



## SDG 13: CLIMATE ACTION

Universitas Sumatera Utara (USU) actively contributes to Sustainable Development Goal (SDG) 13—Climate Action—through a variety of community programs and research initiatives that promote environmental sustainability and climate awareness. These efforts include empowering local communities and youth to engage in activities such as waste management through ecobrick training, educational games to teach climate change concepts, and economic development through carbon trading tied to mangrove conservation. USU's initiatives emphasize the importance of environmental education, community involvement, and sustainable practices to foster resilience against climate challenges and encourage proactive measures for protecting the environment.

No	Title	Abstract	Outcome	Evident/Attachment
1	<p>Pelatihan Pengembangan Karakter Kelompok Sadar Lingkungan Berbasis Ecobrick Sebagai Langkah Awal Pengolahan Sampah Di Desa Bagan Arya Kabupaten Batu Bara</p> <p>Character Development Training for Environmentally Aware Groups Based on Ecobrick as an Initial Step for Waste Management in Bagan Arya Village, Batu Bara Regency</p>	<p>This community service project aimed to empower the environmentally conscious group "Batu Bara Camp" in Bagan Arya Village, Batu Bara Regency, through ecobrick-based waste management initiatives. The program addressed significant waste challenges in the village, particularly plastic waste brought by the sea. The project included training in waste collection, drying techniques using custom drying frames, and ecobrick assembly to create functional products. These activities were supplemented with community outreach to raise awareness about the importance of waste management.</p>	<ul style="list-style-type: none"> <li>The outcomes showed increased community knowledge and active participation, leading to better waste management practices and fostering creativity in recycling.</li> <li>The project also highlighted the need for further support, such as continuous education and the establishment of a categorized waste bank, to ensure long-term sustainability and impact.</li> </ul>	<p><a href="https://drive.google.com/open?id=1GyJOPiCYprQA4yRu9t2uVJWmFaaxVpR8">https://drive.google.com/open?id=1GyJOPiCYprQA4yRu9t2uVJWmFaaxVpR8</a></p>
2	<p>Pembentukan Bocah Apik (Arif Perubahan Iklim) Melalui Edukasi Dan Literasi Sebagai Upaya Penanggulangan Perubahan Iklim Di Kecamatan Deli Tua</p> <p>The Establishment of Bocah Apik (Climate Change Awareness Kids) Through</p>	<p>This community service project aimed to foster environmental awareness among school-age children in Kedai Durian Village, Deli Tua District, through the implementation of an educational game called Atteropoly. The program included activities such as a healthy walk while collecting waste, playing the Atteropoly game to teach waste management and climate change mitigation, and literacy</p>	<ol style="list-style-type: none"> <li><b>Increased Knowledge:</b> Children in Kedai Durian Village showed improved understanding of waste management and climate change mitigation.</li> <li><b>Effective Educational Tool:</b> The Atteropoly game successfully engaged children and enhanced their learning experience.</li> <li><b>Positive Behavioral Change:</b> The program encouraged children to adopt better waste</li> </ol>	<p><a href="https://drive.google.com/open?id=1ascLkLrrZ6NjcyUBL_ZuSk3z05saA-Sn">https://drive.google.com/open?id=1ascLkLrrZ6NjcyUBL_ZuSk3z05saA-Sn</a></p>



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	Education and Literacy as an Effort to Combat Climate Change in Deli Tua District	corner activities. Results showed a significant improvement in children's knowledge, as demonstrated by an average increase of 23.57% between pre-test and post-test scores. The Atteropoly game proved to be an effective educational tool, promoting better waste management practices and fostering proactive attitudes toward environmental care among the children.	<p>management practices and develop proactive attitudes toward caring for the environment.</p> <p>4. <b>Community Engagement:</b> The activities fostered a sense of environmental responsibility among young participants, supporting future sustainability efforts.</p>	
3	<p>Peningkatan Pendapatan Desa Wisata Di Wilayah Pesisir Melalui Carbon Trading</p> <p>Increasing Village Income in Coastal Tourism Areas Through Carbon Trading</p>	<p>This study aimed to empower coastal communities in Tanjung Rejo Village, Deli Serdang Regency, through education on carbon trading linked to their extensive mangrove forest. The initiative focused on raising awareness about the potential economic benefits of carbon trading while emphasizing the importance of preserving mangroves for environmental and financial gains. The Participatory Rural Appraisal (PRA) method was used, involving pre-tests, lectures, discussions, and post-tests to gauge knowledge improvement among residents and local officials. Results showed a significant increase in understanding, highlighting the role of community education in sustainable environmental management and income generation through carbon credit opportunities.</p>	<ol style="list-style-type: none"> <li>1. <b>Increased Community Knowledge:</b> Residents and local officials in Tanjung Rejo Village gained a deeper understanding of carbon trading and its potential benefits, leading to greater awareness of how mangrove conservation can generate additional income.</li> <li>2. <b>Enhanced Environmental Awareness:</b> The project emphasized the importance of preserving mangrove forests, fostering a stronger commitment to environmental sustainability among the community.</li> <li>3. <b>Empowerment for Economic Opportunities:</b> The education provided enabled the community to explore carbon trading as a viable source of supplementary income, aligning environmental conservation with financial benefits.</li> <li>4. <b>Strengthened Community Engagement:</b> Active participation through discussions and training sessions enhanced collaboration between residents and local authorities,</li> </ol>	<p><a href="https://drive.google.com/open?id=1zZX9ECDEcS-HZjhYIzHXeABLqJ0h2yJ">https://drive.google.com/open?id=1zZX9ECDEcS-HZjhYIzHXeABLqJ0h2yJ</a></p>



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			<p>promoting long-term sustainable practices and resource management.</p>	
4	<p>Kesiapsiagaan Dan Implementasi Mitigasi Bencana Pada Kelompok Rentan Melalui Program Ketana Aur Di Kelurahan Aur Medan Maimun</p> <p>Preparedness and Implementation of Disaster Mitigation for Vulnerable Groups Through the Ketana Aur Program in Aur Subdistrict, Medan Maimun</p>	<p>This community service project aimed to increase teenagers' knowledge about disaster mitigation for vulnerable groups in Aur Village, Medan Maimun District, an area prone to frequent flooding. The initiative focused on providing health education and practical training to help youth understand and implement disaster preparedness measures, especially for pregnant women, mothers with infants, and young children who are most at risk during disasters. Using a descriptive research design and a total sampling method involving 23 participants, the project assessed the impact of educational sessions on teenagers' knowledge. Results indicated that health education significantly improved the participants' understanding, with 47.8% showing good knowledge and 39.1% having adequate awareness post-training. This outcome underscores the effectiveness of targeted educational programs in enhancing community readiness and promoting proactive disaster response, particularly for safeguarding vulnerable groups.</p>	<ol style="list-style-type: none"> <li>1. <b>Improved Knowledge:</b> Teenagers in Aur Village gained a better understanding of disaster mitigation practices, especially for vulnerable groups.</li> <li>2. <b>Increased Readiness:</b> The program enhanced youth preparedness to respond effectively to flood situations.</li> <li>3. <b>Community Awareness:</b> The activity promoted greater awareness of the importance of protecting pregnant women, mothers, and children during disasters.</li> <li>4. <b>Engagement and Participation:</b> The community became more involved in disaster education, fostering a proactive approach to safety and prevention.</li> </ol>	<p><a href="https://jurnal.kesdammedan.ac.id/index.php/jurhesti/article/view/317/203">https://jurnal.kesdammedan.ac.id/index.php/jurhesti/article/view/317/203</a></p>
5	<p>Penanaman Mangrove <i>Rhizophora Apiculata</i> Dengan Aplikasi Berbagai Jenis Jamur Di Pulau Sembilan Kecamatan</p>	<p>This community service project focused on the planting of <i>Rhizophora stylosa</i> seedlings treated with bio-fertilizers in collaboration with the residents of Pulau</p>	<ol style="list-style-type: none"> <li>1. <b>Improved Mangrove Growth:</b> The use of bio-fertilizers, particularly <i>Trichoderma sp.</i>, led to significant improvements in the growth parameters of <i>Rhizophora stylosa</i> seedlings,</li> </ol>	<p><a href="https://drive.google.com/open?id=1ej67Bdixj4OZkbJ-Abw2bvUFP7unT2AP">https://drive.google.com/open?id=1ej67Bdixj4OZkbJ-Abw2bvUFP7unT2AP</a></p>

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	<p>Pangkalan Susu Kabupaten Langkat</p> <p>Planting of Rhizophora Apiculata Mangroves with the Application of Various Types of Fungi on Pulau Sembilan, Pangkalan Susu District, Langkat Regency</p>	<p>Sembilan, Pangkalan Susu District, Langkat Regency. The objective was to evaluate the growth performance of mangrove seedlings treated with various bio-fertilizers such as <i>Trichoderma sp.</i>, <i>Mycorrhiza sp.</i>, and <i>Beauveria sp.</i>, compared to untreated controls. The study utilized a completely randomized design (CRD) with four treatment groups and ten replications. Results indicated that bio-fertilizer applications, particularly with <i>Trichoderma sp.</i>, showed better outcomes in terms of seedling height, diameter, leaf count, fresh weight, dry weight, and leaf area index compared to the control group. The findings emphasize the potential of using bio-fertilizers to enhance mangrove growth and contribute to environmental restoration efforts, supporting the sustainability of coastal ecosystems and improving community engagement in conservation activities.</p>	<p>including height, diameter, leaf count, and both fresh and dry weight.</p> <ol style="list-style-type: none"> <li><b>Enhanced Community Involvement:</b> The project fostered active participation from the residents of Pulau Sembilan, strengthening community awareness and engagement in mangrove conservation efforts.</li> <li><b>Support for Environmental Restoration:</b> The successful use of bio-fertilizers demonstrated their potential as a tool for ecological restoration, contributing to the health and sustainability of coastal ecosystems.</li> <li><b>Practical Application of Sustainable Practices:</b> The project provided the community with practical experience and knowledge in utilizing environmentally friendly methods for mangrove management, promoting long-term ecological benefits and sustainable resource use.</li> </ol>	
6	<p>Pengelolaan Sampah Organik Rumah Tangga Dengan Metode Biokomposter</p> <p>Household Organic Waste Management Using the Biocomposter Method</p>	<p>This community service project aimed to educate residents of Padang Bulan Selayang I Village on managing household organic waste using the biocomposter method to make compost. The initiative sought to address the increasing issue of waste accumulation and low awareness of proper waste management. Activities included counseling, hands-on training, and demonstrations on composting with organic materials like vegetables and fruit. The program showed that participants</p>	<ol style="list-style-type: none"> <li><b>Improved Knowledge:</b> Residents gained practical knowledge about composting and managing household organic waste.</li> <li><b>Enhanced Skills:</b> Participants developed the ability to create compost using the biocomposter method.</li> <li><b>Increased Environmental Awareness:</b> The activity raised awareness about the importance of waste sorting and environmental cleanliness.</li> </ol>	<p><a href="https://drive.google.com/open?id=1zhoCfjOk2w_m6ivm_sXdVHYqEmH7F5bTo">https://drive.google.com/open?id=1zhoCfjOk2w_m6ivm_sXdVHYqEmH7F5bTo</a></p>



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		<p>gained practical knowledge and skills in making compost, leading to increased awareness about environmental cleanliness and the benefits of proper waste sorting. This effort promotes reduced waste volume and environmental pollution, contributing to a healthier living environment.</p>	<p>4. <b>Reduced Waste:</b> The initiative contributed to a decrease in household organic waste, helping to reduce environmental pollution.</p>	
7	<p>Pengembangan Community Resilienci Mealui Program SABAR Untuk Mewujudkan Desa Tangguh Bencana Di Desa Sungai Iyu</p> <p>Development of Community Resilience Through the SABAR Program to Create a Disaster-Resilient Village in Sungai Iyu Village</p>	<p>This study aimed to assess the knowledge and attitudes of students at SMP Negeri 1 Bendahara in Aceh Tamiang towards hydrometeorological disaster mitigation through the SABAR program. Conducted using a descriptive research design with purposive sampling, the study involved 37 participants and included pre-test and post-test evaluations. Results indicated that prior to the training, most students had moderate knowledge (51.4%), which improved after the program to 64.9% showing sufficient understanding. The study also found that students' attitudes shifted positively, with those strongly agreeing with proactive disaster responses increasing from 24.3% to 45.9%. The SABAR program proved effective in enhancing both knowledge and attitudes toward disaster preparedness, underscoring the importance of educational interventions in building community resilience.</p>	<ol style="list-style-type: none"> <li>1. <b>Improved Knowledge:</b> The SABAR program effectively increased students' knowledge about hydrometeorological disaster mitigation, with a notable shift from moderate to sufficient understanding.</li> <li>2. <b>Positive Attitudinal Change:</b> Students demonstrated more proactive attitudes toward disaster preparedness, with a significant increase in those strongly agreeing to take preventive measures.</li> <li>3. <b>Enhanced Preparedness:</b> The training equipped students with better awareness and readiness to respond to potential disasters, contributing to overall community resilience.</li> <li>4. <b>Validation of Educational Programs:</b> The success of the SABAR program highlighted the importance of targeted educational interventions in fostering disaster awareness and preparedness among young community members.</li> </ol>	<p><a href="https://jurnal.kesdammedan.ac.id/index.php/jurhesti/article/view/316/201">https://jurnal.kesdammedan.ac.id/index.php/jurhesti/article/view/316/201</a></p>



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8	<p>Kampanye Climate Justice Dengan Pendekatan Themebased Learning Untuk Mencapai SDGs Tentang Climate Action</p> <p>Climate Justice Campaign with a Theme-Based Learning Approach to Achieve SDGs on Climate Action</p>	<p>This community service project aimed to promote climate justice awareness among children in Sei Tuan Village, Deli Serdang, using a theme-based learning approach. Activities included educational sessions in both Indonesian and English, practical assignments like cleaning the environment and tree planting, and interactive games to reinforce learning. The program was designed to help children recognize environmental issues and understand climate change impacts while enhancing their English vocabulary related to environmental care. Post-program assessments showed that children demonstrated improved knowledge and awareness, becoming more proactive in maintaining environmental cleanliness. The initiative highlighted the importance of continuous environmental education in building environmentally conscious future generations.</p>	<ol style="list-style-type: none"> <li>1. <b>Improved Environmental Knowledge:</b> Children in Sei Tuan Village gained better understanding of climate change and environmental issues.</li> <li>2. <b>Enhanced Engagement:</b> Participants became more proactive in maintaining a clean environment and engaging in conservation activities.</li> <li>3. <b>Language Skills Development:</b> The program improved children's English vocabulary related to environmental topics, enhancing their language learning.</li> <li>4. <b>Increased Awareness and Responsibility:</b> The initiative fostered a sense of responsibility among the children to care for their surroundings, supporting long-term environmental awareness and action.</li> </ol>	<p><a href="https://drive.google.com/open?id=1qAq02pZCCeDRWC0winNrclB3zji-qfdM">https://drive.google.com/open?id=1qAq02pZCCeDRWC0winNrclB3zji-qfdM</a></p>