

Creating Awareness Amongst Youth on The Importance of Coastal and Mangrove Ecosystem in Penang

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Abstract

The coastal and mangrove ecosystem have proved to be amongst the most important ecosystem. It is the most important breeding ground and habitat for many organisms apart from the marine species. Despite the increasing awareness regarding the importance of this ecosystem, the destruction of mangrove forest continues to take place due to economic and political demands. With that, our research team in USM with the collaboration with other international universities is currently conducting research in Tanjung Rhu, Langkawi, Sungai Rusa, Penang and Matang Reserve Forest, Perak. Hence, the aim of this project was to monitor the ecosystem health and most importantly create awareness on the importance of the ecosystem to our daily lives among the youth. The total of 30 selected students from 3 schools participated in this programme. These schools are within close proximity to the mangrove area. The students were given the opportunity to conduct the research together with the researchers from USM. Student were given hands on exposure during the field work. Having the nature as their class room has enhanced their enthusiasms and learning experience. Students were given lectures and notes in regards to the research activity. The field trip was conducted at two different areas, disturbed and undisturbed. The selected sites were at the mangrove area in Sungai Rusa, Balik Pulau, Penang (disturbed area) and Matang Reserve Forest, Perak (undisturbed area). This programme comprised lecture series and 2 field trips.

Keywords: *marine, environment, school children, students, awareness*

Introduction

The coastal and mangrove ecosystem are the foundation in a complex marine food chain (Kathiresan, 2012). They are among the most productive ecosystems on earth and occupy brakish water zones along tropical and subtropical coasts (Alongi, 2002). Mangroves are a valuable ecological and profitable resource, being significant nursery grounds and breeding sites for birds, fish, crustaceans, shellfish, reptiles and mammals; accumulation sites for sediment, contaminants, carbon and nutrients; and offer protection against coastal erosion

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(Mohammed, 2004). The findings on the importance of these ecosystems have increased the awareness among authorities to tighten the regulation of coastal and land use development (Lugo, 1974; Rönnbäck, 1999). Unlike adults, children and young teenagers are impressionable, extremely receptive to new ideas and they are excellent ambassadors of conservation education. It is vital that school children are taught to integrate conservation into their subconscious thinking, so that all their actions reflect measures for reducing the impacts of human actions. Thus, the aim of this program was to create awareness among school students aged 13 to 15 years old on mangroves ecosystem and its importance. Discovering the impact of environment education on the children's attitude and creating awareness on its importance about the environment was the basis of the programme. Community appreciation and understanding of coastal and mangrove ecosystem is key to their conservation (Shunula, 2002). To date, to implement awareness among children, workshops and seminar were frequently held by various NGOs and other entities to exposed and convey the message of the importance of environment. By having these activities, useful information were being conveyed to students at an early age.

Hence, the objectives of the programme were to develop continuous knowledge and understanding among students and teachers on the importance of sustainable mangrove and to train teachers of chosen schools in conducting environmental activities and communicating environmental messages to their students. A part from having the customary seminar and workshops, a scrap book crafting competition was also held to allow students to express their opinions and understanding towards the mangroves. This was aimed to enhance students' participation. At the final stage of this workshop, which was held at Kuala Sepetang, Perak, a powerpoint presentation with the addition of poster-making were included in the evaluation criteria. These had helped in enhancing students' presentation skills, knowledge on mangroves, and also their creativity. After the workshop, the students who participated in the programme were required to conduct an awareness programme at their respective school. Among the activities done during the programme were presentations on mangrove awareness, poster making and quizzes. The event was attended by all teachers and students.

Methodology

A total of 30 secondary students from three schools in Balik Pulau, Penang were selected to attend this programme. The workshops were attended by three schools within close proximity to the mangrove areas. The schools were Sekolah Menengah Seri Balik Pulau, Sekolah Menengah St. George and Sekolah Menengah Pondok Upeh. This programme was divided into three stages that was held in Balik Pulau, Centre for Marine and Coastal Studies (CEMACS) USM, Teluk Bahang (5/10/2013 and 23/08/2014) and Kuala Sepetang, Perak (25/01/2014).

Prior to the programme students were given a questionnaire. The main objective of the survey was to gather more information about the students' understanding on the mangrove ecosystems. Students were asked to answer some questionnaires and the results of the questionnaire were analysed.

Results and Discussion

Three schools within close proximity to the mangrove area were involved in the project. The involvement and participation of school teachers were very encouraging. Upon completing the workshop, we viewed the programme as a major success. With that, we think that continuation of the workshop is important to create sustainability awareness. This has been a great achievement, although at the beginning of the programme, some of the school children were

unaware of the ecosystem surrounding their neighbourhood. From the survey conducted, most of the respondents (63.3%) were unaware about the mangrove ecosystem [Figure 1(a)]. It is sad to know that most of the schoolchildren were oblivious that their precious ecosystems are degrading (Figure 1). In general, the levels of agreement with statements describing positive aspects of wetlands were low. For example, the respondents were not mindful of the existence of mangrove in Balik Pulau but many agreed with the statement that mangrove swamp do benefit the local community. This may indicate a tendency for the students to tick what they felt was the 'right answer, although they well not well inform about the ecosystem existence in their area. Therefore, we think that it is possible to change student's attitudes through the awareness programs and education, highlighting the importance of protecting their environment. Thus, school children acting as the main messenger of knowledge to their household should be continuously reminded. Indirectly, some of the school children who have parents working as fisherman could spread the importance of preserving mangrove area in their community.

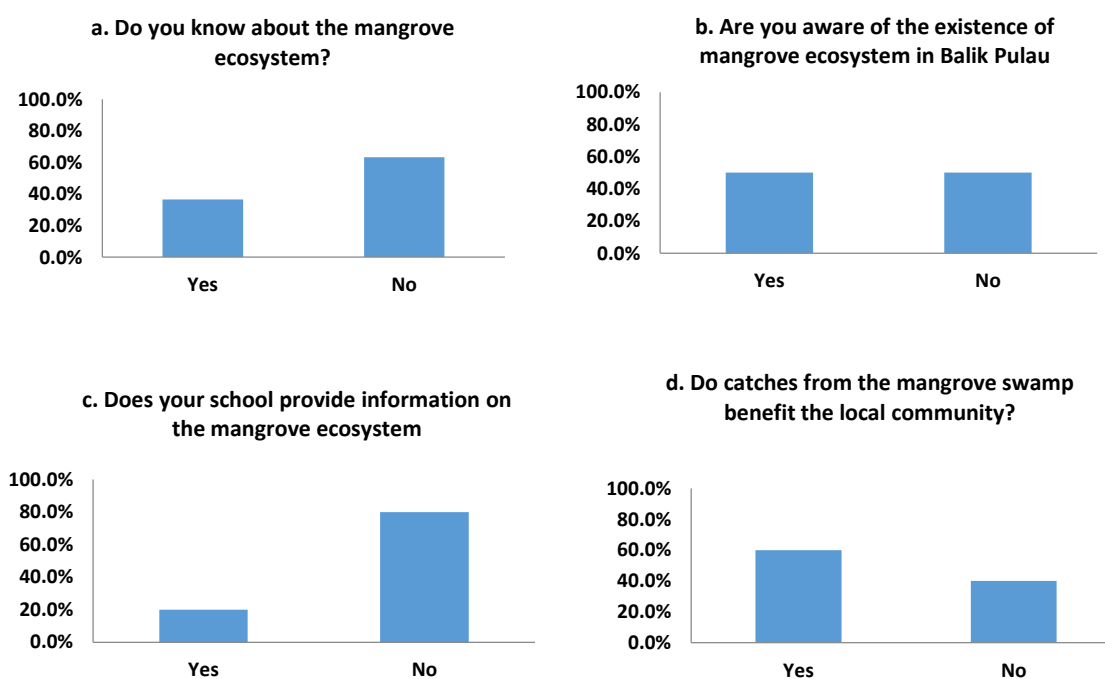


Figure 1: Questionnaires on students understanding conducted prior to the workshop

During the visit to the Matang Forest Reserve, students were enlightened on how conservation was carried out. This exposure enables students to understand how replanting were done and they were able to identify the various species of mangrove plants and animals. This gives them an entirely different experience as the mangrove in Balik Pulau have been severely exploited. The facilitators have also explained to the students on the scientific researches that had been conducted in the mangrove and coastal ecosystem around Malaysia. At the end of the workshop students were required to answer a set of questionnaire about their understanding on the importance of mangrove. The results were presented in Figure 2. Overall results indicated that the objective for the workshop had been achieved and they were well informed about the importance and significance of the ecosystems. With this, 83.3% respondents showed positive response about the importance of mangrove ecosystems [Figure 2(e)]. Participating students demonstrated a better awareness and understanding of mangrove

functions such as breeding ground. Through the students' presentations, they indicated concern about the mangroves, impacts to mangrove systems, and the importance of protecting coastal areas. Participating children were also able to describe their perceptions about the future of the environment providing a better understanding of the children's level of concern for problems affecting the local environment.

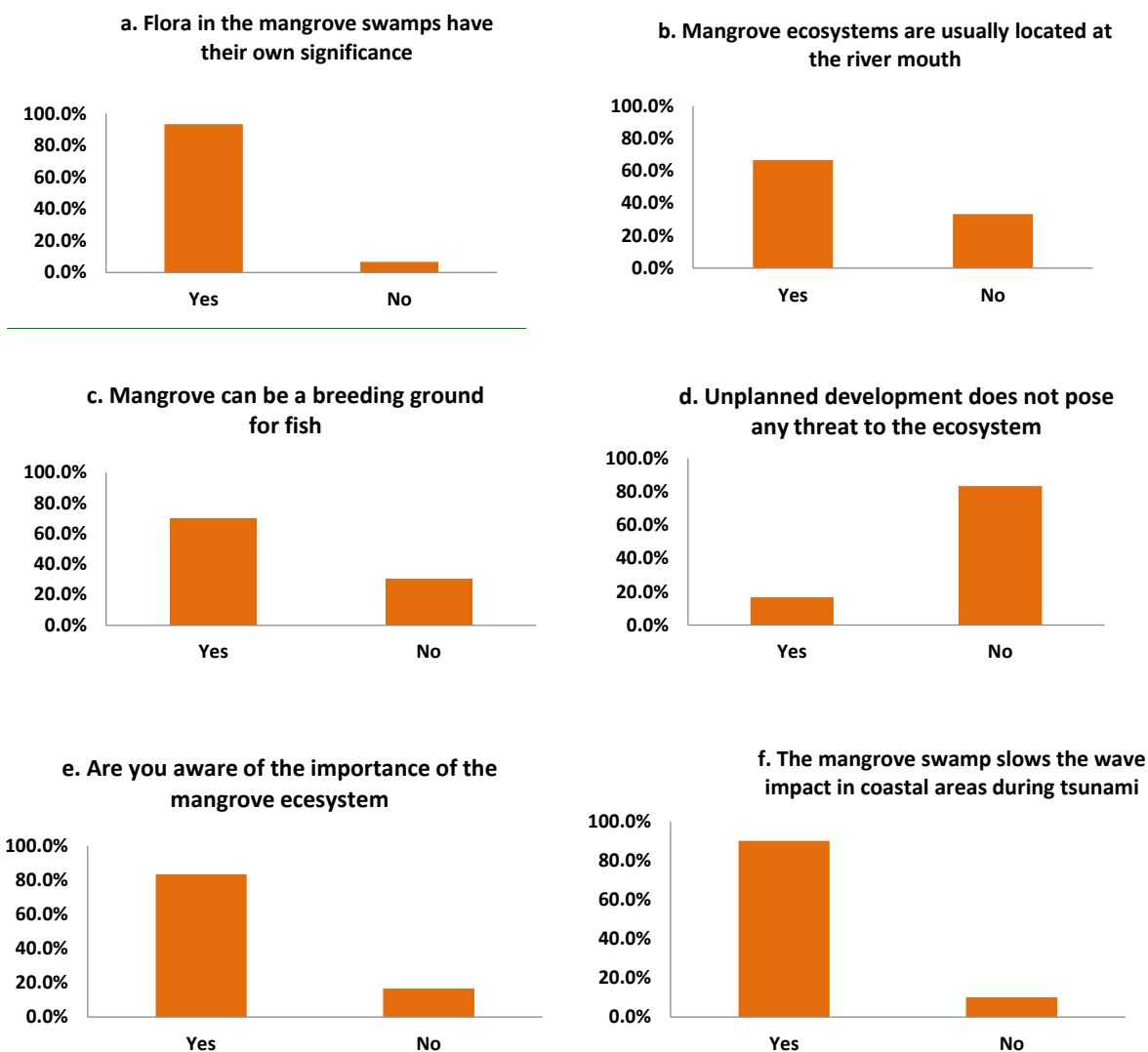


Figure 2: Post workshop questionnaires data to evaluate the effectiveness of the workshop

Teachers' involvement in the mangrove conservation activities

The students and the teachers from Sekolah Menengah Seri Balik Pulau conducted a field trip to the mangrove area nearby their school. During the visit, they interviewed local fishermen about the sustainability of fishing industry in Balik Pulau. A clean up and replanting activity was also conducted (Figure 3). The findings were presented to other schools during the workshop. Meanwhile, Sekolah Menengah Pondok Upeh had written a poem on the importance of mangrove.



Figure 3: Replanting and clean-up activities at Balik Pulau Mangroves

Training the trainer's implementation (TOT)

Students trained in mangrove conservation were asked to conduct presentations in their respective schools. The presentation was participated by all students and teachers in the school. Apart from that, the teachers involved were willing to incorporate mangrove conservation in their extra-curricular activities. The teachers whom were in charge of “Kelab Alam Sekitar” had willingly organised a visit to the nearby mangrove during their extra-curricular activities. Having able to do this has created awareness on importance of Mangrove conservation among students and teachers. This project was also participated by both students from Universiti Sains Malaysia. The graduate students were asked to help school students in understanding on how important it is to conserve mangrove and how monitoring was conducted. Having implemented the TOT for the teachers will help ensure that the awareness activities are sustainable.

Conclusion

Discovering the impact of mangrove awareness education on school student’s attitudes about the environment was the basis of this programme. Apart from those, learning the basic scientific facts was also the goal of this programme. After participation, the survey data (Figure 2) showed that there were significant improvement in knowledge, awareness and responsibility amongst the students. For example, the respondents were more mindful about the importance of mangrove and its surrounding. Hence, sustainable conservation activities could be developed among students and teachers living in close proximity to the mangrove ecosystem along Balik Pulau coastal areas.

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