



Analysis of the Potential of Lubuk Larangan Local Wisdom in Science Learning in Junior High Schools

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Abstract

Lubuk Larangan is an area in a river restricted by the community, which must not be disturbed and is forbidden for fishing. It is in Rantau Kelayang District, Muara Bungo Regency, Jambi Province. The local wisdom of Lubuk Larangan has the potential to bring contextual science learning to conserve the environment based on customary regulations for sustainable development. This study aims to determine the potential of Lubuk Larangan area as a source of science learning. Using descriptive exploratory method, the data were obtained from the interviews with Datuk Rio, a traditional leader and science teacher at SMP Negeri 1 Pelepat Ilir. Data collection techniques included observation, interview, and documentation. The findings indicate that several basic competencies are suitable for science education with the material about Lubuk Larangan, namely analyzing the occurrence of environmental pollution and its impact on the ecosystem (KD 3.8); Lubuk Larangan can be developed in learning media such as modules, assessments, and practical activities; Lubuk Larangan can be integrated into science learning to instill education for sustainable development competencies, especially for action on climate. Based on this study, in general, science learning can be linked to local wisdom of Lubuk Larangan according to learning indicators that refer to education for sustainable development.

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INTRODUCTION

Learning is a concept of gaining experience from the surrounding environment which refers to learning resources (Lee, Ma, and Lee 2016). A good science learning resource is through a process of observing the environment (Ilhami, Riandi, and Sriyati 2018) because the environment has complex problems to be studied contextually.

Environmental problems are national as well as international issues. The community is aware that one factor that affects the survival of living things is environmental problems (Firdaus and Huda 2015). Human activities can have negative effects on the environment such as environmental pollution and damage to ecosystems, both land and water (Susilowati 1999).

One way to raise awareness for the environment is by integrating local wisdom values into education (Faisal and Muryani 2016). Local wisdom in Indonesia is one of the identities as a cultured country. Local wisdom is a heritage that contains the values of wisdom and ideas from the local community (Yuliaty and Priyatna 2015). Through local wisdom, people can adapt to their environment and know the wisdom as regulated in customary norms to produce knowledge or skills to be applied in everyday life. The function of local wisdom can be viewed from several aspects, one of which is the conservation of natural resources (Ilhami, Riandi, and Sriyati 2018).

Constructivism learning theory states that one thing that can influence cognitive development is local wisdom which is closely related to the socio-cultural community. According to this theory, one's cognitive development is strongly influenced by environmental factors. According to Lee, Ma, and Lee (2016), the students' cognitive development process is strongly influenced by interactions with the people around them. The findings of Kurnianingsih (2017) on local wisdom suggest that learning based on local wisdom in Lipi Karangsembung can foster curiosity and enthusiasm for elementary school students' learning. This shows that socio-cultural values and love for the environment can be instilled through education. Therefore, the introduction of cultural heritage-based teaching materials is necessary (Wijana 2015), one of which is Lubuk Larangan or Prohibition Holes.

A local wisdom in Jambi. The local community determines the time and boundaries of part of the river area as a forbidden area for fishing and capturing another biota. The existence of Lubuk Larangan is believed to be one of the attitudes of the community to protect and con-

serve the environment, especially river waters. Furthermore, in the case of harvesting fish, Lubuk Larangan adheres to a system that limits the use of tools and types of fish to be captured to support the preservation of fish. In addition, this conservation area has rules that are binding both by customary law and by local government regulations.

Several previous studies explain that Lubuk Larangan local wisdom is a way to conserve nature. These studies were conducted in several regencies, namely Sarolangun, Merangin, and Muara Bungo. Muhammad, Syafrialdi, and Hertati (2020) They researched the prohibited fish area in Sarolangun. The local community has made Tembesi River in Bathin VIII District as Lubuk Larangan area. Andriyanto, (2004) examined the Lubuk Larangan area Sungai Manau District, Merangin Regency. District. The community created a Lubuk Larangan area with 800-m length in Merangin River. Muhammad, Syafrialdi, and Hertati (2020) studied Lubuk Larangan area in Jujuhan and Jujuhan Ilir Districts, Bungo Regency. In his study, the local community divides 3 forms of Lubuk Larangan area which are still preserved, namely Hugo, Bringin Jaya, and Pulau Batu.

Several studies related to the Lubuk Larangan area in Jambi show the value of community efforts to preserve the environment (Muhammad, Syafrialdi, and Hertati 2020; Andriyanto 2004;). The potential of local wisdom can connect and assist students in learning science concepts more contextually (Parmin 2015). The social culture of the people in Jambi Province, one of which is Lubuk Larangan area, should be explored more deeply as a source of science learning to realize future sustainable development education. Sustainable development is education on human empowerment through education that seeks to create opportunities and awareness to be responsible for enjoying a sustainable future (Hasslöf, Lundegård, and Malmberg 2016), one of which is by education on preserving and maintaining local wisdom through science learning. This sets the background of this study which aims to determine the potential of Lubuk Larangan as a source of science learning.

METHOD

Descriptive exploratory method was used to provide objective information and a complete picture without any manipulation from the subject under study. This descriptive research using qualitative approach was described using primary

and secondary data (Fraenkel, Wallen, & Hyun, 2012; Sukmadinata, 2013). It was conducted in Lubuk Larangan in the Rantau Kelayang District, Muara Bungo Regency, Jambi Province.



Lubuk Larangan Area

Figure 1. Lubuk Larangan Area in Rantau Kelayang

Muara Bungo Regency

Primary data were obtained through in-depth interviews with informants in the community (Datuk Rio or a village head and a teacher at SMP Negeri 1 Pelepat Ilir). The elements of research as the targets in this research of Lubuk Larangan in Rantau Kelayang are

1. Utilization and condition of the Lubuk Larangan ecosystem in Rantau Kelayang;
2. Customary regulation of Lubuk Larangan in Rantau Kelayang;
3. Analysis of the potential of local wisdom of Lubuk Larangan in science teaching materials.

Secondary data were obtained from libraries (library research) related to the results of previous research on natural resources, local knowledge, and local wisdom.

Data collection techniques in this study involved observation, interview, and documentation. The data were validated using triangulation technique to investigate the meaning of reflective data (Nasution, 2003). The data analysis technique refers to Sartopo (2006) who states that interactive analysis model consists of data collection, data reduction, data display, and conclusion drawing.

RESULT AND DISCUSSION

Utilization of natural resources from Lubuk Larangan in Rantau Kelayang

Based on the data obtained, the researchers focused on the utilization, as shown in Table 1 below.

Table 1. Utilization of natural resources from Lubuk Larangan in Rantau Kelayang

Natural resources	Utilization Focus
River water	The focus of current river water utilization is for daily purposes such as bathing and washing. In addition, in agriculture, river water is used for irrigation.
Lubuk Larangan	The focus of Lubuk Larangan is on fish cultivation with certain zoning limits under a set of customary rules agreed upon by the local community and customary law.
Ecosystem	The focus of ecosystem management is Semah fish farming. Local people believe that it is a typical fish of Batang Pelepat River.

Regulations of Lubuk Larangan in Rantau Kelayang

Lubuk Larangan regulations

- a) The opening began with an oath pledge by Syara employees.
- b) The committee enforced a rule that fish catchers were not allowed to go into the river until they were informed.
- c) They instructed that the fish catchers had to give their catches, and the committee would distribute the fish according to the established rules. All fish catchers must comply with this rule. The distribution must follow the rules, in which the catch is divided into four portions (three for the committee and one for the catcher).
- d) The committee (state society) is tasked with watching the fish catch collected by the community at the fish shelter.

Analysis of the potential of local wisdom of Lubuk Larangan in science learning

Based on the data obtained, the researchers analyzed the content of the material related to Lubuk Larangan in Rantau Kelayang, as shown in Table 2 below.

Table 2. Analysis of basic competencies in science learning related to Lubuk Larangan in Rantau Kelayang

Basic Competencies	Theory
1.KD 3.7 Analyzing the interactions between living things and their environment as well as population dynamics due to these interactions	1.Lubuk Larangan is related to the interaction between living things and the environment <ul style="list-style-type: none"> •Abiotic and biotic components •Patterns of interaction of living things •Human interaction with the environment •Ecosystem Conservation
2.KD 4.7 Presenting the results of observations on the interaction of living things with the surrounding environment	2.Lubuk Larangan related to environmental pollution material <ul style="list-style-type: none"> •Water pollution
3.KD 3.8 Analyzing the occurrence of environmental pollution and its impact on the ecosystem	
4.KD 4.8 Writing about the idea of solving pollution problems in the environment based on observations	

Table 1 shows that Lubuk Larangan in Rantau Kelayang is one local wisdom of the local community. Based on the observations, the area is included in Batang Pelepat River. The area of Lubuk Larangan in Rantau Kelayang consists of 3 fish holes, namely Singsang, Paku, and Jantan. The areas are used by the local community and managed through government regulations and local customary norms. Lubuk Larangan in Rantau Kelayang only divides the water area into two zones, core zone and productive zone. The core zone in Lubuk Larangan serves as a conservation zone, a special area where fishing activities are prohibited. This zone is for protecting and preserving fishery resources devoted to fish breeding, so it cannot be used. Furthermore, fish harvesting in the core zone is carried out every two years in Lubuk Singsang, and the distribution of fish seeds (Semah, Gouramy, Tilapia, and Lampam) is done every year as a form of cultivation. Lubuk Larangan in Rantau Kelayang has 10 types of typical fish, namely Tilapia (*Orheochromis*

niloticus), Toman (*Channa micropeltes*), Semah (Tor tambra), Gouramy (*Osphronemus gouramy*) Lampam (*Barbodes schwanefeeii*), Tilan (*Mastacambelus acuelatus*), Seluang (*Rasbora argryotaenia*), Malis (*Puntius Hagensis*), Mentulu (*Barbichthys laevis*), and Barau (*Hampala macrolipidota*). Furthermore, the use of the productive zone mostly includes daily purposes (washing and bathing) and agriculture (irrigation).

Lubuk Larangan has rules that regulate how people use natural resources as the root of their life. In the rules stated in the local customary norms, the community must first determine the river basin area as Lubuk Larangan. The people together with traditional leaders determine the rules of sanctions given to violators, in the form of either fines, moral, or social sanctions. Furthermore, the results of the agreement and decision at the customary meeting through the village consultative body regarding the management of Lubuk Larangan in Rantau Kelayang are decided by deliberation or consensus by all elements including Datuk Rio, youth leaders, and religious leaders.

Based on Table 2, several basic competencies and materials have potentials to be used in science learning such as the basic competency material (Knowledge) of Class VII in analyzing interactions between living things and their environment and population dynamics due to these interactions (3.7) and analyzing the occurrence of environmental pollution and its impact on the ecosystem (3.8) and basic competencies (Skills) of presenting the results of observations on the interaction of living things with the surrounding environment (4.7) and writing about the idea of solving pollution problems in their environment (4.8). Strengthening the substance of the basic competences of learning conveyed by this study is a way to harmonize the sustainable development education of an area based on the potential local wisdom of the community. One of the indicators of sustainable development related to Lubuk Larangan is action against climate. This indicator is very likely to be linked with natural resource management based on the potential of local wisdom presented in the form of modules, assessments, and interactive media as well as motivating the role of students to solve environmental pollution problems and identify ecosystems under prohibition as a social campaign effort around Lubuk Larangan in Rantau Kelayang.

Overall, Lubuk Larangan area in Rantau Kelayang is a potential material as it is closely related to environmental preservation. Lubuk Larangan in Rantau Kelayang is a learning resource

by utilization. Learning resources by utilization means that learning that comes from the environment does not need to be specially modified when it is used in science learning (Najmulmunir, 2010). One function of Lubuk Larangan in learning is to facilitate students in understanding the material with the contextual observation of the object being observed. In line with the principles of science process skills, this process emphasizes students to be more active in developing their knowledge from real objects so that the nature of learning can be well realized. Science learning that integrates environment-based learning around the teacher is expected to be able to map existing local potentials (Parmin, 2015). This is in line with the nature of science learning that is contextual to the student environment (Wiraguna, Sulastri, & Wibawa, 2014). This situation also corresponds to the objectives of science learning which refers to phenomena that occur in the community as a source of learning so that students can understand the concept of science, not only theory but also application in a more contextual environment (Kemendikbud, 2018).

This is in accordance with Dewey's theory which explains that a person's experience is one of the correlations of learning. Therefore, experience is the essence of learning obtained from the opportunity to understand broad knowledge. According to Dewey's thinking, it is recommended that the context of learning material starts from student experience, which can form thought patterns and structural patterns later that better understand the material taught by the teacher. This theory is usually known as "learning by doing". Thus, teachers are encouraged to involve students in activities that can foster new experiences, and teachers must be able to design learning as attractive and contextual as possible. The Lubuk Larangan area is known to provide education to students about environmental and social knowledge. Through Lubuk Larangan, students can find out the biotic and abiotic components in the area as a learning resource. The use of local wisdom indirectly provides information that the potential learning resources obtained from learning by linking local wisdom or local culture can strengthen the science concept. Learning science by connecting Lubuk Larangan also contains elements of sustainable development education, namely the concept of environmental preservation. This concept is pivotal as an effort or action on climate as stated in the indicators of sustainable development. It is hoped that through this local wisdom, the basic level sustainable development education can be more inculcated and easier to

understand, especially through science concepts in junior high schools. Several studies on the use of local wisdom in learning show good potential as a learning resource. The study of Pamungkas, Subali, and Linuwih (2017) shows that science learning integrated with the local wisdom values of Pranata Mangsa Calendar that has been embedded in the Javanese community, especially in the Mount Pati area can improve student creativity and learning outcomes. Kurnianingsih (2017) implemented local wisdom in Lipi Karangsembung as a means of learning science to foster enthusiasm for learning and curiosity at the elementary school level. Subhan (2017) also implemented agricultural-based local wisdom in Cirebon as a means of learning science to improve environmental literacy of junior high school students.

CONCLUSION

From the findings and the discussion, it can be summed up that 1. Lubuk Larangan in Rantau Kelayang District, Muara Bungo Regency, Jambi Province, has 2 zones, core zone and productive zone, which are regulated in customary rules. These rules have very clear consequences in the form of customary rules and sanctions that apply to the community in the event of a violation; 2. The use of local wisdom of Lubuk Larangan in Rantau Kelayang has the potential to strengthen the science concept obtained from learning so that it can be an alternative source of student learning to master a concept, for example, the concept of strengthening sustainable development education through environmental preservation efforts; 3. The potential of sustainable development education indicators can be linked to Lubuk Larangan in Rantau Kelayang, namely action on climate; 4. This study can be used as an initiation of natural science learning resources that are still lacking in learning by doing to promote local wisdom in education.

REFERENCES

- Faisal, Mohammad, and Moh. Gamal Rindarjono Chatarina Muryani. 2016. "Analisis Lubuk Larangan Sebagai Wisata Ekologi Berbasis Kearifan Lokal Desa Lubuk Beringin, Kecamatan Bathin III Ulu, Bungo, Jambi." *Jurnal GeoEco* 2 (2): 103–13.
- Firdaus, Maulana, and Miftakhul Huda. 2015. "Pengelolaan sumberdaya ikan di sungai (studi kasus : di Kabupaten Pesisir Selatan , Provinsi Sumatera Barat) Rivers Fisheries Resources Management (Case Study in Pesisir Selatan

- District , West Sumatra Province).” *Buletin Ilmiah “MARINA” Sosial Ekonomi Kelautan Dan Perikanan* 1: 41–47.
- Frankel, J.R., Wallen, N.E., & Hyun, H.H. (2012). *How to design and evaluate reserch in education* (8 end). New York: Mc.Graw-Hill
- Hasslöf, Helen, Iann Lundegård, and Claes Malmberg. 2016. “Students’ Qualification in Environmental and Sustainability Education—Epistemic Gaps or Composites of Critical Thinking?” *International Journal of Science Education* 38 (2): 259–75. <https://doi.org/10.1080/09500693.2016.1139756>.
- Ihhami, Aldeva, Riandi Riandi, and Siti Sriyati. 2018. “Analisis Kelayakan Kearifan Lokal Ikan Larangan Sebagai Sumber Belajar IPA.” *Jurnal Bioedukatika* 6 (1): 40. <https://doi.org/10.26555/bioedukatika.v6i1.9564>.
- Kemendikbud. (2018). *Silabus mata pelajaran IPA*. Jakarta.
- Kurnianingsih, Hani Oktavia, Ana Nur Fajriyati, Inayatust Sa’diyah, and Rokhmaniyah Rokhmaniyah. 2017. “Pembelajaran Ipa Berbasis Kearifan Lokal Di Lipi Karangsembung Sebagai Upaya Menumbuhkan Rasa Ingin Tahu Dan Semangat Belajar Siswa Sd.” *Prosiding Seminar Nasional Inovasi Pendidikan*, 333–39. <http://jurnal.fkip.uns.ac.id/index.php/snip/article/view/11185/7971>.
- Lee, Stephanie W., Samson C.W. Ma, and Ngok Lee. 2016. “Practicing the Integration of Education for Sustainable Development (ESD) into the School Curriculum.” *International Journal of Comparative Education and Development* 18 (4): 219–45. <https://doi.org/10.1108/ijced-07-2016-0015>.
- Muhammad, Syafrialdi, and Rini Hertati. 2020. “Keaneekaragaman Jenis-Jenis Ikan Di Sungai Tembesi Kecamatan Bathin VIII Kabupaten Sarolangun Provinsi Jambi.” *Jurnal Pengelolaan Sumberdaya Perairan* 4 (1): 1–12.
- Najmulmunir, N. (2010). *Memfaatkan lingkungan di sekitar sekolah sebagai pusat sumber belajar*. Region, 2(4), 1–9.
- Nasution, Prof. Dr. S. 2003. *Metode Penelitian Naturalistik Kualitatif*. Tarsito, Bandung.
- Pamungkas, Aji, Bambang Subali, and Suharto Linuwih. 2017. “Implementasi Model Pembelajaran IPA Berbasis Kearifan Lokal Untuk Meningkatkan Kreativitas Dan Hasil Belajar Siswa.” *Jurnal Inovasi Pendidikan IPA* 3 (2): 118. <https://doi.org/10.21831/jipi.v3i2.14562>.
- Parmin. 2015. “Potensi Kearifan Lokal Dalam Pembelajaran IPA Di SMP.” *Seminar Nasional Konservasi Dan Pemanfaatan Sumber Daya Alam*, 278–82.
- Pendidikan, Andriyanto, Biologi Stkip, and Y P M Bangko. 2004. “Kajian Pengelolaan Lubuk Larangan Sebagai Upaya Pelestarian Ikan Di Desa Guguk Kecamatan Renah Pembarap Kabupaten Merangin,” 47–52.
- Sortopo, HB. 2006. *Metodologi Penelitian Kualitatif*. Surakarta: Universitas Sebelas Maret.
- Sukmadinata, N. (2013). *Metode penelitian pendidikan*. Bandung: PT. Remaja Rosdakarya.
- Susilowati, Indah. 1999. “An Analysis of Co-Management Fisheries in West Sumatra Province , Indonesia : A Case Study of Ikan Larangan.” *Research Report, International Center for Living Aquatic Resource Management (ICLARM)*, Manila, Philipines.
- Wijana, Nyoman. 2015. “Pengaruh Pengintegrasian Pendidikan Karakter Berorientasi Kearifan Lokal Ke Dalam Materi Ajar Mata Kuliah Ilmu Lingkungan Untuk Meningkatkan Soft Skill Mahasiswa Jurusan Pendidikan Biologi Fmipa Undiksha.” *JPI (Jurnal Pendidikan Indonesia)* 4 (2): 647–57. <https://doi.org/10.23887/jpi-undiksha.v4i2.6061>.
- Wiraguna, I. M., Sulastris, M., & Wibawa, C. I. (2014). *Pengaruh pendekatan CTL berbasis kearifan lokal terhadap hasil belajar siswa kelas V di SD Gugus IV kecamatan buleleng*. *Jurnal Mimbar PGSD Universitas Pendidikan Indonesia*, 2(1). Diambil dari <https://ejournal.undiksha.ac.id/index.php/JJPGSD/article/view/2435>
- Yuliaty, Christina, and Fatriyandi Nur Priyatna. 2015. “Lubuk Larangan: Dinamika Pengetahuan Lokal Masyarakat Dalam Pengelolaan Sumber Daya Perikanan Perairan Sungai Di Kabupaten Lima Puluh Kota.” *Jurnal Sosial Ekonomi Kelautan Dan Perikanan* 9 (1): 115. <https://doi.org/10.15578/jsekp.v9i1.1189>.