



Sebastian Gregoriou and his wife, Ascuncion, pictured where their house stood and where their daughter was killed during the typhoon. Photo Credit: Colin Keegan/Irish Mirror, courtesy of Oxfam Ireland

# CAN'T AFFORD TO WAIT

Why Disaster Risk Reduction and Climate Change Adaptation plans in Asia are still failing millions of people

Climate-related disasters and food crises are devastating thousands of lives and holding back development across Asia. A year on from the devastating super-typhoon Haiyan in the Philippines, Oxfam calls for governments across Asia, backed by regional and global institutions and fair contributions from wealthy countries, to ramp up efforts to address these challenges. Without greater investment in climate and disaster-resilient development and more effective assistance for those at risk, super-typhoon Haiyan-scale disasters could fast become the norm, not the exception.

# CLIMATE CRISIS

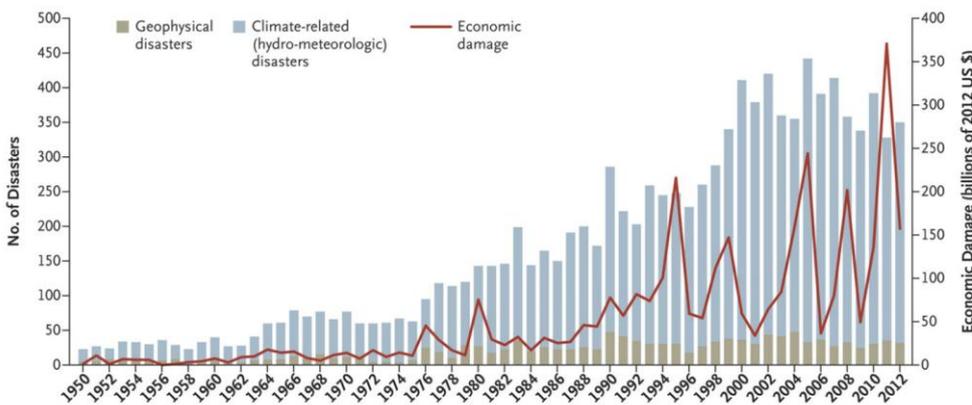
Super-typhoon Haiyan (known locally as Yolanda) tore through the Philippines exactly one year ago, devastating thousands of lives and leaving millions of people homeless. It was the strongest typhoon to make landfall ever recorded, causing a storm surge that ripped through coastal neighbourhoods and agricultural lands across much of central Philippines. The international humanitarian community responded quickly and most generously to the humanitarian needs in the wake of Haiyan. While the scale of the disaster was in many ways unprecedented, Asia is already the most disaster-prone region in the world, and worryingly, the impacts of these disasters are growing. In the most recent Intergovernmental Panel on Climate Change (IPCC) assessment, scientists foresaw, with *high confidence*, that "extreme climate events will have an increasing impact on human health, security, livelihoods, and poverty, with the type and magnitude of impact varying across Asia."<sup>1</sup>

## RISING DISASTERS

The frequency of weather-related disasters and the damage they cause are both on the rise. Since 1980, available data indicates weather-related disasters have increased by 233 per cent.<sup>3</sup> There have been more than 8,835 disasters globally between 1970 and 2012, causing 1.94 million deaths and US\$2.4 trillion in economic losses – primarily as a result of hydro-meteorological hazards such as droughts, extreme temperatures, floods, tropical cyclones and related health epidemics.<sup>4</sup>

*"Weather, climate and water-related disasters are on the rise worldwide, causing loss of life and setting back economic and social development by years, if not decades".<sup>2</sup>*

FIGURE 1: NUMBER AND TYPE OF NATIONAL DISASTERS, 1950-2012<sup>5</sup>



Large destructive disaster events such as super-typhoon Haiyan paint only part of the picture. The impacts of smaller, more localized and gradually occurring crises, sometimes referred to as 'creeping disasters', account for a large proportion of total disaster losses: 54 per cent of houses damaged, 80 per cent of people affected, and 83 per cent of people injured.<sup>6</sup> In addition, climate change is already causing unavoidable losses and damage to the basic means of food generation. The state of food insecurity will worsen significantly unless meaningful and urgent action is taken to improve adaptation.<sup>7</sup>

## ASIA BEARING THE BRUNT

Asia is particularly susceptible to these risks. The region has always faced geological and weather related hazards, but climate change, worsening inequality and inadequate investments in reducing peoples' exposure to risk are intensifying the scale and impact of disasters and food insecurity on vulnerable populations:

- In 2012, Asia accounted for 41 per cent of recorded disasters and 64.5 per cent of people affected by disasters globally.<sup>8</sup>
- Over the past 20 years, Asia has borne almost half the estimated global economic cost of all disasters, amounting to approximately US\$53 billion annually. Direct losses from disasters in the region significantly outpaced growth in GDP.<sup>9</sup>
- Despite the impressive economic growth of many Asian countries, the region is home to two-thirds of the world's most undernourished and food-insecure people.<sup>10</sup>
- The number of people exposed to coastal flooding in Asia is expected to increase by 50 per cent by 2030.<sup>11</sup>
- Agricultural and coastal livelihoods, the mainstay of most Asian people's livelihoods and food security, are in grave peril from the impacts of climate change. By 2050, more than half of the Indo-Gangetic Plains of South Asia, a region which grows 15 per cent of the world's wheat, may become heat-stressed for wheat, with a significantly shorter season for the crop.<sup>12</sup>
- Sea-level rise, coastal flooding and saltwater intrusion related to climate change also threaten farming in major deltas, potentially affecting some 3.5 to 5 million people.<sup>13</sup> The Mekong Delta in Viet Nam accounts for around 50 percent of the country's agricultural production and is at severe risk of saltwater intrusion. It has been estimated that a sea-level rise of 30cm, which could occur as early as 2040, could result in the loss of about 12 per cent of crop production.<sup>14</sup>

## UNEQUAL COSTS

These trends have devastating costs – in both human and economic terms – and these costs are disproportionately borne by the poorest and most marginalized people. Most developing countries are not major emitters of greenhouse gases, yet they have to bear huge costs related to climate disasters. People's vulnerability to extreme weather and disasters is magnified when factors such as their power, livelihoods, and social and personal protection systems are weak. For example, available indicators suggest disaster mortality is higher for women than men.<sup>15</sup> This should be no surprise given women's relatively higher levels of poverty as well as reduced mobility in disasters due to caregiving responsibilities and social conventions.<sup>16</sup>

# THE NEED FOR LEADERSHIP

While there is urgent need for greater global efforts to mitigate the future impacts of climate change, unfortunately, these alone cannot address many of the negative effects of climate change which are already starting to take their toll. Particularly in Asia, it is vital that much more is done alongside mitigation efforts to help poor communities adapt to an already changing climate and reduce their exposure to risk. This requires leadership at all levels: national, regional and international.

## NATIONAL LEADERSHIP

In the face of growing climate and disaster risk, governments in Asia should lead on and deliver effective and inclusive climate adaptation and disaster risk reduction. They should have the governance mechanisms that will deliver, with full accountability, their commitments. In varying degrees, this is starting to happen across the region. Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) are established and growing fields of development and environmental policy and practice, and there are well over 100 national policy instruments across Asia committing to DRR and CCA.<sup>17</sup> The policies of five countries, in particular – Bangladesh, Indonesia, Pakistan, Philippines, and Viet Nam – have been assessed in research commissioned by Oxfam Viet Nam (see research methodology in Annex).<sup>18</sup>

A number of positive developments are evident in these policies. There is increasing recognition in DRR and CCA policies of the rights of hazard-prone communities – including their rights to be consulted, have access to information and receive assistance without discrimination. For example, Indonesia's Disaster Management Law has a strong "rights-based approach" component, and Viet Nam's DRR and CCA policies explicitly mention the right to information, health, education and food, although these are silent on the rights specific to vulnerable groups. Other policies have been more sensitised to the rights of groups with specific needs and vulnerabilities, such as persons with disabilities. An example is Pakistan's National Policy Guidance on Vulnerable Groups in disasters.

Secondly, many governments are taking a multi-stakeholder approach. The Philippines and Indonesia stand out as developing policies enriched by inputs from civil society. The process of drafting the Disaster Management Law of Indonesia included a series of consultations involving stakeholders from various development sectors. In the Philippines, the National Disaster Risk Reduction and Management Council (NDRRMC) has seats for government agencies, civil society, the church sector, private sector, national Red Cross as well as academia. Such multi-stakeholder composition in the national leadership is also

expected to be replicated at the provincial and municipal levels, though this process has yet to be operationalised.

## Remaining challenges

While national governments across Asia have made serious strides at the policy level, the implementation of DRR and CCA policies on the ground remains lacking. This is due to a range of policy and practice challenges.

**Underinvestment:** Despite clear evidence of the human and economic benefits of investing in risk reduction,<sup>19</sup> data suggests that governments continue to emphasise funding disaster response. For example, in the Philippines, close to half (47 per cent) of internal climate change adaptation funds go to reconstruction and rehabilitation, while the rest are spread out to support adaptation activities in agriculture, environment, disaster prevention and preparedness, among others.<sup>20</sup>

**Connecting DRR and CCA efforts:** Given the interconnectedness of extreme weather, climate change and disaster impacts, it makes sense for DRR and CCA approaches to be more linked in both policy and practice. However national policy and planning processes within Asia have only recently started to converge. Some countries in Asia have been effective at leading this joined-up effort, while others are still struggling to find ways to coordinate and demonstrate leadership.

**Gender equality:** During disaster response, women's specific needs such as health and hygiene facilities are too often not met or prioritised. Similarly, women's voices are reportedly weaker in planning preparedness and DRR activities and the integration of these with overall development processes. In spite of the mention of gender and the rights of women in some of the policies reviewed, on the whole, there continue to be inadequate attention given to gender equality. In Bangladesh, for example, early warning systems are largely gender-blind and not developed in such a way as to respond to the specific requirements of women, thus rendering them dependent on men in receiving appropriate and timely messages.<sup>21</sup> Likewise in Viet Nam, women's involvement in local flood and storm control is limited to child care and food distribution. In Indonesia, gender issues are not clearly addressed in DRR policies.

**Public discourse:** There are also gaps in public discourse on climate policy, in part due to the complexity of engaging poor rural communities in complex science-driven agenda. This was underlined in the Bangladesh research where discourse on CCA has been limited to the more educated urban centres.<sup>22</sup> Similarly, Indonesia's CCA policies and mechanisms appear to have a low emphasis on public discourse. In Viet Nam, the Disaster Management Law and other DRR policies have been well publicised nationally and regionally, but their relevance and meaning have not filtered down to affected communities.



*“We have never seen this kind of floods in the area before. Over the last few years, rain patterns have also changed and are having bad effects on our crops and, thus, our livelihoods. Government must tell us how we can save our lives and livelihoods in the face of these threats.”*

Shamshad Bibi, 36-year old mother of six from the village of Bakhtiari, in the district of Bahawalpur (Punjab, Pakistan).

*Photo: Komal Ayaz, Help Foundation. Pakistan, Sep. 2014*

**Legislation:** Legislated policies and decrees often have more political clout, given the legal weight and mandatory enforcement inherent in these. Disaster risk reduction and management has increasingly become a legislated area of policy-making across Asia, while climate change adaptation remains predominantly at the policy level without legislation. Out of the five countries examined, only the Philippines has climate legislation: the Climate Change Act (RA 9729) of 2009. This is a landmark measure that puts climate change at the centre of government policy-making, and resulted in the creation of the Climate Change Commission (CCC) as the government’s chief CCA policy-making body. But while the Climate Change Act is a solid piece of legislation, it is poorly implemented: The CCC is barely functional and has convened only once since 2010.<sup>23</sup>

**Data deficiencies:** One of the key challenges governments continue to face in developing and implementing effective CCA and DRR policies is capturing, and thereafter maintaining, accurate data on risks and vulnerabilities to guide interventions. For example, in the Philippines, DRR policies discuss the importance of vulnerability assessment and of maintaining a database, but while vulnerability assessments are on-going, the national database is not yet operational.<sup>24</sup> Likewise the ‘Disaster Risk Reduction Management Information System’ and GIS-based national risk map are key programs in this area but have yet to be established in practice. The Philippines’ Department of Agriculture’s Climate Information System was recently launched and holds much promise.<sup>25</sup>

**Political leadership:** Senior political buy-in is critical for effective implementation of DRR and CCA policies and legislation. Across the countries examined, in general, there is greater buy-in for disaster management than for climate change adaptation. For example, in Pakistan, the National Disaster Management Act (NDMA 2010) has established the National Disaster Management Commission (NDMC), the apex body for making decisions as well as approving policies and

strategies to mitigate disaster risk. The Prime Minister heads the NDMC, which has representation from all federating units, executives and even the opposition leader in the National Assembly. In contrast, the Climate Change Division is the only dedicated body at national level, with very little technical capacity.

**Coordination challenges:** Risk reduction and adaptation efforts require multi-sector leadership and action by a wide range of stakeholders such as the Health, Defence, Home Affairs, Public Works, Environment and Finance ministries. This could present coordination challenges, particularly where entities set up to oversee DRR-CCA policy implementation lack political clout. For example, in Bangladesh, the task of coordinating all agencies for DRR sits with the Ministry of Disaster Management. The Ministry produces coordination directives but is not directly involved in implementation and lacks the capacity and political weight to enforce compliance from the responsible agencies. As a result, few of the priority activities identified in the Bangladesh Climate Change Strategy and Action Plan (BCCSAP) have actually been implemented so far.<sup>26</sup>

**Local governance:** The trickle down of national policy to the sub-national level is a challenge across the region, and greater investments are required to increase the capacity and leadership of local governments for DRR and CCA. In Pakistan, for example, the 18<sup>th</sup> Constitutional Amendment has resulted in the devolution of responsibility for environment, climate change, DRR, health and parts of education to provinces to strengthen decentralisation. However, this process has also perpetuated confusion about the implementation of national, cross-sectoral and inter-provincial DRR and CCA policies and plans.<sup>27</sup> By contrast, the Philippines is an example of good practice in this area. The Department of Interior and Local Government (DILG) in the Philippines has been a key agency in clarifying a specific provision in the National Disaster Risk Reduction and Management Act (RA 10121, 2009) involving the mandatory allocation of 5 per cent of internal revenue allocations for DRR and emergency response.

**Food security:** Successful DRR and CCA must go hand in hand with policy and strategy for food security and production. Despite the constitutional recognition of the right to food in several Asian countries and their ratification of relevant international instruments, the right to food is not sufficiently operationalised across the region. Nevertheless, across the region, there are some good examples of integrating DRR and CCA with food security and agriculture planning. In Indonesia, for example, food security has been identified by BAPPENAS (the national planning agency) as one of the top five sectors to be affected by climate change. Food security is also identified as a main focus of CCA under the National Mid-term Development Plan (NMDP) 2010-2014, and the Ministry of Agriculture as one of the main ministries responsible for CCA.

## REGIONAL LEADERSHIP

The borderless impacts of climate change and disaster risks therefore require a regional response. Regional organisations like the Association of Southeast Asian Nations (ASEAN) and the South Asian Association for Regional Cooperation (SAARC) play a key role in supporting Asian governments to address this challenge, and their role must be strengthened.

There are some welcome developments. The ASEAN Agreement on Disaster Management and Emergency Response (AADMER), a regional treaty that has been ratified by all ten ASEAN Member States, has formalised regional cooperation to reduce disaster losses and made this commitment legally binding. It has been operationalised through the creation of the ASEAN Centre for Humanitarian Assistance on disaster management (AHA Centre) while institutionalising civil society participation through the ASEAN Committee on Disaster Management-CSO Partnership Framework and the AADMER Partnership Group (APG). Both actions have already made headway in DRR promotion in the region and actual response to recent disasters, super-typhoon Haiyan being the most recent example.

The potential of AADMER, however, has yet to be fully realised. It needs to build up resources to a level that will allow for a comprehensive response to a major disaster in the region. While significant progress has been made in advancing a multi-stakeholder approach to implementation, including a role for NGOs and civil society, improvements can still be made in tying in AADMER with existing international humanitarian infrastructure such as UN coordination mechanisms.<sup>28</sup>

SAARC is also taking steps, using the SAARC Disaster Management Framework, to establish a regional system for the development and implementation of regional programmes and projects in early warning, and the exchange of information on prevention, preparedness and disaster management in South Asia. There are major weaknesses in implementation of the SAARC Framework, however. It is not legally binding and suffers from severe resource constraints. In addition, members have shown reluctance to share critical data and information on trans-border hazards and vulnerabilities.

The formulation of the Expert Group on Disaster-related Statistics in Asia and the Pacific earlier this year by governments of the Asia-Pacific region is also a positive development. The Expert Group will establish a common range of disaster-related statistics to enable more precise risk assessment across the region and help governments in evidence-based policymaking. The group has held only one meeting so far, but holds much potential for informing more effective targeting for support and infrastructure to better manage disaster risks.<sup>29</sup>

## GLOBAL LEADERSHIP

Developing country governments in Asia cannot rise to the challenge of climate related disasters alone, nor should they have to. The United Nations Framework Convention on Climate Change (UNFCCC) establishes the principle of Common but Differentiated Responsibilities and Respective Capabilities (CBDR+RC), meaning countries must act in accordance with their relative responsibility for climate change, and their enforcement capabilities.<sup>30</sup>

### Climate financing

Rich countries are required to help finance climate action in developing countries, including climate change adaptation. The 2009 Copenhagen Accord included a commitment from developed countries to mobilise US\$100 billion a year by 2020 to address the needs of developing countries in tackling climate change.<sup>31</sup> Developed countries further committed to providing US\$30 billion over the 2010-2012, which became known as *Fast Start Finance*.<sup>32</sup>

Despite the agreement that *Fast Start Finance* be balanced between adaptation and mitigation, only 21 per cent of funds supported adaptation to climate impacts.<sup>33</sup> To date, developed countries have made inadequate progress in scaling up their contributions towards the US\$100 billion commitment and only limited progress in closing the 'adaptation gap'.

The Green Climate Fund (GCF) will provide a key channel for new climate finance. Even though a number of questions need to be resolved, the GCF's Board has, among other things, decided on a 50:50 balance between mitigation and adaptation for the fund over time.<sup>34</sup> Pledges to the GCF are needed urgently – both to help meet the escalating adaptation needs in developing countries and to build trust and momentum in international climate negotiations. At least US\$15 billion must be committed to the fund for the first three years. Developed countries must continue to scale up finance to reach the current goal of US\$100 billion by 2020, with a substantial share eventually to be channelled through the GCF.

The Kyoto Protocol's Adaptation Fund also remains an important source of adaptation financing, though it is constantly low on funds. Following considerable pressure from civil society and developing countries, new contributions and pledges enabled the Adaptation Fund to achieve its fundraising goal of US\$100 million by end-2013. The Adaptation Fund's Board set a new fundraising target of US\$80 million per calendar year for 2014 and 2015.<sup>35</sup>

## Global action on DRR

Global initiatives such as the Hyogo Framework for Action (HFA), adopted by 168 countries in 2005, have contributed to shifting international consensus on disasters from a crisis management approach to proactive risk reduction.<sup>36</sup> Institutions like the UN International Strategy for Disaster Reduction (ISDR) have played an important role in that shift, and in furthering national governments' implementation of HFA commitments.<sup>37</sup> However, despite numerous global commitments to increase development assistance for DRR, only 0.5 per cent of international aid went towards crisis prevention and preparedness between 1991 and 2010.<sup>38</sup>

The vast majority of DRR funding stems from humanitarian financing rather than development funds, despite the premise that DRR is for the long term.<sup>39</sup> Although the UNISDR recommends that at least 10 per cent of international humanitarian assistance be allocated towards DRR, in practice the major OECD humanitarian donors have allocated much less than this. Over the past five years, members of the OECD Donor Assistance Committee have contributed only between just 2.9 per cent and 6.2 per cent of their total humanitarian spending on DRR.<sup>40</sup>

The negotiation of a follow up agreement to the HFA (HFAII) in 2015 provides an opportunity for the international community, and in particular developed states, to improve DRR financing arrangements and increase DRR funding available to disaster-prone developing states, many of which are in Asia.

## Mitigation

Ultimately, the only way to prevent the worst of the extreme weather and food security impacts of climate change will be for governments to make good on their commitment to agree to an ambitious new global climate agreement in Paris in 2015 (to be implemented from 2020), while working to close the gap in required pre-2020 emission reductions. Both are crucial to attaining the global goal of limiting global warming to 2°C above pre-industrial levels. Many countries have argued that 2°C is unacceptably high and will exact a heavy toll on many regions. Nonetheless, current trends in emissions put us on a path to much higher levels of warming.<sup>41</sup> This will be a global disaster, to be borne disproportionately by Asia's growing population.

# CONCLUSIONS AND RECOMMENDATIONS

It is clear that current policy, institutional arrangements and resources are not yet delivering results for people facing the brunt of mounting risk. To reverse the trend in disaster and climate risk in Asia, governments, and regional and global institutions must step up to the challenge, backed by wealthy countries contributing their fair share.

## ***National governments must:***

- Deliver more comprehensive, time-bound and coordinated cross-government DRR-CCA plans and strategies to build the resilience of vulnerable people exposed to disaster and climate risk. Attention must be given to ensuring the full and active participation of civil society and hazard-exposed communities, including the equal participation of women in policy development, implementation and review processes.
- Ensure the access to, and appropriate use of, 'risk information' by all sectors of the population. Regionally standardised disaggregated disaster loss databases must be established now. Accurate usable early warning and weather forecasting should be available to the most vulnerable and sensitive production sectors.
- Increase political commitment, buy-in and budget allocations for DRR and CCA policy implementation. Government spending must be undertaken in a transparent and accountable manner and used to support projects that match local and national priorities.
- Build local and national capacity to track and monitor climate adaptation funds. Governments should strengthen existing local and national DRR and CCA platforms and delivery initiatives.
- Protect the right to food, thereby enabling the most vulnerable people to hold government to account for this entitlement from the local to national levels.

## ***ASEAN must:***

- Create a regional resource base that consolidates and facilitates the exchange of information, knowledge, expertise, funds and other resources to support the implementation of DRR and CCA policies and plans in ASEAN Member States. Understanding and addressing the specific needs and situations of women should be a primary consideration in creating this resource base.
- Increase Member States' capacity to implement DRR and CCA policies by expanding partnerships with stakeholders' groups and civil society organisations, and ensure that vulnerability reduction and resilience are top priority.

**SAARC must:**

- Ensure implementation of existing agreements and decisions on disaster management, climate change and food security and agriculture.
- Prioritise the provision and sharing of flood early warnings and development of community-based disaster risk reduction plans.
- Strengthen the SAARC Secretariat and Disaster Management Centre to improve collaboration with CSOs and policy research institutes.
- Establish common positioning on the Hyogo Framework HFA2 process in order to enhance ownership and, ultimately, implementation of the framework.

**All governments involved in the UNFCCC process must:**

- Achieve their goal of finalising a new global agreement in Paris in 2015 (to be implemented from 2020), while working to close the gap in required pre-2020 emissions reductions and ensuring greater funding for adaptation.
- Governments must achieve their goal of finalizing a new global agreement in Paris in 2015 (to be implemented from 2020), Both are essential to achieving the international goal of limiting global warming to 2°C (or the 1.5°C that many countries rightly demand), beyond which there is much higher risk of disasters and adaptation may become impossible. Achieving the required level of emissions reductions means ambitious contributions from all countries and increased support from developed to developing countries for their implementation along with financial support for adaptation and disaster risk reduction.

**Rich countries must:**

- Support developing countries to enable them to protect their citizens against climate disasters. Specifically, the developed countries' pledges for the Green Climate Fund (GCF) should reach US\$15 billion by COP 20 in Peru, to be divided equally between climate change adaptation and mitigation in order to better help countries adapt to and reduce risks related to climate disasters.
- Funds to support climate action in developing countries should be new and additional, which means that these should be over and above the 0.7% of GNI that governments agree was needed to provide in aid to finance the Millennium Development Goals. The need for predictability of climate finance for adaptation and the limited scope for meeting this through the private sector means that funds primarily need to be public. Public funds should be in the form of grants, not loans.
- As part of their 'Intended Nationally Determined Contributions' (INDCs), which detail a country's contribution to the new global agreement, developed countries should include details of the climate finance they will provide, including funding for climate adaptation.

***The second Hyogo Framework for Action on Disaster Reduction (HFA2) must:***

- Outline the sense of ambition, urgency, and prioritisation of DRR needed in the face of rising risk.
- Emphasize the centrality of bottom-up community resilience.
- Emphasize the importance of whole-of-government approaches and the responsibilities of multiple government departments.
- Instil mandatory monitoring and accountability through the 'HFA monitor' and promote public access to decision-making platforms and progress updates.

## ANNEX: RESEARCH METHODOLOGY

Oxfam's research builds on the findings of a comprehensive assessment of the status of government policy<sup>42</sup> relating to Disaster Risk Reduction (DRR) and Climate Change Adaptation (CCA) in Asia. The research also assessed the role of regional and international institutions in supporting policy implementation around risk reduction and adaptation.

In total, Oxfam's assessment covered 109 DRR and CCA policies in a scoping exercise of all 10 Member States of the ASEAN region and four Member States from the SAARC region.<sup>43</sup> It also considered other policies that integrate the DRR and CCA agendas. Policies were assessed by national independent researchers in each country for strengths and weaknesses, and general observations on DRR-CCA policy-making across Asia were documented.

Across five countries, 64 policies were examined in depth to provide deeper insights: Bangladesh, Indonesia, Pakistan, Philippines, and Viet Nam.<sup>44</sup> In its analysis, Oxfam considered the extent to which DRR and CCA policies met nine critical indicators of policy effectiveness devised by Oxfam and informed by global best practice on governance (see box).<sup>45</sup> These indicators were selected and refined through consultation with experts and researchers at regional level and in all countries concerned. Researchers also conducted a desk-review of literature as well as key informant interviews with government officials, civil society respondents, and focus group discussions.

## Indicators of policy effectiveness

- **Specificity:** The policy creates rules, duties, and rights that are clear, unconditional, time bound. It also identifies actors for implementing policy measures, including mainstreaming of DRR and CCA into development.
- **Institutional Set-up:** A multi-stakeholder entity is created or identified to implement, coordinate or enforce the policy at national, sub-national and local levels. Dedicated finance for CCA, DRR and response is a key aspect of the required institutional set-up.
- **Inclusiveness:** Involvement of hazard-prone communities (including those excluded by virtue of their age, gender, ethnicity, etc.), science, academia, private sector and CSOs at the national, sub-national and local level in: a) consultations before and during policy formulation; b) grievances; c) policy review / impact monitoring.
- **Rights:** The policy creates or recognises equity and the rights of hazard-prone communities such as: a) equal share in recovery efforts; b) access to risk information; c) right to be consulted; d) rights specific to women and children; e) access to health, education and food during and after disasters.
- **Legal Status:** The policy is passed by the parliament or the national government, and is formally enforceable. A budget is created or identified for its implementation.
- **Political Status:** The policy is prioritised by the political leadership, or carries a broad political consensus by the parliament, or is an administrative or executive order.
- **Public Discourse:** The policy figures prominently in the mainstream (traditional and online) media or in statements by opinion leaders.
- **Information:** The policy refers to vital data (loss database and vulnerability data) and/or provides how vital data will be acquired in subsequent stages of policy implementation.
- **Gender / Food Security / Livelihoods:** The policy talks about these or some of these issues.
- **Decentralisation:** The policy indicates sub-national and local implementation guidance or institutions for its implementation, including the provision of a budget, mandate, staffing and capacity at these levels.

# NOTES

- 1 IPCC Fifth Assessment Report (2014). Climate Change 2014: Impacts, Adaptation and Vulnerability. Chapter 24 ( p1330 – Executive summary). Due to a lack of available data, at the global level there is a low level of confidence (except the North Atlantic since 1970) to predict increases in intense tropical cyclone activity. In East Asia, we are likely to see enhanced summer monsoon precipitation; increased rainfall extremes of landfall typhoons on the coast and more extra-tropical cyclones in winter. Projected sea level rise will compound tropical cyclone surge impacts (IPCC 2012 Special Report on Managing the Risks of Extreme Events and Disasters (SREX).
- 2 [http://www.wmo.int/pages/mediacentre/press\\_releases/pr\\_998\\_en.html](http://www.wmo.int/pages/mediacentre/press_releases/pr_998_en.html)
- 3 Centre for Research on the Epidemiology of Disasters (CRED), "Disaster Data: A Balanced Perspective," CRED CRUNCH 27, (2012).
- 4 [http://www.wmo.int/pages/prog/drr/transfer/2014.06.12-WMO1123\\_Atlas\\_120614.pdf](http://www.wmo.int/pages/prog/drr/transfer/2014.06.12-WMO1123_Atlas_120614.pdf)
- 5 EM-DAT International Disasters Database, Center for Research on the Epidemiology of Disasters, University of Louvain.
- 6 UN Office for Disaster Risk Reduction (UNISDR), Revealing Risk, Redefining Development: Global Assessment Report on Disaster Risk Reduction 2011 (GAR 2011), Geneva, 2012, 37 and Box 2.4. See [http://www.preventionweb.net/english/hyogo/gar/2011/en/bgdocs/GAR-2011/GAR2011\\_Report\\_Chapter2.pdf](http://www.preventionweb.net/english/hyogo/gar/2011/en/bgdocs/GAR-2011/GAR2011_Report_Chapter2.pdf).
- 7 Extreme Weather Extreme Prices; the costs of feeding a warmer world (Oxfam Briefing Paper, 2012). <http://policy-practice.oxfam.org.uk/publications/extreme-weather-extreme-prices-the-costs-of-feeding-a-warming-world-241131>
- 8 UN OCHA, World Humanitarian Data and Trends, 2013, p. 8, available from: [https://docs.unocha.org/sites/dms/Documents/WHDT\\_2013%20WEB.pdf](https://docs.unocha.org/sites/dms/Documents/WHDT_2013%20WEB.pdf),
- 9 Asian Integration Monitor (ADB), p. 41, April 2014 <http://www.adb.org/sites/default/files/publication/59597/aeim-apr-2014.pdf>  
Investing in Resilience. Ensuring a Disaster Resistant Future (ADB), p. 11 and 21, 2013 <http://www.adb.org/sites/default/files/publication/30119/investing-resilience.pdf>
- 10 See: <http://www.fao.org/publications/sofi/2014/en/>, p. 10.
- 11 Vafeidis et al (2011) cited in UN OCHA. See [https://docs.unocha.org/sites/dms/Documents/WHDT\\_2013%20WEB.pdf](https://docs.unocha.org/sites/dms/Documents/WHDT_2013%20WEB.pdf).
- 12 In India's breadbasket, the Ganges plain, winter wheat is planted in November and harvested as temperatures rise in spring. David Lobell of Stanford University in California used nine years of images from the MODIS Earth-observation satellite to track when wheat in this region turned from green to brown, a sign that the grain is no longer growing. He found that the wheat turned brown earlier when average temperatures were higher, with spells over 34 °C having a particularly strong effect. He then inferred yield loss, using previous field studies as a guide. This revealed a much stronger effect of temperatures on yield than previous studies. Lobell's data predicted that yield losses in the Ganges plain will be around 50 per cent greater from an average warming of 2 °C than existing models. "It surprised me a little how much crop models underestimate the observed effects," says Lobell. They might have especially underestimated the impact of hot spells.  
See: <http://www.nature.com/nclimate/journal/v2/n3/full/nclimate1356.html> and <http://www.newscientist.com/article/dn21399-wheat-will-age-prematurely-in-a-warmer-world.html#.VE5byiKsWEw>.
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  - 44 Specifically, examined in depth were 30 DRR policies, 20 CCA policies, and 14 DRR/ CCA integrated policies. These include eight policies in Bangladesh, 18 in Indonesia, 11 in Pakistan, 18 in the Philippines, and nine in Vietnam.
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