UNDERSTANDING OF LOCAL KNOWLEDGE INSUSTAINABLE DEVELOPMENT TOWARD GLOBALPERSPECTIVE (EXPLORATION STUDIES OF JAVANESE CULTURE)

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ABSTRACT

The concept of sustainable emerged around 1970 which was developed to address the critical issue of energy. It is less recognized that this concept need to be developed and industrialized by the countries due to their dependence on fossil fuels in that time. Then, architecture develop it into a green building concept. The latest development of green architecture becomes imperative in the design architecture for the construction of new buildings. That understanding built in global perspective, how about in local perspective – like in Javanese culture – is it the same context or perspective? Furthermore, it is going to be the focus of this paper.

This paper tries to pick sustainable background in the context of Javanese culture as the focus. In Javanese culture, philosophy background can be constructed by performing puppet plays reinterpretation. Lakon Babad Alas Wanamarta can be placed as the cornerstone of sustainable communities' the philosophy of Java. Theoretical level and indicators for green architecture in the Java community may appoint Primbon.

Research method use Hegel dialogue with architecture critic approach. This working paper is still at the level of exploratory studies to answer unresolved and couldn't replace sustainable and architectural ideas that have been grown in agrarian people today. But it needs to be examined further as sustainable or green architecture can be developed further from an agrarian society civilized.

Keywords: *reinterpretation, sustainability, Javanese culture*

ABSTRAK

Konsep berkelanjutan muncul sekitar tahun 1970 yang dikembangkan untuk mengatasi isu kritis energi. Kurang diakui bahwa konsep ini butuh dikembangkan dan diindustrialisasikan oleh negara-negara karena ketergantungan mereka terhadap bahan bakar pada waktu itu. Kemudian arsitektur mengembangkannya menjadi konsep bangunan hijau. Perkembangan terakhir arsitektur hijau menjadi penting sekali da-

lam desain arsitektur untuk pembangunan bangunan baru. Pemahaman tersebut-membangun perspektif global, bagaimana dengan perspektif lokal – seperti pada budaya Jawa – apakah itu konteks atau perspektif yang sama? Lebih jauh lagi, hal ini akan dibahas pada makalah ini.

Makalah ini mencoba untuk memilih background *berkelanjutan dalam konteks budaya Jawa sebagai fokus. Dalam budaya Jawa, latar belakang filosofi dapat dibangun dengan melakukan reinterpretasi permainan wayang golek. Lakon Babad Alas Wanamarta dapat ditempatkan sebagai dasar masyarakat berkelanjutan filosofi Jawa. Tingkat teori dan indikator untuk arsitektur hijau dalam masyarakat Jawa mungkin menunjuk pada Primbon.*

Metode penelitian yang digunakan adalah dialog Hegel dengan pendekatan kritik arsitektur. Makalah ini masih pada tingkat studi menjelaskan untuk menjawab masalah yang belum dapat dipecahkan dan tidak dapat menggantikan gagasan berkelanjutan dan arsitektur yang telah tumbuh pada orang-orang agraria hari ini. Namun perlu diperiksa lebih jauh sebagai arsitektur berkelanjutan atau hijau dapat dikembangkan lebih jauh dari kebudayaan masyarakat agraria.

Kata Kunci: *reinterpretasi, keberlanjutan, budaya Jawa*

INTRODUCTION

Thinking about sustainable started in 1969, when Rachel Carson published the book with the title "Silent Spring". This book told about pollution and the effect ofthe environment. Term of 'Sustainable Development' was written on "Our Common Future" (Report, 1987).It ties problems together and, for the first time, gives some directions for comprehensive global solutions (IISD, 2012). That is history of sustainable in global perspective.

How about local perspective in Javanese culture? Is it the same context? That's the main question in this paper. After that question, the next question is how about the Javanese culture of sustainable in architecture, both in global and local perspective?

In global perspective, we can called 'Green building council' to explained sustainable from architecture perspective, and Indonesia already had 'green building council' with 'Greenship New Building versi 1.1'. How about Javanese architecture, is there any kind 'greenship'?

THEORY / RESEARCH METHODS

Global Perspective of Sustainable - Excerpt From IISD Time Line (IISD, 2012)

Historical of Sustainable Development

Based on International Institute for Sustainable Development time line (IISD, 2012), the history of Sustainable Development was started in 1962, when Rachel Carson

published *Silent Spring*. She brought together research on toxicology, ecology and epidemiology to suggested that agricultural pesticides are building to catastrophic levels, linked to damage to animal species and human health. After Carson, Paul Ehrlich, in 1968, talked about population bomb, which connected with resource exploitation and the environment.

In 1970, the first earth day. An estimated 20 million people participate in peaceful demonstrations across the United States. Rene Dubos and Barbara Ward wrote "Only One Earth" in 1971, which sound an urgent alarm about impact of human activity. In 1973, OPEC called about oil crisis.

World Conservation Strategy released by the International Union for the Conservation of Nature (IUCN) in 1980. The section "Towards Sustainable Development" identifies the main agents of habitat destruction are as poverty, population pressure, social inequity and trading regimes. The report calls for a new international development strategy to redress inequities. In 1982, The UN World Charter for nature, called for an understanding of our dependence on natural resources and the need to control our exploitation of them. Meeting in Austria, in 1985, of The World Meteorological Society, UNEP and The International Council of Scientific Union reported on the buildup on carbon dioxide and other 'greenhouse gases' in the atmosphere. They predicted about global warming. Brudtland Report, in 1987, called "Our Common Future", a report of the World Commission on Environment and Development, weaves together social, economic, cultural and environment issue and global solutions. It popularizes the term of 'sustainable development'.

Earth Summit held in Rio de Janeiro, in 1992, had an agreement on action plan Agenda 21, the Rio Declaration and non-binding forest principles. In 1994, China sets an international example for national strategies for sustainable development. ISO 14001 is formally adopted as a voluntary international standard for corporate environmental, in 1996.

In 2002, World Summit on Sustainable Development was held in Johannesburg, marking 10 years since UNCED. In a climate of frustration at the lack of government progress, the summit promotes "partnerships" as a non-negotiated approach to sustainability. In 2005 Kyoto Protocol entered into force, legally binding developed country parties to the goals for greenhouse gas emission reductions, and establishing the Clean Development Mechanism for developing countries. Emissions reductions obligations expire at the end of 2012. Green economy ideas entered the mainstream in 2008. In 2009, Scientists introduced the concept of "planetary boundaries"; the concept quantifies our proximity to limits in nine areas, including biodiversity, chemicals, climate change, oceans acidification, fresh water and others.

The population reaches 7 billion in 2011. In 2012, Trade disputes on solar and wind energy products. China's expanded manufacturing capacity and low prices make it a leader in global trade on wind turbines. The U.S. contests both solar and wind subsidies in China as unfair trade practices. The outcomes of these disputes may influence the future of clean-tech energy sourcing and adoption. Rio +20 (2012) Fifty years after Silent Spring, 40 years after Stockholm and 20 years after the Earth Summit, the global community reconvenes in an effort to secure agreement on "greening" world economies through a range of smart measures for clean energy, decent jobs and more sustainable and fair use of resources.

Context and Perspective of Sustainable Development

In 1960s, Sustainability was only about toxic's impact in nature and population bomb warning. It was only talk about nature and human population. In 1970s, the problems increased with the oil crisis. In 1980s, global warming became the main topic. In 1990s and early 2000, sustainable development was containing more complex aspects.

The result of UN conference on Sustainable Development, held at Rio de Janeiro, Brazil in June 20-22, 2012, had 7 critical issues (UNCSD, 2012), such as:
1. Green jobs and social inclusion
2. Sustainable Energy
3. Sustainable Cities
4. Food security and sustainable agriculture
5. Fresh water
6. Clean Oceans
7. Reducing Disaster Risk and Building Resilience

Sustainable development in this day has more complex aspect. It is not just pollution or population, but also about all aspects which related with human activity and human life.

After description above, we can take conclusion that sustainable development in the global context takes the control of the nature for the human life. Otherwise, we can refer Charlotte Perkins Gilman books: "The man-made world" (Gilman, 2009).

Sustainable Development in Architecture

In architecture, we can talk about cities and buildings which have connection with the sustainable development. The sustainable cities become one of critical issues in UN conference in Rio, 2012.

Satterthwaite (1997) said that the greening of cities requires some, or preferably all, of the following:
1. Controlling diseases and their health burden
2. Reducing chemical and physical hazards
3. Developing high quality urban environments for all
4. Minimizing transfers of environmental costs to areas outside the city, and
5. Ensuring progress towards sustainable consumption

In architecture, there are many terms to call sustainability. The term "green" is of one the most widely used but poorly defined terms in architecture nowadays. While the terms "green," "sustainable," and "ecological" are often used interchangeably to describe environmentally responsive architecture, in reality each term has its own history and sociopolitical connotations, as well as its own architectural definition, use, and operation. Green architecture is an umbrella term, which involves a combination of values—environmental, social, political, and technological—and thus seeks to reduce the negative environmental impact of buildings by increasing

efficiency and moderation in the utilization (Attmann, 2010). For technical aspect in architecture, we can use the greenship, and Green Building Council Indonesia already has greenship ver. 1.1., in February 2012.

Greenship new building ver. 1.1. Indonesia has 6 aspects (GBC, 2012):

1. Appropriate Site Development, consist of: Basic Green Area, Site Selection, Community Accessibility, Public Transportation, Bicycle, Site Landscaping, Micro Climate, and Storm Water Management
2. Energy Efficiency Conservation, consist of: Electrical Sub Metering, OTTV calculation, Energy Efficiency Measure, Natural Lighting, Ventilation, Climate Change Impact and on site Renewable Energy.
3. Water Conservation, consist of : Water Metering, Water Calculation, Water Use Reduction, Water Fixtures, Water Recycling, Alternative Water Resource, Rainwater Harvesting, and Water Efficiency Landscaping
4. Material Resources and Cycle, consist of : Fundamental Refrigerant, Building and Material Reuse, Environmentally Friendly Processed Product, Non ODS Usage, Certified Wood, Prefab Material, and Regional Material
5. Indoor Health and Comfort, consist of : Outdoor Air Introduction, CO_2 Monitoring, Environmental Tobacco Smoke Control, Chemical Pollutants, Outside View, Visual Comfort, Thermal Comfort, and Acoustic Level
6. Building Environment Management, consist of : Basic Waste Management, GP as a Member of Project Team, Pollution of Construction Activity, Advance Waste Management, Proper Commissioning, Submission GB Implementation Data for Database, Fit Out Agreement and Occupant Survey

Javanese Perspective of Sustainable

Lakon "Babad Alas Wanamarta" (abstracted from Cempala Magazine, Bima Edition, November 1996)

Lakon (the story of Javanese shadow play) *Babad Alas Wanamarta* is the original of Javanese people, called *lakoncarangan.* This story tells about Pandawa who build the Palace in 'Mertani'forest. PrabuMatswapati gives this forest to Pandawa. Pandawa must 'destroy' the forest and build the palace.

The problem is this unusual forest, not native forest. This forest is a kingdom of 'evil spirit'. This great kingdom has 4 states. Yudhistira is a king of the center of this evil kingdom. And the state lead by:

1. Arya Dandunwacana, a king of Jodipati
2. Arya Dananjaya, a king of Madukara
3. Detya Sapujagad, a king of Sawojajar
4. Detya Sapulebu, a king of Bawenatalun.

Bima, one of Pandawa, with his twin brother – Nakula and Sadewa – directly go to forest and 'destroy' it with their strength. Another side, Arjuna goes to Resi (high priest) Wiyasa for his blessing. Resi Wiyasa gives Arjuna *minyak* (oil) *Jayang katon*.

In forest, Bima, Nakula and Sadewa can't beat the evil spirit, and they are arrested by evil force. Bima, Nakula and Sadewa can be seen by normal people. They disappear. After that, Arjuna came to that forest. He can't see his brothers. Arjuna using *minyak Jaya katon*, and after that he can see all of them include the evil king and army. Arjuna fight to release of his brother from evil kings, and he did it. After that, Arjuna gives that oil to his brothers. And Pandawa strive with evil army. Finally, Pandawa won, and the evil spirit *manunggal* (become 'one') in Pandawa body. Arya Dandunwacana gets into Bima's body; Arya Dananjaya gets into Arjuna; Detya Sapujagad gets into Nakula; and Detya Sapulebu into Sadewa.

Interpretation of Lakon 'Babad Alas Wanamarta'

Scene 1: After PrabuMatswapati gave the Mertani forest to Pandawa, Bima go to this forest directly. With his strenght, he destroys this forest. Arya Dananjaya, one of the evil king, beat down Bima and the twin Nakula-Sadewa. They become captive, and can't be seen with normal eye. The forest can be interpreted as 'mother nature', and Pandawa as human being. This situation can be interpreted if we cannot handle the nature with our streghten. Nature can attact human and imprison us with their strength. What we have to do?

Scene 2: Arjuna chooses another way. He goes to *resi Wiyasa*(high-priest) and gets *minyak* (oil) *jayangkaton* (*katon:* visible). Arjuna uses this oil before fighting with evil. After he uses that oil, Arjuna can see the evil and release Bima, Nakula and Sadewa. The interpretation of this 'scene' is Arjuna used another way. He use a spiritual way. Before war, he went to high priest. *Minyak jaya katon* is the symbol of 'spiritual perspective'. We can not only use human force but also 'spiritual aspect'.

Scene 3: Arjuna gives *minyak jaya katon* to his brothers (Bima, Nakula and Sadewa). After that, they fight with evil kings, and Pandawa win. The evil kings *manunggal* (becomeone) into Pandawa body's. The interpretation of 3rd scene is Pandawa use their strength and spiritual aspect to build the kingdom. *Manunggal* between evil spirit and Pandawa can be read that nature ('evil spirit') become 'one' with man (Pandawa) strengthen aspect and spiritual.

Context and Perspective of Sustainable Development in Javanese Culture

The interpretation of *lakon babad alas wanamarta* above, shows that Javanese culture has close connection with spiritual aspect. Every action must be blessed by religious leader or spiritual logic. Another perspective form this 'story' is between man and nature 'becomes one' (*manunggal*) for build an ideal dwelling.

Based on that explanation above, sustainable development for Javanese culture perspective can be said man and nature is one, hence in the development perspective, we design with nature. Javanese people didn't control nature, but man and nature 'together' built dwelling place. How about 'technical' aspect of sustainable development in Javanese culture?

Sustainable Development in Javanese Architecture

Talking about Sustainable Development in Javanese Architecture, we can refer to the 3 old references: *Serat* (manuscript) Centhini, Primbon Betal jemur Adam makna and Kawruh Griya-Kepatihan.

Centhini, is one of the greatest literary works in new Javanese literature, consist of knowledge and Javanese culture. In Centhini, the knowledge of building talks more about wood aspect. First, describe about history of wooden building, good wood for building and way of fell down. After that, talk about construction element, building type. And finally, talk about *petungan* (calculation) which gives building aim, not only look of building, but also compatibility with fortune and prosperity (Santoso, 1999).

Primbon Betaljemur Adam makna talks about site. There is connection between name of candidate's inhabitant and name of village. Selecting the Javanese reviewing land slope of the land, the environment, the potential of land and type of land (Roesmanto, 1999). Based on Kawruh Griya-Kepatihan, Javanese believe that teak wood influence for a good or bad with building occupant (Prijotomo, 2006).

Description above showed that 3 manuscripts have same ideas with *lakon wayang* (shadow puppets story). Javanese used organic material – teakwood – and have specific order to cutting down that tree. Those teak woods have a specific influence for building occupant. Primbon told those sites, where the people plan to build the house, have a connection with the occupant? The site has a specific allocation as well. It means for Javanese, nature cannot ignore or be put into human's control. Nature and human being have close connection. In design, nature and human being is one aspect, or we can say that human design WITH nature.

Research Methods

To find the context of sustainable development in global perspective, this paper uses the interpretive-historical research with narrative and analysis in interpretive-historical research strategy (Groat & Wang, 2002). This method has ability to identification of data, organizing and evaluation (Groat & Wang, 2002). This method can be answered by the global context of sustainable development.

Another side, Javanese Culture, this paper used investigation philosophy method with clarification approach from Wittgenstein (Rapar, 1996 and Stern, 2004). This method with language analytic, make it clarify the language which used in *lakon wayang*.

The main method in this paper is Hegel's dialectical method *(Raapana & Friedrich, 2012).* This method 'make a dialogue' between global perspectives of sustainable development with Javanese perspective (Figure 1).
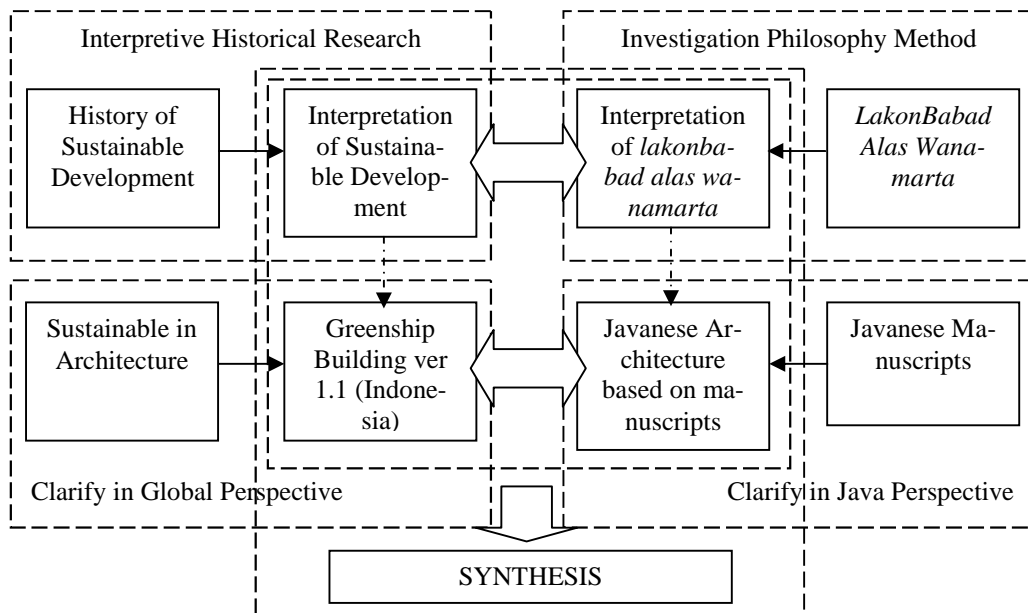
Figure 1. Methodology Scheme

RESULTS AND DISCUSSION

Between global and Javanese perspective about sustainable development seems have no relation. They 'walk' in different direction. In global perspective, sustainable development talks more about 'controlling'. Human being must 'wise' to use natural resources, and control human activity. Another side, Javanese people is thinking that human being and nature have the same level. Javanese cannot be separated between human and nature, they are one. Human and nature have a close connection.

In Hegel dialectical, we can say that global perspective is a thesis and Javanese perspective is an anti-thesis. This method delivers a synthesis (Figure 2). This paper is focus in Javanese side to 'read' the synthesis. We can separate this synthesis into 2 matters:
1. Universality in Javanese perspective of sustainability
2. Locality in Javanese perspective of sustainability

Universality in Javanese perspective of sustainability talks about the global common sense from Javanese perspective. There are always to deal globally, because we are the same human being. We, all of human being in this earth, have the same 'basic knowledge'. Another side, every ethic has something unique, called locality. In Javanese perspective of sustainability, in terms of thought globally also has special or locally.
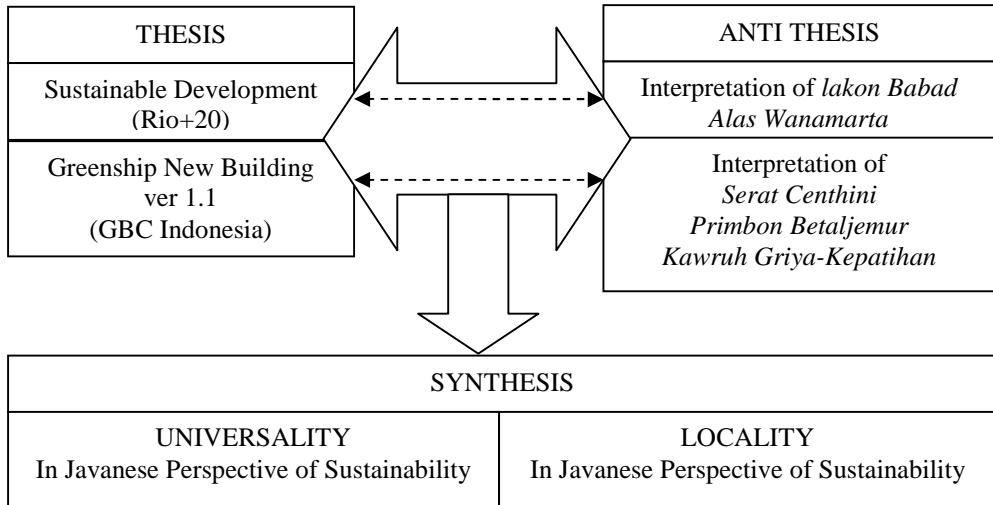
THESIS	ANTI THESIS
Sustainable Development (Rio+20)	Interpretation of *lakon Babad Alas Wanamarta*
Greenship New Building ver 1.1 (GBC Indonesia)	Interpretation of *Serat Centhini Primbon Betaljemur Kawruh Griya-Kepatihan*

SYNTHESIS	
UNIVERSALITY In Javanese Perspective of Sustainability	LOCALITY In Javanese Perspective of Sustainability

Figure 2. Discussion (Dialetic Hegel Model)

Dialogue 1

Thesis: Sustainable Development (Rio +21)

The understanding of sustainable Development is built by pollution, population bombs, energy crisis and climate change. All that aspects are affected by industrial consequences. Now, UN has policy to control all of human activities. This policy must be done for viability of human being in this planet. We only have one planet with limited resources. It's a basic understanding right now. Context of sustainable development is keep the natural sources in this world. They are control human for used the natural sources, because the limitless of natural sources. Human being must be controlled their behavior because in the past time they destroyed natural sources. It is action-reaction method. Natural sources already broke, that why human being must controll their behavior for using the natural sources.

Anti-thesis: Interpretation of *Lakon Babad Alas Wanamarta.*

This story told a different background understanding. Pandawa build the Palace in the 'empty space', in the 'native forest'. This story didn't talk about controlling natural resources, but controlling the behavior and the human perspective on nature. Context this story is about human behavior and their perspective of nature. The story tell that Pandawa facing the 'native forest'. There is no pollution or energy crisis or climate change. Pandawa can 'destroy' all of forest to build the palace, but, the story tell, that a wrong way. Pandawa must control their behavior. The Sustainable understanding based on spiritual aspect, not from action-reaction perspective. Javanese people said that nature is representation of God. This is spiritual perspective.

Synthesis:
Universality

Both of them use a same keyword is controlling. Human activity in nature must be controlled for sustain the nature. The different is how to control and what thing or who in control.

Locality

If global perspective, human take a control of the nature; another perspective, Javanese human and nature take a control in the same time. Or we can say that in global perspective, human being as a leader of sustainable development. But in Javanese perspective, human and nature is a team to do sustainable development. They can be separated.

Dialogue 2

Thesis: Greenship New Building ver 1.1.

In Greenship New Building ver 1.1.from Green Building Council Chapter Indonesia, already describe in very detail about 'green building' technically. That rules can be divided into 3 groups:
1. Controlling external/outside building aspects: Appropriate Site Development, Energy Efficiency Conservation, and Water Conservation.
2. Controlling internal/building aspects: Material Resources and Cycle and Indoor Health and Comfort.
3. Management Control: Building Environment Management.

In technical aspect, we are not only control the nature but also take advantage. The Architect use'Mother Nature' for his 'green building'aspect. Natural lighting, natural ventilation, count the micro climate for human indoor comfort, are the examples of USING nature term. The latest architectural term – green architecture, bioclimatic architecture – nature became one of important variables. We can say that technically human being CONTROL and USE the nature for human dwelling.

Anti-thesis: Javanese manuscripts.

This paper use 3 manuscripts: *serat Centhini, Primbon Betal jemur Adam makna* and *kawruh Griya-Kepatihan.* They 'talk' about Javanese building and land where the building is built. That manuscript can be divided into 3 groups:
1. Material, building type.
2. Connection between human and material.
3. Connection between human and land/site

According to those manuscripts, Javanese people build the house based on wooden material (especially teak wood) and that teak wood has a strong influence in shaping the character of house is expected. A similar thing happened in the selection of land/site for building construction. Every land/site has its own character for inhabited. And those characters have a very close relationship with human who will inhabit. This interpretation shows that Javanese perspective, human being is not as a

main character in controlling all of aspects of sustainable development. Nature has a power too. Man and nature have equal footing, mutual controlling. In that under-standing, man is NOT USING nature, but man and nature are WORKING together for better future.

Synthesis:

Dialectical above shows that there are controlling aspects in relationship be-tween humans and nature. The difference is, in global perspective 'control' is only done by human being, passive nature; while in Javanese perspective, human and nature have a same level which is control mutually.

CONCLUSIONS

This paper showed the similarities (universality) and differences (locality) in the perspective of sustainable development, both from philosophical and theoretical (architectural) level.

In global perspective we can see that the rules on sustainable development or-ganized pragmatically. Improving regulations drafted by the changing condition of this earth. Another side, Javanese perspective is talking about the ideal condition. Javanese perspective is not prepared according the present situation. The story about Pandawa build the palace was compiled as native forests, the same conditions as in writing manuscripts.

This paper based on exploration studies. Javanese perspective of sustainable development provides a global perspective of sustainable development, that human cannot put the nature only to be exploited, but man and nature have a same level. Nature is also able to control human decisions or activities in build something. We must 'LISTEN' and 'READ' a nature more carefully. How does it possible?

To interpret many 'local knowledge' is one of the several ways to understand the 'mother nature'. We can combine advances technology, technical ability with the ideas which contained in the manuscripts or folklore. We must interpret that manu-scripts or folklore first, and 'drag' into our conditions right now. Manuscripts or fol-klore contain 'local knowledge', they are compiled based on a long experience of the past.

This paper only show that there is knowledge behind Javanese folklore and manuscripts, talk about sustainable development. Next step is continuing this re-search to more applied or technical aspect. We have to formulate the rules of green building which is more appropriate to the circumstances in Java/Indonesia as, the example.

REFERENCE

---------- (1996), Cempala Magazine, Bima Edition.
Attmann, O. (2010), *Definitions And Operationalizations Of Green Architecture*, Access Engineering Library,<http://accessengineeringlibrary.com/browse-

/green-architecture-advanced-technologies-and-materials/p20019-d2f9970027001> (Accessed on 10 July 2013).

Gilman, C. P. (2009), *Our Androcentric Culture, or The Man Made World*, The Project Gutenberg EBook,<http://www.gutenberg.org/cache/epub/3015/pg-3015.txt> (Accessed on10 July 2013).

Green Building Council Indonesia (2012), *GREENSHIP New Building Version 1.1: Summary of Criteria and Benchmark*, <http://www.gbcindonesia.org>.

Groat, L., and Wang, D. (2002), *Architectural Research Methods*, John Willey& Sons, Inc, Canada.

IISD (2012), *Sustainable Development Time Line,*International Institute for Sustainable Development: <http://www.iisd.org/pdf/2012/sd_timeline_2012.-pdf>(Accessed on 10 July 2013).

Prijotomo, J. (2006), *(Re-) Konstruksi Arsitektur Jawa, Griya Jawa dalam Tradisi Tanpatulisan,*Wastu Lanas Grafika, Surabaya.

Raapana, N. F. and Friedrich, N. M. (2012), *Books and Publication*, ACL Books,<http://nord.twu.net/acl/dialectic.html> (Accessed on 15 July 2013).

Rapar, J. H. (1996), *Pengantar Filsafat,*Kanisius, Yogyakarta.

Roesmanto, T. (1999), Pemilihan Lokasi dan Lahan menurut Betaljemur Adammakna, J. A.,*Naskah Jawa Arsitektur Jawa*, 187 - 213, Wastu Lanas Grafika, Surabaya.

Santoso, R. B. (1999), Tentang Risalah Bangunan, J.A., *Naskah Jawa Arsitektur Jawa*, 37-55, Wastu Lanas Grafika, Surabaya.

Satterhwaite, D. (1997), Sustainable Cities or Cities that Contribute to Sustainable Development?,*Urban Studies,* **34(10),** 1667-1691.

Stern, D. G. (2004),*Wittgenstein's Philosophical Investigation: An Introduction,* Cambrige University Press, Cambrige.

UN Conference on Sustainable Development(2012), *7 Critical Issues at Rio+20*,<http://www.uncsd2012.org/>.