Session 5: Promoting Sustainable Solutions

Case Study of Malaysia

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Member, International Bioethics Committee (IBC), UNESCO
Member, National Bioethics Council (MBEN), Malaysia

7 December 2017 | Le Meridien Hotel, Jakarta, INDONESIA
We stand at a critical moment in Earth’s history, a time when humanity must choose its future. As the world becomes increasingly interdependent and fragile, the future at once holds great peril and great promise. To move forward we must recognise that in the midst of a magnificent diversity of cultures and life forms we are one human family and one Earth community with a common destiny. We must join together to bring forth a sustainable global society founded on respect for nature, universal human rights, economic justice, and a culture of peace. Towards this end, it is imperative that we, the peoples of Earth, declare our responsibility to one another, to the greater community of life, and to future generations.

Time to Take Action – If Not Now, When? If Not Us, Who?
Malaysian Initiatives in Promoting Sustainable Solutions

Malaysian Initiatives include:
1. UNESCO Langkawi GeoPark
2. UNESCO Tasik Chini Biosphere Reserve
3. UNESCO Help Langat River Basin
4. UNESCO Putrajaya Ecohydrology Demonstration Site
5. Rehabilitation of North Selangor Peat Swamp Forest
6. Giant Clam Conservation
7. Green Pasar Malam Community
8. Green Deen Efforts (Fiqh al-Biah, Junior Ecology Camp, Environmental Publication by IKIM, Eko-Pesantren, Environmental ethics and sustainability seminars, interfaith dialogues, radio/ tv programmes)

- Stakeholders need to work together more – civil society initiatives IMPORTANT
- Role of cultural-religious values in changing attitudes
Roles of religion and ethics in addressing climate change

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ABSTRACT: After a brief introduction summarizing current climate change knowledge and potential responses, climate ethics are discussed within an historical context and a preliminary timeline of climate ethics is set forth. The paper argues as its central thesis that religion has major roles to play in enabling the world’s societies and individuals to take the actions necessary to address climate change causes, impacts, and related issues in an effective and ethical manner. The pivotal roles of religion in issues of climate change and environmental justice hinge primarily on religions’ functions in society, ethical teachings, reach and influence, and ability to inspire adherents to action. Religions’ ability to inspire action is evaluated empirically against data from 2 compilations of religious activity on climate change. The analysis indicates significant religiously based involvement and influence on ethical aspects of climate change and point to much greater potential for the role of religion in future solutions to the climate crisis.

Roles of Culture/ Indigenous Values in Promoting SDGs

• Culture e.g. religion has a major role to play in addressing climate change/promoting SDGs.

• Role is empirically verified.

• Religious ability/function is through its ethical teaching, its reach and influence as well as ability to inspire its adherents (Muslims, Buddhists, Christians prominent in South-East Asia).

• Potential for the role of religion in future solutions to environmental issues such as haze and climate change very much emphasized because it is linked to the ethical aspect of the environmental crisis/problem.

It is the **only one Global Geopark in Malaysia since 2007** which transformed from idyllic fisherman and farmer community to thriving eco-tourism industry.

It is co-managed by the Langkawi Development Authority (LADA) and Langkawi Geopark Management Committee chaired by the Kedah Chief Minister.
UNESCO TASIK CHINI BIOSPHERE RESERVE

It is UNESCO’s first biosphere reserve in Pekan, Pahang, Malaysia.

A thorough research was carried out by the Tasik Chini Research Centre, Universiti Kebangsaan Malaysia to ensure that the laboratory in that place is green and blended with the environment.

Source: (Idris, 2017)
UNESCO HELP LANGAT RIVER BASIN

Langat River Basin is recognized as one of the Hydrology for the Environment, Life and Policy (HELP) Basin since 2004 under UNESCO led by IHP.

It is located in the fastest development area of the country and unique in characteristic because of its drainage through three different jurisdiction.

Mokhtar et al., (2017) @ TJC
Source: (Elfithri, 2017)
UNESCO PUTRAJAYA ECOHYDROLOGY DEMONSTRATION SITE

It is recognized as one of the 32 Ecohydrology Demonstration Sites of UNESCO-IHP Ecohydrology Programme (EHP) in the world since 2010 and has been classified as an Operational Demo Site which is implementing Ecohydrology principles and involved with stakeholders in project management.

Source: (Elfithri, 2017)
REHABILITATION OF NORTH SELANGOR PEAT SWAMP FOREST

During 1998-2008 a portion of the North Selangor Swamp Forest including some permanent reserved forest was encroached and cleared for agriculture. In 2008 Selangor Forest Dept. evicted the illegal settlers and reclaimed the forest land in order to implement conservation programme along community participation as well as peat swamp forest fire prevention.

Source: (Ahmad, 2017)
Johor-Biotech Corporation has been conducting giant clam conservation project since 2008 which is led by the biodiversity team in collaboration with Universiti Sains Malaysia.

The project is ongoing with a mission to culture Malaysia’s own Tridacna gigas.
Green Pasar Malam Community aims to provide green technology such as solar energy to the public.

Pasar Tani Putrajaya consists of 385 stalls, operated every Tuesday and Friday and it is one of the busiest night markets.

A total of 9 caravan type stalls were selected to give a set of solar lighting systems.
<table>
<thead>
<tr>
<th>Rank</th>
<th>Country</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sweden</td>
<td>100</td>
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<tr>
<td>2</td>
<td>Denmark</td>
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<td>3</td>
<td>Finland</td>
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<td>4</td>
<td>Norway</td>
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<td>5</td>
<td>Czech Republic</td>
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<td>6</td>
<td>Switzerland</td>
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<td>7</td>
<td>Austria</td>
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<td>Slovenia</td>
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<td>Germany</td>
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<td>10</td>
<td>France</td>
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<td>United States</td>
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<td>61</td>
<td>Singapore</td>
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<td>71</td>
<td>China</td>
<td>43.9</td>
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<tr>
<td>77</td>
<td>UAE</td>
<td>27.5</td>
</tr>
</tbody>
</table>

*Note: The image also includes a banner with the text 'INSPIRING ● INNOVATION ● SUSTAINABILITY' at the bottom.*
Guiding Principles of Universal Declaration on Bioethics and Human Rights (UDBHR) NEED TO BE PROMOTED → Role of National Bioethics Committees (NBCs)

- **Article 12**: Respect for cultural diversity and plurality
- **Article 13**: Solidarity and cooperation
- **Article 14**: Social responsibility and health
- **Article 15**: Sharing of benefits
- **Article 16**: Protecting future generation
- **Article 17**: Protection of the environment, the biosphere and biodiversity
- **Article 23**: Bioethics education, training and information
- **Article 24**: International cooperation
Institute of Islamic Understanding Malaysia (IKIM) and partners are conducting a research entitled **Bioethical Perspectives of Haze in Malaysia** through its Centre for Science and Environmental Studies to get some perspectives from Malaysian companies involved in plantations.

**Objective**

To incorporate the bioethical dimension to achieve transformative thinking and action in regards to the issue of haze in particular and sustainable agricultural practices in general within the effected communities and among the policy makers.

- This project is fully funded by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The objective of the research is:
  a. to understand the level of understanding, awareness and adoption of the UNESCO’s Universal Declaration of Bioethics and Human Rights (UDBHR) in business models/practices among plantation companies in Malaysia; and
  b. to conduct a baseline study on the understanding of the bioethics of haze in Malaysia.
ASM Local & Transboundary Haze Report
- Project Scopes

• Legal-Policy
• Institutional
• Financial; and
• Technology assessments

• ETHICS?

On
- Air Quality & Haze Episode
- Peat Area & Water Management, and
- Waste to Resource: Energy or Materials
Bioethical Awareness Still Lacking Among Agencies

(A Study on Plantation Companies in Malaysia)

• **Questionnaire Structure (26 questions)**
  • **Part 1** → awareness of UDBHR and its Principles (Article 4, Article 16, Article 17, Article 20)
  • **Part 2** → background and companies’ activities.
  • **Part 3** → focus group discussion/one-to-one interview.

• **Survey result**
  • No response – not interested to participate.
  • Lack of awareness among the companies.
  • Fear of being seen to be irresponsible.
  • However, ideas exist on how to overcome the haze problem.
# List of Plantation Companies in Malaysia

*(targeted for survey on Bioethical Perspectives of Haze)*

<table>
<thead>
<tr>
<th>No.</th>
<th>Company Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>United Plantations Berhad</td>
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<td>2</td>
<td>Kwantas Corporation Berhad</td>
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<td>3</td>
<td>Boustead Plantations Berhad</td>
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<td>4</td>
<td>Bld Plantation Berhad</td>
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<td>5</td>
<td>Chin Teck Plantations Berhad</td>
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<td>6</td>
<td>Felda Global Ventures Holdings Berhad</td>
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<td>7</td>
<td>Genting Plantations Berhad</td>
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<td>8</td>
<td>Hap Seng Plantations Holdings</td>
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<td>9</td>
<td>Ijm Plantations Bhd</td>
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<td>Innoprise Plantations Berhad</td>
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<td>Mhc Plantations Berhad</td>
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<td>12</td>
<td>Pls Plantations Berhad</td>
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<tr>
<td>13</td>
<td>Sarawak Plantation Berhad</td>
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<td>14</td>
<td>Th Plantations Bhd</td>
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<td>15</td>
<td>Astral Asia Berhad</td>
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<td>16</td>
<td>Batu Kawan Berhad</td>
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<td>17</td>
<td>Cepatwawasan Group Berhad</td>
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<td>18</td>
<td>Dutaland Berhad</td>
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<td>19</td>
<td>Far East Holdings Berhad</td>
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<td>20</td>
<td>Golden Land Berhad</td>
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<td>Gopeng Berhad</td>
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<td>Ioi Corporation Berhad</td>
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<td>25</td>
<td>Kuala Lumpur Kepong Berhad</td>
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<td>26</td>
<td>Kluang Rubber Company (Malaya) Berhad</td>
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<td>27</td>
<td>Kim Loong Resources Berhad</td>
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<tr>
<td>28</td>
<td>Kretam Holdings Berhad</td>
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<td>29</td>
<td>Malpac Holdings Berhad</td>
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<td>30</td>
<td>Matang Berhad</td>
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<td>31</td>
<td>NPC Resources Berhad</td>
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<td>32</td>
<td>Negri Sembilan Oil Palms Berhad</td>
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<td>33</td>
<td>Pinehill Pacific Berhad</td>
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<td>34</td>
<td>Rimbunan Sawit Berhad</td>
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<td>35</td>
<td>Riverview Rubber Estates Berhad</td>
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<td>36</td>
<td>Suang Bagan Rubber Company (Malaya) Berhad</td>
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<tr>
<td>37</td>
<td>Sin Heng Chan (Malaya) Berhad</td>
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<td>38</td>
<td>Sarawak Oil Palm Berhad</td>
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<td>39</td>
<td>Tdm Berhad</td>
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<td>40</td>
<td>Tsh Resources Berhad</td>
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<tr>
<td>41</td>
<td>United Malacca Berhad</td>
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</tbody>
</table>
Expert Group Consultation (EGC) on Bioethical Perspective of Haze in Malaysia
18 September 2017, Grand Hall, IKIM
Discussions

Session 1: International & Intergovernmental Initiatives in the Reduction and Management of Haze in Malaysia

Session 2: Tackling Haze Problem through Ethical Investment & Best Agricultural Practices

Session 3: The Bioethical Dimensions of Haze
Inputs from EGC Kuala Lumpur

Session 1: International and Intra-governmental Initiatives in The Reduction and Management of Haze in Malaysia

“…the government initiatives are taken at the national levels and regional levels pertaining to the haze problem that happen in the country.”

(Article 4: Benefit and harm)
(Article 17: Protection of the environment, the biosphere and biodiversity)
(Article 24: International cooperation)

“…the management of haze in Malaysia covers all range of departments involves Meteorological Department and other local departments as well. The law called Environmental Quality Order (Declared Activities) (Open Burning) 2003 is imposed to prevent such activities that promotes haze especially the open burning.”

(Article 18: Decision-making and addressing bioethical issues)
(Article 20: Risk assessment and management)
“...Malaysia has made a commitment to the Sustainable Development Goals (SDG) at the United Nation Sustainable Development Summit in New York on 27th September 2015.”

“...Prime Minister of Malaysia in his speech has declared that Malaysia is absolutely committed to the Post 2015 agenda which is the SDG and also Malaysia’s aspirations to transform the world by 2030.”

“...Prime Minister reaffirmed Malaysia’s commitment to support and implement the 2030 Agenda for Sustainable Development via green technology (sic). Malaysia is now about to embark on its next 5 years development plan precisely the Eleventh Malaysia Plan, starting 2016 until 2020. In many aspects, the plan mirrors the multidimensional nature of the SDG, and has been formulated with the people at the centre of all development efforts.“

(Article 17: Protection of the environment, the biosphere and biodiversity)

(Article 24: International cooperation)
“…Sime Darby plantation is actually **strictly following zero burning policy** throughout its operation since 1985. 

(Article 20: Risk assessment and management) 
(Article 14: Social responsibility and health)

“…transboundary haze is also a concern to all. **We need to have more players in collaboration** with NGOs institution as well as government sectors to handle/ manage this haze issue.”

(Article 13: Solidarity and cooperation)

“…the importance of education and awareness among the plantation companies to stop the slashing and burning activities but rather **adopt a more environmental friendly method** in their land clearing. Companies regardless of their size **must be held accountable before the law and market if they were found to be guilty.**”

(Article 23: Bioethics education, training and information)
“…MSPO standard addresses sustainability issues and challenges in relation to the multi-stakeholders involved in the palm oil industry in Malaysia. MSPO describes the sustainability requirements for the production throughout the supply chain from palm oil plantation up until the consumers.”

(Article 20: Risk assessment and management)
(Article 14: Social responsibility and health)

“…seven (7) principles in MSPO standard are (1) management commitment and responsibility, (2) transparency, (3) compliance to legal requirements, (4) social responsibility, health, safety, and employment conditions, (5) environment, natural resources, biodiversity and ecosystem services, (6) best practices and (7) development of new plantings.

(Article 18: Decision-making and addressing bioethical issues)
(Article 17: Protection of the environment, the biosphere and biodiversity)
“…from the ethical perspective of the organization, there are three (3) views that are promoting sustainability practices which are environmentalist view, business view and humanist view.

“…ethical investment allowing the opportunity for the investors to invest in companies in shares, stock whereby they did not disregard the ethical conscious. “

“Screening is the process for vetting companies which excludes from investment those whose activities conflict with our ethical views, and approves for investment companies whose activities either don’t raise concerns, or have positive social or environmental benefits.

(Article 14: Social responsibility and health)
"...stakeholder engagement is important in certification for sustainable practice for palm oil production for RSPO."

(Article 13: Solidarity and cooperation)
(Article 17: Protection of the environment, the biosphere and biodiversity)

"...the ethical investment presented by University of Malaya and the reputation, certification, operational disruption discussed by Sime Darby are all indicate the common understanding among the industry/corporate and financial perspective towards sustainable development/practices."

(Article 14: Social responsibility and health)
(Article 16: Protecting future generation)
“… it consists of whole array of things that can be done/considered which comes from awareness, assessment, and business part such as planning, public policy, corporate sectors as well as the technologist. The ethical component must be as part of the whole gametes of solution that should be worked upon.”

(Article 24: International cooperation)
(Article 13: Solidarity and cooperation)
(Article 23: Bioethics education, training and information)
“...the concept of SD is to ensure that today's needs are met without endangering the needs of the future generation. We only have one planet Earth to live in and the resources are not limitless. Hence, proper planning is needed in order to ensure sustainability in a way that the economy is progressing and the environment is looked after."

(Article 16: Protecting future generation)

“...sustainability must be undertaken in various sectors such as in agriculture, ecology/environment, industry, health, economy as well as in socio-cultural level. ”

(Article 13: Solidarity and cooperation)

(Article 12: Respect for cultural diversity and pluralism)

“...Islam emphasizes a three-dimensional relationship between: man and God, man and man, man and the environment. Sustainability must also take into consideration the intangibles that are the cultural, moral and spiritual dimensions.

(Article 17: Protection of the environment, the biosphere and biodiversity)
“...broadly speaking, there are many religious principles for Muslims to base their environmental ethics on. These examples include: principle of vicegerency (khalifah), trustworthy (amanah) and balance/equilibrium (mizan). “

“...the following is an example:

**Corruption has appeared on land and sea,**
*Because of what people’s own hands have wrought,*
*So that they may taste something of what they have done; So that hopefully they will turn back.*

(Quran 30:41)

“...the understanding or the awareness about being accountable for what we did is very much related to the discussion of haze problem - connection to the maqasid al-shariah, e.g protection of lineage (sic)”

(Article 16: Protecting future generation)
(Article 12: Respect for cultural diversity and pluralism)
(Article 17: Protection of the environment, the biosphere and biodiversity)
The Ethical Principles in Terms of Haze Issue

• The ethical principles which are mainly practiced/ applied in medical or life sciences field is also relevant in the context of haze issue:

  1. **Autonomy**: the right that individual has to make his own decision.
  2. **Beneficent**: one should take positive step.
  3. **Non-maleficent**: one should avoid causing harm.
  4. **Justice**: fair distribution among all human kind, be they are poor or rich, everyone deserves to breathe in a clean air. (Article 15: Sharing of benefits)

• Haze is the interdisciplinary and in fact multidisciplinary issue as well.
Air Monitoring Station
Continuous Air Quality Monitoring System (CAQM)
Inputs from EGC Kuala Lumpur

Air Quality Monitoring Network

*Alam Sekitar Malaysia (ASMA) Air Monitoring Station
Haze History in Malaysia (HHM)  
(Academy of Sciences input to government)

Note: All of this API is based on PM$_{10}$

Source: Academy of Science Malaysia  (2017)
<table>
<thead>
<tr>
<th>YEAR</th>
<th>HIGHEST API VALUE (VENUE)</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>1983</td>
<td>API Data not available</td>
<td>• First record of haze in Malaysia</td>
</tr>
</tbody>
</table>
| 1997 | 839 (Kuching)            | • Worsened by El Nino  
• Haze emergency declared in Sarawak  
• Caused by forest and peat fires  
• 29 Continuous Air Quality Monitoring Stations (CAQMS) had PM10 concentration exceeding the Malaysian Ambient Air Quality Guidelines (MAAQG) |
| 2005 | 541 (Kuala Selangor)     | • Haze emergency was declared in 11 August  
• Few flights were suspended |
### HHM (cont’d)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>HIGHEST API VALUE (VENUE)</th>
<th>NOTES</th>
</tr>
</thead>
</table>
| 2006 | 222 (Sri Aman)            | • Moderate haze episodes in mid-July, mid-August and late September to October 2006  
• 20 stations in Peninsular Malaysia recorded API value 101-200 |
| 2009 | 299 (Sibu)                | • Haze began in early June 2009 and progressively became worse toward July  
• Primary cause of this event was the slash and burn practices used to clear land for agricultural purposes in Sumatra, Indonesia |
| 2010 | 432 (Muar)                | • Due to transboundary haze as a result of land and forest fires from Central Sumatera  
• Short period of haze episode from 19-23 October  
• Occurred in southern part of Peninsular Malaysia  
• Schools were closed in Muar on 21 October |
### HHM (cont’d)

<table>
<thead>
<tr>
<th>YEAR</th>
<th>HIGHEST API VALUE (VENUE)</th>
<th>NOTES</th>
</tr>
</thead>
</table>
| 2013 | 762 (Muar) | • Short period of severe haze episode from 15 to 27 June 2013 due to transboundary pollution  
• The most affected areas were Johor, Melaka and Negeri Sembilan  
• Haze Emergency was declared on 23 June 2013 in Muar and Ledang Districts, Johor. The Haze Emergency was lifted on 24 June 2013 |
| 2015 | 308 (Shah Alam) | • Deterioration of air quality from August to September due to massive land and forest fires in Sumatra and Kalimantan  
• Considered as the worst after 1997 Haze due to prolonged haze duration (>2 months) |

**Summary:** Haze episodes in Malaysia happened almost every year, with the highest frequencies (cases) and API recorded between 2009 - 2016
Sources of Haze

Land-use changes

Slash and burn

Peat combustion

Burning within oil palm plantation

Local anthropogenic activities
Sources of Haze (Peat soil)

Rein et al. (2008)
Impact of Haze

- HEALTH
- ECONOMIC
- AGRICULTURE
- BIODIVERSITY
1. **Common symptoms during haze**
   - throat irritation, coughing, difficulty in breathing, nasal congestion, sore eyes, cold attacks and chest pain.

2. Several studies shows **increased in asthma, conjunctivitis and acute respiratory infections** during haze episodes.

3. In 1997, number of outpatient visits for
   - **Kuching**: Asthma and respiratory diseases increased from 2-to-3 times during the peak haze period (in Kuching)
   - **KL**: Respiratory disease outpatient visits increased from 250 to 800 a day

4. A case-crossover analysis of forest fire haze events 2000-to-2007 showed an immediate increase of **19% in respiratory mortality** and also the immediate and **delayed effects on mortality**.
### Aggregate value of haze damage in 1997
(Mohd Shahwahid & Othman 1999)

<table>
<thead>
<tr>
<th>Type of damage</th>
<th>RM Million</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Productivity loss during the state of emergency</td>
<td>393.51</td>
<td>49.1</td>
</tr>
<tr>
<td>Decline in tourist arrivals</td>
<td>318.55</td>
<td>39.7</td>
</tr>
<tr>
<td>Decline in fish landings</td>
<td>40.58</td>
<td>5</td>
</tr>
<tr>
<td>Cost of fire-fighting</td>
<td>25</td>
<td>3.1</td>
</tr>
<tr>
<td>Adjusted cost of illness</td>
<td>21.02</td>
<td>2.6</td>
</tr>
<tr>
<td>Cloud seeding</td>
<td>2.08</td>
<td>0.3</td>
</tr>
<tr>
<td>Expenditure on masks</td>
<td>0.71</td>
<td>0.1</td>
</tr>
<tr>
<td>Flight cancellations</td>
<td>0.45</td>
<td>0.1</td>
</tr>
<tr>
<td><strong>Total damage cost</strong></td>
<td><strong>801.9</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
</table>
• Reduction in total solar radiation can affect crop productivity

• According to Nichol (1997), a research by the Forest Research Institute of Malaysia found that two varieties of hybrid rice in Malaysia, MR151 and MR123, experienced a 50% reduction in growth rate and abnormal.

• Paddy rice in Indonesia suffered a 2-3% reduction in yield during the haze.

• Henson (2001) found that haze effect the palm oil productivity
Biodiversity Impact

“The haze fires generated around 600 million tonnes of greenhouse gases - roughly equivalent to Germany’s entire annual output and economically stripped the three countries involved of US$9bil.”

Source: The Star Online (2016) |
Policies/Committee/Programs

National Policy

• Environmental Quality Order (Declared Activities) (Open Burning) 2003
• National Haze Action plan
• Fire Prevention Action Plan
• Clean Air Action Plan (CAAP)
• Zero Burning Policy of Oil Palm Cultivation

Committee

• National Haze Committee (chaired by Deputy Prime Minister)

Programme

• Fire Prevention & Peatland Management Programme
Regional Initiatives

1. Regional Initiatives
   - 1995 ASEAN Cooperation Plan on Transboundary Pollution
   - The Haze Technical Task Force 1995
   - 1997 Regional Haze Action Plan (RHAP)
   - 2002 ASEAN Agreement on Transboundary Haze Pollution (Haze Agreement)
   - 2004 Conference of Parties to ASEAN Agreement on Transboundary Haze Pollution
   - 2006 Sub-Regional Ministerial Steering Committee (MSC) on Transboundary Haze Pollution

2. Track II Diplomacy Initiatives
   - Initiatives taken by Think-tanks, Thought Leaders, Sophisticated Business

3. ASEAN Charter
   - The ASEAN Social-Cultural Community Council
   - The ASEAN Environment Ministers – COP – ASEAN Haze Agreement
Management of natural resources and land clearing practices - **Cost of burning** is USD100 per hectare or USD7 per day, But ZERO-BURNING is reported to cost USD600 per hectare.

Predicting the intensity and duration of the haze episode - variables depend on “hotspots” and meteorological factors.

**Policies generally not well promoted/adopted/implemented**
1. The sciences contribute to a better understanding -
   – characteristics and origin of transboundary haze, meteorology and atmospheric ability to disperse/dilute pollutants.
   – The need for weather data for Malaysia Fire Danger Rating System or FDRS (under Meteorological Department), pairing of satellite data with on-the-ground investigations, collaborative actions.

   – El Nino a predictable event. Preventives measures to be taken.
   – Crucial to also study influence of El-Niño and future trajectory of haze
3. **Innovative efforts**
   - Scientific collaboration - improve foreign policy action in addressing the haze through scientific knowledge or technological solution.
   - Knowledge brokers and technology developers have a responsibility. Interface process to allow “space”.

   - Require government response guidelines to long-term and severe exposure to haze – help government to implement activation of local evacuation plan based on API/PSI, identification of vulnerable groups and provision of immediate aid.
   - Medical preparedness – not just firefighting system

5. **Economic opportunities**
   - Cost-sharing approach for fire prevention and control and ecosystem services
Regional Governance - ASEAN 1: Ecosystem

1. **Zero-burning Policy**: economic incentive to burn.
   - If this cannot be addressed zero-burning or turning biomass into renewable energy or some other material will be a failure.
   - If economical logistics cannot be organised to bring biomass to a central processing plant, this will be another major constraint

2. **Innovate new forms of interaction:**
   - ASEAN to address specific issues such as breakpoint for calculations of air quality indexes or bringing thought leaders and sophisticated business to dialogue on shared values or even initiate on systematic health preparedness measures

3. **Public Pressure** on allocating blame, responsibility and appropriate behaviour, pushing for shared value
**Initiatives at National Level**

- The **High Level Council Meeting on Disaster** chaired by the Deputy Prime Minister of Malaysia is established to discuss the inter-agencies preparation and readiness to face the disasters including possible haze during dry and hot period.
- **Activation of Open Burning Prevention Action Plan** and activation the **Standard Operating Procedure (SOP)** to prevent open burning and peatland fires. **Environmental Quality Act 1974 (DOE, NRE).**
- **Stern legal action against open burning** at construction sites, industrial areas & plantations; close monitoring for peatfires with daily patrols (DOE).

**Initiatives at Regional Levels**

- **Negotiations and cooperation** in dealing with transboundary haze pollution among ASEAN countries.
- **Sub-regional Ministerial Committee (MSC) Meeting on Transboundary Haze Pollution** (southern ASEAN countries & northern ASEAN (Mekong MSC).
- **Roadmap on ASEAN Cooperation Towards Transboundary Haze Pollution with Means of Implementation by 2020.**
- **Regional Haze 2015 Impact Study** to gauge health, socio and economic impacts of the haze in ASEAN.

Source: Department of Environment Malaysia, (2017)
UN Climate Chief: Faith groups must act on climate change

UN Climate Chief Christiana Figueres has condemned climate change as “one of the great humanitarian issues of our time”, arguing that faith leaders must take a stronger stance against it and encourage their followers to do the same.

In an article for the Guardian, Figueres contends that “Saving the Earth and its peoples from dangerous climate change is an economic, social and environmental issue and moral imperative.”

Source: http://www.christiantoday.com/article/un.climate.chief.faith.groups.must.act.on.climate.change/37288.htm
International Conference on Religion & Civilisational Sustainability

20 – 21 Februari 2017, Dewan Besar IKIM

- to promote mutual understanding between people of different faith traditions in understanding the link between religion and sustainability/sustainable development.

- to provide a platform for scientists, people of faiths, and policy makers to discuss and engage in various issues concerning science and the complex interrelationships between science, religion, and socio-economic development.

- to provide the religious understanding/dimension for sustainability solutions in important aspect of civilization.
Ethics Teachers Training Course (ETTC)
Kuala Lumpur
Grand Hall, Institute of Islamic Understanding Malaysia (IKIM)
7th – 11th November 2016
We share a moral obligation to not harm others, to be fair and to care for the vulnerable.
The Global Interfaith Movement

PARLIAMENT OF THE WORLD’S RELIGIONS

Spiritual Leaders Deliver Interfaith Climate Declaration at COP23 - By Bicycle

Personal Commitment and Invitation to UN Climate Conference:
“ Walk Gently on Earth”

2017 United Nations Climate Change Conference (COP23), Bonn, Germany

#WalkOnEarthGently
A Multi-Faith Movement to Sustainable Lifestyles

https://parliamentofreligions.org
Faith Groups, NGOs, Youth? What Can They DO
*Corruption has appeared on land and sea,
Because of what people’s own hands have wrought,
So that they may taste something of what they have done;
So that hopefully they will turn back.

(Quran 30:41)

*The corruption (fasād) that humans have caused on the Earth
Islamic Model to Address Climate Change/Promoting SDGs

(Article 12: Respect for cultural diversity and pluralism)

- Three (3) components: Green Jihad, Ijtihad and Zuhd → Green JIZ → represents a holistic response to climate change from an Islamic perspective.

- Green Jihad → harnessing the civil society activism to save nature and people’s right in a free, safe and healthy living → unlocking the potential of human innovation to improve human well-being.

- Green Zuhd → living tightly on earth and to avoid over consumption, overuse and over-exploitation of resources → Muslims as a median community of all nations (as ummatan wasatan) → should take responsibility & transcend the consumer culture and develop models for renewable energy and clean production.

- Input for Fiqh al-Biah → schools/universities.

- Islam is Deen = total way of life.

The Sustainability Imperative

- Wisdom (hikma)
- Justice (adl)
- Public Interest (maslaha)
- Innovation (ijtihad)

A Model for Addressing the Haze Issue from the Religious (Islamic) Perspective

Green Development

Islamic Finance

Green Zuhd (Lifestyle)

Education

Green Jihad (Activism)

Green Ijtihad (Innovation)

People-Centered

Religious Principles (Islamic) for Sustainable Development

- **Awareness** - pollution and corruption (*fasad*) are due to the breaking of the unity between man, nature and the Creator (*hablum minannas, hablum minallah, hablum minalbi’ah*)

- **Mechanism** – rules and regulations (*fiqh al-biah*) based on environmental ethics + ecological knowledge have to be implemented via shariah and civil law. Concept of *geocide* have to be introduced.

- **Transformational leadership** to address the threats of climate change glocally. Leadership modules, example by INTAN and local universities to be introduced.

- **Religious teachings/preachings** need to take on board discourses regarding the principles of *trusteeship* (*amanah*), *Green Jihad* (striving), *Ijtihad* (innovation), *Zuhd* (moderate living) and *Islah* (renewal) among others.

- **Green JIZ** (Al-Jayoussi, 2012)

Islamic Declaration On Climate Change

Declaration consists:

• **Preamble** – the what & why of climate change
• **Affirmation** – the Islamic view regarding environment & climate change
• **Suggestion (call)** – call for responding the way *(shariah)* & living alongside it *(maqasid shariah)*
• **To do list** for stakeholders, citizens, leaders, governments, corporations etc
Formal Handover of the IDCC to the President of the UN General Assembly, HE Mogen Lykettof
(18 April 2016, New York)

• The IDCC was handed by Imam Talib Abdur-Rashid, Vice President of the Muslim Alliance of the North America (MANA), Islamic Leadership Council of New York.
The Islamic Declaration on Climate Change (IDCC), adopted in August 2015, represents broad unity amongst Muslim leaders and presents a **compelling call for humanity** to meet its **moral and spiritual obligations** as stewards of the Earth.
Man-Centered

- Man is the measure of everything
- By his reason alone he can know and solve everything
- Resources are infinite, other species are of utilitarian value only

Life-Centered

- Man is not the measure of everything
- Reason can be aided by revelation
- Resources are finite, limits exist

Need for Holistic Approach(es)

“The future of humanity depends on the harmonious relationship between the two greatest cultural forces of humankind; religion & science”

(Alfred North Whitehead, 1861-1947)
Reviewing of our worldview/mindset – how we view nature, ourselves; what meaning we give to life – all translatable into how we govern, manage, work, live & sustain the Earth & ourselves.
Values: The Forgotten Dimension in Development. Today We Are Technological Giants, Moral Midgets

• STEM has now become STEAM and STREAM in Korea, Russia, China. (A = Arts; R = Religion)

Permulaan sampah ke sungai

- Sampah – sampah dari darat yang diterbangkan angin/hujan pergi ke sungai.
- Pencemaran dari sisa-sisa toksik atau minyak dari kilang salur ke sungai.
RIVERINE RETREAT
SELANGOR RIVER

THE YOUTH RANGERS

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“FRIENDS OF ENVIRONMENT” WORKSHOP WITH MOSQUE COMMUNITY
RAKAN ALAM SEKITAR MASJID
“WATER MONITORING” PRACTICAL WITH MOSQUE COMMUNITY
Interview session with the Imam and the management of Kg Kuantan Mosque, Kuala Selangor

(Left) Imam and Secretary (right) of Kampung Kuantan Mosque

Researcher participated in giving lectures on the importance of water in Islam

DISCUSSION & LECTURE WITH MOSQUE COMMUNITY REGARDING WATERSHED MANAGEMENT & ISLAM
1. Since transboundary haze affects Malaysia and Singapore in particular only during the southwest monsoon period, it is recommended no open burning is allowed especially during the months of June to September;

2. During the haze episodes, it is also recommended that local anthropogenic sources to be reduced;

3. Since all other measures captured in the existing policies and cooperation framework at both national and regional levels have yet to make a difference to the haze problems, it is highly recommended an environmental-economic Policy be put in place:

“SLASH YOU MAY, BURN YOU ARE NOT; BUT YOU ARE ENTITLED TO EARN ADDITIONAL INCOME BY SELLING THE SLASHED BIOMASS FOR CONVERSION TO USEFUL ENERGY-MATERIALS OR FUELS”
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