10.2. Case study: Rwanda

Use of appraising results to convince decision makers, in particular those that understand mostly economic language

Presented by Mr Patrick Mugabo, Climate Change Adaptation Officer, Ministry of Environment, Rwanda Environment Management Authority

The Presenter highlighted that Rwanda used economic evidence-based information to convince decision makers to embrace the appropriate adaptation options. Evidence was generated through an assessment of the economic costs of climate change impacts in Rwanda, in a study commissioned in 2009, funded by the Department for International Development (DfID) and undertaken by Stockholm Environment Institute in collaboration with local partners. The study utilized several approaches such as aggregated analysis (top-down), sector assessment (bottom-up) and case studies. The key message from the study was that adaptation can reduce the economic costs of climate change but at a cost. Several adaptation options were recommended, thus;

- Top-down aggregated estimates of the costs of adaptation include addressing the current adaptation deficit and increasing social protection,
- Tackling future climate risks involved building adaptive capacity and enhancing climate resilience.

The study emphasized the sectoral bottom-up approach to give greater insights into sectoral planning. A case study calculated economic costs of climate change using flooding in 2 of the 30 districts to gain more insights on anticipated future costs resulting from some of the vulnerability factors.

A national strategy on low carbon developments and climate resilient growth, the Green Growth and Climate Resilience Strategy (GGCRS) was commissioned in 2011. The strategy lays out Rwanda's vision for a climate-resilient, low-carbon economy by 2050 through 14 Programmes of Action. Integrated planning and data management is one of the five enabling pillars of the GGCRS. The development of monitoring, reporting and evaluation systems takes priority as it will contribute to improved planning and provide the evidence base for mobilizing climate finance.

The GGCRS also informs Rwanda's Nationally Determined Contribution (NDC) which identifies Agriculture, Forestry Tourism, Water use and Land use as the four sectors contributing to adaptation and articulates the relevant crosscutting measures. The NDC implementation strategy utilizes the same pillar as the GGCRS and emphasizes data management and integrated planning among all relevant sectors. The emphasis on integrated planning at national level has facilitated mainstreaming of adaptation into sectoral strategic plans and development plans at local government levels.

Group exercises: Understanding the practicalities of CBA and MCA

Participants were divided into two groups; one group would do an exercise on the MCA whilst the second group worked with on CEA. For details of the group exercise see Annex 6.

Issues arising from session 8

Participants indicated that they would have wanted to do both the MCA and CBA exercises as they found them important for future work. They recommended a future plan that would enable participants to practice on each appraisal tool. After the exercise, Participants appreciated the value of data and information in decision-making.

11. Recap of Day 2 and Introducing Day 3

11.1. Review of Day 2

The Facilitator invited Participants to score the workshop on the topics covered thus far. The issues to be voted on were based on comments from the review of Day 1. Each Participant would choose an impression (smiley emoticons) from 3 options, voting on all the five aspects presented; Time management, Time allocation, Relevance of topics, Relevance of group exercises, and participation. Participants were satisfied with the workshop with respect to the indicated aspects, although the time allocation to sessions was scored the least satisfactory (Annex 7).

Participants were also given questions to think through and discuss during the evening. These questions would be used for recap on the morning of Day 3.

Recap activity for Day 3 was a reflection on the workshop expectations articulated on Day 1 and an analysis of how the workshop proceedings had gone in fulfilling these expectations. On Day 1 upon registration each participant was given two pink cards on which they were to indicate their workshop expectations. These were later clustered to produce the following common issues. Participants expected the workshop to:

i. Create an understanding of how data and information systems guide decision making in the NAPS process
ii. Create an understanding on Climate Change Adaptation planning and the practical pay offs.
iii. Develop a better understanding of the challenges and barriers to the NAP process.
iv. Increased capacities for implementation of NAPs
v. Strengthen technical capabilities to implement NAPs, through an increase in technical knowledge and skills for formulation and/or implementation of the NAPs,
vi. Be a forum for regional exchange and sharing of experiences thus, giving lessons for those that are yet to formulate or implement their NAPs

On Day 3, Participants used colored stickers for voting, by sticking full or half dots respectively, on the expectations that they considered fully or partially addressed or by choosing not to stick anything on the topics that were not yet adequately covered. Figure 2 shows the Participants' views on the extent to which their expectations had been addressed by end of day 2.

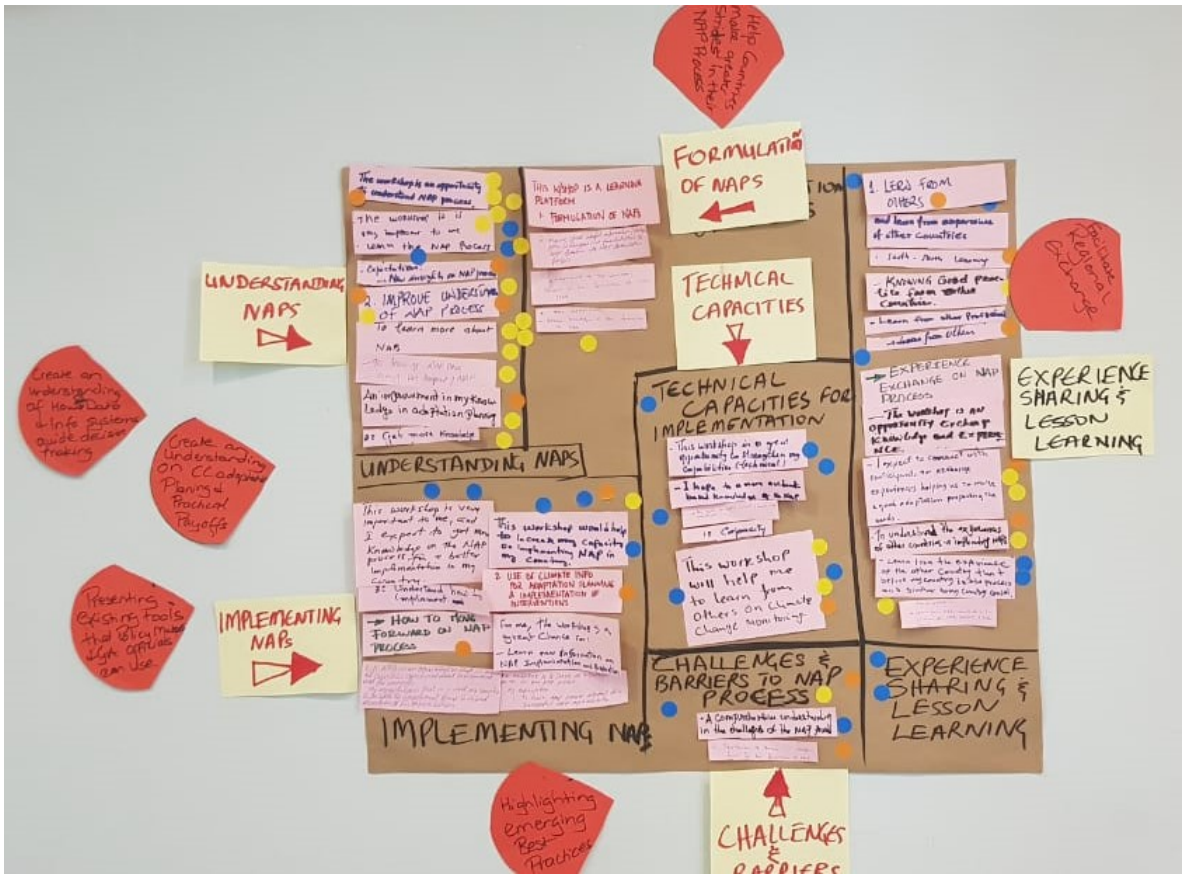

Figure 2 Assessment of the coverage of workshop expectations on Day 3

The dots signify expectations that have been met by end of Day 2. The number of dots on the respective topics showed that "understanding NAPs' was satisfactorily covered while 'Experience sharing and lesson learning' and 'challenges and barriers to the NAP process' received the least votes. The programme was structured in a way that allowed for sharing of experiences through case studies throughout the course. Further discussions revealed that the Participants felt that the time allocated to discussions was limiting the cross-country sharing of experiences.

Introducing DAY 3 agenda

The Facilitator introduced the programme for Day 3. The presentations on day three focus on **Formulating NAPs (Rationale, Strategy, Checklist and Reporting)**

The issues presented in Day three are:

i. Essential components to be included in the NAPs (alignment with guidelines, Paris Agreement),
ii. NAPs as strategic instruments for adaptation planning,
iii. Liberia's Journey: challenges and lessons learned,
iv. Reporting adaptation efforts to the UNFCCC,
v. Ensuring inclusion of subnational stakeholders and priorities in all phases of the NAP
vi. Linkages between NAPs, DRR, SDGs,
vii. Case studies: learning from Ethiopia and Sudan

viii. Activity: Mapping the Participants' country
ix. Activity: Plotting the next steps…what to do now?

12. Session 9: Essential components to be included in the NAPs

Dr Desanker guided the participants through the following elements on NAP components;

- UNFCCC NAP Technical Guidelines building blocks
- Alignment and coherence with reporting under the Paris Agreement
- Submissions to NAP Central

Dr Desanker gave the timeline of the climate change adaptation activities, culminating into the establishment of the NAP process and the Green Climate Fund at COP 16 (2010), and the Paris Agreement at COP 17 (2015). He highlighted the climate adaptation objectives as stipulated in Decision 5 /CP17, the technical guidelines, key steps and sample outputs given to guide LDCs in the NAP process[28]. He pointed out that countries have engaged in the NAP formulation process but it was imperative to now move forward to the implementation of the NAPs, ensuring coherence and synergy with national plans and policies. The guiding principles are to be country-driven and flexible, based on country contexts, thus governments were to take advantage of the NAPs.

Complementarily and supplementation among plans and policies, with respect to the international agreements, was also emphasized. The NAP-SDG iFrame, promoting a systems approach to climate change adaptation, was highlighted. The relevant international agreements for which linkages with climate change adaptation was vital included; the Sendai Framework for Disaster Risk Reduction, the Urban Agenda, and SDGs, and the national plans and priorities for achieving these. For example, climate change impacts directly and indirectly affect many of the sustainable development goals. Thus, ensuring synergy between development and adaptation goals, concurrent implementation of M&E frameworks for SDG and adaptation, and coherence in the documentation of outcomes will ensure effective integration. It was important to realize the interconnectedness of the efforts by unravelling the bigger issues to be addressed and visualizing the inter-linked system of goals and targets.

The Presenter posed various scenarios to demonstrate systems approach to the "theme", unraveling the essential function(s), structure, and integration with other systems, the applicable risk/ vulnerability frameworks, and the eventual distillation of the main adaptation options. Considering a food security model, for example, demonstrates the multi-faceted nature of food activities (Figure 3). Any disturbance on the food systems activities; Production, Processing and packaging, Distribution and retailing, and Consumption will affect food security. Some of the activities are climate responsive while others respond to socio-economic aspects. Even when food is available, aspects of food utilization and access affect food security. On the other hand, the scale may be spatial (geographical area), temporal (of time and durations) or administrative (of jurisdiction), progressing from local to global.

[28] http://unfccc.int/7279

Dr Desanker used the NAP-SDG iFrame on "crop production" to demonstrate a simplified interconnected framework of themes linking the various climate change impacts with several SDGs, as well as the different Sectors, Actors, Spatial units and relevant themes in national development plans (Figure 4). A more complex integration map emerges when several sectors are considered together in the solution space. Applying the systems thinking approach during assessment, design and implementation of medium- to long-term adaptation plans through detailed analysis of systems/ sectors/ places etc., produces integrated maps illustrating the interconnectedness of systems and processes. The challenge in formulating NAPs is articulating the leverage points that would achieve the most impact. Thus, NAPs must communicate a country's climate adaptation priorities and the multiple scales and levels through which to achieve them. Hence, the NAP is a tool for resource mobilization that articulates adaptations needs and ambitions.

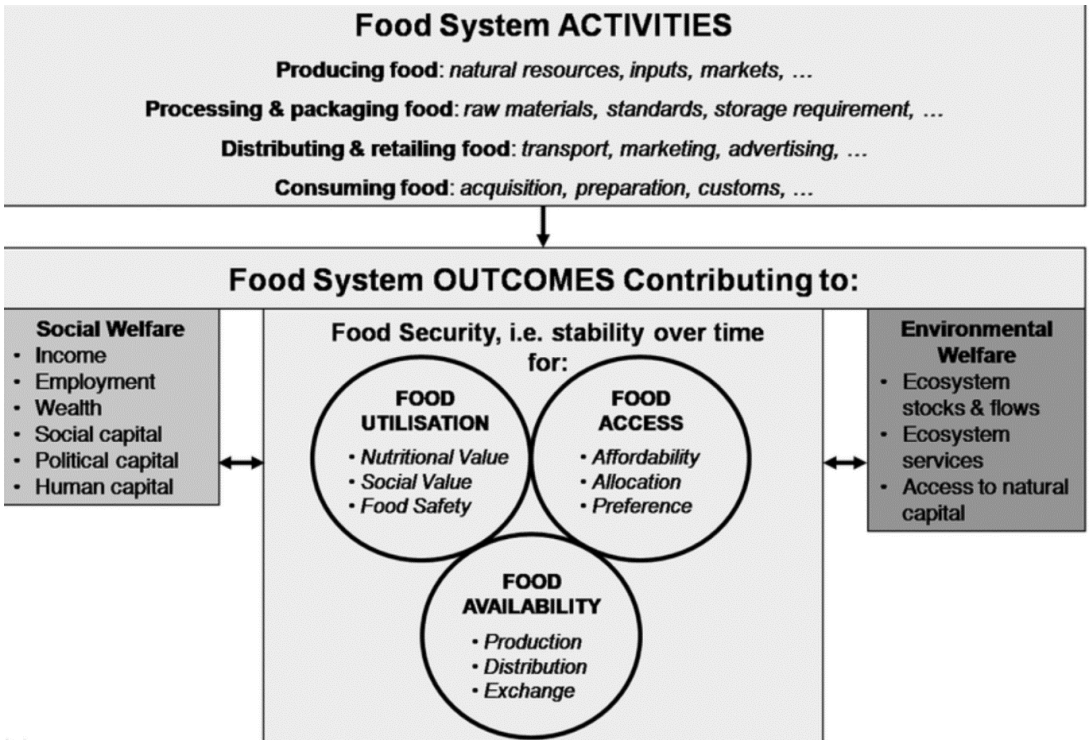

Figure 3 Multi-faceted nature of food systems activities

Adapted from Ericksen 2009[29] (food systems concept diagram). The diagram illustrates the various aspects interacting and contributing to food security.

[29] https://doi.org/10.1016/j.envsci.2009.04.007

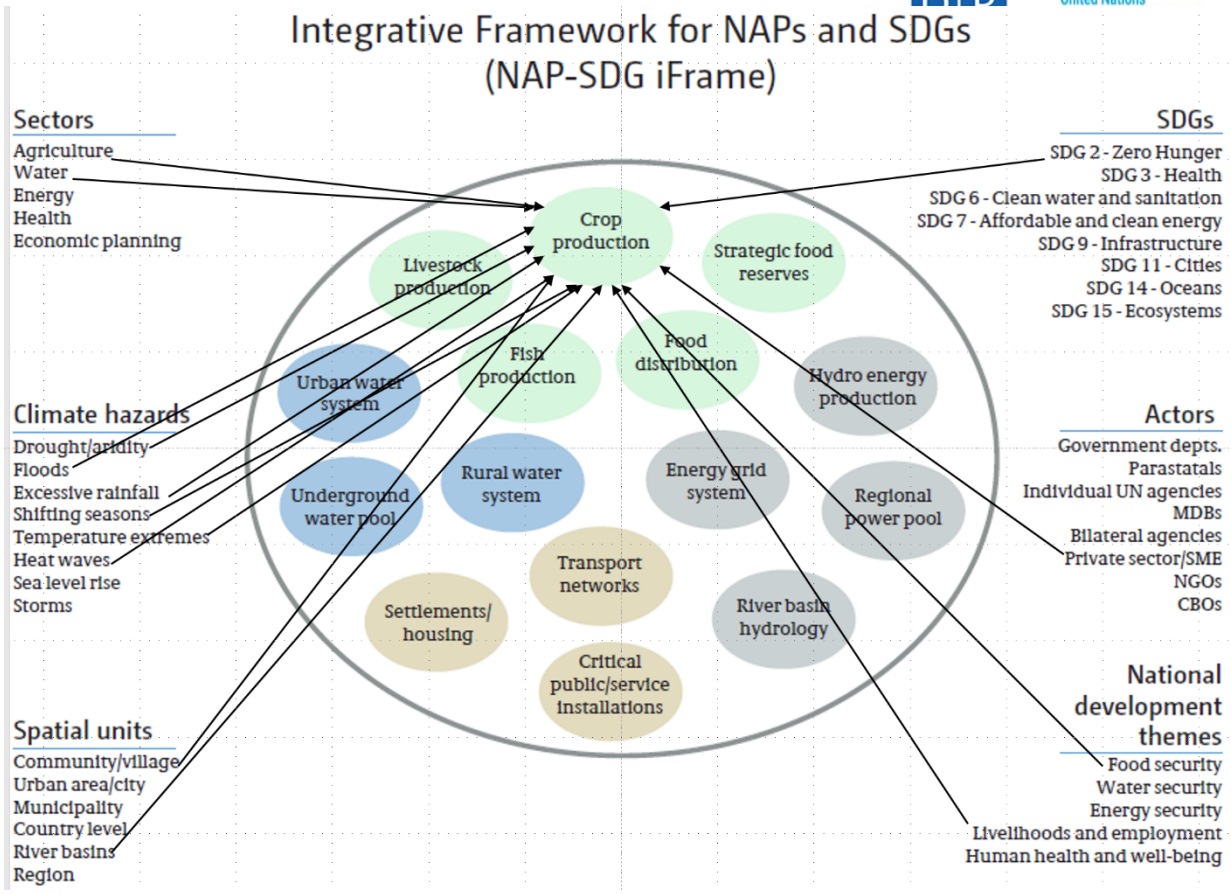

Figure 4 Systems approach demonstrating simplified

13. Session 10: NAPs as strategic instruments for adaptation planning

The following important aspects of NAPs were essential;

- NAPs as a tool for risk informed decision making
- NAPs as a tool for enhancing integration of adaptation into development planning and budget processes.
- Reflecting subnational adaptation efforts in NAPs or other national strategic documents

13.1. Reflecting on subnational adaptation efforts in NAPs or other national strategic documents

The following was highlighted as the objectives of this session

- To understand some general considerations for effective involvement of subnational stakeholders in NAPs,
- To discuss several issues/challenges in reflecting subnational priorities in NAPs,
- To describe some approaches/examples for addressing these issues.

Dr Keith Bettinger linked the session objectives to concepts from previous sessions that demonstrated that climate adaptation is a local process and discussions on the importance of subnational stakeholder inputs into NAP formulation and implementation.

The essential LEG Guidelines[30] that guide these concepts were also highlighted including; stocktaking, addressing capacity gaps and integrating climate change adaptation into national and subnational development and sectoral planning.

The Presenter described the identification of vulnerabilities and opportunities, mobilization of resources, and implementation as entry points for incorporating subnational priorities into NAP processes. Practical examples of subnational stakeholder inclusion into the planning and implementation processes comprised;

- Inclusion of subnational leaders in steering committees and technical advisory committees (e.g. provincial governors, city mayors, national NGOs, etc.),
- Participatory review of subnational plans, policies and planning processes (e.g. subnational disaster risk reduction (DRR) plans and development plans) to identify priorities or entry points,
- Incorporating agencies responsible for subnational affairs (e.g. Interior Ministry, Ministry for Subnational Government, Ministry for Village Affairs, etc.) into the planning processes.

The Presenter highlighted several issues relevant to creating an enabling environment for climate change adaptation.

Issue 1: In many cases, the subnational stakeholders lack awareness on climate change processes and the need for adaptation. Several activities can be designed to address the identified challenges. The following activities exemplified what could be designed as Readiness Projects;

- Identifying knowledge gaps and opportunities at subnational levels,
- Developing appropriate "knowledge products" and capacity building opportunities,
- Identifying the appropriate partners at subnational levels.

Issue 2: Work on adaptation/ resilience building at subnational levels may have been conducted, but has not been tracked. A stocktaking exercise would therefore help to identify these subnational initiatives and form a baseline inventory. Stocktaking may involve the following;

- Vulnerability assessments,
- Small scale adaptation projects or pilots,
- Climate Change Risk and Vulnerability (CCRV) plans,
- The activities of local and international NGOs.

Issue 3: Most climate financiers and accredited entities work with national level agencies. It is therefore difficult to channel climate change finances to subnational levels and to identify entry

[30] **A2**: Stocktaking to identify available information on climate impacts, vulnerability & adaptation, and assessing gaps and needs for creating an enabling environment for NAPs (stocktaking of past and on-going adaptation activities and synthesis of available analyses of current & future climate at broad national and regional levels; **A3**: Addressing capacity gaps and weaknesses in undertaking the NAP process (Identify and enhance awareness on potential opportunities for integrating climate change adaptation into development planning at different levels, and design and implement programmes on climate change communication, public awareness-raising, and education; **B5**: Integrating climate change adaptation into national and subnational development and sectoral planning; **C1**: Prioritizing climate change adaptation into national planning

points for subnational stakeholders. The following interventions may address the financing challenges;

- Aggregating vulnerabilities may achieve the economies of scale required for designing compounded "national" projects/ programs for addressing the identified problems.
- Establishing national climate change adaption funds that may be supported from national budgets or from donor funds. Cases of such initiatives include the People's Survival Fund, Bangladesh Climate Change Trust (BCCT) and Indonesia Climate Change Trust Fund,
- Capacity building to participate in regional entities e.g. the Observatory for the Sahara and Sahel, would enable the adaptation efforts to access regional funding,
- Resource mobilization through other accredited granting agencies, as exemplified by Micronesia Conservation Trust.

Issue 4: Subnational units have no tools or processes to address their adaptation needs. Representative pilot areas can be identified and used for capacity building/ institutional strengthening. A case study for Myanmar Climate Change Alliance (MCCA) was used for illustration. Key processes included;

- Identifying representative areas (e.g. Mountains, dry zones, deltas),
- Establishing subnational councils e.g. township councils,
- Conducting vulnerability assessment,
- Identifying priority projects, and
- Formulating resilience plans.

13.2. Plenary discussion

Question: In your example of establishing councils at subnational levels, what was the funding mechanism for these councils? How are they sustainable after the project funding?

Response: We worked in a collaborative process between the ministry responsible for subnational affairs and Myanmar Climate Alliance throughout the project, from the selection representative sites. We also made stakeholders understand that this was a pilot, but with potential for replication in many places and Phase 2 for upscaling the local level processes and build on the lessons learned.

Question: Was there an engagement with the Ministry of Finance to lobby for national government funding beyond the external funding?

Response: There is an on-going engagement with the internal affairs to lobby for support for domestic sources of finance, the Ministry of Finance has to be involved of course.

Comment: Taking the NAP process to the subnational levels raises concerns in terms of transparent management, procurement, documentation and reporting. Oftentimes subnational levels fail at accountability and M&E.

Response: Capacity building and setting up of accountability measures goes on before project implementation. Thus, the councils only get to control the money after setting up accountability measures. However, there are many examples of breakdown of projects due to lack of capacity, oversight or reporting.

Question: As follow up to the previous concerns on subnational level implementation, can a private sector entity or local NGOs implement a project that is in the NAP?

Response: There's no reason why the private sector cannot be involved in implementing some priorities in the NAPs. However, in most countries there is inadequate private sector involvement and awareness on climate change impacts. Establishing buy-in from private sector is the first step. The private sector should be engaged to understand the relevance of climate change adaptation to their businesses. Private sector entities can be accredited to the GCF. Several infrastructure banks are accredited to the GCF. Public-private partnerships can be set up, but the right building blocks should be put in place. With respect to the GCF, elements of capacity building, awareness raising and wide stakeholder engagement with the private sector are vital.

Question: An article on 'money it matters ' stated that very little funding goes to the most vulnerable. How can challenges at the subnational levels be addressed to ensure trickling down of the most needed finances?

Response: Aggregation of the NAP; putting subnational vulnerability aspects together and constituting national projects can make up national level project management units. Thus, the management can be at national level and the interventions be as close to the ground as possible. One of the objectives of the NAPS is to ensure that adaptation is brought to the grassroots

Comment: From personal experience, accountability is best at the lowest levels. Anyone who has worked directly with communities knows that. Small amounts of grant money can make a difference if channeled directly the grassroots. Issues of capacity can be addressed with training. Some community level partners we worked with have become legal entities. Sometimes the concerns from national authorities warranted. Mechanisms for funding subnational levels can be fruitful

Comment: Through a USAID initiative we are in the process of drafting a manual based on our experiences specifically targeted to assist communities in accessing small grants. The manual covers all the sections required for a funding proposal. People at the grassroots may understand the problem, the stakeholders, what actions are required, etc. but many people struggle to structure a budget, for example. The manual puts all that information together.

Question: Do you have any suggestions on implementation of NAPS in very large countries; in terms of inclusiveness and sufficiently addressing the needs of the populace; compared to small countries?

Response: The needs are bigger in a bigger country. A small country with 18 000 people has the same access to multilateral financiers as one with 18 million, thus can have the same amount of money. However, small island states face barriers to private sector funding and partnerships. Their economies are very small and dependent mostly on remittances and donor funds. A big country has more opportunities for partnerships and resource mobilization, including from the private sector.

The question prompted a discussion among the Participants. Liberia shared an experience where they had to select only a few protected areas for a project due to capacity challenges. Comments arising include the following. **Comment**: Implementation also depends on the capacities. Absorptive capacities are most likely lower in the smaller countries, which is a disadvantage.

Comment: The ability to develop bankable projects is important. The large countries can use the NAP as a springboard to mobilize more grants.

13.3. CASE STUDY: Liberia:

The Liberia NAP Journey, E. Abraham T. Tumbey Jr., NAP Programme Manager

The Presenter highlighted Liberia's geographical and natural resource characteristics (including 42% of land under tropical forest and long coastline) and the impacts on climate change on climate-sensitive sectors such as agriculture and sustainable natural resource utilization. Climate change impacts have resulted in food insecurity, loss of biodiversity and increased risk of climate-induced disasters (e.g. flooding, storms and heatwaves).

Liberia's NAP journey started with stocktaking in 2015. Articulating climate change goals and development strategies was an ambitious undertaking requiring mobilization of political will as Liberia had not yet ratified the Paris Agreement. Liberia´s NAP readiness proposal was awarded by the GCF in 2017. An Inception Workshop to launch the implementation of the NAP Readiness Programme and to raise awareness was convened in 2018. The goal for Liberia is to develop the knowledge base and capacities required to reduce vulnerability to climate change and to facilitate the integration of climate change adaptation into national development planning processes. The identified climate-sensitive sectors include agriculture, energy, waste management, forestry and health. The coastal areas in Liberia also received special mention. Stakeholder mapping identified a number of partners. The expected outputs from the NAP included;

- Strengthening institutional frameworks and coordination for implementation of the NAPs process,
- Expansion of the knowledge base for scaling up adaptation,
- Building capacity for mainstreaming climate change adaptation into planning, and budgeting processes and systems, and
- Formulation of financing mechanisms for scaling up adaptation (including public, private, national and international).

Highlights of Liberia's progress in the process to formulate and implement NAPs include;

- The development of the Climate Change Policy and Response Strategy,
- Ratification of the Paris Agreement by Liberia (August 2018),
- The development of a Graduate Program on Environment and Climate Change underway at the University of Liberia,
- Local and international capacity building efforts to develop the required expertise (Multidisciplinary assessment teams have been trained to support the NAP process),
- Climate change impact assessments that include gender and social considerations,
- Disaster Risk Assessments to inform Disaster Risk Reduction (DRR) strategy,
- Community based adaptation tools and training,
- Sectoral climate risks and vulnerability assessments and adaptation strategies for agriculture, forestry, fisheries and coastal areas (*Process in other sectors hindered by the need to build technical capacity to integrate climate change in development planning and implementation processes*),
- Stakeholder identification and engagement including; active engagement of private sector, development partners and civil society organizations (resources and expertise from development partners and private sector, normally to support the geographic localities in which they operate; stakeholders encouraged to document interventions from private efforts),

- Establishing a repository for information sharing and knowledge management,
- Developing concept notes /project ideas for funding proposals grounded in the identified adaptation action plans (in alignment with Liberia's Pro-Poor Agenda for Prosperity and Development (PAPD), the NDC and the climate change policy).

Challenges and barriers

- NAP project implementation delayed due to political and operational challenges,
- Recruitment of qualified consultants complicated,
- Limited data availability and access to information,
- Capacity retention a challenge for government ministries and agencies (a knowledge sharing strategy to build institutional capacity in addition to the individual capacities being developed).

Lessons learnt

- High level political will is critical for driving climate action,
- NAP focal points and champions should be identified in sectoral entities to support the NAP process and enhance coordination,
- Broad stakeholder engagement with a robust coordination and communication mechanism is important for success in implementation (including private sector and academia for scaling up climate change adaptation and knowledge management, and the media for awareness and sensitization),
- NAP is a useful tool for supporting the attainment of NDC and SDG targets at the national and local level and,
- NAP is a soft project - does not have tangible deliverables to address urgent climate change challenges.

13.4. Issues arising from the Liberia case study

Question: Has Liberia considered IKS and how has this been integrated in the NAPs? How much is government support financially?

Response: IKS adaptation initiatives are already being implemented over the last 20+ years. Funding is solely by the GCF. However, local technical expertise contributes as co-finance.

Question: Can you share experiences on engagement with the private sector?

Response: The private sector and development partners have been involved in small-scale adaptation initiatives. Liberia has initiated a platform for private sector stakeholders to share experiences on small but very meaningful initiatives? This will encourage networking and replication of efforts and strategies. We are documenting these efforts so that Liberia can account for and report these efforts.

Question: What are the funding opportunities for the small-scale adaptation efforts?

Response: Concept notes are developed in alignment with Liberia's National Development Plan, the Pro-Poor Agenda for Prosperity and Development (PAPD), the NDC and the climate change policy. This should facilitate tickling down of finances to the local levels.

13.5. Reflecting on ways to create linkages with SDGs, Sendai Framework on DRR and other frameworks in NAPs

By Excellent Hachileka, UNDP Regional Bureau

Mr Hachileka[31], UNDP Regional Bureau, highlighted the 2015 "trinity" of the three (3) international agreements; the Agenda 2030 for Sustainable Development and the Sendai Framework for Disaster Risk Reduction and the Paris Agreement, resulting in the interface of environment, sustainable development and resilience. Mr Hachileka's presentation was centered on the linkages among these interconnected frameworks.

The Presenter invited the Participants to comment on which of the three agreements they perceived to be the most important. The ensuing discussion demonstrated the interconnectedness of activities and results among the three frameworks. Thus, all three are of equal importance. Though one may be 'overarching,' they feed into each other. For example, a natural disaster can cause major drawbacks in development targets; demonstrating the influence of climate change on disaster risk reduction and on sustainable development goals. Climate change is increasingly becoming a major driver of disasters and risks. SDG13[32] calls for urgent action to combat climate change and its impacts. Climate impacts annually cause economic losses and push millions of people into poverty, ultimately posing significant risks to development and poverty alleviation efforts.

The Presenter posed a scenario to be discussed by Participants in their groups; "*Is DRR a crucial part of adaptation or climate change adaptation should be embedded in DRR as one of the many factors affecting vulnerability?"* The discussion points were to be contextualized within the functions of national and subnational sectors and institutions. Lively discussions ensued, with arguments over whether DRR was part of climate change adaptation or it should be a standalone initiative. The convergence of DRR and climate change adaptation objectives was obvious. So too should the international agreements be viewed as components of the same framework. Together these frameworks provide a roadmap for a more sustainable and resilient world.

The three agreements share common objectives on reducing vulnerability, enhancing resilience and advocating for coherence on DRR, climate change and sustainable development. The development goals are the same, thus sectors must be aware of their reinforcing functions and implement activities in an integrated manner to avoid working in silos and duplicating efforts. Climate change adaptation and DRR are implemented through the sectoral policies of agriculture, water resources, health, land use, environment, finance and planning. Coherence of efforts in the implementation of each framework is vital, as individual efforts lead to siloed approaches, duplication of efforts and creation of tensions across sectors.

Another discussion point was on: *Which was bigger; climate change adaptation or NAPs?* The agreement was that NAPs inform CCA. NAPS help to articulate what are we adapting, taking a systems thinking approach to understanding adaptation planning and implementation. Objectives of the NAP are to reduce vulnerability to climate change and to integrate adaptation considerations into all relevant development plans, policies and strategies. Using the same interconnectivity

[31] See Annex 1 for biography

[32] SDG13: Climate Action - take urgent action to combat climate change and its impacts

argument, NAPs are therefore a tool for achieving both climate change adaptation and development goals. The challenge is how to situate NAPs within the broader climate adaptation efforts.

The implementation of each agenda by Parties has led to the creation of various institutional arrangements, funding mechanisms and M&E frameworks. UNDP has worked with national and regional bodies on coherence of policies and actions on sustainable development, DRR and CCA. Governance issues are at the center of exploiting opportunities for vertical and horizontal coherent and synergetic implementation of DRR and CCA, as well as overcoming the challenges and barriers such as;

- Absence of a common understanding on the importance of coherence among the three Global Agreements due to lack of awareness on synergies and symbiotic CCA and DRR activities that could bring the relevant sectors together;
- Working in silos; differentiated mandates for the relevant sectors and turf protection, leading to weak collaboration and fragmented implementation;
- Fragmented legislation, conflicting policies and/ or absence of institutional mechanisms to facilitate integration of CCA and DRR into planning and governance systems,
- Limited human and institutional capacities to coordinate and mainstream climate and disaster response activities into relevant plans and priorities;
- Different focus areas as disaster risk management pertains more to rescue and relief (humanitarian operations), while CCA centers on long-term transformative efforts;
- Institutional barriers emanating from the different domestic and international funding modalities for programmes and projects.

Having demonstrated the challenges and barriers to integrated implementation of the three global frameworks, the Presenter invited the Participants to discuss *which was more important, vertical or horizontal integration*, and *which was easier to achieve*? Participants pointed out that adaptation priorities came from the bottom. Hence, a bottom-up approach was vital for impactful implementation of any of the frameworks. However, priorities in the form of implementation actions, finances and coordination came from the top. Thus, both vertical and horizontal integration were important. Vertical integration is power related, e.g. it is easier to get information from the lower echelons when funding is used as a carrot. However, horizontal integration is more challenging due to power struggles, competing interests and turf protection, as illustrated by the DRR and CCA integration case.

One of the UNDP actions is promoting, advocating and championing of joint and integrated implementation of DRR and CCA, ensuring that climate change adaptation forums involve the relevant stakeholders. Actions include arranging common meetings to help bring synergy among the relevant actors. If at national level DRR and CCA are not integrated, the subnational efforts are also not cohesive. Hence, mechanisms and guidance at both regional and national level are required to promote coherence of policies and actions, and thus overcome the *siloed* approaches and the duplication of efforts in implementation, ultimately fostering policy coherence for risk-informed development.

Recommendations for improved integration and coherence

Taking systems thinking approach to implementation of the global framework activities (disaster risk reduction and climate change adaptation) will enhance coherence and integration through the exchange of knowledge and tools, and ultimately optimize resources utilization for sustainable development. Many countries have limited knowledge of what they should adapt to, particularly on future climate change risks. The following actions will contribute to better integration and coherence;

- Capacity development on hazard and risk information for the timely provision of easily accessible climate services to inform planning on DRM and CCA. This may include;
    - multi-hazard early warning systems and information clearing house mechanisms for integrated data and information generation and sharing,
    - Exploiting existing regional mechanisms on climate and seasonal weather forecasting.
- Building capacities for the development and utilization of common assessments and analyses of disaster vulnerability and climate risk information,
- Joint programming (common data analysis, common repository (clearing house mechanisms), common M&E frameworks);
    - Developing policy frameworks and strategies that promote integration of DRR and CCA into sectoral planning and budgeting to achieve coherence and holistic interventions for addressing vulnerability and resilience,
    - Integrated implementation of interventions to increase opportunities to access, mobilize and utilize funding from both climate and DRR financing sources,
    - Synchronization of programming to maximize impact towards attainment of SDGs,
    - Inter-sectoral committees for planning, implementation, monitoring and review and reporting of activities with cross-cutting impacts reporting to ensure commonality and complementarity.
- Developing capacities and mechanisms for integrated M&E frameworks and indicators to be used by all relevant stakeholders for tracking resilience building,
- Capacity building opportunities and existing planning instruments, and
- Participation of DRR and CCA representatives on national coordination committees/ platforms for implementation of SDGs.

The UNDP concluded with a quotation from the UN Secretary General illustrating that fragmented efforts will do nothing to solve global challenges[33].

13.6. Issues emerging from the discussions

- Integration required political will at a higher level. For example, in Liberia, the integration of DRR and CCA is easier because the current director at DRR previously worked at climate protection. Therefore, there is a high level understanding of the required alignment and integration.

[33] "*If I had to select one sentence to describe the state of the world, I would say we are in a world in which global challenges are more and more integrated, and the responses are more and more fragmented, and if this is not reversed, it's a recipe for disaster*." Antonio Guterres, UN Secretary-General, January 2019, WEF

- Many governments are struggling to integrate DRR and CCA. The recommendation on harmonization of technical and steering committees may assist in reducing turf protection challenges with regards to sectoral mandates.
- In one case where an inter-sectoral committee was constituted, only one joint technical committee was convened in two years.
- There is need to integrate high level political representation in these inter-sectoral committees. Exemplar cases included; managing inter-sectoral committees under the president's office; appointing high level representation (e.g. the vice president) to chair such committees to ensure progress. For example, a case of in-fighting for 6 years until a new leader (the vice president) gave an ultimatum and demanded a resolution.
- In one country, many different ministries have varying mandates on environmental and climate issues, as well as on development and social issues. In such cases, there is need to nominate/ identify a champion for specific plans and priorities. The problem is not in the multiplicity of sectors but in the policy frameworks, for example overlapping mandate hierarchies.
- Conflicts may occur in one central ministry with several departments or across several separate ministries. The challenge is that policies frameworks must clearly define roles, responsibilities and authorities. Policy guidance is required in such cases.

13.7. CASE STUDY: Ethiopia

Country experiences in formulating NAPs and insights into their next steps

By Asrat Yirgu Senato[34], Climate Change Adaptation Advisor

Mr Senato informed that meeting that Ethiopia's NAP document had been submitted and approved, making Ethiopia one of the few LDCs to submit their NAPs. The NAP articulated the national response to climate change. He highlighted ambitions to transform Ethiopia into a middle-income country by 2025 and the climate resilient green economy strategy[35] based on four pillars; agriculture, forestry, power and industry (including transport and infrastructure). He emphasized the climate change impacts that Ethiopia has to respond to including; elevated temperatures, variable rainfall patterns, and increased incidence of extreme events (e.g. flash floods, severe flooding in some areas, severe droughts, heatwaves, etc.). He pointed out the resulting climate vulnerabilities and the affected sectors, adding that both the agriculture and energy sectors are rain-fed. The recent energy rationing was caused by limited power generating capacity, a consequence of low rainfalls. Crop productivity has subsequently dropped by up to 30%. However, the most frequent hazard was floods, followed by drought. Climate change has also led to increased incidences of human, animal and crop diseases. The evident climate change impacts were described for the various sectors; agriculture, forestry, water resources, transport, energy, health, etc. The economic costs of climate change impacts have also been estimated per sector. Thus, Ethiopia has responded by incorporating relevant climate policies for informing the NAP. Ethiopia's NAP used and built upon lessons from the NAPA implementation.

[34] See Annex 1 for biography
[35] https://www.undp.org/content/dam/ethiopia/docs/Ethiopia%20CRGE.pdf

Ethiopia's NAP process

Ethiopia's NAP (ETH-NAP), launched in Sept 2017, has a very wide scope that embraced multiple sectors. It articulated five (5) strategic priorities and 18 adaptation options. Formulation of the NAP involved a participatory process that articulated the "Who", "how", "where", "when", etc. ETH-NAP is a *country-driven, gender sensitive, participatory and fully transparent approach*, and takes *vulnerable groups, communities and ecosystems* into consideration; aims to be *guided by the best available science* and *traditional and indigenous knowledge* as appropriate; with a view to *integrate climate adaptation into relevant social, economic and environmental policies and actions*, where appropriate. The NAP formulation approach involved first 'connecting the dots' rather than reinventing the wheel. Poor documentation practices presented challenges to this process. Documents used to inform ETH-NAP included; (Growth and Transformation Plan II) GTP II document, Ethiopia's Second National Communication to the UNFCCC 2015, Ethiopia's NAPA 2017, Regional Adaptation Plans, Sectoral Adaptation Plans, Ethiopia's Programme of Adaptation to Climate Change (EPACC), Climate Resilient Green Economy (CRGE) Strategy, Ethiopia's (Intended) Nationally Determined Contribution ((I)NDC), Climate Resilience Strategy for Agriculture and Forest Sectors, Climate Resilience Strategy for Water and Energy Sectors, Technology Needs Assessment (draft) 2016. The EPACC was a programme of action to build a climate resilient green economy through support for adaptation at the sectoral, regional, and community levels. The EPACC was used to update the NAPA. The EPACC aims to mainstream climate change adaptation throughout government sectors; into government plans and policies through Sectoral Climate Programmes and Action Plans. Climate response adaptation strategies were also formulated per sector. The ETH-NAP formulation process (Table 4) highlights some of the steps.

Table 4 ETH-NAP formulation process

Phases of NAP-ETH	Processes and steps
Initiation and mandate setting	• Establish high level inter-ministerial steering body to oversee the development of the NAP-ETH • Mandate MEFCC to coordinate, lead and monitor the development and implementation of the NAP-ETH at the national level • Assign multi-disciplinary technical team to develop and monitor the NAP-ETH
Identification of inputs for NAP-ETH process	• Review of climate change resilient strategies/ plans already devised for the CRGE sectors and by Ethiopia's regions • Review other relevant documents, including the INDC (2015), Second National Communication (2015), EPACC (2010), NAPA (2008), CR strategies, Regional drafts
Preparation phases	• Identify relevant information, policy and strategy documents • Develop draft document involving relevant stakeholders • Organize consultations and targeted discussions involving personnel within the MEFCC • Organize external consultations with all stakeholders including sectors, regions and relevant institutions and actors
Implementation strategies	• Develop guideline to mainstream adaptation in the national planning process, and into sector and regional strategies and action plans • Identify resource mobilization approaches and strategies for adaptation finances

Gap analysis

A capacity gap analysis identified the following needs;

- Capacity to build and maintain data archives/ databases on impacts of climate change for agro-climatic zones, vulnerable groups and ecosystems, etc.,
- Capacity to run climate models, providing predictions and scenarios, including validation with reference to on-the-ground historical data and level of assessing certainty - at national and regional scales,
- Capacity to assess status of vulnerability and determine required adaptation responses for the major development sectors and for all agro-climatic zones, vulnerable groups and ecosystems,
- Capacity to design multi-sector adaptation programs; outlining overlapping or shared responsibilities,
- Mobilization of the private sector and its involvement in climate change adaptation investments,
- Engagement of the general populace in implementing and monitoring climate resilience actions,
- Mobilization and involvement of non-state actors; including professional societies, development partners, donors, and civil society organizations,
- Development of institutional, financial, technical and material capacities for the implementation of climate adaptation programs.

Next steps for ETH-NAP implementation

ETH-NAP has been finalized, submitted, and approved by the GCF. Ethiopia is currently developing the roadmap and completion is targeted for December 2019. The gender analysis for the ETH-NAP involved exploring issues to be taken into consideration in implementation of NAP-ETH. Issues analyzed included;

- Gender differences in adaptation needs, opportunities and capacities,
- Equitable participation and influence in adaptation decision making processes,
- Equity between women and men in access to finance and other benefits arising from adaptation investments.

Ethiopia is currently developing the implementation roadmap and a financing strategy for the implementation of NAP-ETH. An M&E framework is also being developed.

13.8. CASE STUDY: Sudan

Sudan's National Adaptation Plan

Presented by Dr. Noureldin Ahmed Abdalla Saeed, Secretary General, Higher Council of Environment and Natural Resources

Objectives of the NAP include;

- To reduce vulnerability to the impacts of climate change by building adaptive capacity and resilience; and,
- To facilitate the integration of climate change adaptation into development planning processes within all relevant sectors and at different levels, as appropriate;

According to Sudan's NAP assessment, vulnerability is a function of both climatic and non-climatic factors to which a system is exposed. Long-term projections predict a steady increase in temperature, and inconsistent precipitation patterns. Non-climatic factors include; inadequate infrastructure and basic services; inadequate technologies, skills and capacities; Socio-economic

factors such as poverty, limited livelihood opportunities and the associated population dynamics; natural resources management and use (e.g. misuse, land degradation and desertification); limited access to funding opportunities; conflicts and security factors.

Preparatory steps for Sudan's NAP involved laying the groundwork by assessing and addressing the gaps, including;

- Identification and assessment of institutional arrangements, programmes, policies and capacities relevant for the NAP formulation process,
- Assessment of available information on climate change impacts, vulnerability and adaptation measures that can be taken to address climate change, including needs and gaps at national and regional levels;
- Comprehensive and iterative assessments of development needs and climate vulnerabilities.

The preparatory elements included; assessments of medium- and long-term adaptation and development needs and climate vulnerabilities; activities aimed at integrating climate change adaptation into national and subnational development and sectoral planning; participatory stakeholder consultations; and public awareness-raising and education.

Sudan is particularly vulnerable to climate change impacts due to over-dependence on natural resources, and low adaptive capacity due to the realities of other non-climatic challenges. Recurrent droughts have led to food insecurity causing conflicts over resources and migrations. Climate change impacts are impeding national development objectives, particularly on the water, agriculture, food security and health sectors. Identifying suitable adaptation options and integrating these into national planning will contribute to the achievement of Sudan's development objectives.

The NAP preparation process

Sudan's NAP is implemented through a cooperation agreement between UNEP and the Higher Council for Environment and Natural Resources, Sudan (HCENR) in collaboration with the governments of Sudan's 18 states. The NAP is funded by DfID as part of the UNEP-Sudan umbrella project; Sudan Integrated Environment Project (SIEP). The project grant amounts to USD 790,000 and in-kind contributions from the national and state governments.

Preparation of the NAP is one of the main objectives of Sudan's National Implementation Strategy for climate change. Unlike the NAPA, the NAP formulation is more comprehensive; covering all the states and articulating the medium- and long-term adaptation needs. Activities implemented at state level included strengthening national institutional frameworks and consultations;

- Institutions were established/ strengthened; all the states consist of focal points and technical expert teams. Throughout the NAP formulation process, support for strengthening state institutions and for data collection was provided by these expert teams;
- 4 national workshops for capacity building and exchange of experiences among state experts;
- 5 zonal/ regional workshops for awareness creation, capacity building, lesson learning and consultation on policies and institutional issues; and
- 18 state-level workshops for awareness creation, capacity building and identification of priority adaptations needs.

Assessments were carried out to characterize vulnerability to climate change in three priority sectors (water, agriculture and health sectors), and to identify adaptation strategies, including policies, technologies and programmes. The scope of the assessment includes;

- Key climatic factors affecting vulnerable areas, sectors and systems;
- Current and projected vulnerabilities;
- Non-climatic factors contributing to vulnerability, and
- The range of possible adaptation options to be integrated into the NAP.

The NAP document includes annexes with state-level adaptation plans (SAPs) and contains details of the adaptation options for the states. These were defined through state-level consultative processes and were endorsed by the respective state governments. The data and information input into the NAP also included several knowledge products such as;

- Vulnerability and adaptation assessment reports on three sectors (water, agriculture and health),
- Sectoral reports prepared by national consultants,
- Vulnerability and adaptation assessment reports on coastal and marine resources (coral reefs, mangrove, sea grasses etc.),
- Climate scenarios study report,
- Assessment report on the adequacy of research and systematic observation for climate change adaptation,
- Reports on vulnerability hotspot mapping, climate proofing and investment and finance flows.

How Sudan has benefited from the NAP

The NAP has been used to mobilize resources for further projects and programmes notably; adaptation projects implemented by the HCENR; the Third National Communication, Climate Risk Finance, and Eco-Based Adaptation Approach in collaboration with GEF and UNDP, and improving the livelihood in the greater Horn of Africa in collaboration with GEF and the African Development Bank (AfDB), and capacity building for the NDA at individual and institutional level. Sudan will continue developing concepts and project proposals to support priority adaptation options. Fundraising for NAP implementation will target the central government, UNFCCC funds, other bilateral and multilateral sources.

13.9. Issues emerging from questions and comments on the Sudan and Ethiopia NAP processes

Question: Drought and floods are identified as major climate vulnerability areas leading to economic losses. What are the population numbers of those affected and how have these been addressed in the NAPs?

Response Ethiopia: I do not have the numbers. However, the lowland areas represent quite significant numbers. These numbers are available because vulnerability assessments were done in those areas.

Response Sudan: We have identified what we call hotspot areas for vulnerability in both rural and urban settings. As the UN-Habitat emphasized on the importance of resilience in cities and human settlements, we also included that into our NAPs.

Question: The NAP processes presented by the two countries demonstrate remarkable participatory engagements. How is data and information used to arrive at the NAP priorities being secured, being referred back to and used in developing NAPs?

Response Ethiopia: Knowledge management is a priority identified in the ETH-NAP. Strategies to improve data management systems nationally have received great political buy-in. There are registries that are set by a commission but that information is not enough as these have not been implemented by all sectors. Also in Ethiopia, most of the adaptation initiatives are implemented outside of government. There is a need for engaging these sectors to ensure alignment with government policies, including data management systems that embrace the same scope.

Response Sudan: During our NAP formulation, we needed data from Meteorology, but Met put a big price tag on the data. That spurred the need for a data protocol in Sudan. Now government entities are entitled to give data for free. Data rescue is also important because we realized after the NAP process and the first national report that all the data used was lost within the sectors and the subnational entities. Thus, Sudan has now created units at subnational levels that deal with data and climate change on a daily basis. These units have been provided with computers and equipment for data capturing. We have also built capacity within the Met department for data rescue and archiving projects. Historical data is still in paper format.

Comment: Key elements highlighted the need for data and information systems and the barriers. When systems are in place, monitoring and evaluation becomes easier. Sudan and Ethiopia's NAP, as well as other approved NAPs are available on line. The Sudanese NAP is very important due to the 18 state level LAPs, a good example of how to incorporate subnational levels in the NAP formulation process. Another way is to develop sectoral NAPs. In all cases, vulnerability and risk assessments have to be done for the different states or sectors. In Sudan, did the states decide on the methodologies for the vulnerability assessments, or was it decided at the national level and each entity capacitated to implement?

Response Sudan: Sudan applied both top-down and bottom-up approaches. Where technical aspects were required, we implemented top-down. Where information was required from the states we used the bottom-up approach because there were very unique priorities across the states and we wanted these needs to be uniquely articulated.

Comment: Applying common methodologies for risk and vulnerability assessments enables comparison and homogenization of some results.

Table 5 Group exercise Day 3

Group Exercise Day 3[36]	
Step 1: **Map your country**	Based on your group's country circumstances, draw a map of your country. Include; - Country outline (boundaries, coasts), - Administrative boundaries (provinces, counties, prefectures,) - Natural features (e.g. climate zones, rivers, mountains, volcanoes, plains, sea, forests, desert, etc.), - Key infrastructure (e.g. roads, ports, airports, etc.), - Population centers (cities, towns, villages), - Major subsistence & economic activities (e.g. agriculture, forestry, fishing, mining, etc.), - Places of interest (protected areas, etc.), Consider changing climate conditions ... What are they? Label areas of exposure/ climate risk.
Step 2: **Adaptation planning**	You have decided to create a National Adaptation Plan; - Consider the potential risks and vulnerabilities to address, based on your map. - What stakeholders should be involved in the process? - What kinds of data and information might you need? - How would you generate the data and information that you need?
Step 3: **Reflect on your data and information systems**	Reflect on the conceptual map for your data and information. Is it sufficient to meet the needs of your country? Are there any modifications to be made to achieve an effective and functioning institutional arrangements (including roles and responsibilities) for; - Production of data and information? - Use of data and information (including communication)? - Coordination?

14. Session 11: Reporting adaptation efforts to the UNFCCC

Dr Paul Desanker (UNFCCC) informed the meeting that reporting under the Paris Agreement is new and can be quite involved. His presentation included pointers on how to reduce duplication, as the different reporting mechanism to the UNFCCC and the Paris Agreement have significant overlaps. Official communications to the UNFCCC and Paris Agreement required elements might be managed from separate sectors. He expanded on the following reporting obligations;

a) Reporting on progress on NAPs,
b) Communicating adaptation priorities and ambitions through NDCs,
c) Communicating progress on adaptation through the adaptation communication.

Promoting collaboration across all relevant stakeholders is difficult. The Presenter gave pointers on how to align efforts in order to minimize duplication, adding that reporting under the Paris Agreement was quite elaborate. On the other hand, reporting on NAPS was viewed as being different from that of NAPAs; the two are viewed as separate projects with separate management modalities. He emphasized that reporting requirements among the different relevant sectors are a platform for exploring avenues for integration to reduce duplication of efforts. As already pointed out in earlier discussions, different sectors may be responsible for climate change adaptation and for DRR, for example.

[36] Continuation of group activity from Days 1 and 2 in assigned Groups 1-5

Reporting on progress on NAPs

Countries are expected to submit Adaptation Communications by 2023, in time for the Global Stocktake. The Global Stocktake will include a summary of national adaptation priorities, plans of action etc. and progress made on adaptation. Dr Desanker encouraged the LDCs to have their NAPs done by 2020, to include the information in the NDCs, and to start submitting National Reports so that the Global Stocktake can account for these efforts. He added that submitting the NAPS does not prevent Parties from accessing additional funding from the GCF e.g. to improve the NAPs. He expressed the hope that NAP implementation would accrue some benefits that can be reported to the Global Stocktake through the Adaptation Communication. It was also vital to use the results from the NAP formulation process to inform the NDCs.

Communicating adaptation priorities and ambitions through NDCs

The NAPAs and NAPs are plans of action that contain national adaptation priorities. NAPAs are urgent and immediate while NAPs are comprehensive medium- to long-term adaptations plans that articulate national priorities. NDCs contain both adaptation and mitigation plans. NDCs are an important commitment under the Paris Agreement. Implementation of NDCs means delivering on what the Parties have promised. Figure 5 illustrates how the NDC interfaces with the NAP. The two should be intersecting and mutually reinforcing.

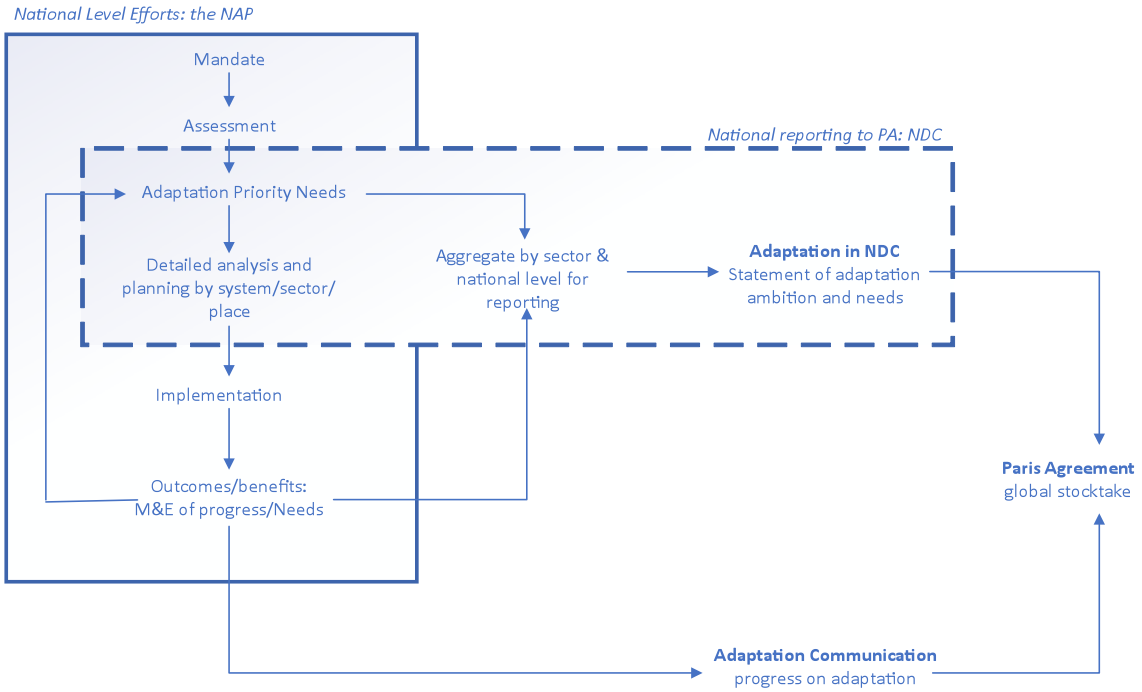

Figure 5 How the NDC interfaces the NAP

Some countries have developed the NDC before the NAPs. NAPs are an articulation of what is important to the country to ensure climate adaptation and resilience. The two efforts may appear disconnected but they actually intersect. After doing the NAP, the NDC can be adapted to ensure that what is in the NAPs is captured. Thus, the NAPS and NDCS speak to each other.

Communicating progress on adaptation through the Adaptation Communication

UNFCCC emphasized that reports are used to make decisions. Thus, these reports must contain solid information on the different framework requirements. It was up to the Parties to decide where to

put this information; recognition of efforts in the Adaptation Communications, the NAPs, or in **Transparency Reports**. Though the presentation focused on the Paris Agreement, reporting was also required for the Sendai Framework and for progress on SDGs. Countries were encouraged to aim for coherence as the same activities and outcomes contribute to the different frameworks. Using the same data and M&E tools across all sectors was encouraged to promote the required coherence.

14.1. Issues arising from reporting adaptation efforts to the UNFCCC

Discussions around the reporting requirements were mostly based on Participants seeking clarification on the modalities.

Question: Looking at the scheme, is there a way of getting to the NDC if there is no NAP in place? It seems the content required for the NDC is similar to that in NAPs. In terms of practicability, which one is recommended to be developed first?

Response: There is no need to have a physical NAP in order to appreciate adaptation priorities. Most experts in the different country sectors would have an idea of the adaptation priorities (to be expressed in the NDC). The NAP process is an objective way of validating these priorities, including inputs from stakeholders, in a transparent prioritization process. The NAP process takes time, but these priorities can be outlined in the NDC as issues that the country needs to address. Although the NDC does not require in-depth elaboration of the priorities, there is need to articulate what the issues are and why they matter. In addition, there should be concrete options for addressing the priority issues. Thus, the NDC should reflect the state of knowledge on climate change and highlight the priority issues. The documents can be declared as being based on current knowledge. These documents can then be updated at any time. The NDC is flexible because it is voluntary and nationally determined. It can be retracted at any time or updated to increase country ambitions.

15. Day 4 Addressing Bottle Necks in the NAP process

Reflection on Day 3

As a way to reflect on the topics covered on Day 3, the Facilitator presented three questions for Participants Box 7. Participants were requested to respond individually by writing on colored paper (Annex 9)

Box 7 Key questions from Day 3

15.1. Session 12: Countries' needs - country presentation

15.2. Presentation of group activities on imaginary countries

Practical application of NAP formulation processes

Group activities on Days 1, 2 and 3 were according to the groups assigned to Participants upon registration. The group exercise on Day 1 had been cumulatively developed on Days 2 and 3, based on the concepts and themes presented and discussed during the workshop. Each group elected a representative to present the finished work according to instructions (Box 5). Figure 6 presents the hypothetical countries conceptualized by the 5 groups and the vital elements on climate change adaptation posited by group members throughout the workshop, learning from the proceedings.

15.3. Presentation of the group ideal data and information infrastructures and how they inform NAP formulation and implementation

The groups used their imaginary geographical maps to highlight priority climate change issues that required attention in the 'ideal' data infrastructure. The groups also highlighted the vital environmental and economic features, the relevant climate change impacts, how the ideal data system would produce the relevant data and information, how the information would be appropriately used, the ideal institutional arrangements, available expertise, capacity building needs and gaps, the different sectors involved and how they cooperate, the dissemination and use of the information, funding channels, etc. Annex 10 compounds the imaginations of the 5 groups in presenting the NAP formulation for their imaginary countries and contexts

Vital concepts and themes from the group presentations

Group activities on developing characteristics of the different 'ideal' data and information systems produced the following elements;

1. *Addressing barriers, needs and gaps*

- The requirement to draw a geographical map prompted the Participants to rethink the data and information infrastructure with respect to real life needs and gaps,
- Participants considered how the data and information infrastructure would contribute relevant information to the NAP formulation processes,
- High level political buy-in was vital in creating effective institutional arrangements and enabling environments (many situated the data and information portfolios in the (vice) president's office or had a high ranking government official sitting on inter-sectoral committees)

2. Stakeholder engagement and buy-in

- Sectoral coordination and integration requires high-level political buy-in
  - E.g. A NAPs standing committee chaired by the Minister of Environment
  - E.g. A vice president chairs committee to ensure effective participation and efficient coordination
- Integrated planning and monitoring utilized to prevent duplication of efforts and ensure inter-relatedness
- Both bottom-up and top-down approaches; data analyzed and communicated to all policy makers
- Appreciation of what type of information to synthesize for the different users of tailor-made, sector specific information targeting different needs.

3. Financing

- Mainstreaming of data and information infrastructure into all sectors,
- Mainstreaming information production and use into national plans and priorities,
- Ministry of Finance provides resources from central government,
- Galvanizing political will to enact policies for financial support e.g. Ministry of Finance uses a portion of earning from natural resources from contribution toward climate change adaptation.

4. Data production, dissemination and use

- Reflection on what details are required for setting up ideal processes guided the design of the data and information infrastructure,

- Structures required to produce data and information for all relevant sectors;
  - Identification of priority sectors,
  - Developing national and sectoral strategies,
  - Creating committees including both data producers and users to ensure that data collected and information synthesized is relevant and usable,
- Use media sector to assist with dissemination,
- The different ecosystems that require specific attention. Thus, data and information systems to incorporate ecosystems biology,
- Consideration of existing situations that can be aggravated by climate impacts, e.g. Naturally arid areas and unsustainable resource use practices,
- Extensive consultations and interaction in data infrastructure to enable coordination,
- Inter-sectoral coordination at high level, e.g. MoUs between Ministry of Environment and sectoral agencies,
- Data generated is fed to relevant sectors.

15.4. Major country challenges and support needs on formulating and implementing NAPs

Dr Bettinger presented a scenario to the Participants. The scenario illustrated that each country will face major challenges, and the NAP should be formulated to put in place support for addressing priority problems. He assigned Participants into four groups according to their countries and gave each group themes to deliberate on. In analyzing these problems and solutions, countries were encouraged to consider the pre-workshop assignment on country needs and challenges (Annex 11), incorporating these elements needs and challenges and using the why question to test the aspects for which intervention projects could be designed.

Workshop resource persons were available to discuss and assist Participants in their deliberations. This activity took the place of the Market Place consultations.

Box 8 Group exercise on problem and solution trees

Tourism is a major contributor to Hawaii's economy. On the other hand, homelessness is a major challenge. Overnight, the homeless can pitch tents or build shacks on the beautiful beaches. On one occasion, while walking with my six-year old daughter on the beach, we saw some recently built shacks. She asked, "*Why did the people build houses on the beach?*", to which I answered "*Because they don't have houses*." But in the manner of all small children, she kept asking "*why*" to every answer I gave.

The task for each group was to consider the allocated theme, and identify improvements to systems, processes, procedures, designs or cultural practices. The analysis involved identifying the real issues by asking "*Why*" repeatedly to identify the root cause(s) thus;

Identify issues that can be solved, (for example, considering the homelessness problem above, a cause such as "because they are lazy" cannot be solved. Real problems are those to which there are actionable solutions.

The 4 themes assigned each to a group were;

i. Awareness raising and stakeholder engagement,
ii. Resource mobilisation,
iii. Climate information including vulnerability and risk assessments,
iv. Institutional arrangements.

Thus, the discussion process for the groups was;

The "*Why*" interrogation to identify the needs,
Identify leverage and entry points for the suggested solutions,
Identify adaptation needs for developing and formulating NAPs.

Issues arising from the group discussions on needs and challenges

1) The coordination of sectors and other stakeholders is a challenge. There is need for technical capacity to assist with;
   - Policy frameworks on institutional arrangements that would effectively support climate change adaptation, and development plans and priorities,
   - Defining roles and responsibilities of the relevant stakeholders.
2) Resource mobilization is challenging. Additional technical support from other partners; e.g. Technical support in developing proposals (such as proposal writing workshops) would help
3) Human resources and technical capacity; e.g. there is no funding for capacity development to fill data needs and gaps, e.g. capacity to produce the relevant climate data and use it
4) The scopes of some projects do not meet the specific needs and gaps; e.g. the specific technical needs of a country will not be covered in the project scope. Technical support provided should be context-specific, e.g. The ideal coordination, infrastructure, legal and institutional policies, depend on the country realities

15.5. Workshop closure and certification

The workshop closure was marked by a final workshop assessment when participants updated their votes to the expectations chart (Figure 2), adding dots on aspect covered up to the end of the workshop. Participants commented the workshop organizers, resource persons and facilitators for an interactive workshop that enabled them to learn by doing as well as learn from others' experiences.

The UN Environment distributed stainless steel straws to all the participants in an initiative to encourage people to carry reusable straws rather than disposable plastics.