was conducted to validate the respondent's rationale for sorting, especially their view on statements sorted at extreme ends of the Q-sort grid (−4 and +4). With informed consent, the post-sorting interview was audio recorded to document the qualitative information from the respondents.

2.4. Statistical analysis

Ken-Q analysis Desktop Edition (KADE) (version 2.0.1), an open-source software developed for Q methodology, was used to carry out the statistical analysis in this study (Banasick, 2023). KADE provides a structured and user-friendly interface with built-in features that guide users through a step-by-step analytical process. The dataset was initially organised in a spreadsheet (XLSX file) before being imported into the KADE. A correlation matrix using Pearson correlation was calculated to measure the linear association between all the Q-sorts (n = 32). Principal Component Analysis (PCA) was used to extract and group the Q-sorts into a manageable number of factors based on their similarity in sorting. Initially, 8 unrotated factors with eigenvalues (EV) greater than 1 were obtained, from which the top 3 factors, each with EV > 1.5, were selected for a factor rotation (see Supplementary Table 2). For this, we applied the varimax rotation method which focuses on a mathematical solution to enhance the clarity of results by making sure that the factors explain the maximum study variance. Following the factor rotation, the 'autoflag' function was applied along with a majority of common variance to automatically load defining Q sorts significantly associated with each factor at $p < 0.01$ (see Supplementary Figure 1). Based on the minimum requirement of at least 2 significantly loaded Q sorts within each factor we decided to retain 3 factors for discourse interpretation.

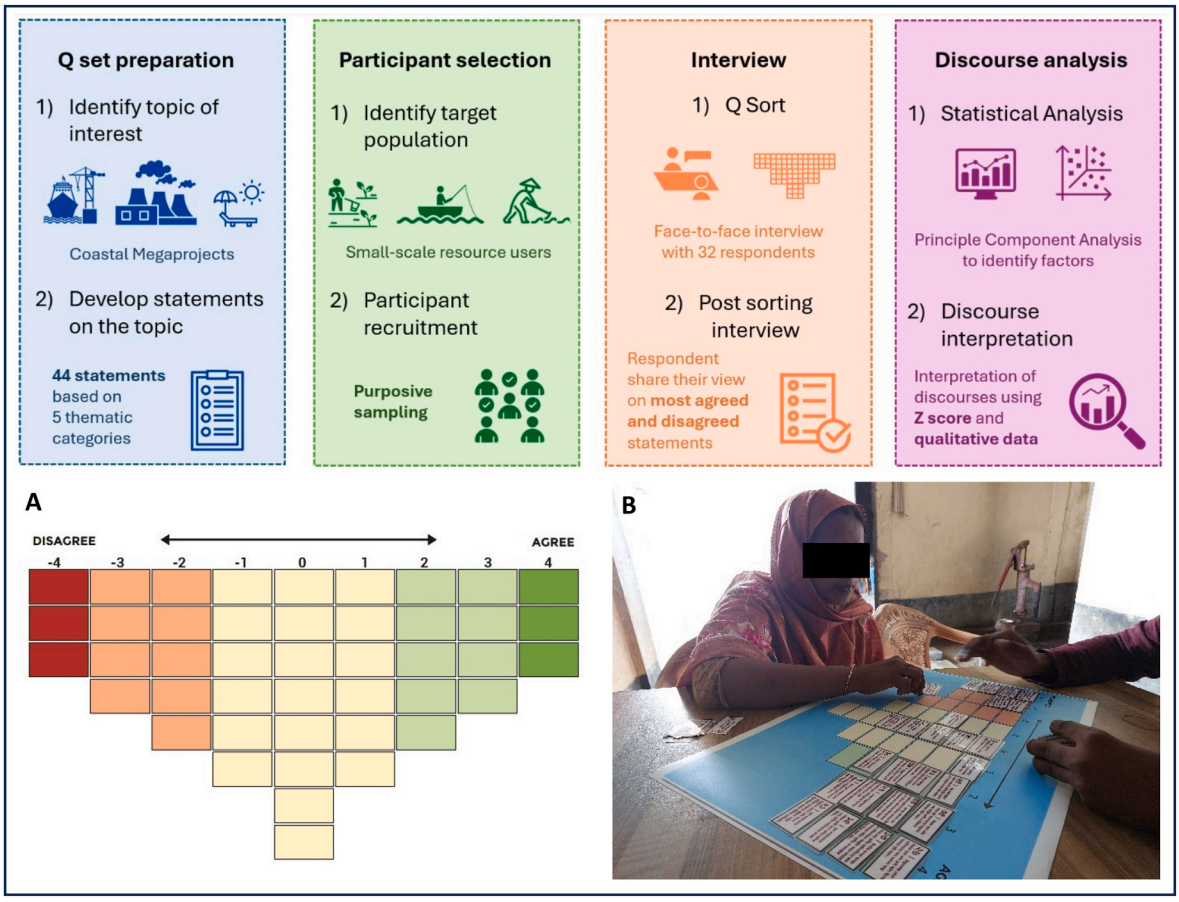

Fig. 2. Research design, data collection, and discourse analysis using Q methodology. The research design involved the preparation of 44 statements under 6 thematic categories on the topic of coastal megaprojects. 32 respondents took part in face-to-face interviews during which they sorted the statements on the Q matrix and responded to our questions. Data analysis was done through Ken-Q analysis (version 2.0.1). Three factors were identified and clustered using Principal Component Analysis. The interpretation of the results generated three narrative discourses. A) Ranking Q grid used by respondents to rank the statements. B) A respondent during the interview. Methodological schematic created using Microsoft PowerPoint (version 16.0).

2.5. Discourse interpretation

The three factors were independently interpreted by identifying the strongly agreed statements (+4 and + 3), strongly disagreed statements (−4 and −3), and the distinguishing statements attributed to each factor (Appendix 2). By identifying the patterns of the statements sorted within the factors using the corresponding Z scores (Supplementary Table 3), a thematic narrative for each factor was developed to explain different discourses. Additionally, the qualitative information, reasoning, and quotes from the respondents clustered for each factor were interpreted to further validate the identified discourses.

2.6. Limitations and constraints

Data collection for this study was conducted during an economically and politically challenging period in Bangladesh. This resulted in an extended fieldwork period of over six months, during which five visits were made to Maheshkhali Island, each lasting 2–3 days. The evolving political backdrop during this time may have influenced respondents' perceptions or opinions. A contextual challenge is the deeply rooted conservative social structure in the study area, which contributed to a skewed gender ratio among respondents. Although we initially aimed to interview both a male and a female representative from each resource user category, it was difficult to achieve this in practice. To address this gender imbalance, the final field campaign focused exclusively on interviews with female respondents.

The Q-sort procedure requires respondents to individually read the Q statements and sort them according to their agreement or disagreement (Zabala et al., 2018). However, some respondents had difficulty reading the statements due to limited literacy. In such cases, the data collectors read the statements and asked respondents where they would like each to be placed. As this approach could potentially introduce interviewer bias, steps were taken to minimise it by avoiding prompts and reading all statements in a neutral and consistent tone. Although Q methodology recommends individual interviews to avoid peer influence, in some cases, interviews were carried out in public places. This occasionally attracted peers or bystanders, which may have made the respondents feel self-conscious or influenced their choices (Zimbalist, 2021). In such cases, the data collectors reminded the respondents to sort the statements based on their own views and politely discouraged consultation with others.

A potential limitation of Q lies in the interpretation phase, which involves the analysis of the pattern of ranked statements to construct discourse narratives. Although this process is informed by the sorting data, it requires manual interpretation, which can introduce researcher subjectivity or bias (Robbins and Krueger, 2000). To strengthen our interpretations, we incorporated qualitative data obtained during the post-sorting interviews into our thematic analysis (Appendix B). To reduce potential bias, the resulting discourses were collaboratively reviewed and validated by co-authors with both local knowledge and international experiences working on coastal social-ecological systems. The findings were presented at the 6th Conference on Sustainable

Development (CSD) at the University of Liberal Arts Bangladesh (ULAB) in Dhaka, in October 2023. This platform provided an opportunity to validate the results beyond the research team and gather feedback from scientists and other stakeholders.

3. Results

3.1. Factor analysis

Factor analysis was used to identify underlying patterns and similarities among the 32 Q-sort datasets and assign them to different clusters. The resulting factors are clustered Q-sorts based on their similarity in the ranking of statements by the respondents. Our factor analysis resulted in the extraction of three factors that explain 55 % of the total variance which passes the required minimum threshold range of 35–40 % (Watts and Stenner, 2012). The total variance also falls within the commonly observed range in Q studies (40–60 %) in social science research (Sneegas et al., 2021), indicating that the results are reliable for interpreting distinct discourses. Factor 1 explains 33 % of the total variance and 21 out of 32 respondent's Q-sorts are clustered within it. Factor 2 and Factor 3 each explain 11 % of the total variance, with 5 respondents each. The correlation of factor Z-scores suggests that the three factors are significantly independent of each other, further strengthening the reliability of the findings (Table 1).

3.2. Factors to discourses: Small-scale resource user's discourses of coastal megaprojects

The combined interpretation of the factors and the qualitative information reveals the prevalence of three discourse clusters among resource users about the coastal megaproject developments on Maheshkhali island in Bangladesh. The major characteristics of identified discourse clusters are summarised in Table 2. The Q statements (denoted by #) and the qualitative data (respondent quotes) used for the interpretation of discourses can be found in Appendix B. In the following sections, we describe each discourse and its themes.

3.2.1. Discourse 1: Injustice in growth: Discontent over development that overlooks local concerns

3.2.1.1. Value and motive. According to discourse 1, the local interests including livelihoods, living space, and the island's natural resources are highly valued by the respondents. There is limited value seen in the coastal megaprojects; respondents feel that the mega-developments have no positive impact locally (#1, #22). There is a strong disagreement with the notion that the megaprojects will alleviate poverty on the island (#6); respondents stated that national interests such as rapid economic development overlook local needs (#2). Local benefits for the islanders such as employment in the megaprojects are considered limited and temporary as outsiders are seen to be often favoured over locals (#27).

3.2.1.2. Concern and challenges. The primary theme of this discourse is the collective concern about the megaprojects and their impacts on health, livelihoods, and the natural resources that islanders are dependent on. Specific stated concerns include the impacts of toxic fly ash and other pollutants from the coal power plant on the environment (#35) and human health (#26) and the effects of the deep-sea port on local fishers' livelihoods (#28) and their access to resources (#42). There is a wide agreement on the undesirable effects of the megaprojects on the quality of resource-dependent livelihoods such as small-scale fisheries, salt production, farming, and cultivation (#21, #31). There is an expressed non-willingness to accept relocation in exchange for either or both financial compensation and job opportunities (#16, #17). This discourse also highlights various power imbalances among actors, which particularly marginalise the voices of local communities (#10), and especially women within them (#23). Additionally, external stakeholders of megaprojects are seen to be more involved and influential in decision-making with limited engagement of local actors (#2, #8).

3.2.1.3. Recommendation. The discourse emphasises the need for pollution control measures and comprehensive risk management strategies in and around the areas where the megaprojects are implemented (#43). Respondents advocate for measures to mitigate adverse impacts on local communities including compensation for damages to properties and livelihoods (#9).

3.2.2. Discourse 2: Development within bounds: Need for development that safeguards local interests

3.2.2.1. Value and motive. According to discourse 2, local interests are prioritised, while the coastal megaprojects on the island are moderately valued. The local interests including the living space of the islanders and their livelihoods are highly valued (#40). The mega-development is valued because of the potential local benefits such as job opportunities, economic benefits, and amenities such as better roadways and transportation facilities (#1, #3). Respondents sharing this discourse share the classic "not in my backyard" perspective advocating for the preservation of their space amidst the development initiatives (#16 and #17).

3.2.2.2. Concern and challenges. The primary concern expressed in this discourse is a strong non-willingness for relocation for the megaproject infrastructure development (#16, #17). Similar to discourse 1, concerns related to the livelihoods of resource users with agreement on the negative changes in the quantity and quality of resources available locally due to the impact of the coal-power plant and deep seaport are expressed in discourse 2 (#31, #28). Additionally, and despite the perception of their potential benefits, there is an opinion that the megaprojects are implemented in proximity to ecologically sensitive areas, leading to detrimental effects on island biodiversity (#33, #29, #30). Notably, while concerns about the ecological and livelihood impacts are acknowledged, there is no expressed concern regarding the pollution impacts and human health in this discourse (#32).

3.2.2.3. Recommendation. The respondents that share this discourse strongly advocate for policy and planning measures to protect local interests (#40), to provide access to better health care and education (#11), to increase the climate and disaster resilience of the island (#44), and to implement renewable energy systems (#34). Although there is agreement that the coastal megaprojects will bring local benefits, this discourse highlights a need for improved governance and better local engagement (#13) to ensure a balance between megaprojects for coastal development and the welfare of coastal communities.

Table 1
Factor Z-score correlation, variance explained (%), number of defining Q sorts loading with $p < 0.01$ of each factor, eigenvalue, and composite reliability.

Z-score	Factor 1	Factor 2	Factor 3	Variance explained	No. of Q-sorts	Eigenvalue	Composite reliability
Factor 1	1	0.37	0.46	33 %	21	13.94	0.99
Factor 2		1	0.31	11 %	5	2.12	0.95
Factor 3			1	11 %	5	1.71	0.96

Table 2
Characteristics of the three identified discourses with priority themes and livelihood details of respondents.

Discourse	Value and Motive	Concern and Challenge	Recommendation	Supporting Respondents
1. Injustice in growth: Discontent over development that overlooks local concerns	• High value for local interest, living space, and island resources • Low value for megaprojects due to potential risks	• Environment and human health • Livelihood damage • Access to resources • Power imbalances among actors	• Pollution control measures • Compensation for damages • Regulatory framework to protect small-scale livelihoods	Fisher (3), Salt farmer (3), Oyster collector (2), Crab collector (2), Dry fish producer (2), Fish and dry fish retailer (3), Agricultural farmer (2), Shrimp cultivator (1), Betel leaf cultivator (2), Subsistence gardener (1)
2. *Development within bounds: Need for development that safeguards local interests*	• High value for living space and local interest • Moderate value for megaprojects due to potential benefits	• Forced displacement • Livelihood damage • Ecosystem degradation • Biodiversity loss	• Regulatory framework to protect small-scale livelihoods • Health care and education • Engagement of Local Knowledge systems • Climate and disaster resilience	Salt farmer (3) and Fisher (2)
3. Fair compensation and safety: Advocating for equity amidst change	• High value for island resources and safety • Moderate value for megaprojects due to potential benefits, with caution	• Unequal compensation • Safety of megaprojects • Human health • Livelihood damage	• Fair compensation measures • Compensation for damages • Equal job opportunities • Health care and education	Fisher (2), Agricultural farmer (1), Betel leaf cultivator (1), Subsistence gardener (1)

3.2.3. Discourse 3: Fair compensation and safety: Advocating for equity amidst change

3.2.3.1. Value and motive. In discourse 3, equitable sharing of compensation and benefits and adequate risk management for local communities are prioritised and local interests including livelihoods, health, and safety are valued. The respondents who share this discourse express mixed feelings towards the coastal megaprojects on the island. While the economic benefits of the megaprojects especially at the national level are valued (#14), respondents are sceptical about the local benefits of the megaprojects (#1, #22). Nevertheless, in contrast to those respondents associated with discourses 1 and 2, there is a willingness to relocate and give up their land and living spaces for megaprojects if adequate employment is provided as a compensation (#17).

3.2.3.2. Concern and challenges. The primary concern voiced in this discourse is the perception of unfair or unequal compensation and benefit distribution policies associated with the megaprojects and related infrastructure developments (#9, #19, #27). Respondents criticise that only landowners are eligible for financial compensation, advocating for a broader inclusion of all affected community members (#15). There is a critical concern about the safety of megaprojects during extreme natural events such as heavy storms and cyclones, that pose risks to both infrastructures and islanders (#36). Similar to discourse 1, it is agreed that the megaprojects will have a negative impact on the health and livelihoods of the islanders (#26, #28). Concerns about mangrove loss and ecosystem degradation due to the megaprojects are also expressed (#35, #30).

3.2.3.3. Recommendation. There is an emphasis on the need for fair and equitable compensation for the local communities especially, for the resource users. In addition to the one-time compensation provided for land and property acquisition, the respondents advocate for the right to compensation for damages to properties and livelihoods caused by the megaprojects (#9). Additionally, there are recommendations for policy and planning measures aimed at enhancing access to health care and education for the islanders (#11) and equal job opportunities to ensure the well-being of the local communities (#27).

3.3. Points of consensus among small-scale resource users' discourses

The three discourses prevalent among the resource users on Maheshkhali Island highlight distinct concerns, priorities, and values. The discourses display a varying value attributed to the coastal megaprojects on the island. There are also several topics of consensus. All three discourses express concerns regarding vulnerability to displacement (#25), livelihood loss (#21, #28) restricted access to island resources (#42), and diminished quality and quantity of island resources (#31) due to the coal-power plant and deep-sea port construction and implementation.

There is a shared moderate consensus across discourses regarding the adverse effects of megaprojects on island biodiversity including fisheries, mangroves, and birds (#29, #30, #31, #35). This is accompanied by a shared disagreement across discourses with the official claim that megaprojects to date has followed all required environmental and coastal protection regulations (#41, #43) and scepticism regarding the implementation of safe distance from ecologically sensitive areas (#33). Finally, there is limited value attributed to the Sonadia Tourism Park with disagreements with its benefits of boosting tourism (#18) and biodiversity conservation (#37).

Although discourses 2 and 3 recognise economic benefits of megaprojects, all three discourses disagree that megaproject development will alleviate poverty on the island (#6). Emphasis on the need for improved access to health care and education is supported across all three discourses (#11), highlighting the shared priority of islander's

wellbeing amidst the coastal megaproject development initiatives.

4. Discussion

4.1. Resource user attitudes towards top-down blue growth discourses

Our investigation of the local discourses on coastal megaprojects in Maheshkhali Island has revealed a general disregard among the resource users towards the predominant blue growth narrative in Bangladesh. Globally and nationally in Bangladesh, blue growth is seen as a pathway towards socio-economic growth, development, and transformation (Silver et al., 2015). Amidst these strong discourses on blue growth and its positively outlined trajectories, the opinions of coastal communities are often overlooked, undocumented, or misrepresented (Kumar et al., 2014). Documenting marginalised local discourses is key to co-producing knowledge that can support resistance to 'business as usual' decision-making (Reed et al., 2010).

Our findings demonstrate a clear disconnect between the prominent political rhetoric in Bangladesh and the local realities on the island. The resource users do not or hardly perceive local and national economic benefits of the coastal megaprojects in their region. A common top-down discourse that megaprojects will reduce poverty was unanimously rejected across the three local discourses (#6), indicating that there is a shared opinion among the resource users that rapid development do not mean poverty alleviation, especially at the local level. That economic growth will automatically benefit all income groups, including the disadvantaged, has been a central tenet of early trickle-down theories and practice in development and it has been clearly dismissed by research evidence (Greenwood and Holt, 2010). The idea does persist as a prevalent justification of top-down, growth-focused policies and interventions including megaproject development in our case study in Bangladesh. The clear dismissal of the transformative potential of blue growth and related infrastructure development by locally rooted stakeholders is an important wake up call for decision makers today that envision indiscriminate growth as a path to address poverty (Ertör and Hadjimichael, 2019).

Despite the overall scepticism and disagreement, some respondents acknowledged potential benefits from blue growth, such as employment opportunities, improved infrastructure, and access to better services (#1, #3, and #22). This suggests that a section of the resource users supports the transformation associated with megaprojects for the sake of certain immediate benefits and general improvements in their quality of life. The planning and implementing for such desired benefit sharing is, however, often dominated by an unequal distribution of power and influence among the actors involved (Wynberg and Hauck, 2014). In Maheshkhali Island, concerns over existing power imbalances that may prevent the local actors from accessing the promised benefits are highlighted across the three discourses. Discourse 1 emphasis the prioritisation of national over local interests (#2) and the exclusion of women from development decision-making (#23). There is also a shared recognition between discourses 1 and 2 that international actors hold more power in development decisions than local communities (#8). These structural imbalances were seen to hinder fair benefit-sharing, with all discourses disagreeing with the notion that compensation for displaced or affected households is equitable (#19) and expressing concern that residents are often overlooked in favour of outsiders for employment in the megaprojects (#27). Similar patterns are evident in employment distribution, where residents have largely been excluded from permanent job opportunities due to lack of training and skills (Appendix B). While a few residents of Matarbari were employed as unskilled labourers during the power plant construction, the positions were low paid and temporary. This highlights the poor planning and execution of the benefit sharing schemes that is far from local realities. An underlying factor in this is the marginalisation and exclusion of coastal communities in blue growth decision-making in Bangladesh (Das et al., 2024b). Power relations characterised by the domination of international and national growth-oriented objectives over local interests skew the sharing of benefits and costs to the disadvantage of resource users. Consequently, it increases the chances of social and environmental risks associated with megaproject development for local actors.

4.2. Concerns over displacement and livelihood losses

The planning and implementation of megaprojects involves greater challenges on small islands than in non-island contexts. Small island communities are often highly dependent on the island's natural resources for their livelihood through activities such as fisheries, farming, and tourism-related activities with fewer alternative livelihood options than in more connected mainland. Infrastructure development for megaprojects introduces risks to these vulnerable communities, including displacement, loss of livelihoods, and restriction of access to coastal commons (Susman et al., 2021; Ayilu et al., 2023). In our study, the Matarbari coal-based power plant and the Sonadia Tourism Park have displaced a section of residents in the Matarbari area of Maheshkhali Island and on Sonadia Island, respectively. Our results indicate strong opposition among resource users to community displacement for the accommodation of these megaprojects. Concern over displacement or loss of living space is shared across discourses (#25). Discourse 1 and 2 express non-willingness for relocation under any conditions, while Discourse 3, held by a few respondents, show conditional willingness, particularly if compensation is provided. This highlights the immense value that a majority of the island resource users place on their living and livelihood-related coastal spaces. Studies show that displacement often leads to the loss of social networks and cultural practices tied to local livelihoods, particularly in artisanal fisheries and farming (Mukherjee et al., 2022; Cinner et al., 2019). This erosion of key social capital can limit the communities' capacity to organise and adapt to rapid external pressures and changes when necessary (Kriegl et al., 2022). Additionally, displacement results in loss of local ecological knowledge and worldviews that are crucial to inform sustainable and just transformations in coastal systems (Jayaraman et al., 2024).

Coastal megaprojects, particularly ports, degrade nearshore fishing grounds vital to artisanal fishers through dredging and other destructive construction activities (Tsoukala et al., 2015). Indirect impacts, such as coastal erosion further affect fishing communities. These megaprojects often impose restrictions which reduce access to traditional fishing grounds. All three discourses among the resource users express concerns over livelihood-related damages and restrictions. This is demonstrated by a consensus on the risk of livelihood loss (#21) and disagreement with claims suggesting that fishing, farming, and salt production remain unaffected (#31, #28, #42). Together, these findings indicate a clear perception and concern among resource users that livelihoods are indeed at risk from the coastal megaprojects. Beyond economy, artisanal livelihoods are deeply intertwined with cultural identity and social well-being, which are also impacted (Béné et al., 2016). The findings we report on here echo broader patterns in the Global South, where coastal megaprojects often displace vulnerable communities without adequate safeguarding mechanism and alternate livelihood options. Despite being promoted as solutions to coastal poverty, such projects often result in environmental degradation and social disruption. Driven by neoliberal growth models in a top-down manner, they often ignore the complexities of local livelihoods and fail to offer adequate compensation or alternative opportunities, resulting in significant socio-economic hardships (Schlosberg, 2013). Similar concerns have been reported in large-scale port developments in Africa and Southeast Asia, where artisanal fishers are restricted from traditional fishing grounds due to dredging and coastal privatisation (Bennett et al., 2021). In our findings, the shared agreement across the discourses that livelihoods are at risk underscores the urgency and need to integrate local livelihood considerations into blue growth planning in Bangladesh.

4.3. Environmental injustice and systemic inequalities

The megaprojects on Maheshkhali Island expose coastal communities to multiple layers of environmental injustice, which build on and enhance pre-existing inequalities. While the top-down rhetoric surrounding these megaprojects emphasises national progress and transformation, the lived experiences of local actors reveal persistent environmental and social risks, disproportionately borne by vulnerable islanders. A concern shared across the discourses is the health risks associated with the Matarbari coal-based power plant and the deep seaport. In particular, the pollution and environmental hazards posed by the power plant are underscored by consistent agreement with statements highlighting the threat of toxic gas and fly ash emissions (#26, #35). The dangers related to fly ash, a fine powdery byproduct of coal combustion (Jambhulkar et al., 2018), include respiratory problems and the contamination of water bodies, ground water, salt pans, fishing grounds, and agricultural fields. Respondents pertaining to discourses 1 and 3 highlighted these issues.

The establishment of a polluting industry, such as the Matarbari Coal Power Plant, in a region with overall limited power and agency (see section 4.1) illustrates how spatial inequities intersect with local realities, reinforcing existing inequalities (Mirza, 2022). This aligns with cases globally, where powerplants and related infrastructure are sited near marginalised communities and their settlements, leading to long term health impacts. Studies from India show how fly ash ponds and chemical discharge pipelines from coal plants are often planned near Dalit[3] settlements, exposing residents to chronic health issues and disrupting their agricultural or coastal livelihoods (Kumar, 2023). Frequent fly ash leakages from the Mundra Port and Coal Power Complex in Gujarat and the Ennore Thermal Power Plant in Chennai have caused substantial harm to nearby coastal communities (Velayudhan, 2012; Jayaraman et al., 2024). In the United States of America, African American and Latino communities living near coal and nuclear powerplant facilities have suffered long-term health issues due to similar discriminatory planning practices (Hipp and Lakon, 2010). Louisiana's 'Cancer Alley' holds predominantly African American communities that live near petrochemical plants and face elevated cancer rates due to the long-term accumulation of industrial waste (Huber, 2016). The marginalisation of Maheshkhali's poor resource users in the context of ongoing blue growth mirrors these systemic injustices observed in the above examples. The Matarbari Coal Power Plant is projected to expose approximately 11.5 million people in Bangladesh to fine particulate matter (PM2.5) emissions annually, increasing risks of premature death (Ahmed, 2019). These concerns are further compounded by the general disregard and distrust expressed in relation to governance and its transparency. Poor and neglected governance, as underscored by the respondent's critical views on the megaprojects' compliance with regulations and responsible administration (#41, #43), reflect that local actors are overlooked in blue economy governance and megaproject planning. Addressing these systemic issues will require transparent decision-making, proactive community engagement, and stringent environmental safeguards to mitigate human health risks.

The promotion of eco-tourism as part of Maheshkhali's blue growth reveals contradictions between sustainability narratives and actual ecological impacts. For instance, moderate contamination of the Kutubdia channel near the Matarbari power plant was revealed during its test run phase (Hossain et al., 2021). Moreover, the power plant is expected to affect five wildlife sanctuaries in the greater Chattogram area through mercury and fly ash deposition in the coming years (350.Org, 2022). Damages to island ecosystems such as mangroves, wetlands, and sandy beaches are expected due to the megaproject's proximity to ecologically sensitive zones like Sonadia Island (#33). Against this backdrop, projects like the Sonadia Tourism Park are positioned as a sustainable counterbalance to industrial development but risks 'greenwashing', where superficial environmental narratives obscure ecological and social harm. This is supported by the general rejection of the claim that the tourism park will effectively conserve biodiversity across the discourses (#37). Such tourism initiatives are known to prioritise aesthetic 'beautification' over ecological conservation or restoration, often replacing coastal vegetation and beaches with manicured landscapes and artificial amenities (Chatterjee et al., 2022). Disagreement with the claim that mangrove forests remain unaffected by the megaprojects (#30) further suggests that resource users foresee degradation of coastal ecosystems to blue growth-related infrastructure development.

Coastal and marine tourism parks also risk displacing traditional resource users and limiting their access to coastal commons under the banner of conservation (Kumar et al., 2014). This branding of eco-tourism often aligns with neo-colonial imaginaries of 'pristine nature', marginalising the cultural and historical presence of local communities to cater to elite and international tourists (Bucher and Fletcher, 2016). In Bangladesh, this can be further highlighted by the 'foreigners-only zone' planned within the Sabrang Tourism Park on the Teknaf Beach, Cox's Bazar which systematically sidelines domestic tourists and local communities (The Business Standard, 2023). Megaprojects on Maheshkhali Island, thus, clearly illustrate a series of environmental injustices and systemic inequalities that are perpetuated through the current model of blue growth in Bangladesh.

4.4. Implications for just and equitable blue growth in Bangladesh

In our study, we trace three interconnected dimensions of blue justice for sustainability transformations across the three discourses identified (Bennett et al., 2019). First, all discourses share elements of distributional justice, with concerns about the unequal distribution of risks and benefits associated with the megaprojects. This includes the health and environmental impacts of Matarbari Coal Power Plant, as well as the inadequate compensation and benefit-sharing mechanisms. Second, recognitional justice is emphasised in Discourses 1 and 2, where the need to acknowledge local values, interests, and rights around livelihood and land use is central. Additionally, Discourse 1 highlights power imbalances between external actors (decision-makers and investors) and local actors (islanders, resource users, and women). These are seen to undermine recognitional justice in the blue economy-related island transformation. Finally, all three discourses reflect procedural justice concerns. Discourse 1 express discontent over non-inclusive and non-transparent governance, while the need for improved governance that accounts for local livelihoods, histories, and cultural values is emphasised across all discourses. These concerns not only relate to immediate threats to livelihoods but also to a broader lack of agency and participation in the decision-making processes that shape the island's future.

As a climate-vulnerable nation, Bangladesh must ensure that blue growth policies not only deliver economic development but also build resilience among coastal communities (Islam et al., 2020). The elements of justice dimensions identified in the discourses must be critically examined within the context of ongoing Blue Growth and Blue Economy policies in Bangladesh. Particularly, the *8th Five Year Plan (2020–2025)* which included a strategic emphasis on developing 100 economic zones, many implemented in coastal areas. Such national frameworks prioritise investment on infrastructure development and offer limited mechanisms to safeguard recognitional or distributional justice. As the government prepares to launch the *9th Five Year Plan*, and potentially introduce new strategies for blue growth, it is vital that future governance plans address these justice gaps. The priority elements and discourse-specific recommendations in Table 1 can inform immediate policy interventions, particularly in managing livelihood loss, displacement, health-related risks.

[3] Dalit is a communal term for the marginalised social groups historically (and presently) subjected to discrimination and exclusion by the caste system in India.

Embedding justice in blue growth cannot be accomplished through post-hoc governance framework and policy amendments alone. It requires meaningful engagement with local stakeholders throughout the planning and implementation of mega coastal transformations (Bennett et al., 2025). The discourses unravelled in this study offer practical and locally grounded insights into the perspectives and priorities of those most affected by blue growth initiatives. Each discourse reflects a specific view of how just transformation can succeed. In this regard, we highlight the potential of Q methodology for studying local discourses and how it can contribute to informing just and sustainable transformations. Ideally, similar exercises as for this study should be conducted during the early stages of project development to ensure that these voices are not only heard but also systematically integrated into decision-making (Schlosberg et al., 2017). To institutionalise stakeholder engagement, we reiterate a key recommendation from our earlier study, the establishment of a Community of Practice for Blue Economy Governance (CoP-BG) in Bangladesh (Das et al., 2024b). This multi-stakeholder platform could serve as a space for diverse actors, especially those at risk of marginalisation, to co-produce knowledge, share experiences, and influence decision-making and coastal governance. In Maheshkhali Island, the discourses identified provide actionable knowledge that could guide planning, risk mitigation, and equitable benefit-sharing. A CoP-BG would enable the systematic integration of these locally embedded perspectives into coastal megaproject governance on the island. Examples of multi-stakeholder platforms for Marine Spatial Planning (MSP) from the European Union have demonstrated how inclusive platforms can build trust, improve transparency, and reduce conflict in complex coastal and maritime governance settings (Jones et al., 2016). For Bangladesh, a CoP-BG model developed through the Blue Economy Cell (BEC) along with local actors could foster a shift from top-down planning toward a more just and equitable blue growth.

5. Outlook: Lessons for blue justice beyond Bangladesh

The rapid development of blue growth in Bangladesh, particularly through large-scale infrastructure development on Maheshkhali Island, is a development trajectory that is increasingly common across the Global South. As national and international actors seek to harness maritime and coastal resources for blue growth, the voices and concerns of coastal resource users, are often excluded from its planning and implementation (Das et al., 2024b). In our study, the three local discourses identified from Maheshkhali Island highlight a range of concerns associated with the megaprojects on the island including displacement, livelihood loss and damage, human health impacts, environmental degradation, and unjust benefit sharing. These risks are experienced mostly by the local communities, highlighting the need for a more inclusive and just approach to blue growth in Bangladesh.

Our case study has broader relevance within the South Asian context, where numerous coastal megaprojects are currently underway. For example, the '*Great Nicobar Project*' in India aims to develop a transshipment port, airport, and township on an ecologically sensitive island, risking the displacement of Indigenous Shompen and Nicobarese communities and damaging critical ecosystems (Sekhsaria, 2024). In Pakistan, the '*Gwadar Port and Free Zone*' is affecting Baloch fishing communities through displacement and increasing marine pollution (Khan et al., 2024). Similarly, Sri Lanka's '*Colombo City Project*' involves large-scale land reclamation for luxury housing and infrastructure, threatening fishing livelihoods and coastal ecosystems (Fernando, 2018). In the Maldives, the '*Hulhumalé Land Reclamation Project*', primarily driven by elite tourism and urban expansion, endangers local fishing communities (Van der Pol, 2023). These examples underline the shared challenges of blue growth and blue economy development in South Asia. Similarly, the exclusion of coastal communities from blue growth decision-making processes is a widespread concern, reported in parts of Africa, Central and South America, and Southeast Asia (Evans et al., 2023). This highlights that the concerns of coastal resource users, as identified in Maheshkhali, are not isolated but part of a broader pattern globally.

The findings from our study could inform national blue growth frameworks and policies, with recommendations on how blue growth can be redefined to include the welfare of coastal communities and the natural environment they, and eventually planetary health, depend on. The perspectives and priorities of coastal communities like those on Maheshkhali Island offer critical insights that can guide blue growth, ensuring that future development is not only sustainable but also inclusive, and just for all. Rethinking blue growth as a people-centred process that balances economic, environmental, and social goals is key to achieving blue justice not only in Bangladesh, but also in other countries navigating similar coastal transformations.

CRediT authorship contribution statement

Maheshwaran Govender: Writing – original draft, Writing – review & editing, Validation, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization, Visualization. **Jewel Das:** Writing – review & editing, Validation, Project administration, Investigation, Conceptualization. **Srijon Paul:** Writing – review & editing, Validation, Investigation, Data curation, Visualization. **Sourav Shil Shuvo:** Writing – review & editing, Validation, Investigation. **Samiya Ahmed Selim:** Writing – review & editing, Validation, Supervision, Conceptualization. **Marion Glaser:** Writing – review & editing, Validation, Supervision, Funding acquisition, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Appendix A. List of Q statements

Mega projects and development:

1. The megaprojects will create more job opportunities for island dwellers.
2. In the ongoing island development, national interests are given more importance than local interests.
3. The megaproject development will result in better infrastructure, health care, and education for future generations on the island.
4. The coal power plant will contribute to solving the energy crisis in Bangladesh.

5. The deep seaport will enhance the maritime defence and national security of Bangladesh.
6. The megaprojects will help to minimise poverty on the island.

Governance:

7. The government did not consult with the local communities before planning and developing the megaprojects on the island.
8. The international stakeholders are more involved and influential in the island development than the local communities.
9. Damage to properties and local livelihoods as a direct effect of the megaprojects should be compensated.
10. The islanders lack the power to stop such projects to protect the interest of local citizens.
11. The government should focus on developing health care and educational infrastructure on the island rather than the megaprojects.
12. The national government and local administrations are working together efficiently to manage the island resources.
13. The government should collaborate with local communities to incorporate the local indigenous knowledge to manage the island resources.

Economy:

14. The megaprojects on the island will have a positive impact on the national economy and development.
15. A part of the income generated by the megaprojects should go to landowners and local citizens.
16. I am willing to relocate if I get compensation.
17. I am willing to relocate if they provide job opportunities for me/my family member in one of the developmental schemes.
18. The Sonadia Tourism Park will attract more tourists, and this will benefit the local tourism sector.
19. There is no unfairness or inequality in the allocation of compensation for the displaced or affected communities.
20. The deep seaport will boost international trade and commerce in Bangladesh.

Local communities and livelihood:

21. I risk losing my livelihood/lost my livelihood because of the megaproject developments.
22. The local community will benefit from the megaprojects on the island.
23. The women on the island do not have any space to voice their opinion about the island development.
24. The government should engage with the local communities and share the objectives of the planned development.
25. We risk losing our land/houses and getting displaced due to the megaprojects.
26. The toxic gas and fly ash from the power plant will cause serious health issues for the residents.
27. The outsiders are prioritised over islanders for employment in the ongoing developmental projects.
28. Fishing communities will not be affected by the construction of the deep seaport.

Ecosystem, Environment, and Biodiversity:

29. There are fewer migratory birds since the megaproject development started in the island.
30. The ongoing island development will not affect the mangrove forests.
31. There is no change in the quality/quantity of fish catch/salt production/farming/cultivation ever since the developmental schemes in the island started.
32. The megaprojects will result in pollution of our land, water, and air.
33. The megaprojects are implemented in areas maintaining a safe distance from ecologically critical zones.
34. We should focus on developing renewable energy systems than coal-based energy systems for a sustainable future.
35. The toxic gas and fly ash will cause severe damage to the nearby ecosystems and associated animals and plants.
36. The deep seaport and coal power plant are completely safe from natural calamities and disasters.
37. The Sonadia tourism park will effectively conserve nature and biodiversity.
38. There has been increased water logging since the development of the coal power plant.

Formal and Informal Rules

39. Our community's customs and traditions risk getting affected because of the ongoing island mega-development.
40. There is a need for a regulatory framework to protect the interests of small-scale resource users in the island.
41. The megaprojects have followed all the environmental protection and coastal regulation laws.
42. There is no prohibition or restriction on access to resources due to the megaproject development.
43. The environmental impact assessment was carried out well by the planning commission and the reports were shared with the local community.
44. We need better policies to increase the resilience of our island and island dwellers against climate change and natural disasters.

Appendix B. The most agreed and disagreed statements within each perception along with respondents quotes that were used to determine the narrative of the discourses

1. Injustice for growth: Discontent over development that overlooks local concerns	
Agreement (+4 and + 3)	**Disagreement (-4 and -3)**
35. The toxic gas and fly ash will cause severe damage to the nearby ecosystems and associated animals and plants (+4)	28. Fishing communities will not be affected by the construction of the deep seaport (−4)

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(*continued*)

1. Injustice for growth: Discontent over development that overlooks local concerns

26. The toxic gas and fly ash from the power plant will cause serious health issues for the residents (+4)
27. The outsiders are prioritised over islanders for employment in the ongoing developmental projects (+4)
2. In the ongoing island development, national interests are given more importance than local interests (+3)
21. I risk losing my livelihood/lost my livelihood because of the megaproject developments (+3)
8. The international stakeholders are more involved and influential in the island development than the local communities (+3)
9. Damage to properties and local livelihoods as a direct effect of the megaprojects should be compensated (+3)
31. There is no change in the quality/quantity of fisheries/salt production/farming/cultivation ever since the developmental schemes in the island started (−4)
16. I am willing to relocate if I get compensation (−4)
17. I am willing to relocate if they provide job opportunities for me/my family member in one of the developmental schemes (−3)
43. The environmental impact assessment was carried out well by the planning commission and the reports were shared with the local community (−3)
6. The megaprojects will help to minimise poverty on the island (−3)
42. There is no prohibition or restriction on access to resources due to the megaproject development (−3)

Respondent quotes

- *After the ships started entering the port, the fishing activities in that area has been prohibited* (Fisher)
- *Pollution in canals and reduction in fish stalk are some visible changes in the island due to the megaprojects* (Crab Collector)
- *The islanders do not hold any power to stop these projects or secure our interests, as these projects are considered to be of national importance* (Salt cultivator)
- *We were promised jobs but only outsiders were recruited. The locals are not prioritised as we do not have the skills* (Fisher)
- *The fly ash will have severe impacts on both the residents and the plantations. We are worried about that the fly ash will settling on the plantation and contaminating it* (Farmer)

2. Development within bounds: Need for development that safeguards local interest

Agreement (+4 and + 3)

40. There is a need for a regulatory framework to protect the interests of small-scale resource users in the island (+4)
11. The government should focus on developing health care and educational infrastructure on the island rather than the megaprojects (+4)
13. The government should collaborate with local communities to incorporate the local indigenous knowledge to manage the island resources (+4)
44. We need better policies to increase the resilience of our island and island dwellers against climate change and natural disasters (+3)
36. We need better policies to increase the resilience of our island and island dwellers against climate change and natural disasters (+3)
1. The megaprojects will create more job opportunities for island dwellers (+3)
3. The megaproject development will result in better infrastructure, health care, and education for future generations on the island (+3)

Disagreement (-4 and -3)

17. I am willing to relocate if they provide job opportunities for me/my family member in one of the developmental schemes (−4)
16. I am willing to relocate if I get compensation (−4)
38. There has been increased water logging since the development of the coal power plant (−4)
31. There is no change in the quality/quantity of fish catch/salt production/farming/cultivation ever since the developmental schemes in the island started (−3)
32. The megaprojects will result in pollution of our land, water, and air (−3)
33. The megaprojects are implemented in areas maintaining a safe distance from ecologically critical zones (−3)
28. Fishing communities will not be affected by the construction of the deep seaport (−3)

Respondent quotes

- *This island is my homeland, and I am unwilling to leave it. As long as I am here, I will be able to manage my daily needs through my livelihood and that is not possible if they force me out of my home.* (Fisher)
- *The coal power plant took over the salt farms, and shrimp cultivation areas and many of us lost our livelihoods in that process* (Salt farmer)
- I disagree with this statement as mangroves have been cut due to the projects in some parts of the island (Fisher)
- *I depend a lot on my garden for small-scale vegetable farming. I do not want to be displaced from my home* (Subsistence gardener)
- *Renewable energy will not pollute our environment. We see that with the Wind Power Plants in Cox Bazar and that is why we would prefer that to coal power plant* (Fisher)

3. Fair compensation and safety: Advocating for equity amidst change

Agreement (+4 and + 3)

9. Damage to properties and local livelihoods as a direct effect of the megaprojects should be compensated (4)
40. There is a need for a regulatory framework to protect the interests of small-scale resource users in the island (4)
35. The toxic gas and fly ash will cause severe damage to the nearby ecosystems and associated animals and plants (4)
17. I am willing to relocate if they provide job opportunities for me/my family member in one of the developmental schemes (3)
26. The toxic gas and fly ash from the power plant will cause serious health issues for the residents (3)
11. The government should focus on developing health care and educational infrastructure on the island rather than the megaprojects (3)
27. The outsiders are prioritised over islanders for employment in the ongoing developmental projects (3)

Disagreement (-4 and -3)

38. There has been increased water logging since the development of the coal power plant (−4)
28. Fishing communities will not be affected by the construction of the deep seaport (−4)
19. There is no unfairness or inequality in the allocation of compensation for the displaced or affected communities (−4)
36. The deep seaport and coal power plant are completely safe from natural calamities and disasters (−3)
43. The environmental impact assessment was carried out well by the planning commission and the reports were shared with the local community (−3)
31. There is no change in the quality/quantity of fish catch/salt production/farming/cultivation ever since the developmental schemes in the island started (−3)
30. The ongoing island development will not affect the mangrove forests (−3)

Respondent Quotes

- *In compensation for land acquisitions, there is clear discrimination. Several people have not yet received the full amount. (Fisher)*
- *Compensation was provided for the affected individuals, but the amount was not sufficient for them to rehabilitate in a new area. This created further problems for them (Farmer)*
- *The compensation schemes are poorly executed. Middlemen and broker take 20–40 % commission from the victims of displacement and land loss (Shrimp farmer)*
- *Almost every year we experience cyclones that badly affect the island. I am worried about the safety of these megaprojects and the residents near it during such natural disaster events (Seaweed cultivator)*

Appendix C. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.ocecoaman.2025.107766.

Data availability

An anonymised version of the dataset analysed in this study is archived at: https://doi.org/10.5281/zenodo.14762452.

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