# Part II

# Disaster risk reduction and development assistance

For many years, countries in the Indian Ocean rim have been coming together to work cooperatively across a range of activities, agencies and organisations. Sometimes, a small group of like-minded countries have banded together for mutual benefit. In other cases, a larger collection of countries have entered into collaborative enterprises to pursue a common purpose. In part II of the report, the committee looks at the nature and breadth of Australian cooperative activity in the region in the following areas:

- Disaster mitigation and management;
- Climate change;
- food security including the sustainable management of fisheries;
- research and development; and
- mining for development.

The committee looks at the links and associations involving Australia that exist or are being built in the region and whether there is scope for improvement.

# Chapter 6 Natural disasters and climate change

Major disasters such as the Indian Ocean tsunami and the Great East Japan earthquake and tsunami have underscored for the international community the importance of disaster risk reduction...<sup>1</sup>

6.1 Indian Ocean rim countries are all too familiar with natural disasters—earth quakes, tsunamis, cyclones, floods due to torrential monsoons, volcanic eruptions and landslides.<sup>2</sup> For some time they have recognised the mutual benefits to be realised from cooperation in the area of disaster mitigation and management. They are also aware of the potential for changes in climate to create environmental, economic and social problems that require a regional approach. As discussed in Chapter 3, IOR-ARC has, on a number of occasions, identified disaster risk reduction as a key interest common all member countries. In 2010, it also referred to climate change as a priority consideration.

6.2 In this chapter, the committee looks at the collaborative efforts of countries in the Indian Ocean rim to mitigate and manage disasters and to understand the changes taking place in the region's climate. It looks specifically at Australia's contribution.

# Background

6.3 The Indian Ocean rim is particularly vulnerable to natural disasters. The region has an extensive number of islands, highly exposed to cyclones and tsunamis. Many countries bordering the ocean have long coastlines, many with high density populations living in low lying areas susceptible to flooding, such as parts of India and Bangladesh. Some countries, including Indonesia, are prone to specific disasters. Indonesia has the largest number of active volcanoes in the world and is located in the 'ring of fire', the name given to areas on the edge of tectonic plates, the movement of which can cause earthquakes and volcanic eruptions. Indeed, approximately 10 per cent of the world's recorded seismic activity has occurred in the Indonesia archipelago.<sup>3</sup>

# **Disaster risk reduction**

6.4 A number of natural disasters have exposed the region's lack of readiness or preparedness to minimise the risk from natural disasters. A 2007 UNESCO report gave the example of Mozambique, one of the world's poorest nations, which suffers from periodic cyclone damage and flooding. The report described how in 2000, after a

<sup>1</sup> *Submission 30*, p. 59.

<sup>2</sup> See paragraphs 3.23 and 3.40.

<sup>3</sup> Prema-chandra Athukorala and Budy P. Resosudarmo, 'The Indian Ocean Tsunami: Economic Impact, Disaster Management and Lessons', ANU, revision of papers presented at the Asian Economic Panel Conference, Keio University, Tokyo, 6–7 March 2005, p. 8.

warning about likely abnormally high rainfall, Mozambique sought aid funds of US\$2.7 million to commence preparation and mitigation activities—the country received less than half the amount of aid required for appropriate mitigation measures. When the rains finally arrived, Mozambique took the brunt of the worst flood in living memory—700 people were killed; 650,000 people were displaced and 4.5 million were affected. The disaster erased the country's economic progress—the report quoted aid workers who said that the flood waters 'caused more destruction than the civil war itself'.<sup>4</sup> This event clearly showed the importance of disaster prevention and mitigation as the UNESCO report highlighted:

...once a disaster has occurred, it is often painfully evident with the benefit of hindsight that an ounce of prevention would have been much better than a pound of cure.<sup>5</sup>

6.5 The Indian Ocean tsunami, which struck on 26 December 2004, causing widespread devastation and claiming the lives of over 220,000 people also revealed that many of the countries of the Indian Ocean rim were tragically unprepared.<sup>6</sup> For example, in Sumatra, one of the areas hardest hit by the tsunami, there was 'practically no warning and little preparedness for responding'.<sup>7</sup> Although scientists registered the massive undersea earthquake off Sumatra which caused the tsunami, no communication mechanism existed to provide advance warning of the tsunami. UNESCO noted that:

Had an alert system, similar to that already operating in the Pacific Ocean been in place, many of the more than 240,000 people killed or missing in the Indian Ocean disaster would have had time to escape to higher ground.<sup>8</sup>

6.6 Once the tsunami had passed, however, the global relief and recovery operation was immediate and massive. For example, foreign militaries from 11 countries eventually deployed to Indonesia coordinated by the Indonesian military. With Indonesian permission, Australian Defence Forces (ADF) flew C130 transport planes carrying aid from Jakarta and Madan to Banda Aceh and removed the injured from Aceh. It deployed medical teams to the region and brought water purification equipment to supply drinking water. Singapore set up a mobile air traffic control tower at Banda Aceh and Madan airports. The United States sent an aircraft carrier and hospital ship from which its military ran relief operations; the United Nations (UN) dispatched a Disaster Assessment and Coordination Team; and the UN Office

<sup>4</sup> United Nations Educational Scientific, and Cultural Organization, *Disaster Preparedness and Mitigation UNESCO's Role*, 2007, p. 45.

<sup>5</sup> United Nations Educational Scientific, and Cultural Organization, *Disaster Preparedness and Mitigation UNESCO'S Role*, 2007, p. 45.

<sup>6</sup> *Submission 30*, p. 23.

<sup>7</sup> Reiner Huber et al, The Indian Ocean Tsunami: a case study investigation by NATO RTO SAS-065 Part Two: the case of Aceh and North Sumatra, March 2008, p. 2, http://www.dodccrp.org/files/case\_studies/Tsunami\_case\_study.pdf (accessed 3 May 2013).

<sup>8</sup> United Nations Educational Scientific, and Cultural Organization, *Disaster Preparedness and Mitigation UNESCO'S Role*, 2007, p. 23.

for the Coordination of Humanitarian Affairs (OCHA) established a Humanitarian Information Centre.

6.7 Despite the concerted effort, important lessons were learnt from this international effort, including the need for better coordination especially between militaries and international Non-Government Organisations (NGOs) and between International NGOs and local NGOs. There was also an identified need for improved dissemination of information by national governments to other governments.

6.8 A painstaking period of rebuilding followed the immediate aftermath. Again this was an international effort and again lessons were to be learnt. For example, a NATO report found:

It took nearly nine months of negotiation just for the government and the aid agencies to agree to a building code setting out the standard measurements and requirements for new homes.<sup>9</sup>

Problems with communication continued even throughout this reconstruction phase.<sup>10</sup>

#### Summary

6.9 The floods in Mozambique and the 2004 tsunami not only galvanised the international community into action but highlighted the importance of disaster risk reduction and the need for greater awareness and cooperation when it comes to managing disasters. The committee used these two examples to highlight that:

- prevention or mitigation of the effects of a disaster is of paramount importance;
- natural disasters can overwhelm the resources of the affected country which will often require outside assistance from numerous overseas countries and multilateral organisations;
- cooperation and coordination in both relief and recovery is critical between the government of the affected country and with those providing assistance and also between the numerous agencies providing assistance;
- timeliness in responding is essential; and
- respect for the affected country's pride is necessary.

6.10 Although the international community generally responds to a major natural disaster, regional organisations have a major role to play in disaster risk mitigation. A recent examination of regional organisations in disaster management suggested that in terms of disaster response, regional mechanisms 'may not only be able to respond more quickly than international ones, but their intervention may also be politically

<sup>9</sup> Reiner Huber et al, The Indian Ocean Tsunami: a case study investigation by NATO RTO SAS-065 Part Two: the case of Aceh and North Sumatra, March 2008, p. 5, <u>http://www.dodccrp.org/files/case\_studies/Tsunami\_case\_study.pdf</u> (accessed 3 May 2013).

<sup>10</sup> Reiner Huber et al, *The Indian Ocean Tsunami: a case study investigation by NATO RTO SAS-*065 Part Two: the case of Aceh and North Sumatra, March 2008, p. 3, http://www.dodccrp.org/files/case\_studies/Tsunami\_case\_study.pdf (accessed 3 May 2013).

more acceptable'. They have 'developed innovative and effective forums of regional collaboration that could serve as models for other regions'.<sup>11</sup> It cited the work of researchers in this field who found that regional organisations are:

...particularly well-equipped to carry out today's threat management functions. They have solid information and expertise on their regions, inherently tailor their responses to the regional realities, and can get on the ground fast. ROs [regional organizations] are also innately compelled to continue their engagement and monitoring of the scene when the other actors depart. And having reshaped their policies and plans over the years to meet newly emerging challenges, ROs have a record of responsiveness and institutional flexibility.<sup>12</sup>

6.11 This study of 13 regional organisations noted that the Indian Ocean as an entity does not have a recognised regional association to cover natural disasters. It noted further that there are organisations (SADC, Asian Disaster Reduction Center, SAARC and ASEAN) that included some Indian Ocean countries but not one that could be characterised as an Indian Ocean organisation.

6.12 Despite the lack of a strong regional disaster reduction and management organisation, the countries in the Indian Ocean have taken important steps to reduce the risks from natural disasters.

# Australia's contribution

6.13 Australia is well placed to help the region establish solid risk mitigation practices—in addition to renowned scientific and research expertise, Australia's situation as a country with significant coastal assets means that it shares with other Indian Ocean rim countries a firsthand understanding of the effect of extreme weather and tidal events.

6.14 For example, during its visit to the Pilbara the committee heard of the effective cyclone warning system that provides adequate warning to the region to prepare for the damaging effects of wind and rain. The Port Hedland Port Authority explained that the quick response following such warnings enables the harbour to be cleared and assets secured before the cyclone strikes. The committee was also

Elizabeth Ferris and Daniel Petz, In the Neighbourhood: the growing role of regional organizations in disaster risk management, The Brookings Institution, London School of Economics, Project on Internal Displacement, February 2013, p. 3, <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013, p. 3, <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013, p. 3, <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013\_ferris\_petz.pdf">http://www.brookings.edu/~/media/research/files/reports/2013\_ferris\_petz.pdf</a> (accessed 3 May 2013).

<sup>12</sup> Elizabeth Ferris and Daniel Petz, In the Neighbourhood: the growing role of regional organizations in disaster risk management, The Brookings Institution, London School of Economics, Project on Internal Displacement, February 2013, p. 6, <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013, p. 6, <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%20organizations%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2</a> <a href="http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2">http://www.brookings.edu/~/media/research/files/reports/2013/02/regional%2</

informed about the strict building code that applies to the region to ensure that constructions are better prepared to withstand the effects of cyclonic winds.<sup>13</sup>



Committee Chair Senator Eggleston at the control tower, Port Hedland Port Authority with Councillor Bill Dziombak and Mr Jon Giles, Landside Operations, Port Hedland Port Authority.

# Tsunami Warning System

6.15 DFAT's submission noted that disaster preparedness such as for a tsunami was a regional concern for the Indian Ocean rim.<sup>14</sup> It explained that there was 'substantial cooperation in the region on tsunami warning systems' led by the UNESCO Intergovernmental Oceanographic Commission (IOC) Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System. This group was formally established in 2005. At its first meeting, members welcomed Australia's 'generous offer' to support the Secretariat and provide continuing financial

<sup>13</sup> Notes from committee's visit to the Pilbara.

<sup>14</sup> Submission 30, p. 23.

and other assistance for the Secretariat. Australia, India and Indonesia currently chair this group with its Secretariat located in UNESCO's IOC Perth Office. The warning system is intended to be a coordinated network of national systems and capacities that would form part of a global network of early-warning systems for all ocean-related hazards.<sup>15</sup> The group coordinates and facilitates development and operational implementation of tsunami warnings and associated disaster mitigation. Capacity constraints, however, were recognised as an area needing attention.<sup>16</sup> The resolution establishing the IOTWS noted:

IOC shall develop a comprehensive programme of capacity-building on tsunami protection for the Indian Ocean, in order to assist all countries of the region, including the coastal African countries and Middle-Eastern countries, to have the capacity to protect their populations.<sup>17</sup>

6.16 In terms of regional cooperation, Mr Piece, DFAT, stated that 'One obvious but compelling common interest is the network of tsunami buoys which are in the Indian Ocean.'<sup>18</sup> Geoscience Australia received funding in 2005-06 of \$21 million over four years to implement the Australian Tsunami Warning System (ATWS). This initiative is a national effort involving Geoscience Australia, the Australian Bureau of Meteorology and Emergency Management Australia, and provides a comprehensive tsunami warning system.<sup>19</sup> It is intended to contribute to an Indian Ocean tsunami warning system and to integrate with the existing Pacific Tsunami Center, run by the US in order to facilitate warnings for the south-west Pacific region. From 2009-10, a further \$4.7 million per annum was allocated for ongoing operations.<sup>20</sup>

6.17 The Bureau of Meteorology Australia maintained that collaboration between Australia and Indian Ocean rim countries is necessary for an effective tsunami warning system, as the strength of the system depends on all components working in harmony. The Bureau described the collaboration:

The countries fund their own contributions (apart from funding by aid agencies from various countries) to the overall Indian Ocean Tsunami Warning and Mitigation System. This ranges from sharing seismic data, coastal sea level data and deep ocean buoy data as well as warning information, communications systems and community impacts.<sup>21</sup>

6.18 Dr Ray Canterford of the Bureau of Meteorology noted that vandalism of the tsunami monitoring buoys had been a concern. He argued that 'strong national

<sup>15 &</sup>lt;u>http://www.ioc-tsunami.org/images/IOTWS/Resolution-XXIII\_12.pdf</u> (accessed 16 May 2013).

<sup>16</sup> http://unesdoc.unesco.org/images/0014/001445/144508e.pdf

<sup>17 &</sup>lt;u>http://www.ioc-tsunami.org/images/IOTWS/Resolution-XXIII 12.pdf</u> (accessed 16 May 2013).

<sup>18</sup> *Committee Hansard*, 17 August 2012, p. 4.

<sup>19</sup> Dr Barnicoat, *Committee Hansard*, 6 December 2012, p. 19.

<sup>20</sup> Dr Barnicoat, *Committee Hansard*, 6 December 2012, p. 19.

<sup>21</sup> Bureau of Meteorology, answers to questions on notice (public hearing, 6 December 2012, Canberra), pp. 2–3.

legislation and awareness programs are required to act as deterrents for this type of activity.<sup>22</sup>

#### The Australia-Indonesia Facility for Disaster Reduction

6.19 Australia has also established strong bilateral links with some countries in the Indian Ocean rim to assist them to improve their resilience and response to the effects of natural disasters. For example, the Australia-Indonesia Facility for Disaster Reduction (AIFDR) is a joint initiative between Australia and Indonesia which was announced in November 2008. Together, AusAID and the Indonesian Disaster Management Agency implement the AIFDR. Its aim is to strengthen national and local capacity in disaster risk reduction in Indonesia and the region. Examples of the facility's activities include:

- helping the Indonesian Government establish a real time earthquake impact estimation system that enables rapid estimates of the number of people potentially affected in an earthquake; and
- supporting the development of training packages on the fundamentals of disaster risk management that are being delivered to disaster managers (primarily Indonesian officials at the national and sub-national level) across Indonesia.<sup>23</sup>

6.20 Under this initiative, Australia has provided specialist staff and financial assistance worth \$67 million over five years to 2013, with Indonesia providing counterpart staff, services and support arrangements.<sup>24</sup> AusAID also noted that the AIFDR works closely with Geoscience Australia, host of the Australian Tsunami Warning System, on a range of natural disaster scientific models, including tsunami.<sup>25</sup>

6.21 In 2010, AusAID reported that the partnership between Australia and Indonesia was starting 'to support and influence regional disaster management priorities in particular through support to the ASEAN Agreement on Disaster Management and Emergency Response'.<sup>26</sup> An Independent Progress Review of the AIFDR was undertaken in 2012. It found that opportunities existed to use information from the supervision of significant activities to inform disaster risk reduction and disaster management policy dialogue not only between Australia and Indonesia but with multilateral relationships. While the review cited the Global Fund for Disaster Risk Reduction (GFDRR), ASEAN and APEC, the committee would also suggest

<sup>22</sup> *Committee Hansard*, 6 December 2012, p. 20.

AusAID, answers to questions on notice (public hearing, 6 December 2012, Canberra), p. 12.

AusAID, answers to questions on notice (public hearing, 6 December 2012, Canberra), p. 12.

AusAID, answers to questions on notice (public hearing, 6 December 2012, Canberra), p. 12.

<sup>26</sup> AusAID, Annual Program Performance Report, Indonesia, 2010, July 2011, p. 36, http://www.ausaid.gov.au/Publications/Documents/indonesia-development-cooperation-report-2010.pdf (accessed 16 May 2013).

encouraging such dialogue and information sharing within IOR-ARC.<sup>27</sup> The review stated further that lessons from field activities 'provide strong evidence to support policy dialogue and can be used to advance disaster risk reduction and related issues such as food security, vulnerability and disaster response.<sup>28</sup>

#### Disaster risk reduction assistance

6.22 Scientific research about climate and seismological activity enables reasonably accurate prediction of extreme weather or tidal events. Key to disaster prevention is the timely communication of scientific monitoring results to emergency services, government, and media. For less developed countries, however, preparation for extreme natural events also requires infrastructure and capacity development.

6.23 AusAID provides a number of Indian Ocean rim countries with disaster risk reduction support. In 2010-11, Bangladesh, Burma, Indonesia, India, Kenya, Pakistan, Somalia and Timor-Leste received Australian assistance. For example, DFAT informed the committee that AusAID was supporting a School Reconstruction Program in West Java and West Sumatra, Indonesia, in response to the two major earthquakes that struck Indonesia in September 2009.<sup>29</sup>

6.24 The findings of the 2012 independent progress review of the AIFDR has broader relevance for these numerous bilateral programs. It reported that AusAID had:

...clearly assigned donor communication and harmonisation roles and responsibilities to AIFDR but little has been done to systematically implement these functions and communicate lessons learned to other AusAID sectoral programs.<sup>30</sup>

6.25 Noting that AusAID supports disaster risk reduction in a number of Indian Ocean rim countries, the committee believes that AusAID should consider looking at ways to ensure that work in one sector informs activity in related sectors. The committee attaches particular importance to ensuring that improvements derived from activity in one area not only flow across sectors but across country programs. This sharing of knowledge and experience gained from development assistance in one program to other AusAID country programs in the Indian Ocean rim may help to develop a regional approach of mutual advantage to all programs. It may well identify areas where collaboration would be of most benefit and indeed provide a foundation

<sup>27</sup> Australia Indonesia Facility for Disaster Reduction, Independent Progress Review, p. 29, <u>http://ausaid.gov.au/countries/eastasia/indonesia/Documents/aifdr-ipr-ipm.pdf</u> (accessed 16 May 2013).

<sup>28</sup> Australia Indonesia Facility for Disaster Reduction, Independent Progress Review, p. 29, <u>http://ausaid.gov.au/countries/eastasia/indonesia/Documents/aifdr-ipr-ipm.pdf</u> (accessed 16 May 2013).

<sup>29</sup> *Submission 30*, p. 59.

<sup>30</sup> *Australia Indonesia Facility for Disaster Reduction*, Independent Progress Review, p. 25, <u>http://ausaid.gov.au/countries/eastasia/indonesia/Documents/aifdr-ipr-ipm.pdf</u> (accessed 16 May 2013).

for other countries to become part of a network contributing to development especially in areas such as disaster risk reduction and food security (as discussed later).

#### Summary

6.26 The committee recognises that Australia collaborates with several countries in the Indian Ocean rim in regard to disaster mitigation and, in some cases, Australia leads in terms of scientific and research skills and expertise. Australia also provides bilateral assistance to a number of Indian Ocean rim countries to help them reduce the risks from natural disasters.

6.27 The committee fully supports and applauds the Australian Government for investing resources in disaster risk reduction. The contribution that Australia has made to the Group for the Indian Ocean Tsunami Warning and Mitigation System is commendable and the committee urges the Australian Government to continue its support for this and similar initiatives.

6.28 Drawing on the findings of the 2012 review of AIFDR, the committee highlights the potential for Australia to build on the work it is already doing with Indonesia in disaster risk reduction to inform its other bilateral programs and, indeed, an Indian Ocean rim regional approach. It notes the importance of:

- developing stronger links with, and better communication and coordination between Australia's country programs in the region that are also engaged in disaster risk reduction and related areas such as climate change and food security;
- developing stronger links with, and better communication and coordination between AusAID development personnel and technical personnel from other government agencies that are partners in assisting countries in the region with their disaster risk reduction; and
- encouraging a regional approach to disaster risk reduction that builds on Australia's experience in assisting a number of Indian Ocean rim countries.

# Climate change and disaster mitigation initiatives

6.29 There is growing recognition that climate change will exacerbate the effects of natural disasters: that their frequency and intensity is expected to increase.<sup>31</sup> In its submission, DFAT explained the ways climate change and environmental degradation are affecting the Indian Ocean rim:

Sea level rises and climatic variations may also lead to coastal submersion as well as degradation of coral and patch reefs on the continental shelf. Coastal population pressures and increasing exploitation of coastal resources have led to coastal degradation. Large parts of African (and Indian Ocean rim) coastlines are already slowly being impacted. For some

<sup>31</sup> Australian Civil-Military Centre, 'ACMC funds new study on regional approaches to disaster management', 5 April 2013, <u>http://acmc.gov.au/2013/04/acmc-funds-new-study-on-regional-approaches-to-disaster-management/</u> (accessed 3 May 2013).

Indian Ocean states, such as the Maldives, this represents a major concern.  $^{\rm 32}$ 

6.30 In its submission, the Western Australia Government argued that climate change 'is a significant challenge for the region, with many countries in the Indian Ocean rim likely to be affected by extreme climatic events, such as droughts, floods and cyclones.' The submission noted that cooperation should be encouraged to put in place warning systems along with mitigation and adaptation strategies.<sup>33</sup>

6.31 The Defence White Paper 2013 also indicated that climate change and accompanying changes in weather patterns would likely lead to more extreme weather events and increase the 'demand for humanitarian assistance, disaster relief and stabilisation operations over coming decades.<sup>34</sup>

# Developing countries and climate change

6.32 A number of countries in the region are particularly concerned about changes to climate including South Africa, a major player in climate change negotiations, and Maldives, which is worried about the future effects of climate change, especially sea level rises. DFAT cited other countries troubled by the prospects of changing climate, including Mozambique, Mauritius, Comoros and Bangladesh. It also referred to Seychelles, which is a strong advocate for the climate change concerns of small island states and is a leading member of the Alliance of Small Island States.<sup>35</sup>

6.33 All these countries are developing and Maldives, Mauritius, Comoros and Seychelles are members of the Alliance of Small Island States. In this regard, DFAT informed the committee that the Australian Government consulted closely with Indian Ocean rim members of the Alliance in negotiations under the UN Framework Convention on Climate Change. Through the International Climate Change Adaptation Initiative, Australia provided support to assist developing countries, particularly the small island states and least developed countries, adapt to the effects of climate change. DFAT stated that Australia's assistance is 'focused on timely, practical initiatives that are integrated with wider development programs'.<sup>36</sup>

6.34 Clearly, developing nations have very limited resources to deal with the detrimental effects of climate change. AusAID recognised the increasing threat that natural disasters pose to countries achieving their development goals. It observed that disaster risk reduction and climate change adaptation are now being integrated into aid initiatives in Africa to reduce vulnerability and build resilience at both the country and community level.<sup>37</sup> For example, Australia co-operates closely with the Maldives to address climate change and provided A\$5 million 2011-12 to assist with human

<sup>32</sup> *Submission 30*, p. 23.

<sup>33</sup> *Submission 35*, p. 11.

<sup>34</sup> Department of Defence, *Defence White Paper 2013*, paragraph 2.75, pp. 18–19.

<sup>35</sup> *Submission 30*, pp. 60–61.

<sup>36</sup> *Submission 30*, p. 57.

AusAID, answers to questions on notice (public hearing, 6 December 2012, Canberra), p. 12.

resource development and climate change. Australia also provides assistance to Bangladesh.  $^{38}$ 

#### IOR-ARC and disaster risk reduction

6.35 Australia identified climate change and adaptation as areas of current and potential collaboration within IOR-ARC. DFAT noted that, as part of IOR-ARC, Australia 'may have further opportunities to work with member states to pursue targeted development outcomes, including in areas such as climate change adaption'.<sup>39</sup>

6.36 Members of IOR-ARC often call on the association to implement practical initiatives that will make a difference. With regard to climate change, the committee notes that a workshop with participants from the Western Indian Ocean recognised that monitoring of climate change impacts was important but that some types of monitoring could be expensive. To understand the effects of climate change on resources, they identified the need for 'improved data and information tools', including tools to collect baseline data and to monitor the health of ecosystems and changes in climate. In their view, 'it would be helpful to have standardized monitoring methodologies within the region'.<sup>40</sup>

6.37 The committee believes that IOR-ARC has a significant contribution to make in areas such as standardisation as noted above. In this regard, the committee also refers back to observations made about delays in reconstruction work in Indonesia after the 2004 tsunami because of negotiations over building codes. Improvements in these concrete, sensible areas of potential regional cooperation are not high profile but they are practical and of great benefit.

# Conclusion

6.38 The committee commends the efforts of those agencies working on the Tsunami Warning System. The committee believes that such a system not only works on the level of disaster mitigation, it also facilitates people to people connection between countries and allows an exchange of information and expertise.

6.39 The committee believes that there is much more to be done in the region on disaster risk reduction and climate change adaptation and that IOR-ARC has an important role in both highlighting the achievements so far and in underscoring the need for strengthened collaboration. The committee is particularly aware of the vulnerability of many developing countries in the region to the devastating effects of natural disasters and climate change and importantly of their lack of capacity to manage such events. The committee supports strongly Australia's work with the Alliance of Small Island States and urges it not only to continue to do so but to give

<sup>38</sup> *Submission 30*, p. 66.

<sup>39</sup> *Submission 30*, p. 54.

<sup>40</sup> Adaptation Partners, 'Western Indian Ocean Climate Change Workshop for Coastal and Marine Protected Areas', Cape Town, South Africa, February 2012, <u>http://www.adaptationpartnership.org/blog/activities</u> (accessed 3 May 2013).

greater emphasis to its work with the small islands states in the Indian Ocean to ensure that their interests are represented in international fora.

6.40 Australia and Indonesia are the future chairs of the IOR-ARC. Both countries have forged an effective partnership through the AIFDR to help Indonesia with its disaster risk reduction. The committee believes that this partnership provides a solid platform from which the region as a whole could benefit.

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