

Capacity Development of Underwater Archaeology in Malaysia: Bidong Shipwreck and Continuous Research on the Subject

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ABSTRACT

The capacity development aspect in underwater archaeology has not been a major focus in the field's development, as it is not a widely recognized area. Thus, the purpose of this paper is to examine the capacity development of underwater archaeology in Peninsular Malaysia, focusing on the Bidong shipwreck in Terengganu, by using the framework introduced by Janicke (1997) for capacity building. Since the 1980s, Malaysia has been involved in underwater archaeology in its waters, particularly on the east and west coasts of Peninsular Malaysia. The development or experiences of underwater/maritime archaeology in Malaysia can be segregated into several phases, which are 1) Non-local researchers, 2) The Museum and Antiquities phases, 3) National Heritage Agency Phase, and currently 4) Local University Phase.

Keywords: Bidong shipwreck, Capacity-building, Underwater archaeology, Structural framework conditions, National experience

INTRODUCTION

The capacity development aspect in underwater archaeology has not been a major focus in the field's development, as it is not a widely recognized area. Those who have been in the field have always focused on the methodology and the outcome of the research area. Furthermore, it can be said that underwater archaeology in Malaysia has only been in the country for a decade been taken seriously. If not before 2015, only the people of the National Heritage Agency (known as JWN) have been conducting survey and report-based activity in the country. Thus, the purpose of this paper is to examine the capacity development of underwater archaeology in Peninsular Malaysia, focusing on the Bidong shipwreck, Terengganu, by using the framework introduced by Janicke (1997) of capacity building by focusing on the aspects of Structural Framework Conditions.

Capacity Building (or Development)

According to OECD, the capacity is derived as the ability to devise and implement solutions to environmental issues as part of a wider effort to achieve sustainable development (Janicke 1997: V). They also mentioned that it includes the society's ability to identify and solve environmental problems (OECD 1994:8). The discussion of the capacity building framework is by enhancing the national experiences of the people involved, especially in environmental studies. According to the case studies of several countries in environmental studies, it cannot be comprehensively explained that it is due to the single perfect choices of instruments or even strategies that provide success or failure of the environmental protection measure (Janicke 1997: V). The implications of one weakness in certain aspects would fail a long-term strategy that includes technological or administrative knowledge, legal resources, and institutions that have an interest in the field. Mentioned below is the model framework introduced by Janicke (1997):

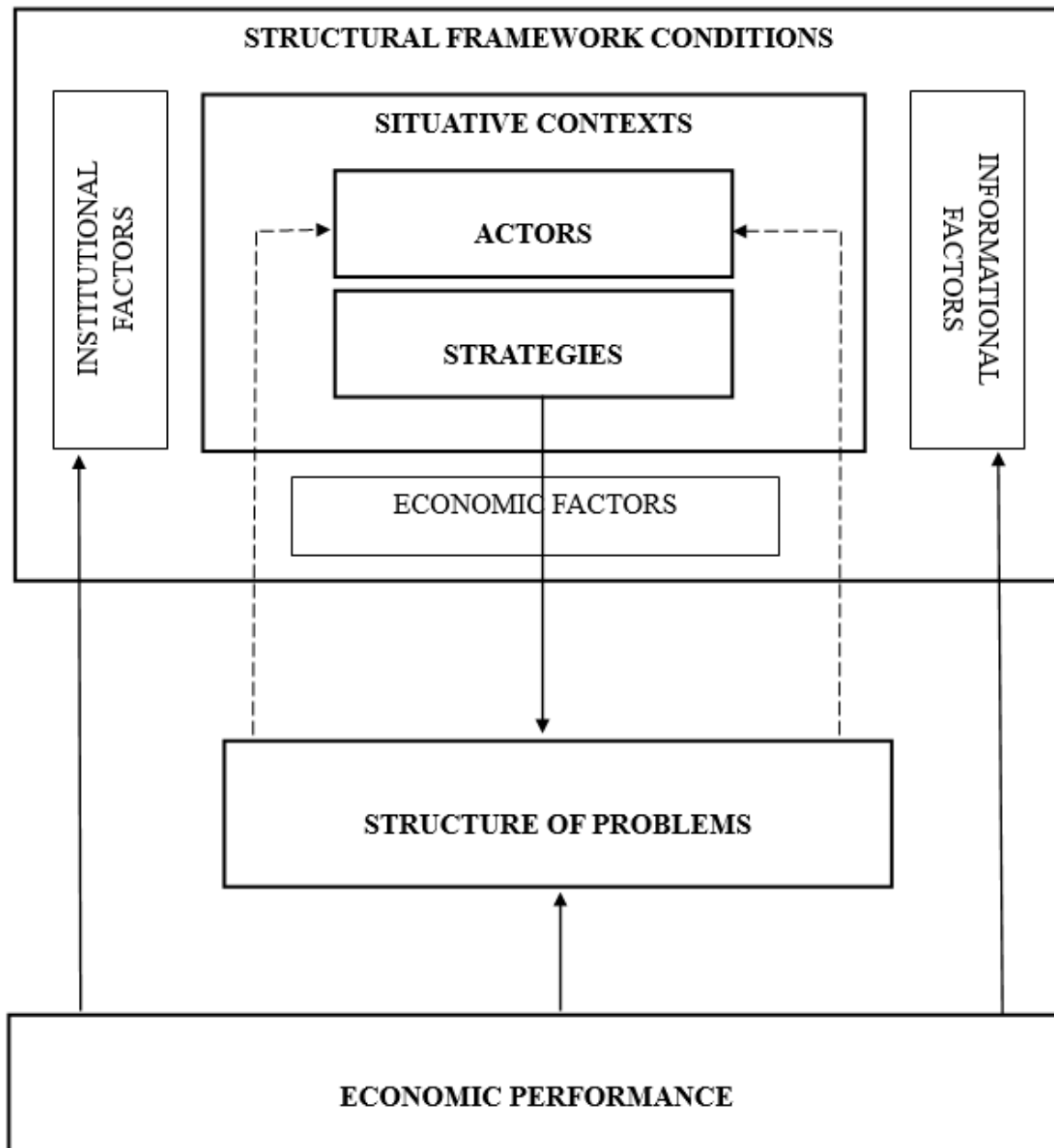


Figure 1. Model of framework conditions by Janicke (1995)

According to Figure 1 above, there are several factors influencing any capacity building process, including 1) Actors, 2) Structure of Problems, 3) Structural Framework Conditions – cognitive-informational, political-institutions & economic-technological, and 4) Situative Contexts, and 5) Strategy. Focusing only on the mono-factorial aspects (instruments) would not be able to create a long-lasting or continuous success towards the capacity-building process. In this paper, the authors enlightened one of the instruments mentioned above, which is the structural framework conditions, that has been happening in Malaysia for the underwater archaeology discipline, based on the case study selected. Structural framework conditions – cognitive-informational, political-institutions, and economic-technological aspects were translated into the strength, competencies, and configuration of organised governmental and non-governmental proponents of (the discipline) protection (Janicke 1997:8). Cognitive-informational, according to Janicke 1997, the knowledge and public awareness are both factors that are vital for influencing policy and management. Without perceived problems, there would be no management and measures created for protection. According to OECD (1994), “...knowledge and the conditions under it are generated, distributed, interpreted, and applied are of the utmost importance...”. Thus, the openness of the community in the archaeology discipline to new problems and paradigms, as well as the openness of the media to the new issues, are important for the policy to be developed or enhanced. MacKintosh

(2019), the ability of archaeologists to produce information, the dissemination of this information, causing or raising public awareness, and finally, causing political awareness.

The second, the political-institutional, where the constitutional, institutional, and legal structures constitute the framework for interaction (MacKintosh 2019). Mentioned in Janicke (1992), three aspects within this framework were recognised: the capacity for participative, the capacity for integrative, and the capacity for strategic action. Sometimes the pressure from (local historical movements) or even environmental groups is a relevant factor for the general opening-up and modernisation of political systems, as those were the group of institutions of common interest in the subject area, constantly searching and creating public awareness for the subjects. According to Wiedner (1996), in this matter, the openness of the legal system to protective interests is mentioned as a kind of catalyst to the capacity for participation. As for the capacity for integration, it is important at many different levels, as Janicke (1997) mentioned.

Firstly, the intrapolicy cooperation where the internal integration of the policy field is levels of the political systems. The second field of integration is interpolicy coordination, the cross-sectoral integration of conflicting policies. Thirdly, the external integrations of policy institutions and non-governmental actors, including target groups, are needed.”

The capacity for strategic action can be seen as the highest priority of capacity-building in the management of (historical) environmental policy and management, as many great nations (England, the US, and Australia) have different capacities for implementing their strategic actions in the field of underwater archaeology.

Underwater Archaeology Experience in Malaysia

Since the 1980s, Malaysia has been involved in underwater archaeology in its waters, particularly on the east and west coasts of Peninsular Malaysia. According to Zainuddin & Stephen (2020) and Amirah & Muhamad (2023), the development or experiences of underwater/maritime archaeology in Malaysia can be segregated into several phases, which are 1) Non-local researchers, 2) The Museum and Antiquities phases, 3) National Heritage Agency Phase, and currently 4) Local University Phase. These phases act as the people or institutions that are involved directly in the underwater archaeology development in Malaysia (see *Figure 2*).

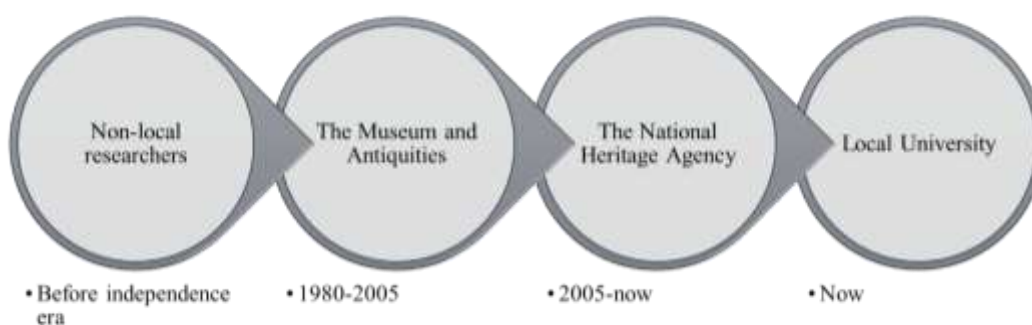


Figure 2. Phases of involvement in underwater archaeology in Malaysia. Source: Authors.

During the Department Museum and Antiquities era, several officers were sent to undergo training in Thailand and Scotland, to establish a unit of underwater archaeology in the department (personal conversation, 2022, Zainuddin & Stephen 2020:55). During this phase, no specific legal measures in the law specifically mention the underwater cultural heritage yet. Most of the time, the law provided only the Antiquities Act 1976 (Act 168) together with the Treasure Trove Act 1957 (Act 542) (Amirah & Muhamad 2023:31). Most of the time, the cases during this phase has only been a survey and salvaged by the commercial company that has been permitted by the government (under supervision by museum and local university). None of the shipwrecks have been brought up to the surface to carry out further investigations. The big turning point of underwater archaeology is towards the discovery of the Risdam shipwreck off Johor's east coast in 1980 that was believed to have sunk in 1727

(Sten Sjostrand, Adi Haji Taha & Samsol Sahar 2006:11). It was deemed as sensational news during the time as Malaysian government discovered that a company based in Singapore has been looted the wreck. Many more of the shipwreck sites were discovered and salvaged by the commercial company (with a permit from the government), and the collections of the ceramics found are in the museum's collections nowadays. For that phase, when too few in numbers of local officers can be involved in the underwater archaeology in the country, this practice seems acceptable.

Different kinds of practices can be seen after the phase of the Department of Museum and Antiquities; all archaeological excavation and survey activities were transferred to the National Heritage Agency in 2005. It is due to the development of national law when the legal document of the National Heritage Act 2005 (Act 645) was introduced. During this phase, the involvement of a commercial company has no longer been used, as the officers of the agency have received multiple and continuous training in underwater archaeology. Nowadays, in 2025, those officers who have been involved in archaeology have been recognised as archaeologists by the National Heritage Agency. Every request to carry out archaeological surveys, excavations, and studies must go through this agency, as they are the sole agency that carries out the act of protection towards heritage in Peninsular Malaysia. During the early years of the National Heritage Agency, they conducted an underwater archaeology survey in the Melaka waters- a continuation of a 2005 survey by the Department of Museums and Antiquities in collaboration with a commercial company (Final report 2007). This continuation concludes that there are wreck/objects' images located around the seabed of the survey area.

But during the dive into the survey area (see Figure 3), no artifacts were found (Final report 2007). But during 2005, Flecker and the commercial company found a few pieces of Chinese export kilns of Jingdezhen and an anomaly that represents an ancient shipwreck site, also with a cannon with lifting rings (Final report survey 1 2005). All new cases of underwater archaeology are conducted by the National Heritage Agency officers as the main divers under supervision. During the discovery of the Bidong shipwreck in 2012 by fishermen, the National Heritage Agency surveyed the site, and not until 2015-2017, only an underwater archaeology salvage operation was carried out in collaboration with a local university in Terengganu, namely Universiti Malaysia Terengganu. This institution called upon a local expert on archaeology to help them carry out the salvage operation underwater. This collaboration acts as a catalyst for the recent development of a localised involvement of underwater archaeology in Malaysia. Even though at the time, this institution did not have any experts or a person able to carry out the underwater archaeology process, with the collaboration of another local institute, the projects took off.



Figure 3. Melaka 2007 survey. Source: Courtesy of the National Heritage Agency.

The involvement of the local university seemed as important towards the development of underwater archaeology capacity in Malaysia, as the only way for a project to make a continuation process is through their involvement. Currently, Universiti Malaysia Terengganu acts as the main protector of the Bidong Wreck while building its capacity for localised efforts by introducing an underwater archaeology programme for its students

(see Figure 4). Hence, this development of building a capacity for future experts and an abundance of new studies on the Bidong site might answer the questions pondered by Asyaari and Hasrizal in 2018 through the published work of Maritime Archaeology in Bidong Island, which they mentioning “for how long do we need to depend on the external experts to uncover the secrets of the shipwreck’s history and heritage in our waters?”, (Asyaari & Hasrizal 2018:10).



Figure 4. Bidong site. Source: Courtesy of the National Heritage Agency.

Application of the Capacity Building Concept in Underwater Archaeology of Bidong Shipwreck

According to the model framework of policy created by Janicke (2005), 5 main aspects or instruments need to be thoroughly thought out, which are 1) Actors, 2) Structure of Problems, 3) Structural Framework Conditions – cognitive-informational, political-institutions & economic-technological, 4) Situative Contexts, and 5) Strategy (see Figure 5). This Bidong shipwreck site is being used as the case study for this model of capacity building concept in the paper with focusing on the structural framework conditions - cognitive-informational, political-institutions & economic-technological aspects. It can be seen, according to the II segments of this paper, that Malaysia has undergone quite a long experience of conducting underwater archaeology surveys involving many people in doing so, including outside experts and a commercial company. Throughout this paper, it should be clear that the aspects of political institutions which is being controlled by the government have done quite an extensive work in preserving Malaysia’s heritage as the melting pot of travellers during ancient times, even with almost zero experts during the earlier times.

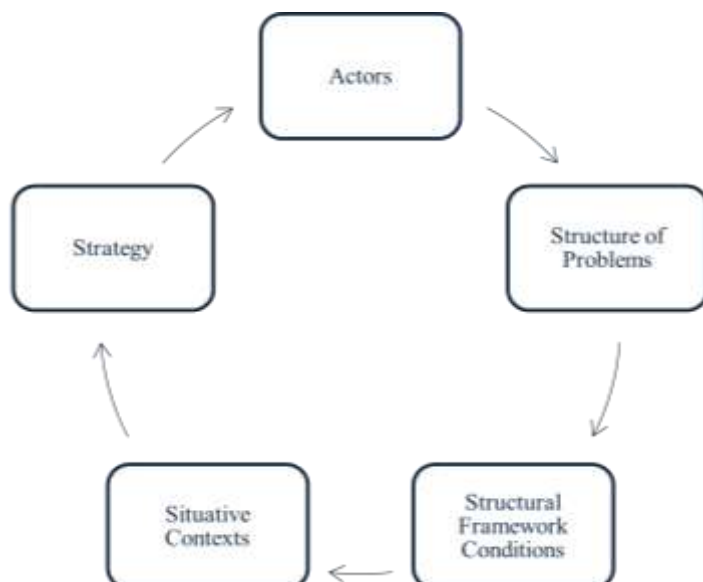


Figure 5. The instruments or aspects involved in capacity building. Source: Authors' compilation.

The government that acts swiftly by bringing the company that looted the Risdam wrecks through legal action must have seen that it should not be a mono-factorial or single-handedly being taken care of by the government to protect the heritage. To not repeat the same mistake twice, the aspects of cognitive-informational must be enhanced by creating awareness among the public, and a continuous study must be done, preferably by local universities, as Universiti Malaysia Terengganu is doing right now. Creating a community archaeologist can also encourage the people to work together with local institutions in protecting and preserving the heritage of coastal communities. Universiti Malaysia Terengganu is currently developing a programme regarding underwater/maritime archaeology to the extent that they are sending their own to pursue a Doctor of Philosophy (PhD) at Flinders University, Australia, which will be a great asset for them to pursue further study about underwater archaeology, especially study on the Bidong shipwreck in their backyard. In Malaysia, funding for research in universities is allocated if compared to the government agency. In doing so, the economic-technological aspects of structural framework conditions would have double the funding to pursue the study or research regarding underwater archaeology without waiting the funding from the government agency.

CONCLUSION

This paper has highlighted a few of the many experiences of Malaysia conducting surveys of underwater archaeology since the 1980s until now by mentioning institutions and government policy involved in the works. It is a high hope for Malaysia's future endeavours in underwater archaeology, especially for the Bidong site to have many research projects led by university researchers and highlighting Malaysia's unique history of becoming a trade center for maritime networks. Furthermore, it is to be encouraged that those researchers would develop a new theory or even upgrade methodological approaches in underwater archaeology based on the experience conducting salvage archaeology and in future proper underwater archaeological excavations. This paper is far from being a perfect reading material for underwater archaeology in Malaysia, but we will work hard to showcase our writings more forward about underwater and maritime archaeology research in Malaysia.

REFERENCES

1. Amirah, Y. and Muhamad, A. 2023. Malaysian maritime archaeology: Whither in the next decade? *Spafa Journal* 7:25-40. <https://doi.org/10.26721/spafajournal.d28144g7j9>
2. Asyaari Muhamad and Hasrizal Shaari. 2018. Maritime Archaeology in Bidong Island, Terengganu Waters. *Voyages of Discovery*.
3. Final report Survei Kapal Karam Bersejarah di Selat Melaka. 2007. Jabatan Warisan Negara.
4. Final report Survey I. 2005. Maritime Explorations (M).
5. Janicke, M. 1992. Conditions for environmental policy success: An international comparison. *The Environmentalist* 12(1): 47-58.
6. Janicke, M. and Weidner, H. (eds). 1995. *Successful Environmental Policy: A Critical Evaluation of 24 Cases*. Berlin: edition sigma.
7. Janicke, M. 1997. The political system's capacity for environmental policy. In Janicke, M. and Weidner, H. (eds) *National Environmental Policies: A Comparative Study of Capacity Building*. Springer.
8. MacKintosh, R. 2019. Capacity in maritime archaeology: A framework for analysis. *Journal of Maritime Archaeology* 14:391-408. <https://doi.org/10.1007/s11457-019-09245-w>
9. OECD. 1994. *Capacity Development in Environment*. Paris: OECD.
10. Sten Sjostrand, Adi Haji Taha, and Samsol Sahar. 2006. *Mysteries of Malaysian Shipwrecks*. Department of Museums and Antiquities. Kuala Lumpur.
11. Weidner, H. 1996. *The New Politics of Pollution*. Manchester, New York: Manchester University Press.
12. Zainuddin Baco and Stephen Chia. 2020. Penyelidikan arkeologi bawah air di Semenanjung Malaysia (1902-2015) [Underwater archaeology research in Peninsular Malaysia (1902-2015)]. *Jurnal Arkeologi Malaysia*. 33(1):49-63.