



Youth Empowerment for Mangrove Ecosystem Sustainability: A Study on Knowledge, Attitudes, and Stewardship Practices in Sundarbans Areas of India and Bangladesh

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Mangroves are important fundamental natural resources that underpin sustainability, supporting biodiversity essential for human and environmental well-being in the Sundarbans. The interdependence between mangrove resources and ecological health underscores the urgent need for responsible stewardship, particularly among youth, who are future decision-makers. Empowering young people with knowledge, values, a sense of responsibility and practical skills can play a transformative role in addressing mangrove pollution, ecological degradation, and unsustainable consumption patterns. This study examines youth awareness and actions on mangrove sustainability by promoting conservation knowledge, pollution prevention, green lifestyles, awareness campaigns, and youth-led community action for sustainable mangrove management. The questionnaire survey and FGD study randomly engaged 230 students from 10 educational institutions from the Bangladesh and Indian Sundarbans community, and the data were analyzed using SPSS and STATA. 71.8% of participants were initially unaware of the direct link between pollution and mangrove ecology, while 68% reported experiencing visible impacts of pollution in their daily lives. Encouragingly, 84% of participants expressed a commitment to adopting greener lifestyles, while 83% reported significantly enriched knowledge because of the initiative. Additionally, 76% noted that their learning positively influenced attitudes within their families, and 63% actively participated in two to three awareness campaigns for mangrove restoration. Thus, the result indicates a significant initial knowledge gap regarding the link between pollution and mangrove ecology, despite many participants already experiencing visible environmental impacts in daily life. The intervention effectively improved awareness and understanding, as reflected in increased ecological knowledge and a strong commitment to greener lifestyles. Its influence also extended to families, indicating broader social impact beyond individual participants. Moreover, active participation in mangrove awareness campaigns suggests that the initiative not only enhanced knowledge but also encouraged community engagement and pro-environmental behavior. Overall, the results highlight the potential of targeted awareness programs to strengthen mangrove conservation efforts.

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