## Adaptation to climate change: ASEAN and comparative experiences.

MADEBWE, T.

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Adaptation to Climate Change: ASEAN and Comparative Experiences, Koh Kheng-Lian (Editor-in-Chief), [World Scientific Publishing Co, 2015, hardback, p 560, \$178] ISBN 9789814689731

In the modern day, the pervasive nature of climate change impacts on humans and nature, coupled with increasing recognition of the fact that mitigation efforts are faltering, has not only driven the focus of climate change efforts to adaptation measures, but also managed to side-line other laudable environmental protection efforts.

It is against this backdrop that following a "Closed Door Workshop on Climate Change Adaptation: ASEAN and Comparative Experiences" held at the Faculty of Law of the National University of Singapore from 17 to 18 July 2014 that Editor-in-Chief Koh Kheng-Lian and his team of editors of Adaptation to Climate Change: ASEAN and Comparative Experiences, 1 fully alert to the fact that adaptation is now the buzzword of climate change<sup>2</sup> and cognisant of the fact that "adaptation forces countries to think globally but act locally", have been inspired to put together the work of like-minded authors who wish to provide insights on climate change, adaptation and environmental protection for policymakers, administrators, the private sector, scientists, academic scholars, climatologists and non-governmental organisations.<sup>4</sup> For practical reasons, not rooted in exclusivity, as is highlighted by the authors' references to various comparative experiences to support their arguments, the authors have decided to frame the discussion in the book in the context of sampling of a few ASEAN member states,<sup>5</sup> other Asian countries and comparative experiences.<sup>6</sup> ASEAN states are located in one of the fastest growing regions in the world,7 and a region which has always been disaster-prone and is particularly susceptible to climate change impacts.8







<sup>&</sup>lt;sup>1</sup> Koh Kheng-Lian, Ilan Kelman, Robert Kibugi and Rose-Liza Eisma Osario, Adaptation to Climate Change: ASEAN and Comparative Experiences (New Jersey and London: World Scientific Publishing, 2016).

Koh Kheg-Lian, "Preface" in Koh Kheng-Lian et al (eds) (n 1 above) pp xi, xii.

Ibid., p xii.

<sup>&</sup>lt;sup>4</sup> Ibid., p xv.

<sup>5</sup> Ibid., p xvi. ASEAN itself is a sub-regional block of ten states in South East Asia incorporating Brunei, Cambodia, Indonesia, Lao, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Reference is made, for example, to experiences in countries such as Bangladesh, the People's Republic of China, India, Sri Lanka, Kenya and the Republic of Taiwan.

AH Ansari, "Legal and Policy Framework for Ecosystem-Based Adaptation to Climate Change in Malaysia: A Reform-Oriented Study" in Koh Kheng-Lian et al (eds) (n 1 above) pp 83, 95.

R Letchumanan, "Keynote Address: ASEAN Experiences on Adaptation to Climate Change" in Koh Kheng-Lian (n 1 above) p 37. See also E Quah and TT Siong, "Sustaining Growth,



The fact that the text was a product of a gathering that saw the authors sit together and deliberate on the subject matter is, I find, relevant to the understanding of the book. This is because, while the ideas contained in the chapters are often different and somewhat compartmentalised, certain themes are apparent and consistently recur in the work. To this end, one of the easily apparent and broadly recurring themes in the book, one that will be the focal point of this review, is that the authors initiate and couch the discussion in the context of three known and established facts about climate change. Following from this, they cleverly push the reader to question the value of the present approach, while conveniently availing very plausible and attainable alternative avenues to policymakers, administrators, the private sector, scientists, academic scholars, climatologists and non-governmental organisations.

First, the book begins as a very traditional and comfortable read, with a deeply detailed and illuminating discussion on one of the most traditional and basic propositions in climate change discourse: that fighting climate change, often illustrated as coastal warming and sea level rise, is best done on the basis of the principle of common but differentiated responsibility. There is even reference to illuminating examples. For instance, that the Tuvalu Prime Minister was on track to sue the United States and Australia for Greenhouse Gas Emissions had he won re-election.

Certainly, in a world in which climate science is often contested, <sup>10</sup> this is all consistent with the traditional argument that, from a procedural and distributive justice perspective, developing states want developed states to be burdened by past responsibility while developed states want developing states to take on future responsibility. <sup>11</sup> By this logic, vulnerable communities are justified in expecting, and waiting, for developed states to honour the responsibility accruing to them to lead the fight against climate change based on their superior capacity, and the pressure that their societies place on the environment.

This sense of comfort does not persist however, as the editors and contributors are quick to point out that, while it may be true that the anthropogenic stressors of climate change traceable to the activities of developed states have played a seminal role in forcing climate change,





Climate Change, and Meeting Environmental Obligations: What Can ASEAN Governments Do?" in Koh Kheng-Lian *et al* (eds) (n 1 above) pp 231, 246–247.

<sup>9</sup> I Kelman, "Asia-Pacific Islander Responses to Climate Change" in Koh Kheng-Lian et al (eds) (n 1 above) p 1. Also see DA Friess "Managing Southeast Asian Ecosystems to Reduce Coastal Population Vulnerability under Sea Level Rise" in Koh Kheng-Lian et al (eds) (n 1 above) p 29.

See, however, W Xi and G Qi, "Policy and Legal Responses to Climate Change in China: New Developments, New Challenges" in Koh Kheng-Lian et al (eds) (n 1 above) p 119, who note that the probability of human influence on global warming is 95 to 100 per cent.

E Quah and TT Siong (n 8 above) p 248.



there is evidence to suggest that, in the present, some developing states such as Papua New Guinea with its deforestation conundrum<sup>12</sup> and East Timor with its extensive use of fossil fuel<sup>13</sup> are responsible for not negligible contributions to the climate change. They go further to point out that, while other developing states, such as the Marshall Islands have not had the same impact, this is certainly not for lack of trying, they simply have not had the opportunity to do so.<sup>14</sup> Essentially, the point is, no one is justified in doing nothing and waiting for assistance. In any respect, Khan for instance notes that developed states have shown little propensity to live up to their promises.<sup>15</sup> This is a sentiment echoed by Gunawansa, who notes that developed states have often shown little interest in the plight of poor states.<sup>16</sup> In this context, waiting might not be prudent practically. And, in just a few expressed sentiments, the authors have managed to challenge the traditional approach to common but differentiated responsibility.

Second, and following from the above, the authors also consistently stick to, and endorse the well-known and well-established argument that mitigation is the first port of call in combating climate change.<sup>17</sup> There is certainly no mistaking what authors perceive to be a central role for mitigation in combating climate change.<sup>18</sup>

As with the common but differentiated responsibility issue however, this positive take on the established approach does not persist. It is quickly, and consistently, pointed out that history suggests that in 25 years (at the time of going to press, now 26) since climate change efforts began in 1990, practical development considerations have meant that efforts at securing mitigation have not been successful to the levels where mitigation can be relied on as the first port of call in combating the rate or pace of climate change, as was the case in the past. <sup>19</sup> Consequently, it is recognised by now, as Ansari notes, that despite greenhouse gas reduction commitments, mitigation is not enough. <sup>20</sup> Sribuaiam goes further to note





<sup>&</sup>lt;sup>12</sup> Kelman (n 9 above) p 13.

<sup>&</sup>lt;sup>13</sup> *Ibid.*, pp 13-14.

<sup>14</sup> Ibid

MHI Khan, "The Warsaw International Mechanism: Exploring the Structures and Functions to Address Loss and Damage Associated with Climate Change Impacts" in Kheng-Lian et al (eds) (n 1 above) pp 165, 170.

A Gunawansa, "Dealing with Climate Migrants: A New Challenge for Developing Nations" in Koh Kheng-Lian et al (eds) (n 1 above) p 311.

<sup>&</sup>lt;sup>17</sup> Koh Kheg-Lian (n 2 above) p xii; ibid.

K Sribuaiam, "The Laws, Policies, and Institutions Relating to Climate Change in Thailand: Balancing Between 'Mitigation' and 'Adaptation'" in Koh Kheng-Lian et al (eds) (n 1 above) p 145; RL Ottinger, W Pianpian and KM Motel, "Options for Adaptation to Climate Change" in Koh Kheng-Lian et al (eds) (n 1 above) p 259; Gunawansa (n 16 above) p 311.

<sup>&</sup>lt;sup>19</sup> Kelman (n 9 above) pp 13–14.

<sup>&</sup>lt;sup>20</sup> Ansari (n 7 above) pp 83, 92.



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that while greater emphasis in Thailand has been placed on mitigation, there is need for law reform to reflect an adaptation focus.<sup>21</sup> There is even the interesting exploration of "solar radiation management", a "mitigation-like" form of geoengineering by Jolene Lin which looks at the impact that turning to techniques, such as spraying specific aerosols into the stratosphere, whitening marine clouds, using satellites in space and whitening the earth's surfaces could have on reducing global warming.<sup>22</sup> While Lin notes that geoengineering is often perceived as something distinct from mitigation, one cannot help but feel that, like mitigation, geoengineering can contain climate change but, like mitigation, it is incapable of doing so.<sup>23</sup> In large part, and like mitigation, this is due to the contested climate science, moral and ethical implications attached to the approaches and the prohibitive costs attaching to geoengineering techniques.<sup>24</sup>

Third, the authors use the foregoing as the basis to build on the fact that, in the modern world, their audience has been sensitised to adaptation as an increasingly relevant technique in combating climate change. This is an impression which the editors and contributors follow and is the basis of the title of the book, foreword, preface and acknowledgements of the text. Building on this, they consistently argue that adaptation can plug the holes left by mitigation.<sup>25</sup> As such, they argue for mitigation and adaption.<sup>26</sup> However, on the basis of the practical consideration that mitigation entails greater cost than adaptation, authors such as Ansari,<sup>27</sup> Xi and Qi,<sup>28</sup> and Anton,<sup>29</sup> to name a few, argue for greater recourse to adaptation.

Further, and in somewhat contradiction to hitherto established knowledge, the editors and contributors assert that the role of adaptation in climate change is best understood when it is considered that climate change does not directly affect human rights.<sup>30</sup> Instead, what affects people are events like, property loss, infrastructural damage, loss of life,

<sup>21</sup> Sribuaiam (n 18 above) pp 145, 161–162.







J Lin "Geoengineering: An ASEAN Position" in Koh Kheng-Lian et al (eds) (n 1 above) pp 191, 191–197.

<sup>&</sup>lt;sup>23</sup> *Ibid.*, pp 197–201.

<sup>&</sup>lt;sup>24</sup> *Ibid.*, pp 201–209.

<sup>&</sup>lt;sup>25</sup> See, eg, Koh Kheng-Lian (n 2 above) p xii; Ansari (n 7 above) pp 83, 92–93.

<sup>26</sup> Ibid. GM Anton "The Legal Regime of Climate Change Adaptation and Disaster Management in Taiwan: Focus on the Major Amendment Following the Devastating Typhoon Morakot of 2009" in Koh Kheng-Lian et al (eds) (n 1 above) p 373.

<sup>&</sup>lt;sup>7</sup> Ansari (n 7 above) p 83.

<sup>&</sup>lt;sup>28</sup> W Xi and G Qi (n 10 above) p 119.

<sup>&</sup>lt;sup>29</sup> GM Anton (n 26 above) p 373.

<sup>30</sup> AS Tolentino, "Achieving Human Rights in an Era of Climate Disruption: The Philippines" in Koh Kheng-Lian et al (eds) (n 1 above) p 359.



loss of property, pollution, disease, food shortages, looting and rape. 31 A similar argument by Kelman is that, climate change is not a hazard to people in itself.<sup>32</sup> Rather, its effect is to create hazards which vulnerable people and potentially affected people on the ground must deal with.<sup>33</sup> Against this backdrop, when there is a call for adaptation, Iza, Müller and Nozza, for instance, point out that such adaptation is really intended to key the survival of communities susceptible to these hazards in a context sensitive way, that is, based on the hazards they are susceptible to.34 Relevant adaptation therefore, considering as noted above that responsibility is common and mitigation exclusively is inadequate, is best conceived not as adaptation to climate change, but as adaptation of vulnerable and potentially affected people to potential hazards. After all, it is these people who suffer the brunt of hazards, whether they are caused by climate change or not.<sup>35</sup> Ansari, for instance, notes that adaptation is at the centre of local and indigenous people globally to the extent that it affects their reliance on ecosystems for their needs.<sup>36</sup>

By this point, the authors will have established two of the fundamental premises on which they base future argument. First, the authors establish that what is known and frequently recited with respect to issues such as climate change, common but differentiated responsibility, the significance of mitigation to combating climate change, and the current approach to adaptation is, at the very least, based on erroneous assumptions. Second, and in a pragmatic sense, the authors make the compelling point that responsibility to survive environmental hazards should be equally shared. However, vulnerable and potentially affected people, a common occurrence in ASEAN, 37 are logically under a heightened obligation to act on their own circumstances through considering and anticipating issues, such as how to build resilience to the hazards they encounter and experience; how to escape these hazards and how to relate to the affected people seeking refuge. They are also concerned with what befalls their property when disaster strikes.<sup>38</sup> Importantly, and against this backdrop, the authors propose a three-tier approach to their ASEAN ideal version of adaptation.







Koh Kheng-Lian and RE Osorio, "The Role of ASEAN in Disaster Management: Legal Frameworks and Case Study of Typhoon Haiyan/Yolanda" in Koh Kheng-Lian et al (eds) (n 1 above) pp 455–457; Koh Kheng-Lian (n 2 above) p xi.

<sup>&</sup>lt;sup>32</sup> Kelman (n 9 above) p 18.

<sup>33</sup> Ibid

<sup>&</sup>lt;sup>34</sup> A Iza, A Müller and V Nozza, "Adaptive Water Governance: Lessons Learned from Implementing Ecosystem Approach in Mesoamerica" in Koh Kheng-Lian et al (eds) (n 1 above) pp 57, 61–63.

Kelman (n 9 above) pp 20–22; Friess (n 9 above) pp 29–30.

<sup>&</sup>lt;sup>36</sup> Ansari (n 7 above) p 111.

<sup>&</sup>lt;sup>37</sup> E Quah and TT Siong (n 8 above) p 231.

<sup>&</sup>lt;sup>38</sup> See the discussion in Kelman (n 9 above) p 1.

In the first tier, and in the present, adaptation should be driven by vulnerable and potentially affected individuals and communities.<sup>39</sup> This is not too difficult. After all, the authors are united in pointing out, albeit in separate chapters, that if given room to do so, the environment is capable of rejuvenation if people act in order to build resilience.<sup>40</sup> Ansari notes that what is required to facilitate such rejuvenation is also often known to vulnerable communities. 41 And, where it is unknown to them, there is evidence to suggest that when adequately informed and educated, vulnerable people consistently show a propensity, individually and in groups, for doing something about their circumstances to build resilience. 42 There is evidence cited to suggest that, contrary to the sweeping statements often made in climate change discourse, developing states in the community of Pacific Small Island Developing States (SIDS), consistent with their culture, have embraced this responsibility.<sup>43</sup> Beyond this, other non-traditional adaptation techniques are explored. For instance, Gunawansa argues that migration is not a failure to adapt. Instead, it is an adaptation measure accessible to individuals.<sup>44</sup> Indeed, this is consistent with the interesting example of the unsuccessful 2003 court case in New Zealand by a Kiribati resident claiming climate refugee status in New Zealand<sup>45</sup> on the basis of gaps in the law with respect to socalled "climate refugees".

The authors, drawing from experiences in different ASEAN states, also see a second tier of adaptation led by states. <sup>46</sup> Some authors, notably Quah and Siong <sup>47</sup> and Kibugi <sup>48</sup> refer to this as "operationalizing sustainable development". Here, different authors rely on the experiences in different jurisdictions to note that governance efforts at state level are well under way in most states, but point to the value of improved, mainstreamed local governance at the state level as being critical to coordinated preventative and proactive approaches to adaptation. <sup>49</sup> For instance, drawing from lessons learned from Mesoamerica, Iza, Müller and Nozza argue for the turn to adaptive governance of water resources as key to building the

<sup>9</sup> Gunawansa (n 16 above) pp 312–313.







<sup>&</sup>lt;sup>40</sup> Iza, Müller and Nozza (n 34 above) pp 58–59, 61, 75.

<sup>&</sup>lt;sup>41</sup> Ansari (n 7 above) pp 113–115.

<sup>42</sup> Ibid.

<sup>&</sup>lt;sup>43</sup> Kelman (n 9 above) p 27.

<sup>44</sup> Gunawansa (n 16 above) p 312.

<sup>&</sup>lt;sup>45</sup> Kelman (n 9 above) p 24.

On the Taiwan experience, see, eg, GM Anton (n 26 above) p 373.

<sup>&</sup>lt;sup>47</sup> E Quah and TT Siong (n 8 above) pp 235–236.

<sup>&</sup>lt;sup>48</sup> R Kibugi, "Legal Options for Mainstreaming Climate Change Disaster Risk Reduction in Governance for Kenya" in Koh Kheng-Lian et al (eds) (n 1 above) p 409.

<sup>&</sup>lt;sup>49</sup> Iza, Müller and Nozza (n 34 above) pp 58–61; Kibugi (n 48 above) pp 426–430.

resilience of communities. 50 Ansari identifies how, in Malaysia concerted governance efforts have led to improved ecosystem management, water resource management and secured agricultural productivity in a positive manner.<sup>51</sup> The Chinese experience, which has seen a management framework put in place is also presented by Xi and Qi as illustrative of how governance is necessary.<sup>52</sup> In a similar vein, Khan notes that loss and damage resulting from the adverse effects of climate change impacts are now a reality that should be accounted for.<sup>53</sup> However, it remains difficult to conceptualise and identify, and determine how to deal with, avoidable and unavoidable losses in a piecemeal manner.<sup>54</sup> One possible solution here is through the turn to governance frameworks that assist in such determinations at the localised level.<sup>55</sup> There is, in addition to this, a proposal to account for mobility because, as Mayer notes, in South East Asia, migration whether due to climate change or other factors, is already an important constituent.<sup>56</sup> And, further, as Gunawansa notes, the sheer number of people affected by climate change, with estimates ranging from 150 million to 200 million people by 2050, means migration is an inevitable progression generally.<sup>57</sup> As such, at state level, there is value in governance structures to ensure that such migration, particularly as it relates to internally displaced persons as they are the type of migrants whose rights are often most violated, is planned.<sup>58</sup> This is a sentiment echoed by Tolentino based on an appraisal of the Filipino experience.<sup>59</sup> Another issue of state concern highlighted by Chien-Te and Yun-Hsiang with reference to the Taiwanese experience relates to the provision of green jobs, and real green jobs at that, as a useful adaptation technique. 60 Fitzpatrick and Compton add to this when they highlight that one of the surest ways to adapt is to "build-back-better" following a disaster. 61 However, they point out, using the example of the Philippines, that a poor system of land governance and tenure, even if it should be traceable

<sup>0</sup> Iza, Müller and Nozza (n 34 above) pp 58–61.

<sup>53</sup> Khan (n 15 above) p 165.

<sup>54</sup> *Ibid.*, p 166.

<sup>55</sup> *Ibid.*, pp 168–169.

B Mayer, "Climate Change, Migration, and International Law in Southeast Asia" in Koh Kheng-Lian *et al* (eds) (n 1 above) pp 337, 339–340, 343–345.

Gunawansa (n 16 above) pp 311–314.

<sup>58</sup> *Ibid.*, pp 312–314, 319–321.

<sup>59</sup> Tolentino (n 30 above) pp 365–369.

60 F Chien-Te and H Yun-Hsiang, "Assessing Green Jobs in Taiwan: A Tri-Pillar Approach" in Koh Kheng-Lian *et al* (eds) (n 1 above) p 215.

D Fitzpatrick and C Compton, "Land Tenure Systems as a Challenge for Disaster Recovery: Adapting to Extreme Weather Events after Typhoon Haiyan" in Koh Kheng-Lian et al (eds) p 433.







<sup>&</sup>lt;sup>51</sup> Ansari (n 7 above) pp 87–90, 95, 116.

<sup>&</sup>lt;sup>52</sup> W Xi and G Qi (n 10 above) pp 123–124.

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to historical impacts of colonisation, adversely affects the ability of poor people who are often most vulnerable to adapt. Such a system can therefore have serious drawbacks which can jeopardise adaptation efforts.<sup>62</sup> The key to resolving this, according to them, is through establishing effective land governance with security of tenure.

Most importantly perhaps, links are drawn between this tier and the previous one to the extent that authors are united in asserting that the success of state governance efforts is contingent upon extensive provision of vulnerable, potentially affected and interested people in decisionmaking. Iza, Müller and Nozza make the point that dialogue is critical in any governance efforts. 63 Importantly, when seen in the light of the argument that adaptation in the first tier faces various transactional costs, the value of such a governance approach is threefold. First, as Quah and Siong note, there is the widely held view that money spent on the environment is money diverted from other pressing needs. 64 A governance approach has the advantage that it allows action to be based on a much-needed cost-benefit analysis perspective which is particularly important because, as Quah and Siong note, monetising environmental goods, services and impacts can be complex. 65 Second, such an approach offsets some of the aforementioned transactional costs. Third, a governance approach can accommodate some traditional problems with first-tier approaches such as the "Not-In-My-Back-Yard" issues.66

The third tier, based on authors' generally positive regard for the value of "holistic" "whole-of-the-world" and "horizontal-vertical" approach, consists of the turn to international, specialised and broad regulatory frameworks to build on, strengthen and, where necessary, direct state governance efforts. For instance, Iza, Müller and Nozza make the argument for global governance generally, and of water resources specifically, a particularly salient point considering, as they note, that 60 per cent of global freshwater is shared between two or more states. Assuming a similar pro-international governance perspective, Khan argues that there is the need to build on the Warsaw International Mechanism on loss and damage and adopt proactive and reactive methods for addressing losses and damages suffered due to both, sudden and slow onset events as a result

62 Ibid., pp 434–443.





<sup>&</sup>lt;sup>63</sup> Iza, Müller and Nozza (n 34 above) p 75.

<sup>&</sup>lt;sup>64</sup> E Quah and TT Siong (n 8 above) p 250.

<sup>65</sup> *Ibid.*, pp 239–240.

<sup>66</sup> *Ibid.*, pp 237–239.

<sup>67</sup> Koh Kheng-Lian and Osorio (n 31 above) p 456.

<sup>&</sup>lt;sup>68</sup> Iza, Müller and Nozza (n 34 above) pp 63–64.

of climate change.<sup>69</sup> In a similar vein, Gunawansa argues that national efforts to govern migration should be complemented by an international governance system to protect the rights of internally displaced persons, and for cross-border migrants so that their fundamental rights are protected. 70 Gunawansa notes that, in several ways, such a framework is already in place.<sup>71</sup> However, Mayer argues that it does not address the needs of migrants satisfactorily.<sup>72</sup> A properly established international governance framework would therefore go a long way towards addressing sovereignty and citizenship issues. For instance, Tolentino suggests that such a framework would resolve the issue of whether climate migrants should be accorded the status of refugees, something which is not can vassed under the current refugee regulatory framework. 73 Ultimately, such a framework would lead to avoidance of the recurrence of incidences such as citizens bringing lawsuits to get citizenship in foreign states only to be turned away because there are no applicable laws as was the case in the aforementioned case of the Kiribati resident bringing a suit in New Zealand. 74 Alternatively, authors also advocate the turn to broader frameworks dedicated to addressing issues surrounding land and property rights as well as public participation. It is quite useful to note that in the text, there is the disclaimer that ASEAN states are generally reluctant to bind themselves to international agreements. However, this certainly does not detract editors and contributors from proposing the turn to international regulation and close out the discussion in the text with an illuminative case study of the Typhoon Haiyan or Yolanda experience, highlighting how international action was useful and how, looking ahead, international collaboration could hold value.75

This three-tier approach is insightful, and is clearly informed over the initial observations made by the authors. Further, and being rooted in a drive to be led by considerations relevant to vulnerable and affected communities, the value and quality of the proposals is beyond refute. There are always difficulties that attach to proposals for international regulation, and the proposals in the text will undoubtedly encounter these. However, being based on compelling prior and reasoned discussion, their feasibility is not all that remote, particularly in ASEAN.

<sup>69</sup> Khan (n 15 above) pp 165–168, 185–187.

<sup>70</sup> Gunawansa (n 16 above) pp 321–323.

<sup>71</sup> *Ibid.*, pp 324–327.

<sup>72</sup> Mayer (n 56 above) pp 338, 344–345.

<sup>73</sup> Tolentino (n 30 above) p 359.

<sup>74</sup> Kelman (n 9 above) p 24.

<sup>75</sup> Koh Kheng-Lian and Osorio (n 31 above) p 455.









Three other things are particularly noteworthy about the book. First, the text is predominantly presented from an ASEAN perspective. This is useful. ASEAN is highly vulnerable to the impacts of climate change whether the science is contested or not. Second, ASEAN is constituted of states at various levels of development. 76 It is not unreasonable to contend that to a significant extent, ASEAN offers a microcosmic look into the experiences of the world at large. And, to the extent that ASEAN fails to do so, the editors and contributors rely on comparative experiences to culminate in near universal coverage of world experiences (see inter alia reference to SIDS generally, 77 Mesoamerica, 78 and Kenya 79). Third, it is quite apparent that, taken in the abstract, the contributions in the book relate to issues centred on environmental hazards, resilience, adaptation, sustainability, regulation and the preservation of ecosystems, without advocating too strongly the turn to infrastructural adaptation, but instead ecosystem-based adaptation. 80 These issues lie at the core of a broad range of other environmental issues not just those related to climate change.

The impact of these three factors therefore is to establish the book as a specific text on the ASEAN experience, with experiences, and arguments, that are easily translatable to other regions, countries and communities. This makes the book particularly useful for the intended audience of policymakers, administrators, the private sector, scientists, academic scholars, climatologists and non-governmental organisations whether they are dealing with the climate change impacts and the hazards attached, or, other environmental protection issues generally.

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<sup>&</sup>lt;sup>76</sup> E Quah and TT Siong (n 8 above) p 247.

<sup>&</sup>lt;sup>77</sup> Kelman (n 9 above) p 3.

<sup>&</sup>lt;sup>78</sup> Iza, Müller and Nozza (n 34 above) p 57.

<sup>&</sup>lt;sup>79</sup> Kibugi (n 48 above) p 409.

<sup>80</sup> Iza, Müller and Nozza (n 34 above) pp 61, 75.

<sup>\*</sup> Lecturer in Law, Public Law Department, Midlands State University, Gweru, Zimbabwe.