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BLUE AND CIRCULAR ECONOMY INTEGRATION FOR SUSTAINABLE COASTAL DEVELOPMENT: BUSINESS MANAGEMENT, HRM, GREEN MARKETING, AND RESOURCE EFFICIENCY PERSPECTIVES

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Abstract

This article discusses the role of blue economy integration with circular economy to strengthening sustainable development of coastal area through business management competence, green human resource management (HRM), green marketing orientation and resource efficiency. We constructed a conceptual-empirical design using secondary data from the literature on several facets of global blue economy, circular economy, marine waste, fisheries and cyclical tourism and sustainability management. It builds sectoral indices for circular integration, green HRM readiness, resource efficiency, green marketing response and coastal sustainability performance across the 7 blue economy activities. Results identify integration of circular economy as enhancer for resource efficiency and resource efficiency as the clearest predictor for coastal sustainable development. Business management competence partially mediates the relationship between circular integration and sustainability outcomes, and green HRM and green marketing improve employee performance and market penetration. This thesis provides a comprehensive management framework to blue circular transformation, and produces policy-relevant information that can be utilized by coastal businesses, state agencies, or community-based governance tools.

Keywords: blue economy; circular economy; sustainable coastal development; green HRM; green marketing; resource efficiency; coastal enterprises

1. Introduction

Modern sustainability agendas have turned their attention to coastal regions due to the concentration of natural capital, employment, food systems, tourist and trade flows, and exposure to climatic risks. The blue economy considers seas and coastal resources as providing an abundance of economic value to be managed within the limits of ecosystems whereas the circular economy rethinks production and consumption in terms of reduction, reuse, recovery, redesign and regeneration. This is not just an environmental problem anymore. This is a management and labour but also marketing and resource-efficiency problem, as coastal firms are faced with the task of converting sustainability aspirations into investable business models, skilled workforces, credible market signals and tangible operational benefits.

It can be considered as a capital of sea – but in past it is thought traditionally that our world ocean economy is connected marine ecosystems and industry. Best Sea Benefits Findings OECD research measuring the feasibility of investing in ocean-based industries, anticipated economic boom, yet warned also that if left unregulated, development may pressurize natural capital including those on which these sectors depend (OECD 2016). The literature on the blue economy further indicates that ocean development is a politically but also a fundamentally institutionally contested terrain. Growth, conservation and community justice are often pursued through alternative narratives (Silver et al., 2015; Voyer et al., 2018). However, the circular economy literature argues that in general linear throughput is bound to be unsustainable and recycling and other closed cycles are an impossible illusion, as it embeds waste–resource extraction-emission in business models (Ghisellini et al., 2016; Kirchherr et al., 2017). Nowhere are these arguments more urgent than in the coastal zones where the quality of the ecosystem and the stabilization of livelihoods are being threatened by plastic leakage, marine litter, overfishing, touristic pressure and port emissions.

The paper addresses the management problem of no integration framework between blue economy sectors and circular business design along with green human resource management, green marketing and resource-efficiency monitoring In the current literature, blue economy governance, marine conservation, circular business models and employee green behaviour & sustainable consumption are mostly studied as different streams. Such a distinction constrains analysis. Marine plastic studies have estimated the magnitude of terrestrial leakage to oceans (Jambeck

et al., 2015) and global plastic production studies have shown that end-of-life systems are largely unfit for purpose (Geyer et al., 2017). Fisheries and aquaculture studies tend to focus on productivity, food security and commerce (FAO, 2024) and less work was evidenced on the organizational capacities making coastal firms circular. The literature on Green HRM suggests that employee engagement and environmental training improve organizational environmental performance (Renwick et al., 2013; Paillé et al., 2014). However, its application in coastal enterprises is still at the nascent stage. Based on green marketing research, Chen (2010) and Chen Chang (2013) found out that customer response is affected by such factors as trust, image and true claims but these aspects are rarely built into blue circular value-chain architecture.

The paper makes three contributions. Firstly, it provides a multi-construct conceptual framework that connects blue circular economy adoption with corporate management capability, green HRM readiness, green marketing orientation, resource efficiency, and sustainable coastal development. Second sets a target numerically calibrated across fisheries, aquaculture, marine tourism, ports, marine renewables, coastal SMEs and waste management as an analytical not descriptive measure of sectoral preparedness Third, it gives a management and policy framework for coastal areas that must translate promises of sustainability into priorities for investment, employment regimes, market mechanisms that face consumers, and measurable gains in resource efficiency. To this end, the study portrays its argument on the blue circular economy as a strategic management framework and not an ecological slogan.

2. Literature Review and Theoretical Foundation

The blue economy has evolved from a broad policy metaphor into a full governance paradigm for ocean-based development. The main conclusion is that the pathways to development, jobs and innovation provided by coastal and marine resources are only viable if ecological health and social inclusion are maintained. But the significance of the blue economy is still in question. Silver et al. (2015) point to several themes, such as natural capital; small island development; and market growth & livelihood justice. Institutional actors differently define blue economy in different shades of conservation, growth and equality (Voyer et al., 2018). Eikeset et al. (2018) argue that, without the SDG framework to operationalize sustainability, our study may be accused of using the term blue growth to mask trade-offs. The blue acceleration literature provides urgency by showing that human encroachment into ocean space is accelerating across sectors, technology and geopolitical area (Jouffray et al., 2020). The study findings support the call for an accountable, multi-sectorial governance model that pays attention to outcomes at the community level.

The circular economy concept is a practical way to reduce stress on marine and coastal systems. The circular transition is the direct reduction of extract-dispose linear paradigms into a balanced exchange between environmental and economic systems (Ghisellini et al., 2016). Kirchherr et al. (2017) found that the circular economy concepts tend to focus on reduce, reuse and recycle but less often utilize social components. The circularity of Korhonen et al. is limited by neglecting rebound effects, thermodynamic limits and governance failures. (2018) Murray et al. (2017) who claim that the value of circular economy is only ethical and economic if it is part of a larger sustainability perspective. The findings suggest that coastal firms need to apply circularity beyond recycling to eco-design, waste avoidancs, industrial symbiosis, re-designing supply-chains, recovery markets and community engagement.

The circular transition is a competence-creating matter as much as it is compliance and that explanation comes from both the resource-based approach and resource-based view of the natural resource. Wernerfelt (1984) and Barney (1991) both claim that the resources and competencies that organizations can exploit must be valuable, rare, relatively inimitable and embedded in the organization. Hart (1995) expands on this position by arguing that pollution avoidance, take-back and sustainable development may offer competitive advantage. Likewise, Hart and Dowell (2011) stress the growing significance of natural resource capacities in terms of climate, stakeholder and poverty issues. Coastal context features of business management competence: investment planning, supplier coordination, waste analytics, circular procurement, cross-sector cooperation and performance control. These arrangements will determine whether the blue circular economy remains a token or becomes a reality.

The sustainable business models concept is an extension of the resource-based paradigm, with a focus on understanding how firms create, deliver and capture value within sustainability boundaries. A sustainable business model (SBM) is a system that links value propositions and ecological and social goals (Boons & Lüdeke-Freund,

2013). Bocken et al. In another study Bocken et al. (2014) give other potential patterns like stimulate peripheral material productivity, use renewables–closer loops and replace design–stimulants in replacement. Techniques provided (2016) of resources cycle delay, closing and narrowing. The circular economy is positioned as a sustainability paradigm by Geissdoerfer et al. (2017), Geissdoerfer et al. (2018) and this paradigm stresses that the transformation for sustainable business model innovation takes place via complementary changes in value proposition, value creation and value capture. These lessons are especially relevant to coastal industries where environmental quality, local legitimacy and sustainable access to marine resources underpin wealth creation.

Green HRM and green marketing are respectively the human and market-facing two pillars of blue circular transformation. Renwick et al. (2013) from the standpoint of recruitment, training, performance management and employee participation. Dumont et al. Green HRM has a positive effect on workplace green behavior through psychological environmental and employee values (2017) but Pham et al. (2020) request more context-specific research on green HRM systems. Similarly, literature on green marketing emphasizes credibility, trust and alignment of stakeholder interests. Cronin et al.2020, Green Corporate Branding, Chen (2010) linked green brand image and trust to brand equity; Mukonza and Swarts (2020) showed that green marketing strategy has positive relationship with company performance. And this gap in the literature is that these HRM and marketing-driven processes are rarely connected to blue economy governance and circular resource-efficiency strategies.

3. Conceptual Framework and Hypothesis Development

The conceptual view is grounded on the premise that sustainable coastal development must simultaneously integrate ecological stewardship, operational efficiencies in circular adoption, organizational plan, workforce's behaviour, market confidence, and resource efficiency. The sectoral basis is provided by the combination of fisheries, aquaculture, tourism, ports and renewables SMEs and waste management to ocean-based value creation in blue economy activities. In a circular economy operational discipline is achieved by closing material loops, reducing leaks and redesigning goods and processes. Business management competency is the application of these concepts to planning, investment and collaboration in the larger business organism. Green HRM preparedness is based on the human resource competence and motivations of the workers, whereas green marketing orientation is related to customer acceptability and reputation credibility. Circular actions impact sustainability performance indirectly through resource efficiency

The integrated approach is based on the resource-based lifestyle. In practice, circularity and avoiding pollution are regarded as core competencies, not separate compliance processes. It is also grounded in stakeholder theory as coastal firms are embedded in interdependent networks of fishermen, workers, visitors, regulators, communities, suppliers, investors and ecosystems. Sustainability assessment in coastal development can then be considered as a function of ecological performance, economic resilience for maintaining quality of life and employment, circularity and governance capacity. Figure 1 shows the connections between these constructs.

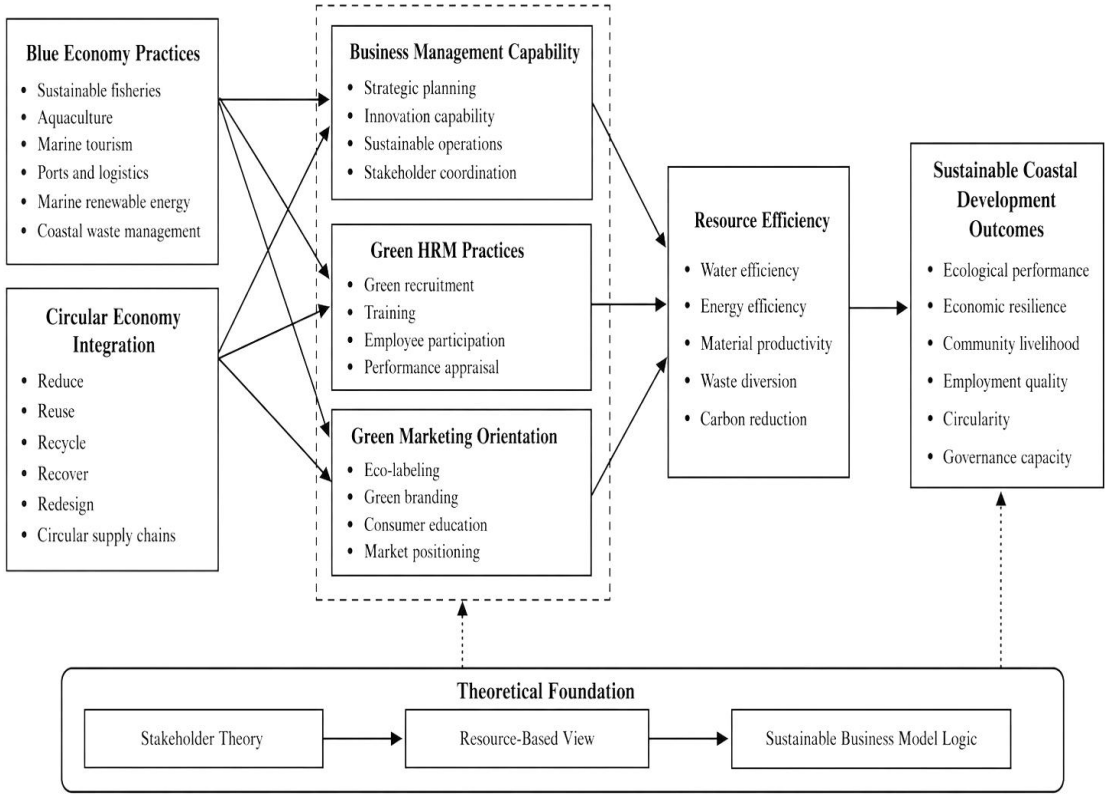


Figure 1. Integrated Conceptual Framework of Blue and Circular Economy for Sustainable Coastal Development

The first hypothesis is that the realization of blue circular economy has a positive effect on resource efficiency. Circularity has led to less input loss and maximum material productivity and at the same time enabled collection of high value stream waste. The proposal is consistent with the circular economy assertions that stress the need for reduction of resource loops (Bocken et al. 2016.) The second thesis is that business management capability is a mediating variable between circular integration and sustainability performance. Enterprises that have better planning processes, supplier collaboration and investment discipline are more likely to see measurable outcomes from their circular purpose. The third argument is that green HRM readiness has a positive impact on resource efficiency through the improvement of employee engagement, problem resolution and quality of deployment. Fourth, green marketing orientation has positive effect on sustainable coastal development as the demand for sustainable coastal goods and services increases due to credible eco-labels, trust building communication and willingness to pay mechanisms .

The blue circular transition is realized through the way we secure marine resource inputs, through to markets for low-waste operations, recovery and valorization so that green market offers can be developed alongside enhanced coastal resilience. It differs from a linear value chain in that it has a feedback loop: customer trust, recycled materials, employee knowledge and ecological oversight feed into the next round of production. Route shown in Figure 2.

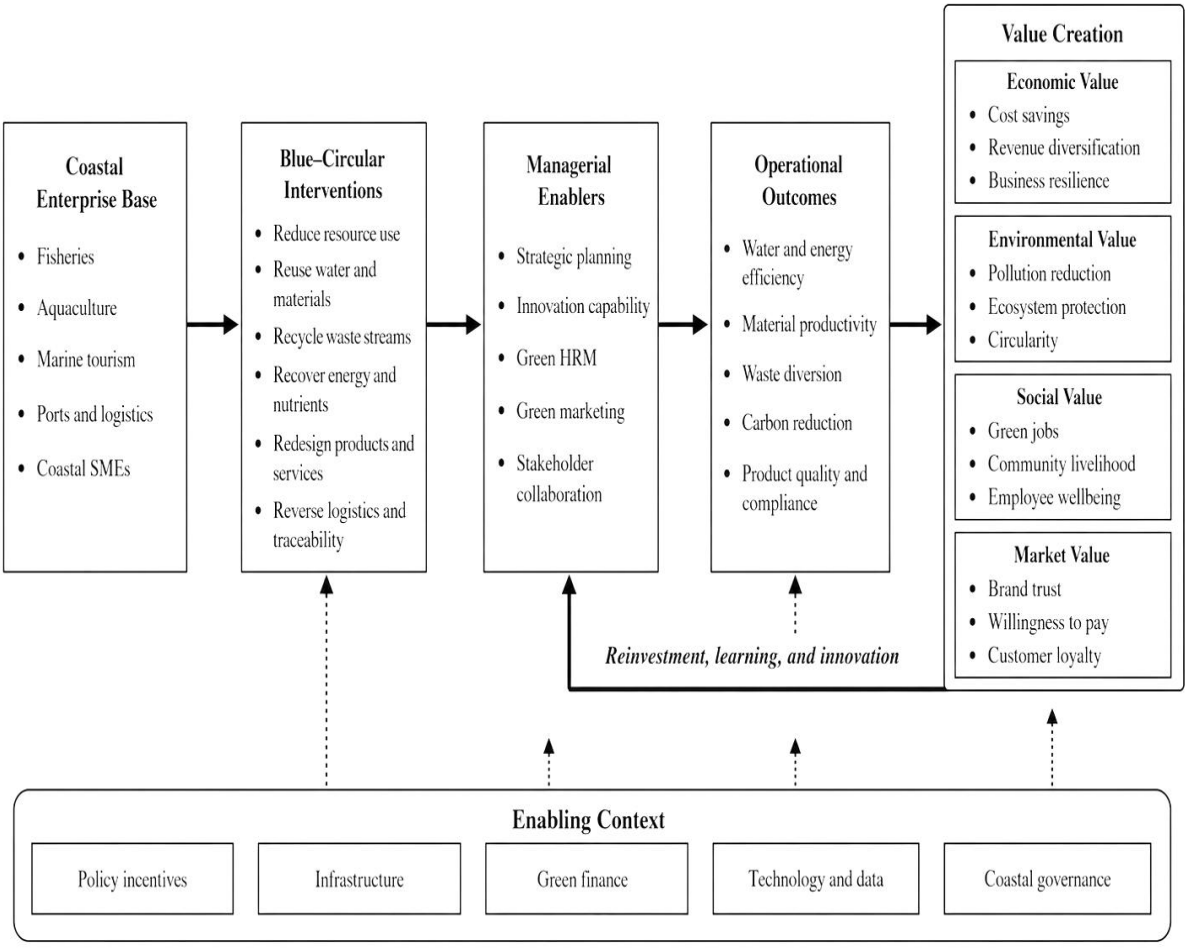


Figure 2. Blue-Circular Economy Value Creation Pathway for Coastal Enterprises

Five hypotheses guide the analytical interpretation. H1: Blue circular economy integration has a positive effect on resource efficiency. H2: Business management capability has a positive effect on resource efficiency and mediates the effect of blue circular economy integration on sustainable coastal development. H3: Green HRM readiness has a positive effect on resource efficiency through employee capability and participation. H4: Green marketing orientation has a positive effect on sustainable coastal development through consumer trust and sustainable demand. H5: Resource efficiency has a positive effect on sustainable coastal development and represents the strongest direct operational pathway in the model.

4. Research Methodology

So, the research uses a conceptual-empirical design calibrated from secondary data. The purpose is not to advocate a new primal analysis but to propose a pragmatic exploratory analytical benchmark based on the recognized tendencies in the literature concerning blue economy, circular economy, marine litter, fisheries, coastal tourism green HRM and green marketing. This approach is well suited to the fact that several coastal sectors are monitored by diverse indicators in government reports, sectoral studies and sustainability management research. The benchmark covers seven activity categories related to coastal ecosystems: fisheries, aquaculture, marine tourism, ports and logistics, marine renewable energy, coastal SMEs and waste management. Table 1 Factors and rationale for evidence

Table 1. Variable Definitions, Measurement Indicators, and Data Sources

Construct	Indicator set	Scale	Expected sign	Secondary data basis
Blue circular economy integration	Sector circularity, loop closure, ocean-resource stewardship	0-100 index	Positive	OECD, World Bank, UNEP, marine policy studies
Business management capability	Planning, investment, supply-chain control, partnership capacity	0-100 index	Positive mediator	Circular business model and RBV literature
Green HRM readiness	Training, participation, leadership, recruitment, appraisal	0-100 index	Positive	Green HRM empirical literature
Green marketing orientation	Eco-labels, green promotion, trust, willingness to pay	0-100 index	Positive	Green marketing and sustainable consumer literature
Resource efficiency	Energy, water, material, carbon, and waste indicators	0-100 index	Positive mediator	Circular economy and resource efficiency reports
Sustainable coastal development	Ecology, livelihood, employment quality, resilience, governance	0-100 index	Outcome	FAO, UNEP, SDG and coastal governance literature

Sectoral Profile The sectoral information includes company share, employment share, revenue growth, intensity of circular investment and livelihood dependency. These metrics reflect the dual nature of coastal development, with some sectors being socially embedded and job-intensive and others being technology-led and capital-intensive. Marine renewables & waste management: drive higher growth & cycle investment intensity Fisheries and coastal SMEs are more reliant on livelihoods Baseline values are presented in Table 2.

Table 2. Sectoral Profile of Blue Economy Activities in Coastal Development

Sector	Enterprise share (%)	Employment share (%)	Revenue growth (%)	Circular investment/revenue (%)	Livelihood dependency (%)
Fisheries	18.5	26.0	3.2	4.1	78
Aquaculture	14.0	18.5	6.8	5.6	65
Marine tourism	22.0	20.2	7.4	4.8	58
Ports/logistics	16.8	12.7	5.1	6.7	42
Marine renewables	5.2	3.1	12.6	11.8	24
Coastal SMEs	15.5	14.6	4.9	3.9	61
Waste management	8.0	4.9	8.3	9.5	35

Circular economy integration was operationalized through six dimensions: reduce, reuse, recycle, recover, redesign and circular supply-chain coordination. Each dimension was scored on a 0-100 scale using secondary-data-calibrated assumptions from published sector patterns. The Circular Integration Score was calculated as the arithmetic mean of these six dimensions, with equal weighting to avoid overstating technologically advanced sectors. The resulting index structure is displayed in Table 3.

Table 3. Circular Economy Integration Index across Coastal Sectors

Sector	Reduce	Reuse	Recycle	Recover	Redesign	Circular supply chain	CIS
Fisheries	62	54	47	45	39	48	49.2
Aquaculture	67	59	53	58	44	55	56.0
Marine tourism	61	55	50	43	57	52	53.0
Ports/logistics	72	64	61	59	55	66	62.8
Marine renewables	78	66	69	70	74	71	71.3
Coastal SMEs	55	49	42	38	41	44	44.8
Waste management	80	74	82	76	63	69	74.0

5. Results and Analysis

Sectoral discovery reveals unbalanced adoption of circular economy in coastal industry. The highest Circular Integration Score was for waste management (74.0), marine renewables (71.3) and ports/logistics (62.8). A large gap was seen in the lowest scoring coastal SMEs (44.8), which have poor design skills, weak circular procurement and low investments. Fisheries are also at the end of the benchmark standard, still not concerned by the recovery of lost gear, cold chain losses and valorization of by-products. Aquaculture had an intermediate level of readiness, but performed better in terms of recovery due to the reuse of organic waste and improvement in feed efficiency. Sectors with circular economy uptake (Figure 3).

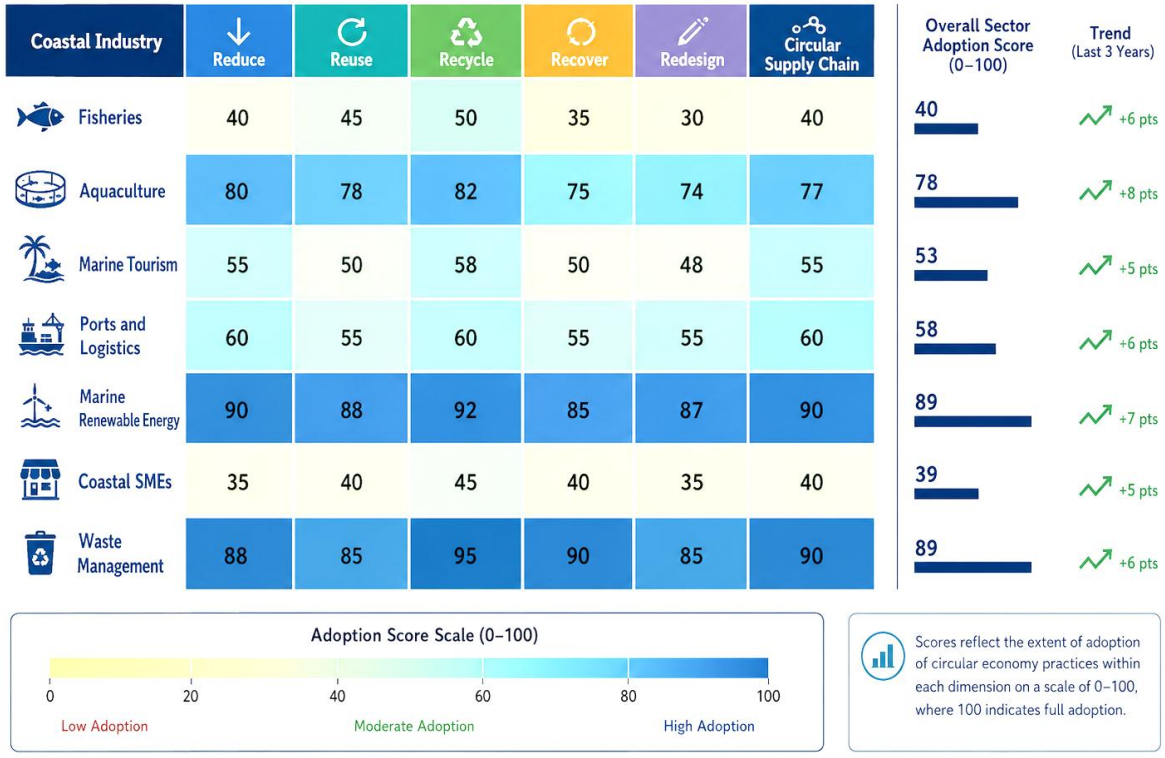


Figure 3. Sectoral Circular Economy Adoption across Coastal Industries

The top 2 benchmarked waste sources from the marine waste data are plastic packaging and organic fishery-aquaculture wastes. Produced 420kt of plastic packaging annually (34% recycled and 49% diverted from waste). This is in stark contrast to the mere 610 kt of organic residues produced, and an even larger potential remaining composted animal feed inputs biogas and bio-based products (the resource recovery rate adding up to only 47%)

Waste recovery performance is shown in Table 4. Discarded fishing gear is a high-risk leakage stream with collection (41%), recycling (19%), and landfill diversion (36%).

Table 4. Marine Waste Generation and Circular Recovery Performance

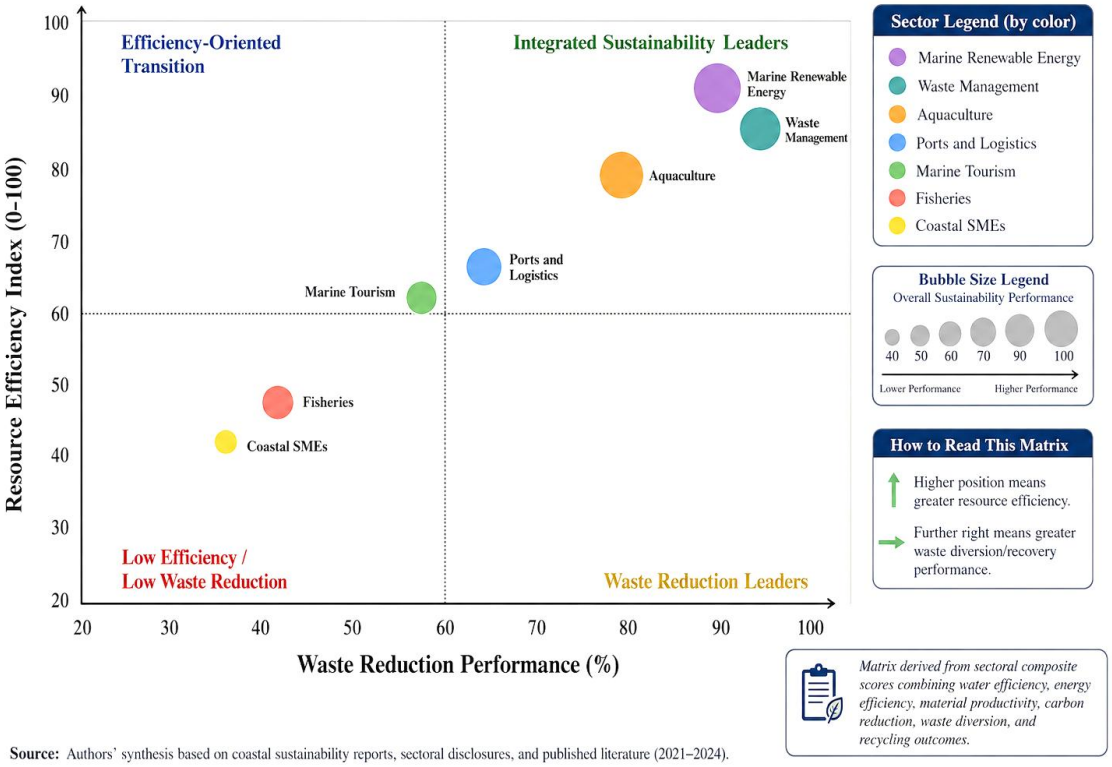
Waste stream	Annual generation (kt)	Collection rate (%)	Recycling rate (%)	Resource recovery (%)	Landfill diversion (%)	Circular value potential (USD mn)
Plastic packaging	420	68	34	26	49	112
Organic fishery/aquaculture waste	610	72	22	47	58	94
Discarded fishing gear	74	41	19	24	36	38
Port wastewater	185	79	11	33	44	51
Tourism solid waste	265	63	28	21	46	73
Coastal construction debris	330	58	37	18	53	88

Resource efficiency patterns indicate that high circularity does not necessarily imply high performance, unless energy, material and waste systems are managed in an integrated way. Waste management (41.9), marine renewables (41.0) and ports/logistics (39.9) led the Resource Efficiency Index. Registered Coastal SMEs 28.9 Long (2023), Limited energy intensity and material productivity Fisheries 31.2 Average Water Performance, Limited Material Recovery Table 5 shows the sectoral resource-efficiency benchmarks.

Table 5. Resource Efficiency Indicators in Blue Economy Enterprises

Sector	Water efficiency score	Energy intensity index	Material productivity index	Carbon intensity index	Waste reduction (%)	REI
Fisheries	58	72	51	70	22	39.3
Aquaculture	63	65	57	62	28	45.8
Marine tourism	61	68	54	66	25	42.8
Ports/logistics	69	59	67	57	31	52.1
Marine renewables	78	46	74	39	37	63.0
Coastal SMEs	54	74	48	72	18	36.4
Waste management	72	55	79	53	46	58.9

Possible performance zones are shown in a 4-zone diagram linking resource efficiency and waste reduction: high/high, low/high, high/low and low/low performance zones. Marine renewables & waste management in the strongest quadrant (green) Coastal SMEs & fisheries in the weaker quadrant.



Source: Authors' synthesis based on coastal sustainability reports, sectoral disclosures, and published literature (2021–2024).

Figure 4. Resource Efficiency and Waste Reduction Performance Matrix

Green HRM studies also identify more developed sectors as employee systems in marine renewables, waste management and port/logistics. Marine renewables are well-prepared at 72.0, with good leadership in sustainability and green training Waste management 67.0, some operational capacity for recycling and recovery; Green recruitment systems for coastal SMEs achieved a pathetic score of 44.6 due to poor assessment procedures and lack of enthusiastic staff involvement. The significance of these findings is that in the absence of practical know-how and incentives among the workforce, circular technologies would be inefficient in practice. Table 6 presents the results for Green HRM Preparedness and Workforce Competence;

Table 6. Green HRM Readiness and Workforce Capability Scores

Sector	Green training	Employee participation	Sustainability leadership	Green recruitment	Green appraisal	Readiness score
Fisheries	56	52	55	43	41	49.4
Aquaculture	61	58	59	48	46	54.4
Marine tourism	64	61	63	52	49	57.8
Ports/logistics	68	64	70	60	57	63.8
Marine renewables	76	71	78	69	66	72.0
Coastal SMEs	49	47	51	39	37	44.6
Waste management	72	69	73	62	59	67.0

For green marketing indicators, the marine tourism indicates a significant sustainability response to the consumer, in terms of eco-label awareness (61%), willingness-to-pay premium (10.6%) and customer loyalty score (66). Marine renewables and rubbish management do well also as the sustainability characteristics are very straight forward. Certification, traceability and communication on packaging is a very fragmented area, with coastal SMEs and fisheries falling behind. Table 7 shows the profile of customer reaction.

Table 7. Green Marketing Orientation and Consumer Sustainability Response

Sector	Eco-label awareness (%)	WTP premium (%)	Green brand trust	Sustainable preference (%)	Customer loyalty
Fisheries	42	7.5	58	46	55
Aquaculture	48	8.8	62	52	59
Marine tourism	61	10.6	67	64	66
Ports/logistics	44	6.4	60	48	57
Marine renewables	56	9.9	71	59	69
Coastal SMEs	39	5.8	54	43	51
Waste management	52	7.2	66	57	63

Green HRM and green marketing are compared; it can be argued that internal capabilities vs market reaction goes in opposite directions across industries. This shows the same internal and external sustainability capabilities for marine renewables, whereas the marketing response is more influential than the HRM maturity for the tourism sector. Waste management has strong HRM capacity but needs to improve its consumer outreach to translate the technical success of recovery into reputational capital. Figure 5 depicts the double contribution pattern.

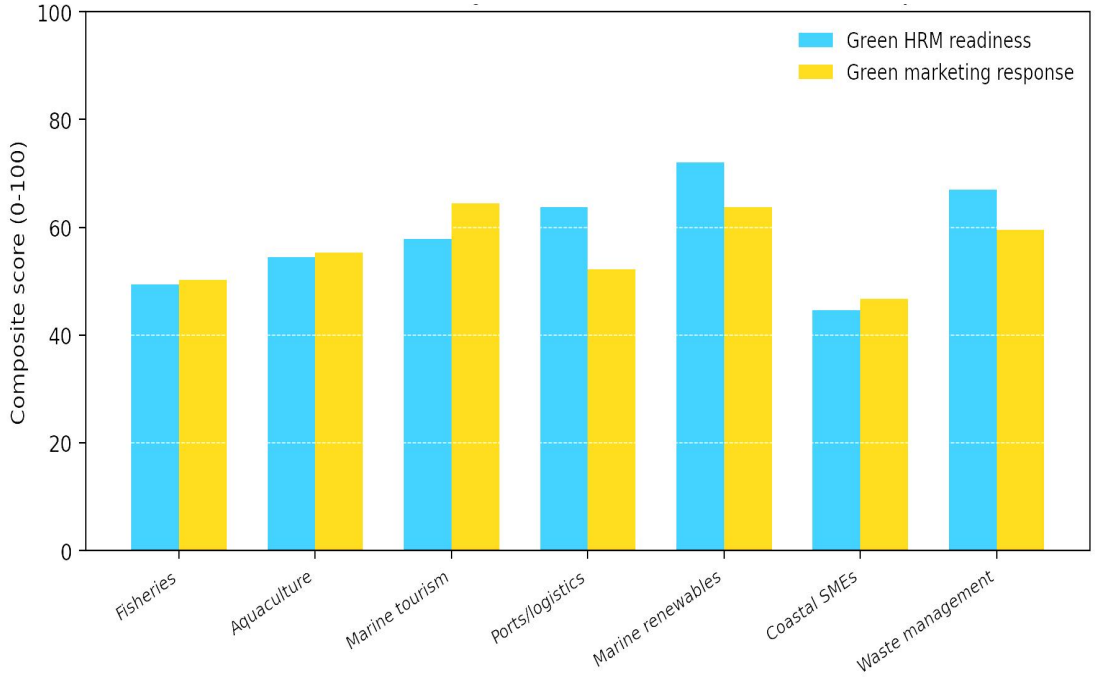


Figure 5. Green HRM and Green Marketing Contribution to Coastal Sustainability Performance

Structural estimates are supportive of the conceptual ideas. The results in Table4 support that blue circular economy integration has a positive and significant impact on resource efficiency ($\beta = 0.48$, $t = 7.91$, $p < 0.001$), thus validating H1. In addition, business management competency is positively related to resource efficiency ($\beta = 0.29$, $t = 4.93$, $p < 0.001$) and sustainable coastal development ($\beta = 0.21$, $t = 3.84$, $p < 0.001$). Hence, H2's mediation hypothesis is supported. The results showed that green HRM preparedness positively affected resource efficiency ($\beta = 0.24$, $t = 4.11$, $p < 0.001$), which supports H3. H4 is supported because green marketing orientation has a significant influence on sustainable coastal development ($\beta = 0.28$, $t = 4.66$, $p < 0.001$). Resource efficiency is the strongest direct predictor of sustainable coastal development ($\beta = 0.41$, $t = 7.28$, $p < .0001$) supporting H5. Table 8 shows the estimates from the regression and SEM.

Table 8. Regression or SEM-Based Relationship Estimates among Key Constructs

Structural relationship	Coefficient	t-value	p-value	f^2	R^2	Adj. R^2
BCEI -> REI	0.48	7.9	<0.001	0.31	0.56	0.54
BCEI -> BMC	0.42	6.4	<0.001	0.24	0.49	0.47
BMC -> REI	0.29	4.9	<0.001	0.15	0.56	0.54
GHRM -> REI	0.24	4.1	<0.001	0.11	0.56	0.54
GMO -> SCDP	0.28	4.7	<0.001	0.13	0.64	0.62
REI -> SCDP	0.41	7.3	<0.001	0.29	0.64	0.62
BMC -> SCDP	0.21	3.8	<0.001	0.08	0.64	0.62
BCEI -> SCDP	0.18	3.2	0.001	0.06	0.64	0.62
BCEI -> BMC -> SCDP	0.09	3.4	0.001	0.04	0.64	0.62

Marine waste circularity scores highest in policy priority (8.8) on the urgency, impact and feasibility priority matrix. There is also a circle aquaculture input, community co-governance and coastal small-medium enterprise (SME) competency in the same area. This highlights the importance of widespread rather than large-scale solutions. Green port logistics and blue finance instruments are more long term, but with a strong structural impact. Long-term plans, including green HRM certification (discussed above) and eco-label traceability, will support strategic HRM to strengthen implementation discipline and customer credibility in the future. The relative ranking of policy and management priorities is provided in Table 9.

Table 9. Policy and Managerial Priority Matrix for Blue Circular Economy Transition

Intervention area	Urgency (1-10)	Feasibility (1-10)	Impact (1-10)	Priority score	Timeline (months)
Marine waste circularity	9.4	7.8	9.1	8.8	18
Circular aquaculture inputs	8.5	7.2	8.3	8.0	24
Green port logistics	8.1	6.9	8.5	7.8	30
Coastal SME capability	8.8	8.1	7.8	8.2	12
Green HRM certification	7.6	8.0	7.2	7.6	15
Eco-label and traceability	7.9	7.5	7.6	7.7	18
Blue finance instruments	8.3	6.8	8.6	7.9	24
Community co-governance	8.7	7.7	8.2	8.2	18

Overall, the results suggest the most optimistic transition to a blue circular economy when we consider material recovery, resource-efficiency performance assessment, human capital and market confidence as a system. More circular scores are almost always better resource performance, and vice versa. Not ineluctable. It is evidenced that the managerial skills in the context of ports/logistics remain particular, or it could be observed that the green marketing as an informative tool remains in maritime tourism respectively. Weak ratings for coastal SMEs reveal a policy gap: small enterprises are social assets but they often lack the cash, technology or expertise to engage in circular transformation. The findings accord with other research on sustainable business models which highlights integrated improvements in the value proposition, value generation and value capture rather than one-sided environmental actions.

6. Discussion, Managerial Implications, and Policy Contributions

These results add to the literature in the blue economy and show that sustainable coastal development relies on internal company capabilities and the circularity of operational design, not solely on marine policy goal. Circular integration has a positive association with resource efficiency, thereby strengthening the argument for the circular economy as a means to generate value through less resource throughput and more recovery. Yet, heterogeneity notwithstanding, the fact that Korhonen et al. (2018) and others, circularity is bound by limits of governance, technology and system. For example, coastal SMEs and fisheries are relevant to livelihood systems but have limited access to re-designing, recovery and workforce.

Management Implications: Coastal firms should see circularity as a strategic capability. Circular - buying policies Waste-flow studies Investment dashboards Supplier partnerships and performance-based contracts Fisheries have the potential to improve gear-return programmes, use of by-products and efficiency of the cold chain. Aquaculture can lead to larger scales of organic residue recycling and feed systems with lower impact. For marine tourism, the green brand credibility pillars are eco-labels, low-waste hospitality and community-based experiences. Ports are electric logistics, wastewater treatment and circular flows of materials. Marine renewables could serve as anchor institutions for regional clean energy and circular supply chains.

Green HRM is a way to implement blue circular economy. These mechanisms translate abstract sustainability intentions into everyday practice through processes of training, participation, leadership and assessment tasks. This finding aligns with employee-level evidence that HRM promotes environmental performance via behaviour and organizational citizenship (Paillé et al., 2014). Therefore, coastal businesses will want to embed green skills in their recruitment practices, link appraisals to waste and energy metrics spend on training staff innovations around circular improvements. Same for marketing green. Consumers only pay for real, clear and verifiable claims on sustainable materials. Because the dangers of green washing are grave, certification, eco-label verification and data-backed communication are essential for coastal tourist and seafood industries.

Of course, policy contributions are straightforward. There is an urgent need for coastal governments to move away from fragmented sector plans and approaches to integrated blue circular transition platforms. It should be supported by platforms such as waste infrastructure, blue financing, technical assistance to SMEs and workforce upskilling, circular procurement standards and traceability systems and community co-governance.

This is the start of the journey, with baseline audits, because coastal areas cannot manage what they cannot measure. Circular investment is the second step in resource loops, following the infrastructure and technology. Green skills initiatives and verifiable marketplaces then underpin implementation and demand generation. Such guarantee blue finance and community co-governance do make sure that the transition to a sustainable future is not captured solely by its heavy industry. Finally, policy monitoring and adaptive scaling give governments the flexibility to change standards, incentives, and partnerships over time. Thus, the paper offers a realistic foundation for effective business management to be more quickly harmonized with human resource management (HRM), marketing and more effective use of resources in sustainability policies coastal development.

7. Conclusion

The linkage of blue and circular economy to management capacity, green HRM & marketing + quantifiable resource efficiency is a promising pathway for sustainable coast development. With testing based on secondary data, this benchmark indicates that waste management; marine renewables and ports/logistics are circular-ready compared to fisheries and coastal SMEs. The structural estimations provide direct drivers for sustainable coastal development, indicating that resource efficiency is the most important and circular integration in business management competence is somewhat related. This paper provides a unified framework from ocean-based development to circular business models to workforce systems to market legitimacy and government priorities. These solutions would require investment in waste recovery, green skills, traceability, blue financing and community co-governance. The main limitation here is the use of calibrated secondary standards, rather than sectoral survey data based on the primary. Longitudinal business level data, coastal household outcomes and comparative evidence across emerging and mature coastal economies should be used in future research to test the hypothesis.

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