14.4.3. Connecting Pollution Research With Public Responsibility

Introduction

Addressing aquatic pollution requires both scientific evidence and clear routes for communicating environmental concerns to people able to act on them. Research can identify sources, exposures, and potential transport pathways; institutional policies and public-facing materials can make those concerns more accessible to educators, managers, and other stakeholders.

During Academic Year 2024–2025, Davao Oriental State University (DOrSU) launched a policy brief addressing the Banaybanay Orange River issue and presented computational research on possible marine-plastic movement from rivers to Davao Gulf. These activities were complemented by the university's existing single-use plastic policy and an earlier study of anthropogenic debris in Pujada Bay mangrove forests.

The report treats policy communication, research dissemination, established campus rules, and earlier scientific evidence as distinct contributions. The available sources establish opportunities for public discussion and a stronger basis for environmental action, but not a new enacted regulation, a completed clean-up, or a measured decline in river or marine pollution.

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, 2024).



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

References

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

Tracing Plastic From Rivers to the Gulf

DOrSU researchers used Python-based OpenDrift modelling to examine seasonal movement of plastic from 39 rivers around Davao Gulf. Supported by the United Nations Development Programme and ADDVentures Innovation Center, the work identified likely transport and accumulation patterns.

Led by Dr. Jonathan S. Cabrera with Wilkin Simo, Cindy Lasco, Lanie Laureano, and Danver Palmiano, the team received Best Paper recognition at InvENT on July 23–24, 2025. The model provides information for targeting monitoring and waste-management action; it does not measure a completed reduction in marine litter.

The model shifts attention from individual litter observations to possible connections among river outlets and coastal accumulation areas. This can help frame where field checks may be useful and which local governments may need to coordinate. Because the results are simulations, their strongest practical use is as a guide to investigation and prioritisation alongside observations; the award recognises the research contribution rather than a completed clean-up outcome (DOrSU PIO, 2025).

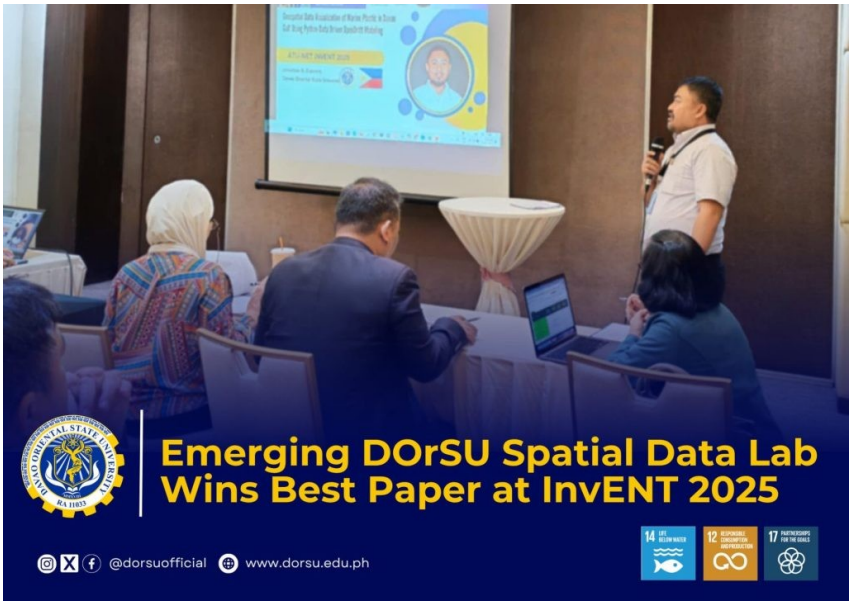

Figure 2. Actual InvENT 2025 presentation photograph within DOrSU's institutional marine-plastic modelling graphic, July 23–24, 2025. Photo/graphic credit: DOrSU–Public Information Office.

References

Davao Oriental State University, Public Information Office. (2025, July 24). Emerging DOrSU Spatial Data Lab Wins Best Paper at InvENT 2025. Retrieved from https://dorsu.edu.ph/emerging-dorsu-spatial-data-lab-wins-best-paper-at-invent-2025/

A Pre Existing Campus Framework for Reducing Disposable Plastics

DOrSU's Single-Use Plastic-Free policy provides an institutional starting point for waste prevention. Adopted under Board of Trustees Resolution No. 2019-25, its implementing rules took effect on February 3, 2023, before AY 2024–2025. The rules cover campus constituents, visitors, concessionaires, and caterers, and encourage reusable alternatives.

This policy is retained as background to the university's later pollution research. The cited advisory establishes the policy framework; records of enforcement and waste quantities during AY 2024–2025 would be needed to measure its implementation and effect.

The policy also identifies the campus as a setting where prevention can be discussed through everyday decisions about disposable materials. Its coverage of concessionaires and caterers connects institutional rules with services used by the university community. For the reporting year, the policy serves as an existing framework. The volume of plastics avoided and the consistency of implementation remain questions for operational records and monitoring (Davao Oriental State College of Science and Technology, 2019; DOrSU PIO, 2023).

References

Davao Oriental State College of Science and Technology (now Davao Oriental State University). Single-Use Plastic-Free DOSCST. Board of Trustees Resolution No. 2019-25. Institutional policy. Available through the university's official communication channels.

DOrSU-PIO. Public Advisory: Implementing Rules and Regulations (IRR) of the Single-Use Plastic-Free DOrSU Policy, enforced on February 3, 2023. Official Facebook page of Davao Oriental State University (dorsuofficial), official public communication. Retrieved from https://www.facebook.com/dorsuofficial/posts/pfbid02xq5BKamzihCGNqmg2JiYDg7NnHdGAMyqdvFY7W1zvBw9daM9iTPg2gEKpFiR4wSbl

A Local Scientific Basis for Pollution Policy Discussion

The Pujada Bay mangrove-debris study provides earlier, locally grounded evidence relevant to pollution prevention. It helps explain why rules about disposable materials and discussions of waste pathways have implications beyond the campus boundary.

Its role in this article is to strengthen the scientific context for prevention and public discussion. It does not demonstrate that the study caused the university policy, that a new ordinance was enacted, or that litter declined during the reporting year (Abreo et al., 2020).

References

Abreo, N. A. S., Siblos, S. K. V., & Macusi, E. D. (2020). Anthropogenic marine debris (AMD) in mangrove forests of Pujada Bay, Davao Oriental, Philippines. Journal of Marine and Island Cultures, 9(1), 38–53. https://doi.org/10.21463/jmic.2020.09.1.03

Scopus record in supplied export. Retrieved from https://www.scopus.com/pages/publications/85099004478?origin=resultslist

Conclusion

Indicator 14.4.3 illustrates how DOrSU connects environmental evidence with public responsibility. The November 2024 policy brief brought a local river issue into an accessible policy-discussion format, while the July 2025 marine-plastic modelling presentation illustrated the use of geospatial analysis to explore potential pollution pathways across Davao Gulf.

The earlier campus plastic rules and Pujada Bay debris research place those academic-year outputs within a longer record of waste-prevention and coastal research. Their timing and purpose must remain distinct: an institutional policy, a research study, and a publicly launched brief do not establish that regulations were newly adopted or that pollution outcomes improved during the reporting period.

These contributions provide materials and analytical approaches for educators, agencies, and communities to discuss environmental accountability. Evidence of subsequent uptake would require documented decisions, implementation records, environmental monitoring, and follow-up engagement with relevant stakeholders.