

PROCEEDINGS

***Nurture Young
Research Talent***

SERIES 1

NUR FADHLINA ZAINAL ABEDIN, *EDITOR*

Series 1

Nurture Young Research Talent

Nur Fadhlina Zainal Abedin, *Editor*

This book features articles submitted for Final Year Project & Postgraduate Poster Competition (FYPPPC), Series 1, 2020 organised by MNNF Network. FYPPPC is a platform for graduate and postgraduate students to present their final year projects and thesis (or dissertation) in the field of science, engineering, technology, social sciences and humanities.

ISBN 978-967-17324-5-8



9 789671 732458



BOOK COMPILATION

Proceedings: Nurture Young Research Talent (Series 1)

Published by MNNF Publisher

Copyright © 2020 by MNNF Publisher

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or any means, electronic, mechanical, photocopying, recording or otherwise, without prior permission, in writing, from the publisher.

The views and opinions expressed therein and those of the individual authors and the publication of statements in the book do not imply endorsements by the publisher.

Perpustakaan Negara Malaysia

ISBN 978-967-17324-5-8



Table of Content

Chapter 1	
Rock Deformation Model Incorporating the Intrinsic Shear Strength <i>Ahmad Fadzil Jobli, Mohd Jamaludin Md Noor & Ismacahyadi Bagus Mohamed Jais</i>	1
Chapter 2	
Production of Dihydrated Aldehyde Through Cellulose Ring Opening Using Sodium Periodate <i>Nur Wahibah Mohd Zaki, Khairina Taufek Al-Khakim, Nur Nadia Dzulkifli, Ahmad Husaini Mohamed & Sheikh Ahmad Izzadin Sheikh Ahmad Ghazali</i>	8
Chapter 3	
Study on Potential of Biosurfactant Rhamno NR22 on Demulsification of Industrial Emulsion <i>Farah Nasyitah Esa & Nik Raikhan Nik Him</i>	14
Chapter 4	
Analytical Study on CFRP Repair Method For Lower Flange of Girder End with Corrosion Damages <i>Atsuya Takamori & Norliyati Mohd Amin</i>	26
Chapter 5	
Water Conservation During Ablution: A Case Study at Al-Barokah Mosque Kampung Bukit Cherakah Jaya <i>Mohd Aiman bin Mohd Fauzi, Syahid Irfan bin Yunus, Jaanavee Devi a/p Sundaresan, Fatin Najihah binti Zainal Abidin, Zainah binti Othman & Azizi Mursidy bin Zainol Abidin</i>	33
Chapter 6	
The Perception of Kampung Bukit Cherakah Jaya's Community on Co-Management Antecedent: A Case Study on Empangan Tasik Subang Forest Reserve <i>Jaanavee Devi a/p Sundaresan, Fatin Najihah binti Zainal Abidin, Syahid Irfan bin Yunus, Mohd Aiman bin Mohd Fauzi, Zainah binti Othman & Nurul Ajleaa binti Abdul Rahman</i>	41
Chapter 7	
A Study on The Effects of Temperature, Salinity and pH on the Rheological Behavior of Water Based Mud (WBM) with Graphene Nanoparticles <i>Muhammad Hammad Rasool, Asif Zamir, Maqsood Ahmed & Shaun Edgar Stephen</i>	49

CHAPTER 6

The Perception of Kampung Bukit Cherakah Jaya's Community on Co-Management Antecedent: A Case Study on Empangan Tasik Subang Forest Reserve

Jaanavee Devi a/p Sundaresan, Fatin Najihah binti Zainal Abidin,
Syahid Irfan bin Yunus, Mohd Aiman bin Mohd Fauzi, Zainah binti
Othman & Nurul Ajleaa binti Abdul Rahman

Politeknik Sultan Salahuddin Abdul Aziz Shah

othman.zainah@gmail.com

ABSTRACT

Community participation is crucial for forest management. The simple reality is that survival of flora and fauna depends upon community engagement and participation. Although, there are government agencies, including the Forestry Department and the Wildlife Department which are responsible for the protection of natural resources, the commitment of the surrounding community in ensuring the preservation of the natural resource is paramount. The community can act as the eyes and ears for the authorities to ensure that no harm befalls the invaluable resources that are so crucial to the survival of the human race. The Kampung Bukit Cherakah Jaya, Shah Alam, Selangor, is in close proximity to the Empangan Tasik Subang Forest Reserve. This forest reserve has been the habitat of wild animals, flora and fauna. Wild animals including tapir, snake and wild boar were seen roaming the roads and occasionally killed by vehicles plying nearby roads. More often than not, the tapirs, in particular, are left to die on the roadsides instead of being sent to Sungai Dusun Rehabilitation Centre to recuperate. In situations such as this, the local community can alert the Wildlife Department. Therefore, this research is conducted to understand the perception of the Kampung Bukit Cherakah Jaya's community towards co-management antecedent on the Empangan Tasik Subang Forest Reserve. This is done by interviewing four members of the village committee who have had encounters with tapirs and other wildlife when development projects began in the surrounding areas of the forest reserve. Interview results showed that a majority of the interviewees were not fully satisfied with the government agencies responsible for forest protection. However, they agreed that a lot of efforts have been put by the Government. The community, on the other hand was of the view that their assistance will lessen the burden of the Government. However, to understand the extent that the community are willing to go in helping the Government will require a further research.

Key Words: co-management, community engagement, and natural resources.

1. INTRODUCTION

Partnership with the private sectors and the local community would ease the cost of managing the natural resources. This is when the alternative management is strived for. As such, a form of alternative management that includes partnership, collaboration and co-management are among the choices of management. According to Natcher 2005, Hedican 1995, Nelson and Serafin 1993, a co-management model is most sought after when dealing with nature resources and aboriginal conservation. The International Union of Conservation for Nature (IUCN) in 1996 defined co-management as “a partnership in which government agencies, local communities and resource users, non-governmental organization and other stakeholders negotiate as an appreciation to each context, the authority and responsibility for the management of a specific area or set of resources”.

According to Plummer and Fitzgibbon (2004), in order for co-management to take place there are six antecedents involved, they are the process of identifying real crisis, the willingness of the users to contribute, opportunity for negotiations, legal mandate, leadership forces and shared vision. The process of identifying crisis is important as it shows whether the community is aware of issues around them (Mitroff, 1988). Ismail (2018) stressed that the partnership program between the community, private sectors and the government to achieve sustainable goal was crucial as 80% of people in Selangor did not know what Local Agenda 21 (LA21) and they did not participate in any activities related to it. This report was done in 2016 and it evaluated the respondent’s awareness on conservation and protection of natural resources in Selangor. Not many people aware of what is happening to their surrounding environment. In many cases they only realized the loss of natural resources when they are no longer available. For example, United Nations reported that the natural resources usage was threefold higher than 40 years ago (Monbiot, 2018). The economic activities such as mining, logging, meat production and industrial fishing replaced the once magnificent natural resources. According to Monbiot (2018), people always failed to perceive the degree of changes that take place in the natural environment until it diminished.

In Malaysia, the Malayan tapir was first listed as endangered species in 1986, due to an ongoing decline from loss of available habitat, fragmentation of remaining habitat and increasingly hunting activity (Bernama, 2018). It is estimated, more than 50 percent population decline over 36 years (involve 3 generations) due to large scale conversion of tapir habitat to palm oil plantations and other human dominated land use (Malaysiakini, 2018). It was also reported in Bernama (2018), that three tapirs were killed in road accidents as of March 2018. In 2017, 22 tapirs became road casualties, a slightly over two-fold increase from the year 2016. From 2010 until 2017 about 73 tapirs were killed in road accidents involving 61 road and highway networks in Peninsular Malaysia (Malaysiakini, 2018).

This shows that the government alone will not be able to solve the current problems it faces. Other stakeholders should be given the opportunity to get involve in the process of protecting the flora and fauna. The local community in the close vicinity should act as a counterpart and be given some responsibilities to safeguard the natural resources, flora and fauna. Ross and Wall (1999) put a greater emphasis on the involvement of the local community towards achieving sustainable goal. Ross and Wall (1999) stated that local residents acted as stewards of the natural resources and, in return, they benefitted from protected areas through sustainable harvesting, integrated and multiple use zones, and protection of important resources. It is crucial to know if the local community are aware of what is happening around them in-terms of environmental crisis and the seriousness of the

issues. This study concentrates on the first element of co-management antecedent that is to know whether the local community are aware of a real crisis that takes place in their area. Therefore, this research is conducted to investigate the perception of the Kampung Bukit Cherakah Jaya's Community on the co-management antecedent of the Empangan Tasik Subang Forest Reserve.

2. LITERATURE REVIEW

2.1 Co-Management

According to Goetze (2004), the reasons for development of co-management in various areas is associated with basic dilemma, such as:

2.1.1 The ineffective of top-down resource management by centralized government agencies.

2.1.2 Local-level, community based management is not working well due to multiple reasons among which interference from outsider multiple interests, centralized management, inter jurisdictional problems.

Plummer and Fitzgibbon (2004) position it as an independent concept that is not pure state control or pure community control as figure 2.1 below;

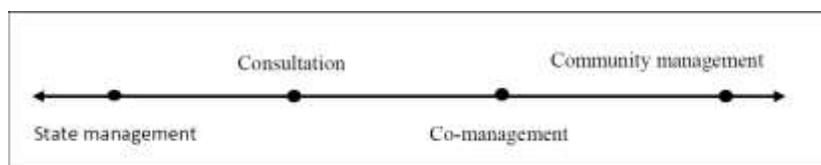


Figure 2.1 The Management System (Source: Adopted from Plummer & Fitzgibbon,2004)

This co-management function does not replace the current government roles but to enhance them further by giving assistance when the need arises. There were a few examples of co-management initiatives that had taken place in Malaysia in the aspects of where they were conducted, who had involved and the activities performed. These examples were published in the 'Green Heart' magazine, 2010 as below;

Table 2.1 Co-Management in Malaysia

Location	Actor	Programme
Belum-Temenggor Forest	WWF & Orang Asli Communities	Awareness programme highlighting the problem of foreign encroachment and poaching (Green Heart, 2010).
Setiu, Trengganu	Nestle (Malaysia) Berhad, WWF, & the local women entrepreneur of Setiu or PEWANIS	The emphasis is put on training of the local women to develop cottage industries, including basic entrepreneurial skills, adopting clean green practices in food processing, marketing and branding as well as environmental awareness (Green Heart, 2010).
Kinabatangan, Sabah	WWF & Boh Plantation & Local Communities	To restore the home of Orang-Utans (Green Heart, 2010).
Pulau Maliangin Kecil, Sabah	Tun Mustapha Park & WWF & Local Communities	The focus is to demonstrate co-management between marine resources and local communities (Green Heart, 2010).

Source: Green Heart Magazine, 2010

These examples of co-management are mainly on the involvement of the NGO's and the private sectors. In line with that, Carlsson and Berks (2005) stated that good governance of natural resources can be accomplished both with and without the participation of a formal government. The latest development of Tapir conservation in Malaysia is when Perhilitan and Malaysian Nature Society (MNS) worked together in the initiative to draft a strategic plan for the Malayan Tapir Conservation and Protection on February 2019 (Perhilitan Official Website, 2019) various sectors involved include the universities, zoos, NGOs and other government agencies such as State Forestry Department, Ministry of Education and Attorney General's Chamber of Malaysia. The representatives of Government Linked Companies such as Malaysian Palm Oil Board (MPOB), Malaysian Palm Oil Council (MPOC) and Malaysian Timber Certification Council (MTCC) were also sought (Perhilitan Official Website, 2019). This joint forces can be regarded as a co-management initiative and it can be described as the involvement of potential actors of co-management unfortunately the missing party is the local community.

2.2 Flora and fauna in Malaysia

Malaysia is blessed with approximately 130 years old jungle which inhabits unique flora and fauna that include Malayan tigers, Proboscis monkeys, orang utans, hornbills, and the Malayan tapir. Most of these magnificent creatures are threatened by human activity as their habitats are destroyed as a result of expansion and irresponsible development projects. The remaining populations are isolated in existing protected areas and forest fragments. This situation of gradual decrease in the number of wild animals is expected to continue at alarming rate as non-protected areas, become less available due to logging activities (Malaysiakini, 2018).

According to the Wildlife and National Parks Department (Perhilitan) records, there are currently less than 1,500 tapirs in Peninsular Malaysia (Malaysiakini, 2018). The Assistant Senior Director of Perhilitan's Biodiversity Conservation Division (Tapir) Muhamad Bokhari Fadzil, the construction of roads and highways have caused the tapir wilderness areas to "split into half" (Malaysiakini, 2018). This has caused the animal to cross roads and highways, he added. Due to its physical appearance that makes it difficult for motorists to spot it at night, inevitably it has become the victim of a road accident. Although Perhilitan and the Public Works Department have worked together to identify wildlife crossing areas across the country and erect signs to warn motorists to slow down and be wary when traversing those routes there are still many casualties recorded. Data from Perhilitan shows the states with the highest number of tapir accidents are as table below;

Table 2.2 The numbers of accidents involving Tapir by states

State	Cases
Terengganu	28
Pahang	20
Johor	11
Negeri Sembilan	7
Selangor	5
Kelantan	5

Source: Perhilitan 2018

A serious action should be taken to curb the problem. The government, the private, the nongovernmental organization and the community should share the same mission to safeguard the mammals.

3. METHODOLOGY

3.1 The area of study

This study covers an area of approximately 1800 acres that includes the Kampung Bukit Cherakah Jaya and the forested area. Kampung Bukit Cherakah Jaya is a village with 150 families (Zulina, 2019). It is surrounded by the main roads to Kampung Meru, Kampung Bukit Kapar, Puncak Alam and Shah Alam. Half of the village area is still undeveloped. The main sources of income are in the agriculture sector, farming and the small scale industry. In the recent years, Tapirs were seen to seek for food from the crops grown by the villagers especially the banana and the jackfruit. Tapirs were also seen along the trail that identified by the villagers. This trail starts from the forested area where it is believed to be their sanctuary. The Tapir would travel 4km away from the forest to look for food in the nearby village of Kampung Bukit Cherakah Jaya. Along the way, the Tapir would stop for water and there is possibility for it to get trapped in snares set by poachers. To get to the other side of the road, the tapir might get caught in the road traffic and be the victim of road accident. If it is managed to cross the road safely, it would have to explore 8km further in the village to quest for food. A few villagers had spotted the Tapirs in this village and this data was recorded in this study. Below diagram shows the Tapir trail based on the observation made by the villagers.



Figure 3.1 Study area of Kampung Bukit Cherakah Jaya, Puncak Alam, Selangor. (Source: Fieldwork 2019)

In this light, this research attempted to gain local community perspectives on the first element of co-management antecedent that is identification of crisis on the conservation of the Empangan Tasik Subang Forest Reserve. The qualitative component of this research was collected on August 2019. The representatives were villagers that had encountered with Tapir itself. In-depth interview was conducted in order to gain insights into the villagers' perception of the crisis. For this research, the process of crisis identification was conducted

with the help and guidance from the local community themselves. This was done to answer the issue of trustworthiness, reliability and validity of the case study (Cresswell, 2007). The questions were reviewed and commented by the local community during data analysis and interpretation phases of the research (Cresswell, 2007). This is important to ascertain the existence of co-management antecedent among the local community of Kampung Bukit Cherakah Jaya.

4. DATA ANALYSIS AND DISCUSSION

Table 3.1 The perception of crisis among the local community:

		Respondent A	Respondent B	Respondent C	Respondent D
Identification of crisis on the use of forest reserve.	Logging	No	No	No	No
	Conflict	Yes	Yes	No	No
	Development	Yes on private land	Yes on private land	Yes on private land	Yes on private land
	Agricultural activities	Yes on private land	Yes on private land	Yes on private land	Yes on private land
Impact on the crisis	Residential area	Yes on private land	Yes on private land	Yes on private land	Yes on private land
	Development	No development in action. Selling of earth is rampant.	Development upstream has polluted rivers and stream. Drainage is often clogged.	Development on villagers and school but surroundings have taken a step back.	Flash floods are more frequent.
	Agricultural activities	Forests treasures are gone and not re-planted. Sandalwoods are gone	The eco system has been disturbed.	Sales of earth has increased and it is affecting the flora and fauna.	Effects are minimal on flora and fauna. Forest areas remain untouched.
Expectation out of the crisis	Residential area	Tapirs enter village to feed on jackfruit leaves.	Wild boar, monkeys and tapir are more seen here.	Tapirs venturing from the jungle.	Houses close to waterway are frequently muddy from overflowing water. Tapir died in road accident.
	User experience	Don't use it.	Never used before.	Satisfied but doesn't enter after a murder case.	Only entered with students. Happy because still could enjoy biodiversity.
	Community experience	Satisfied	Not satisfied	Not satisfied	Not satisfied
	Forest management authority	Satisfied	Not satisfied	Not satisfied	Satisfied
	Involvement of community in decision making process.	No. Only village head involved	No participation.	Yet to be satisfied. There's no rattan.	No. Suddenly received information between land owner and a housing developer.
Involvement of development project	No. The area has been gazzeted but there are many development activities.	Not satisfied. Villagers has no interest.	No. Development activities will cause floods. Especially at downstream areas.	No. Only for profit and vehicles are increasing.	

Based on the data in table 3.1 above, respondents agreed that logging activities are no longer available in the forest. However, activities such as development, agricultural and residential projects are taking place on the private lands surrounding the forest reserve areas. They managed to describe the massive impacts of the developments that took place surrounding the forest reserve. Nevertheless, the respondents were not in agreement with the existence of conflict in the forest use. In the case of forest development and encroachment, community are occasionally not fully aware of what was happening in the forest. For example, Mohamed and Lajim (2018, Jun 21), stressed that community in Bukit Bayu are baffled by the development activities progressing in the Bukit Cherakah forest. They are confused and agitated when wild animals such as snake started to roam freely into their homes and the risks of landslides making them even more unrest (Mohamed and Lajim, 2018, Jun 21). This similar scenario had happen to the Kampung Bukit Cherakah Jaya residents when development projects started to take place in the surrounding area particularly in the Empangan Tasik Subang forest reserve which is close to their residents. Majority of the respondents also were not satisfied with the community involvement towards decision making process on forest management. Furthermore, they were not satisfied with development projects that had taken place which did not benefit them much.

5. CONCLUSION AND RECOMMENDATION

This research shows the community's perception on the first element co-management antecedent crisis. Crisis is separated into three major themes, the identification of crisis, the impact on the crisis and the expectation out of the crisis. Majority of the respondents are aware of the crisis surrounding the forest reserve. The impact of the development projects, agriculture activities and residential area have detrimental effect on Tapir's habitat and its food resources. As a result, Tapir are seen around the village. Majority satisfy with the way the forest reserve is managed but still believe there is room for improvement. However, they are not satisfied with the involvement of the community towards decision making process for the forest reserve and also towards the development projects. As this research is a preliminary research, further investigation on the stakeholders should be conducted especially on the private sectors and the government sectors as to discover their perception on co-management antecedent. The result will add to the current knowledge on co-management antecedent and to proceed to the next stage of co-management antecedent that is willingness to contribute.

REFERENCES

- Carlsson, L. & Berkes, F. 2005. Co-management: Concepts and methodological implications. *Journal of Environmental Management*, 75(1), 65–76. doi:10.1016/j.jenvman.2004.11.008
- Cresswell.J.(2007). Qualitative inquiry & research design: *Choosing among five approaches 2nd edition*.London sage
- Goetze, T. C. 2004. Sharing the Canadian Experience with Co-Management: Tara, (May).
- Goetze, T. 1998. Reaching for New Perspectives on Co-Management with First Nations:Exploring the Possibilities for Conflict Management, Indigenous Rights, and Systemic *Change Under the Interim Measures Agreement in Clayoquot Sound*, BC. MA Thesis, Department of Anthropology, McMaster University. Hamilton, ON.
- Green Heart Magazine, 2010
- Ismail, A. (25 October, 2018). Mega Sains, Utusan Malaysia.
- IUCN, (1996). Managing Conflicts in Protected Areas. Lewis, Connie IUCN, Biodiversity Programme ; IUCN, Protected Areas Programme ; IUCN, Social Policy Group ; Keystone Center and Gland Switzerland.
- Lajim.(2018,Jun 22).Bukan hutan simpan kecil.*Berita Harian Online*.Retrieved from <https://www.bharian.com.my/berita/wilayah/2018/06/440559/bukan-hutan-simpan-kekal>

- Malayan tapirs losing out to development. (2018, April 25). Malaysiakini. Retrieved from <https://www.malaysiakini.com/news/421518>
- Malaysiakini, 2018. Retrieved from <https://malaysiakini.com/news/421518> on Mei 2019
- Mitroff, I. I. (1988). *Crisis management: Cutting through the confusion*. Sloan Management Review, 29(2), 15-20
- Mohamed & Lajim (2018, Jun 21). Penduduk keliru status projek di Hutan Bukit Cerakah. *Berita Harian Online*. Retrieved from <https://www.bharian.com.my/berita/wilayah/2018/06/440008/penduduk-keliru-status-projek-di-hutan-bukit-cerakah>
- Monbiot, G. (2018, Jun 29). Our nature is disappearing before our eyes. We have to save it. *The Guardian*. Retrieved from <https://www.theguardian.com/commentisfree/2018/jun/29/natural-world-disappearing-save-it>
- Natcher, D., Davis, S. and Hickey, C. 2005. Co-management: Managing relationships, not resources, *Human Organization* 64(3): 240-250.
- Nelson, J. & Serafin, R. 1995. Post hoc assessment and environmental planning, management and decision making. *Environments*, Retrieved https://scholar.google.com.my/scholar?hl=en&q=Nelson%2C+J.G.+and+R.Serafin+1995&btnG=&as_sdt=1%2C5&as_sdt=0
- Perhilitan Official Website, 2019
- Plummer, R. & FitzGibbon, J. 2004. Some observations on the terminology in co-operative environmental management. *Journal of Environmental Management*, 70(1), 63–72. doi:10.1016/j.jenvman.2003.10.005
- Ross, S., Wall, G., (1999) Ecotourism: towards congruence between theory and practice, *Tourism Management*, 20, 123-132.
- Zullina. (2019, Jan 29). Kampung Bukit Cerakah Jaya. Retrieved from <https://www.selangor.gov.my/petaling.php/pages/view/50?mid=147>