



SDG 12

Responsible Consumption and Production

12 RESPONSIBLE
CONSUMPTION
AND PRODUCTION



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Promoting Responsible Consumption Through River Clean-Up Initiatives

In commemoration of World Water Day, the Student Association of Fisheries, Faculty of Fisheries and Marine Sciences, Universitas Padjadjaran organized an environmental initiative called the Sustainable Waters Program (Properi) on March 23, 2024, at the Cikapundung River area, Braga, Bandung City. This activity represents a concrete effort by students to address environmental pollution, particularly plastic waste, which has become one of the major challenges in water resource management. Through this initiative, students actively contribute to raising public awareness of the importance of protecting aquatic ecosystems.

The Properi program was carried out through a collaboration between Himikan Unpad and the Trash Ranger community. The “Clean Our River” activity was participated in by 30 students and volunteers. Participants were equipped with gloves and garbage bags to clean the river directly. In addition, they received educational materials from Trash Ranger volunteers on the importance of plastic waste sorting and management, including how to turn plastic waste into eco-bricks, a simple innovation to support responsible and sustainable waste management practices.

Through this action, Unpad students made a tangible contribution to the implementation of SDG 12: Responsible Consumption and Production, by promoting responsible consumption and production behavior through community-based waste management. The Properi activity not only had a direct impact on improving river cleanliness but also strengthened collective awareness among students and the community regarding the importance of reducing plastic waste at its source. This initiative reflects the active role of the university community in supporting sustainable production and consumption patterns at the local level.





In addition to the river clean-up, another environmental action was carried out earlier in the year by a group of Universitas Padjadjaran students participating in the “Lepidochelys” Community Service Program (KKN). On January 27, 2024, they held a Coastal Clean Up (CCU) activity at Batu Hiu Beach, Ciliang Village, Parigi, Pangandaran Regency. Guided by Dr. Titin Herawati, Chair of the Master’s Program in Marine Conservation at the Faculty of Fisheries and Marine Sciences, this activity focused on socialization and education regarding sea turtle conservation and its relationship to environmental carrying capacity. Batu Hiu Beach is a nesting and breeding site for sea turtles and one of Pangandaran’s key ecotourism areas, making beach cleanliness a critical factor for conservation and tourism sustainability.

The CCU activity was attended by various groups, including Unpad students from KKN 55 “Lepidochelys,” KKN 50 Parigi, KKN 64 Batu Karas, Master’s in Marine Conservation students, students from the Marine Tourism Study Program, and external stakeholders such as the Raksa Bintana Foundation (NGO), local tourism awareness groups, Pandu Laut, Ciliang Village Waste Bank, the Water and Air Police Corps, and tourists. The collected waste was sorted into organic and inorganic categories. Organic waste consisted of leaves, branches, wood, and coconut shells, while inorganic waste included plastic wrappers, nets, ropes, cloth, styrofoam, glass, sandals, and baby diapers. Plastic waste, especially snack wrappers, bottles, and straws, dominated the inorganic category. Inorganic waste was sent to the Ciliang Village Waste Bank for recycling, while organic and residual waste was taken to the temporary waste storage facility (TPS).

Turning Waste into Value: Unpad’s Student Innovation for Sustainable Production

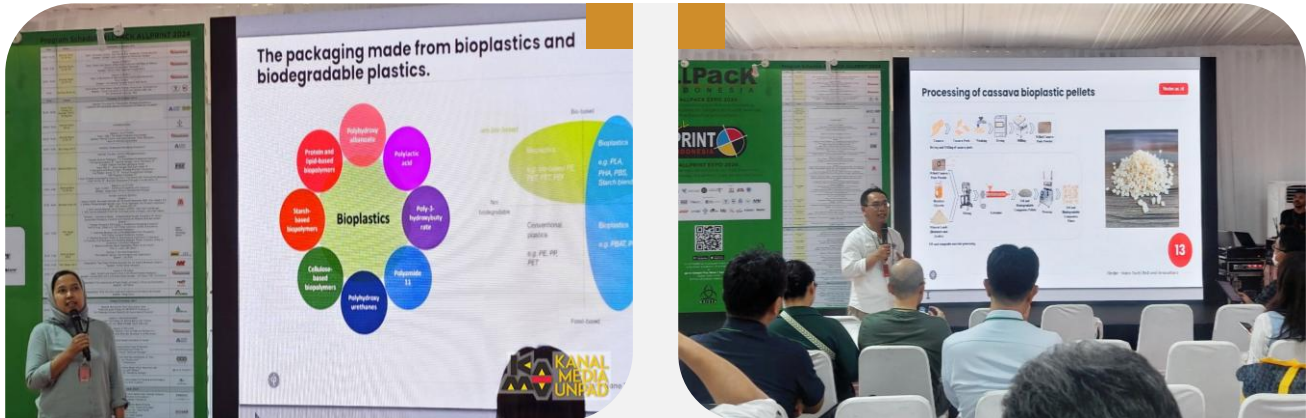
A group of Universitas Padjadjaran students has turned an unconventional raw material into an innovative and sustainable product. Known for its distinctive odor, jengkol (dogfruit) is commonly discarded after use. However, five Unpad students, Hauzan Shidqy Rabbani (Digital Business), Ayesha Nadia Savitri (Pharmacy), Riyandi Arif Budiman (Agrotechnology), Ikhsan Muhammad Fajar (Government Science), and Ockta Alfared Sijabat (Management), with the guidance of Dr. Budi Irawan, M.Si., successfully developed “ArchiCare 2in1 Face and Body Wash,” an organic soap made from jengkol peel waste. This innovation was part of the Student Creativity Program for Entrepreneurship (PKM K) and received funding from the Ministry of Education, Culture, Research, and Technology in 2024.



The idea emerged from the team’s awareness of the untapped economic value of jengkol peel waste. Scientifically, jengkol peel contains tannins and flavonoids with antibacterial properties. By utilizing these natural compounds, the team formulated a dual purpose soap for facial and body cleansing. ArchiCare is classified as an organic soap because it uses natural, environmentally friendly ingredients such as beeswax, jengkol peel extract, olive oil, coconut oil, and palm oil. The product offers moisturizing benefits and is suitable for sensitive skin, providing an eco friendly alternative to conventional chemical based soaps.

Beyond the use of organic ingredients, the team also ensured sustainable packaging by using recyclable materials to avoid generating new waste. This initiative reflects student innovation and entrepreneurship in applying circular economy principles, where waste is transformed into value added products. By creating ArchiCare, Unpad students actively contribute to the realization of SDG 12: Responsible Consumption and Production, particularly through waste utilization, eco friendly product design, and sustainable business development. This project also illustrates how higher education can drive environmentally conscious innovation that benefits both the economy and the environment.

From Research to Industry: Unpad's Contribution to Sustainable Packaging Solutions



Finder Universitas Padjadjaran has shown a strong commitment to advancing sustainable production by introducing innovative powder processing and biodegradable film technologies as practical solutions to environmental challenges in the modern packaging industry. This initiative was presented during the talk session “Indonesia is Ready: Understanding Powder Processing for Various Sustainable Packaging Industries and Insights into Realistic Business Models,” held as part of ALLPACK Indonesia 2024, one of Southeast Asia’s largest annual platforms for innovation and collaboration in packaging and processing. The event brought together more than 35,000 visitors and exhibitors from over 25 countries, providing an international stage for Finder Unpad to showcase its research-based technological innovations.

During the session, Prof. Dr. Eng. I Made Joni, Chair of Finder Unpad, explained that powder processing technology offers an effective solution for developing environmentally friendly and efficient packaging products. This technology involves selecting raw materials such as starch, cellulose, and vegetable oils, followed by drying, milling, and mixing with catalysts and stabilizers to ensure the quality of the final product. The formation process uses methods such as melt intercalation and solution casting to create biodegradable plastic films that naturally decompose. This approach allows for more efficient material use, reduced waste generation, and the production of stronger, longer-lasting, and cost-effective packaging. The bioplastics produced through this method have undergone strict absorption and degradation tests, making them ready to compete in global markets as sustainable packaging alternatives.

In addition, Prof. Dr. Eng. Camellia Panatarani highlighted the potential of biodegradable film technology derived from Indonesia’s abundant natural resources, such as cassava. Through drying, grinding, and mixing natural starch and cellulose with catalysts and stabilizers, followed by film-forming methods, the resulting biodegradable films offer an eco-friendly and economically viable packaging solution. This innovation has also passed a series of quality tests to ensure its performance in various packaging applications. Meanwhile, Willy D. Liusan, CEO of Baiyo, introduced Baiyo-degradable plastic, developed through collaboration with Finder Unpad. Unlike conventional plastics that take centuries to decompose, Baiyo-degradable plastic is designed to break down more quickly, responding to the growing global demand for sustainable packaging materials. Their joint presentation emphasized how collaborative innovation between research institutions and industry can accelerate the adoption of sustainable products at scale.

The collaboration between Finder Unpad and Baiyo at ALLPACK Indonesia 2024 illustrates how research-based technological innovation can drive the packaging industry toward a more sustainable future. By focusing on product development that minimizes resource use and reduces plastic waste, these innovations support the achievement of SDG 12: Responsible Consumption and Production, particularly in promoting sustainable production methods within the packaging sector. Through partnerships and knowledge exchange, Finder Unpad positions itself as a key contributor in bridging academia and industry to produce globally competitive yet environmentally responsible products.

Padjadjaran Green Innovation Summit (PGIS) 2024



Universitas Padjadjaran, through its Student Executive Board Department of Environment, demonstrated its commitment to promoting environmental awareness and innovation by organizing the Padjadjaran Green Innovation Summit (PGIS) 2024. The event took place on October 30, 2024, at Bale Santika, Jatinangor Campus, with the aim of encouraging students to develop creative ideas related to waste management and broader environmental issues. PGIS 2024 served as a platform to connect students with businesses and industries, opening opportunities for their innovative ideas to be implemented on a larger scale and generate real impact. By doing so, PGIS not only became a forum for new ideas but also positioned young people as active contributors in addressing urgent issues such as waste management and the climate crisis.



During the event, speakers emphasized the importance of raising environmental awareness from an early age, particularly in waste sorting and responsible waste disposal. Dr. Eng. Boy Yoseph Cahya Sunan Sakti Syah Alam, Director of Student Affairs and Alumni Relations at Unpad, highlighted the increasing complexity of waste problems, including the threat of microplastics entering the food chain. He stressed that waste issues must be addressed through sustainable solutions and collective action. Meanwhile, representatives from the Ministry of Environment and Forestry of the Republic of Indonesia encouraged a paradigm shift in waste management from “collect, transport, and dispose” to “limit, avoid, and reduce,” while emphasizing the need to adopt the 3R principles: Reduce, Reuse, Recycle, as a shared responsibility. They also addressed how the triple planetary crisis, which includes climate change, biodiversity loss, and pollution, can be tackled through circular economy approaches in waste management.

PGIS 2024 featured a talk show and discussions with various stakeholders, including academics, industry representatives, NGOs, and government officials. These sessions provided students with knowledge, perspectives, and networking opportunities to transform their ideas into practical and sustainable solutions. Through PGIS, Unpad strengthened student awareness, engagement, and leadership in promoting responsible consumption and production practices, in line with SDG 12. The event showcased how higher education institutions can empower students to become agents of change, driving innovation in sustainable waste management and supporting the development of a circular economy in Indonesia.