

**Twelfth meeting of the Adaptation Committee  
Bonn, Germany, 19-22 September 2017**

**Technical paper on  
Long-term adaptation planning**

**Recommended action by the Adaptation Committee**

The Adaptation Committee will be invited to consider the draft technical paper contained in this document. It may wish to agree on next steps in the finalization and publication of the paper.

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<sup>1</sup> Revised version for technical reasons.

## 1. Objective and scope

1. This paper is produced by the Adaptation Committee (AC) as a contribution to the committee's work under "Workstream A" (Technical support and guidance to the Parties on Adaptation Action) under the leadership of the National Adaptation Plan Task Force (NAP TF).
2. The paper seeks to share information about long-term adaptation planning, to assist Parties as they implement the provisions of the Paris Agreement (particularly Article 7),<sup>2</sup> including as they formulate and implement national adaptation plans (NAPs). In addition, it can be used by the AC and its NAP TF, to inform upcoming discussions on long-term adaptation planning.
3. It draws on input from the "Workshop on experiences, good practices, lessons learned, gaps and needs on the NAP process", including responses from participants to the guiding questions, held in September 2015; as well as from the NAP technical guidelines, the Nationally Determined Contributions (NDCs), case studies, relevant peer-reviewed and grey literature, UNFCCC documents, and information from the Intergovernmental Panel on Climate Change (IPCC).
4. The paper starts with a background section (section 2 below) which contextualizes the discussion by highlighting the importance of adaptation under the Paris Agreement. Thereafter, it discusses long-term adaptation planning under the United Nations Framework Convention on Climate Change (UNFCCC) process, elaborating on opportunities presented by the Cancun Adaptation Framework (CAF) and the process to formulate and implement NAPs, and pointing out certain challenges that exist. A section on conceptualizing "long-term" in the context of adaptation planning follows, which presents different views on the matter, and different practical applications.
5. Section 3 focusses on related agreements and processes. It highlights and briefly describes relevant multilateral agreements (the Sustainable Development Agenda 2030, the Sendai Framework for Disaster Risk Reduction, and Agenda 2063), linking them to long-term adaptation planning, for example through the NAP-SDG iFrame. A selection of five examples of adaptation planning processes will then be discussed, as lessons can be learned from their approach to long-term adaptation planning.
6. The next section (section 4) gives more technical detail by delving into topics that are related to long-term adaptation planning, including mainstreaming adaptation into long-term development planning and cycles (including budget cycles); connecting short-, medium- and long-term adaptation planning; planning in the context of long-term risk and uncertainty; incremental versus transformational change; taking an iterative approach to planning (including through monitoring and review); the importance of effective institutional arrangements and stakeholder engagement.
7. The paper concludes with a summary of how the technical information contained in this paper could be used by the AC at its twelfth meeting.

## 2. Background

8. Long-term adaptation planning has increasingly been coming to the fore as a valued approach to enhanced action on adaptation. The 2015 Paris Agreement includes the long-term global goal to "limit global average temperature rise to well below 2 °C above pre-industrial levels and to pursue efforts to limit the temperature increase to 1.5°C above pre-industrial levels, recognizing that this would

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<sup>2</sup> <[http://unfccc.int/files/meetings/paris\\_nov\\_2015/application/pdf/paris\\_agreement\\_english\\_.pdf](http://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf)>.

significantly reduce the risks and impacts of climate change”.<sup>3</sup> Parties also agreed a global goal on adaptation, on “enhancing adaptive capacity, strengthening resilience and reducing vulnerability to climate change, with a view to contributing to sustainable development and ensuring adequate adaptation response in the context of the aforementioned temperature goal.”<sup>4</sup>

9. Although it generally requires higher levels of finance, technology and capacity building (together also referred to as “means of implementation”), in the longer-term it can prove more cost-effective than other forms of adaptation, such as projects that focus on the short-term. Positive progress on long-term adaptation will go a long way towards meeting many of the Sustainable Development Goals (SDGs). This is reflected in some countries’ NDCs and in the NAPs, which can be viewed not only as climate action plans, but also as sustainable development action plans.

10. Part of this evolution towards long-term adaptation can be attributed to the process to formulate and implement NAPs, which is the only multilaterally-agreed, comprehensive, adaptation planning process of its kind. It takes a medium- and long-term approach to reducing vulnerability to the adverse effects of climate change that is integrated with national development planning processes and strategies. The process to formulate and implement NAPs can be used by countries as an effective approach to facilitate long-term planning, particularly in the context that NAPs are to be updated periodically. When the COP agreed to establish the process in 2010 under the Cancun Adaptation Framework (CAF)<sup>5</sup>, they included long-term planning as an integral element. The process to formulate and implement NAPs enables Parties to identify medium- and long-term adaptation needs, and develop and implement strategies and programmes to address those needs.<sup>6</sup> It is a continuous, progressive and iterative process which follows a country-driven, gender-sensitive, participatory and fully transparent approach.

11. The objectives of the NAPs are inherently long-term in nature: “to reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience; and to facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.” The focus of the NAPs on integrating adaptation is significant, as it requires looking at adaptation through a long-term lens. Policies and programmes are, by nature, generally longer-term in scope than activities and projects, which had typically been the *modus operandi* for adaptation in previous years. By integrating adaptation into development planning processes and strategies, countries can ensure that adaptation becomes a long-term feature of development at different levels, and that NAPs have longevity and serve as the main vehicles for national adaptation planning and implementation in the decades to come, while maintaining synergy between the achievement of the goal to limit the rise in global average temperature, the global goal on adaptation, and the SDGs. An example of a NAP that clearly elaborates its long-term perspective and links to development is that of Burkina Faso, see Box 1.

**Box 1. Long-term adaptation planning through the NAP of Burkina Faso**

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<sup>3</sup> Paris Agreement. Article 2.1(a), available at:

<[http://unfccc.int/files/meetings/paris\\_nov\\_2015/application/pdf/paris\\_agreement\\_english\\_.pdf](http://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf)>

<sup>4</sup> Paris Agreement. Article 7.1.

<sup>5</sup> Decision 1/CP.16. Paragraphs 11-35 address enhanced action on adaptation. The decision is available at: <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=4>

<sup>6</sup> Decision 1/CP.16, paragraph 15.

“Burkina Faso intends to manage its economic and social development more efficiently by implementing planning mechanisms and measures taking account of resilience and adaptation to climate change between now and 2050.

The long-term adaptation objectives based on that vision are to:

- Protect accelerated growth pillars;
- Ensure sustainable food and nutrition security;
- Preserve water resources and improve access to sanitation;
- Protect persons and goods from extreme climate events and natural disasters;
- Protect and improve the functioning of natural ecosystems; and
- Protect and improve public health. ”

The NAP was formulated with very close attention to institutional, technical and financial aspects and the need for capacity. Experts at the University of Ouagadougou (UO), with some external support, prepared climate forecasts for the country up to 2100 and evaluated the vulnerability of various development sectors in the long-term.

Source: Burkino Faso’s NAP available at

<[http://www4.unfccc.int/nap/Documents/Parties/PNA\\_Version\\_version%20finale\[Transmission\].pdf](http://www4.unfccc.int/nap/Documents/Parties/PNA_Version_version%20finale[Transmission].pdf)>.

12. The CAF which established the process to formulate and implement NAPs also took into account **the resource needs inherent to longer-term adaptation**. It included a request to “developed country Parties to provide developing country Parties, taking into account the needs of those that are particularly vulnerable, with long-term, scaled-up, predictable, new and additional finance, technology and capacity-building, consistent with relevant provisions, to implement urgent, short-, medium- and long-term adaptation actions, plans, programmes and projects at different levels”.<sup>7</sup>

13. The Paris Agreement also contains provisions for the means of implementation (MOI) related to adaptation (and mitigation). It mandates “(d)eveloped country Parties to provide financial resources to assist developing country Parties with respect to both mitigation and adaptation in continuation of their existing obligations under the Convention”, and “(o)ther Parties are also encouraged to provide or continue to provide such support voluntarily”. In addition, the mobilization of climate finance should “represent a progression beyond previous efforts” (see Article 9.1-4 of the Agreement).<sup>8</sup> In relation to technology, it states that “Parties share a long-term vision on the importance of fully realizing technology development and transfer in order to improve resilience to climate change and to reduce greenhouse gas emissions”; and that they “note the importance of technology for the implementation of mitigation and adaptation actions under this Agreement, and recognizing existing technology deployment and dissemination efforts, shall strengthen cooperative action on technology development and transfer”.<sup>9</sup> In relation to capacity-building, the Agreement states that it “should enhance the capacity and ability of developing country Parties, in particular countries with the least capacity, such as the least developed countries, and those that are particularly vulnerable to the adverse effects of climate change, such as small island developing States, to take effective climate change action, including, inter alia, to implement adaptation and mitigation actions, and should facilitate technology

<sup>7</sup> Decision 1/CP.16, paragraph 18.

<sup>8</sup> <https://unfccc.int/resource/docs/2015/cop21/eng/10a01.pdf>.

<sup>9</sup> Paris Agreement, Article 10.1 and 10.2.

development, dissemination and deployment, access to climate finance, relevant aspects of education, training and public awareness, and the transparent, timely and accurate communication of information.<sup>10</sup>

14. Since 2010, the magnitude of support for MOI has increased but it is not yet sufficient.<sup>11</sup> Given the mandate of the Least Developed Countries Fund (LDCF) and the Special Climate Change Fund (SCCF) to support the NAP process,<sup>12</sup> total funding from the LDCF towards the LDCs' NAP processes amounted to USD 41.7 million as at June 30, 2017, in addition to USD 5.1 million of NAP process support for non-LDCs from the SCCF.<sup>13</sup> Twenty-nine countries have submitted requests support for the formulation of NAPs and/or other adaptation planning processes under the Green Climate Fund (GCF) of which three have been approved (from Liberia, Nepal and Pakistan).

15. In the submitted NDCs, the majority mention barriers and needs of financing, technology, and capacity building in relation to adaptation in general (short-medium- and long-term). According to the World Resources Institute (WRI) (2015), adaptation funding has historically lagged behind funding for mitigation, and the Paris Agreement "provides more support for adaptation, including efforts to balance overall climate finance between adaptation and mitigation; recognize that public grants-based resources are especially important for adaptation, because it is more difficult to attract private investment; and increase the share of funding going to adaptation from the USD 100 billion in climate finance developed countries will provide each year by 2020; and help the most vulnerable nations better access climate finance." Furthermore, the Agreement recognized specific funds that place an emphasis on adaptation.<sup>14</sup> In addition, the recently agreed G20 Hamburg Climate and Energy Action Plan for Growth<sup>15</sup> states that the G20 leaders "call on all Multilateral Development Banks (MDBs) to identify opportunities for cooperation and enhanced action to address, inter alia, ambitious adaptation and mitigation finance, including coordinated support for country driven long-term strategies for low greenhouse gas emissions and respective technologies for climate-resilient development...".

16. In the NDCs, some Parties (including the Central African Republic, Chad and Kiribati) noted **additional challenges to long-term planning that are not directly linked to MOI**. Such additional challenges include, for example, illiteracy rates, political crises, interregional socioeconomic inequality,

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<sup>10</sup> Paris Agreement, Article 11.1.

<sup>11</sup> In relation to the public funding for climate change in general, „mitigation-focused finance represented more than 70% of the public finance in developing countries reported in 2013 and 2014. Adaptation finance provided to developing countries accounted for about 25% of the total finance. This is similar to 2011–2012, although there has been a slight increase in the proportion of adaptation finance from climate funds and bilateral concessional channels. More than 80% of MDB investments focused on mitigation, and less than 20% on adaptation“. More information available in the UNFCCC Standing Committee on Finance 2016 Biennial Assessment and Overview of Climate Finance Flows Report, available at: <[unfccc.int/files/cooperation\\_and\\_support/financial\\_mechanism/standing\\_committee/application/pdf/2016\\_ba\\_technical\\_report.pdf](http://unfccc.int/files/cooperation_and_support/financial_mechanism/standing_committee/application/pdf/2016_ba_technical_report.pdf)>.

<sup>12</sup> Decision 12/CP.18 requested the GEF, as a first step under the NAP process, to provide funding from the LDCF, to meet the agreed full cost, as appropriate, of activities to enable the preparation of the NAP process, and through the SCCF, to consider how to enable activities for the preparation of the NAP process for interested developing country Parties that are not least developed country Parties.

<sup>13</sup> Report of the Global Environment Facility to the twenty-third Session of the Conference of the Parties to the United Nations Framework Convention on Climate Change, paragraphs 126 and 127.

<sup>14</sup> Including the Adaptation Fund, the Green Climate Fund, the Least Developed Countries Fund, and the Special Climate Change Fund.

<sup>15</sup> <[https://www.g20.org/Content/DE/\\_Anlagen/G7\\_G20/2017-g20-climate-and-energy-en.pdf?\\_\\_blob=publicationFile&v=5](https://www.g20.org/Content/DE/_Anlagen/G7_G20/2017-g20-climate-and-energy-en.pdf?__blob=publicationFile&v=5)>.

extreme poverty, high staff turnover rates in senior executive positions, limited sector specific training, a lack of clarity on internal roles and responsibilities, and cultural or religious barriers to awareness and action. To add, Corfee-Morlot et al. (2011) notes that ongoing political issues affect and inform the relationships that governments (both national and local) have in managing climate risks. The IPCC also points out, in the context of adaptation, that short-term interests on the part of governments can limit incentives to make investments in long-term issues (Noble et al., 2014). Adaptation generally takes place more often in socioeconomic sectors that see a faster and more frequent turnover of capital investment and operating costs, and less often where long-term investments are required (Yohe et al., 1996).

## 2.1. Conceptualizing “long-term” in the context of adaptation planning

17. There are **different conceptualisations of what constitutes “long-term” adaptation planning**. The IPCC’s Working Group II Summary for Policy Makers (SPM) (2014) denotes three time-lines in relation to climate risk: Present, Near-term: 2030-2040, and long-term: 2080-2100. The conceptualization of time horizons for risk differs to that for adaptation planning. The **process to formulate and implement NAPs** doesn’t specify a timeline, as the NAPs are a country-driven process, but they do set-out steps that a country can use in order to define the medium- and long-term timeline it requires. The guidelines advise that the successful implementation of a NAP requires an understanding of the “big picture”, and the sequential steps that lead to it. “A clear long-term implementation strategy will serve as valuable guidance for addressing adaptation at the local and national levels. The strategy will need to be focused, have a clear sense of direction and be linked to the national vision for adaptation and development priorities, plans and programmes.”<sup>16</sup>

18. By looking to the literature, some experts within the adaptation community focus on long-term adaptation planning as planning and implementation that is *undertaken over a long term*, and usually involves a programme that is put in place over a relatively extended number of years (they typically use incremental approaches). To illustrate further, “short-term adaptation planning”, in this context, would thus be considered planning that is more “once-off” or project based. The second, and what seems to be the more widely used, conceptualization of “long-term adaptation planning” refers to planning that *leads to resilience in the longer term*. This means that it is outcomes-focussed, and the time it takes to plan and implement the adaptation is a secondary concern. The adaptation planning could be once-off or programmatic, although programmatic approaches usually generate more robust adaptation outcomes in the longer-term. “Short-term adaptation planning”, in this context, would refer to adaptation that has a less profound outcome, but may be necessary to deal with immediate needs.

19. The Paris Agreement established the **global stocktake (GST)**, a process to assess progress towards achieving the goals discussed in paragraph 8 above. It will take place every 5 years starting in 2023. Countries will review and increase their mitigation ambition, and share updated information about their adaptation priorities, implementation, and support needs via a public registry. It is foreseen that these cycles of stocktaking will assist countries in improving long-term adaptation planning over time.

20. In relation to the specific **time-horizons for long-term adaptation planning**, Parties, through their NDCs, generally do not specify timelines for adaptation action explicitly. For those NDCs that do, references are mostly to 2020-2030. Some Parties’ NDCs refer to adaptation action in stages. Box 2 below highlights some concrete examples.

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<[https://unfccc.int/files/adaptation/cancun\\_adaptation\\_framework/application/pdf/naptechguidelines\\_eng\\_high\\_res.pdf](https://unfccc.int/files/adaptation/cancun_adaptation_framework/application/pdf/naptechguidelines_eng_high_res.pdf)>.

### Box 2. Examples of timelines in NDCs

Pakistan's NDC refers to "near-term" as 2020-2025; and "medium- to long-term" as up to 2030.

Georgia and Vietnam, amongst others, mention pre-2020 activities and activities between 2021-2030 and, similarly, Chile mentions pre-2021 and pre-2030 activities.

The Fijian NDC, on the other hand, refers to short, medium, and long term actions/goals, with "short-term" referring to a period of up to 2 years; "medium-term" referring to 3-5 years; and "long-term" referring to over 5 years.

21. By assessing published **adaptation plans and strategies**, or information about processes that countries' have already initiated, including NAPs, it becomes apparent that there is a mixture of approaches and ways of conceptualizing "long-term". Many do not refer to timelines, or look less than ten-years ahead, with some focussing on only a few years. In general, such plans do not refer to the longer-term and if they do, they mention how the project/strategy can inform longer-term development planning. On the other hand, there are also a number of countries that initiated or completed adaptation planning processes with a time-horizon of 2030, which points towards a conclusion that many countries consider a time span of between 15 and 20 years as appropriate for adaptation planning. There are also examples of countries that look even further ahead into the future when planning adaptation, including up until the end of the century. Box 3 below presents a non-exhaustive list of such examples

### Box 3. Examples of adaptation planning processes with a 2030 timeline and beyond

**2030** Benin's NAP; China's National Plan on Climate Change; the Democratic Republic of Congo's National Climate Change Adaptation Programme ; the Republic of Djibouti's NAP, the Dominican Republic's Plan for National Adaptation Action ; Ethiopia's Climate Resilient Green Economy Strategy; Jamaica's Climate Change Policy Framework; Kenya's NAP, the Republic of Korea's NAP; Monaco's action plan; Morocco's NAP; Singapore's NAP; and Zambia's Pilot Programme for Climate Resilience (PPCR).

**2035** Niger's NAP

**2050** Thailand's National Climate Change Master Plan

**End of the century** The Netherlands' National Programme for Spatial Adaptation to Climate Change and Delta programme look one-hundred years ahead, and South Africa's National Adaptation Strategy, including the Long Term Adaptation Scenarios project, incorporates three time frames for scenarios: 2015–2030, 2040–2060 and 2080–2100.

## 3. Relevant agreements and processes in adaptation and development

### 3.1. Relevant multilateral agreements

22. The year 2015 was a landmark year for longer-term planning, in different areas. Aside from the Paris Agreement, world leaders agreed on the Sustainable Development Agenda 2030 and its SDGs, the

Sendai Framework for Disaster Risk Reduction, and African leaders adopted the Agenda 2063. This sub-section will discuss these overarching policy documents, through which the world set course for a transition to low carbon, resilient societies and economies in the short-, medium- and long-term, with countries acting towards common goals, while focusing on their specific national circumstances, challenges and opportunities.

23. **Transforming our world: the 2030 Agenda for Sustainable Development**, is forward-looking, with the intention of achieving the full implementation of the Sustainable Development Goals by the year 2030. It makes the link to climate change very clear by noting that “(c)limate change is one of the greatest challenges of our time and its adverse impacts undermine the ability of all countries to achieve sustainable development” and that the widest possible cooperation is needed to mitigate and adapt,<sup>17</sup> with the the goal to “take urgent action to combat climate change and its impacts” agreed as SDG 13. The latter focusses on strengthening resilience and adaptive capacity; integrating climate change measures into policies, strategies and planning; education, awareness raising and capacity building, especially for the most vulnerable; and mobilising climate finance for developing countries.

24. Action on climate change, in coordination with development, is necessary so as not to undermine the Agenda, as it is linked, either directly or indirectly, to all of the other SDGs. According to Adger et al. (2003), climate change poses a serious challenge to development, and these challenges already exist in the present-day: “Observed climate change, present-day climate variability and future expectations of change are changing the course of development strategies”. It adds that societies have different coping ranges in relation to the risks posed by climate change, and in order to face both present and future climate change outside of these coping ranges, societies need to enhance their adaptive capacity to face both present and future climate change.

25. Another relevant multilateral agreement is the **Sendai Framework for Disaster Risk Reduction 2015-2030 (Sendai Framework)** which was endorsed by the UN General Assembly following the 2015 Third UN World Conference on Disaster Risk Reduction (WCDRR). It is a voluntary, non-binding agreement containing seven targets and four priorities for action, all of which have a 15-year timeline. It has a strong focus on actions that cover the short-, medium- and long-term.

26. Learning from the Hyogo Framework for Action (HFA) 2005-2015: Building the Resilience of Nations and Communities to Disasters, it notes that “disasters, many of which are exacerbated by climate change and which are increasing in frequency and intensity, significantly impede progress towards sustainable development”. Looking at risk levels, it also notes that “(e)vidence indicates that exposure of persons and assets in all countries has increased faster than vulnerability has decreased, thus generating new risks and a steady rise in disaster-related losses, with a significant economic, social, health, cultural and environmental impact in the short, medium and long term, especially at the local and community levels.”<sup>18</sup> This further strengthens the need for long-term adaptation planning, in order to build resilience and safeguard against the impacts of disasters.

27. Thirdly, it is important to note **Agenda 2063**<sup>19</sup>, adopted by African leaders in 2015 as the continent’s new long-term vision for the long-term. It aims to optimise the use of Africa’s resources for the benefit of the continent’s people. The NEPAD Agency, the implementing agency of the African Union, has been tasked with fast-tracking its implementation and monitoring. When the agenda was adopted, African leaders agreed, as their first aspiration, to work towards a “prosperous Africa based on inclusive growth and sustainable development”, including addressing “the global challenge of

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<sup>17</sup> <[https://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815\\_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf](https://www.un.org/pga/wp-content/uploads/sites/3/2015/08/120815_outcome-document-of-Summit-for-adoption-of-the-post-2015-development-agenda.pdf)>

<sup>18</sup> <[http://www.unisdr.org/files/43291\\_sendaiframeworkfordrren.pdf](http://www.unisdr.org/files/43291_sendaiframeworkfordrren.pdf)>.

<sup>19</sup> <<http://www.un.org/en/africa/osaa/pdf/au/agenda2063.pdf>>.



climate change by prioritizing adaptation in all our actions, drawing upon skills of diverse disciplines with adequate support (affordable technology development and transfer, capacity building, financial and technical resources) to ensure implementation of actions for the survival of the most vulnerable populations, including islands states, and for sustainable development and shared prosperity". Work has already commenced by the African Union Commission and NEPAD Agency on the first 10-year Implementation plan, to ensure aligned implementation at national, regional and continental levels.

### 3.2. Relevant adaptation planning processes

28. This sub-section will discuss a few adaptation planning processes that have been undertaken, or are being undertaken. Lessons can be learned from how/if they address(ed) long-term adaptation planning.

29. The first approach that was examined was the **Pilot Program for Climate Resilience (PPCR)** approach to adaptation, which is highly focussed on long-term adaptation planning. The PPCR framework includes timescales of 10-20 years for transformative impacts at the country level; and 15-20 years for impacts at the global level (BMZ, 2013). The PPCR was created to "empower countries to approach climate resilience in a programmatic manner. Moving beyond project-by-project activities that have limited potential to effect national or sector wide transformations, the PPCR programmatic approach entails a long-term, strategic arrangement of linked investment projects and activities to achieve large-scale, systematic impacts and take advantage of synergies and co-financing opportunities" (CIF, 2016).

30. The logic model and results framework for PPCR illustrate how the approach includes goals for country-level outcomes in the short-term, but also country-level transformative outcomes at the 10 to 20-year scale, and global outcomes at the 15 to 20-year scale. The approach uses five core indicators to evaluate progress toward the desired outcome of climate resilience in the longer-term. To summarise, these indicators deal with the degree of integration of climate change into national and sectoral planning, strengthened government capacity and coordination to mainstream climate resilience, the quality and the extent to which climate responsive instruments/investment models were developed and tested, the extent to which the PPCR was used to respond to climate variability and climate change by the vulnerable, and the number of people supported by the PPCR to cope with the effects of climate change (BMZ, 2013).

31. Lessons can be learned from this approach that countries can use in their process to formulate and implement NAPs. The focus on the programmatic approach, rather than short-term projects, assists countries in undertaking longer-term adaptation and bringing about more systemic, meaningful change, and is consistent with the NAP steps. In addition, the focus on resilience in the long-term can assist countries to focus on the bigger picture.

32. A second example that was examined was the **Poverty Reduction Strategy**, which was introduced in 1999 by the International Monetary Fund (IMF) and the World Bank. As a part of the strategy, low-income countries receiving aid are required to prepare Poverty Reduction Strategy Papers (PRSPs) that "assess poverty challenges, describe how macroeconomic, structural, and social policies and programs can promote growth and reduce poverty, and outline external financing needs and the associated sources of financing." The process involves three-year poverty-reduction strategies (which can be extended to five years) and is based on the five following guiding principles: country-driven, results-oriented, comprehensive, partnerships, long-term perspective (IMF, 2016)

33. According to a synthesis report of PRSPs by the World Bank (2004), "long-term" for poverty reduction "entails taking a strategic approach to short-term programs with a view to meeting long-term

goals.” According to this report, the various countries that were studied “had long-term planning documents and processes in place prior to the PRSP.” Examples of these are the Vision 2020 initiatives, many of which had become integrated into government planning, for instance the Tanzania Vision 2025.<sup>20</sup> The PRSP has been adopted alongside other long-term planning processes, such as country Vision exercises, country MDG plans, and regional or global commitments such as NEPAD.” However, because the PRSPs are generally created on a three-year programmatic timeframe, many PRSPs did not “analyze how they will achieve longer-term goals, nor [did] they reconcile their own long-term targets with those of other long-term plans.” One of the challenges of facilitating long-term poverty reduction lies in integrating the short-term PRSP plans with long-term development goals. The report notes that “(t)he inconsistency of medium-term targets with long-term goals,” could inhibit PRSP strategies from “delivering countries’ long-term visions.” The report suggests that if PRSP goals are integrated with long-term goals, they can advance short- and medium-term objectives of poverty while making progress toward long-term development visions.

34. This approach to keeping longer-term visions in sight when planning shorter term action is a lesson that can also be applied to the NAPs. It is also important to establish the long-term goals at the outset, and to integrate actions that take place over different timelines into a holistic package.

35. Third, the **approach developed by the Organisation for Economic Co-operation and Development (OECD)** was studied. The organization discusses ways to integrate considerations of climate change into development planning processes, what it calls “applying a climate lens”. One example was noted from an OECD training manual, whereby the approach is expanded upon: a fictional country example illustrates how climate adaptation efforts can be integrated into a national development plan that is to have a ten-year timeline (in this case 2012-2022).<sup>21</sup>

36. It is notable that, instead of explicitly referring to “long-term” sustainable development or adaptation, the OECD’s climate lens is used to ensure that existing or new longer term planning processes (development planning) include climate change action. This lesson is also reflected in the NAP objectives, one of which is to facilitate the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate.

37. Another example is that of the **guidance from PROVIA**. The guidance was initially created in 2013, and focusses on assessing vulnerability, impacts, and adaptation to climate change through a 5-stage iterative cycle. The 5 steps include: identifying adaptation needs and options, appraising those options, planning and implementing adaptation actions, and monitoring and evaluating actions. Here, the link to long-term planning is explicit in the formal appraisal of adaptation options, whereby the PROVIA guidance recommends that key factors that need to be taken into account when choosing an approach include whether the options are all short-term, or are a mixture of short- and long-term.

38. The iterative nature of this approach is useful, in that long-term adaptation planning is undertaken in the context of uncertainty (described in more detail in section 4.3), and iterative planning processes can ensure that the adaptation stays relevant and effective.

39. Finally, the paper examined the “**Approaches to Climate Change Adaptation- A guide by Japan’s Committee on Approaches to Climate Change Adaptation**” (Mimura et al., 2010). The guide was designed for national and local governments seeking to adapt to climate change; and it notes the need for short, medium, and long- term measures. It defines short-term measures as less than 10 years;

<sup>20</sup> <<http://www.mof.go.tz/mofdocs/overarch/vision2025.htm>>.

<sup>21</sup> <<https://www.oecd.org/dac/environment-development/45856020.pdf>>.

medium-term as between 10-30 years; and long-term as between 30-100 years. The guide discusses the need for adaptation measures in individual sectors; the need to integrate adaptation planning into government agencies; and to “give adequate priority to adaptation within policies, plans and programs.” It notes the need to integrate mitigation and adaptation, and to view associated measures “in the context of future regional and community development”; and the need to consider climate adaptation at every level of society.

#### **Box 4. Case study-Mexico’s National Climate Change Strategy 10-20-40 Vision**

Mexico’s National Climate Change Strategy recognizes that a long-term vision is necessary for the planning and implementation of adaptation strategies. It outlines desired milestones for the next 10, 20, and 40 years which feature goals related to both climate change adaptation and mitigation. These converge to support the country’s overarching development goals and vision of being “...a thriving, competitive, socially inclusive, and globally responsible country...with ecosystems and population that are resilient to climate change.”

The Strategy details the policies, plans, institutional arrangements, funding sources, and evaluation mechanisms that support climate change initiatives at the federal, state, and municipal levels; it underscores the need for the alignment of these policies and plans, as well as the coordination between actors and institutions for successful mainstreaming of adaptation into all levels of governance. For adaptation strategies, it provides criteria to help guide decision makers in the selection and prioritization of adaptation measures. These criteria include, among others:

- Flexibility (for adjustment of measures over time)
- Cross-cutting (in terms of policies, programs or projects)
- Prevention encouragement (over reactionary actions)

*Source:* Ministry of the Environment and Natural Resources, Federal Government of Mexico. 2013. National Climate Change Strategy 10-20-40 Vision.

[https://www.transparency-partnership.net/sites/default/files/encc\\_englishversion.pdf](https://www.transparency-partnership.net/sites/default/files/encc_englishversion.pdf)

40. Lessons can be learned from the way that the approach delineates the three different timelines, which can help to plan for different types of adaptation. In addition, the approach promotes many of the same steps as the process to formulate and implement NAPs, such as using long-term climate change projections for risk assessments, introducing ways to revise adaptation plans every few years to avoid lock-in, integrating new scientific information, integrating adaptation through coordination between various sectoral and cross-sectoral adaptation initiatives; and collaboration between governmental departments

## **4. Topics related to long-term adaptation planning**

### **4.1. Mainstreaming adaptation into long-term development planning and cycles**

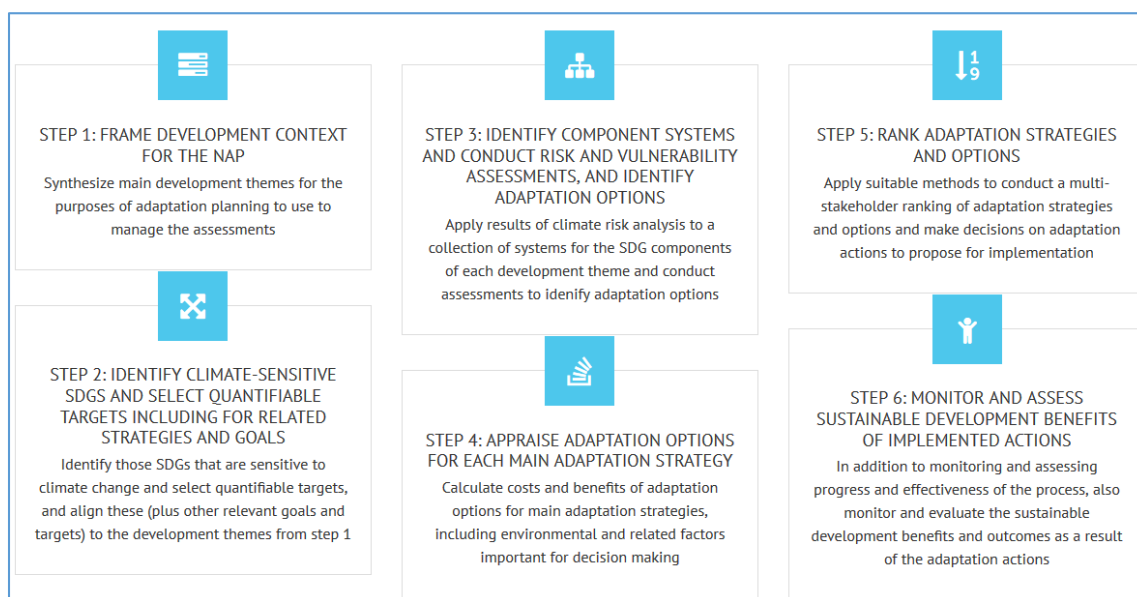
41. Long-term adaptation planning goes hand-in-hand with long-term development planning, and thus an integrated approach is crucial. This premise is supported by the IPCC Fifth Assessment Report, which asserts that the most attractive adaptation actions are, in many cases, those that offer development benefits in the short-term while reducing vulnerability in the longer term (Agrawal, 2005;

Klein et al., 2007; McGray et al., 2007; Hallegatte, 2008; NRC, 2010). It is positive to note that, in many developing countries, adaptation is already being embedded in development through NAPs, other adaptation strategies and/or national climate change strategies.

42. The Least Developed Countries Expert Group (LEG) has focussed on the link between adaptation and development planning, and is taking an integrated approach towards country-driven approaches to achieve adaptation and contribute towards achieving SDG targets. The group has developed the NAP-SDG iFrame, which is an approach that countries can use to manage the synergy between development and adaptation goals, including documenting outcomes to support the monitoring and evaluation of SDGs and adaptation concurrently. Looking at the longer term, the approach advocates the consideration of a combination of SDGs and climate risk factors when selecting adaptation priorities.

43. As an example, in relation to food security, the adaptation strategies chosen may include aspects like crop production, distribution, affordability, strategic food reserves over time, as well as nutritional value. These component systems can be assessed for sensitivity to climate change, taking into account interlinkages to other “sectors/SDGs”. Thereafter, adaptation actions can be developed, prioritized and implemented. After implementation, outcomes would accrue adaptation benefits as well as sustainable development benefits – both of which can be monitored and documented in reporting. Figure 1 below describes the steps within the NAP-SDG iFrame

**Figure 1. Steps in the NAP-SDG iFrame**



44. **National budget and planning cycles** need to be kept in mind when undertaking long-term adaptation planning, as aligning adaptation planning with the existing cycles can be highly effective. The same can be said for alignment with national economic and sectoral development plans. The process of mainstreaming climate change adaptation efforts into development strategies requires aligning adaptation measures with existing program budgets and budgeting processes. NAP Align, a supplementary guidance document to the NAP technical guidelines, stresses the importance of integrating adaptation planning with national, subnational, and sectoral financial planning processes. National development strategies, which can range in timeframes of three to over 20 years, are often supplemented by shorter action plans, ranging between one to five years. NAP Align recommends that adaptation initiatives are aligned with medium-to long-term development goals in the NDSs and that

they are budgeted for in shorter action plans. It notes that a good entry point for integrating adaptation measures into budgets may be when strategies are up for review or revisions, but that interventions may also be necessary to ensure integration. The guidance document stresses that in order to effectively mainstream adaptation efforts with existing national programmes and procedures, “it is essential [to] have a broad understanding of the whole political system as it drives the interrelations between planning and financing” (GIZ, 2014).

45. An assessment of the current NDCs shows adaptation is being mainstreamed into sectoral development plans and/or various levels of governance by more than half of the countries that had submitted an NDC by mid-July 2017. They also show that long-term adaptation is mainly being planned through initiatives including changes to insurance structures, building codes, relocation, and urban planning. It is difficult to ascertain, through the NDCs, the extent to which such initiatives are currently implemented. In this regard, many developing country Parties mentioned their commitment to the integration of adaptation with DRR (including Bangladesh, Costa Rica, Ghana, Guatemala, Indonesia, Jamaica, Malaysia, Namibia, Peru, Rwanda, Uganda, and Vietnam). A number of Parties focussed on adaptation initiatives that have mitigation co-benefits (including Bahrain, Belize, Cambodia, Central African Republic, Guatemala, Honduras, Marshall Islands, Mongolia, Niger, Saudi Arabia, and the United Arab Emirates).

## 4.2. Connecting short-, medium- and long-term adaptation planning

46. There are **important connections and linkages between short-, medium- and long-term adaptation planning and implementation**. The process to formulate and implement NAPs, for example, builds upon the achievements and lessons learned from the national adaptation programmes of action (NAPA), which focussed on urgent and immediate needs. It builds upon the institutional arrangements and capacity that have been developed at the national and sub-national levels, awareness-raising efforts and assessments that have been undertaken.

47. The process to formulate and implement NAPs is designed to provide countries with the opportunity to take a more considered approach, working towards transformational change in their capacity to address adaptation. According to the IPCC (Agard et al., 2014), transformation in the context of adaptation refers to “change in the fundamental attributes of natural and human systems. Within this summary, transformation could reflect strengthened, altered, or aligned paradigms, goals, or values towards promoting adaptation for sustainable development, including poverty reduction.”

48. The NAPAs and numerous adaptation projects planned and implemented in different countries, were/are designed to produce one plan or outcome (for instance a NAPA). The process to formulate and implement NAPs, on the other hand, was designed to create a comprehensive system through which countries can integrate climate change adaptation into national planning, and produce national adaptation plans on an ongoing basis. These plans are monitored and reviewed, then updated periodically. This iterative approach is critical, since better quality climate data and projections, as well as other information useful for the planning process, increasingly becomes available, and the impacts of climate change in the medium and long-term are constantly better understood.

49. There are thus clear benefits to planning for the longer-term. As mentioned above, those planning adaptation can take advantage of lessons learned from any short-term projects that may exist (or have existed), make use of the capacity built and the knowledge collected and generated. Building on from that basis, adaptation can become more about transformational change, taking into account longer-term climate scenarios and building enhanced resilience over a longer time-frame. It can also ensure longer-term buy-in, and can extend beyond political cycles, so as to become part of the way that communities

operate, rather than reliant on short-term decision-making cycles. Many researchers contend that the benefits outweigh the costs in the longer-term.

### 4.3. Planning in the context of long-term risk and uncertainty

50. **Risk** was a focus of Working Group II for the IPCC's Fifth Assessment report (2014), and the SPM valued shifting patterns of risk and potential benefits due to climate change, while considering how to reduce and manage impacts and risks through adaptation and mitigation. As discussed in paragraph 17 above, for each key risk assessed by the IPCC, three timeframes were used: "Present", "Near-term" (2030-2040) and "long-term (2080-2100)". It was found that prior to 2040, there is little substantial divergence in projected levels of global mean temperature increase for different emission scenarios, and that the divergence occurs towards the middle of the century. In the longer-term, limits to adaptation become more significant. The SPM recognizes that there is high confidence that "(g)reater rates and magnitude of climate change increase the likelihood of exceeding adaptation limits." These limits refer to cases when "adaptive actions to avoid intolerable risks for an actor's objectives or for the needs of a system are not possible or are not currently available". As a result, adaptation options may decrease with time as the magnitude of climate change increases. The SPM asserts that, in some parts of the world, "insufficient responses to emerging impacts are already eroding the basis for sustainable development". This points clearly to the need for a long-term perspective in adaptation planning.

#### Box 5. The Netherlands' long-term approach to flood risk

As a low-lying coastal nation that faces high risks of flooding, the Netherlands must address anticipated impacts of sea level rise and increased precipitation to reduce its vulnerability to climate change in coming decades. Its Delta Programme has set a long-term goal "achieving sustainable and robust flood risk management and a sustainable and robust freshwater supply by 2050" through flood-resistant infrastructure and spatial adaptation. Its initiatives include innovations and improvements in flood defense systems, new standards for infrastructure projects, and investments in the development of the National Water Model and delta scenario models. These models forecast the impacts of climate change on "the 'water dynamics' of the Netherlands in 2050 and 2085" to support decision making on flood risk management that takes long-range projections into account.

Source: <https://deltaprogramma2017.deltacommissaris.nl/viewer/publication/1/1-delta-programme->

51. According to PROVIA, "the farther into the future that a climate risk lies, the greater the uncertainty involved". The costs and benefits would have to be calculated taking into account an increasingly broad range of climate scenarios, and different non-climate variables would need to be considered, allowing for a higher degree of uncertainty, such as development and policy choices. Given these challenges, alternative methods have been developed that aim to support decision-making under increasing uncertainty. Cost-benefit analyses, on one hand, aim "to find the optimal solution within a fixed set of parameters", while other approaches "look for solutions that are robust under many possible future scenarios". The latter decision-making methods that use robustness as a criterion, also often incorporate the criteria of "flexibility" (Hinkel et al., 2013).

52. **Risk management** is a commonly used strategy for long-term adaptation planning under conditions of uncertainty (Jones and Preston, 2011; Jones et al., 2014). A number of adaptation

frameworks use it, including those by the European Commission, and the UK Climate Impacts Programme (UKCIP). Within risk management, the framing of future risk scenarios is a critical part of evaluating adaptation options in long-term planning (Ramm et al., 2017). The time horizon across which the adaptation planning occurs affects the amount of knowledge about both future impacts and adaptation benefits. The extent of knowledge can be described as being certain (i.e. deterministic), quantifiable probabilistically as risk (i.e. stochastic), or non-quantifiable (Hall and Solomatine, 2008; Knight, 1921; Willows and Connell, 2003). In other words, it exists on a spectrum from certain to uncertain. This conceptualisation can be broadened by referring to uncertainty levels ranging from certainty to total ignorance (Courtney, 2003; Riesch, 2013; Walker et al., 2013).

53. There are **many approaches** that can be taken to risk, and the approach selected highlights how decision-makers choose to frame risk (Jones and Preston, 2011). They also determine the kinds of climate change scenarios (risk identification) that will be used, which impacts will be analysed (risk analysis), which risk treatment options (adaptation actions), will be developed, and the overall benefit of the adaptation actions evaluated (Ramm et al. 2017). According to a number of sources, risk is commonly framed in one of two ways: 'bottom-up' or 'top-down' (García et al., 2014; IPCC, 2012; Jones et al., 2014). The IPCC (2012) refers to these as "impact-first" and "threshold-first" respectively. The difference between the two approaches is their treatment of uncertainty, and the order in which the steps in risk assessment are undertaken. The former approach projects future emissions of greenhouse gases first, then develop climate scenarios, after which the impacts are analysed and adaptation options planned. The 'bottom-up' approach, on the other hand, studies vulnerabilities and risk thresholds in the context of a given system (focussing on how much a system is susceptible to, and able to cope with the impacts of climate change) (Dessai and Hulme, 2004; Kwadijk et al., 2010; Ramm, et al., 2017; Ray and Webb, 2015; White et al., 2017).

54. A number of researchers propose that decision-makers usually seek one of two adaptation outcomes: optimal outcomes, which refer to those that maximise, or minimise, the performance of an adaptation action; and robust outcomes, which is more long-term and identifies an adaptation action that can perform satisfactorily across a wide range of future scenarios (Ben-Haim, 2012; Lempert and Collins, 2007; Walker et al., 2013b; Woodward et al., 2014). As an example from Ramm et al. (2017) in reference to coastal adaptation, adaptation is optimal when assumptions about climate change impacts on the coast can be estimated with confidence, or when the adaptation action is flexible and can be reversed relatively easily. Such long-term adaptation planning relies on scientific assumptions about the future being correct, which can become increasingly problematic as the time-horizons extend. As a result, the researchers contend that robust options are superior when adaptation actions provide ongoing, multi-decadal benefits (typical of certain infrastructure/engineering adaptations) or when future impacts are difficult to model.

55. The literature shows that "**adaptation pathways**" have demonstrated significant potential in adaptation planning under conditions of deep uncertainty (Haasnoot et al., 2012; Siebentritt et al., 2014; Barnett et al., 2014; Rosenzweig and Solecki, 2014; Lawrence et al., 2013; Wise et al., 2014; Haasnoot et al., 2013; Kingsborough et al., 2016). The "adaptation pathways" approach sequences the implementation of actions over time to ensure the system adapts to the changing social, environmental and economic conditions, and can build flexibility into an overall adaptation strategy (Ranger et al., 2010; Haasnoot et al., 2012). This approach prioritizes the management of existing risks to development a set of long-term adaptation pathways from which to choose. Pathways can be informed by expert judgement, stakeholder consultation and/or through models to respond to different threshold levels of climate-risk (Haasnoot et al., 2013; Reeder and Ranger, 2011). Box 6 illustrates a relevant case study.

#### **Box 6. Example of the “adaptation pathways” approach used for heat risk in London**

An example of an adaptation pathways approach is that developed by Kingsborough et al. (2017) to respond to heat risk in London. It responds to the increasing risk of residential overheating and mortality due to the effects of climate change and the urban heat island effect, through adaptation.

Pathways were chosen that represented an array of adaptive strategies, each with a clear portfolio of action. These actions were planned while taking into account feasible time-lines over which the adaptation options could be implemented. Each adaptation pathway was used as a scenario to inform the planning process, rather than serving as a plan in itself. The adaptation pathways were then appraised using an impact assessment model, to evaluate the effectiveness of the different pathways and demonstrate to decision-makers how climate-risk could be managed.

Two examples of pathways (of the twelve described in the article) from this particular study include: “urban greening” and “air-conditioning-100% uptake”, both of which had the same portfolio of actions (increasing green roof areas, upgrading buildings, increasing the green space area and installing residential air-conditioning) (Kingsborough, 2017).

Source: <[www.sciencedirect.com/science/article/pii/S2212096317300050](http://www.sciencedirect.com/science/article/pii/S2212096317300050)>.

#### **4.4. Incremental versus transformational change**

56. Within the UKCIP, it has been noted that there is an increasing tendency to refer to “transformation” in the context of adaptation, which they feel reflects a sense that greater, more profound adaptation responses will be required to address the level of climate change anticipated. They note that transformational adaptation is frequently viewed in contrast to incremental adaptation, which refers more to small improvements or changes, usually in the short-term. In addition, they find that transformation has a strong focus on the future and long-term adaptation, and is characterised by system-wide change and/or changes across more than one system. This is, however, just one view of the matter. Throughout the literature, there is not a common understanding, nor common definition, of what transformational adaptation is. According to Lonsdale et al. (2015), most definitions of transformational adaptation refer to “how it addresses fundamental aspects of the system, often overtly including aspects of power and justice.”

57. Incremental and transformational adaptation can be seen as operating on a spectrum, in line with the views of certain researchers including Thornton & Manasfi (2010). Moser & Ekstrom (2010) see adaptation as a range “from short-term coping to longer term, deeper transformations”. Some researchers view transformational and incremental adaptation as very different, necessitating a ‘paradigm shift’ in the way that longer-term adaptation is framed, because it tends to focus on systemic change (Lonsdale et al., 2015). Pérez-Català (2014) discusses the difference in that some view transformational adaptation as ‘fitting to’ and others as ‘fitting with’ the environment. In the former school of thought, researchers focus on how the existing system responds to the increased risk of climate change by developing adaptation responses that increasing the scale/intensity of existing approaches (Kates et al., 2012; Rickards & Howden, 2012). In the latter school of thought, in the ‘fitting or adapting with’ framing, it is viewed that systems co-develop responses to change and this framing thus emphasises the need to consider the causes of vulnerability within society (Pelling, 2011; Rickards & Howden, 2012) Some agreed characteristics for transformational adaptation exist within the literature however many remain disputed or unclear (such as the scale or durability of change) (Lonsdale et al.,



2015). There is also doubt about the scenario, and our ability of to adequately anticipate the changes that are likely to result climate change. There is also some doubt about whether communities or governments would have sufficient time to adequately plan and prepare for the scale of change required for deliberate transformation.

58. Researchers point out that responses to large environmental challenges such as climate change tend to be ad hoc and incremental rather than fundamental (Rayner and Malone, 1998). In a study undertaken decades ago, it was already noted that while not necessarily an inappropriate response, incremental adaptation can, in fact, be costlier in the long term than undertaking a long-term strategy to cope with climate change (Glantz, 1988). The PROVIA guidance also refers to a kind of incremental adaptation that it calls the “adaptive management” approach. When appraising different adaptation options, “short-term and lower-cost options, and options that address current risks, provide more room for experimentation and learning – that is, to take adaptation action, monitor the outcome, and make adjustments as needed.” It adds that in cases where long-term options are involved and/or the financial implications are higher, experimentation is less desirable. It recommends instead that adaptation options are assessed upfront, before implementation, “following standard approaches for decision-making under uncertainty such as cost-benefit analysis or cost-effectiveness analysis. (Cost-benefit analysis, as its name suggests, weighs the costs of implementing a measure against its expected benefits. Cost-effectiveness analysis starts from the premise that action – e.g. addressing a drought risk – is desirable, and looks for the most cost-effective, or lowest-cost, way to achieve the desired goal...having probabilistic information about the risks is crucial to calculating expected outcomes” (Hinkel et al., 2013).

59. It can be concluded that there is lack of clarity on what transformational *adaptation* is and also on whether it is advantageous over incremental adaptation in the long-term. As a result, it may be wise support the concept of transformational *change*, as a product of longer-term adaptation planning and implementation, rather than transformational *adaptation*.

#### **4.5. Taking an iterative approach to long-term planning**

60. As long-term adaptation planning is undertaken in the context of uncertainty over longer timelines, iterative planning and implementation is advisable, to ensure that adaptation is flexible, and can be robust. It also allows for the integration, at periodic intervals, of the best available science, for example when the IPCC publishes an assessment report or special report.

61. The IPCC Fifth Assessment Report (Mimura et al., 2014) points out that improving the use of climate risk information across time scales, especially in the context of early warning systems, can help to bridge the gap between shorter and longer term decision-making on adaptation (van Aalst, 2009; Field et al., 2012; Pulwarty and Verdin, 2013). It adds that there has also been a shift in the balance of attention and expenditure in the context of DRR, moving away from disaster response and reconstruction to building resilience (not limited to climate-related extreme events). Taking an iterative, flexible approach when undertaking long-term adaptation planning is important, to allow for the best-available scientific knowledge to feed into the process. This can help to ensure robustness, and avoid lock-in.

62. The IPCC WG II SPM (Field et al., 2014) found that there is high confidence that “adaptation and mitigation choices in the near term will affect the risks of climate change throughout the 21st century” and that warming is projected to differ considerably in the different Representative Concentration Pathways (RCPs). Interestingly, the “(p)rojected global temperature increase over the next few decades is similar across emission scenarios. During this near-term period, risks will evolve as socioeconomic

trends interact with the changing climate. Societal responses, particularly adaptations, will influence near-term outcomes.” The real divergence in risk within the different scenarios occurs in the *longer term*. “In the second half of the 21st century and beyond, global temperature increase diverges across emission scenarios. For this longer-term period, near-term and longer-term adaptation and mitigation, as well as development pathways, will determine the risks of climate change”.

63. Furthermore, WG II (Field et al., 2014) acknowledged with high confidence that “(r)esponding to climate-related risks involves decision making in a changing world, with continuing uncertainty about the severity and timing of climate-change impacts and with limits to the effectiveness of adaptation. Iterative risk management is a useful framework for decision making in complex situations characterized by large potential consequences, persistent uncertainties, long timeframes, potential for learning, and multiple climatic and non-climatic influences changing over time... Assessment of the widest possible range of potential impacts, including low-probability outcomes with large consequences, is central to understanding the benefits and trade-offs of alternative risk management actions. The complexity of adaptation actions across scales and contexts means that monitoring and learning are important components of effective adaptation.” It adds that there is also high confidence that there are large uncertainties about future exposure, vulnerability, and responses which “motivates exploration of a wide range of socioeconomic futures in assessments of risks” but that it is a challenge to understanding future vulnerability, exposure, and response capacity of interlinked human and natural systems... due to the number of interacting social, economic, and cultural factors, which have been incompletely considered to date.” Partly as a result of this, the IPCC Sixth Assessment Report will present Shared Socio-Economic Pathways. SSPs are a “collection of pathways that describe alternative futures of socio-economic development in the absence of climate policy intervention. The combination of SSP-based socio-economic scenarios and Representative Concentration Pathway (RCP)-based climate projections should provide a useful integrative frame for climate impact and policy analysis”<sup>22</sup> in the IPCC’s Sixth Assessment Report, to be published in 2022.

64. Monitoring, review and revision is an important aspect of iterative adaptation planning. In the submitted NDCs, almost all countries noted the need for adaptation monitoring, but there is very little information about how this would be undertaken. Vietnam submitted one of the few NDCs that mentions specific metrics that will be used to monitor adaptation efforts. For the rest, since many of them also refer to NAPs, it is assumed that countries will follow the NAP approach to reporting, monitoring and review.

65. At the “workshop on experiences, good practices, lessons learned, gaps and needs on the process to formulate and implement national adaptation plans, including responses from participants to the guiding questions”, held in September 2015,<sup>23</sup> participants shared experiences on monitoring and review, and on the use of indicators for describing measurable impacts of climate change, as well as the effect of the implemented measures. Some mentioned that their countries have established or are considering the establishment of reviews of national plans at four- or five- year intervals, allowing them to take into account the latest science and assessments of climate change impacts, among other inputs. They also emphasized the need to share information in an iterative manner, within the country and externally, so that lessons can be learned, and all stakeholders can be kept aware of the planning and implementation process over the long-term. Some participants discussed how mechanisms have been established at the national levels to facilitate collaboration and sharing of information among different levels of government, public and private sector actors. Box 7 highlights an example of long-term adaptation planning that integrates a comprehensive communication strategy.

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<sup>22</sup> <[http://www.ipcc-data.org/guidelines/pages/glossary/glossary\\_s.html](http://www.ipcc-data.org/guidelines/pages/glossary/glossary_s.html)>.

<sup>23</sup> <<http://unfccc.int/resource/docs/2015/sbi/eng/inf06.pdf>>.

### Box 7. South Africa's Communications Strategies for Effective Long-Term Adaptation Planning

"The vision for the National Adaptation Strategy (NAS) is to provide a framework through which South African society can develop resilience to the adverse impacts of climate change through implementation of effective short-, medium- and long-term adaptation responses, while achieving a more equitable and sustainable low-carbon development pathway and move towards the vision of a climate resilient South Africa".

Facilitating long-term climate adaptation requires effective communication between government agencies as well as various levels of government implementing plans and programmes. It also requires clear communication between agencies and an array of sectors, stakeholders, and community members to provide support on developing and administering adaptation efforts. South Africa's forthcoming NAS recognizes the importance of effective communication for long-term adaptation as demonstrated in its draft communications strategy. This provides recommendations on how agencies can communicate with various strategic stakeholders (e.g., private sector entities, NGOs, community members) for adaptation planning, as well as use consistent key messages about climate change and adaptation. It recommends the usage of "local languages and metaphors" when interfacing with community members in particular. The ultimate goals of the communication strategy are to effectively support the implementation of the NAS which aims to mainstream climate change considerations across all sectors and levels of government over time.

Source: Republic of South Africa Department of Environmental Affairs. 2016. South Africa National Adaptation Strategy Draft for Comments. Available at [www.environment.gov.za/sites/default/files/docs/nas2016.pdf](http://www.environment.gov.za/sites/default/files/docs/nas2016.pdf).

#### 4.6. The importance of effective institutional arrangements and stakeholder engagement

66. The Co-Chairs of the Adaptation Committee have stated that "(l)eadership and understanding is required to build the courage, the confidence and the political space for accelerated adaptation action. **Strengthened institutional arrangements** at global, regional and national levels are vital for success and sustainability of this action" (Adaptation Committee, 2014). Developing, enhancing and enabling institutional and technical capacity is an important aspect within the process to formulate and implement NAPs. There is no single definition for institutional arrangements for adaptation and the term is used in many different forms and contexts. The AC considers institutional arrangements as those structures, approaches, practices or rules set in place by stakeholders at all levels to steer adaptation action including for: assessing impacts, vulnerability and risks; planning for adaptation; implementation of adaptation measures; and monitoring and evaluation of adaptation (Adaptation Committee, 2014). Box 8 illustrates an example of institutional arrangements in Jamaica that support long-term adaptation.

#### Box 8. Jamaica: Institutional Arrangements to Support Long-Term Climate Adaptation

In 2015, Jamaica developed its Climate Change Policy Framework which supports the integration of climate change adaptation into all facets of development planning and programmes, and supports the national development plan, Vision 2030, in accomplishing one of its 15 desired national outcomes--"Hazard Risk Reduction and adaptation to climate change."

The Framework supports a long-term approach to climate change adaptation through institutional arrangements that facilitates the mainstreaming and monitoring of climate considerations in relevant sectors as well as national policies. The implementation of the Framework is overseen by the Ministry of Water, Land, Environment and Climate Change (MWLECC), a group newly established in 2012. Within the MWLECC, the Climate Change Division (CCD) works to coordinate climate change across all relevant sectors, ministries, and agencies who are working to create adaptation plans. The CCD ensures consistent distribution of information and technical guidance to these groups. Climate change focal points were also appointed in all government ministries and selected departments. These individuals regularly report to the CCD and are “responsible for managing, monitoring, evaluating and reporting on the development of their sectoral strategies and actions with respect to climate change.”

*Source* Government of Jamaica Ministry of Water, Land, Environment and Climate Change. 2013. Green Paper No. Climate Change Policy Framework and Action Plan. Available at <[www.japarliament.gov.jm/attachments/440\\_Climate%20Change.pdf](http://www.japarliament.gov.jm/attachments/440_Climate%20Change.pdf)>.

67. At the workshop mentioned in paragraph 65 above,<sup>24</sup> participants noted that some countries are using their existing institutional arrangements for NAPs, some are establishing new arrangements, and some are enhancing existing arrangements. In some cases, the national climate change agency or department is asked with coordinating the integration of climate change adaptation into development planning processes through a network of focal points situated in other departments or ministries. In other cases, a multidisciplinary technical group, team or committee, composed of representatives of various agencies and institutions at the national level is tasked with the work. In some countries, a national climate change committee advises the government. For long-term adaptation planning, the approach taken to institutional arrangements needs to be appropriate to each country, and adjusted/enhanced/established in a country-driven manner.

68. In long-term adaptation planning, **stakeholder engagement** is critical, in order to ensure that the strategies are appropriate and relevant, and in-order to ensure buy-in from those that will either need to implement them or live with their implications and outcomes. Stakeholder engagement should take a multi-level approach, whereby policy-makers consider and interact with, inter alia, sub-national entities, the private sector, civil society, communities and the public in general. In the case of NAPs, the “framing” of adaptation varies case by case, owing to the complex nature of adaptation, particularly over the longer-term. It is therefore very important for a wide range of stakeholders to be involved in the process of planning and implementing adaptation activities to ensure that the assessment and subsequent results are understood and are useful in decision making. In this sense, adaptation can be seen as a way to help stakeholders to achieve their collective development and adaptation goals considering a changing climate. (Fankhauser et al., 1999; Willows and Connell, 2003 and Parry et al., 2007).

69. The NAPs provide guidance to processes at the national level and beyond. These processes would encompass not only government agencies and ministries, but also communities, the private sector, local municipalities, non-governmental organizations, and other relevant stakeholders. Those developing the NAP are urged consider, inter alia, the nature of public and stakeholder involvement and input, provide an indicative list of stakeholders who will be invited to participate in the process, define the reporting arrangements to various stakeholders in the country and beyond, arrange for stakeholder feedback prior to governmental NAP endorsement, engage stakeholders in adaptation prioritization

<sup>24</sup> <<http://unfccc.int/resource/docs/2015/sbi/eng/inf06.pdf>>.

exercises, create and raise awareness amongst stakeholders, and provide a basis for decision-making that enables the various stakeholders to take precautions and to gradually incorporate the impacts of climate change into their private, business and public planning and activities.

70. In the submitted NDCs, a number of Parties noted the need to engage various actors (public agencies, NGOs, communities, and the private sector). Few states gave details on how this engagement would take place. Box 9 gives one example of adaptation with a long-term perspective, that harnesses private sector investment.

**Box 9. An example of sectoral adaptation action with a long-term outlook and investment by the private sector**

AfricaFertilizer Org (AFO) was initiated in 2010 with the aim of addressing food insecurity and climate change, through increasing farmers' access to both fertiliser markets and policy information. It has a long-term outlook, given that regional warming is projected to be greater than the global average and, in addition, average rainfall is projected to fall. Key export crops are projected to decrease by 2050. In order to build resilience in the longer-term, sustainable farming is needed that leverages the opportunities offered by modern agricultural methods.

Sub-Saharan Africa faces a number of combined challenges that are exacerbated by climate change, including a rising demand for key staples, declining soil health and crop yields, persistent malnourishment, and a lack of access to affordable agricultural inputs. AFO harnesses the internet, social media and mobile applications to grow the nascent fertiliser market in the region through knowledge sharing. It empowers agro-dealers and farmers by providing fertiliser statistics, product catalogues, policy information, market news, and business directories.

One of the lessons learned from the project was that the private sector can also take a long-term view, and invest with the goal of more distant benefits. "Currently, Sub-Saharan Africa only represents 1.5 per cent of the world fertiliser market and production in the region is very limited. IFA's involvement is driven in part by a recognition of the long-term benefits of growing the market while acknowledging that its investment will not yield any near-term payoff in the traditional sense" (Becker-Birck et al., 2013).

See <<http://africafertilizer.org>>.

71. According to Few et al. (2007) "public participation is an important normative goal in formulating response to climate change risks". It also, however, cautions that there are also challenges inherent to involving a wide range of stakeholders in decision-making, including with regarding to navigating different power-relations, and ensuring that policy-making is not delayed to too great an extent by participatory approaches. In relation to long-term, anticipatory planning, a tension can arise between the principle of participation and the need to take urgent action to plan and implement adaptation, and this can lead to an overly managed form of inclusion. It suggests that "alternative, more narrowly instrumental, approaches to participation are more likely to succeed in this context"

## 5. Conclusion

72. This technical paper has summarised information about long-term adaptation planning, with the goal of assisting Parties as they implement the provisions of the Paris Agreement (particularly Article 7), including as they formulate and implement national adaptation plans (NAPs). It can inform the upcoming discussions by the AC and its NAP TF, on long-term adaptation planning.

73. The paper has contextualised long-term adaptation planning by discussing the Paris Agreement, CAF and NAPs, and by elaborating on related agreements and processes. Examples of related approaches were given, and a number of theoretical topics related to long-term planning were discussed. Through the technical analysis, it becomes apparent that, given the long-term nature of the challenge of climate change, long-term adaptation planning is necessary, and should be part of a coherent approach that also covers shorter timeframes. There are challenges associated with long-term planning, including uncertainty of degree of risk over a longer timeframe, however this uncertainty can be mitigated and planned for. There is no “one-size-fits-all” approach to long-term adaptation planning. Countries that are more advanced in planning over long time-frames have used different methods and approaches.

74. In general, taking a long-term approach to adaptation plan can, in-line with the objectives of the NAP process, reduce vulnerability to the impacts of climate change, by building adaptive capacity and resilience over time, in an iterative manner. It can also assist in facilitating the integration of climate change adaptation, in a coherent manner, into relevant new and existing policies, programmes and activities, in particular development planning processes and strategies, within all relevant sectors and at different levels, as appropriate within each country.

75. The AC may choose to use the information contained in this paper to inform discussions at the twelfth meeting of the AC, on next steps that could be taken by the NAP TF, and to formulate possible recommendations on long-term adaptation planning, for consideration by the COP and interested stakeholders.

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