



# WORKING PAPER



## Beyond COP 21: What did Asian countries pledge in the Paris Agreement?

By Nadeem Ahmad, Irum Hamid and Syed Twangar H. Kazmi, LEAD Pakistan



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## About this working paper

Accelerating the shift to climate compatible development is CDKN's business and improving the lives of the most climate-affected people is our mission. A multi-year, GBP 130 million programme funded by the British and Dutch governments and many others, CDKN works to support climate compatible development in Asia, Africa, Latin America and the Caribbean.

Our programme provides technical assistance to governments as well as research-into-action projects that fill gaps in our understanding of climate change impacts and solutions.

A further, crucial part of CDKN's programme is knowledge management and policy engagement, an effort to which this Working Paper contributes. We synthesise information on the collective performance of governments, as well as non-state actors, in tackling climate change. We convene online discussions and in-person events to assess how climate actions are serving the most climate-affected people and how climate action could be more ambitious and effective. Find more CDKN thought leadership, including insights to our Asian initiatives, and find out how to join our webinars and online discussions on [www.cdkn.org](http://www.cdkn.org) or twitter @cdknetwork

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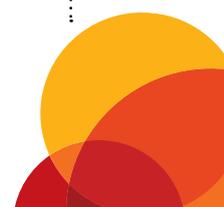


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Women attending a course on solar energy, India

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## Purpose of the report

Intended Nationally Determined Contributions (INDCs) are the blueprints developed by each country that outline how they plan to contribute towards tackling climate change beyond 2020. The INDCs were created by national governments and communicated to the United Nations Framework Convention on Climate Change (UNFCCC) before and after the 21st Conference of the Parties (COP 21), held in Paris, France in 2015.

The national-level commitments in the INDCs are now part of the Paris Agreement that came out of COP 21, and demonstrate the visions, strategies and priorities for addressing mitigation and adaptation challenges. Combined, the aggregated commitments and priorities outline the nature, extent and magnitude of future global responses to managing climate change.

But before countries begin to implement what they have promised in their INDCs, close scrutiny of these documents will provide insights into regional needs and priorities to achieve these targets and promises. This will not only enhance efforts to reduce greenhouse gas emissions, but also enhance resilience through adaptive measures.

This working paper contributes to this process by reviewing 18 INDCs from South Asia and South-East Asia in terms of their focus on four themes: (1) mitigation targets; (2) climate finance; (3) disaster risk reduction; and (4) social inclusion, particularly gender. Our analysis reviewed each INDC in terms of the types of target included, their quantification and demonstrated level of ambition; their motivational potential; and their pathways towards a low-carbon future. The financing needed to implement the pledges within each INDC was analysed in terms of the domestic finances allocated, as well the need for financing from external sources. For each of these, the 18 INDCs are ranked according to a thematic five-point rating scale, from 1 (no mention of the thematic area) to 5 (thematic area covered extensively).

Awareness of the INDCs is gaining some momentum among development partners and national governments in South Asia and South-East Asia, but there is still a lack of understanding among non-climate policy-makers, practitioners and civil society. Furthermore, policy-makers in some countries are not fully aware of what others in their region are proposing in their INDCs, or what the overall regional picture looks like. This Working Paper will help to increase continent-wide understanding and awareness of the INDCs.

## Introduction

### Planning for the INDCs

The 20th Conference of Parties (COP 20) of the UNFCCC, held in Lima, Peru, launched a process for countries to declare their national climate action plans, or Intended Nationally Determined Contributions (INDCs).<sup>1</sup> Under the Lima Call to Action, the UNFCCC urged all countries – developed and developing – to submit INDCs, outlining how they would contribute to a global agreement to tackle climate change.

This required countries to assess the feasibility of different scenarios to avoid emissions, and map which actions they could finance themselves and which would require international funding. These national exercises involved both political negotiation and technical work.<sup>2</sup>

By the official deadline of October 2015, the UNFCCC Secretariat had received 120 INDCs, covering 148 out of 196 parties (28 European Union countries submitted one joint INDC). All developed countries had submitted their INDCs by the official deadline, and two thirds of developing countries met the deadline. Together, these countries are responsible for 87% of global emissions and are home to 96% of the world's population.

The INDCs were expected to be quantified or quantifiable, except for those from countries with very limited capabilities and/or low emissions. Countries were asked to provide accompanying basic information (known as 'Up-front Information') so that their targets could be understood clearly by others and aggregated to set realistic global greenhouse gas emission-reduction targets. Moreover, quantified information and targeting would facilitate the implementation of the INDCs, support monitoring towards progress, offer more credibility for countries when securing finance and access to markets, and enhance the ability to compare between countries.<sup>3</sup>

The INDC documents varied greatly. Before they were submitted, there were no agreed guidelines on exactly what should be included. Broadly, all countries have put forward mitigation commitments, either as quantified targets or in the form of actions according to their national circumstances; about 80% – mostly developing countries – also included an adaptation section to highlight their vulnerabilities and needs.

More than 80% of the INDCs submitted specified 2030 as the horizon by which countries will implement their actions; the rest specified 2020 or 2025, in order to focus on early actions, particularly in the forestry sector.<sup>4</sup> Among the 48 countries that did not submit, 26 were from Asia and the Pacific, including Malaysia and Nepal, which submitted later. By 31 March 2016, 13 more countries had submitted their INDCs, taking the aggregate number to 161 out of 196 Parties.<sup>5</sup>

### **COP 21 and the Paris Agreement**

Both developed and developing countries displayed a renewed commitment and vigour towards tackling climate change at COP 21, held in Paris, France in 2015. Much of this was demonstrated through the INDCs, which included pledges from many countries with high carbon emissions to work on reducing these and shift towards renewable energy. These commitments helped to form the Paris Agreement, a legally binding framework for an internationally coordinated effort to tackle climate change. This was agreed on 12 December 2015 by the 196 Parties to the UNFCCC, and will come into effect in 2020.

The Paris Agreement establishes a goal of limiting global warming to less than 2°C above pre-industrial levels, and to pursue efforts to limit this to 1.5°C. It also demands commitments from all countries to undertake sustained efforts and profound changes in their energy systems, development patterns, economic planning, adaptation strategies and consumption levels. The INDCs outline these commitments. In addition to mitigation actions, most developing countries included adaptation actions and means of implementation (technology, finance and capacity building) in their INDCs.

The Paris Agreement is expected to inspire countries towards progressive and transformative climate action. It provides a long-term vision to gradually reduce greenhouse gas emissions globally, and will continually be informed by data and science. It also outlines a plan to generate resources and enhance cooperation to implement this long-term vision: one of the most encouraging outcomes for developing countries from COP 21 was the commitment of at least US\$100 billion a year to help them adapt to the ever-increasing impacts of climate change. Moreover, it outlines the broader agenda for enhanced actions by 2020, for example through the wider engagement of subnational authorities, the private sector and civil society.

Already, the Paris Agreement has fundamentally transformed the role of developing countries in global climate governance. There is now a binding requirement not only to formalise the process of developing national plans for addressing climate change, but also to assess and review progress towards these plans at least every five years. Each country is required to continuously increase its commitments towards green growth and low-carbon pathways, and all countries – developed and developing – are required to ratchet up their targets continually.

Another significant change under the Paris Agreement was that developing countries were asked to take more responsibility for allocating resources to addressing climate change, in line with their capabilities. Previously, only developed countries were supposed to provide finance for climate actions. The Paris Agreement therefore requires sustained and proactive action from developing countries, in terms of boosting domestic resources for climate change action and assuming transformational leadership, within and beyond their boundaries.

This emerging focus on bottom-up climate governance will see a push for developing countries to play an ever greater role, and the INDCs are a major entry point to effectively engage developing countries to deliver on the collective global promises in the Paris Agreement. The INDCs submitted serve as the foundation for country-owned actions under the Paris Agreement. However, the aggregate ambition levels in all the 161 INDCs submitted by 4 April 2016 will only achieve a projected course for a 2.7°C increase in global temperatures – well short of the 2°C goal set in the Paris Agreement.<sup>6</sup> Therefore, while the first round of INDCs have set a baseline for global ambitions and national actions, meeting this emission gap will require further innovations in mitigation action to progressively raise the level of ambition in the next round of Nationally Determined Contributions.<sup>7</sup>

### Climate change and Asia

The Asia region covers a wide geographical area and has diverse landscapes, climates, societies and economies. The continent includes some of the world's most vulnerable countries, such as Nepal and the Republic of Maldives, as well as some of the world's most polluting nations, such as China and India. The actions that Asian economies take – to further define their INDCs and to deal with the impacts of climate change – will therefore be crucial in global efforts to adhere to the Paris Agreement.

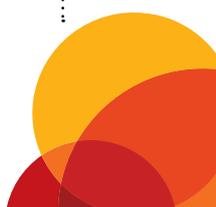
Asia accounted for 43% of all global greenhouse gas emissions in 2014, more than the United States (15%) and the EU (10%) combined. Among the 49 UN member states in Asia, 43 have a 'light' climate footprint, contributing about 10% of global emissions. By contrast, Asia is home to six of the world's top 10 emitters: China, India, Russia, Japan, Indonesia and Iran.<sup>8</sup> China alone constitutes 28% of global greenhouse gas emissions, mostly from its energy sector.<sup>9</sup> Indeed, many of Asia's emissions come from the power sector, and installed power-generation capacity on the continent is expected to double by 2030, due to steady economic growth and rapid urbanisation. Power generation globally is projected to increase by over 70% between 2010 and 2035, with over half of this expected to come from China (38%) and India (13%); overall, Asia is expected to account for 64% of this growth.<sup>10</sup>

The use of coal is a particular issue in Asia's efforts to tackle climate change. Coal accounts for 55% of electricity generation in the region. China burns more coal than the rest of the world combined and generates more electricity from coal than any other country in Asia.<sup>11</sup> In Indonesia, the share of coal in installed capacity is projected to increase in the coming years.<sup>12</sup> Pakistan and Bangladesh, which have almost no coal use today, are planning major investments in this sector. Overall, by 2040, Asia is projected to account for four out of every five tonnes of coal consumed globally.<sup>13</sup>

At the same time, there is huge potential to expand renewable energy in Asia. By 2040, the share of renewables-based power generation is expected to reach around 30% in China and Japan and 25% in India, compared with projections of 50% in the EU and 25% in the United States.<sup>14</sup> China has the world's greatest wind and solar capacity, and has contributed more than half of global energy savings through renewables since the 1990s; India plans to generate 175 gigawatts of renewable energy by 2022.

India has also made significant commitments in its INDC to improve energy efficiency and reduce transmission and distribution losses as part of its drive for a cleaner energy supply.<sup>15</sup> Indeed, many middle-income Asian countries have untapped potential for improving their energy efficiency. Both for climate protection efforts and for economic reasons, it is crucial that these countries compensate economic growth with improvements in efficiency levels.<sup>16</sup> With advanced energy efficiency, Asia could save 35% of its energy consumption against business as usual by 2035.<sup>17</sup>

In terms of adaptation, Asia faces huge challenges as the region is highly vulnerable to the effects of climate change, including increased risk of heat-related mortality and of drought-related water and food shortages causing malnutrition, coral reef decline, and exacerbated poverty and vulnerabilities.<sup>18</sup> More than half of the world's population lives in Asia, of which close to half live on less than a dollar per day; meanwhile, a large population lives in low-lying and coastal areas. These groups will need the greatest support to cope with climate change, as the region is likely to suffer extensive damage in the future.<sup>19</sup> Rising maximum temperatures and changing rainfall patterns are already affecting agriculture and food security today, and the effect of these changes will escalate towards 2030.<sup>20</sup> Climate change will also worsen the ill-effects of Asia's current environmental problems, such as water insecurity.



### Box 1. CDKN's work on the INDCs

The Climate and Development Knowledge Network (CDKN) has been working on climate compatible development in South and South-East Asia for six years, encompassing various issues including mitigation, adaptation, climate finance, energy, disaster risk reduction and gender. CDKN has also been fully involved in understanding and analysing the INDCs from the beginning, when the concept was first put forward at COP 20 in Lima.

CDKN's various projects around the INDCs range from research and support to deep engagement with country governments. In Asia, this has included a research project in India, and support to the governments of Bangladesh and Pakistan in preparing and disseminating their INDCs. More widely, CDKN has provided technical assistance for INDC preparation in Colombia, Ethiopia, The Gambia, Kenya, Peru, the Republic of the Marshall Islands and Uganda.

In Bangladesh and Peru, CDKN supported the production of economic growth and emissions projections, and mitigation options. In other countries, activities ranged from supplying technical experts in Uganda and Kenya to economy-wide stakeholder engagement processes in The Gambia. This work strengthened the foundations for drafting INDCs, and for future climate compatible development policies more generally.

The interaction between the global framework of the Paris Agreement and national processes offered an unprecedented learning opportunity for staff in CDKN's focal countries. CDKN set up a working group with project managers and senior experts from all nine of its focal countries as well as its own international experts, to share challenges and approaches. This yielded useful comparative insights for the implementation of current INDCs as well as for the future INDC development cycles.

CDKN, together with Ricardo-AEA, co-produced *A Guide to INDCs* for least developed countries and small island developing states, in English, French and Spanish.<sup>21</sup> CDKN's public affairs team also organised multilingual webinars and outreach activities around this process. The guidance, which is published on the UNFCCC's own INDC portal, remains one of CDKN's most popular publications to date. A learning exercise has been conducted to reflect on how countries could improve their INDC planning processes, and these lessons will be important for future rounds of international commitments.

### Study approach and objectives

Our research analysed the INDCs of 18 countries in South Asia (Bangladesh, Bhutan, India, Iran, Maldives, Nepal, Pakistan and Sri Lanka) and South-East Asia (Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand and Viet Nam), including high emitters, countries vulnerable to climate change, least developed countries and middle-income countries, including but not limited to CDKN's deep engagement countries.<sup>22</sup> We reviewed these in light of the Paris Agreement, consolidating the measures, pledges and targets contained in them, and looking at the requirements of the two regions overall.

This analysis was made across four themes that are of importance to these regions and to CDKN: (1) mitigation targets; (2) climate finance; (3) disaster risk reduction; and (4) gender and social inclusion. We systematically applied qualitative coding, using NVivo, to assess the thematic focus of each INDC under review. In addition to developing thematic coding, a rating was applied for each of the four themes to grade the INDCs for comparative analysis. This was applied on a scale from 1 (no mention) to 5 (fully covered). None of the four themes reviewed was weighted. Since every INDC is unique and does not follow a standard format or framework, the application of the rating allows for some comparison of the INDCs. The coding scheme and rating for each theme is further explained in Annex I.

This thematic analysis extracted the commonalities, and implementation challenges across the 18 countries. The next section of this working paper presents the analyses for the four themes, with South Asia and South-East Asia presented separately in most cases, but consolidated where relevant. The results from these regions can help to shape the overall direction of implementing the INDCs, as well as subsequent reviews and targeting.

In addition, this paper captures a range of good practices identified from these 18 INDCs. These should stimulate comparative reviews, as the documents vary in scope and content. It is important to note, however, that INDCs are, in most cases, high-level expressions of complex underlying national processes, and climate mitigation and adaptation actions within the national needs and challenges.

## Box 2. About the regions

### South Asia

South Asia covers 5.1 million km<sup>2</sup> of land and is home to over 1.7 billion people – more than one fifth of the global population. This makes it one of the most densely populated regions in the world. Agriculture is a vital sector, accounting for one quarter of the region's GDP, half of all jobs, and 55–65% of livelihoods for the majority rural population. Other major economic sectors include the manufacturing sector, dominated by small and medium-sized enterprises that produce for domestic consumption and export.<sup>23</sup>

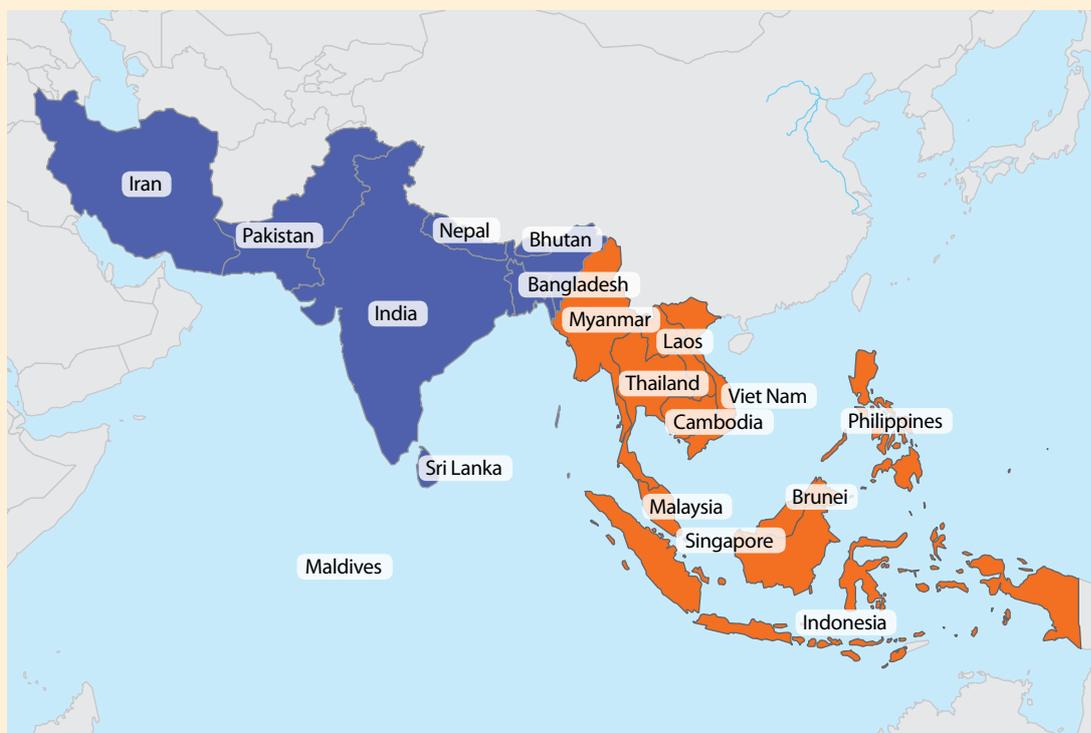
Yet according to the World Bank, South Asia is likely to suffer the most as the result of climate change.<sup>24</sup> Agriculture in particular will be affected, as the region suffers from more extreme droughts and floods, rising sea levels and glaciers melting more rapidly, leading to declines in food production.

The warming climate will also contribute to slowing efforts to reduce poverty: while the lives of everyone in the region will be altered by climate change, the impacts will fall hardest on poor people. The region's already large population of poor people is particularly vulnerable to disruptions to agriculture, which could undermine livelihoods dependent on the sector and cause food price shocks. These same populations are likely to be faced with challenges on other fronts, including limited access to safe drinking water and to electricity.

### South-East Asia

Agriculture plays a similarly important role in South-East Asia: nearly three quarters of the region's poor people live in rural areas, and a large majority of them are dependent on agriculture,<sup>25</sup> which provides employment for over one third of the working population overall. Climate change has been shifting monsoon patterns, causing erratic water availability which affects agriculture, and consequently food production and rural livelihoods. South-East Asia's population is mostly concentrated along its 173,251 km of coastline, which leaves people exposed to rising sea levels, especially low-lying nations such as Indonesia, Thailand and Viet Nam, all with long coastlines.<sup>26</sup>

Figure 1. The countries reviewed in this study



## Trends in the INDCs from South Asia and South-East Asia

### Mitigation targets

There was no common understanding among the parties to the UNFCCC about what constitutes a 'contribution' in the INDCs. There seemed to be a general agreement, however, that INDCs should at least reflect a country's contribution towards global efforts to reduce greenhouse gas emissions in the post-2020 period and thus help to mitigate climate change. Developed countries' INDCs are brief and generally cover mitigation contributions only (i.e. targets for reducing greenhouse emissions by a certain year), whereas for developing countries the scope of contributions was much wider, often including greenhouse gas and non-greenhouse gas mitigation targets, adaptation actions, climate finance, capacity building, and technology transfer or support.

Countries opted for one of four types of mitigation target, according to their needs and priorities: quantified economy-wide targets with base years; intensity-of-GDP targets; deviation from business as usual targets; or a set of policies, programmes and actions.<sup>27</sup>

Developing countries commonly split their quantified targets into two categories: unconditional targets that they can accomplish using their domestic resources; and conditional targets for which they need international assistance in terms of finance, technology and capacity. Around half of all developing countries included both unconditional and conditional mitigation targets.

### Targets in South Asia and South-East Asia

Table 1 shows that of the 18 countries under consideration in this analysis, 10 INDCs used deviations from business-as-usual emissions, two opted for targets measured as an intensity of GDP, while six did not specify any mitigation targets. Across the two regions, 11 countries committed to reductions in greenhouse gas emissions conditional on external support.

**Table 1. Nature and type of mitigation contributions in INDCs<sup>28</sup>**

Region	Number of countries (%)				
	Quantified economy-wide targets with base years	Intensity-of-GDP targets	Deviation from business as usual	Policy, programmes and actions	Undefined
Global	37	5	37	15	6
Asia	13	17	42	17	13
South Asia	0	12.5 (1)	50 (4)	0	37.5 (3)
South-East Asia	0	10 (1)	60 (6)	0	30 (3)

Note: all figures are in percentages. Numbers in brackets indicate the number of INDCs.

The most ambitious mitigation target against business as usual was made by the Philippines, with a conditional target of reducing greenhouse gas emissions by 70%. The Philippines did not specify an unconditional reduction target, however, which is important when considering its overall ambition. Iran had the lowest conditional target at 8% below the business-as-usual level by 2030 using 2010 as a base year.

In terms of unconditional mitigation targets, 10 countries specified some form of target that could be attained without external support. The highest emissions-reduction target for 2030 was set by Singapore, at 36% (2005 as a base year); the lowest was set by Iran, at 4% (2010 as a base year). The unconditional targets given were, on average, 10% lower than countries' overall targets. Bhutan is carbon neutral, meaning its total emissions are below its carbon sink; its INDC committed to maintaining carbon neutrality until 2030. Table 2 details the results for all countries analysed in South Asia and South-East Asia, including base years and target years.

**Table 2. Mitigation commitments in South Asia and South-East Asia INDCs**

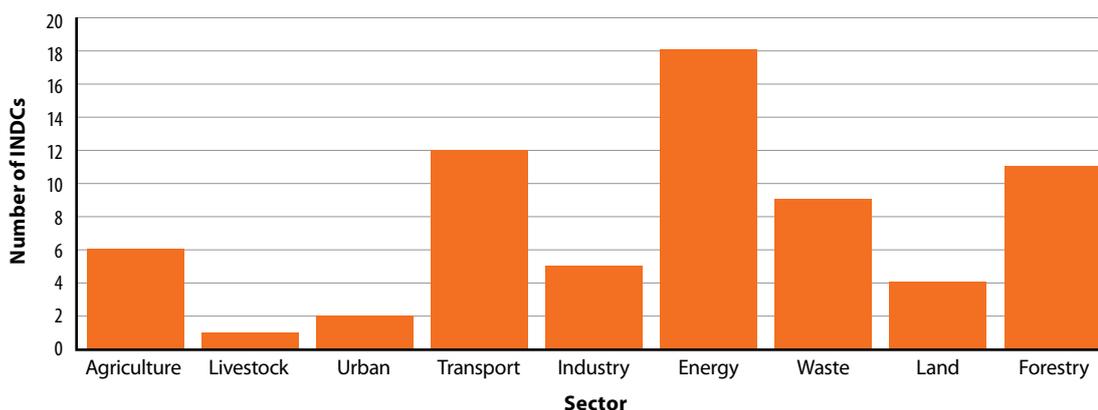
Country	Reduction target for greenhouse gas reductions (%):		Base year	Target year	Type of target
	conditional on external support	through national resources only (unconditional)			
<b>South Asia</b>					
Bangladesh	15	5	2011	2030	Deviation from business as usual (BAU)
Bhutan	Unspecified	Unspecified	2000	Not applicable	Carbon neutral
India	35	33	2005	2030	Intensity of GDP
Iran	8	4	2010	2030	Deviation from BAU
Maldives	24	10	BAU	2030	Deviation from BAU
Nepal	Unspecified	Unspecified	Not applicable	2050	Policies and actions
Pakistan	Unspecified	Unspecified	Not applicable	Not applicable	Unspecified
Sri Lanka	23	7	BAU	2030	Deviation from BAU
<b>South-East Asia</b>					
Brunei	Unspecified	Unspecified	BAU	2035	Policies and actions
Cambodia	27	Not available	Baseline of 11,600 Gg CO <sub>2</sub> equivalent	2030	Deviation from BAU
Indonesia	41	29	BAU	2020	Deviation from BAU
Laos	Unspecified	Unspecified	Not applicable	2025	Policies and actions
Malaysia	10	35	2005	2030	Intensity of GDP
Myanmar	Unspecified	Unspecified	Not applicable	2030	Policies and actions
Philippines	70	Unspecified	BAU	2030	Deviation from BAU
Singapore	Not available	36	2005	2030	Intensity of GDP
Thailand	25	20	BAU	2030	Deviation from BAU
Viet Nam	25	8	2010	2030	Deviation from BAU

### Sectoral coverage and preferences in South Asia and South-East Asia

In terms of the sectors from where emissions will be mitigated, the 18 INDCs reviewed included nine sectors: agriculture, energy, forestry, industry, land, livestock, transport, urban and waste. Figure 2 shows how many INDCs covered each mitigation sector.

All 18 INDCs included energy, although six did not provide any quantified targets for the energy sector. This was followed by transport (12) and forestry (11). Livestock was included in only one INDC and therefore received the least coverage.

**Figure 2. Sectors covered in the mitigation sections of the INDCs**



### Climate finance

The Paris Agreement communicated three directives to policy-makers in terms of climate finance.

- To make finance flows consistent with a pathway towards low greenhouse gas emissions and climate-resilient development.
- To urge developing countries to mobilise more resources for both mitigation and adaptation, in addition to the financial commitments from developed countries.
- To increase financial flows from developed to developing countries, starting with US\$100 billion a year, and to continue mobilising finance at this level until 2025.<sup>29</sup>

Once the Paris Agreement comes into force in 2020, the international development community – both public and private – is expected to go beyond making pledges and formulate investment plans according to each country’s growth potential, and with goals that are in line with the Paris Agreement. Each country will be required to modify its INDC into concrete action plans and policy frameworks to deliver transformational changes on the ground. But while most of the INDCs from developing countries provide considerable details regarding *what* they want to achieve, there is a lack of information about *how* they will achieve their targets, and the resources that will be required. Specifically, few INDCs from developing countries provide details about the financial support needed to implement their pledges and actions, such as where this financing will come from.

Only a few developing countries expressed their financial requirements for fully implementing their INDCs, or for achieving their conditional targets, in terms of quantitative estimates of the domestic and/or international finance needed. A handful of countries indicated the high-level figures needed for either mitigation or adaptation; others provided cost estimates at the sectoral level, or a detailed list of intended actions and the associated costs.

Some detailed calculations of the costs involved do exist, however. In terms of mitigation finance, for example, Carbon Brief, analysing the INDCs of 73 developing and least developed countries, estimates that these countries will require at least US\$3.5 trillion to transform their energy infrastructures to reduce greenhouse gas emissions up to 2030.<sup>30</sup> These estimates reflect only a fraction of the real cost, though, as not all nations have quantified their financial requirements for meeting the goals stated in their INDCs.

Quantified estimates of the financing required for adaptation actions in the INDCs are more common, with figures per country ranging from US\$100 million to over US\$200 billion for the whole period covered by the INDCs, and from US\$10 million to US\$3 billion per year. A few countries provided projected adaptation costs for different mitigation scenarios, indicating that the costs of adaptation actions will depend on mitigation ambitions. Several countries indicated that they are still in the process of quantifying their financial needs, or refining their estimates.<sup>31</sup>

### Climate finance in South Asia and South-East Asia

The 18 countries reviewed in our analysis identify diverse resources that they plan to access in order to implement their INDCs, including public, private, domestic and international resources. Overall, they pledged to increase the volumes of the domestic resources allocated towards implementing the INDCs through increased budgetary support for climate action; the development of public-private partnerships; introducing green procurement programmes; and the reformation of pricing and taxation regimes. Moreover, these countries also expressed their ambition to raise funds through the use of market instruments; improving green credit mechanisms; and establishing funds to channel and stimulate financial flows from the private sector. With regard to international sources of financing, the Green Climate Fund was most frequently cited.

### South Asia

Most of the countries in South Asia explicitly requested climate finance and international support to implement their INDCs. India made the greatest demand, of US\$1.04 trillion up to 2030 at 2011 prices, of which 80% is needed for mitigation; it also provided an estimated requirement of US\$2.5 trillion to finance climate change between now and 2030 if it is required to scale up actions.

Bangladesh and Iran demanded a higher proportion for adaptation actions, while Sri Lanka only outlined finance needs for adaptation. Nepal and Pakistan indicated the need for climate finance for both mitigation and adaptation, without specifying any exact figures. Bhutan and the Maldives did not make any demands for climate finance. Table 3 summarises the needs identified by each country in South Asia.

**Table 3. Financial needs reported in the INDCs from South Asia**

Country	Climate finance needed for mitigation (US\$ billion)	Climate finance needed for adaptation (US\$ billion)	Total climate finance needs (US\$ billion)
Bangladesh	27	40	67
Bhutan	Not available	Not available	Not available
Iran	52.5	100	152.5
India	834	206	1,040 (2,500)*
Nepal	2.6	Not available	2.6
Maldives	Not available	Not available	Not available
Pakistan	Not available	Not available	Not available
Sri Lanka	0	0.42	0.42

\*Estimated amount if India is required to scale up its actions.

The transfer of clean technology and know-how, through collaboration with developed countries, is one of the key areas for which climate finance is needed for this region. In this regard, India's INDC advocated for the transfer of green technology to be free from intellectual property rights, or financed through a separate window of the Green Climate Fund. Iran also proposed access to environmentally sound technologies for greener industrial production.

### South-East Asia

In South-East Asia, five countries did not make any specific demands for international climate finance in their INDCs, nor did they indirectly state the need for this. Malaysia, Thailand and Viet Nam mentioned

the need for climate finance for mitigation and adaptation, but with no specific figures. Only Cambodia and Laos specified their exact climate finance requirements, and only Laos specified the total amounts required for mitigation and adaptation separately; Cambodia stated a requirement of US\$1.27 billion for climate financing without specifying the distribution between adaptation and mitigation. Table 4 shows the financial needs reported by each country.

**Table 4. Financial needs reported in the INDCs from South-East Asia**

Country	Climate finance needed for mitigation (US\$ billion)	Climate finance needed for adaptation (US\$ billion)	Total climate finance needs (US\$ billion)
Brunei	Not available	Not available	Not available
Cambodia	Not available	Not available	1.27
Indonesia	Not available	Not available	Not available
Laos	1.4	0.97	2.37
Malaysia	Not available	Not available	Not available
Myanmar	Not available	Not available	Not available
Philippines	Not available	Not available	Not available
Singapore	Not available	Not available	Not available
Thailand	Not available	Not available	Not available
Viet Nam	Not available	Not available	Not available

In terms of carbon trading, only Viet Nam's INDC included a reference to its policy framework to support the implementation of mitigation through the "management of greenhouse emissions [and the] management of carbon credit trading activities to the world market". Furthermore, Viet Nam stated the need for technology transfer to adapt to climate change in several sectors, including early warning systems, water resources, coastal zones, agriculture and forestry.

### Disaster risk reduction

Of the 161 INDCs submitted by 31 March 2016, 137 included sections on adaptation, in recognition of the environmental and climate-related challenges they are facing.<sup>32</sup> This detailed adaptation-related information provides an opportunity to assess the immediate and long-term resilience challenges and priority actions proposed by each country.

Almost all of these 137 countries highlighted key adaptation areas, pertaining to human, social, agricultural and economic systems, climatic and non-climate vulnerabilities, their national scenarios, observed and projected changes during recent years, and the most vulnerable sectors, geographical areas and population groups. There is recognition among almost all developing countries that, in future, the warming climate is likely to push the majority of their populations into poverty. Consequently, several countries provided estimates of past socioeconomic losses due to extreme weather events, and referred to the links and interconnections between climate risks and non-climatic factors such as poverty, food insecurity and rapid urbanisation.<sup>33</sup>

Notably, a large number of countries provided information regarding their disaster risk-reduction strategies, policies, plans, platforms and frameworks. Some also provided details of specific disaster risk-reduction measures according to their national circumstances, including early warning

systems, risk-management institutions, hazard maps, building codes and other standards, infrastructure protection measures and contingency plans.<sup>34</sup> The Paris Agreement recognises that disaster risk reduction is beyond the remit of the UNFCCC, instead being covered under the Sendai Framework for Disaster Risk Reduction 2015–2030, which outlines four priority areas and seven targets to reduce disaster risk and increase resilience.<sup>35</sup> However, disaster risk reduction still provides a useful indicator by which to analyse the adaptation commitments in the INDCs.

The 18 INDCs in this study were evaluated to assess the inclusion of disaster risk reduction and resilience, and the nature of proposed solutions, using a five-point scale (see Annex I). Of these 18 INDCs, nine made direct reference to disaster risk reduction. The same number advocated for climate-resilient infrastructure as an adaptation measure to cope with natural hazards and disasters. However, only two made reference to reducing health risks from climate change, which is part of the overall disaster risk-reduction framework. Overall, a higher percentage of South Asian countries made reference to disaster risk reduction, climate-resilient infrastructure and climate health risks (which are part of disaster risk-reduction frameworks) than countries from South-East Asia.

### South Asia

The INDCs from Bhutan, India and Nepal indicated the nationwide implementation of disaster risk-reduction measures at all levels and for all sectors reviewed. We therefore graded these as 5. Pakistan's INDC included recognitions of nationwide implementation; however, as it is not followed by specific commitments and actions, it is graded as 4. These countries have institutional arrangements, such as national policies and plans, to incorporate disaster risk reduction into development activities at all levels. It is no surprise that they have been the most severely impacted by natural disasters in the past, and are highly vulnerable to the increased frequency of disasters in the future.

Bangladesh and the Maldives were graded as 3, as disaster risk reduction was mentioned for two sectors only. Iran and Sri Lanka made no reference to disaster risk reduction in their INDCs, and were therefore graded as 1.

Overall, the INDCs primarily associate resilience to disasters with the agriculture sector, for example ensuring food security through climate-resilient agriculture practices. This is understandable as agriculture and rural livelihoods are the most important sectors across South Asia.

### South-East Asia

Four INDCs from South-East Asia referenced disaster risk reduction at the nationwide level: Myanmar, the Philippines, Singapore and Viet Nam. These were awarded 5 in our rubric. Three INDCs – Brunei, Indonesia and Thailand – do not include any reference to disaster risk reduction, and are graded as 1. Malaysia's INDC mentioned disaster risk reduction for only one sector, so was graded 2; Laos included disaster risk reduction for two sectors, and was graded 3; Cambodia referenced three sectors and was graded 4.

Climate-resilient infrastructure was the most commonly emphasised adaptation approach, mentioned in five of the INDCs, and is therefore one of the priority areas for action. Other countries underlined the need for early warning systems and technologies to improve disaster preparedness and reduce the risks of extreme natural events through timely response mechanisms. Myanmar and Viet Nam indicated a shortage of advanced technologies for hydrological and meteorological monitoring and forecasting, and early warnings for natural disasters and hazards.

A few countries also provided details of the projected costs of climate change impacts and how their intended adaptation measures are expected to reduce these (while leaving some residual damage), clearly making an economic case for investing in adaptation and disaster risk reduction. Some countries mentioned insurance schemes as a way to protect the most vulnerable communities and to create incentives for disaster risk-reduction initiatives.

### Gender and social inclusion

The Paris Agreement constituted a breakthrough: for the first time, a climate treaty incorporated gender-specific references and priorities. This built on previous milestones, including COP 18 in 2012, when

gender appeared for the first time as standing agenda item; and the launch of the Lima Work Programme on Gender at COP 20 in 2014, shifting the focus from conceptual recognition around gender equality and balance to implementation.<sup>36</sup>

The Paris Agreement opened up a space to implement the Lima Work Programme through five gender-related decisions. Its preamble demands that parties respect, promote and consider their respective obligations on human rights, as well as on gender equality and the empowerment of women, while taking action to address climate change. The Agreement also mandates gender-responsive adaptation actions and capacity-building activities. For example, under Article 7.5, “parties acknowledge that adaptation action should follow a country-driven, gender responsive, participatory and fully transparent approach [...] with a view to integrating adaptation into relevant socioeconomic and environmental policies and actions”; meanwhile, Article 11.2 states that “capacity-building should be guided by lessons learned [...] and should be an effective, iterative process that is participatory, cross-cutting and gender-responsive.”<sup>37</sup>

This shift in understanding of the role of gender can be seen in the INDCs. Of the 162 INDCs received by 19 April 2016, 65 (40%) of those explicitly mention ‘gender’ or ‘women’ in the context of their national priorities and ambitions for reducing emissions. Of these, 33 emphasise gender as a cross-cutting policy priority, or commit to integrating or mainstreaming gender into all climate change actions, strategies and policies.<sup>38</sup> The inclusion of gender and women’s issues in national policies highlights the links between gender and climate change, as well as highlighting gender as an important area for implementing the Paris Agreement.

In terms of social inclusion, four INDCs (Bangladesh, Laos, Malaysia and Singapore) did not include details about vulnerable groups or those groups which are most likely to be affected by climate-induced hazards or disasters. This is considered only in the adaptation sections, however; there is no mention of vulnerable groups and how they are affected by mitigation issues.

To assess the 18 INDCs reviewed for this study in terms of their focus on social inclusion and gender, we used a five-point scoring system (see Annex I).<sup>39</sup>

### **Results for South Asia**

The coverage of gender in the INDCs from South Asia is disappointing. Of the eight countries, only India and Sri Lanka mentioned gender, gender equality or women’s empowerment as a priority objective or issue in their INDC. Additionally, only policies related to agriculture and food security highlight gender concerns. There is no reference to gender in mitigation policies or energy-related actions, despite the fact that in many developing countries, especially in the poorest parts of South Asia, most energy currently comes from traditional biomass fuels such as wood, charcoal and agricultural waste, and collecting and managing these is almost always done by women.<sup>40</sup>

Similarly, the social inclusion considerations in the South Asian countries’ INDCs are vague and generalised. Sri Lanka and Nepal both focused on groups that face a higher risk of being affected by climate change (such as women and youth in Sri Lanka), but the remaining countries only referenced ‘vulnerable groups’, lumping all underprivileged people into this one general category. Yet in all six countries, there are national circumstances that are likely to affect certain vulnerable groups, in the context of adaptation or mitigation, and the INDCs do not take these into account.

Furthermore, none of the eight countries allocated any resources for gender or social inclusion concerns in its INDC, even those that mentioned these considerations. Table 5 summarises the results and overall grades for South Asia.

### **Results for South-East Asia**

Of the 10 countries reviewed in South-East Asia, five – Cambodia, Indonesia, Myanmar, the Philippines and Viet Nam – mentioned gender, women’s equality or women’s empowerment as a priority objective or issue in their INDCs. These results are encouraging compared to South Asia. Of these, the Philippines clearly presented gender as a relevant entry point in relation to the main objective of its INDC; the four other countries mentioned gender in their overall objectives.

**Table 5. Gender and social inclusion results for South Asia**

Country	Gender mentioned	Social inclusion mentioned	Social inclusion and gender considerations (which groups are mentioned?)	Resource allocation for gender/social inclusion	Grade
Bangladesh	No	No	None	No	1
Bhutan	No	Yes	Vulnerable groups (e.g. poverty-stricken families)	No	1.5
India	Yes	Yes	Poverty-stricken groups; vulnerable groups likely to be impacted by climate-induced disasters; rural populations	No	2
Iran	No	Yes	Local communities, rural populations	No	1.5
Maldives	No	Yes	Coastal communities in low-lying areas	No	1.5
Nepal	No	Yes	Vulnerable communities	No	1.5
Pakistan	No	Yes	Vulnerable communities	No	1.5
Sri Lanka	Yes	Yes	Groups such as women, youth, vulnerable communities	No	2

Seven countries mentioned social inclusion in one way or another; only three – Laos, Malaysia and Singapore – made no reference to this. Indonesia, Myanmar, the Philippines and Viet Nam specifically mentioned social inclusion in terms of the groups most likely to be affected by climate change. The Philippines and Viet Nam also considered the particular issues faced by their vulnerable groups and framed their priorities in reference to this. The remaining three countries – Brunei, Cambodia and Thailand – referenced vulnerable groups as one general category.

As in South Asia, references to social inclusion for vulnerable groups were made only within the context of adaptation activities. These include promoting climate-resilient livestock farming practices to contribute towards poverty alleviation and self-sufficiency; helping communities to protect themselves against climate-induced health hazards (e.g. malaria, vector diseases); building social and livelihood resilience, and the sustainable and durable development of poor people; and developing livelihoods and production processes that are appropriate under a changing climate, and that are linked to poverty reduction and social justice. In comparison to South Asia, the countries in South-East Asia have included more detailed priority actions for socially vulnerable groups.

Indonesia was the only country in this region to mention that it will allocate resources for gender and social inclusion in its INDC. The other countries did not allocate any resources, even those that mentioned both considerations in their INDC. Table 6 summarises the results and overall grades for South-East Asia.

**Table 6. Gender and social inclusion results for South-East Asia**

Country	Gender mentioned	Social inclusion mentioned	Social inclusion and gender considerations (which groups are mentioned?)	Resource allocation for gender/social inclusion	Grade
Brunei	No	Yes	Vulnerable communities	No	1.5
Cambodia	Yes	Yes	Vulnerable communities	No	2
Indonesia	Yes	Yes	Poorest and most marginalised populations	Yes	3.5
Laos	No	No	None	No	1
Malaysia	No	No	None	No	1
Myanmar	Yes	Yes	Children and other younger members of society; urban and rural poor	No	2
Philippines	Yes	Yes	Indigenous Peoples; local communities; women	No	3
Singapore	No	No	None	No	1
Thailand	No	Yes	Low-income populations	No	1.5
Viet Nam	Yes	Yes	Poor people; ethnic minorities; the elderly; women; children; people with disabilities	No	2

## Conclusions

The INDCs in Asia are shaped by countries' priorities, national circumstances, growth potential and technical capacities. The essence of the INDCs is to shape the goals and ambitions towards low-carbon, climate-resilient and climate compatible development. This analysis aimed to explore the ambitions and priorities of 18 countries from South Asia and South-East Asia.

### Climate mitigation

After assessing their own emissions and local resources, countries were required to come up with global commitments in their INDCs (conditional or unconditional) for reducing emissions by 2030. The results of this analysis show that 12 of the countries reviewed provided quantified commitments to reduce their emissions. However, six countries have so far not specified any commitment to this cause. It is imperative that these countries also declare their commitments urgently, and the national circumstances surrounding them.

Our analysis shows that the INDCs outline the priority actions for countries to address climate change. Undoubtedly, energy is the most important sector to the primarily developing economies of these regions and consequently the greatest contributor to greenhouse gas emissions. With growing populations and economies, the need for transport is also ever-increasing and is the second most significant sector coming out from the mitigation components of the INDCs.

Table 7. INDCs scorecard

Country	Mitigation targets	Climate finance	Disaster risk reduction	Gender and social inclusion	Overall score
<b>South Asia</b>					
Bangladesh	2	4	3	1	10
Bhutan	1	1	5	1.5	8.5
India	5	5	5	2	17
Iran	2	4	1	1.5	8.5
Maldives	2	1	3	1.5	7.5
Nepal	1	1	5	1.5	8.5
Pakistan	1	1	4	1.5	7.5
Sri Lanka	2	2	1	2	7
<b>South-East Asia</b>					
Brunei	1	1	1	1.5	4.5
Cambodia	2	2	4	2	10
Indonesia	4	1	1	3.5	9.5
Lao	1	4	3	1	9
Malaysia	5	1	2	1	9
Myanmar	1	2	5	2	10
Philippines	2	1	5	3	11
Singapore	5	1	5	1	12
Thailand	3	1	1	1.5	6.5
Viet Nam	2	2	5	2	11

It is therefore important, not only for the high-income economies such as Singapore, Malaysia and Thailand, but also for the vast majority of developing nations in the regions, to invest in mitigating their emissions. Our analysis shows that all 18 countries, through their INDCs, have accepted this need and aimed to do so, predominantly in the energy and transport sectors. This will contribute to the ultimate aim of the Paris Agreement – to bring global emissions down through a collective and systematic effort and change the current trajectory of global warming.

### Climate finance

Climate finance is a critical issue in formulating effective responses to climate change. The INDC process provided an opportunity to inform all countries more effectively about the global climate finance landscape, and align the global climate finance system with national financial systems. The expression of climate finance needs help in order to determine countries' capacity to deliver their own financing

and to identify the nature and scope of resource gaps. Through an increased demand for climate finance for adaptation and mitigation activities, higher ambitions and targets can be set, which can drive the development agenda more forcefully towards sustainable development.

However, from reviewing the Paris Agreement and our analysis of the INDCs from South Asia and South-East Asia, it is evident that this financing is, at present, incomplete. A large proportion of the countries analysed do not specify explicit finance requirements; domestic allocations are largely missing from the INDCs of developing countries; and several countries were unable to provide reliable, quantified cost estimates. This reflects the lack of local needs assessments for adaptation and mitigation activities.

To turn INDCs into investment plans, countries need specific cost estimates for their proposed actions. The countries that have not yet specified their demands for climate finance must assess their needs and capacity to fulfil these requirements internally, and the degree of support that needs to be sought from external sources.

It is also worth noting that current discussions about climate finance are also misleading, as there is a considerable focus on figures that are artificial. For example, developed countries pledged to mobilise US\$100 billion for climate change-related investments, but this promised amount represents a very small percentage of the overall amount required; the United Nations Development Programme estimates that there is a US\$250 billion financing gap for adaptation alone.<sup>41</sup>

Furthermore, a recent report<sup>42</sup> suggests that almost two thirds of the promised US\$100 billion is already being provided by international climate funds every year. A breakdown of this US\$61.8 billion of climate finance reveals that US\$23.1 billion is bilateral public finance, US\$20.4 billion is channelled through multilateral public finance, US\$16.7 billion is mobilised from the private sector, and US\$1.6 billion of export credits were provided. On 17 October 2016, developed countries published a roadmap showing their commitment to mobilise US\$91 billion of climate finance by 2020. This states that they will boost public finance (by both donor countries and multilateral development banks) from an average of US\$41 billion in 2013–14 to US\$67 billion in 2020. Private finance is predicted to be US\$24 billion in 2020. The roadmap also indicates that the amount of adaptation finance available is projected to at least double, to US\$14 billion.

These figures and projections have drawn criticism for definitional and accounting inaccuracies in determining what constitutes climate finance commitments under the Paris Agreement. For example, Oxfam states that of the US\$41 billion reported, funds targeting climate action were just US\$11–21 billion, and only US\$4–8 billion was earmarked for adaptation activities, with a limited focus on least developed countries.<sup>43</sup> The accounting challenge is worse at the national level, especially in developing countries.

### **Disaster risk reduction**

Climate change-induced disasters, such as floods, are increasing in frequency, and the need for preparedness and risk reduction is increasing rapidly. In the face of increasing natural hazards and extreme climatic events, countries in South Asia and South-East Asia need to be better prepared, so improving the planning and prioritisation of resources is a necessity. The countries that have realised this included disaster risk reduction as their one of the major focus areas in their adaptation plans and INDCs. India and Myanmar were the most accomplished in articulating their plans and needs for climate-resilient infrastructure, health-risk reduction and early warning systems in the INDCs.

Overall, however, the inclusion of disaster risk reduction and resilience cannot be considered as complete or sufficient in the INDCs of South Asia and South-East Asia. India and Myanmar could be good case studies for how to integrate disaster risk reduction within INDCs. Specifically, there needs to be further integration of disaster risk reduction into development planning, linked with climate-resilient infrastructure, health-risk reduction and early warning systems.

In addition to INDCs and the Paris Agreement, almost all countries have agreed to implement global frameworks related to disaster risk reduction, including Agenda 2030 for Sustainable Development, the Sendai Framework on Disaster Risk Reduction 2015–2030, the World Humanitarian Summit, and the UN Habitat III Framework. Putting these global frameworks into operation has the potential to provide thematic and operational guidance for integrating disaster risk reduction into future NDCs and to align

these with the existing global frameworks. This will generate mutual benefits that may not be possible if these global processes are managed in isolation.

### **Gender and social inclusion**

The impacts of climate change are most urgently and devastatingly felt in developing countries by the poorest people, women, the elderly and vulnerable groups – all of whom are the least responsible for the factors contributing to climate change. Policy and practice for climate compatible development therefore require explicit commitments and a renewed focus on reducing inequalities among marginalised groups, and enhancing the awareness and capacity of policy-makers to support these groups. Moreover, climate compatible development warrants changes in social structures, increased sensitivity to women's vulnerabilities and capacities, readjustments in gender relations, and the inclusion of women in decision-making process at all levels.<sup>44</sup> The INDCs provided an opportunity for countries to make steps towards this.

However, the 18 INDCs reviewed lack gender sensitivity and recognition of the disproportionate impacts of climate change on women and vulnerable groups. For example, our analysis shows that most of the actions outlined for vulnerable groups and/or women in the INDCs focus only on adaption, yet climate compatible development requires the mainstreaming of gender concerns and those of vulnerable groups into mitigation plans as well. Climate strategies that call for radical emission reductions are likely to impact these groups in particular, as their lives and livelihoods revolve around activities that are linked to greenhouse gas sinks (e.g. agricultural production, forest-based livelihoods), both natural and human-made, that mitigation strategies will seek to protect and enhance.<sup>45</sup> When including a gender-based and socially inclusive perspective in both mitigation and adaption policies in future revisions of the INDCs, women and other vulnerable groups should be seen as agents of change.

## Annex I. Methodological notes

Our methodology followed a two-pronged approach to reviewing the INDCs. First, the INDCs were analysed on the basis of the thematic questions under each of our four selected categories; second, we applied a five-point grading under each theme.

### Climate mitigation

The analysis explored the conditional and unconditional mitigation targets in the INDCs and applied the following grading to each INDC.

1. No quantified greenhouse gas emission-reduction target mentioned (policy and plans only)
2. Quantified greenhouse gas emission-reduction target with higher conditional target (e.g. business as usual or intensity of GDP)
3. Quantified greenhouse gas emission-reduction target with higher unconditional target (business as usual or intensity of GDP)
4. Economy-wide reduction with lower ambition
5. Economy-wide reduction with higher ambition

### Climate finance

This analysis assessed the international climate finance demands in each INDC, and the split between mitigation and adaptation activities. The analysis also examined the opportunities identified in the INDCs for countries to benefit from carbon trading. The following grading scheme was applied to each INDC.

1. No quantified financial costs mentioned
2. Quantified finance mentioned in one sector, programme or project
3. Quantified finance mentioned for either adaptation or mitigation
4. Quantified finance mentioned for both adaptation and mitigation
5. Quantified finance mentioned for both adaptation and mitigation, and sources/measures proposed

### Disaster risk reduction

The adaptation component of the INDCs was studied in terms of how integral disaster risk reduction is, and the climate finance requirements (conditional and unconditional) for achieving the commitments in the INDCs relating to disaster risk reduction. We also analysed the technological advances needed by each country to achieve these commitments. We used the following grading to assess the degree of focus placed on disaster risk reduction.

1. No reference to disaster risk reduction
2. Disaster risk reduction referenced for one of the sectors reviewed (agriculture, energy, forestry, industry, land, livestock, transport, urban and waste)
3. Disaster risk reduction referenced for two sectors
4. Disaster risk reduction referenced for three sectors or a geographical zone
5. Nationwide implementation for disaster risk reduction stated at all levels

### Gender and social inclusion

Our analysis reviewed the extent to which the INDCs from countries in South Asia and South-East Asia consider social inclusion and/or gender equality, for example by including vulnerable groups in the design of activities, or keeping in mind their needs. Moreover, we looked at whether the INDCs allocated resources for gender equality and social inclusion. To assess this, we used the following five-point grading.<sup>46</sup>

1. No reference to gender or social inclusion issues
2. Gender mentioned in overall objectives, but absent from subsequent implementation levels
3. Gender clearly presented as one relevant entry point in relation to the main objective, but an absence of a clear roadmap leading to implementation
4. Gender included in action plans, but an absence of clearly earmarked resources for implementation
5. Gender included in the document from the objectives down to action plans, with clear resources identified for implementation

## Endnotes

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The Climate and Development Knowledge Network (CDKN) aims to help decision-makers in developing countries design and deliver climate compatible development. We do this by providing demand-led research and technical assistance, and channelling the best available knowledge on climate change and development to support policy processes at the country level.

## About LEAD Pakistan

LEAD Pakistan aims to empower stakeholders and generate positive action for evidence-based policy-making, effective planning, efficient service delivery and lasting impact on lives and livelihoods. Its mission is to create and support networks of people and institutions and strengthen leadership for economically sound, environmentally responsible and socially equitable development.



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