

National Efforts in Adaptation Planning

Experiences and lessons learned from the workshop series “Capacity Building on Climate Change Impact Assessments and Adaptation Planning in the Asia-Pacific Region”



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The Institute for Global Environmental Strategies (IGES) is an independent think tank and strategic policy research institute that focuses on the development – environment nexus. Through policy research, capacity building, networking and outreach, IGES aims to contribute to sustainable development solutions in the Asia-Pacific region and globally.

The aim of the IGES Adaptation Team is through strategic research, capacity building and outreach, to contribute to the development of adaptation capacities, policies, plans and actions in the developing countries of the Asia Pacific region.

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Foreword

Japan's Climate change Adaptation Initiative was announced by Prime Minister Shinzo Abe at the UN Climate Summit 2014 with the aim to support the adaptive capacity of developing countries in a holistic manner. The Adaptation Initiative includes support for designing adaptation planning based on scientific knowledge and for capacity development of developing countries to update climate change impact assessments. As a contribution to this initiative, the Ministry of the Environment Government of Japan (MOEJ) engaged the Institute for Global Environmental Strategies (IGES) to conduct the workshop series "Capacity Building on Climate Change Impact Assessments and Adaptation Planning in the Asia-Pacific Region" with countries from across the Asia-Pacific region to build the capacities of national government officials and other relevant stakeholders on developing and implementing NAPs and related policies in the region.

This report reflects the experiences and lessons learned from this workshop series. The workshop series began in 2015 and to date a total of four workshops have been held with the participation of 14 countries in the region. Through the workshops, participants exchanged information about the status of adaptation planning and implementation in their countries and generated knowledge on the needs and opportunities for promoting National Adaptation Planning (NAP) processes in the region.

The United Nations Development Programme (UNDP) provided inputs and insightful comments on an early draft of this report based on its experiences supporting NAP processes in developing countries.

I believe that this report will be useful for organisations promoting NAP processes and adaptation actions in the Asia-Pacific region.

Hideyuki Mori

IGES Executive Director

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We would also like to express our gratitude to the United Nations Development Programme (UNDP). They contributed to this workshop series by sharing their best practices and expert approaches in strengthening the mainstreaming and integration of Climate Change Adaptation in policy, planning, and budgeting. They also provided insightful and useful comments on an early draft of this report based on their experiences supporting NAP processes in developing countries.

This report includes some material which was previously published in three workshop reports and an issue brief (Endo et. al. 2015; Didham et. al. 2016, Endo et. al. 2016; Chiba et. al. 2017).

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Executive summary

- Climate change is expected to adversely affect the development capacities of most Asian and Pacific developing countries. Temperature extremes, water scarcity, declines in food productivity, sea level rise, coastal erosion, and increased outbreaks of mosquito-borne diseases are but some of challenges countries in the Asia-Pacific region will face from climate change. Increasing adaptive capacity and reducing the vulnerability of human and natural systems to the impacts of climate change are essential to the future prosperity and security of the region.
- National Adaptation Plans (NAPs) are important instruments for adaptation. Developing countries can use the planning process to assess vulnerabilities and integrate adaptation into their development policies to address climate change. NAPs will have to address barriers to climate change mainstreaming to be effective. This is challenging as there is a lack of knowledge on areas for leverage and action by government and there is a lack of universal indicators for adaptation.
- With funding from the Ministry of the Environment Government of Japan (MOEJ), the Institute for Global Environmental Strategies (IGES) carried out a collaborative, multi-stakeholder investigation and assessment on the status and needs of developing countries in preparing and advancing their NAPs. Adaptation focal points from 14 countries in the region – Bangladesh, Bhutan, Cambodia, Fiji, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, the Philippines, Samoa, Sri Lanka, Thailand and Vietnam – and other stakeholders participated in the investigation through four regional workshops, held between October 2015 and February 2018. The investigation methodology consisted of literature reviews, surveys and participatory workshop sessions. The *Technical Guidelines for the National Adaptation Plan (NAP) Process* (UNFCCC, 2012b) was used to structure the investigation.
- This report reviews the achievements made by countries in relationship to three elements of the Technical Guidelines: A) Lay the Groundwork and Address Gaps, B) Preparatory Element, C) Implementation Strategies. The results are presented as sets of findings and recommendations.
- Findings (1) **Adaptation Planning Strengths and Weaknesses:** Investments are needed in building human capacity at national, sub-national and local levels to better understand, plan for and implement adaptation efforts. Investments in education and capacity building are likely to be more cost-effective than investments in physical infrastructure, especially when the impacts of climate change are highly uncertain.
- Findings (2) **NAP Background Assessment Approaches:** The initiation of adaptation planning is hampered by lack of awareness, knowledge and access to information, as well as lack of institutions and policy frameworks. Initial efforts should focus on sensitisation to climate change across different ministries and agencies. For the assessment of climate change scenarios and impacts, scientific knowledge needs to be presented in ways that decision makers can act on. For the assessment of risks, hazards and vulnerabilities, training to build capacities is required at the local level. Institutional support to ensure adequate resources, expertise and facilitation is also needed. For the assessment of adaptation options, tools for quantitative assessment are required.

- Findings (3) **Mainstreaming and Integrating Adaptation Planning:** Most countries are making progress on mainstreaming adaptation planning into policies and strategies. Further maturation of cross-agency coordination is required as while the necessary mechanisms are in place, they mainly serve as information sharing platforms with little authority and no control over budget allocation. Sectoral integration can be observed for mitigation but less so for adaptation. Many sectors struggle to find good approaches to incorporate adaptation measures. Innovative approaches to budgetary alignment can be observed, but little is known about their effectiveness. Better information and tools to cost the risks and net benefits of investments in adaptation for “climate proofing” and the integration of adaptation into development activities are also needed.
- Findings (4) **Implementation and Localisation of Adaptation:** In many countries local government units do not have enough autonomy to contextualise and design effective adaptation programmes, and few national governments have established institutional frameworks and mobilised resources to streamline local implementation of adaptation plans and strategies. To implement and localise adaptation, national governments can build awareness of and provide mandates to local governments on adaptation, and they can make contextualised and scaled information available. Local governments can increase social capital for adaptation by engaging with the public and employ land-use planning to accelerate adaptation.
- The key recommendations from this investigation include:
 - Engagement in participatory assessment and planning can be promoted to build social capital for adaptation.
 - Adaptation capacity building can include efforts to build awareness and acceptance for adaptation planning and implementation, and the building of more specific capacities for effective adaptation planning, distinguishing between short-term disaster risk reduction and long-term adaptation.
 - While disaster risk reduction and adaptation are closely related, disaster risk reduction primarily focusses on reducing short-term risks and hazards from disasters, while adaptation should focus on long-term and systematic changes to reduce vulnerability and increase resilience.
 - Programmes and platforms to collect, analyse and disseminate good practices in adaptation planning, policy and practice should be developed.
 - Authority should be provided to coordination mechanisms for cross-agency cooperation.
 - Monitoring and evaluation systems for adaptation that allow for comparative reporting and analysis should be developed and linked with financing.
 - Tools that enable quantifiable comparisons between different adaptation options and capacities should be developed to evaluate alternative adaptation solutions.
 - Tools to assess the net-benefits of “climate proofing” should be developed.
 - Comparative assessment of approaches to budgetary alignment should be conducted.
 - Establishing capacities for localisation of adaptation is a priority. National governments should consider alternative options, such as targeted training of local government officers and establishing technical units to provide support to local governments.
 - For sectoral coordination, training on approaches for integrating adaptation measures to ministries and agencies with weak awareness can be considered.
 - Extensions units can be engaged to bridge scientific knowledge relevant to adaptation and local activities in fields such as agriculture, construction, etc.
 - Multilateral and bilateral development agencies, research institutes and others can assist developing countries on adaptation planning by providing them with opportunities to improve their technical skills and strengthen their institutional setups, and by helping them secure access to data, information and funding.

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Abbreviations and Acronyms

CC	Climate Change
CCA	Climate Change Adaptation
COP	Conference of the Parties
CPEIR	Climate Public Expenditures and Institutional Review
DRR	Disaster Risk Reduction
EBA	Ecosystem Based Adaptation
IGES	Institute for Global Environmental Strategies
IPCC	Intergovernmental Panel on Climate Change
LDC	Least Developed Countries
LEG	Least Developed Countries Expert Group
M&E	Monitoring and Evaluation
MEA	Multilateral Environmental Agreement
MOEJ	Ministry of the Environment Government of Japan
NAP	National Adaptation Plan
NAPAs	National Adaptation Programmes of Action
NAP-GSP	National Adaptation Plan - Global Support Programme
NWP	Nairobi Work Programme
PPP	Private Public Partnership
SDGs	Sustainable Development Goals
SIAD	Sustainable Integrated Area Development
SWOT	Strengths-Weakness-Opportunities-Threats
TEP-A	Technical Examination Process on Adaptation
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNFCCC	United Nations Framework Convention on Climate Change

The Importance of Adaptation Planning

The goal of National Adaptation Planning is to have adaptive capacity translate into effective adaptation actions that reduce vulnerability of human and natural systems to effects of climate change. Adaptive capacity is defined as the “ability or potential of a system to respond successfully to climate variability and change, and includes adjustments in both behavior and in resources and technologies” (Adger et al., 2007: 727).

When policy discussions on climate change first began in the 1980s, adaptation was discussed as a highly relevant part of responding to climate change. However, as efforts to achieve international agreement to address climate change bore fruit in the form of the United Nations Framework Convention on Climate Change (UNFCCC) in 1992 as part of the Rio Conventions and then with the initiation of the annual UNFCCC Conference of the Parties (COP) in 1995, the promotion of adaptation receded as it was seen as promoting a conflicting message towards achieving the more paramount goal of international commitment to mitigation and emissions reductions (Pielke et al., 2007).

For almost a decade, climate change adaptation remained on the climate agenda but little political attention was paid to advancing its practice. This changed in 2001, when at COP 7 UNFCCC Parties agreed to establish the Least Developed Countries Fund (LDC Fund) and the national adaptation programmes of action (NAPAs) as a support mechanism for least developed countries (UNFCCC, 2001). In 2002 at COP 8, developing countries were able to advance a call for greater focus on adaptation and this was reflected in the Delhi Ministerial Declaration (UNFCCC, 2002), which stated that “adaptation to the adverse effects of climate change is of high priority for developing countries and deserves urgent attention and action on the part of the international community”. During the latter half of this decade, increasing recognition was given to the fact that while many of the developing and least developed countries had historically contributed very little to global greenhouse gas emissions, they would experience some of the most significant impacts from climate change. This growing awareness helped to increase the voice of the developing countries in climate change negotiations and push for stronger commitments and support for adaptation. At COP 13 in 2007, Parties agreed to the Bali Road Map which outlined a two-year process towards finalising a binding climate agreement. The Bali Action Plan was part of this agreed Road Map, and it identified enhanced action on climate change adaptation as one of five key building blocks (UNFCCC, 2008).

As part of the Cancun Agreements reached in December 2010, Parties to the UNFCCC affirmed that “adaptation must be addressed with the same priority as mitigation and requires appropriate institutional arrangements to enhance adaptation action and support” (UNFCCC, 2010: 3). The National Adaptation Planning (NAP) process was also established under the Cancun Agreements to facilitate climate change adaptation planning. In undertaking the NAP process, countries can address their medium- and long-term adaptation needs, and plan to reduce their vulnerability.

Under the Paris Agreement reached in December 2015, Parties agreed to establish an adaptation goal under Article 7 and to assess the adaptation needs of developing countries, review the adequacy and effectiveness of present assistance provided by the international community to developing countries to enhance their adaptive capacity, and increase support to accelerate the development of their national adaptation plans (NAPs) (UNFCCC, 2015). NAPs are viewed as important instruments for adaptation, as developing countries can use the planning process to assess vulnerabilities and integrate adaptation into their development policies to address climate change (UNFCCC, 2012a).

The Asia-Pacific region will face many pressures from climate change. Extreme climate events will have an increasing impact on human health, security, livelihoods, and poverty levels (IPCC, 2014: 1331). Warming trends, temperature extremes, water scarcity, declines in food productivity, sea level rise and coastal erosion, and increased outbreaks of mosquito-borne diseases are some of the challenges the countries in this region will face from climate change. Furthermore, these pressures have the potential to create extreme vulnerabilities, diminish human security, increase poverty and create livelihood insecurity in the region (NAP-GSP, 2017: 3). In light of these challenges, increasing the adaptive capacity and reducing the vulnerability of human and natural systems to the impacts of climate change are essential for ensuring the long-term development and security of countries throughout the region.

The Stern Review (2006) highlighted the importance of adaptation measures and drew attention to the fact that even with stringent mitigation measures countries would still encounter climate change impacts for which adaptation is the only adequate means to tackle them. "Adaptation is the only response available for the impacts that will occur over the next several decades before mitigation measures can have an effect" (Stern, 2006: xxi). This report went on to highlight that adaptation efforts could also provide immediate development benefits. "Unlike mitigation, adaptation will in most cases provide local benefits, realised without long lead times" (Stern, 2006: xxi). Subsequent reports (see, for example, UNEP 2017) confirm these conclusions and findings. The importance of adaptation is now recognised both as a complement to mitigation efforts, as essential to enabling achievement of development goals, and as an essential response to climate change impacts themselves, and countries are now beginning to mainstream adaptation practices into their development activities.

While national efforts for adaptation planning have been carried out by many countries, there remain many barriers to understanding and validating the effectiveness of these various initiatives and activities. Agrawala et al. (2005) identified five major constraints for mainstreaming climate change:

- Relevance of climate information for development-related decisions,
- Uncertainty of climate information,
- Compartmentalisation with governments,
- Segmentation and other barriers within development-cooperation agencies,
- Trade-offs between climate and development objectives.

To ensure that these constraints and others are both identified and appropriately addressed, evaluation and assessment of NAP processes and countries' adaptation efforts needs to be advanced and systematically carried out. Adger et al. (2007: 737) points out that "there are significant outstanding research challenges in understanding the processes by which adaptation is occurring and will occur in the future, and in identifying areas for leverage and action by government."

Preston, Westaway and Yuen (2010) note three key reasons why evaluation of adaptation planning is essential to ensuring effective adaptation implementation. First, since adaptation aims to reduce the vulnerability of human and natural systems to the effects of climate change, evaluation methods are necessary to track the outcomes of adaptation initiatives to ensure that the reduction of vulnerabilities is being achieved: "[E]valuation must ensure [that] the social, economic and environmental benefits of adaptation policies and measures outweigh the costs and that additional negative externalities are not created" (Preston, et.al. 2010: 409). Second, the authors argue that climate change adaptation is "fundamentally a process of social learning," but that such learning cannot be achieved without evaluation to track what has and has not worked and to "identify effective, efficient and equitable policies and measures" (Preston, et.al. 2010: 409). Third, adaptation policy must be evidence-based,

and this requires a level of accountability and transparency that can only be achieved through the role of evaluation. In light of the current lack of universal indicators and systematic evaluation of adaptation planning, the type of multi-country, comparative assessment and collaborative investigation among relevant stakeholders conducted in this study provides a valuable means to identify common strengths, weaknesses and opportunities in adaptation planning.

To promote the NAP process in the Asia-Pacific region, the Institute for Global Environmental Strategies (IGES) carried out a collaborative, multi-stakeholder investigation and assessment on the status and needs of developing countries in preparing and advancing their NAPs with the participation of adaptation focal points from 14 countries in the region; i.e., Bangladesh, Bhutan, Cambodia, Fiji, Indonesia, Malaysia, Mongolia, Myanmar, Nepal, the Philippines, Samoa, Sri Lanka, Thailand and Vietnam. This early effort to examine the needs of developing countries in the region with respect to their current efforts for adaptation planning aimed to reveal the challenges and opportunities that the countries face by examining their activities under the NAP process. Throughout this study, the framework of the *Technical Guidelines for the National Adaptation Plan (NAP) Process* (UNFCCC, 2012b) has been used as a framework for structuring the investigation. Technical Guidelines for the NAP process (UNFCCC, 2015), “issued by the LEG ... to Parties and relevant organisations in response to the mandate given to the LEG by the COP,” was released to provide Parties with technical guidance on the development of NAPs. The technical guidelines are designed to support countries in their planning and implementation of adaptation at the national level. According to the technical guidelines, the NAP process includes four elements: A) Lay the Groundwork and Address Gaps, B) Preparatory Element, C) Implementation Strategies, and D) Reporting, Monitoring and Review. This report reviews the achievements made by countries in relationship to elements A, B and C. Specific areas of investigation include examination of: 1) Adaptation Planning Strengths and Weaknesses, 2) Pre-Assessment Approaches, 3) Mainstreaming and Integrating Adaptation Planning, and 4) Implementation and Localisation of Adaptation.

This investigation complements other initiatives on adaptation planning in the region. These include the NAP GSP training workshops, which have been conducted since 2014 to help strengthen countries’ understanding of adaptation planning, as well as regional NAP expos, also organised by the Least Developed Countries Expert Group (LEG) under the UNFCCC.

Element A. Lay the Groundwork and Address Gaps

Step A.1: Initiating and launching the NAP process

Step A.2: Stocktaking: identifying available information on climate change impacts, vulnerability and adaptation and assessing gaps and needs of the enabling environment for the NAP process

Step A.3: Addressing capacity gaps and weaknesses in undertaking the NAP process

Step A.4: Comprehensively and iteratively assessing development needs and climate vulnerabilities

Element B. Preparatory Elements

Step B.1. Analysing current climate and future climate change scenarios

Step B.2. Assessing climate vulnerabilities and identifying adaptation options at the sector, subnational, national and other appropriate levels

Step B.3. Reviewing and appraising adaptation options

Step B.4. Compiling and communicating national adaptation plans

Step B.5. Integrating climate change adaptation into national and subnational development and sectoral planning

Element C. Implementation Strategies

Step C.1. Prioritizing climate change adaptation in national planning

Step C.2. Developing a (long-term) national adaptation implementation strategy

Step C.3. Enhancing capacity for planning and implementing adaptation

Step C.4. Promoting coordination and synergy at the regional level and with other multilateral environmental agreements

Element D. Reporting, Monitoring and Review

Step D.1. Monitoring the NAP process

Step D.2. Reviewing the NAP process to assess progress, effectiveness and gaps

Step D.3. Iteratively updating the national adaptation plans

Step D.4. Outreach on the NAP process and reporting on progress and effectiveness

Figure 1 Elements and Steps of the NAP Process

* as detailed in UNFCCC (2012) *National Adaptation Plans: Technical guidelines for the national adaptation plan process*.

Collaborative Investigation and Methodology

The Adaptation Initiative was announced by Japan's Prime Minister Shinzo Abe at the UN Climate Summit 2014 with the aim to support the adaptive capacity of developing countries in a holistic manner. The Adaptation Initiative includes support for designing adaptation planning based on scientific knowledge and for capacity development of developing countries to update climate change impact assessments. As a contribution to this initiative, the Ministry of the Environment Government of Japan (MOEJ) engaged IGES to conduct a workshop series with countries from across the Asia-Pacific region and to conduct a collaborative stock taking to assess countries' current status in adaptation planning and implementation. The workshop series *Capacity Building on Climate Change Impact Assessments and Adaptation Planning in the Asia-Pacific Region series* began in 2015, and to date a total of 4 workshops have been held collaborating with participants¹ from a total of 14 countries in the region.

The workshops in the series were:

- *Needs and Challenges for Designing and Implementing Climate Actions* held in Bangkok, Thailand on 1-2 October 2015.
- *Technical Review of Background Assessment for Climate Change Adaptation* held in Manila, Philippines on 27-28 January 2016.
- *Mainstreaming of Climate Change Adaptation* held in Manila, Philippines on 1-2 February 2017.
- *Advancing Practices in Climate Change Adaptation at National, Local, and Sectoral Levels* held in Manila, Philippines on 31 January - 1 February 2018.

This workshop series has been designed to exchange information about the status of adaptation planning and implementation among the participating countries. Research has been conducted corresponding to the workshop series in three main ways. First, an extensive literature review on climate change adaptation, especially focussed on multi-country comparison studies, was carried out. Second, prior to workshops, surveys asking for detailed reporting on key aspects of each countries' adaptation status were circulated and collected. Third, the workshops themselves were structured and facilitated to create a platform for the co-review of the status of adaptation planning in the region and the co-generation of knowledge on the needs and opportunities for strategic capacity building. Through exchanging views and relevant information, the workshops also helped to enhance the capacity building of national government officials and other relevant stakeholders who are engaged in developing and implementing NAPs and related policies in the region.

The structure of the workshops contains a diversity of session types – individual presentations, expert panels, roundtable discussions, as well as group activities, participatory mapping exercises, and case studies. Many different participatory group facilitation techniques were applied through the course of the four workshops, which allowed participants to assess common strengths and weaknesses and identify opportunities for improvements across the region in adaptation planning and practice. The importance of the workshops for not only identifying the current status but also deliberating and elaborating on opportunities to further strengthen adaptation planning and implementation is central to this report. Triangulation and comparison of findings from the workshop proceedings, the surveys, the literature review, and peer review by other stakeholders engaged in NAP technical assistance, all support the robustness of findings in this report. The wide breadth of this study in identifying common strengths, weaknesses and opportunities across 14 countries and the multi-stakeholder evaluation of these findings also support overall validation.

¹ Participants were nominated as adaptation focal points representing their respective countries by the relevant ministries and agencies, local government in each country, as well as international organizations which are involved in climate change adaptation.

General status of countries in study

The countries participating in the Adaptation Initiative, and specifically those actively involved in the workshop series *Capacity Building on Climate Change Impact Assessments and Adaptation Planning in the Asia-Pacific Region*, are eager to have their relevant government officers be involved in this regional capacity building and knowledge sharing platform as a means to share best practices and identify opportunities for improvement in their efforts for climate change adaptation. The countries generally recognise that climate change adaptation is a long-term need for their countries' security and prosperity, and they identify many potential climate impacts and risks that must be addressed if they are not to become major vulnerabilities for the well-being of their societies. All fourteen countries involved in this knowledge sharing platform are taking actions to begin addressing these needs for climate change adaptation, however the status of progress between countries varies significantly.

Based on country responses to the first survey conducted in 2015², only three countries reported that they had completed the official National Adaptation Planning process (Indonesia, Samoa and Vietnam). This low number can in part be understood because NAP was a process that officially targeted least developed countries, so other countries that engaged with the NAP process did so voluntarily. Eight countries reported that they had completed the development of an equivalent national climate change adaptation plan (Bangladesh, Cambodia, Fiji, Malaysia, Myanmar, Philippines, Sri Lanka, and Thailand). Only three countries had yet to complete any form of national adaptation plan (Bhutan, Mongolia, and Nepal). Follow up interviews with representatives from these three countries in February 2018 found that at that time all three countries were in the process of preparing their national-level adaptation plans and planned to release them in the near future.

Countries had a higher rate of completed National Programs of Actions (NAPA), and this can be understood because it serves as a prerequisite for LDCs to access international adaptation finance. Eight countries reported developing official NAPAs³ (Bangladesh, Bhutan, Cambodia, Indonesia, Myanmar, Nepal, Samoa, and Vietnam), and another five countries had completed equivalent programs of action (Fiji, Malaysia, Philippines, Sri Lanka and Thailand). Most countries (11 in total) had also already gained support from international agencies in their preparatory work on CCA to strengthen technical capacity and to give strategic guidance. Survey data also tracked the use of tools related to the three background assessment phases (or pre-assessments) of the NAP planning process, i.e. climate change scenarios and impacts, risks and vulnerabilities, and effectiveness of adaptation options. Most countries had used related tools for the first two background assessment phases, but only five countries had used the related tools for assessing effectiveness of adaptation options.

During the course of three and a half years during which this collaborative investigation and study has already been carried out, the countries participating in this study have all shown significant developments in terms of adaptation planning. Many countries are now utilising their established adaptation plans and mandates to ensure that adaptation efforts are mainstreamed into policies,

² The data reported by countries in the first survey conflicts with UNFCCC official record of approved National Adaptation Plans. There are currently only 12 approved NAPs, and of the reporting countries included in this survey only two are represented: Sri Lanka (approved 2016) and Fiji (approved 2018). It may be the case though that other countries did complete the NAP process to develop a national adaptation plan and even submitted it to the UNFCCC, but that they did not have their NAP approved as 47 countries have submitted NAPs even though only 12 have been approved.

³ While Indonesia and Vietnam reported developed official NAPAs, as these countries are not classified as LDCs, they may be better classified as equivalent programs of actions.

development activities, and through budgetary alignment. Several countries are also taking efforts to support the integration of adaptation planning and implementation at the sectoral-level and/or the local-level. Furthermore, the knowledge and expertise at which the government representatives from these countries are able to explain, examine and assess their adaptation efforts has shown significant improvement over the period of this collaborative investigation.

Examination of Adaptation Planning Strengths and Weaknesses

The first review and assessment conducted as part of the workshop series was a general analysis of the status of adaptation planning across the 14 countries participating in this project. The main purposes of this review was to identify the major factors and leverage points important for effective adaptation planning; to assess the current strengths of individual countries and the common strengths across the region for adaptation planning; and to understand the barriers and persistent challenges for adaptation planning that require additional interventions and capacity building to address them. This review focussed primarily on elements A and B identified in the NAP Technical Guidelines, which are known as the “preparatory stages” of adaptation planning (although findings related to the preparatory stocktaking have implications across all four NAP elements).

During the first workshop (held in Bangkok in 2015), multi-country groups used a facilitated assessment process called Force Field Analysis, which is a visual mapping process similar to a strengths-weaknesses-opportunities-threats (SWOT) analysis. Groups at the workshop considered two different topics: 1) analysing capacity gaps, development needs and vulnerabilities for adaptation planning, and 2) assessing the effectiveness of climate change scenarios, approaches for impact and risk assessment, and appraising adaptation options. Findings from these group activities were compared and triangulated against data from country surveys and from the literature review to ensure robustness and validity of overall findings.

The initial data led to a long list of categories of important factors for adaptation planning. A process of selective coding was then used to combine topics and narrow the total list down to 10 meta-categories:

1. Data (relevance and availability).
2. Knowledge and experience (knowledge gap).
3. Technical capacity.
4. Institutional arrangements and coordination mechanisms.
5. Stakeholder participation and local level engagement (information awareness raising).
6. Research and development (improving tools, approaches and adaptation options).
7. Effectiveness assessments of adaptation options
8. Mainstreaming – the integration of adaptation objectives, strategies, policies, measures such that they become part of the national and regional development policies, processes and budgets at all levels.
9. Finance.
10. Monitoring, evaluation and reporting systems.

The first workshop aimed to identify the status of and needs for adaptation planning and climate change impact assessments at the national level in the Asia-Pacific region, providing a platform for knowledge sharing and learning. Major needs and challenges for adaptation planning that were identified included limited institutional and human capacities, such as the lack of internal and external coordination among relevant stakeholders, insufficient policy framework and mainstreaming of climate change adaptation (CCA) into other policies, less priority on implementation of adaptation planning, weak public awareness and participation, and the need for greater human resources development.

Table 1: Identified opportunities for improving adaptation planning and implementation

<i>Item</i>	Opportunities
<i>Political Institutions & Arrangements</i>	- Establish a cross-sectorial coordination mechanism to support collaboration - Strengthen institutions for adaptation planning and implementation at local level
<i>Policy Framework</i>	- Review and harmonise existing programmes and policies to improve coordination - Strengthen the policies and frameworks for addressing adaptation at local level
<i>Public Participation & Local Level Engagement</i>	- Build citizen awareness to make adaptation and development priority voting issues - Improve transparency of data collection and available information - Train community organisers and facilitators, train local government officials, and support a decentralised system for adaptation implementation
<i>Awareness & Capacity</i>	- Capacity building for local governments to understand how to include adaptation in budget allocation - Awareness raising programmes across sectors, stakeholders and vulnerable groups - Create a knowledge sharing mechanism for community and local level information
<i>Technical Capacity</i>	- Improve technical capacity for monitoring, evaluation and reporting, for project design and proposal development; and for local governments to implement adaptation measures/ activities
<i>Monitoring, Evaluation and Reporting (MER)</i>	- Conduct MER training and capacity building for responsible institutions; and improve demonstration and reporting of results and strengthen accountability mechanisms to convince donors

At the first workshop, capacity building activities related to climate change impact assessments were also provided. With support from international experts, donors and research institutes, the participants reviewed available resources on climate finance, data modelling and downscaling, mapping and forecasting risks and vulnerabilities, and adaptation policy implementation at the national level, as well as CCA-related tools, technologies and technical assistance programs. In multi-country groups, participants also reviewed and discussed major needs and challenges for climate change impact assessments. The countries began by identifying the major climate change impacts that they view as the largest concern for their countries (see figure 2 for the identified impacts and the scores each was given – i.e., a larger score represents a higher ranking of importance). Cambodia, Malaysia and Mongolia specified the need of improvement on capacity building, weak public awareness and education on the impact assessments. Fiji, Indonesia, Philippines and Samoa emphasised the fact that there are too many relevant guidelines, interpretations and models to address uncertainty to climate change, the low ability of climate change impact projection, quantification and application, the difficulty of gathering baseline data and impact modelling, and the lack of sufficient capacity at local levels. Bangladesh, Bhutan, Nepal and Sri Lanka presented limited research and technical capacity, the lack of seasonal and localised climate forecasting, and the need of education as major barriers. Myanmar, Thailand and Vietnam described the needs for coordination between national and sub-national levels and the integration of climate change into local plans, as well as weak governmental support. As a result, these findings highlighted the importance of building capacity, sharing knowledge and pooling expertise to meet the needs and challenges associated with adapting to climate change for effective planning and implementation.

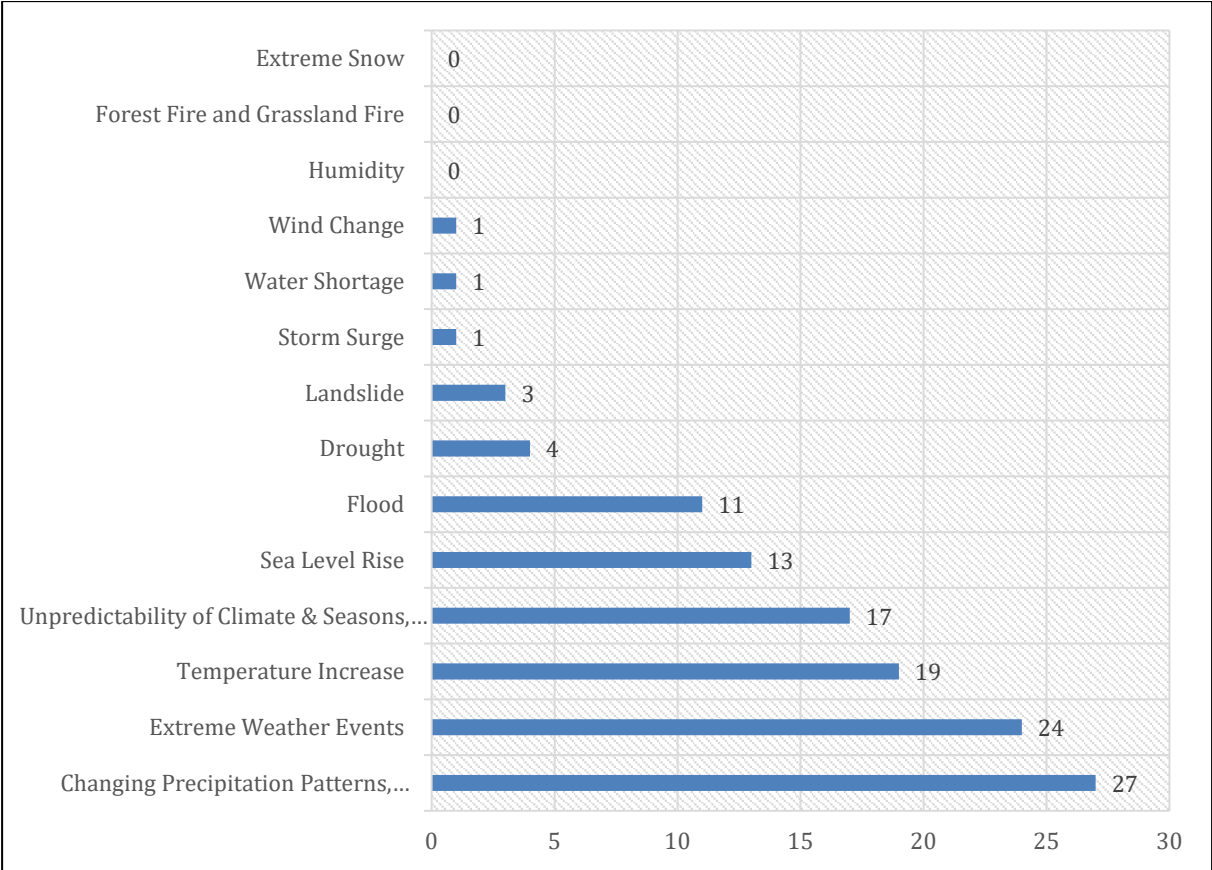


Figure 2: Combined Projected Impacts and Ranking

Examination of Background Assessment Approaches

During the second phase of this workshop series, focus was placed on examining the pre-assessment phases of adaptation planning. Effective adaptation planning depends on the support of robust assessments to identify both adaptation needs and appropriate responses, and it is these pre-assessments that serve as the basis for developing plans that will address future impacts and risks in the most meaningful way. There are three categories of necessary background assessments for CCA:

1. assessment of climate change scenarios and impacts;
2. assessment of risks, hazards and vulnerabilities associated with climate change impacts; and
3. assessment of effectiveness of CCA options.

These three categories of pre-assessment are part of Element B of the NAP Process and the technical guidelines. Specifically, they correspond with steps B.1, B.2 and B.3 of the *NAP Technical Guidelines*. While the first three steps of Element B of the NAP Process cover the background assessments, steps four and five relate more directly to the actual planning for adaptation. Considering the importance of robust assessments in securing effective planning, the three categories of pre-assessment and the capacity countries have to carry these out are very important to the overall success of adaptation planning and implementation.

The second workshop (held in Manila in 2016) aimed to identify key requirements of the CCA background assessments at the subnational and/or national levels on the key sectoral and/or cross-sectoral bases (e.g., agriculture, water resources, health, transport, etc.). It also aimed to identify effective and feasible tools of CCA background assessments and good practices in conducting these assessments. The workshop also served to enhance the capacity building of national government officials and other relevant stakeholders who are engaged in developing and implementing NAPs and the impact assessments in the region.

Country survey data was used to identify the major tools currently being used by countries for each of the three background assessment stages. To achieve this and to go one step further into the practical approaches taken by countries to achieve steps B.1, B.2 and B.3, the research team reviewed both the *NAP Technical Guidelines* and other supporting literature to pull out the major tools and approaches linked to achieving each of these steps.⁴ The survey findings showed that across the 14 participating countries most had used relevant tools and approaches to assess climate change scenarios and impacts, and several countries had used multiple tools for this pre-assessment stage. Only four countries reported no usage of tools for this stage. A total of eleven countries used the tools and approaches for assessing risks, hazards and vulnerabilities, but only six countries used multiple tools to support this pre-assessment stage. There was a much lower usage rate of tools and approaches for assessing the effectiveness of adaptation options, with only five countries reporting any usage of these tools and only one country using all three tools. *See figure 3 for more details on tool usage.*

⁴ This approach was taken for two main reasons. First, while the *NAP Technical Guidelines* detail a thorough and ideal process for national adaptation planning, it does not always provide specific instructions on how to achieve each step. Second, as not all participating countries had specifically followed the NAP process for their efforts for adaptation planning, we felt it was also important to more generally review if countries had access to relevant knowledge, tools and approaches for achieving each step of the background assessment stage.

Step B.1 of the NAP process focusses on assessing climate change scenarios and impacts. Five different tools were identified from *NAP Technical Guidelines* and supporting literature which were seen as relevant to supporting this pre-assessment stage and include:

- Sectoral Analysis of Climate Scenarios and Risks,
- Geographic Mapping of Climate Scenarios and Risks,
- Scenario Analysis of Future Socio-Economic Projections,
- Scenario Analysis of Future Climate Projections,
- Climate Change Impact Assessments.

The most used tool among the surveyed countries was “Scenario Analysis of Future Climate Projections”, and a usage rate of 71% was reported for this tool. The least used tool was “Scenario Analysis of Future Socio-Economic Projections”, and only two countries reported using this tool (i.e., a 14% usage rate). The total average usage rate for all tools for this stage was 48.6%. Two countries reported using all five tools to support the pre-assessments they carried out for this stage.

Step B.2 of the NAP process focusses on assessing risks, vulnerabilities and hazards. Five different tools were identified and considered relevant to supporting this pre-assessment stage and include:

- Resilience and Adaptive Management Analysis,
- Hazard Assessment or Mapping,
- Risk and Vulnerability Ranking,
- Risk Analysis,
- Vulnerability Assessment.

The most used tool among the surveyed countries was “Vulnerability Assessment”, and a usage rate of 79% was reported for this tool (i.e., the highest for all pre-assessment tools). The least used tool was “Resilience and Adaptive Management Analysis” with a reported usage rate of 36%. The total average usage rate for all tools for this stage was 51.4%. Three countries reported using all five tools to support the pre-assessments they carried out for this stage.

Step B.3 of the NAP process focusses on assessing adaptation options and their perspective effectiveness. Only three relevant tools were identified to support this pre-assessment stage, and later co-operative review by national focal points highlighted that this is the pre-assessment stage most lacking technical capacity. These tools include:

- Cost-Benefit or Cost-Effectiveness Analysis of Adaptation Options,
- Decision-matrix of Adaptation Options,
- Stakeholder Evaluation of Adaptation Options.

The most used tool among the surveyed countries was “Stakeholder Evaluation of Adaptation Options”, but this was only used by four countries (i.e., a usage rate of 28%). The least used tool was “Cost-Benefit or Cost-Effectiveness of Adaptation Options”, and only two countries reported using this tool (i.e., a 14% usage rate). The total average usage rate for all tools for this stage was 21.4%. Only one country reported using all three tools to support the pre-assessments they carried out for this stage.

Further investigation into the current capacity for carrying out the three pre-assessment stages was conducted in the form of a participatory assessment during the workshop. This revealed needs for improvements in technical, institutional and human capacities. For all three stages, common needs for

human capacity improvements were noted to support better understanding of the related approaches and tools, an adequate interpretation of scientific knowledge, and effective communication at the local level. The technical capacity for climate change scenarios is generally considered strong, and if anything, there were complaints about there being too many different scenarios to choose from. Because climate scenarios are scientific-led assessments though, some concern over the ability to translate science to policy was acknowledged. While generally the data provided by the climate change scenarios assessment tools is considered adequate, some countries are interested in greater downscaling of this data, however others commented that it is during the next stage of risk and vulnerability assessment that the scenario data is effectively downscaled.

The technical capacity for assessing risks, vulnerabilities and hazards are also considered strong. Countries have found the existing tools to be generally effective, although some felt that better instruction and training on using these tools would be beneficial. Because risk and vulnerability assessments need to be carried out at sub-national and local levels, both institutional and human capacities were seen as needing improvement. Better support is needed from the national level to ensure that these assessments can be carried out at the local-level, and this includes needs for adequate resources, expertise and facilitation, and competent officers at the local level who know how to work with the collected data. It was acknowledged that strengthening human capacity for these assessment approaches to be mainstreamed at local levels is challenging. Participants questioned whether it was possible to develop the capacity of all local municipalities to carry out their own local risk and vulnerability assessments or whether a national team who could work with each local municipality would be a more feasible option.

The place where technical capacity was seen as weakest was in regards to the assessment of adaptation options. Many felt that the existing tools and approaches were not adequate or fully functional in their current status, e.g. while cost-benefit analysis is a proven tool in other fields, it is very challenging to fully calculate benefits and the differences in costs between inaction (i.e., risk calculation) and the adaptation options. Both the availability of fewer tools for this pre-assessment stage and the rather qualitative nature of both "Decision-matrix" and "Stakeholder Evaluation" leads to a need for more systematic tools and approaches that can support quantitative assessment of different options. There is a need for technical, institutional and human capacity improvement for the assessment of adaptation options to become a functional part of the NAP process.

Table 2: Needs related to NAP Background Assessment

	CC scenarios & impact assessments	Risk, hazards & vulnerability assessments	Effectiveness assessments of CCA options
Over-view	<ul style="list-style-type: none"> • Technical capacity is strong for producing scenarios and impact assessment, some desire for downscaling. 	<ul style="list-style-type: none"> • Technical capacity is strong / existing tools are generally effective 	<ul style="list-style-type: none"> • Technical, institutional and human capacity improvements are needed / existing tools are not adequate.
Needs	<ul style="list-style-type: none"> • Translating CC scenarios into policy and selecting which scenario to use • More meteorological data is needed • Lack of human capacity on climate modelling • Lack of public awareness and understanding of future climate change • Need for communication with the local level, etc. 	<ul style="list-style-type: none"> • Major challenge is scaling out these assessments to all local levels • Needs for institutional human capacity development, technical support, training and transfer • Lack of public awareness • Lack of laws/policies requiring inclusion in local planning • Low quality data, etc. 	<ul style="list-style-type: none"> • Lack of availability of adequate tools • Lack of institutional arrangements • Lack of cross-cutting coordination at the local level • Lack of linkage among studies, policies and adaptation options • Lack of relevant information and data about options



Figure 3: Current use of approaches or tools for three levels of CCA background assessments

(a) Climate change scenarios and impact assessments; (b) Risk, hazards and vulnerability assessments; (c) Effectiveness assessments of CCA options

Source: Fig. 1 in Endo, I., Chiba, Y., Didham, R. J., and Nakata, M. (2016)

Mainstreaming and Integrating Adaptation Planning

Mainstreaming of climate change adaptation means establishing it as an idea, with associated activities, that are shared by most people and regarded as normal or conventional. *Integration* of climate change adaptation means combining it with work already being done. For the purpose of this paper these words are used almost interchangeably, to suit the particular context. For example, either “mainstreaming” or “integration” are appropriate when referring to the application of the concept across sectors of national government (horizontal); whereas integration is more appropriate when referring to vertical links such as those between national and subnational governments.

During the third phase of the workshop series, focus was placed on how well adaptation planning is being mainstreamed and integrated across all government activities. While an adaptation plan is an important asset for countries’ efforts to build the resilience of their societies and adapt to climate change, if this plan remains the sole responsibility of only one government ministry or department or if it has no connection to national development or financial plans then it may well remain ineffective:

“Mainstreaming adaptation into development means not forgetting about current and future climate change when designing political programmes and spending public or private money. This occurs at different planning and budgeting levels – from national and sectoral down to local levels. ... Responding to the long-term and widespread risks of climate change requires not only stand-alone adaptation measures but also systematic, widespread and coherent mainstreaming of adaptation into planning and decision-making processes” (Scholze and Below, 2015).

National adaptation plans, policies and measures need to be properly integrated into national development strategies, economic plans and budgeting for adaptation implementation to be linked to all sectors and levels of government. Mainstreaming and integration of adaptation planning are especially important in the later steps of Element B (the Preparatory Element) and Element C (Implementation Strategies) of the NAP process. Specifically, mainstreaming and integration of adaptation across national and subnational planning processes corresponds directly with those identified in steps B.4, B.5 and C.1-C.4 of the *NAP Technical Guidelines*.

The third workshop (held in Manila in January 2017) covered the topic of mainstreaming and integrating adaptation planning. The primary focus was on horizontal integration of adaptation planning across sectors at the national level. Three aspects of integration were considered:

- Mainstreaming adaptation planning across national policies and strategies and policy integration approaches,
- Integrating adaptation into budget plans and securing financial mechanisms,
- Cross-ministerial collaboration and cross-sectoral integration of adaptation planning.

Additional consideration was also given to vertical integration and which mechanisms national governments can put in place to strengthen the downscaling of national adaptation plans for effective local-level adaptation implementation. This workshop aimed to develop a better understanding and identification of key requirements and conditions for mainstreaming adaptation planning into and across all levels of government. The pre-workshop survey completed for this workshop unfortunately was not able to obtain a 100% completion rate; a total of nine countries were represented in this survey – Bangladesh, Bhutan, Cambodia, Indonesia, the Philippines, Nepal, Sri Lanka, Thailand, and Vietnam. In this workshop, government representatives presented the current status of countries’ efforts to mainstream and integrate climate change adaptation efforts (i.e., policy, planning and

practice) into national-level policy, strategies and actions, as well as across various sectors and development efforts.

Seven of the nine reporting countries reported having specific mechanisms for facilitating policy integration for climate change adaptation in national planning and policy formulation. For two of those, the main mechanism identified was their national climate change committee. The other five countries pointed to specific mandates or acts that have led to the direct inclusion of climate change adaptation into national policies, development strategies and planning. The mandates and acts that support this in most countries jointly require the mainstreaming of both climate change mitigation and adaptation. Further discussions on this issue among participants revealed that while the mainstreaming and integration of adaptation into national policies could be improved, it is generally progressing without many significant challenges. There does nonetheless remain the perennial challenge of competing interests among different stakeholders, but in the majority of surveyed countries the mandate for adaptation integration in policy is strong enough to ensure it is given a place.

Eight of the nine reporting countries stated that mechanisms for cross-agency coordination were in place. However, a deeper review on functioning of the types of coordination (i.e., most often an inter-ministerial/agency working group or steering committee) through the workshop discussions revealed that in most countries the “coordination” does not often progress beyond the level of information sharing on existing activities. While some of the relevant committees are rather high-level, the committees themselves usually have no real authority to lead the mainstreaming efforts of different ministries and agencies, thus it is up to the individual officers representing these different ministries and agency to initiate such efforts. There is often also no linkage made between the coordination mechanism and the budgetary alignment mechanism in these countries, which further hinders progress. Lack of awareness among officers from different ministries and agencies still remains a challenge for many. While familiarity and awareness around sectoral approaches for climate change mitigation are getting stronger, there are only a few sectors that have good awareness on approaches for integrating adaptation measures.

Responding to the question about the existence of budgetary alignment mechanisms, five of the nine reporting countries provided positive examples of such mechanisms. However, the types of mechanisms being used vary. Some countries have a general climate change fund that is used to support both mitigation and adaptation activities, but this may not prioritise a specific amount of funds specifically for adaptation. Others have a specific fund for adaptation that can be used to support local level projects. A couple of countries show good practice in this area with specific tagging of a percentage of budget lines to all sectors for adaptation implementation. There are also efforts by some countries to develop clearer budgetary coding for climate change activities so that they can more clearly track the flow of related funds.

A major technical need that was identified though is better information and approaches for understanding budget requirements for integrating “climate proofing” into development activities. This requires the ability to cost both the risk (if no action is taken) and the cost of the adaptation measure. In some cases, it can also be the case that a cheaper adaptation measure may reduce the majority of the risk but not eliminate it completely, and the option that would completely eliminate the risk could be many times more expensive. Careful consideration is needed to decide if the risk can be accepted if it is substantially reduced and/or if they choose the more expensive option to fully

eliminate that risk, will it compromise how quickly they can carry out adaptation measures to address other pressing risks and vulnerabilities.

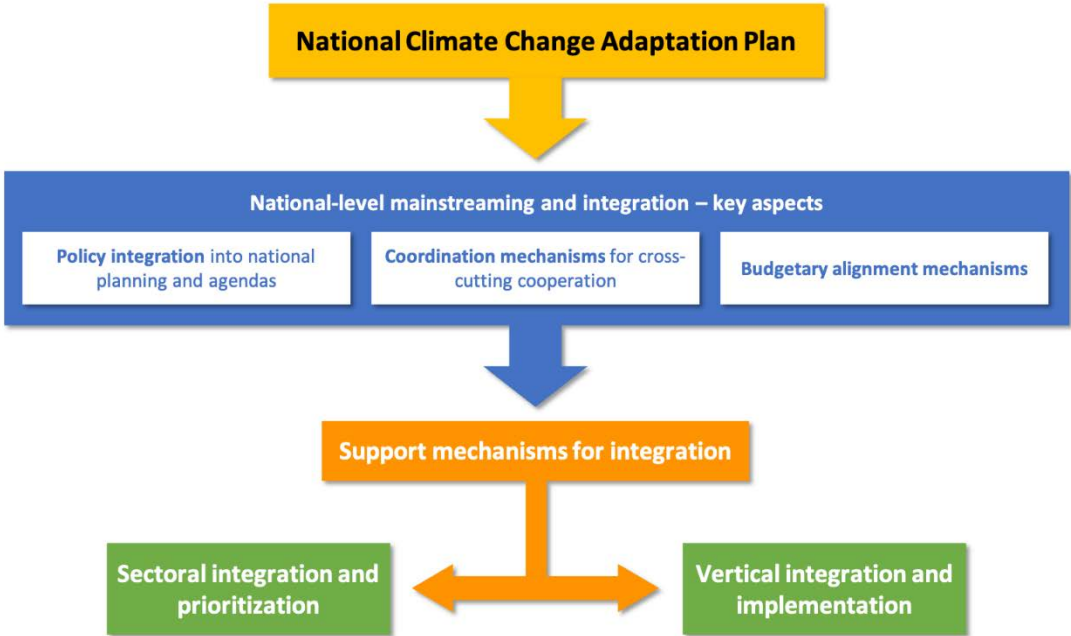


Figure 4: Schematic for Mainstreaming and Integrating Adaptation Planning

Table 3: Key strengths, gaps and needs for mainstreaming of climate change adaptation

	Current Strengths	Current Gaps & Needs
Policy integration approaches of climate change adaptation	<ul style="list-style-type: none"> Existing CCA planning process provides basis for mainstreaming and establishes benchmark SDG processes promoting further mainstreaming Most countries are already taking efforts to integrate climate change into national planning and agenda setting Baseline data is useful for planning and agenda setting 	<ul style="list-style-type: none"> Lack of technical & institutional capacities for mainstreaming CCA into wider policies and plans Limited access and availability of relevant information/data for supporting decision-making Lack of proper translating and interpretation of available CC data for use in decision-making There are opportunities for strengthening through better alignment of CCA and disaster risk reduction (DRR) Structured guidance on integrating CCA into planning at different levels and the appropriate ordering
Coordination mechanism on climate change adaptation across ministries	<ul style="list-style-type: none"> Most countries have existing coordination bodies, some specialising on climate change Most countries have established coordination mechanisms for vertical integration from national to local Some countries are making efforts to interlink and coordinate across different plans and strategies 	<ul style="list-style-type: none"> While coordination bodies exist, their achievements are often limited to knowledge sharing Lack of alignment between coordination and budgeting makes them less effective Technical capacity building is needed for effective cross-agency and cross-sectoral coordination Coordination between sectors is challenging under current institutions More high-level involvement of politicians is needed on climate change coordination
Budgetary alignment mechanisms for climate change adaptation	<ul style="list-style-type: none"> Some countries demonstrate good practice in CCA budget tagging and integration into national budgetary systems Availability of adaptation funds (at the international & national levels) Some countries are developing frameworks/ criteria for prioritising funding for different types of CCA actions and responses 	<ul style="list-style-type: none"> Budgetary alignment is currently not seen as part of the NAP process Ability to link CCA budget alignment to effective risk management is limited Understanding budget requirements for integrating “climate proofing” into development investments Lack of identification criteria for CC budgeting Lack of eligibility criteria for CC project funding

Source: Table 1 in Chiba, Y., Didham, R. J., Endo, I., and Nakata, M. (2017)

Implementation and Localisation of Adaptation

When turning to the implementation of adaptation plans and initiatives, the local-level is the place where a majority of adaptation practice will occur, making sub-national and local governments important actors. It is important though that national adaptation planning identifies and outlines the supportive institutions and mechanisms that will enable down-scaling from national planning to local implementation. Stakeholder engagement is another important factor for effective adaptation planning and implementation, and is especially relevant at local-levels where the public can participate in decisions for building community resilience.

The fourth workshop (held in Manila in January/February 2018) addressed how to advance implementation and practices for climate change adaptation. This workshop aimed to support stronger implementation of CCA by addressing key areas for moving from planning to practice, especially in relation to vertical integration. In this workshop, the participants 1) shared good practices and lessons learned from existing programs and projects on CCA vertical integration, 2) identified challenges and opportunities for countries to engage in these good practices, and 3) explored ways to fill in the gaps by considering available resources in the region and beyond. While the workshop focussed on strengthening vertical integration and implementation of CCA and looked across national, local and sectoral levels, achieving effective implementation at the local-level was a key focus of this workshop.

Countries were asked in a survey to identify existing mechanisms or approaches that the national government had established to support vertical integration and sub-national mainstreaming of climate change adaptation into regional and local planning and policy formulation. Of the nine responding countries⁵, six countries identified such existing mechanisms. However, three of those countries indicated that these mechanisms are only newly in place and still require further development. Specific examples of these mechanisms mainly relate to the incorporation of adaptation considerations into local land-use and development plans, and they include ecosystem-based approaches (EBA) to adaptation and sustainable integrated area development (SIAD). Workshop discussions revealed that while frameworks and institutions for vertical integration are in place at the national-level, there are challenges to achieving strong integration. The lack of a clear implementation strategy attached to the national adaptation plans and both limited technical and human capacity at the local-level were seen as key barriers.

Countries additionally reported on specific approaches to support local level implementation of CCA strategies and actions. Of the nine responding countries, six also responded positively to the existence of such mechanisms. For two of those countries, there is specific support being given by national agencies for the development of local plans related to climate change adaptation and disaster risk reduction. Currently these efforts are still in their first phase so only a small percentage of local governments have been reached. For the other four countries reporting on positive mechanisms, these exist mainly in the forms of capacity building/training and budgetary support provided from the national governments to local governments for increased local capacity for adaptation implementation. In discussions, participants found that the various existing support mechanisms and programs offered by national governments to strengthen local-level implementation are relatively effective, and they noted that the major challenge now is scaling out such assistance to all local governments as the actual

⁵ Bangladesh, Bhutan, Cambodia, Indonesia, Nepal, the Philippines, Sri Lanka, Thailand, and Vietnam.

practice of adaptation remains low across all countries. The law of the Philippines mandating the inclusion of CCA into local plans and the national budgetary system of Indonesia that supports easier local access to adaptation funds were both identified as exemplars in this area. Participants felt though that access to and availability of relevant data and information remains a critical hurdle, as does the persistent challenge related to the volatility of local governments.

During the fourth workshop, participants identified several promising aspects for achieving greater level of vertical integration and local implementation of CCA. It was acknowledged that the knowledge, capacity and efforts of national governments on CCA has grown at a considerable place, and it was noted that the depth of both understanding and action that countries reported on during this workshop demonstrated significant improvements, if compared to what they first shared during the workshop in 2015. Most countries have already established strong foundations for adaptation with relevant plans, policies and even the development of horizontal integration/mainstreaming mechanisms, and thus much of the precursory steps to vertical integration have already been established. Additionally, there are an increasing number of good opportunities for accessing international support, technical expertise, and financing for adaptation implementation. While adaptation options have yet to be systematically evaluated and strategised, there are many existing good practices at the local level (especially for strengthening vertical integration of adaptation planning) that offer transferable lessons. Although many specific challenges and barriers still exist for achieving effective adaptation implementation, the growing effort in research and development to target and overcome these obstacles was also seen as a positive sign by the participants.

Table 4: Challenges and Opportunities for Vertical Integration of Climate Change Adaptation

Challenges for Vertical Integration	Opportunities for Vertical Integration
<ul style="list-style-type: none"> • Mainstreaming across government and development tiers • Administrative governance and management approaches (e.g. eco-system governance) • Balance in vertical and horizontal integration • Capacity building and training • Better data management and information sharing • Wide spread scaling and deployment of risk and vulnerability assessments • Understanding and selecting from a long list of adaptation options • Balance between addressing adaptation as a stand-alone projects and as <i>climate proofing</i> integrated into all development activities • Monitoring, reporting and evaluation systems 	<ul style="list-style-type: none"> • Upgrading of NAPs and CCA strategies, as well as related capacity development programs • Climate change communication is strong • Increased climate literacy • Global policy integration • Increasing national policies and mechanisms to support local action • Integration of climate risks into planning and budgetary processes • Improved sectoral analysis of impacts and risks • Climate finance • Integration into educational curriculum

At the fourth workshop, participants further discussed some improvements required to support effective adaptation implementation at the local level. A conceptual challenge of distinguishing between disaster risk reduction (DRR) and climate change adaptation (CCA) was noted. While DRR and CCA are closely related, it is considered important that local government units can clearly distinguish between the two if they are to plan for effective adaptation strategies and options. DRR primarily focusses on reducing short-term risks and hazards from disasters, while CCA should focus on long-term and systematic changes to reduce vulnerability and increase resilience. CCA must also look at changing

the means of how things are done and how systems operate with the aim of not just making ameliorative improvements to reduce risks, but also making transformative changes to operations of systems to increase their adaptive capacity to respond to climatic changes. In considering DRR, local government units must also consider the mid- and long-term impacts of climate change, which include increasing the magnitude of disasters.

At an institutional level, it was recognised that local government units require increased levels of autonomy and decentralisation in order to have the capacity to respond effectively to CCA. Discussions on this issue revealed opportunities for both top-down support from the national level for local level implementation and also bottom-up approaches for strengthening the social capital of local government units. At the national level, institutional frameworks and resource mobilisation should be developed that target and streamline local implementation of adaptation plans and strategies. National governments can support greater awareness and mandate local government units to mainstream adaptation practices, and they can promote greater exchange of information including contextualised and scaled information. National governments were also seen as maintaining the key role in driving research and innovation to support the creation and replication of context-specific solutions. In order to strengthen the social capital of local government units, more efforts to raise the awareness and acceptance of local communities to adaptation related issues and initiatives should be encouraged. Participatory assessments and public involvement in adaptation planning were identified as key ways to increase social engagement at the local level. It was also noted that voluntary public-private partnerships (PPPs) may be an effective way to increase multi-stakeholder engagement in local adaptation initiatives. Additionally, it was noted that in general it is often possible to achieve greater coordination across departments within a local government unit than at the national level, and this should be encouraged as an important means of implementation for CCA, but this does require some level of national-level support through cross-ministerial cooperation and alignment.

The integration of CCA into local land-use planning was recommended as one of the main ways to accelerate local adaptation planning and implementation in an effective manner, and it was suggested that this practice should be mandated by national governments. An area needing further development is increased understanding about different adaptation options, and to achieve this greater research-based validation is needed to identify the costs, benefits and effectiveness of these different options. Alongside this effort, mechanisms to collect, share and scale up good practices in adaptation practice should be developed. These two aspects could be better supported through the development of national (and/or international) databases of available technologies and tools of 1) support mechanisms for adaptation planning, and 2) adaptation options. It was noted that the *Adaptation Knowledge Portal*⁶ has been established by the UNFCCC as part of the Nairobi work programme (NWP) established at COP11 (December 2005) and will be extended through the work of the *technical examination process on adaptation* (TEP-A) established at COP21 (December 2015) as part of the Paris Agreement. Participants also highlighted the need for greater gender inclusion in adaptation initiatives as evidence shows that women are unequally impacted by climate change.

⁶ <http://www4.unfccc.int/sites/NWP/Pages/Home.aspx>

Findings, Recommendations and Conclusion

Summary of Findings

The findings in this report have been based on a process of collaborative investigation carried out through the participation of government representatives from 14 countries in the Asia-Pacific region as well as other relevant stakeholders. The purpose of this study has aimed at understanding current factors supporting and hindering adaptation planning and practice in the region, as well as identifying opportunities for improvement. While in depth analysis of individual countries is not provided, the breadth of the study and its ability to identify commonalities across the region validates specific recommendations for interventions and capacity building that could support the improvement of adaptation efforts across the region and beyond.

The findings from this investigation relate to elements A) Lay the Groundwork and Address Gaps, B) Preparatory Element, and C) Implementation Strategies as outlined in the *NAP Technical Guidelines*. Across all elements, the need for further capacity building is apparent. While there are specific areas where increases in technical and/or institutional capacity are required, increasing human capacity to better understand, plan for and implement adaptation efforts is important across the board. Existing capacity building at national, sub-national and local levels is still not systematically translating into tangible adaptation actions on the ground. Interestingly, Lutz, Muttarak, and Striessnig (2014) conducted a cost-benefit analysis of various adaptation options and found that investment in education and capacity building can be more effective for increasing a country's adaptive capacity to climate change than investments in physical infrastructures, especially in situations where the impacts of climate change remain highly uncertain: "Education directly improves knowledge, the ability to understand and process information, and risk perception. It also indirectly enhances socioeconomic status and social capital. These are qualities and skills useful for surviving and coping with disasters" (IIASA, 2014).

Examination of Adaptation Planning Strengths and Weaknesses

Reviewing the progress made by countries towards analysing capacity gaps, development needs and vulnerabilities for adaptation planning (i.e. the steps related to element A), general lack of awareness, knowledge and access to information were seen as some of the most challenging aspects for this phase. Insufficient institutions and policy frameworks were also seen as a challenge for initiating adaptation planning, which resulted in poor coordination between stakeholders and agencies, limited prioritisation, conflicting policies, and limited budget alignment. These challenges however can be seen as issues that can be a focus of later efforts for mainstreaming and integration of adaptation planning. During this stage, a lack of sensitisation to climate change across different ministries and agencies was found in many countries, which resulted in a conflict between DRR and CCA approaches.

Examination of NAP Background Assessment Approaches

Countries' experience with the three pre-assessment stages were reviewed, and needs for technical, institutional and human capacity improvements were found. For the assessment of climate change scenarios and impacts, there was a common view that technical approaches for climate change scenarios are well developed, but some concern was expressed about the need for better translation of the science into appropriate evidence for decision-making and greater understanding about what "uncertainty" means in climate science. For the assessment of risks, hazards and vulnerabilities

associated with climate change impacts, again the existing tools and approaches were viewed as effective for this phase. However, needs for instruction and training are significant since these assessments need to be carried out at the local level. Institutional support is also required to ensure adequate resources, expertise and facilitation for this phase. The assessment of adaptation options is the pre-assessment phase most challenged by a lack of technical and institutional capacity, as well as also requiring human capacity improvement. The existing tools and approaches for assessing adaptation options are seen as not adequate or fully functional, and a need for tools that can support quantitative assessment of adaptation options was noted. Across all three pre-assessment phases, capacity building is also desirable to support better understanding of the related approaches and tools, an adequate interpretation of scientific knowledge, and effective communication at the local level.

Mainstreaming and Integrating Adaptation Planning

During the review of mainstreaming and integrating adaptation planning, three main aspects were reviewed: 1) mainstreaming across national policies and strategies and policy integration approaches, 2) cross-agency coordination and cross-sectoral integration, and 3) integrating into budget plans and financial mechanisms. With regard to mainstreaming adaptation planning into policies and strategies, this aspect is now occurring in most countries and is generally proceeding well. Competing interests and priorities can slow the speed of progress in this area, but the strength of existing mandates for most countries will ensure it continues. For cross-agency coordination, the necessary mechanisms are in place, but they mainly serve as information sharing platforms with little actual authority and no control over budget allocation for these issues. For sectoral integration, while climate change mitigation is now well addressed, many sectors still struggle to find good approaches to incorporate adaptation measures. Budgetary alignment is an area in which several countries have developed innovative approaches, but greater comparative assessment of these approaches is needed to clearly identify the effectiveness of each. One aspect that is specifically challenging in relation to budget alignment is the incorporation of “climate proofing” and adaptation measures into planned development activities, which would require better information and tools to cost both the risk and the cost/benefit of the adaptation measure to be taken.

Implementation and Localisation of Adaptation

The review of the implementation and localisation of adaptation found many areas needing improvement to secure better vertical integration and downscaling of national adaptation plans. Strategising CCA as a long-term response that requires systematic change and differentiating it from the short-term perspective of DRR is a conceptual challenge that requires greater understanding and capacity. In many countries, local government units do not have enough autonomy to really contextualise and elaborate unique adaptation programmes, and few national governments have established the institutional frameworks and necessary resource mobilisation to streamline local implementation of adaptation plans and strategies.

National governments can support greater awareness and mandate local government units to mainstream adaptation practices, and they can also promote greater exchange of information including contextualised and scaled information. National governments were also seen as maintaining the key role in driving research and innovation to support the creation and replication of context-specific solutions. Local governments, on the other hand, can strengthen their social capital through increased public engagement and participation, and they should utilise local land-use planning as a

means to accelerate adaptation. Finally, a key technical challenge for local adaptation planning and implementation is a lack of available information about adaptation options, including information on the costs, benefits and effectiveness of different options, or an adequate way to assess these.

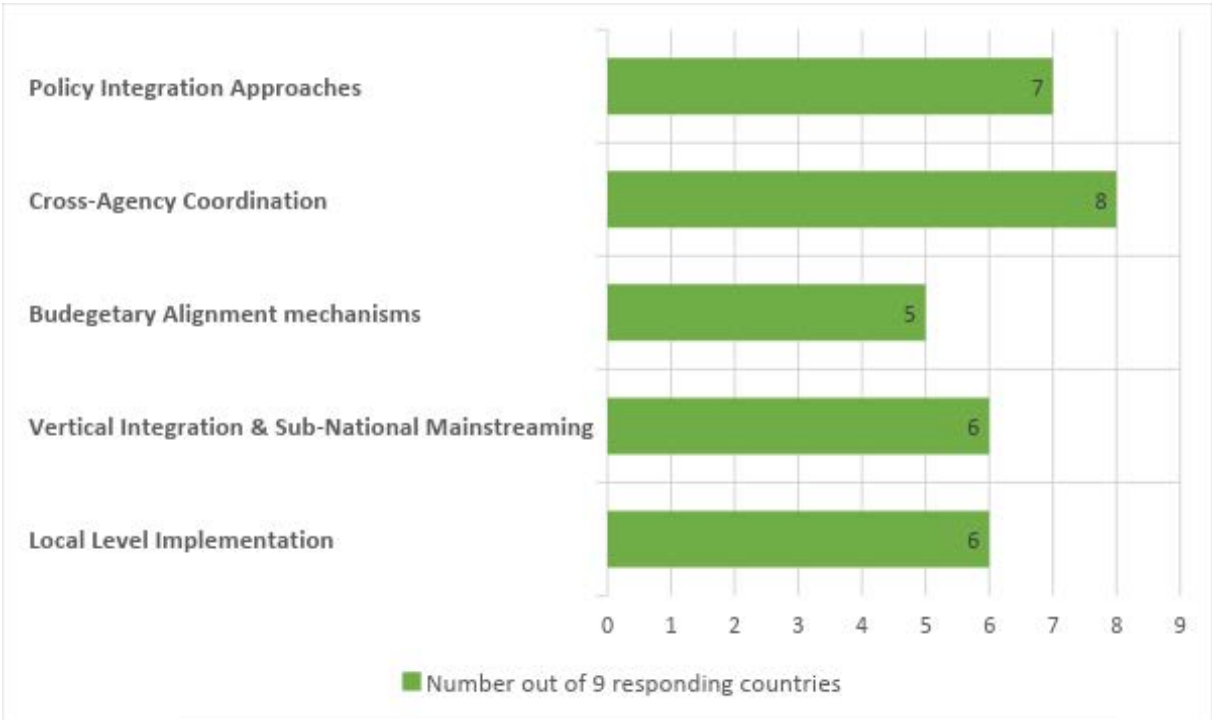


Figure 5: Countries’ reporting on existence of mechanisms to support key aspects of CCA mainstreaming and integration

Recommendations for Improving Climate Change Adaptation

Enhance local capacity and raise awareness of climate change adaptation

It has already been noted that there is strong need for human capacity building across all aspects of climate change adaptation. To move beyond only a small core group of experts who are actively involved in adaptation efforts, countries need to raise the awareness and build capacity of others to engage with these processes. For integration into various sectors and for implementation at the local level, the capacity of large numbers of people will need to be increased. Engagement in participatory assessment and planning is a key way to achieve this and build social capital for adaptation. Additionally, collaborative investigations like the one conducted in this study provide an effective way to support the co-generation of new knowledge and the identification of opportunities for advancing CCA.

Capacity building for adaptation may take many forms. At the most basic level, there is a need to build wider awareness and acceptance for adaptation planning and implementation. Beyond this, there are specific abilities required for strategising for effective adaptation planning and systematic increases to adaptive capacity, distinguishing between short-term disaster risk reduction and long-term adaptation, and examining needs for changes to systems and processes for greater ability to respond to shocks. Linked closely with capacity building, there are also opportunities for better data management and information dissemination. More initiatives like the *Adaptation Knowledge Portal* should be developed

and supported to collect, analyse and disseminate good practices in adaptation planning, policy and practice. Capacity and skill assessments (like the UNITAR program explained by Mackay, et al., 2015) also are important precursors to ensuring effective and contextually relevant capacity building.

Increase institutional capacities

Increases in institutional capacities are necessary to ensure better mainstreaming and integration of CCA, both horizontally at the national level and vertically, so that it is integrated into sectoral considerations and local level implementation. Coordination mechanisms for cross-agency cooperation require more authority to take an active role in ensuring the inclusion of adaptation considerations in all development plans and strategies. The mainstreaming of adaptation would also benefit from a clearer framework or mandate that does not present adaptation efforts as an “add-on” but rather as an essential and integral part of development activities if they are to achieve lasting benefits. Adequate resource mobilisation and financing are normal challenges for most development activities, but for adaptation countries are especially challenged by the fact that this requires a significant level of downscaling so that the necessary resources and funding are provided for implementation at the local level. The importance of securing robust data and information management has previously been mentioned, but to achieve this, better systems for monitoring and evaluation should be established that allow for comparative reporting and analysis.

Develop proper tools

In relation to the existing technical capacities to support the NAP process, several areas that could benefit research, development and innovation were identified. A major challenge currently exists due to insufficient approaches for assessing the effectiveness of adaptation options. More data about individual options is needed, as well as tracking of the long-term performance of these options. The development of tools that allow for quantifiable comparisons between different adaptation options would also be extremely valuable. While the existing technical capacity allows for a reasonably good quality in assessing impacts as well as risk and vulnerabilities, both of these steps merely support problem identification. More effort is needed to support the identification of solutions and innovations to accelerate the overall implementation of CCA.

Improve financial models for better management

While there exist several newly developed budgetary alignment mechanisms for adaptation, there has been little comparative testing of these approaches to determine their effectiveness and appropriateness to different contexts. There is also a need to find different approaches to financing (and also valuing) both stand-alone adaptation initiatives and the integration of adaptation measures into other development activities. In relation to this second approach, a key area for improvement is the development of more robust models for assessing and costing “climate proofing” into development activities. If such a model was available, it would also become possible to establish more funds that primarily support the additional costs of climate proofing in traditionally-funded development activities. Furthermore, if the projected costs of potential loss and damage far outweigh

the costs of climate proofing, then it may even justify the inclusion of such climate proofing costs within equity packages offered by private financing if this is likely to reduce the risk of default. The Climate Public Expenditures and Institutional Review (CPEIR), for example, is a tool useful for national planning and budgeting and has been conducted in many countries in Asia-Pacific since 2011.

Training and support

In order to provide support mechanisms for vertical integration of adaptation planning, and implementation at the local level, national governments may find different ways to transfer expertise. For general capacity building, training programs may be developed for local government officers. For aspects requiring more specialised expertise, national governments may establish support units that can work with multiple local government units. To achieve wide-scale implementation of certain assessments, planning approaches or evaluation, the government may also establish research funds to engage the academic community in such work. Finally, extension units may be used to bridge scientific knowledge and innovative practices with on-the-ground practitioners including farmers, builders, contractors, etc. Mainstreaming and integration across sectors may also benefit from training if other sectors are willing.

This might start with the identification of the sectors that most pose the greatest threat to adaptation measures, and those that are most impacted by the consequences of climate change. In both cases, identifying common goals may facilitate the integration of adaptation into national development strategies. For sectoral integration, which is necessary for NAPs to be properly integrated in to national development strategies, training on approaches for integrating adaptation measures to ministries and agencies with weak awareness may enhance cross-agency coordination.

Make good use of international support

Access to effective tools and approaches should be enhanced and their usage encourage. Support from the international community is crucial for developing countries with limited capacity to utilise the tools and approaches for promoting NAP implementation. Multilateral and bilateral development agencies, research institutes and others can assist these countries by providing them with opportunities to improve their technical skills and strengthen their institutional setups, and by helping them secure access to data, information, and funding. Additionally, systems for monitoring and evaluation need to be further develop and applied. Lesnikowski et al. (2015) note that “most guidelines for evaluating adaptation policy are focused on project-level monitoring and evaluation or single-country evaluation of adaptation policy, not systematic assessment of adaptation progress across countries, sectors and scales.” Adaptation requires learning from our actions so we can improve the way we do things, but this cannot be achieved without a robust monitoring and evaluation system in place.

Conclusion

Climate change adaptation must be pursued through many paths and approaches that reflect contextual specificities. There is no one silver bullet nor one indicator that can show if the correct decisions for adaptation are being made. Both “climate proofing” all development activities against future climate change impacts and preparing long-term strategies to strengthen the resilience of human and natural systems to shocks are required. While adaptation planning begins by looking at the potential threats of climate change, ultimately it must be about looking forward to doing things differently ... and doing them better. It is about learning and finding new ways to live that are more resilient and able to adapt to change, and it is about managing natural systems to build up their innate adaptive capacity. The collaborative investigation into national adaptation planning carried out for this study signifies the desire of countries and individual to come together to share their practices and their knowledge, to collectively reflect on the challenges they face, and to reimagine how things are done. It is in this collaboration and shared learning that we find the opportunities to strengthen our efforts and eventually our achievements.

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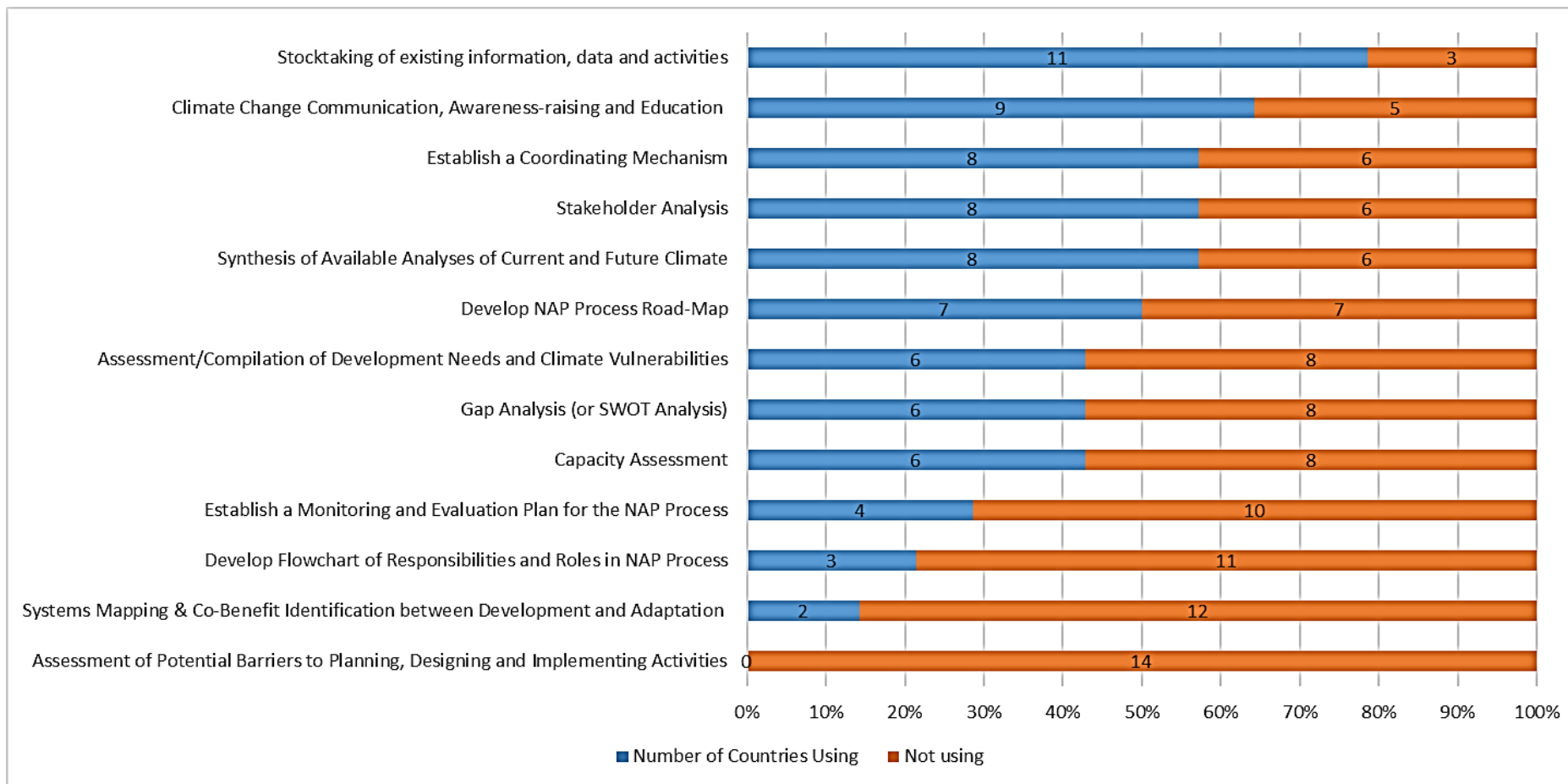
Annex 1: SWOT Analysis of Capacity Gaps, Needs and Vulnerabilities for Adaptation

<p><u>Strengths:</u> Existing Policy and Mandate Linking Policy to Budget Budget Political Institutions Background Preparations Research & Information Adaptive Capacity Key Partners Local Level Engagement Data Management</p>	<p><u>Weaknesses:</u> Policy Framework Institutional Arrangements Competing Interests Financial Support Information Technology Technical Capacity Monitoring, Evaluation and Reporting Systems Addressing Needs Data Management Public Participation Awareness</p>
<p><u>Opportunities:</u> Improve Cross-Sectoral Coordination Harmonize existing programmes and policies Integrate DRR and CCA together Strengthen institutional support for CCA Legislation & Local Ordinance to allocate national budget Capacity building for local government Establish CC Portals – “One Stop Information Shops” Build capacities to apply for/access international funds Participation in data collection improves transparency Access to downscaling models and improved capacity Awareness raising programmes (across sectors)</p>	<p><u>Threats:</u> Limited human resources Uncertainties in data & conflicting data Change of government & Change of political priorities Institutional mechanism not effective for reaching all sectors</p>

Annex 2: Assessment of Climate Change Scenarios, Approaches for Impact and Risk Assessment, and Appraising Adaptation Options

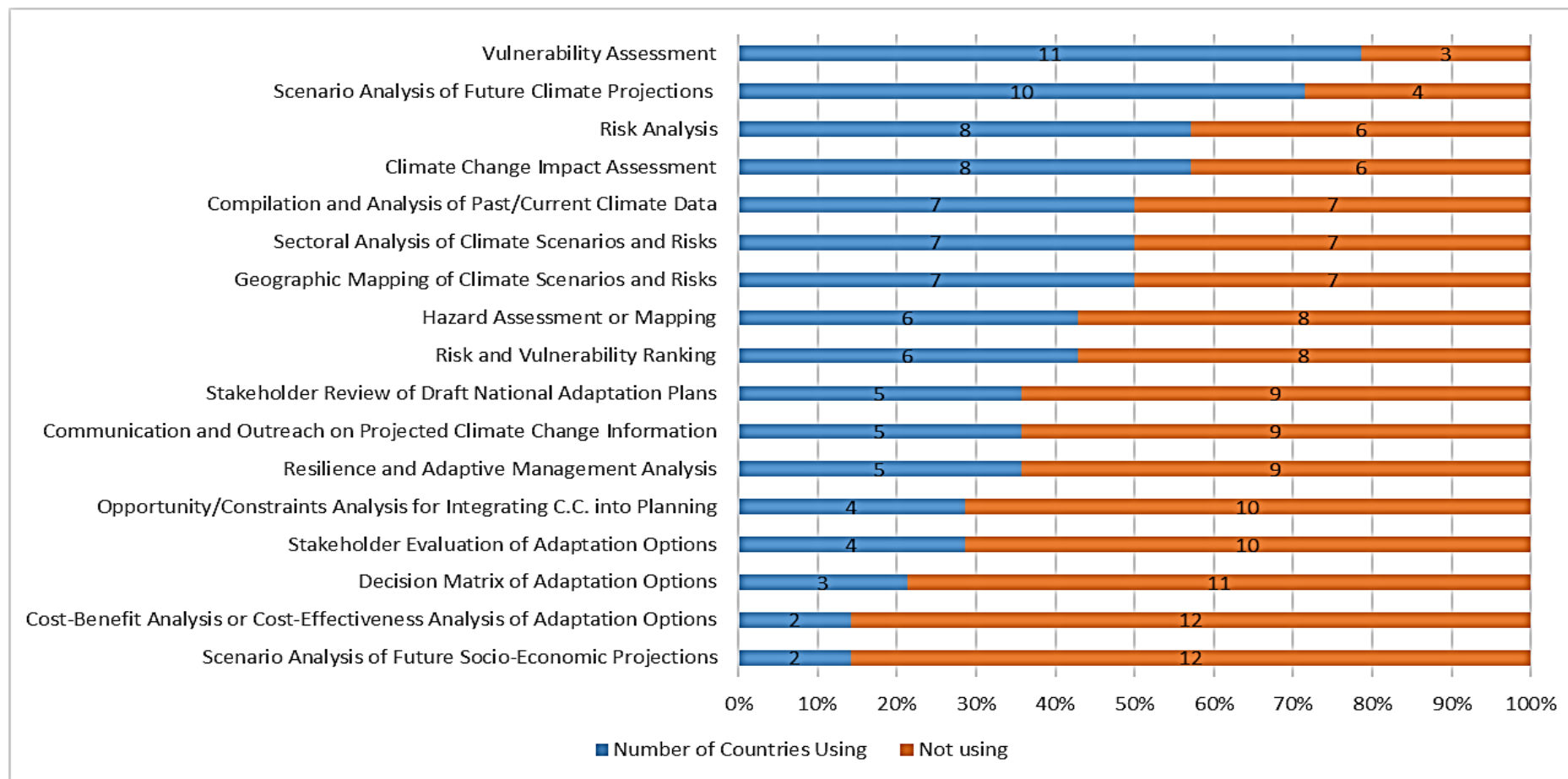
<p><u>Strengths:</u> Availability of CC Scenarios Meteorological Data Assessments Existing Knowledge and Experience Institutions Data Collection Research Integration Finance</p>	<p><u>Weaknesses:</u> Translating CC Scenarios in Action Plans Too many Scenarios Forecasting Setting Baseline for Data Collection Spatial Scale of Data and Downscaling Localising NAP Community Adaptation Plans Impact Modelling Assessments Capacity Knowledge Gap Research</p>
<p><u>Opportunities:</u> Develop CC Models that project Localised Impacts Capacity Building Strategy for Target Stakeholders & Access to Experts to provide training Improve Technical Capacity to Downscale & to Identify Risks at Local Levels Teacher Training Document Community & Indigenous Knowledge Knowledge Sharing Mechanisms More support for implementation of CCA measures Regional CC research agendas/programmes Technology transfer Guidelines for integrating CCA into Local Plans</p>	<p><u>Threats:</u> Uncertainties in Climate Projections Lack of Finance for Training Lack of Expertise for Training Costs of conducting CC studies Centralisation of decision making Lack of community organisers & facilitators Over dependence on international support</p>

Annex 3: Countries reported use of Tools and Approaches for Element A: Groundwork, Stocktaking, Capacity Building and Addressing Gaps



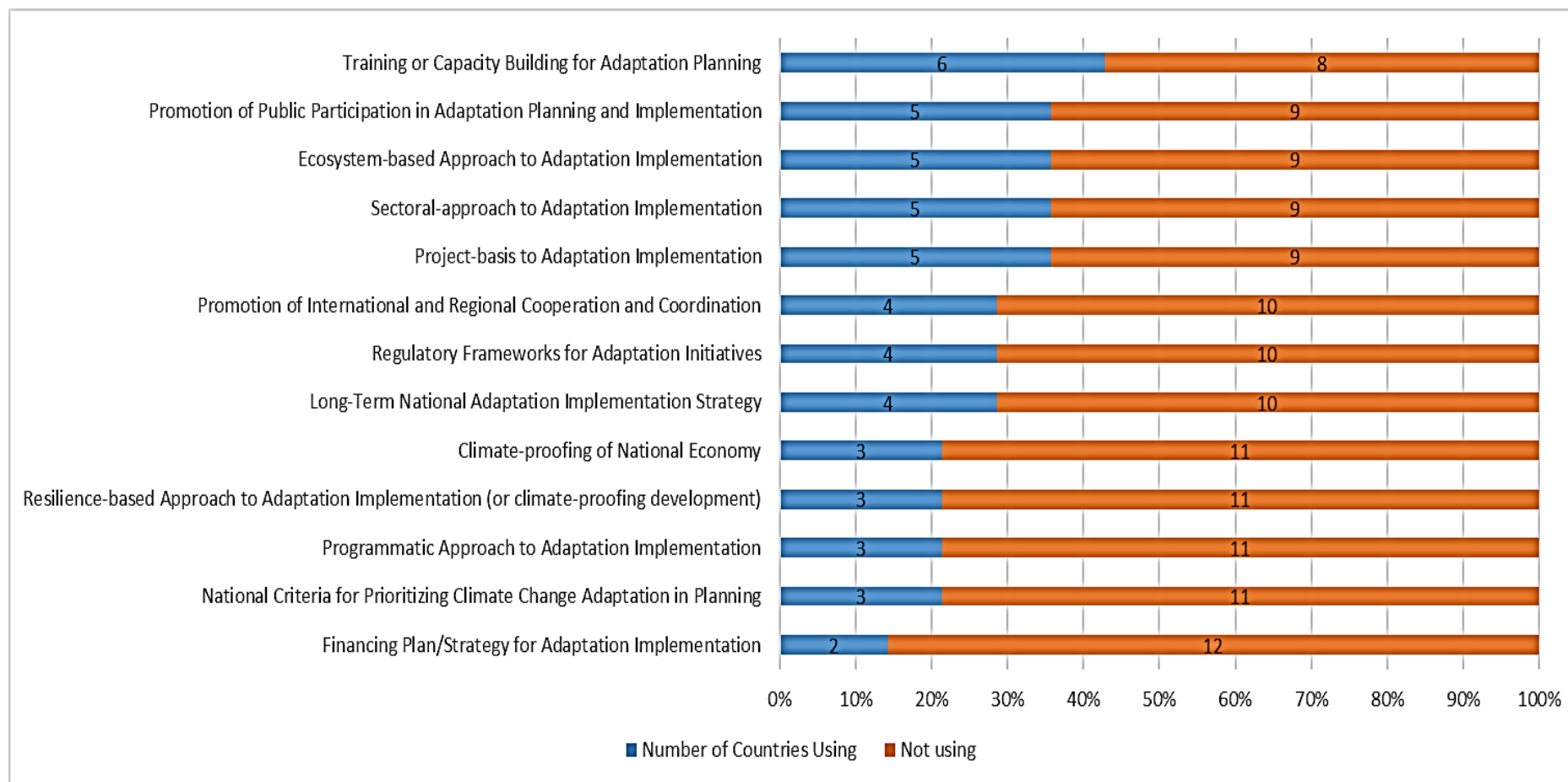
Source: Figure 2 in Didham, R. J., Endo, I., Scheyvens, H., and Chiba, Y. (2016)

Annex 4: Countries reported use of Tools and Approaches for Element B: Preparatory Assessments and Integrating into Development Planning



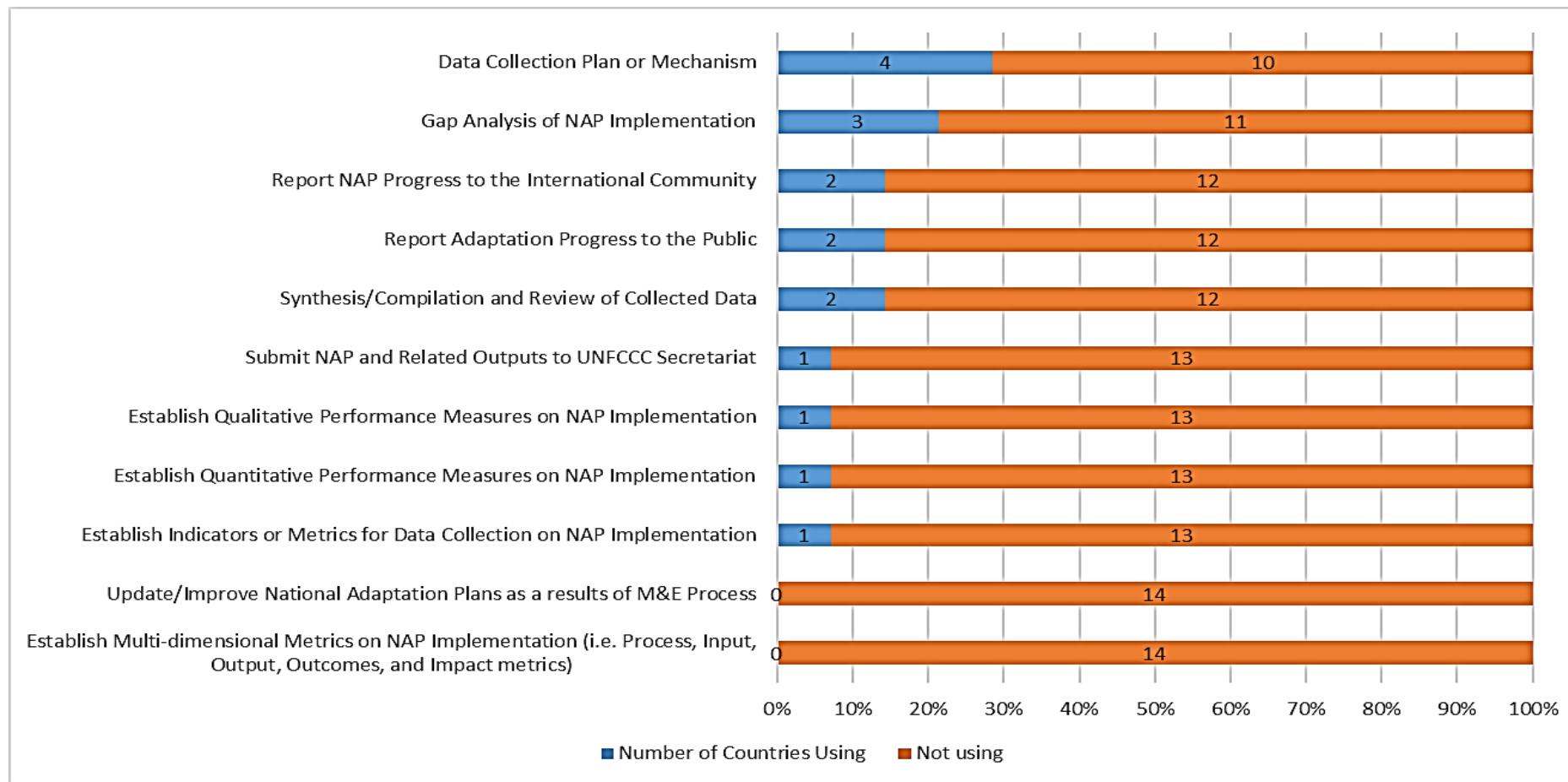
Source: Figure 3 in Didham, R. J., Endo, I., Scheyvens, H., and Chiba, Y. (2016)

Annex 5: Countries reported use of Tools and Approaches for Element C: Developing Implementation Strategies, Coordination, and Implementation



Source: Figure 4 in Didham, R. J., Endo, I., Scheyvens, H., and Chiba, Y. (2016)

Annex 6: Countries reported use of Mechanisms and Approaches for Element D: Monitoring, Evaluation and Reporting



Source: Figure 5 in Didham, R. J., Endo, I., Scheyvens, H., and Chiba, Y. (2016)



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