Attitudes and Practices by the Muslim Society towards Environmental Issues: A Singapore Model

Masayu Fatimah Azzahrah¹, Masayu Mashita Maisarah¹ and M. Qomarul Huda¹ ¹UIN Syarif Hidayatullah Jakarta

Keywords: Environment, Sustainability, Religiosity, Muslim Singapore

Abstract: Relations between religion and sustainability has been discussed and documented widely throughout multiple countries. However, few pieces of research have been done in Singapore to determine the involvement of minority Muslim Singapore regarding earth conservation. By applying the descriptive qualitative procedure, the study tended to deal with this gap in two different ways: firstly, to portray an outline of Singaporean environmental perspectives and behaviours in general; and secondly, to identify the possibility of Muslims Singapore on contributing in earth conservation. The paper attempts to explain the attitudes and practices of the Muslim society in Singapore regarding environmental issues.

1 INTRODUCTION

Environmental problems are outspoken worldwide nowadays due to the effects of environmental degradation. Deforestation, air pollution, water pollution and other issues related have pushed the earth beyond its limits with an exponential increase in world population, which becomes a global challenge that requires a global solution. Countless declarations have called for changes in human activities that would harm the Many possible keys environment less. for transforming human behavioural direction have been put forward. Notions on planned behaviour, norm activation theory, the value-belief norm model, and the focus theory of normative conduct have been proposed as succinct models of environmentalfriendly concern and behaviour. Simultaneously, the self-reported environmental concern often does not decipher to the actual environmental-friendly behaviour (Swim, et al., 2011). As stated in Grifford (2011), this reality occurs partly because of as many as 30 psychological barriers to behaviour change have been described; the brief concepts and models may help to capture important portions of the manageability in environmental concern and behaviour, yet a full account should incorporate an expansive scope of social and political influences.

Different studies have tried to identify variables that either foster or prevent environmental-friendly attitude. In one pioneering study by Van Liere and Dunlap (1980), age, sex, income, education, occupational prestige, residence, political party, and political ideology found to be associated with environmental concern. In a recent review paper, Gifford & Nilsson (2014) identified 18 variables from personal and social factors associated with environmental concern. The role of 'religion' among those factors was considered significant, yet it was uncertain whether increasingly religious practice entailed progressively conservational concern or less.

A study by Chuvieco et al. (2016) depicts above argumentation. With a result that the relevance of religion to explain environmental quality is poor compared to other controlling factors, such as economic or social development; the paper concluded as "... no religion can be considered statistically friendlier to the environment, at least in consideration of effective policies that improve environmental quality. The religion should be associated with all others to explain final environmental performance." Based on this finding, questions can be raised: to what extent are religions bearing on environmental issues? How do religious beliefs affect a person's environmental stance and conduct?

Palpably the above questions have been discussed and documented throughout multiple countries regarding the relations between religion and the environment. Yet, to an extent the study on Singapore setting is missing regardless of the nation-state being home to multireligious traditions. Undeniably that Singapore is an interesting exploration site in light of the fact that within it lays a crossing point among modernity and tradition: Singapore adheres to an

Fatimah Azzahrah, M., Mashita Maisarah, M. and Huda, M.

In Proceedings of the 1st International Conference on Recent Innovations (ICRI 2018), pages 885-892 ISBN: 978-989-758-458-9

Attitudes and Practices by the Muslim Society towards Environmental Issues: A Singapore Model. DOI: 10.5220/0009919208850892

Copyright © 2020 by SCITEPRESS - Science and Technology Publications, Lda. All rights reserved

advancement approach that centres on monetary development and instrumental rationality, yet allows its people to participate in religious activities with certain degrees of autonomy.

With no intention to extend the discussion on Singapore's advantages; the nation has been criticised for rapid development into an urban nation over the last 30 years that neglected the natural environment, which ranked the country as the 'worst environmental offender among 179 countries' (Vaughan, 2010). On the other hand, as reported by Singapore's National Climate Change Secretariat's Climate Change Public Perception Survey, it shows that over a third of respondents in Singapore believed that their individual actions would not have any kind of effect to climate change (Tan, 2018). Concerning these matters, a study will conduct to identify Singaporeans viewpoints and behaviours towards environmental issues particularly from a minority Muslim perspective. Malay-Muslim Singapore was selected with a purpose to determine the involvement of minority Muslim Singapore regarding earth conversation.

2 ANALYTICAL FRAMEWORK

2.1 The Concept of Sustainability: An Overview

Sustainability has long been topics of public debate, particularly when it related to social movement and the politics of the environment. From its brief history, environmentalism evolved in three distinct stages: from nineteenth-century when preservationist seeking to protect areas of wilderness and natural beauty, to an interwar concern with urbanization and conservation, and finally, into the post-1950s mass movement. Shortly, environmental the environmentalism transformed in the 1960s inspired and influenced by the other social movements of the period, which emphasized the negative impacts of pollution on ecosystems and human health, and encouraged radical direct action and a quality of life approach to environmental politics (Hancock, 2018:19). This movements, according to Timberlake (1984), have impacted the changing view of 'environment' itself; from the preservation of natural life and pristine wilderness, to grasp such issues: exhaustion of non-renewable resources, depletion of species, squander, unequal distribution of assets, monetary development, urbanization, uniformity of industrial life, the non-sustainability of the modern culture, the control of science over other approaches to deal with information, the disintegration of local

cultures and the general powerlessness of the planet to support present rates of industrial and populace development. Hence, a definition was given in the Brundlandt report (1987) mentioned that sustainability is 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs.'

Based on above definition, sustainability can be identified when a state with social harmony, environmental wellness and economic prosperity or the so-called 'three main pillar of sustainability', concurrently exist in harmony. But how to synchronize this three components? Obviously, there is no single model of sustainable development works for all countries. Each country must adopt solutions to fit their specific circumstances and priorities. But sustainable development is not a solo mission. It is a collective goal and a country has much to learn from each other's experiences.

From a Singapore outlook, sustainability has dependably been indispensable to the record. Singapore venture towards sustainability began during the 1960s before ecological issues turned into a worldwide concern. Singapore was a juvenile country confronting high joblessness with an incompetent work drive, predominantly living in urban slums that needed sanitation and the help of sufficient public infrastructure. Nevertheless, Singapore pioneers at that period made intense inquiries to guarantee long-term sustainability. The founding Prime Minister, Mr Lee Kuan Yew, stated that, "I have always believed that a blighted urban jungle of concrete destroys the human spirits. We need the greenery of nature to lift up our spirits." National (Singapore Review Report, https://sustainabledevelopment.un.org/). Hence, two years after independence in 1967, Singapore launched the Garden City programme with a vision to make Singapore a highly liveable city filled with greenery.

Thus, Singapore's sustainability efforts can be refined into an efficient system that pioneers can apply to their own urban communities. In its quest for sustainable development, Singapore has held three steady results. Competitive economics have attracted investment and provided employment. besides that the existence of a sustainable environment can help developing cities, even though the available natural resources are limited, in terms of land and fresh water and quality of life. (Singapore Sustainability Blueprint, https://www.mewr.gov.sg/). These results are not generally at chances; solutions to accomplish one outcome can make open doors for another.

2.2 Singapore Environmental Sustainability

Looking back, the reason that transformed Singapore from a small city to environmentally sustainable is the role of government in communicating the vision. The Singapore government has constantly clarified to people in general that the national priority placed to the environment. The first yearly 'Keep Singapore Clean' campaign was launched in October 1968 by the Prime Minister Lee Kuan Yew, to educate all Singaporeans on the importance of keeping shared public spaces clean. This yearly battle went up against an extra measurement in 1971 with the launch of Tree Planting Day. A long way from being only one day in a year, Tree Planting Day symbolized the government's vision for Singapore to be transformed into a tropical garden city - both clean and green and turn into a tradition panning for the following twenty years. In 1990, the first Clean and Green Week (CGW) was launched, incorporating both to Keep Singapore Clean campaign and tree-planting activities. The campaign educates each individual about not making roads, waterways and public places dirty (Soon, et al., 2016:5).

Another reason was related to strict law enforcement. Based on a reality that regardless of how fruitful public education initiatives may be, there will constantly be a little gathering of people who remain recalcitrant. In 1968, the Ministry of Health carries out its battle against litterbugs through the Environmental Health Public Act (EHPA). The Act in its fourteen sections covers all fields of natural wellbeing. Specifically Part 3 (Public Cleansing), it manages with the cleansing of the street, the collection and removal of refuse, and the cleanliness of 'public places'. Comprehensive provisions against littering and the disposal of refuse in the public places were introduced. To accomplish the ideal results of enhancing public cleanliness, strict legislative provisions accompanied by equally serious enforcement. The combination of anti-littering laws with fines as penalties and the series annual 'Keep Singapore Clean' campaigns, and the Corrective Work Order (CWO) in place of a hefty fine, have helped reduce the littering problem to a large extent (2016:22). Other than littering, vandalism, chewing gum, smoking, urinating in elevators, not flushing toilet was other environmental issues related that become Singapore's concern on keeping the city safe and clean

Further reason regarding the Singapore successful story on environmental sustainability is that Singapore applying economic principles to environmental policy. There are four key zones in

which financial matters has assumed a key role in managing environmental policy: (i) in deciding between which projects or options to implement; (ii) in setting appropriate prices or user fees; (iii) when introducing market competition; and (iv) how market failures should be dealt with (2016:45). Notwithstanding the economics, to quicken the development of the environmental industry and to keep up Singapore's image as a City in a Garden, the government additionally started a few subsidizing and motivating force plans related to energy efficiency, clean energy, green buildings, water and environmental technologies, green transport and shipping, waste minimization, energy and greenhouse gas management, and environmental initiatives and training. Based on a compilation by Singapore Sustainability Alliance, presently, Singapore has 72 groups that are doing work related with the environment; and 35 government funding and incentives for the environment (Singapore Sustainability Alliance, http://ssa.sbf.org.sg/).

Singapore is certifiably not a green ideal world with zero carbon emissions, extensive scale sustainable energy sources, or cutting edge zeroenergy buildings. As Singapore is in the Inter-tropical Convergence Zone (ITCZ), its air composition and climate are vigorously affected by the breezes that bring mists and air from the northern and southern halves of the globe and natural and anthropogenic activities within the region. The activities such as land-use change and the related exercises in peatterrains would add to Singapore's air quality through trans-boundary transport, notwithstanding nearby Moreover, emanation sources. Singapore's geography is generally level, with most land under than 15 meter above sea level. Subsequently, this low-lying, densely populated country in profoundly defenceless against climate change effects (National Environmental Agency, https://www.nea.gov.sg/).

Addressing this matter, in 2007, the Singapore government commissioned a Climate Change Study to investigate Singapore's defencelessness on climate change. The specialists give a projection of climate change effects, i.e. changes in temperature, sea level and rainfall patterns in Singapore in the following century, and the impact of such effects, including increased flooding and impacts on water resources Climate (National Change Secretariat. https://www.nccs.gov.sg/). By result, Singapore pledged to reduce the Emissions Intensity (EI). The government through the National Environment Agency (NEA) actively promotes energy efficiency in the industry, household, and public sectors through legislation, incentives, and public education. In addition, set yearning focuses under 2030 pledge, and meeting them will require purposeful endeavours by

the administration, organizations, family units and people. These schemes are laid out in the *Climate Action Plan: Take Action Today, For a Carbon-Efficient Singapore* (National Climate Change Secretariat, 2016).

2.3 Sustainability and Islam

An interesting polls result sponsored by the Pew Forum Research shows that in contrast to abortion, gay marriage and other hot-button cultural issues, there is a fairly strong consensus across faith traditions on environmental policy. Protecting the environment become a priority after terrorism, the economy, health care and education across the spectrum (Pew Research religious Centre. http://www.pewforum.org/). This result accentuated that religion concerned with environmental issues. By principle, religious belief should be a strong motivation for environmental concern, as religions provide a cosmological view on how humans should relate to other creatures. Even more important, religious practices foster a moderate living, restricting consumerism.

Sustainability has a strong relation with religiosity, especially Islam. The basis of environmental protection in Islam is found in the notion that God created the world and set human beings in it to appreciate and painstakingly use it; environmental parity and sustainable care of nature are encouraged (Deen, 2012:299). Proceeding with the subject of stewardship and trusteeship (khilafah), individuals are allowed to appreciate the products of the earth, yet the earth must not be demolished for their descendants: 'Individuals ought not manhandle, abuse, or distort the natural resources as each generation is entitled to benefit from them yet is not qualified for "possess" them in an flat out sense'. Being caring to creatures is an 'article of faith' in Islam. Like humans, other living creatures have comparative rights to exist and flourish in this planet, individuals are 'commended' and with а responsibility to protect the environment and caring for the earth (Saniotis, 2011; Islam, 2012).

This above clarification shows that mankind in the world is not solely obligated as Allah's steward on the earth, yet likewise be considered responsible in the hereafter if there is any straying. Every single generation is obliged to enhance the condition in which preceding generations have left the earth. No generation has a privilege to contaminate the earth in a way that exhausts its assets and degrades its biological systems. Hence, Muslims are religiously compelled to manage the environment wisely manifesting their trusteeship to Allah. In so doing, it charts an environmental ethic and morality in Islam that melds human attitudes towards the environment.

3 METHODOLOGY

As an attempt to gather information on the attitudes and practices of Muslim Singapore toward nature, this study framed by a qualitative approach: a method that uses the natural setting as the direct source of data and the researcher as the key instrument (Rossman & Rallis, 1998). Such research involves a range of welldefined, through variable methods: informal interviews, direct observation, analyses of documentation by surveying a number of relevant libraries.

3.1 Naturalistic Observation

The investigation utilized a participant observation technique, in which the observers partake in the activities of the subjects. The primary information for the study is accumulated from an intensive fieldwork that occurred over than two weeks, from August 21 - September 4, 2018. The object of research was varied, consists of: 3 mosques, 1 madrasah, 1 public school, 1 wet market, 1 shopping centre; which located at different part of Singapore.

3.2 Informal Interviews

In selecting respondent, a purposive sampling technique was utilized to the preferred subjects due to specific attributes. We ended up by having interview with 12 muslimah from category: 3 elders, 5 students, 2 teachers, and 2 housewives. The little number is due to the limit time and inaccessibility to be piece of our respondent in the interview, some of them were rejected and a few acknowledged our demand.

In this paper, the reference to 'Muslim Singapore' are refers to Malay–Muslims. The Indian Muslims and Muslims from the 'Other' category are not included due to time.

3.3 Documentation

Finally, as an essential technique to break down the examination issue, bibliographical or library research is completed by reviewing number of significant libraries from which, books, articles, containing early discoveries are acquired.

4 **RESULTS AND DISCUSSION**

4.1 Muslim Singapore Religious Attitudes towards Nature

In quest of examining through deep search on religions and environment on literature, the authors have only found two papers related with Muslim Singapore context.

Firstly, a book chapter written by Sofiah Jamil (2009:119) emphasized on the need to promoting environmentalism within Singapore's Muslim community based on her preliminary attitudinal responses amongst Singapore's Muslim youths in Islamic environmentalism. Focusing on climate change issues, the author analysed the perceptions of on-the-street Singapore's Muslim youths toward Islamic environmentalism. The author found that only 60% of Singapore's Muslim youths considered them to be environmentally friendly; 50% never heard of Islamic environmentalism; while another 27% were unsure about it. From this outcome, respondents that positively made up approximately 23%, who cited cleanliness, no wastage, and man's responsibilities and role as the steward on earth as the main tenets of Islamic teachings on the environment. An overwhelming 78% agreed that Muslims would be more environmentally friendly if their religious leaders advocated the importance of caring for the environment; 89% noted that they would like to see more done by their religious leaders in promoting environmental awareness; and 77% respond positively to the question: 'Can Singapore Muslim Youths make a difference in encouraging people to be environmentally friendly?' These preliminary survey findings show the indicative of Singapore Muslim's attitudes toward the role of Islam in addressing environmental issues.

Differ from the previous study, the second paper was related to the issues on extremism. Mustazah Bahari and Muhammad Haniff Hassan (2015) in an article named *Islam's Moderate (Wasatiyah) Vision* and Jihad through Service to the Environment – Analysis, draw the significant Muslims' commitment to preservation fill in as a solid case of jihad in the more extensive setting. The 'jihad' represents the wasatiyah (moderate) vision of Islam. Hence, the endeavour to advance wasatiyah ought to run simultaneously with other efforts to counter the present issue on radicalization of Muslim youths globally.

As decade progressed, the perceptions of Muslim Singapore nowadays might gradually change. They more concerned about environmental protection. Respondents indicated that the need to protect the environment is part of Islamic teaching. Although some of our respondents have never heard about the term 'Islamic environmentalism', they are motivated to preserve the environment for the future generations. Even one of the respondents stated that she prefers her children to connect more to nature rather than technology.

Moreover, a few respondents implied that they do not want to predominantly conserve plant and species, or natural habitats over any other straightforwardly. They are bound to display the 'introverted' or thoughtful preservation practices by utilizing environment-friendly products, no littering, and include keeping the public clean. On the other hand, different respondents prone to act more by presenting a request of to an applicable government organization to take up preservation causes and furthermore signing a pledge for Climate Action.

Clearly, this above outcome indicated an environmentally-friendly attitude and practical from Muslim Singapore views. Regarding this Muslim Singapore pro-attitude, according to Ivy, et al. (1998) it was contributed from several factors: levels of education, social class, time perspective and knowledge on environmental issues. With these four factors, Singaporeans are definitely well equipped to understand the environmental messages taught to them.

In addition, Singapore religious groups desired for progressively societal activism and support as to protecting the environment. As indicated in the work of Andrew Chan and Md. Saidul Islam (2015):

"The issues of religious ecological concern can be proceed as a powerful overarching framework in directing the state and/or religious environmental policy to create both multicultural social cohesion and additionally environmental protection, and by doing as such add to maintaining the fundamental pillars of religious and national harmony in Singapore while simultaneously encouraging the participatory citizenship."

The above statement is in tune with the Islamic environmental ethics which can be emphasized through community participation. Herein lays a chance to create approaches that would be reasonable and adaptable, and would help to understand the environmental standards of Islam in in different agrarian and urban settings. Ecological principles communicated in the *shari'ah* may help with delivering rules in protection and contamination control. The manners by which principles of stewardship and accountability can be actualized for all intents and purposes will be dependent upon the explicit financial setting of every Muslim country. This will be an arduous task, consolidating the scholarly and monetary assets of policymakers, civil servants, ethicists, scientists, religious leaders, and the private sector.

As we presented earlier about the attitude of Muslim Singapore toward nature, it is interestingly to highlight that the previously distinguished research has not yet assessed the practical aspect of environmental issues. Thus, the following section will elaborate on the behaviour of Muslim Singapore towards nature.

4.2 Muslim Singapore Religious Practical towards Nature

In regard to Muslim Singapore action and movement toward nature, we highlighted several possibility contributions to environmental protection.

4.2.1 *Wudhu* (ablution) with Less Water

For Muslim, notably, water is an essential need to clean their body before performing worship. They do this 5 times per day, 35 times each week, 150 times each month, which all this means a ton of water. Notwithstanding, since water protection is an imperative inhabitant in Islam, one way Muslims can moderate water is to reduce the measure of water use amid *wudhu*.

In Singapore, *wudhu* usually has done with running water from a tap. Muslim Singapore have been taught to *wudhu* with less water. We visited mosques to observe the sermon and to look at the mosque's water-saving strategies. We saw how the mosque collects rainwater and condensate from the air-conditioning system for watering plants and cleaning floors.

This is certainly different from the shopping centre, since not all public toilets provide water. Concerning this issue, our respondents give solutions: (1) return back home quickly to perform prayer, (2) find the nearest mosques, (3) performing the *jama*' prayer, (4) keep ablution for the next prayer, and (5) bring a small bottle. The last solution was shown by a student in a mosque before, how she practices her ablutions in a water-efficient way with a small bottle of water. Last but not least, the Islamic Religious Council of Singapore (MUIS) also has launched 'MuslimSG' app, to help Muslim Singapore to stay connected with the prayer times, nearest places for pray, halal food, *khutbah*, classes & e-learning and religious matters.

4.2.2 Consuming NEWater

NEWater is the product name given to recycled water manufactured by Singapore's Public Utilities Board. Explicitly, it is dealt with wastewater (sewage) that has been filtered. The water is drinkable and is devoured by people.

With respect to this product, respondents concurred that the water can be consumed by Muslim and they consider it as *halal*. This is based on the 53rd *Muzakarah* of the Fatwa Committee National Council of Islamic Religious Affairs Malaysia that held on 27th November 2002 which examined the utilization of NEWater from an Islamic law point of view, and even MUIS has given a green light concerning the product.

4.2.3 Green Ifthar

Ifthar is the evening meal which Muslims end their daily Ramadan fast at sunset. In Singapore, mosques around the island will be working with government organizations to urge their congregants to have a more beneficial and greener Ramadan as component of their Touch of Ramadan campaign (Abdullah, 2016). The Muslim started to cut down oil and salt for its meals, as well as offer a platter of fruits and vegetables. They offer brown rice and grilled fish for up to 100 worshippers as well as hold talks throughout the month on the topic of healthy living from a religious perspective. In addition, this movement aims to get mosques to save up to 250,000 litters of water a week by getting worshippers to use less water when making ablution. The mosques also encouraged to move away from offering styrofoam or plastic utensils for their congregants to break their fast and to switch to reusable or biodegradable alternatives instead.

Unfortunately, this practice does not applicable yet to all places. Especially in Eid Fithri celebration, where there are so many guests coming to the house. Most houses have to cook plenty of food including meats to show a respect as a tradition and to show a respect towards the guests. And for convenience purposes, most houses will use disposable dishware which was made from plastic or styrofoam.

4.2.4 Social Organization

Other than above movement, we also search for a Muslim social organization that works for the environment. From 72 non-profit groups, we only found one group that obviously stating Islam and the environment protection. *FiTree*, under Ms. Nur Khairiana binte Mohd Malek, sorts out exercises including youthful Muslims from different mosques and *madrasahs* to advance familiarity with natural issues and open doors for positive commitments towards ecological protection. Most of the tasks are synergetic in nature, to build mindfulness that '*being Green is part of our Deen*'.

Other than *FiTree*, we also found Singapore Youth for Climate Action (SYCA), under the supervision of Ms. Nor Lastrina Hamid, a young Malay-Muslim Singapore. SYCA is a community of young Singapore residents who come together with a common goal: to take climate action. SYCA was started by a group of young Singaporeans who are already active on the local environmental scene.

5 CONCLUSIONS

We have presented the attitudes and practices of Muslim Singapore regarding earth conservation. Globally speaking, Muslim Singapore mostly has an environment-friendly attitude. However, there is a question on these Muslim attitudes and practices are based on the religious act or under control? Attributable to the complexity of Malay-Muslim Singapore as the minority, this paper asserts that there is a requirement for an inspection into various parts of Muslim environmentalism, and to what degree environmental practices are impacted by Islamic environmental ethics.

ACKNOWLEDGEMENTS

This work conducted within the Master Program of the Graduate School UIN Syarif Hidayatullah UIN Jakarta, and supported by Institution of Research and Community Engagement (LP2M) UIN Syarif Hidayatullah Jakarta. The authors gratefully acknowledge the helpful comments and suggestions of the reviewers, which have improved the presentation.

REFERENCES

- Abdullah, Z., "Mosques to offer a greener, healthier option this Ramadan." *The Straits Times*, 25th May 2016.
- Bahari M., and Hassan, M. H., "Islam's moderate (wasatiyah) vision and jihad through service to the environment - Analysis." Available at https://www.eurasiareview.com/04112015-islamsmoderate-wasatiyah-vision-and-jihad-through-serviceto-the-environment-analysis/
- Chan A., and Islam, M. S., "State, religion, and environmentalism: fostering social cohesion and environmental protection in Singapore," *Environmental Sociology*, pp. 1-13, 2015.
- Chuvieco, E., Burgui M., and Gallego-Alvarez, I., "Impact of religious beliefs on environmental indicators," *Worldviews*, Vol. 20, pp. 251-271, 2016.

- Deen, M. I. Y., "Islamic environmental ethics, law and society," in L. P. Pojman and P. Pojman, *Environmental Ethics: Readings in Theory and Application*, Wadsworth: Cengage Learning, 2012.
- *FiTree.* Available at https://greenfitree.wordpress.com/about/
- Gifford R., and Nilsson, A., "Personal and social factors that influence pro-environmental concern and behaviour: a review," *International Journal of Psychology*, Vol. 49, No. 3, pp. 141–157, 2014.
- Psychology, Vol. 49, No. 3, pp. 141–157, 2014.
 Gifford, R., "The dragons of inaction: Psychological barriers that limit climate change mitigation and adaptation," *American Psychologist*, Vol. 66, No. 4, pp. 290–302, 2011.
- Halal Industry Development Corporation, "The Consumption of NEWater," 2008, and Muhammad Haniff Hassan, *Meragui kesucian NEWater*. 18th July 2007
- Hancock, R. Islamic Environmentalism: Activism in the United States and Great Britain. New York: Routledge, 2018.
- Islam, M. S., "Old philosophy, new movement: the rise of the Islamic ecological paradigm in the discourse of environmentalism," *Nature and Culture*, Vol. 7, No. 1, pp. 72–94, 2012.
- Ivy, Tan GC., Road, K. S., Lee C. K., and Chuan, G. K., "A survey of environmental knowledge, attitudes and behaviour of students in Singapore," *International Research in Geographical and Environmental Education*, Vol. 7, 1998.
- Jamil, S., "Islam and environmentalism: greening our Muslims youth," in Muhammad Nawab and Farhan Ali (eds.). *Igniting Thought, Unleashing Youth*, Singapore: Select Publishing, Young AMP. 2009.
- Minister of Environment and Water Resources, "Singapore Sustainable Blueprint." Available at https://www.mewr.gov.sg/docs/defaultsource/module/ssb-publications/41f1d882-73f6-4a4a-964b-6c67091a0fe2.pdf
- National Climate Change Secretariat (NCCS), "Impact of Climate Change to Singapore." Available at https://www.nccs.gov.sg/climate-change-andsingapore/national-circumstances/impact-of-climatechange-on-singapore
- National Climate Change Secretariat, Singapore's Climate Action Plan: Take Action Today, For a Carbon Efficient Singapore, Singapore: NCCS, 2016.
- National Environment Agency (NEA), "Vulnerability and adaptation measures." Singapore's Second National Communication. Available at https://www.nea.gov.sg/docs/default-source/ourservices/climate-change/second-nc 12-nov-2010.pdf
- Pew Research Centre, "Religion and the environment: polls show strong backing for environmental protection across religious groups", 02 November 2014. Available at http://www.pewforum.org/2004/11/02/religion-andthe-environment-polls-show-strong-backing-forenvironmental-protection-across-religious-groups/

- Rossman G. B., and Rallis, S. F. Learning in the Field: An Introduction to Qualitative Research. Thousand Oaks: Sage Publications. 1998.
- Saniotis, A., "Muslims and ecology: fostering islamic environmental ethics," *Contemporary Islam*, pp. 155-171, 2011.
- Singapore Sustainability Alliance, "Singapore government funding and incentive for environment." Available at http://ssa.sbf.org.sg/resources.html
- Singapore Youth for Climate Action (SYCA). Available at https://sgyouthforclimateaction.com/about/
- Singapore's Voluntary National Review Report to the 2018 UN High-Level Political Forum on Sustainable Development, "Towards a Sustainable and Resilient Singapore." Available at https://sustainabledevelopment.un.org/content/docume nts/19439Singapores_Voluntary_National_Review_R eport v2.pdf
- Soon, T. Y., Jean L. T., and Tan, K., "Reflections on Singapore's environmental journey," in Tan Yong Soon (ed.). 50 Years of Environment: Singapore's Journey towards Environmental Sustainability. Singapore: World Scientific, 2016.
- Swim, J. K., Stern, P. C., Doherty, T. J., Clayton, S., Reser, J. P., Weber, E. U., Gifford, R., and Howard, G. S. "Psychology's contributions to understanding and addressing global climate change mitigation and adaptation," *American Psychologist*, Vol. 66, No. 4, pp. 241–250, 2011.
- Tan, A., "Most Singaporean worry about impact of climate change but few think their actions matter," 28 January 2018. Available at https://www.straitstimes.com/singapore/environment/s ingapore-launches-its-year-of-climate-action-masagosurges-people-and
- Timberlake, L. "The emergence of environmental awareness in the West," in Ziauddin Sarda (ed.), *The Touch of Midas: Science, Values and Environment in Islam and the West.* Goa, India: The Other India Press, 1984.
- Van Liere, K. D., and Dunlap, R. E., "The social bases of environmental concern: A review of hypotheses, explanations and empirical evidence," *The Public Opinion Quarterly*, Vol. 44, No. 22, pp. 181–197, Summer, 1990.
- Vaughan, V., "Is Singapore the worst environmental offender?" 14 May 2010. Available at http://newshub.nus.edu.sg/news/1005/PDF/ENVIRON MENTAL-st-14may-pB1.pdf
- World Commission on Environment and Development (WCED), "Towards Sustainable Development" in *Our Common Future, Report of the World Commission on Environment and Development,* Switzerland: WCED, 1987. Available at https://www.are.admin.ch/are/en/home/sustainabledevelopment/international-

cooperation/2030agenda/un-_-milestones-insustainable-development/1987--brundtland-report.html