Sustainable Conservation of the Coal Mining Town: Ombilin Sawahlunto West Sumatra Indonesia Context

Rika Cheris¹, Repi Repi², & Dian Amalia³

¹ Universitas Lancang Kuning, Pekanbaru, 28265, Indonesia
Email: rika.cherish@unilak.ac.id
² Universitas Lancang Kuning, Pekanbaru, 28265, Indonesia
Email: repi@unilak.ac.id
³ Universitas Lancang Kuning, Pekanbaru, 28265, Indonesia
Email: dianamalia@unilak.ac.id

Abstract. Sawahlunto is a small town located 116 km from the West Sumatra city of Padang. It was the second coal-mining town which was opened by the Netherlands after North Borneo. The discovery of this coal deposit interest to embed the Netherlands Colonial investment. At the end of the 19th century they initiated three major projects in West Sumatra. The third major project is the construction of Railway Infrastructure along the 155 km between Sawahlunto towards port in Padang city, the construction of the Teluk Bayur harbour and the construction of the mining town of Sawahlunto. The presence of the whole infrastructure has made a new history for the people of Indonesia at that time. Nevertheless the whole infrastructure is still survives and has been a witness to the struggle of the nation. Historical heritage attracts the Government town of Sawahlunto, observer preservation and historians. These stakeholders are then shared with the public the city declared to still preserve the historical heritage of this evidence. This commitment has resulted in the preservation of program implementation is running very well. So the whole infrastructure has in the mining town of conservation and is enabled to support government programs especially in the field of historical tourism and culture. This preservation program has been bearing the name of the town of Sawahlunto and has become one of the tourist destinations in West Sumatra. This success became a passion for the City Government to propose Sawahlunto being one to UNESCO World Heritage sites. As evidence of the extraordinary diusulukan of the Ombilin coal mine is a city with an infrastructure of railway and warehousing coal in Teluk Bayur Harbour. The methodology used is Qualitative Observation from a current state to make future development plans. The basic observation will be taken from the process of preservation that has been done before especially for the town of Sawahlunto. Because of the town of Sawahlunto as a pioneer against the initiative. This article aims to identify sustainable development plan for the development of the heritage site. This management plan will affect property and maintenance as well as the development of new functions as a historical and cultural tourism destinations. The study will be made in the form of a framework for the management of the world heritage site and development guidelines for the world heritage site. The end of the research will produce guidelines for sustainability development historic district and the world heritage site management plan.

Keywords: sustainable development; management plan, mining town conservation; ombilin; sawahlunto
1. Introduction

Sawahlunto is located in West Sumatra Province. In 1858 a Netherlands geologist has found small chunks of coal on the river not far from this area. This geological research was continued until the town of Sawahlunto. This greatly coincides with the industrial revolution that occurred in the United Kingdom and France. Thus the Netherlands colonial Government began to make an announcement to the entrepreneurs to invest their stocks through several major projects to be built in West Sumatra at that time. Three large projects had been decided to central Sumatra at that time also called “Triumvirate” (Dossier Team, 2018). The project, namely the construction of the mining town of Sawahlunto, railway infrastructure development and construction of the Teluk Bayur Harbour. See the considerable economic potential, Colonial began implanting the first development capital City coal mine Infrastructure, then the railway line and the port. While on workers brought in from several prisons in central Sumatra, Java and Sulawesi. The construction of three major projects completed at the end of the 19th century. The Netherlands launch large-scale exploitation of coal that is in Sawahlunto and ended after Japan occupied Indonesia in 1942. The entire Netherlands people repatriated and Mining continued by the Government of Japan. After the independence, the Foundation of the coal mine Company Factory State and administered by the State with the name of PT. Ombilin and currently joined PT. Bukit Asam Tbk. The city has a total area of Sawahlunto 275.9 km² is the number two largest in West Sumatra Province. The city is inhabited by several ethnic tribes such as Minangkabau, Javanese, Batak, Melayu and Minangkabau Java Straits. The Java Straits Minangkabau also produces a unique culture known as Creole or often referred to the language as the language of Tangsi today. Deposits of coal mines in the city has been continuing to run out as time goes by. So the Government should try to find an alternative to the coal city economy activities. History has carved out and leave evidence of its former glory. So this evidence will be capable of recounting the past glory. As such, then the Government gave a vision of the city as a tourism city of Sawahlunto i.e. mines Cultured. The City Government is very enthusiastic with this vision, so being able to cooperate well. Construction to realize a vision that's not too long. In the year 2004 began conservation work at the district building and revitalizing downtown. Some buildings that have conservation then disable townhouse to support tourism activities such as museum, gallery, homestay, a place to sell food, souvenirs and Government offices. Some work on the infrastructure of the city do with simultaneous so that in 5 years this city has become one of the tourist destinations in West Sumatra. Considerable potential led the City Government to beriniviatif proposed this mining town as a world heritage site with the theme of the Ombilin Coal Mining Heritage of Sawahlunto city site with mine, railway infrastructure and coal sheds in Bay Harbor Lake maninjau. The locations listed in this world heritage site will go through seven cities, namely Sawahlunto Municipality, Solok Regency, Solok Municipality, Tanah Datar Regency, Padang Panjang Municipality, Padang Pariaman Regency, Padang Municipality.

This article aims to identify sustainable development plan for the development of the heritage site. This management plan will affect property and maintenance as well as the development of new functions as a historical and cultural tourism destinations. The map below shows some locations that would be the Tread with world heritage outstanding universal value which becomes UNESCO criteria i.e. (ii) shows the importance of human values, within a span of time or within a cultural regions of the world, in the development of architecture or technology, monumental work, planning or landscape design. The proposal from Sawahlunto is (ii) cultural heritage of the Ombilin coal mine in Sawahlunto.
(WBTBOS) is evidence of coal mining technology exchanges that are essential to Europe in the 20th century. This site contributes to the world of coal mining that is knowledge development in mining technology, specifically the character of a tropical climate. The next advantage value (iv) is an outstanding example of a type of building, architectural or set of technologies or landscapes which describes important stages in human history. The proposal from Sawahlunto is (iv) cultural heritage of the Ombilin coal mine in Sawahlunto (WBTBOS) is a testament to the remarkable and become examples of the world regarding the design technology, for coal mining that has a distinctive character in the final stages of the industry Global. This form of technology embodied in the form of integrated mining systems and efficient, i.e. development of mining towns, mining technology in coal processing, transport and shipment (Dossier Team, 2018). This nomination is a criteria statement to get recognition by UNESCO and was established as a world heritage site.

2. Theory and Hypotheses

When Heritage and environment management is discussed, it must be remembered that the majority of demand for these products is domestic rather than foreign—that is, the national's country theme self (Nuryanti, 1995). Management of heritage sites should accommodate the interests and needs of local communities. It is preferred prior to providing facilities for visitors or tourists. The preserving of indigenous cultures in small countries is matter of concern throughout the globe. Smaller countries are under intense pressure from the dissolving of national borders in face of the globalization of the world economy and the growth and power of international media (Nuryanti, 1995). A country that has become UNESCO cultural heritage sites would have the power of the economy especially in the field of tourism. Intervention against economic and policy will be directed to the world heritage site, since the entire property is recognized will be protected. The State should create a policy to provide a budget of development, promotion and management of world heritage sites. For example, the Temple of Borobudur and Prambanan temple as the world heritage which is located in Yogyakarta, became a tremendous attraction for the community economy and add to the international community and foreign countries. Managing the preservation of historic buildings and regions as tourist destinations, requires serious attention, especially in aspects of the area's development plan. Much of this physical work is in upgrading basic infrastructure, which is not directly visible. But important as such infrastructure is, it is the new buildings and the restoration projects that have tended to fuel the most public controversy [7].

The developmental activities are changing and affecting the environment and can have therefore positive as well as negative impacts on the environment. They pollute rivers, seas, lands, forests, beaches, etc. And the tourist also produce waste, solid, fluid, and gaseous waste. The arrival also tourists especially through mass tourism with different culture, tradisional, religious and sosial background may also affect local cultures, heritage and environment (Salim, 1995). Sustainable development for tourism destination areas require attention to the sustainability of the culture of the local people and safeguarding the environment. Communities that are on the world heritage site requires education, socialization on the development plan of the construction of the future. Besides it is necessary also to make some policy so that development can be in control. The UN Commission on Sustainable Development has developed a Theme Indicator Framework, which address overall sustainable issues, with the specific subsets that may be directly applicable to tourism destinations or to key assets. It also defined guidelines for developing a national indicator programmes (Guidebook, 2004). The indicator is intended is to give direction in managing a tourism destination. This Guidebook in provided some alternative indicator as a rationale for a start in identifying the management on site.
According to the WTO a few guidelines should also be followed to manage a destination such as; a) Include key sites and assets, b) Try to make existing boundaries, c) Reflect natural or ecological area, d) Consider subdividing the destination, e) Consider specific sub-areas for special consideration (Guidebook, 2004). The first article of Venice Charter for conservation and restoration of monuments and sites (1964) acknowledges that an historic monument embrace not only the single architectural work but also the urban and rural setting in which is found the evidence of a particular civilization, a significant development or an historic event. This applies not only to great works of art but also to more modest work of the past having acquired cultural significance with passed of time (ICOMOS, 1964). As an area that will be planned for the world cultural heritage site, it should refer to this ICOMOS charter. Buildings with beautiful architecture will not be meaningful if they are not supported by physical conditions around their surroundings. This means that the preservation of one building should be supported by the preservation of the physical area around the building in order to have historical significance and become a visual unity of the city. Mining-based tourism is an endeavour to investigate and reconstruct past mining activities; the imagination of the past provides inspiration for the future. All the mining artefact are significant tools in the education process that will give meaning to the past and enrich the present and future life. However, mining tourism in Indonesia is a new activity; it is unlike recreational tourism influenced and dominated by consumerism and attracting a large flow of visitors. Mining-based tourism has a more specific characteristic. It focuses on education and broadening knowledge, which presently does not attract large audiences or interested parties and in Indonesia is quite unknown and unpopular (Martokusumo, 2010). This statement is a challenge for town of Sawahlunto in developing tourism in the field of development. Cultural and heritage tourism are not popular in Indonesia due to lack of awareness of preservation, management, control and evaluation. The nation of Indonesia is very rich with history and culture, but have not managed with the maximum.

3. Research Methods
The methodology used is Qualitative Observative, which is from the current situation to make future development plans. The basis of the observation will be taken from the physical development of the city and village that the railway infrastructure passes through. Gathering working papers for several seminars and workshops. Then conducted an observation of the official Government portal to find out the extent of involvement and seriousness in historical and cultural preservation support, especially towards the WBTBOS heritage site. Observations continued by tracing the latest data about the development of the conservation program on the nomination site. As resource persons were the Head of the Historical Heritage Division and the Head of the Museum Division at the Sawahlunto City Cultural Office. Taking photos of current conditions to analyze changes that occur and will be adjusted to the plan as a historical area. Interviews with the community were also conducted to get an opinion on the Government's seriousness in its support as a world heritage site. Support from the Government to the preservation of historical and cultural heritage will be observed through the official government website.

4. Result and discussion
The discussion at this stage begins with the increase in population and economic development along the railway line. Population increase and economic development very influential towards the functioning of the area. The growth of the city which is quite important town of Sawahlunto City, Padang Panjang, and the city of Padang. The third core area of the city is the location where the site is located. Uncontrolled development often occurs due to economic pressures. This condition is not very favourable for cultural heritage sites. Therefore, the Core must have strong rules in order to maintain the cultural heritage sites. This rule was made taking into account the aspects of function area, façade, architecture buildings, building height, color, marker boards, etc.
Figure 1 Site Analysis, the rapid development in which growth will threaten the existence of the WBTBOS

In rural areas along the railway line also has a unique and original culture. This potential needs to be identified and is very useful for the development of natural and cultural wealth. This macro potential is called the tangible and intangible inheritance. Tangible potentials such as rumah gadang (minangkabau house), local community houses, trees, lake Singkarak, rice fields, plantation areas, areas along the river, traditional markets, forests, and so on. Intangible potentials such as daily culture, customs, food, clothing, art, religion, language, deliberation, and so forth. Both of these potentials need to be developed and preserved so that they can become attractions for heritage sites.

Maintaining a tangible and intangible culture will create the local wisdom of each region. Then indirectly it will produce its own advantages and uniqueness. Thus, some of the management components are as follows these steps i.e.; Step 1), Defining boundaries and protection legislation, Step 2) Development Plan, Management plan (appropriate use of Cultural Heritage Site and sustainable development), Urban Design Guideline, Building Conservation Guidelines, Step 3) Economic insentif and Heritage Tourism. Secondly, the Government of the city and County that have been registered into the proposed world heritage site documents have not been showing the maximum support. The support is intended is a seriousness in promoting and developing the site heritage particularly heritage railway infrastructure.

Sawahlunto City Government is the only one who has had a fairly strong commitment towards the preservation of this action. The importance of a support need to be shown mainly on the official government website. Official government portal in cyberspace which will be the reference for anyone around the world. This portal is a window early to get valid information about a place. The information contained on the portal are still surrounding the activities of the Government in managing its internal organization. Very little information about the potential of historical and cultural heritage on the portal. The next problem is the awareness of government officials who are still skimpy against the historical and cultural heritage preservation. The workshop for capacity building of government institutions is important. In general it needs an organization that will take care of everything about
this world heritage site. Seven city Government, have nearly the same potential. The similarity of character building, culture, demographics and geography makes it easy to create rules together. However, the current limitations in communication is becoming a major constraint for the makers of team management plan. Very limited human resources becomes a problem when the team will work to find the solution of a conservation policy. Third, the sustainability of development on core areas such as the town of Sawahlunto, city of Padang Panjang and Padang city requires a more serious attention. UNESCO and ICOMOS is concerned against the seriousness of the Government's policy in controlling and guarding against the development, especially in regard to the proposed heritage site. In this case not only buildings, but villages and the area where the property is located must be observed and must be kept. The making of rules, guidelines for restoration and protection of the world heritage site is a very important thing.

In fact UNESCO will preserve and safeguard world heritage sites, and local communities should hold an important role in the area of good in terms of stewardship and development sectors of the economy. When UNESCO already recognise WBTBOS as a world heritage site then West Sumatera will be into a travel map of the world tourism. The sustainability of the program depends of the budget provided by the Government. This budget will be used to create multiple documents Guide, made a large percentage, physical job, promotions, seminars and workshops. The budget should be available every year. The success of the program can be seen and makes it easy to evaluate and control. The success of job preservation cannot be seen in a short time but the success of the work of preservation can be seen the next few years.

![Figure 2](image.png)

**Figure 2** Sawahlunto is a small town on the valley, as initiative for World Heritage UNESCO. 
Source: Ronald

5. **Conclusion**

The discussion to welcome the UNESCO recognition on the WBTBOS website still requires a long work. Some indicators that are very necessary as consideration are divided into two, namely physical aspects and non-physical aspects. For the physical aspect of sustainable development, it can be concluded that several indicators are needed in planning ahead as a basis for a management plan such as;

A. Managing strategis and action; management of the Nominated World Heritage Site, Land Use and Building Use, Conservation of Cultural Landscape, Conservation of Built Heritage, Compatible Development, Views and Vistas, Urban Infrastructure and utility, Access and circulation and also Risk Management of world Heritage Sites.
B. Management and implementation mechanism; Level governm ent involve in the management system, Legal Provisions for Heritage Protection and Conservation, Existing institutional and organization set-up at City Government Provincional and Local Level and also Implementating the Management Plan

C. Incentive and funding for World Heritage Site; Existing Incentives, Proposed Incentive Programmes for World Heritage Site and Proposed Financial for Managing Finances.

Management plans for the development of guidelines for the world heritage property:

A. Managing the use of land and buildings; Mapping of Living Cultural Heritage, Profile of Activities in the World Heritage Site, Controlling the use of land and building, Special activities and Water body.

B. Protecting Built Cultural Heritage; Building Category, Building Types, Building Style, Guideline for the Conservation are and Heritage Buildings.

C. Protecting Vistas, Enclave, and Streetscapes; Protecting panorama and Riverfront / Mountains / Building Vistas, Protecting Landmarks and Vistas and Protecting the Setting.

D. Managing Circulation and Access; Traffic Management Strategy, Public Transport, Traffic Circulation and Parking, Pedestrian, Cycling and Access for all.

E. Improving Urban Infrastructure; Sewarage, Water Supply, Fire Protection System, Roads and Drains, Electrical supply and Risk preparedness (flood mitigation, earthquake and Fire)

Management plan for non physical aspect i.e.;

A. Institutional capacity building; the human resources who will act as the organizer of the preparatory program is proposing a world heritage thread. Experts planologi, heritage architect, historant, anthropologist, mapping, civil engineering, transportation managers, environmental experts, tourism developing expert "et al."

B. Make the cooperation between regions (seven cities and counties); the need for a Memorandum of Understanding (MOU) as confirmation and support for this program and realized with an Office Manager Treads a world heritage.

C. Preparing the TOR for the planning documents; in order to generate a planning document that corresponds to the desire of UNESCO and ICOMOS, and more mainstream a planning that will be beneficial to local communities.

D. Dissemination Program about sustainable development for world heritage site should always be done either city as well as the present provincially by involving local communities; like the exhibition, workshop, workshops, FGD, exchange Government officer "et al."

E. Develop forum community engaged in preservation; Let the title opinion, input, criticism, suggestions from the community especially the forums that engaged in the preservation of history and culture.

Further research will specifically detail the sustainability program against the construction to the core area and sub area. The development of tourism has not been discussed in detail because it takes a fairly long time. Hopefully this research goes in accordance with expectations and can be beneficial against the development of the town of Sawahlunto fore that will become a world heritage site. Thank you to reviewers who've helped editing against this article. Criticism and suggestions will build character writings and will really help to achieve the quality of the writing is good.

6. References

[1] Dossier Team. (2018). Nomination dossier_ Nomination for Inscription on the World Heritage List. (Y. Arbi, Ed.) (I). Sawahlunto West Sumatera: Ministry of Education and Culture of Republik Indonesia.

[2] Guidebook, A. (2004). Indicators of Sustainable Development for Tourism Destination. World Tourism Organization (1st ed.). Spain.
[3] ICOMOS. (1964). *ICOMOS Charter*.

[4] Martokusumo, I. W. (2010). The Ex-Coal Mining City of Sawahlunto Revisited: Notions on Revitalization, Conservation and Urban Development.

[5] Nuryanti, W. (1995). Tourism and culture: global Civilization in Change? In W. Nuryanti (Ed.), *Indonesian-Swiss Conference on Culture and Tourism* (pp. 6–7). Yogyakarta, Indonesia: Gadjah Mada University Press.

[6] Salim, E. (1995). Toward Sustainable Tourism Development. In W. Nuryanti (Ed.), *Indonesian-Swiss Conference on Culture and Tourism* (p. 197). Yogyakarta, Indonesia.

[7] Serageldin, I. (1995). Tourism and Culture: Revitalizing Historic Cities Towards a Public-Private Partnership. In W. Nuryanti (Ed.), *Indonesian-Swiss Conference on Culture and Tourism* (p. 141). Yogyakarta, Indonesia: Gadjah Mada University Press.