

No Place for “Nature” in the Sustainable Development Concept: The “Lack” of Incorporating Nature—The Case of Thailand

Nuttapol Sothiratviroj, Panyapiwat Institute of Management, Thailand

Date Received: 1 April 2020

Revised: 21 September 2020

Accepted: 6 October 2020

Abstract

The objective of this article was to analyze the concept of nature, which is perceived as lacking in sustainable development in Thailand. The discussion of nature is based on the concepts of Naturalism, which considers nature through an ecocentric view, and Materialism, which considers nature as a usable resource. By looking at the example of the Eastern Economic Corridor in Thailand as a sustainable development project and its further deconstruction, this paper recommends that sustainability should be evaluated at two levels. The shallow level is based on the Materialist concept of nature and anthropocentrism. Deep-level sustainability, on the other hand, is based on environmentalism and ecocentrism. Even though deep sustainability is critiqued as being too ideal to deploy at the policy level, the concept is still useful. It could be an alternative discourse that creates space for suppressed sentiments in society.

Keywords: *Sustainable development, sustainability, nature, development discourse*

Introduction

The concept of nature is discussed in this academic article. In Thailand, the notion of sustainable development (SD) is seemingly lacking, particularly since the concept of nature is minimized to consist of “environment” and “resource” that humans can manage and exploit. The article also discusses how the concept of SD has come short in understanding the environment as a resource rather than as being integral to nature.

In recent times, SD has expanded its focus to include economic outcomes, together with social and environmental development. This is a shift from a sole emphasis on economic growth. While this may be a general trend, SD and the notion of sustainability remain complex concepts, which may be interpreted differently, leading to possible misunderstandings and misuse in various contexts. The differentiation of interpretation can be traced through the history of SD. Beginning with Brundtland’s (1987) paper, called *Our Common Future*, the idea of SD was to combine contradictory dimensions, in particular, economic growth and environmental protection co-existing without any changes affecting the economic and market system (Charoensin-o-larn, 2011). In the Brundtland report, SD is defined as,

development that meets the needs of the present without compromising the ability of future generations to meet their own needs. SD contains two key concepts which are 1) the concept of 'needs', in particular the essential needs of the world's poor, to which overriding priority should be given; and 2) the idea of limitations imposed by the state of technology and social organization on the environment's ability to meet present and future needs (1987, Chapter 2, Section IV).

Following this report, the paradigm of SD and sustainability was further expanded to consider the three dimensions (pillars) of development known as *The Triple Bottom Lines*, which were economy, environment, and (social) equity as the main objectives to address the needs of both the present and future generations. These may differ from previous development objectives as their emphasis was mainly on economic growth. After the Brundtland report was adopted as the main principal of the Rio Declaration on Environment and Development of the United Nations Conference on Environment and Development (United Nations, 1992), it became the “driving force” of global attempts to identify solutions for development that encapsulated all three dimensions. This finally resulted in the proposal of Sustainable Development Goals (SDGs), which have served as the blueprint for the new global future adopted by all United Nations member states since 2015. However, like previous forms of

development, SD is still dominated by the development discourse of desirable economic, human, and environmental conditions of the West. Technical-based indicators, expectations, scholarship, and funding operate, under the “one size fits all” model, created a common understanding of SD among western societies (Boonchai & Beeton, 2015). Even if SD is readily adopted by policymakers and international aid agencies, the representation is still far removed from its conceptualization (Boonchai & Beeton, 2015). This is observed in the context of Thailand, where developments that claim to be sustainable are, in fact, running their operations from an economic perspective. This unfortunately renders social and environmental issues as minor considerations.

The contradiction may be better understood through the review of Aminpour et al. (2019), who suggested that sustainability in the context of indigenous people emphasized the connection between “human” and “nature” as significant. Specifically, their work argued that the division between indigenous people’s perspectives of sustainability and prioritized traditional disciplinary lines of academia is an important obstacle to overcome, in order to start building sustainability. This is an ontological problem since different people construct different sets of reality, but the bigger problem is some sets of knowledge dominate the construction of reality through the stratification of power. In the case of SD, nature is a concept that ought to be an integral component. In the following sections, this academic paper will present the general concepts of nature and its relationship with sustainable development. This relationship is then viewed in the context of Thailand, after which some recommendations are provided.

Concepts of Nature

There are many definitions for the concept of nature that vary according to the context. For example, nature may be understood as the spiritual mother (animism); nature as the path to absoluteness (Taoism and *Dhamma* in Buddhism); and nature as the phenomenon (science). Each of these interpretations shape the way humans react to nature. In Thailand, nature have been understood differently through time. Sattayanurak (2002) proposed three different perceptions of nature according to the history of Thai society. In the first period of traditional society, the people of Siam perceived nature according to Thai cosmology, *Traibhumigatha*, which is a spiritual and supernatural perception. However, in the second period after the modernization of the country in the reign of king Rama IV, modern science became influential and it was the beginning of the perception of nature as a physical phenomenon. In the third period, encompassing the age of development in the 1950s, nature became an economic resource that was of value to the country’s development.

Beyond the contextualized understanding of nature, there are pervasive views regarding its interpretation. The first is the Fundamental/Essentialist view that proposes the question “what is [the] nature of nature?” This view attempts to look at nature in an objective manner, that is, nature has an absolute reality of itself or contains uniqueness/authenticity as its essence. In other words, nature is not artificial. Mill (1874, p. 8, as cited in Connelly et al., 2003, p. 14) provided a clear representation of this view:

...we must recognize at least two principal meanings in the word nature... it means all the powers existing in either the outer or the inner world and everything which takes place by means of those powers... not everything which happens, but only what takes place without the agency, or without the voluntary and intentional agency, of man.

The concept of nature in a fundamentalist/essentialist approach sees nature as a thing-in-itself that is powerful and uncontrollable. This approach represents nature as absolute being, the creation of god, the great chain of being, uncertainty, a flow, etc. (Connelly et al., 2003, p. 15). This kind of concept also appeared in oriental environmental philosophy such as in Taoism and Buddhism, as well as in indigenous societies such as the Inu in Japan and the Native Americans (Kinsley, 1995). Another approach is called Social Constructivism, which argues that nature never exists in itself. Instead, it is what we constitute as “nature”—the social creation of nature. Social constructivism believes that there is no innocent nature without human production; no uniqueness; no authenticity as fundamentalist/essentialist philosophy attempts to propose (Rolston, 1997). Aside from the divergent

views of nature, there are also at least two significant problems in the definition of nature, which can be seen in the terms “nature” and “environment.” These two terms are used differently according to the discourse that regulates their understanding. A useful approach to take in discussing the terms of nature is to view them through metaphysical perspectives, which are “Naturalism” and “Materialism.” the former considers nature as “nature,” and latter considers nature as “environment.”

Naturalism emphasizes the importance of nature containing intrinsic value. The concept of Naturalism is that of ecocentrism, believing in the linkage between beings and non-beings in the world (Capra 1996). The idea of naturalism accepts the status of nature as being at the same level as humans and promotes the co-existence between humans and nature. As such, nature in Naturalism is the biosphere in which humans co-exist with other beings and non-beings. Humans neither have any legitimacy to take advantage nor to utilize nature to fulfil their wants. Indigenous concepts of sustainability and deep ecology are good examples of Naturalism that are effective in practice as a trend of social movement. Materialism runs contrary to Naturalism. While Naturalism sees nature as a chain of bio-systems each having its intrinsic value, Materialism looks at it as a source of resources that could be utilized for human consumption. Materialism emphasizes the importance of science and technology as tools to control and manage nature. In the Materialist view, nature exists to serve humans since humans hold a higher value over nature as conquerors or at least stewards. Materialism is anthropocentrism, which separates human from nature.

Hence, the identification of nature according to Naturalism leads to specific discursive practices, some of which emphasize living together with nature such as that demonstrated by green movements or environmental campaigns, even radical ones, where land is purchased in order to preserve areas in their existing state and to halt activities harmful to nature. On the other hand, the materialist discourse permits human intervention, including the utilization of natural resources in the most efficient way to bolster the growth of humanity’s well-being.

Nature and Sustainable Development

When considering the concept of SD, one important issue is its objective as a form of development, specifically the satisfaction of *human* needs and the improved quality of *human* lives (Brundtland, 1987). It seems that the center of concern in SD is human, as described in principle 1 of the Rio Declaration, which states “Human beings are at the *centre* of concerns for sustainable development.” This may be due to the importance of economic growth to achieve “our common future.” Furthermore, “meeting essential needs depends in part on achieving *full growth* potential, and SD clearly requires *economic growth* in places where such needs are not being met” (Brundtland et al., 1987). What is then seen in SD is the development objective in economy to meet the needs of humans. In other words, it takes on an anthropocentric perspective that separates nature/environment from human. In terms of the concept of nature in SDGs, Goal 14 (life below water) and Goal 15 (life on land) may be relevant to the discussion in this paper, and that in the context of Thailand. Goal 14 states “conserve and sustainably *use* the oceans, seas and marine *resources*,” while Goal 15 states “Protect, restore and promote sustainably *use* of terrestrial ecosystems, sustainably *manage* forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.” These two goals view nature as a resource that humans could *use* and *manage*, which are explained in the target indicators of these goals. For example, Goal 14’s targets call for the proper use of marine resources so that by 2020 there is an effective regulation of harvesting and ending overfishing, illegal, unreported, and unregulated fishing and destructive fishing practices and implementing science-based management plans, in order to restore fish stocks in the shortest time feasible, at least to levels that can produce maximum sustainable yield as determined by their biological characteristics. Though there are attempts, seen in SDGs, to address concerns of development affecting the social and environmental dimensions of nature, there remains the problem of power relations between knowledge of nature as environment with development practices that overlook the value of nature.

The Lack of Sustainability: A Case in Thailand

It may appear that there is no place for nature as “nature” in SD, but only nature as “environment,” used as materialistic resources for (economic) growth. What seemed to have happened is that the preservation of nature may be considered a form of deep ecology, which would deny the development and materialism needed for economic growth (Redclift & Woodgate, 2013). Thus, nature as environment in the context of SD is reductively valued as a resource for human activity. Protecting nature as environment is not to protect something with intrinsic value, but to protect as a resource with value for human activities and to make sure that natural resources are available to everyone including future generations as a natural capital. Escobar (1996) proposed the idea of capitalized nature suggesting that nature be merged into a part of capital. Therefore, the status of nature has been changed from “nature” as mystical and uncontrollable to “environment,” which is manageable and controllable for the sake of human manipulation, patrol, and monitoring. Moreover, environmental problems are reduced to managerial and technical problems that remove concerns of nature as a “subject” and remain only a passive worry. For Escobar, the acceptance of SD is hazardous since it does nothing about questioning development and is unable to cope with environmental preservation and restoration.

This may be seen in Thailand, where the first seven national socio-economic development plans paid attention to the use of natural resources to bolster economic growth, with the concept of nature being treated as resource written clearly in the plan itself (Sattayanurak, 2002, pp. 15–33). As a result of this, there has been a loss of environmental resources in the last 40 years of development in Thailand, which can still be observed in many projects today. Geisinger (1999) and Charoensin-o-larn (2011) shared the same view on how SD remains similar to previous mainstream developments, due to existing problems, namely, the environment and the imbalance of power and process leading to environmental destruction as a result of industrialization, consumerism, and capitalism. A case study in Thailand worth considering is the Eastern Economic Corridor (EEC), which is a governmental project “aiming to encourage investment, uplift innovation and advanced technology in Thailand for the future generation” with the target of “the completion of ready-to-implement regional development model helps to drive economic development and Thai society to a level of a developed country in accordance with the Thailand 4.0 policy” (EEC Office, 2019). The project focuses on three eastern provinces of Thailand—Chonburi, Rayong, and Chacheongsao, known as the Eastern Seaboard, to be developed in both physical and social perspectives in order to enhance the economic competitiveness of the country. On one hand, the Eastern Economic Corridor is considered an important development project to bolster sustainability in the country. This is according to one of its aims, namely, to “formulate EEC into a best-in-class area-based development that contemplates economic, social, and environmental advancement, supported by clear regulatory and governance structure, and serves as an example for Thailand's future area-based development” (EEC Office, 2019). On the other hand, the project is widely criticized, especially on social and environmental issues, which have been intentionally overlooked.

From an environmental lens, the EEC development seems to be in contrast with contemporary environmental knowledge at both the global and local levels. This may be observed from the Maptaphut industrial estate in Rayong, which had failed as a sustainable development and caused pollution in the local community. Despite this, industrial estates are still being constructed in the Eastern Corridor, with governmental policies being rescinded or changed to support this development. For instances, changes made in the Town Planning Act and Promotion and Conservation of National Environmental Quality Act B.E. 2535 could change the area usage from a green zone (agricultural) to a red zone (industrial). Moreover, the industrial park is also located very near to important natural spaces, such as the Khao Yang Dong area, which is situated in between Amphoe Plangyao and Amphoe Panomsarakham. This area is a conserved forest area, which is also the source of Bangpakong's headwater, an important national wetland area being nominated to be a RAMSAR site due to its biodiversity and importance to local lives in Amphoe Panomsarakham, Chachoengsao province. In terms of environmental assessment, EEC still uses Environmental Impact Assessment and

Environmental Health Impact Assessment, the paradigms of which are project-based. This has been criticized as the assessment is only effective for evaluating the impact of individual projects, yet is unable to see the sum-total of impacts from many projects. Perhaps a more apt assessment tool is Strategic Environmental Assessment (SEA) that is area-based. Nonetheless, the Office of the National Economics and Social Development Council purported that SEA is not systematically pushed and its process is still unclear to provide any definite results (Kree-Aksorn, 2019). From these observations, it seems that assessment of the EEC has only been carried out for the sake of appearing to be aligned with sustainable development.

The oversight of nature in the EEC is as a manageable and controllable resource for the benefit of humans. While there are efforts to promote this project as environmentally friendly, it is nothing more than to create a discourse of difference from mainstream developments. Many development projects in Thailand, especially those conceived in recent times, have ignored the quality and safety of nature, seen through such developments as the concessions and opening of mines in many provinces; the continuation of dam building projects, especially, the Mae Wong Dam in Nakhon Sawan, which was once deemed unsustainable by the EIA; and the Chao Phraya delta plan 2040, for which many academics and researchers are concerned. These examples present Thailand's sustainable development as adhering to the model of mainstream development, and nature as "nature" is rarely considered in the country's development regime. The effects of SD on nature as environment are quite critical, since maintaining this perspective does not provide any complete sustainability as it is supposed to do. The adherence of SD to a development discourse is highly questionable, especially with its inability to create any solutions to solve environmental problems. The wide acceptance of SD should be re-considered and re-conceptualized, since the concept itself is very interpretative. A direction worth considering may be that recommended by Achavanuntakul (2019), who stated that real SD would not be confined to goals or targets; instead, it aims to improve existing development and ensures that future development will not pose any harm to nature and humans.

From Shallow to Deep Sustainability: Recommending a Typology for Sustainability

Neumayer (2003, as cited in Whitehead, 2014) claimed that sustainability is actually categorized into two forms: Weak sustainability and strong sustainability. Weak sustainability is based on the concept that human technology could be used to replace the depletion of natural resources while strong sustainability is based on the concept that natural capital could not be substituted for human capital. In the case of SD, the concept could be interpreted as both types of sustainability. However, both categorical forms still lack the dimension of nature as part of its core conception, as there is only the existence of environment. Hence, I would like to offer an expansion to the typology of sustainability. This expansion involves *shallow sustainability* and *deep sustainability*.

Shallow Sustainability is anthropocentric. It is based on the concept of nature as environment which humans could manage, use, and benefit from in a way that does not permanently deplete or destroy the environment. Shallow ecology focuses on the sustainable use of natural resources for humans. *Deep Sustainability*, on the other hand, is a concept derived from deep ecology. It is ecocentric and emphasizes the status of nature as "nature" holding its own intrinsic value and re-considers the position of humanity as a part of an organic whole. In this perspective, humanity has no legitimacy to do anything they want to do to nature, but must consider nature as a whole. Deep ecology sees the sustainability of everything in the biosphere. Its objective is to find a solution for the co-existence of lives in the biosphere. This typology can be seen in light of Ives et al.'s (2018) concept of reconnection with nature, where the treatment of nature can be differentiated into five levels, as follows.

1. Material level. The connection is about consuming goods and materials from nature and could be analyzed at both the individual and social levels. This level often is connected to each characteristic of the social system.

2. Experiential level. This level of connection is the direct interaction with the natural environment, such as going to the forest and the sea. The scale is measured normally in the individual, but could expand to the societal level.
3. Cognitive level. The connection is in terms of knowledge, awareness, attitude, and value toward nature. The analytical scale is at the individual level.
4. Emotional. This level of connection is about feelings of attachment, empathy, and the aesthetical valuation of nature. The analytical scale is at the individual level.
5. Philosophical level. The level of connection is in the context of perspective or world view considering both the metaphysical (the reality of nature) and the axiological context (the matter of nature/ the ethics between humans and nature).

These five levels of connection with nature lead to different levels of interaction and intervention with nature at both the theoretical and practical levels. This concept could be applied to classify the typology of sustainability based on the levels of connection with nature. The levels of nature connection in the context of sustainability could be described by the outer connection in levels one and two, leading to the interaction with nature, based on a shallow sustainability perspective, since the connection in these levels is the use and management of nature as a resource. In contrast, the higher levels three to five can be expanded to the level of connection from the outer to the inner, and connections between humans and nature, which results in no stratification as the perception of nature goes beyond the level of it as a resource. Furthermore, Abson et al. (2017, as cited in Ives et al., 2017) mentioned that changes at the shallow level are relatively ineffective in influencing the system/society, while minor changes at the deep level can alter the behavior of a system/society. A shallow level of connection relates to (a) system/society parameters and (b) feedback between variables. A deep level relates to (a) the system/society design or architecture and (b) the goals/intents pursued through the system/society (e.g., the proportion of protected land is less effective than changing of its design such as the rights of biodiversity to persist). In summary, to make changes, the system/society needs more than just shallow levels of intervention. Hence, shallow sustainability is not sufficient to build sustainability.

In practice, if we consider our connection to nature as a means to strengthen sustainability, there are many practices that affect different levels of connection, which require a re-evaluation. Beginning at the material and experiential levels, there are interactions such as the consumption of local products to reduce the consumption of resources. For instance, roof-top gardening for urban dwellers enables experiences of nature, as well as enhancing knowledge of natural processes and ecosystem functions in both consumption and experiential ways. This also contributes to an emotional attachment to a particular place. These interactions with nature are at the shallow level, but they play an important supporting role to create sustainability (see Boossabong, 2019). At the deeper level of nature—where there needs to be a connection from the cognitive to philosophical levels—the creation of value and a belief system about nature needs to be transcended to influence the desirable goals/meanings of an individual's life. For example, the arts could be used as an interactional medium between humans and nature, and also faith in religion could motivate conservative actions, such as tree ordaining in Thailand. Nature-based education, such as forest kindergartens (Waldkindergarten), which are popular in Germany, Sweden, and Denmark, is also a viable practice to help children develop a deeper empathy for nature (Kane & Kane, 2011). This may be implemented easily as there are many schools in Thailand attempting to add environmental studies as an important part in the syllabus for children (Piampongsan, 2005; Thathong, 2010). Globally, the numerous environmental campaigns also play an important part to build a deeper sustainability discourse. Locally, we have also witnessed campaigns, such as the proposition to reimagine Thailand's capital, Bangkok, as a space where bicycles could be symbolized as a conduit between urban dwellers and nature (Sengers, 2017).

A caveat affecting deep sustainability is its ideal goal, which might be too abstract to be deployed at the policy level. Nonetheless, the concept of post-development, such as de-growth, could be the strategy for adopting the concept of deep sustainability in practice. This is because de-growth itself

directly criticizes and denies the objective of development as economic growth, and redefines the identity of humanity's well-being (e.g., Asara et al., 2015). Together with the pillar of equity, people at all levels need to have a fundamental capacity for their lives, such as that proposed by Amartya Sen in *Development of Freedom* (2000). According to Sen (2000), the emergence of a post-humanism discourse can be an epistemological weapon to challenge the existing dominant discourse, especially since humanity has experienced damaging effects from natural degradation and destruction from development schemes of the past. Though such social movements are not particularly powerful in the global context at present, global trends that question "development" are continuously emerging. At the very least, the concept of deep sustainability could be an alternative discourse proposing another angle of sustainability with "nature" as "nature".

Conclusion

Arias-Maldonado (2016), writing of the relationship between anthropocene (the age of humans) and nature, stated that he did not agree with the dualistic perspective of nature that separates humans from nature. He argued that hybridization and natural combination are the result of human adaptation to the natural world, since humans are an integral part that interweaves with nature and cannot be considered as separate. Anthropocene might bring nature to an end, but in contrast it is also the "resurrection" of nature. Arias-Maldonado believes in the ability of humans to adapt to natural circumstances and also that science and technology cannot be left behind since they are important for the survival of mankind.

The ideas of Arias-Maldonado seem to represent both sides of the concept of nature. On one hand, humans need to adapt themselves to nature since they are a part of it, but on the other hand, human technology is also important for mankind. There is a classical conflict between the naturalist and materialist views. Sustainable development is an attempt to offer a compromise between these two; however, SD has leaned too much to one side. This is especially prevalent in discourses regarding SD, which play a critical role in shaping our political and economic world. Since the discourse of SD is socially constructed, it could be deconstructed. And, if deconstruction could bring justice to the suppressed components in our world, then it is our responsibility to shoulder this deconstruction and strive to redefine it—such as the concept of nature within the model of SD.

References

- Abson, D. J., Fischer, J., Leventon, J., Newig, J., Schomerus, T., Vilsmaier, U., Wehrden, H., Abernethy, P., Ives, C. D., Jager, N. W., & Lang, D. J. (2017). Leverage points for sustainability transformation. *Ambio*, 46(1), 30–39.
- Achawanuntakul, S. (2019, September, 25). *EEC kap kânphatthanā thī yangyŭn? botrīan čhāk mǎp tā phut* [EEC and sustainable development? Lessons learned from Maptaphut]. The Momentum. https://themomentum.co/eeec-and-sd_learn-from-maptaphut-port/
- Aminpour, P., Gray, S., Richardson, R., Singer, A., Castro-Diaz, L., Schaefer, M., Ramlan, M. A., & Chikowore, N. R. (2020). Perspectives of scholars on the nature of sustainability: a survey study. *International Journal of Sustainability in Higher Education*, 21(1), 34–53. <https://doi.org/10.1108/IJSHE-05-2019-0161>
- Arias-Maldonado, M. (2016). Nature and the Anthropocene: The sense of an ending? In P. H. Pattberg & F. Zelli (Eds.), *Environmental Politics and Governance in the Anthropocene: Institutions and Legitimacy in a Complex World* (pp. 31–46). Routledge.
- Asara, V., Otero, I., Demaria, F., & Corbera, E. (2015). Socially sustainable degrowth as a social–ecological transformation: Repoliticizing sustainability. *Sustainability Science*, 10(3), 375–384.
- Boonchai, C., & Beeton, R. J. (2016). Sustainable development in the Asian century: An inquiry of its understanding in Phuket, Thailand. *Sustainable Development*, 24(2), 109–123.
- Boossabong, P. (2019). Governing Bangkok's city food system: Engaging multi-stakeholders for smart, sustainable and inclusive growth. *City, Culture and Society*, 16, 52–59.
- Brundtland, G. H. (1987). *Our common future*. Report of the world commission on environment and development: Our common future. <https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf>
- Capra, F. (1996). *The web of life: A new synthesis of mind and matter*. Anchor Books.

- Charoensin-O-Larn, C. (2011). *Wathakam kanphatthana* [Development discourse]. Vipasa.
- Connelly, J., Smith G., Benson, D., & Saunders, C. (2003). *Politics and the environment: From theory to practice* (2nd ed.). Routledge.
- EEC Office. (2019). *About EEC*. Eastern Economic Corridor (EEC). <https://eng.eeco.or.th/en/vision-mission>
- Escobar, A. (1996). Construction nature: Elements for a post-structuralist political ecology. *Futures*, 28(4), 325–343.
- Geisinger, A. (1999). Sustainable development and the domination of nature: Spreading the seed of the western ideology of nature. *Boston College Environmental Affairs Law Review*, 27(1). <https://lawdigitalcommons.bc.edu/eafr/vol27/iss1/3/>
- Ives, C. D., Abson, D. J., von Wehrden, H., Dorninger, C., Klaniecki, K., & Fischer, J. (2018). Reconnecting with nature for sustainability. *Sustainability Science*, 13(5), 1389–1397.
- Kane, A., & Kane, J. (2013, April 3). Waldkindergarten in Germany. *Green Teacher*, (94), 16. <https://greenteacher.com/back-issues-index/green-teacher-94-fall-2011/>
- Kinsley, D. (1995). *Ecology and religion: Ecological spirituality in cross-cultural perspective*. Prentice Hall.
- Kree-Aksorn, T. (2019, December 24). *EEC (1): Mai mī ratthaprahān mai mī thāng thamdai* [EEC (1): No coup, no project]. <https://prachatai.com/journal/2019/12/85663>
- Mill, J. S. (1874). *Three essays on religion*. Longmans.
- Neumayer, E. (2003). *Weak versus strong sustainability: Exploring the limits of two opposing paradigms*. Edward Elgar.
- Piampongson, P. (2005). *Singwātlōm surksā* [Environmental education]. Chulalongkorn University Press.
- Redclift, M., & Woodgate, G. (2013). Sustainable development and nature: The substitution of capitals. *Environment, Politics and Development* (Working Paper Series, WP, 46). Department of Geography, King's College London.
- Rolston, H., III. (1997). Nature for real: is nature a social construct? In T. D. J. Chappell (Ed.), *The philosophy of the environment* (pp. 38–64). University of Edinburgh Press.
- Sattayanurak, A. (2002). *Niwet prawatisat: Phromdaen khwam ru* [Ecological history: Boundaries of knowledge]. Khob Fai Publishing.
- Sen, A. (2000). *Development as freedom*. Anchor Books.
- Sengers, F. (2017). Cycling the city, re-imagining the city: Envisioning urban sustainability transitions in Thailand. *Urban studies*, 54(12), 2763–2779.
- Thathong, K. (2010). A study of suitable environmental education process for Thai schools context. *Research in Higher Education Journal*, 7, 1–7. <https://www.aabri.com/manuscripts/09378.pdf>
- United Nations. (1992). *Rio declaration on environment and development* (No. E.73.II.A.14). United Nations Conference on Environment and Development. <http://www.un-documents.net/rio-dec.htm>
- Whitehead, M. (2014). Sustainability. In C. Death (Ed.), *Critical environmental politics* (pp. 257–266). Routledge.