14.5.5. Connecting Land and Water Through Research and Dialogue

Introduction

Land and water systems are linked through watersheds, rivers, agricultural practices, and the movement of pollutants and sediments toward coastal habitats. Protecting aquatic species therefore benefits from dialogue that brings upstream environmental conditions into the same conversation as coastal ecosystem management.

During Academic Year 2024–2025, Davao Oriental State University (DOrSU) advanced related foundations through a river-focused policy brief, technical training in soil physics and water chemistry, and the inauguration of a Biocultural Field Station in Manay developed with community and institutional partners. Earlier research on an adaptive coastal-zone health index provides background for interpreting pressures across connected environments.

These are contributions to research capacity, communication, and partnerships. The materials do not document the adoption or implementation of a formal watershed management strategy explicitly based on aquatic-species diversity during the reporting period; that distinction is maintained throughout the report.

Bringing a River Pollution Concern Into Public Discussion

DOrSU launched its Regenerative Futures Policy Brief Series on November 22, 2024, alongside a Trainer's Module for educators, researchers, and extensionists. One of the initial briefs, "Banaybanay Orange River: Why Mining Companies Should be Environmentally Accountable," placed a local river concern within the university's public policy work.

The launch gave environmental research another route to reach decision-makers and community educators. For connected river and coastal systems, such communication supports discussion of accountability and prevention. Publication of a brief is a policy input; the source does not report adoption of a new regulation.

The brief series also gives university research a format that can circulate beyond specialist journals. A locally recognisable river issue can help educators and officials discuss how environmental responsibility relates to land use and downstream waters. The launch establishes dissemination of a policy input. Evidence of consultation, institutional adoption, enforcement, or environmental improvement would be needed to trace its subsequent influence (DOrSU PIO, 2024a).



Figure 1. Participants at DOrSU's Regenerative Futures Conference and policy brief launch, November 22, 2024. Photo credit: DOrSU–Public Information Office.

References

Davao Oriental State University, Public Information Office. (2024a, November 26). DOrSU Launches Trainer's Module, Policy Brief Series at Inaugural Regenerative Futures Conference. Retrieved from https://dorsu.edu.ph/?p=11593

Strengthening the People Behind Soil and Water Testing

DOrSU's Dr. Janeth C. Tayone and Geralph Sam P. Villarubia strengthened their analytical skills through the Bureau of Soils and Water Management–Laboratory Services Division training in Quezon City. Sessions on October 14–18, 2024 addressed soil physics and water chemistry; October 21–25 sessions focused on rapid soil testing.

These skills support more consistent laboratory work and strengthen the university's capacity to examine local environmental conditions. The immediate achievement is trained personnel and improved testing capability, providing a foundation for reliable research and technical support.

The value of this training extends to the quality of advice the university can provide. Consistent analytical procedures make results easier to compare and give researchers a firmer basis for investigating a suspected problem. This is an enabling contribution to freshwater stewardship: laboratory competence supports later assessment, while community outreach and field application remain separate activities to document (DOrSU PIO, 2024b).



Figure 2. Laboratory work pictured in DOrSU's report on the October 2024 BSWM training in soil physics, water chemistry, and rapid soil testing. Photo credit: DOrSU–Public Information Office.

References

Davao Oriental State University, Public Information Office. (2024b, November 5). DOrSU Advances Expertise in Soil Physics, Water Chemistry, and Rapid Soil Testing through BSWM Training. Retrieved from https://dorsu.edu.ph/dorsu-advances-expertise-in-soil-physics-water-chemistry-and-rapid-soil-testing-through-bswm-training/

Creating a Place for Community Led Landscape Learning

DOrSU inaugurated its Biocultural Field Station in Sitio Matabang, Taocanga, Manay on September 26, 2024. Working with Mandaya communities, local government, and the Department of Environment and Natural Resources, the university established a base for agriculture, biodiversity, and cultural initiatives. The Indigenous Peoples Engagement Center, led by focal person Laarni M. Pasion, complements this work.

Community consultation helped shape the initiative. This locally grounded presence provides a setting for future learning about connected land and water resources, while the inauguration record does not establish a completed watershed management strategy.

A continuing presence in the community can support relationships needed for research and extension to respond to local priorities. Linking biodiversity and agriculture with culture also recognises that environmental

decisions are made within lived landscapes. The station provides a platform for that engagement. Any specific contribution to aquatic-species protection or watershed management should be supported by records of the relevant activities and findings (DOrSU PIO, 2024c).



Figure 3. Inauguration of DOrSU's Biocultural Field Station in Taocanga, Manay, September 26, 2024. Photo credit: DOrSU–Public Information Office.

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Davao Oriental State University, Public Information Office. (2024c, September 27). DOrSU Inaugurates Biocultural Field Station in Manay. Retrieved from https://dorsu.edu.ph/dorsu-inaugurates-biocultural-field-station-in-manay/

Research Context for Waters That Connect Land and Sea

Earlier work on a coastal-zone health-index framework provides methodological context for considering connected environmental pressures. It helps explain why information about land use, water condition, and coastal ecosystems belongs within a shared management discussion.

The connection to this AY is supporting capacity: the river policy brief, analytical training, and field-station relationships create resources for future investigation and dialogue. The research framework is not evidence that a formal aquatic-species-based watershed strategy was adopted or implemented by DOrSU during the period (Cabrera & Lee, 2022).



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Article

Coastal Zone Environment Integrity Assessment for Sustainable Management: Part 1. Development of Adaptive Expert-Driven Coastal Zone Health Index Framework

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Abstract: The coastal zone is the environment that connects terrestrial and marine environments. It is the most productive ecosystem on the planet. It has been estimated that 23 percent of the population lives in the coastal regions. The attractive landscape and seascape of the coastal zone environments attract human settlement and increase the economic activities in the area. Unfortunately, massive human urbanization is also attributed to coastal zone ecosystem degradation. In addition, water-related phenomena due to the changing climate also affect the said environment. The negative impacts of human activities and the water-related phenomena typically deplete the environment's health. Thus, this study developed an adaptive index framework to assess the coastal zone environment condition. The principle of this framework is the sustainable co-existence of human development with the coastal zone environment. The identified coastal cities in the Philippines were utilized as the case study for developing the framework. The results show that the decision-makers are conservationists while extractive. In contrast, environmental educators are conservationists in nature. Moreover, each city has its own unique framework and signifies that the framework is adaptive to the perspective of the decision makers in their city.

Keywords: coastal zone sustainable management; CoZHI; multicriteria decision analysis; analytic hierarchy process; the Philippines

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Figure 4. Actual journal first-page image: Cabrera & Lee (2022), Journal of Marine Science and Engineering. Source: earlier supplied SDG 14 reference document; DOI: https://doi.org/10.3390/jmse10091183.

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Conclusion

DOrSU's work under Indicator 14.5.5 provides foundations for understanding connected land and water resources. The Banaybanay Orange River policy brief supported public discussion of accountability, laboratory training strengthened analytical capacity, and the Biocultural Field Station created a setting for continuing community relationships and landscape learning.

Earlier coastal-zone health research supports integrated management, but these activities do not establish an adopted aquatic-species-based watershed strategy or measured downstream improvement. Confirming such results requires documented plans, repeated environmental and biological monitoring, and meaningful community participation.