Capacity Needs Assessment and Capacity Development Plans

For Updated Ethiopia's NDC Implementation of the Ethiopian Transport, Energy and Industry Sectors

JUNE 18, 2021

ADDIS ABABA, ETHIOPIA

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Ethiopian Environmental Protection Authority

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BAU: business-as-usual 13
BRT: Bus Rapid Transit 33
CCIIDI: Chemical and Construction Inputs Industry Development Institute 47
CDKN: Climate and Development Knowledge Network 26
CRGE: Climate Resilient Green Economy 13
CSA: Central Statistical Agency 74
CSC: Civil Service Commission 74
DEEP DIVE: Deepening Efforts to Implement NDC in Ethiopia 14
ECCD: Environment and Climate Change Directorate 21
ECCSA: Ethiopian Chamber of Commerce and Sectoral Associations 84
ECPC: Ethiopian Cleaner Production Center 84
EEA: Ethiopian Energy Authority 107
EICG: Ethiopian Institute of Corporate Governance 84
EMDIDI: Ethiopian Meat and Dairy Industry Development Institute 47
ESA:Ethiopian Standards Agency 84
ETIDI: Ethiopian Textile Industry Development Institute 47
FBPIDI: Food, Beverage and Pharmaceutical Industry Development Institute 47
FeMSEDA: Federal Small and Medium Manufacturing Industries Development Agency 48
FTI: Fast Track Investment 33
GGGI: The Global Green Growth Institute 25
GHG: Greenhouse Gas 13
GTP: Growth and Transformation Plan 34
ICT: Information and Communications Technology 50
IWRM: Integrated Water Resources Management 98
LIDI: Leather Industry Development Institute 47
LoE: Level of Effort 75
LRT: Light Rail Transit 33
MIDI: Metal Industry Development Institute 48
MoE: Ministry of Education 78
MoIT: Ministry of Innovation and Technology 77
MoSHE: Ministry of Science and Higher Education 78
MoT: Ministry of Transport 16
MoTI: Ministry of Trade and Industry 16
MoWIE: Ministry of Water Irrigation and Energy 16
Mt CO_2e: Metric Ton of Carbon Dioxide Equivalent 13
NDC: Nationally Determined Contribution 13
NDRMC: Disaster Risk Management Commission 74
NMA: National Meteorology Agency 84
PCCB: Paris Committee on Capacity-building 17
PDP-10: Ten-Years Perspective Development Plan 14
PIM: Project Implementation Manual 94

Acknowledgements

The Consultant would like to acknowledge the contributions of the informants who were available for interviews (listed at the end of this Report). Without their insights, inputs and critical reviews, this Report could not have come to fruition.

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Girum Bahri
Independent Consultant, Green Growth and Sustainability
June 18, 2021

Executive Summary

This report presents the findings of the Institutional Capacity Need Assessment carried out within the ambit of UNDP's Deepening Efforts to Implement NDC in Ethiopia (DEEP DIVE). The sectors which this report (the Study) covers are Transport, Energy and Industry. The need assessment conducted was not an end in itself but rather an input for the formulation of Institutional Capacity Development (Action) Plans.

The assessment was carried out in the period December 4, 2020 to April 9, 2021. In addition to review of relevant literature and previous studies, the Consultant did interviews and focus group discussions with informants drawn from the sectors and concerned stakeholders. Case studies were also conducted with a view to provide additional insights.

Methodologically, the assessment, data analyses and the organization of this report itself were informed by the UNDP Capacity Development Framework. The draft PCCB Capacity Gap and Needs Assessment Toolkit was also used as a supporting checklist. Additional tools were also used to help in the selection and prioritization of intervention ideas such as a theory of change for capacity development.

The draft findings of the assessment were presented to stakeholders in a validation workshop held on March 20, 2021 in Bishoftu town. After the workshop, the capacity needs identified were compiled and shared with the respective ministries for "endorsement" vis-à-vis capacity needs for NDC implementation. The sectors were also asked to self-assess their existing capacity[1] to respond to those needs and to review and "sign off" the interventions drawn for the identified need areas. Similarly, they were also requested to confirm their readiness for owning and implementing the plans.[2]

A Draft Report was then submitted on April 9, 2021 which also addressed the feedback given in the validation workshop. Following from that, a Final Report (dated April 23, 2021, version 1) was prepared including additional work also by addressing the written feedback given on the Draft Report. The Clients organized a de-briefing workshop on June 14, 2021 in Bishoftu town in which the participants provided another round of feedback mainly intended to strengthen the editorial quality and presentation of the work. This Final Report (dated June 18, 2021, version 2) was accordingly prepared by addressing the comments given in the de-briefing workshop.

Whereas there are small variations in the NDC capacity-building needs across the three sectors (mostly to do with the order in which the issues turned out), there appear to be common capacity-need themes straddling the three sectors. In no particular order, these are: MRV, Planning, Finance, Structure (O&M, HR), Awareness, Information & Knowledge Management, Private Sector, Policy, Technology and Adaptation.

[1] Technical and financial

[2] MoT and MoTI did the review process in a workshop setting in which the Consultant facilitated the process.

For the identified capacity development needs, preparation of the capacity development plans encompassed the following tasks: identification systemic interventions; concretization of activities for those interventions; developing a broad theory of change; and drawing activity schedules including anticipated outputs, estimating budget and tentative timelines of implementation. A discussion of that is made in **Chapter 7** with details included in the Intervention Guides (**Annexes 9.7A-9.7C**). It must be stated that, all three ministries have acknowledged the usefulness of these "Intervention Guides" as a tool for continuing work on NDC implementation.[3]

Needless to say, the most important success factor for any capacity development plan is **ownership.** Therefore, it is recommended that the sectors drive their respective action plans. EFCCC must play a crucial coordination and facilitation role to catalyze these plans- not just for the three sectors covered in this Report but for all the CRGE sectors. There are also roles to be played by other stakeholders, i.e. top leadership within the federal and regional governments; coordinating entities (PDC & MoF); other ministries and commissions; donors; academia; private sector and business associations; and civil society. **Chapter 8** provides recommendations to this end.

Another important principle for capacity development endeavors is **sustainability:** meaning maintaining long-run, enduring processes. Mindful of that, effort has been made to design the various interventions to be "systemic"- in contrast to traditional one-off, episodic activities. Hence, the interventions in the plans focus on creating systems; building endogenous capacity within local universities; coalition building; joint visioning and planning; professional networks & certifications; institutional twinning; etc.

The accompanying budgets are intended as ball-park estimates. They are based on certain cost factors and assumptions, which are clearly explained in the plans. The sectors could use those as inputs to refine and draw more accurate plans as needed.

Finally, without going into the specifics of the sectors, a generalized and high-level summary of the identified capacity development needs and intervention strategies followed is provided in **Box 1** below. Detailed discussions of these are made in **Chapters 5 and 7** and in the separately attached Intervention Guides (**Annexes 9.7A-9.7C**).

Box 1: High level summary of NDC capacity development needs and strategies for capacity development response

a) MRV

Capacity development needs: These relate to setting up and maintaining a system for MRV of GHG inventory and mitigation all the way from data collection to reporting- for instance- in compliance with the IPCC 2006 guidelines. To this end, capacity needs exist on how to link to the national data center that is being set up; how to ensure (mandate) reporting of data; setting up quality control and quality assurance systems. Related to all these, another need area is how to secure the requisite skills in a continuing manner.

[3] In dedicated workshops held with MoTI, MoT and telephonic discussions held with MoWIE to introduce and illustrate these intervention guides.

Capacity development response: The general approach/strategy followed is for the sectors to work towards linking to the national data center. The experience which has been gained so far from the on-going EU climate change budget support project on setting up the national data center and the GHG of inventory relating to AFOLU and IPPU is recognized as a key knowledge resource to draw on.[4] Other activities which the sectors are expected to carry out include: setting up quality control systems (internal); setting up quality assurance systems (external); coalition building with stakeholders concerned with MRV issues (sub-sectoral institutions, EFCCC, CSA, PDC, etc.); and for the EFCCC (by mobilizing all CRGE sectors) to work towards completing the pending third National Communication and the Biennial Update Report. Starting work and completing these reports is expected to provide a hands-on experience on MRV issues.[5]

b) **Planning**

Capacity development needs: In the main, this relates to lack of strategic planning capacity such as not being clear on the portfolio of projects needed to meet the CRGE/NDC targets of the sectors. Related to that, how the sub-sectors and regions are expected to contribute to the sectoral/national objectives and targets lacks clarity. In the same vein, lack of joint planning with other sectors is missing. For instance both the Energy and Industry sectors work on demand-side, energy efficiency projects with manufacturing firms with little evidence of coordination between MoT and MoTI.

Capacity development response: Joint visioning and planning is the main approach followed to craft the interventions for this need area. One strategy advocated is for the sectors to work with the PDP-10 auxiliary documents (activities, finance, human resources) to coordinate and harmonize their plans vertically (with the sub-sectors and the Regions) and horizontally (with the other sectors).[6]

c) **Finance:**

Capacity development needs: Importantly, this relates to the high initial capital investment needed to implement projects identified in CRGE implementation (e.g. the Addis Ababa LRT system and electric railway project for the transport sector). A common challenge for the sectors is limited financial resources to carry out planned CRGE activities (for instance field studies and observations). For all three sectors, technical capacity to draw bankable proposals for soliciting finance is weak- be it from debt, climate finance and market development mechanisms.

Capacity development response: Joint visioning is an approach proposed to design the interventions. As a first step, the sectors are encouraged to work with the PDP-10 "Financing the Plan" auxiliary document in their bid to determine and harmonize their financing needs for CRGE/NDC implementation- including for capacity development. One of the specific interventions suggested to address the needs relating to finance is up-skilling the climate negotiation skills of experts working in the CRGE space and honing green business case analysis and writing of bankable green project proposals. **Case Study 6** sheds some light on how implementing and coordinating entities could go about building partnerships with academia to create endogenous capacities

[4] There is consensus on this idea (of drawing on the existing experience from the EU project). Discussions with EFCCC colleagues (Benti Firdissa) and EU colleagues (Danielle Morbin, Yosef Melka and Addisu Amare) were in favor of this strategy.

[5] This line of thinking is also advocated by experts from the EU Ethiopia Climate Change Sector Reform budget support project.

[6] The idea of getting around the table for joint planning and visioning with the PDP-10 main and auxiliary documents as a **"lighthouse"** was an insight gained in brainstorming discussions (more importantly during the interview held with Abas Mohammed of PDC).

for training, research and service offerings for CRGE implementation (not just Finance but for other NDC capacity need themes as well).

d) **Structure (Human resources):**

Capacity development needs: Primarily, this relates to lack of clear roles and responsibilities of CRGE focal persons in the Regional states, zones and Woredas. To be specific: The "focal" persons are tasked with other regular responsibilities whereas the CRGE function is just a side activity. Lack of a clear staffing plan for the CRGE function in the Regions also implies no commensurate budget can always be expected (strictly speaking).

Capacity development response: Again, a first-step approach proposed is for the sectors to form coalition around the PDP-10 document to discuss their CRGE related HR issues. At least the EFCCC, CSC, PDC and their regional bureaus and offices are expected to be part of this joint visioning exercise. The objective would be to have clear structure (staffing plans, job description, budgets and reporting systems) for the CRGE focal persons.

e) **Structure (Coordination, Accountability):**

Capacity development needs: This is inter-linked with the two constraints relating to Planning and Structure-HR. For instance, the "focal persons" cannot be held accountable for not reporting to the federal ministries and to the regional EFCC bureaus on CRGE work carried out. There is no formal (binding) system for communication and coordination amongst the sectoral CRGE focal persons (of the bureaus), the EFCC bureaus/offices and the respective ministries.

Capacity development response: The same strategy as above (for Structure-HR) applies here. The focus here is ensuring better coordination and accountability vertically and horizontally amongst the various entities (ministries, sub-sector institutes, bureaus and offices of the Regional states, zones and Woredas). Again, the EFCCC, CSC, PDC and their regional counterparts need to be part of this joint visioning exercise.

f) **Knowledge Management:**

Capacity development needs: This is about lack of a modern information and knowledge management system. Examples are: no systematic approach for compiling, storing and sharing CRGE/NDC related data; no shared drives; no dedicated web-pages on CRGE activities on the ministries' websites; no regular in-house knowledge-sharing activities such as "brown-bag lunches", expert de-briefs; and no planned participation in academic or CRGE-relevant conferences; etc.

Capacity development response: Here the ministries (of the three sectors) are advised to set up Information and Knowledge Management Systems to respond to the identified gaps. These practices exist in many international organizations and the experiences can be studied and adopted to the local context. Before embarking on that journey, the ministries need to commit themselves as "learning organizations" and follow up that with a company-wide, Information and Knowledge Management strategy.

g) **Awareness:**

Capacity development needs: Lack of awareness on broader sustainability and responsible leadership issues on the part of top leadership from within the public and private sectors is a systemic constraint. That has contributed, in part, to the notion prevailing in some quarters that CRGE is as a one-off, side activity and not a strategic roadmap of choice which the country has consciously made. That CRGE is also viewed as a mere "fund-raising" opportunity was also pointed out in the interviews- another example of poor awareness. Although the ministries have set up Environment and Climate Change Directorates, a strong case cannot be

made confirming that sustainability/CRGE has become **core business and part of the organizational DNA of these organizations**. A quick look at the websites of all three ministries indicated that there are no organizational sustainability policies- preconditions to ensure that CRGE implementation is on equal footing with the other "core businesses" of the ministries. Poor awareness on sustainability and CRGE issues also permeates other segments of society: top leadership of Regional states; sector bureaus and offices; leadership within the private sector; and also academia.

Capacity development response: Endogenous capacity development especially within universities is the main strategy followed here. The idea is for Research Universities and the sectors (both implementing and coordinating entities) to work through partnerships. A starting point is for the sectors to share identified capacity development need areas with the universities. The universities, on their part, need to overhaul their education, research and service offering to contribute towards Ethiopia's sustainable development objectives and its CRGE strategy. **Case Study 6** provides a course of action towards that objective.

h) **Adaptation:**

Capacity development needs: For the most part, this relates to lack of skills and access to methodologies to "unpack" what adaptation means in practice to the various sectors. Of course, the National Adaptation Plan has identified various actions for the sectors; however, that does not mean it is crystal clear for all of the sectors.

Capacity development response: An immediate action proposed is for the sectors to unpack the National Adaptation Plan to their context and reality. An already existing tool that is being rolled-out is also proposed.[7] Parties to this collaborative action are EFCCC, NDRMC and the NMA. Once the risks are identified for the sectors, the next course of action is to determine the mitigation measures and implement same.

i) **Private sector**:

Capacity development needs: The private sector as the engine of growth, source of investment and technology is fraught with challenges when it comes to CRGE activities. Generally speaking, the Ethiopian private sector's awareness of and commitment to sustainability issues is poor. Excepting multinational companies, local companies do little by way of adopting internationally recognized best practices: such as in articulating clear sustainability policies and publishing annual reports; formulating or embracing corporate governance codes; signing up-to internationally recognized accords, such as the ten principles of the UN Global Compact (all companies); or the UNEP Financial Initiative and the Equator Principles (for the finance sector). Unlike peers in Africa (e.g. Kenya, South Africa, Uganda, Tanzania), there are no business-led, national initiatives for sustainability in Ethiopia, which are comparable with the National Business Initiative (of South Africa) or the Kenya Association of Manufacturers (of Kenya). Access to finance is another constraint which the private sector is facing limiting its capacity to invest and engage in the green economy space in Ethiopia.

Capacity development response: The main strategy is for the implementing and coordinating entities (spearheaded by the EFCCC) to work towards the best practices mentioned above. A strategic partner is ECCSA and its Corporate Governance Institute, which has already been working on developing a corporate

[7] That is the "Climate and Disaster Screening" tool of the World Bank on which the WB organized training in collaboration with the National Disaster Risk Management Commission and the National Meteorology Agency.

governance code for Ethiopia. Universities are also expected to build the long-term endogenous capacity in this area providing specialized advisory services tailored to business sustainability.

j) Technology:

Capacity development needs: Identification, testing, piloting and transfer of (locally appropriate) green technologies is another constraint. Even when technologies are clearly determined (as in solar lanterns and home systems), their continued use is compromised due to lack of quality standards, guaranteed supply of spare parts and after-sales services. Demonstrating the green business case is also a big challenge as the (debt) finance sector in Ethiopia has not developed portfolios to serve green investments and activities (as discussed above).

Capacity development response: An immediate action proposed here is for the implementing entities to commission opportunity studies with a view to identify technology solutions relevant to their sector (across the whole value chain). The most promising opportunity ideas could later be developed into full-fledged feasibility studies. Local capacity for carrying out opportunity and feasibility studies already exists in Ethiopia.[8] The EFCCC, MoF-CRGE Facility and MoIT and interested private sector could be the partners for the coalition towards this objective.

k) **Policy and regulation:**

Capacity development needs: This concerns both the EFCCC and other sectors although the former is expected to play a leading role in driving and facilitating the process. Generally speaking, the enabling environment is not fully developed to enable the CRGE to realize its full potential. Broad constraints relating to policy could be in any of the following dimensions: absence of specific policies or regulations; lack of clarity and harmonization of existing policies or regulations; delay in the enactment (of pipeline policies); and weak implementation or lack of ex-post evaluation (of existing policies). For instance, the Payment for Ecosystem Services proclamation and the Green Eco-Tax (fund) have been tabled to parliament more than a year ago, but they have not been enacted so far. While energy efficiency projects by the private sector usually fall in the voluntary (self-regulation) space, this "policy choice" has not been fully explored and promoted by the concerned sector (industry and energy) and the EFCCC. Both Kenya and South Africa have national Energy Efficiency Accords which have been facilitated voluntarily by the private sector. In the same vein, our financial sector (debt finance) is not aligned to the CRGE- be it on a regulated or voluntary basis.[9] While the National Bank of Ethiopia is a principal signatory of the Sharm El Sheikh Accord[10] on Financial Inclusion, Climate Change and Green Finance, the contribution of Ethiopian banks in advancing the CRGE in a proactive manner is very limited.

Capacity development response: Here the EFCCC is expected to take the lead to engage the sectors as needed (e.g. MoTI and MoWIE on energy efficiency issues). Particularly on the idea of a national energy

[8] The Industrial Project Services is a public enterprise which has been working this space for more than 30 years.

[9] The following are some examples which Ethiopia could closely study and emulate: (1) Bangladesh: Preferential refinancing terms for guided credit by the Bangladesh Central Bank, i.e. 5% of loan portfolio to green finance; (2) China: Banking Regulatory Commissions' Green Credit Guidelines; (3) Indonesia: Roadmap for Sustainable Finance; (4) Brazil: Central Bank's Environmental Risk Management Requirements Tax breaks for investing in "Infrastructure Notes"; and (5) South Africa: Financial Charter; Regulation 28 (Pension Funds); Code for Responsible Investing Principles

[10] For more on the Sharm El Sheikh Accord, have a look at: https://www.afi-global.org/.

efficiency accord, EFCCC needs to explore and package voluntary policy approaches in the policy tool-box of regulatory, economic and informative instruments. Of course, other economic instruments (tax breaks, tariffs, preferential procurement, standards, bylaws, etc.) have to be explored. The objective should be to come up with goal and cost effective policy packages for effective CRGE implementation. Partners towards this objective could be the PSI, MoF and PDC.

1. Background

Ethiopia committed itself, as early as 2011, to transition into a carbon neutral and climate resilient economy by 2030 and, at the same time, to becoming a lower, middle-income country by 2025. In the same year (2011), it also adopted the Climate Resilient Green Economy (CRGE) Strategy, which is an ambitious goal, seeking to grow the economy, while decoupling it from its dependence on carbon based production and consumption practices.

The CRGE initiative follows a sectoral approach and its green economy plan is based on four pillars. These are: (a) improving crop and livestock production practices for higher food security and farmer income while reducing emissions; (b) protecting and re-establishing forests for their economic and ecosystem services, including as carbon stocks; (c) expanding electricity generation from renewable sources of energy for domestic and regional markets; and (d) leapfrogging to modern and energy-efficient technologies in transport, industrial sectors, and buildings.[11]

Drawing on the CRGE Strategy, Ethiopia's (first) Nationally Determined Contribution (NDC)[12] aimed to limit net Greenhouse Gas (GHG) emissions in 2030 to 145 Mt CO_2e or lower on the condition of full implementation of all the activities outlined in the CRGE strategy. This constituted a 255 Mt CO_2e reduction from the projected business-as-usual (BAU) emissions in 2030 or a 64% reduction from the BAU scenario in 2030.

Table 1 presents an overview of the NDC (of March 2017).

Table 1: Overview of Ethiopia's (first) NDC

No.	Aspect	NDC (March 2017)
a)	Baseline emissions at 2010	150 $MtCO_2e$
b)	BAU emissions projections by 2030	400 $MtCO_2e$
c)	Proposed reduction over 20 years (2010-2030)	255$MtCO_2e$ (by 64%)
d)	Intended limit of net emissions by 2030	145 $MtCO_2e$
e)	Mitigation budget	Over 20 years: $150 billion
		Per year: $7.5 billion
f)	Target conditionality	Not specified[13]
	Adaptation aspects	Implementation strategies and priority sectors included; budget not qualified

Source: *Ethiopia First NDC- updates submission (December 2020)* [available On-line at UNFCCC Ethiopia country page: https://www4.unfccc.int/sites/NDCStaging/Pages/All.aspx]

[11] FDRE (2011). *Ethiopia's Climate-Resilient Green Economy: Green economy strategy*

[12] The INDC which Ethiopia submitted ahead of COP 21 (in 2015) turned automatically into its 1st NDC once Ethiopia ratified the Paris Agreement on March 9, 2017.

[13] As a Least Developing Country, Ethiopia will need financial and technical assistance (as per the stipulations of the Paris Agreement) to implement the conditional targets in its NDC.

The three sectors, which this study will focus on (Transport, Energy and Industry), constitute three of the six mitigation sectors and three of the eight adaptation sectors identified by Ethiopia's NDC.[14] The fact that the Ten-Years Perspective Development Plan (hereafter referred to as PDP-10) continues to place emphasis on structural transformation of the economy, implies these sectors are expected to play key roles in bringing about the projected economic growth while at the same time reducing the share of agriculture to GDP. In concrete terms, in PDP-10, the share of agriculture to GDP is projected to decline from its current level of 34.5% in 2010 to 22% in 2022; whereas, the share of industry to GDP is expected to grow from 26.7% in 2010 to 35.9% in 2022 (of which manufacturing will constitute 6.8% and 17.2% respectively).[15] Likewise, the service sector is projected to grow from 38.7% (in 2010) to 42.1% (in 2022).[16] Correspondingly, work that needs to be done on mitigation and adaptation in these sectors and the associated challenges are expected to grow as well.

Starting 2021, Ethiopia needs to put its NDC to action. It must also do updates every five years, which implies it needs to engage in a continuous process of preparing, communicating and maintaining successive NDCs. Needless to say, doing that and, importantly, meeting the targets calls for huge commitments in technical and financial capacity.

According to the UNDP DEEP DIVE project document[17], the main gaps which the sectors face in implementing their planned NDCs as identified by CRGE/NDC assessment and the preliminary scoping mission carried out by the NDC Partnership[18] are: low private sector engagement; lack of capacity and awareness at all levels; poor data management; inadequate financial support to implement mitigation and adaptation actions; lack of coordination and joint planning; limited technology; limited technical capacity at national and sub-national level; limited private sector access to climate finance; lack of strong MRV system and capacity to track emissions; lack of baselines GHG emissions to account progress on emissions reductions; and lack of experience in best practices in climate actions.

The conclusions in the UNDP DEEP DIVE project document are mirrored by global the UNDP study[19] which covered 58 developing countries of which 23 were African. This study looked on country support needs for NDC implementation and identified the following as the top seven country support needs:

l) Moving from INDCs to NDC Implementation;

[14] As indicated in Ethiopia's (first) NDC- whose objectives are: (1) fostering economic development; (2) ensuring abatement of emissions; and (3) setting priorities for resilience building.

[15] የፕላንና ልማት ኮሚሽን (2012 EC). *የአስር ዓመት መሪ የልማት ዕቅድ (2013-2022): የመጀመሪያ ረቂቅ*

[16] Ibid.

[17] Deepening Efforts to Implement NDC in Ethiopia (DEEP DIVE) is a UNDP project with EFCCC as the partner, which will be implemented from January 2020 to May 2021. This Study is one of the activities supported by the DEEP DIVE project.

[18] Which was carried out in collaboration with the EFCCC in 2019

[19] UNDP (2016). *Developing Country Support Needs for the Implementation of Nationally Determined Contributions*

m) Building Support for Climate Action;
n) Assessments & Priority Setting;
o) Developing an Information Base and Monitoring Systems;
p) Institutional Arrangements;
q) Sector-specific Approaches and Access to Technology; and
r) Mobilizing Resources and Private Sector Participation for NDC Implementation.

This Report validated the above, "global" findings by providing context to the Ethiopian Transport, Energy and Industry sectors as will be further discussed in the chapters to follow.

2. Mobilization and Design

2.1. Context

The Institutional Capacity Needs Assessment was carried out on the basis of the request and guidance of UNDP and EFCCC with a view to use it as input for the formulation of Capacity Development Plans for the Transport, Energy and Transport sectors. Two milestone events, which happened in 2020-2021, provided the special context of the Study. These were the drafting and adoption of the PDP-10 and the process to revise the (first) NDC.

In response to the Terms of Reference (ToR) appended in **Annex 9.3**, the Consultant submitted a technical proposal outlining the approach and methodology envisaged for the Study. The ToR indicates that the assessment will be done from Addis Ababa with provisions for field visits to carry out project case studies (one each per sector, on need basis).

With that in mind, the Consultant prepared its technical and financial proposals. Subsequently (upon acceptance of the Consultant's offers), an Inception Report, which provided details of the proposed approach and methodology, was submitted on December 25, 2020. The Clients and other stakeholders reviewed the draft inception report and provided valuable insights and comments. Based on that feedback, the Consultant prepared and submitted a revised Inception Report on January 13, 2021. Importantly, the feedback affirmed the applicability of the proposed methodology (to be discussed later).

The assessment (deskwork and fieldwork) was carried out in the period **December 4, 2020- April 9,** 2021. **Annex 9.4** presents the work-plan. Following conceptual agreement with UNDP, EFCCC and key stakeholder (as reflected in feedback on the Inception Report), the Consultant coordinated with UNDP and EFCCC to conduct interviews with key informants identified from the three sector ministries, other sector ministries, development agencies and other stakeholders.[20] Interviews were conducted with well over 45 key informants (**Annex 9.6**). Following from that, the Draft Report findings were presented in a Stakeholder Engagement (Validation) Workshop held on March 20, 2021 (organized by UNDP and EFCCC).

The Engagement (Validation) Workshop provided useful comments and insights from the EFCCC, the sectors and other stakeholders on the basis of which a Draft Final Report was prepared and submitted. The Clients then reviewed and provided written feedback on the Draft Final Report. Following from that, a Final Report (version 1, dated 23.04.2021) was prepared by addressing those written comments and feedback through additional analysis, revisions- and importantly- incorporation of new information and a case study.

The Clients organized a de-briefing workshop on June 14, 2021 in Bishoftu town in which the Consultant presented the main findings of the Final Report. Participants of that workshop provided another round of feedback mainly intended to strengthen the editorial quality and presentation of

[20] Mr. Bemnet Teshome kindly provided vital support by providing the contact details of the key informants, who, in turn, provided additional leads to other informants (project managers or consultants)

the work. This Final Report (version 2, dated June 18, 2021) was accordingly prepared by addressing the comments given in that de-briefing workshop.

2.2. Primary clients

The primary clients of the assignment are the UNDP and EFCCC (assessment owners). However, the capacity needs assessment and development plans are intended for the transport, energy and industry sectors (implementing partners). That implies Ministry of Transport (MoT), Ministry of Water Irrigation and Energy (MoWIE) and Ministry of Trade and Industry (MoTI) should also be regarded as primary clients (owners of the study findings and its implementation).

2.3. The request for support

The context for that is provided by the UNDP Deepening Efforts to Implement NDC in Ethiopia (DEEP DIVE) project, which is a two year initiative having the EFCCC as the implementing partner. The objective of DEEP-DIVE mirrors GoE's over-arching policy goal. The project document rephrases it as follows: "achieve middle income status by 2025 through economic growth that is resilient to climate change and results in no increase in carbon emissions."

With a view to meet that objective, DEEP-DIVE proposes the following solution- in effect framing the "request for support", which this Study seeks to meet:

> "The proposed solutions by the [DEEP-DIVE] project are conducting further capacity development needs and gaps assessment and presenting capacity development plans for strengthening the capacity of NDC/CRGE sectors to implement NDCs in a way that makes sectors capable to integrate current and future climate change adaptation and mitigation measures in their PDP-10 action plans as part of NDC implementation to ensure that PDP-10 outcomes are sustainably climate proofed and resilient."

2.4. Objective and scope of the assessment

The ToR describes the objective of the assignment as follows:

> **Conduct institutional capacity need assessment** and to **plan institutional capacity building** that will enable the **transport, electric power and industry sectors** and their agencies to **integrate current and future climate change adaptation and mitigation measures in their PDP-10 action plans** as part of the **updated NDC implementation** and **ensure that outcomes of updated NDC interventions and PDP-10 actions are sustainably climate proofed** and resilient.

The objective is derived from the "proposed solution" of the DEEP-DIVE project document as discussed above. From that, it is straightforward to determine that the capacity need assessment is not intended as an end in itself but as an input to another key output, namely the capacity development (action) plan. The three sectors (Transport, Energy and Industry) frame the *target group of enquiry* and by extension the *intended beneficiaries* of the capacity development plans. The *thematic* scope is related to the issue of NDC implementation as it applies to the local context of the sectors and their institutional arrangements in Ethiopia.

2.5. Adapting identified capacity gap assessment frameworks

As already introduced in the Inception Report, the UNDP Capacity Assessment Framework[21] was unpacked and adapted as the main analytical lens for this assignment. The framework was tested during the Inception phase to analyze and filter information obtained from preliminary literature review. The feedback given on this framework (as part of the feedback to the Inception Report) was positive; the only recommendation given was to adapt it to the local context.[22] In the study, which Khan et al. (2019) did on methodologies for capacity need assessment and development planning for NDC implementation, they made reference to the UNDP framework.[23] Their work (citing also other studies) concludes that, "review of definitions by different agencies, such as CIDA, NORAD, OECD, SDC, UNDP, USAID and the World Bank, shows more similarities than differences in perspectives, with differences being more a question of semantics and focus."[24] With that observation, Khan et al. (2019) also adopted the UNDP framework to elucidate their research.

After the Inception Phase, the Consultant also reviewed the draft capacity gaps and needs assessment toolkit of the Paris Committee on Capacity-building (PCCB).[25] In particular, the six-country case study[26] on capacity gaps and needs assessment was found illustrative; the main recommendations were distilled and used to re-inforce the framework of analysis (in particular on principles for intervention design). PCCB has yet to finalize the tool, i.e. test, adjust and roll it out.[27] To a greater extent, the UNDP Framework and the PCCB draft Toolkit are complementary, especially, in terms of the approach and steps to be followed in capacity gap and needs assessment and as to how the resulting report could be structured. The UNDP Framework, in addition to having undergone rigorous applications over many years, is quite robust in two aspects. First, it provides an easy-to-understand and adaptable theory of change for *systemic* institutional capacity development efforts. Second, the concept of the "Core Issues as levers of change" lends itself for a pragmatic analysis. The PCCB case study (UNFCCC, 2009), of which the draft Toolkit is an annex, provides good guidance on the scope of work for such assessment. Importantly, the actual case study provides insightful, good-practice examples on how the six countries tackled the various capacity gaps they faced.

Hence, the consultant (as approved in the Inception Report) used the UNDP Framework as the main conceptual lens of analysis and the PCCB draft Toolkit as an additional guide and checklist on the

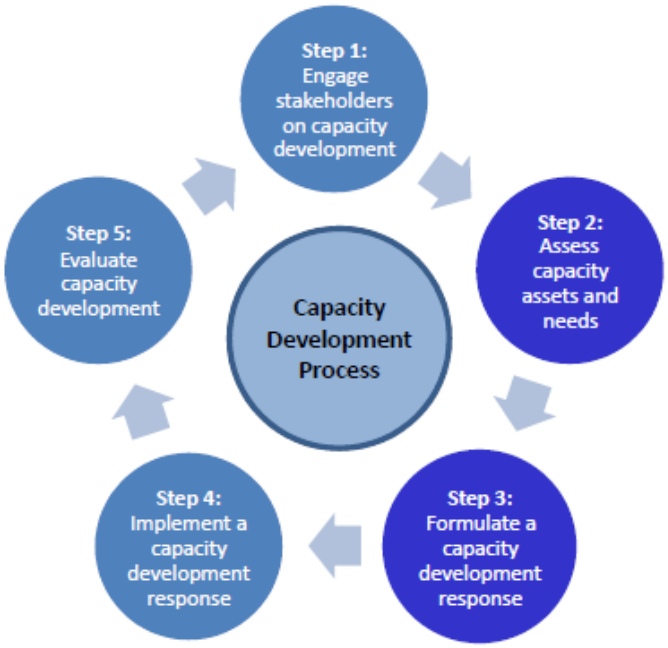
[21] As presented in: UNDP (2008). Capacity assessment methodology: User's guide; UNDP (2009). Capacity development: A UNDP primer; UNDP (n.d.). Supporting capacity development: The UNDP approach
[22] For instance feedback provided by Mr Solomon Tesfasilassie (M & E Bureau Head) on the Inception Report also suggested for adaptation of the methodology [E-mail communicated dated 01.01.2021].
[23] Khan et al. (2019). *Capacity building for implementation of nationally determined contributions under the Paris Agreement*
[24] Ibid.
[25] The Consultant would like to acknowledge the recommendation given to this end by EFCCC colleagues.
[26] UNFCCC (2019). *National-level pilot exercise on capacity gaps and needs related to the implementation of nationally determined contributions*
[27] This is one of the recommendations of the six-country cade study (Ibid.)

subject-matter at hand, i.e. NDC related capacity gaps and needs. **Annex 9.7** presents the UNDP capacity assessment framework.

Additional helping tools were also developed to support the analyses, importantly a broad Theory of Change- used to help in the identification and illustration of *systemic* interventions and with the formulation of the capacity development plans.

Figure 1 depicts the capacity development cycle. Given the scope of the ToR for this assignment, focus will be placed on Steps 1, 2 and 3. The capacity development plan forthcoming from this Study will inform how the Clients of the study, i.e. project proponents (UNDP & EFCCC) and beneficiaries (MoT, MoWIE, MoTI) could go with implementation.

Figure 1: The Capacity Development Process



Source: UNDP (2008).

According to this framework, three questions guide the gap assessment exercise, namely: 'capacity for why?', 'capacity for whom?' and 'capacity for what?' These questions will inform the need assessment enquiry and the capacity development response.

The **Capacity Assessment** exercise seeks to focus on four CORE ISSUES as a lever of change, namely **Institutional Arrangements, Leadership, Knowledge and Accountability**. This seems to be validated by UNDP's own evidence (based on many years of work), which attests, "from empirical evidence and UNDP's first-hand experience, it is in these four domains that the bulk of change in capacity happens."[28] In addition, these four issues cover many of the contexts and much of the work, which UNDP and partners do (*Ibid.*).

[28] UNDP (2008). *Capacity Assessment Methodology: User's guide*

For these Core Issues, the assessment (through interviews and desk work) are expected to highlight specific "Technical and Functional Capacities" in which the concerned stakeholders encounter limitations.

The "Points of Entry" to bring about a desired level of capacity will be at the Enabling Environment Level; Organizational Level; and Individual Level. These entry points provide a good frame of reference for the interventions under the capacity development plan.

Box 2 below provides definitions of key terminologies used in the UNDP framework.

Box 2: Definition of terminologies[29]

Capacity Assessment: An analysis of desired capacities against existing capacities that offers a systematic way of gathering critical data & information on capacity assets and needs and serves as input for the formulation of a capacity development response.

Capacity Development: The process through which individuals, organizations and societies obtain, strengthen and maintain the capabilities to set and achieve their own development objectives over time.

Core Issues:

- **Institutional arrangements:** the policies, practices and systems that allow for effective functioning of an organization or group. These may include 'hard' rules such as laws or the terms of a contract, or 'soft' rules like codes of conduct or generally accepted values.
- **Leadership:** is the ability to influence, inspire and motivate others to achieve or even go beyond their goals. It is also the ability to anticipate and respond to change. Leadership is not necessarily synonymous with a position of authority; it can also be informal and be held at many levels.
- **Knowledge:** or 'literally' what people know, underpins their capacities and hence capacity development. Knowledge has traditionally been fostered at the individual level, mostly through education. But it can also be created and shared within an organization, such as through on-the-job training or even outside a formal organizational setting through general life experience, and supported through an enabling environment of effective educational systems and policies.
- **Accountability:** Exists when two parties adhere to a set of rules and procedures that govern their interactions and that are based on a mutual agreement or understanding of their roles and responsibilities vis-à-vis each other.

Functional and technical capacities: A set of essential management skills that allow for planning, implementing and monitoring and evaluating initiatives for growth. The following five are noteworthy: Capacity to engage stakeholders; Capacity to assess a situation and define a vision; Capacity to formulate policies and strategies; Capacity to budget, manage and implement; and Capacity to evaluate.

Source: UNDP (2009). *Capacity development: A UNDP primer*

Last but not least, on the question of which terminology to use in this work, i.e. **capacity building or capacity development?** The ToR does not provide any guidance on this and seems to use the two terms interchangeably.[30]

[29] UNDP(2009). *Capacity development: A UNDP primer*

[30] In fact, the term "Capacity Building" is used ten times in the ToR whereas "Capacity Development" is used four times.

Again, if we look into our UNDP Capacity Development toolbox, there is a clear distinction between these terminologies. Another useful publication[31] from the UNDP Capacity Development Group provides the following insightful definitions:

> **Capacity development** commonly refers to the process of creating and building capacities and their (subsequent) use, management and retention. **This process is driven from the inside and starts from existing capacity assets.**
>
> **Capacity building** commonly refers to a process that supports only the initial stages of building or creating capacities and is **based on an assumption that there are no existing capacities to start from**. It is therefore less comprehensive than capacity development. The OECD/DAC writes that capacity building 'suggests a process starting with a plain surface and involving the step-by-step erection of a new structure, based on a preconceived design. **Experience suggests that capacity is not successfully enhanced in this way.' Capacity building can be relevant to crisis or immediate post-conflict situations where existing capacity has largely been lost due to capacity destruction or capacity flight**.

Obviously, the term Capacity Development appears most appropriate to use in this Study. The following arguments can be made in favor of that statement. First, Ethiopia is an early adopter of the green growth concept having enacted its CRGE strategy as early as 2011. It also followed that strategy with its INDC submitted to the Paris Agreement in 2015. Second, the country has been implementing numerous projects and initiatives on adaptation and mitigation measures especially in the period 2011-2021 as was also evidenced by the capacity needs assessment studies commissioned during that period. Those capacity needs assessment studies (reviewed in this work) confirmed that there is some level of technical capacity on CRGE implementation and by extension on NDC implementation as well. **Hence, this Study proposes to adopt and use the term Capacity Development.**

[31] UNDP (2009). *Frequently asked questions: The UNDP approach to supporting capacity development*: Bureau for Development Policy

3. The Capacity Assessment

3.1. Overview of study methodology

The assessment methodology combined desk research and field works.

The desk research (literature review) comprised two components. The first one (discussed in **Section 3.5**) focused on identifying pertinent guidelines on capacity gap assessments (as it applies to implementation of NDCs). Here, the UNDP Capacity Gap Assessment Framework and draft PCCB concept and draft Toolkit provided the conceptual framing of the exercise, which was also informed by other studies (discussed in **Section 4.3**).

The second part of the desk research was concerned with review of previous assessments on CRGE/NDC capacity needs, which were identified during the inception phase and additional ones identified in the course of the study leading up to this report (See **Annex 9.6**).

The field work involved Interviews (with key informants and focus groups) and site visits (to carry out project case studies of selected mitigation or adaptation projects).

Interviews took the form of face-to-face discussions with key informants based on questionnaires and interview guides. Where permissible, focus group discussions were held involving small teams of experts owing to the limitations posed by the Covid-19 pandemic. Key informants were identified in consultation with EFCCC, UNDP and the Environment and Climate Change Directorate (ECCD) of the three sectors. (**See Annex 9.6 for the complete list of interviewees**).

The questionnaires were of structured type (**Annex 9.2**) based on open-ended questions. They were crafted by taking into account the following: the objective of the assignment as articulated in the ToR; the Capacity Development CORE ISSUES of the adapted framework; and also keeping in mind the Theory of Change (discussed in **Section 6.2**).

Mindful of the fact that, there were other capacity gaps and needs assessments studies previously conducted in the same vein**, interviews were framed as "forward looking" in their purpose.** That is to say the overarching purpose of the enquiry was unpacked to the interviewees in the following manner: **What capacity needs do we still have as we go into implementation of the NDC in the PDP-10 horizon? Out of the many gaps and needs, which ones are the priorities in your sector, which capacity development interventions could bring about systemic and sustainable change?**

Project case studies (of the exploratory type) were also carried out with a view to distil successes, challenges and dilemmas, and capacity gaps and needs limiting successful implementation. The projects were selected in consultation with experts of the three ministries and their affiliated institutions and relate to adaptation and mitigation aspects. In addition, some interesting experiences observed in certain institutions (linked to the three sectors) were also profiled into additional case studies to inform the analysis and strengthen the recommendations. The case studies are separately presented in **Annex 9.1**.

3.2. Key insights distilled from literature specific to NDC capacity development

Capacity development in the context of NDC implementation is an emerging concept. However, the Consultant reviewed selected literature to extract guidance with a view to inform this Study. Also, one value-add this particular study could make is reviewing and summarizing good-practice ideas from the NDC capacity development literature (an additional objective of this Section).

With that in mind, the following studies and reports were reviewed with some level of depth.

- *National-level pilot exercise on capacity gaps and needs related to the implementation of nationally determined contributions* (PCCB, 2019);
- *Developing Country Support Needs for the Implementation of Nationally Determined Contributions* (UNDP, 2016);
- *Integrating Climate Action into National Development Planning: Coherent Implementation of the Paris Agreement and Agenda 2030* (Sida, 2017);
- *Planning for NDC implementation: Quick start guide and reference manual* (CDKN, 2016); and
- *Capacity building for implementation of nationally determined contributions under the Paris Agreement* (Khan, M. et al., 2019)

3.2.1. National-level pilot exercise on capacity gaps and needs related to the implementation of nationally determined contributions (PCCB, 2019)

This UNFCC/PCCB technical paper[32] is reviewed with some level of detail in this report for two reasons. First, it provides the latest information and understanding on capacity gaps and needs as it relates to NDC implementation drawing on country case studies and additional desk research. Second, the findings and guidance is vouched by the PCCB (an expert committee tasked to spearhead capacity development in NDC implementation) which is also seeking to finalize a standardized toolkit in 2021.

The following are the key findings and recommendations distilled from this study. **Box 3** provides sector-specific findings relevant to the implementing partners addressed in this work.

- The importance of capacity building has been recognized in Article 11 of the Paris Agreement, as well as through **the promotion of education, training, and public awareness (Article 12), and the establishment of the Capacity-building Initiative for Transparency (CBIT) (Article 13).**

[32] The paper is based on national-level pilot exercise undertaken voluntarily by six PCCB member countries, i.e. Burundi, Dominican Republic, Georgia, Guatemala, Indonesia and Saint Lucia. These countries gathered information on the NDC implementation capacity gaps and needs and submitted their findings to the UNFCCC secretariat. The technical paper compiled and collated the submissions and complemented the national-level assessments of capacity gaps and needs with insights from desk research and interviews.

- Common capacity gaps and needs persist on cross-cutting issues such as **standardized data generation, collection and analysis**; **governance and coordination**; **development of endogenous capacity**; **access to climate finance**; and **gender-responsiveness**.
- Addressing capacity gaps and needs at the national level must go hand-in-hand with addressing similar **gaps and needs at the local level, both for public sector entities as well as for non-State actors such as the private sector, civil society, academia, media, religious leaders and young people**.
- Having the **capacity to generate, collect and analyze** standardized data is a prerequisite for devising and adjusting specific policies and actions to achieve the adaptation and mitigation components of a country's NDC, as well as for accessing and efficiently and effectively using support from international sources.
- Capacity gaps persist at the systemic, institutional and individual levels.
- At the systemic level, there is often a **lack of legal frameworks to ensure the coordination and standardization of data generation and collection among different stakeholders across different sectors both at and between the national and local levels.**
- At the institutional level, there is a frequent absence of formal methods for the regular and standardized collection and storage of data as well as technical means, such as software applications, for using available data for monitoring and forecasting purposes.
- At the individual level, technical capacity gaps on data recording and analysis were highlighted.
- **Governance and coordination:** The implementation of NDC requires its integration into various sectoral policies, programs and budgeting, and therefore requires strong coordination efforts between and within relevant ministries and other government entities at both the national and local levels.
- **Development of endogenous capacity:** Putting in place and retaining sufficient systemic, institutional and individual capacities to ensure the successful implementation of NDC requires the development of endogenous capacity, namely **capacity that is locally or nationally owned and independent from international support. [The direction should be] a more strategic use of international expertise through working arrangements where international experts work as peers with their local counterparts.**
- **Access to climate finance:** There continues to be capacity gaps at the institutional and individual levels regarding **the development of project proposals for accessing different sources of climate finance, in particular adaptation finance.**
- **Gender-responsiveness:** Most of the countries of PCCB members participating in the pilot exercise highlighted in their NDCs the importance of **gender equality and gender-responsive policies and programs for effective climate action.** In some countries, specific capacity gaps and needs were identified with regard to ensuring that NDCs were implemented and updated in a way that is gender-responsive.

Box 3: Recommended sector specific adaptation and mitigation actions

Specific findings: Adaptation

- **Disaster risk reduction**
  - Fostering education, training and public awareness of climate risks and adaptation technologies;
  - Strengthening disaster preparedness programmes and early warning systems.
- **Energy**
  - Developing climate-resilient energy systems
- **Infrastructure**
  - Climate-proofing infrastructure and housing

Specific findings: Mitigation

- **Energy**
  - Fostering an **enabling environment for the development and use of renewable energy technologies** and energy-efficient appliances, including local value chains;
  - Building the capacity of **the private sector** in relation to energy efficiency;
  - Developing the technical capacity to manufacture energy-efficient cook stoves;
  - Introducing standards for energy-efficient buildings**.**
- **Transport**
  - Developing a nationally appropriate mitigation action for the transport sector;
  - Introducing more efficient vehicles and improving and expanding public transportation.

3.2.2. Developing Country Support Needs for the Implementation of Nationally Determined Contributions (UNDP, 2016)

UNDP did this survey in 2016 to assess countries' capacity development support needs as they prepared for implementation of their NDCs. It focused on NDC implementation planning and capacity development technical assistance needs. It covered 58 developing countries of which 23 were from Africa. Accordingly, the top four needs identified by respondents were capacity development/technical support for: (a) mobilizing resources for NDC implementation (77% answering "extremely relevant"); (b) developing NDC implementation plans (67%); (c) developing/improving information base and monitoring systems (62%); and (d) building institutional structures and coordination mechanisms (61%). In addition to these support areas, qualitative comments received from respondents also noted the need for: trainings or consultations with stakeholders in key economic sectors; IPCC greenhouse gas (GHG) inventory methodologies, and emission factor studies; understanding the application of market mechanisms; and developing the capacity of industry, and local and federal governments to identify opportunities for mitigation and adaptation.

The survey categorized the needs and additional interest areas into seven "key themes" as shown in **Box 4.**

Box 4: Key themes identified by UNDP survey of country support Needs for NDC implementation

a) Moving from INDCs to NDC Implementation
b) Building Support for Climate Action
c) Assessments & Priority Setting
d) Developing an Information Base and Monitoring Systems
e) Institutional Arrangements
f) Sector-specific Approaches and Access to Technology
g) Mobilizing Resources and Private Sector Participation for NDC Implementation

3.2.3. Integrating Climate Action into National Development Planning: Coherent Implementation of the Paris Agreement and Agenda 2030 (Sida, 2017)

This guide (part three of a series of guides) was selected due to the focus it places on NDC implementation, national development planning and SDG 2030. The Swedish International Development Cooperation Agency (SIDA) commissioned the three-part series of guides to support implementation of the Paris Agreement. The following are the main findings, which could help elucidate this assessment.

- Dealt with in isolation, there is a **risk that NDCs could result in countries focusing on a narrow range of sectors, particularly those relevant to emissions reductions**. This would run contrary to the principle that the 17 SDGs are indivisible and must be implemented in a coherent and mutually reinforcing way.
- **It is critical for development agencies to align their support to partner countries for SDG and NDC implementation with national strategies and development priorities.**
- The 17 SDGs are to be implemented in a nationally determined way while respecting the indivisible and integrated nature of the goals. The Goals include SDG 13 on climate action which directly references the UNFCCC and makes an explicit link with NDCs and NAPs in Target 13.2 and the associated indicator.
- **The green economy approach and narrative provide a useful way to link the SDGs and NDCs and their implementation.** The Global green Growth Institute (GGGI) provides technical assistance focusing on green growth and SDG/NDC co-benefits for particular sectors and emphasises achieving the SDGs in a climate compatible way (*Ethiopia is one of the countries which has adopted the green economy approach through its CRGE strategy*).
- **Adaptation actions delivered by NDCs and NAPs can also result in benefits for the SDGs, by building resilience in sectors and disaster risk reduction.** Two of the targets in SDG 13 directly relate to adaptation: target 13.1 on strengthening resilience and adaptive capacity and target 13.2 on integrating climate change policies into national policies, strategies and planning processes (*Ethiopia finalized its NAP in 2017 and submitted it to the UNFCC in 2019*).
- Beyond government, there is also a need to **engage society at large** in delivering the SDGs and making the transition to low carbon, climate resilient development. **Civil society, business and local authorities all need to play a role.**

- There are many opportunities to deliver win–win outcomes and co-benefits from **an integrated approach to NDC and SDG implementation.** The experience bilateral donors have from years of working on policy coherence for development, donor harmonisation, country ownership, alignment and managing for results is directly relevant to this new paradigm.
- The SDGs provide **a development first framing** for NDCs and if well-coordinated could help to increase the ambition of NDCs and ensure zero poverty and zero carbon go hand in hand.
- In some countries NDCs are the driver while in others it is the SDGs or **a green economy approach**. It is critical for development agencies to align their support to partner countries for SDG and NDC implementation with national strategies and development priorities [*Note: In the case of Ethiopia, both GTP II and PDP-10 included the green economy concept (CRGE) as one of their pillars.*]

3.2.4. Planning for NDC implementation: Quick start guide and reference manual (CDKN, 2016)

This resource is actually a step-by-step "how to do" manual on NDC planning and implementation prepared by the Climate and Development Knowledge Network (CDKN) in 2016. Hence, what are summarized below are the overarching findings and recommendations.

- NDC implementation can **build on and strengthen wider development and social policy, with NDC commitments representing the opportunity to fundamentally shift a country's approach to economic development and poverty alleviation.**
- Climate change actions identified in NDCs can be integrated and **embedded into development planning; they do not necessarily need to be a new and separate process [***Remark: Ethiopia has worked to integrate the CRGE into GTP II and PDP-10; Ethiopia's NDC is derived from the CRGE with revisions*].
- Notably, **implementing NDCs can support the achievement of the Sustainable Development Goals (SDGs**) across all sectors and levels of government.
- The implementation of NDCs can also support other, related international frameworks and agreements, such as the **Sendai Framework for Disaster Risk Reduction 2015–2030.**
- **A gender sensitive approach to climate compatible development** means recognizing and addressing the different interests, needs and adaptive capacities of men and women to climate change.
- To achieve all of this, **political leadership at the highest levels** will be needed, along with a clear governance structure for implementation. Developing an **NDC implementation plan** is the first step towards this.

Concerning common "how to" questions in implementing climate policy, the manual identified the following:

- Build awareness of the need for, and benefits of, action among stakeholders, including key government ministries;
- Mainstream and integrate climate change into national planning and development processes;
- **Strengthen the links between subnational and national government plans on climate change**

- Build capacity to analyze, develop and implement climate policy; and
- Establish a mandate for coordinating actions around NDCs and driving their implementation.

On the three main steps of national NDC implementation, the manual provides the following guidance:

- **Step 1- Preparatory work:** Before starting work on their NDC implementation plan, countries will need to confirm the **objectives of their NDCs**. They will also need to define the scope of their NDC implementation plan, its timeframe, how it will relate to existing plans and processes, and its status.
- **Step 2- Developing the NDC implementation plan**: Each country will approach the development of its NDC implementation plan as appropriate to its national circumstances. However, it is likely that, in each case, this process will include**: (a) gap analysis to identify priority activities; (b) an assessment of resource needs; (c) sequencing of activities; and (d) documenting the NDC implementation plan.**
- **Step 3- Delivering the plan:** Achieving NDC commitments will involve ongoing effort, coordination and engagement across governments to implement the activities in the NDC implementation plan. The majority of implementation activities are likely to be undertaken at the sectoral and subnational level, and many actions **will need to be delivered by non-state actors**. Consequently, a number of cross-cutting issues should be considered: the coordination of climate actions; **capacity-building**; **stakeholder engagement**; **and updating the NDC.**

3.2.5. Capacity building for implementation of nationally determined contributions under the Paris Agreement (Khan, M. et al., 2019)

This is an article written by three authors[33] and published on the Climate Policy Journal in September 2019. It is an insightful study and hence was reviewed with some level of detail. Its main findings and conclusions are summarized below:

- The need for capacity building is evidenced by the fact that, out of the 169 NDCs submitted, 113 developing countries made capacity building a condition to NDC implementation and this is the most frequently requested type of support (citing Pauw et al., 2019).
- The Paris Agreement includes capacity building as one of its main pillars through **Articles 11 (capacity building), 12 (education, training and awareness) and 13 (transparency),** with Article 11 also establishing the need for the PA to 'be guided by **lessons learned' (Article 11.2).**
- Most of the literature suggests that capacity building covers three levels: individual, organizational, and societal/systemic (citing OECD, 2006; CHF, 2008; UNDP (2014, 2009); World Bank (2005, 2009); and Pearson, 2011).
- Efforts so far have mostly been **project-based, short-term, foreign consultancy-driven and workshop-focused ad-hoc initiatives**, with no system of capacities left behind (citing Hoffmeister, 2016).

[33] Mizan Khan, David Mfitumukiza and Saleemul Huq

- A new framework for capacity building needs to be established, i.e.: with a capacity building mechanism under the UNFCCC; **developing country universities as the central hub; strengthened partnerships; and a long term financial support system.**
- Article 11 of the Paris Agreement points to a potentially new paradigm for capacity building: **Universities in developing countries should serve as central hubs for a sustainable, institution-based capacity building system, supported by strengthened partnerships and long term financing.**
- Whatever way capacity building is conceptualized, there is an agreement in the literature that **the key to success is ownership of the process and products.**
- For the next round of NDCs, developing countries should be more explicit and specific in their demands and approaches to capacity building.
- One of the nine elements of the Work Plan to be coordinated by the PCCB is to explore **means of ensuring national ownership.**
- The Marrakech Capacity Building Framework adopted in 2001, and its three reviews, have largely guided capacity building efforts under the UNFCCC .This Framework includes 15 areas of focus for capacity building in developing countries as well as six priority areas for LDCs and SIDS. The latter include **institutional strengthening, establishing research and training centers, assessment of vulnerability and implementation of adaptation measures, and strengthening of meteorological and hydrological services.**
- As adaptation is mostly local and region-specific, **field-based learning-by-doing** is key to finding locally specific solutions.

Khan et al. (2019) argue that capacity building efforts in the context of NDC implementation should have the following features:

- **Cover different levels and scales**- involve people, organizations, institutions and society as a whole and their interactions, ultimately as society-wide development of capabilities;
- **A dynamic process, adaptive** with evolving developments in reality, knowledge and skills;
- **A long-term issue**, requiring investment of time and resources;
- Be **driven from the inside as an endogenous process**, based on ownership, where external support can only facilitate, not implant; and
- **Strengthen existing capacities to ensure sustainability**, **with anchoring of the processes in permanent institutions** backed by adequate policy and financial support.

The four top recommendation of this study are:

a) **Universities in developing countries should serve as the central hub of capacity development:** Universities provide a tested institutional arrangement on education, training, public awareness, research and technology development. Historically, universities have proved to be the most sustainable capacity building arrangement, as powerful arbiters of knowledge in societies with their impact reaching beyond their boundaries [citing Blume et al. (2017), Huq (2016), and Winthrop et al (2015)]. Universities have the ability and minimum logistics needed to generate both generic and specific capacities, creating a synergy for sustainably enhancing

overall capacity for development and climate change [citing Lemos et al. (2013)]. They have a ripple effect across all segments and sectors of society, from reaching students (through curricula) to supplying graduates and experts, thought leaders and policy makers. Even the small LDCs have at least one university, with a certain level of multi-and-interdisciplinary expertise across disciplines, including environmental science and natural resource management.

b) **It is crucial to strengthened civil society networks and partnerships:** At the climate negotiations, universities, think tanks, national and international NGOs, women, youth and indigenous groups, and other stakeholders all participate, sharing their experiences, research and advocacy materials. Since 2017, several South–South and North–South university partnerships have been established. For example**, the LDC Universities' Consortium on Climate Change (LUCCC),** endorsed by the LDC Ministerial meeting in 2018, exactly aims at building institutional networks and partnerships for promoting education and research on climate change through development of expertise, exchange of faculty, researchers and students across LDCs universities and beyond.

c) **Long-term financing is vital:** Capacity building requires dedicated, long-term programmatic support to have a sustainable impact. Although a new approach was agreed by successive multilateral declarations **on enhancing aid effectiveness in three meetings held in Paris, Accra and Busan during 2005, 2008 and 2011** respectively, all emphasizing recipient ownership and mutual accountability, practices have not changed much [citing Kühl (2009) and Awdsley et al. (2014)].

d) Internationally, aim for a Capacity Building Mechanism (CBM) under the UNFCCC: This would be similar to the existing Technology Mechanism. Its purpose would be to marshal, coordinate and monitor resources and activities for Capacity Building. The CBM could carry out the following activities at international and national levels: **promoting human resource development through education and training at universities; facilitating and promoting networks/partnerships globally; and developing metrics for monitoring and evaluating CB activities. The CBM could also track capacity building finance flows in the Biennial Reports (BRs), and the channels and recipients of these flows. In addition, it could facilitate linkages with the financial mechanisms, to align CB and finance flows.**

4. Summary of Findings of the Capacity Needs Assessment and Interpretation of Results

The objective of this Section is to describe the capacity needs of the three sectors based on the desk and field research carried out including the project case studies. The Consultant carried out extensive interviews at the federal level[34] and conducted additional assessments in the Southern Nations Nationalities and Peoples (SNNP) Regional state. While in the SNNP Regional state, a cursory assessment of one rural sub-City of Hawassa town (namely Hawela Tula) of the newly formed Sidama Region was also carried out.

The consultant also reviewed previous capacity need assessment studies. Specifically, four key studies were selected and their findings distilled based also on guidance from the Clients. These are: (a) the respective sector's PDP-10; (b) The CRGE 2011-2019 Implementation Progress Assessment Report; (c) National Capacity Development Program Gap Assessments and Findings (CRGE Facility, MoF); and (d) the findings of the NDC Partnership preliminary scoping mission carried out in collaboration with the EFCCC in 2019.[35]

Other capacity needs were identified from the project case studies conducted. In addition to the three, sector cases studies, the consultant did two additional exploratory case studies (Case Studies No. 4 and 6) to elucidate existing practices in and opportunities for endogenous capacity development in the context of partnerships with local universities .

The data from these sources was logged into a spread sheet (MS Excel). The needs were further categorized into NDC relevant themes and further analyzed by the Capacity Gap Core Issues of the framework of analysis. Further analysis was done to filter the most pervasive capacity needs. Appropriate charts were generated to indicate the findings/results by NDC capacity-building-need themes and by capacity gap core issues.

The findings of this capacity needs analysis along with the proposed intervention ideas were compiled and the results were presented to stakeholders in the validation workshop held in Bishoftu on March 20, 2021.

Based on the comments and feedback obtained, the Consultant shared the consolidated capacity needs (gleaned from the various sources) mentioned above to the respective sector ministries for verification. The purpose was four-fold, namely for the sector ministries to: (a) confirm if the assessment has not missed any major capacity needs specific to NDC implementation (forward looking); (b) give feedback on whether the prioritization of the need-themes reflects their experiences so far; (c) validate the interventions proposed and suggest additional ones if any; and (d) finally indicate, which interventions, they are willing to own and drive. This "Verification Process"

[34] As called for by the ToR

[35] This was one of the feedbacks given by UNDP on the IR.

was very useful, as it helped the study to transition from constraint analysis into the most important stage of collaborative intervention design- a crucial step in Capacity Needs Planning.

With that in mind, the results are presented separately for the Transport, Energy, Industry sectors. A separate section (cross cutting interventions) is added for the "EFCC" sector; the purpose of this is to inform cross-sectoral interventions which the EFCCC need to own and drive as part of its support to NDC implementation in all the CRGE sectors.

The sections are organized in such a way that they provide uniform information on four issues, namely:

- Highlight of the sector's CRGE relevant information;
- The sector's PDP-10 overview ;
- Highlight of sector's CRGE performance to date and future perspectives; and
- Mapping of the capacity needs identified; and interpretation of results.

It is important to mention that the sectoral PDP-10 overviews provided[36] are those issues which are believed to have direct and indirect relationships with CRGE and NDC implementation such as on project activities planned; overall budgets or revenues; objectives relating to efficiency and sustainability; and, where available, mitigation and adaptation targets.

4.1. Transport

A high-level highlight of the Transport sector as it relates to CRGE and NDC issues is presented in **Box 5.**

Box 5: Transport sector CRGE relevant information

Relevant policies & strategies

Transport Sector NAP Implementation Roadmap (2020-2030); Climate Resilient Transport Sector Strategy; Transport Policy of Addis Ababa (2011); Transport Policy of Ethiopia; National Non-motorized Transport (NMT) strategy 2020-2029; Regulation to limit the age of second-hand vehicles imported

CRGE structure (Federal):

- Ministry of Transport;
- Environment and Climate Change Directorate;
- Two teams: Climate Change Team and Environment and Social Impact Monitoring Team.

CRGE structure (Regional)

- Oromia (Transport Authority); Amhara (Transport & Roads Development Bureau); SNNP (Transport and Roads Development Bureau); Addis Ababa- various entities (Transport Authority, Roads Authority, Transport Bureau);
- SNNP case: One focal person at regional level;

Project portfolio

[36] Extracted from the official PDP-10 documents, i.e.: PDC (2021). *Ten years development plan: A pathway to prosperity 2021-2030*; and □□□□□ □□□ □□□□ (2013 EC). □□□□ □□□□ □□□ □□□□□ (2013-2022)

- FTI: Share the Road, Smart Parking
- Flagship projects: LRT System, Awash-Hara Gebeya-Mekelle electric railway system, Ethio-Djibouti Electric Railway, Electric Mobility Project (new)

4.1.1. Sectoral PDP-10 overview

The **focus areas** of the transport sector development plan for the coming ten years (2020/21-2029/30 Gregorian calendar) are:

- Expansion of transportation infrastructure and services;
- Provision of efficient logistics services;
- Increasing the participation of the private investors in the sector; and
- Strengthening the sector's institutional implementation capacity, including mainly human resources, organization, policies and legal frameworks.

The principal **objectives** of the transport sector are to:

- Ensure the security, *equity, accessibility and quality of transportation infrastructure* and services;
- Provide rapid and reliable logistic services;
- Make transportation infrastructure and services **resilient to climate change**;
- Improve the performance of the subsector by developing implementation capacity.

The following are the main **targets**:

- Expand road infrastructure, i.e. build 102,000 km new roads, thereby raising the overall national road network from 144,000 km to 246,000 km; upgrade the standard of 28,000 km existing roads; and increase the total length of expressways from 301 km to 1,650 km;
- Increase the total length of the rural roads built through the "Universal Rural Roads Access Program" (URRAP) from 56,000 km to 109,000 km; and raise the proportion of roads in good condition from 58% to 87%;
- Expand transportation services, i.e. raise the number of truck terminals from 1 to 23; increase the number of dry ports from 8 to 11; build 1,000 product and input storage centers; increase the number of cold storage facilities from 3 to 6.
- Increase the length **of railway from 902 km to 4,199 km;**
- Raise transport service coverage from 67% to 100% in rural areas and mass transport service coverage from 34% to 70% in urban areas;
- Increase the number of intercity transboundary public road transport links with neighboring countries from 1 to 6;
- Increase the number of **cross-country rail passengers from 79.19 thousand to 448.6 thousand, and raise the capacity of the Addis Ababa light rail transport service from 75 thousand to 200 thousand passengers per day;**
- Improve the country's global ranking for logistics performance from 126th to 40th;

- **Reduce transport sector's greenhouse gas emissions from 41 million metric tons to 27.8 million metric tons of carbon dioxide equivalent;**
- **Increasing annual Road Fund income from Birr 2.94 billion to Birr 14.2 billion;** increasing annual revenue from transportation related services fees from Birr 2.39 billion to Birr 7.71 billion; launching 23 public-private partnerships projects; **creating 1.425 million job opportunities in the transport subsector.**

4.1.2. Overview of CRGE performance and future perspective

An overview of the CRGE performance of the sector and its future perspective is provided below distilled from the Sector's PDP-10:

- The sector's baseline emission (around 2003 EC) was about 1.5MTCO_2e equivalent GHG;
- In 2009 EC, the emission reached 5.3 MTCO_2e;
- If this BAU scenario continues and no aggressive mitigation measures are taken, this is projected to reach **about 40MTCO_2e by 2022 EC;**
- **A strategy adopted to bring about meaningful reduction of emissions from the sector is to focus on public and freight transportation with a view to improve fuel efficiency of vehicles and shift from internal combustion to electric engines; the Addis Ababa Light Rail Transit** (LRT) **system and the Addis-Djibouti rail system;**
- The two electric rail systems were able to reduce 42.5kTCO_2e of emissions in 2011 EC only;
- By reducing aircraft ground time (take-off and landing) from 15 and 20 minutes to 3 and 2.5 minutes, it was possible to reduce 5.2 million liters of aircraft fuel per annum;
- About 2.1 million trees were planted in 2011 EC to counter the emissions from the sector;
- However, results so far are not satisfactory; forward looking, more needs to be done;
- Future focus of the new planning period: **increase carrying capacity of public buses; introduce an electric** Bus Rapid Transit (BRT) **system as against one based on diesel engine; diversify electric train transportation & provide required infrastructure/power; plant trees.**

The CRGE Implementation Assessment (2011-2019) report (EFCCC et al, 2019), provides the following additional details:

- The MoT was allocated funds for two CRGE Fast Track Investment (FTI) projects – (a) smart parking to improve traffic flow and emissions reduction; and (b) share the road – non-motorized transport for walking and cycling for urban mobility;
- Of the two, progress was made on the first, and the non-motorized transport suffered problems during the planning stages and was stopped;
- In terms of the smart parking project, one location was completed and is under operation, but GHG calculation and estimation of impact was not undertaken in the project cycle since the initiative was always regarded as a small, pilot effort;
- The GHG calculation element was not embedded within project design.

4.1.3. Findings of capacity gap assessment

Table 2 summarizes the capacity needs of the **Transport Sector** as gleaned from the review of the key studies and the interviews.

Table 2: Transport sector- Capacity needs in CRGE & NDC mainstreaming and implementation

Source of information	**Capacity gaps and needs identified**
PDP-10	Low priority given to design and build transport infrastructure in a **climate resilient** manner
	Few interventions/projects working towards reducing the GHG emissions by the sector
	Low priority afforded to **environmental protection** in the sector
	Poor technical capacity in design and construction services of transport infrastructure to enhance their **resilience to climate change adverse effects**
CRGE implementation assessment (2011-2019)	Insufficient **data available to estimate emissions avoided or reduced**
	Several projects in this sectors were **small-scale pilots** unlikely to yield large GHG reductions although better than the Industry sector for instance;
	No readily consolidated & accessible database, where detailed Measurement, Reporting and Verification (MRV) could be tracked or recorded.
	MRV system not methodologically consistent and comparable
	Poor M&E system.
NDC Partnership preliminary scoping mission	Inadequate capacity in MRV, data collection, data management, to establish standards, regulations, directives
	Inadequate **financial support** to implement mitigation actions
	Lack of **coordination and joint planning** between city and transport planners – local level
National Capacity Development Program Gap Assessment	***Human resources*** *related capacity gaps in the competence areas of:*
	Analysis and strategic and operational planning (no capacity for understanding relevant climate change/ climate risk, social or economic analysis required for defining CRGE options; staffs are not able to demonstrate evidence of how to translate and operationalize CRGE strategies into the context of their sector/geography)
	*Resource mobilization and attracting finance for CRGE implementation (*no staff with mandate for resource mobilization; no skills and knowledge exist in relation to international finance requirements and contract negotiation; regional bureau staffs do not have skills to prepare accurate budgets)

Source of information	Capacity gaps and needs identified
	Management of effective CRGE delivery competence areas (**no mandates for CRGE deli**very allocated to existing staff; only a few experts understand the mechanisms available to them for enabling effective coordination; no skills/competence to establish or manage shared filing or information management systems)
	Organizational *gap in competence areas of:*
	Analysis and strategic planning for CRGE mainstreaming (CRGE goals are not considered in Ministry/ Bureau's Vision and Strategy; there are no staffs with the mandate to coordinate and quality assure planning; the overall CRGE strategy is not translated into operational plans;
	Resource mobilization and attracting finance for CRGE implementation (international climate financing requirements are not documented or understood)
	Management of effective CRGE delivery & ***Knowledge Management for CRGE implementation*** (**no organizational mandate** for **monitoring progress and learning** from delivery or from research and innovation- to capture and inform delivery improvement; no staffs with the organizational mandate for CRGE coordination with stakeholders (i.e. engaging with private sector or NGOs); no knowledge management strategy is followed and no staffs have knowledge management responsibilities)
	System gap in:
	Operational planning (**no systems for capturing or making available to staff relevant technologies and practices that may improve response to CRGE priorities**; no operational planning process for CRGE strategic priorities to be consolidated with development priorities and climate risks/ opportunities)
	Effective and efficient resource allocation (**no system for prioritizing or mobilizing funding opportunities and allocation of time to different resource mobilization activities; no templates or established systems for financial management**)
	Responsive delivery (systems in place to disburse CRGE funds to point of delivery and a performance management system that can be applied to CRGE delivery, but they are not regularly used)
	Knowledge Management for CRGE implementation (no functional system or coordination structures on CRGE related issues as well as no documented system for compiling and managing information).
Interviews and focus group at federal level (MoT, ECCD team)	**Access to Finance** is the number one binding constraint as the projects with mitigation potential are capital intensive
	Data management system: No central information repository; reporting is based on rough estimates and not regular; Anecdote: even the number of vehicles in the country is not accurately "known".
	Knowledge management and staff turnover:
	Top management change quite frequently and with that loss of institutional memory is a problem;
	Trainings are one-off types usually very broad and not tailored to specific skills needs;
	Turn-over of staff (including trained staff) is high; unattractive pay scale is believed to be the main cause of the turn-over

Source of information	Capacity gaps and needs identified
	Number of staff of the ECCD is not adequate and its organizational structure is not fit-for-purpose (the two units need specific skill-sets and professionals)
	Structures within regions: The ECCD is not represented well within the regional bureaus; the ECCD does not have clear authority to instruct the regional transport bureaus on CRGE or the NDC issues (cooperation is based on goodwill); the structuring of the bureaus is not consistent, i.e. Oromia (Trans[port Authority); Amhara (Roads and Transports Bureau); SNNP (Roads and Transports Bureau); Addis Ababa- various entities (Transport Authority, Roads Authority, Transport Bureau)
	Support from the EFCCC is not adequate: MoT has about ten specialized institutes under it; EFCCC expects reporting from MoT (on CRGE activities) but it does not provide the requisite technical and financial support (at best it offers only one-off training seminars; no dedicated budget to MoT)
	Budget constraints: The ECCD has very limited budget even for organizational activities (e.g. field observations, training, etc.); of course, it has no project-specific budget over which it has direct control (sources for the projects mentioned are either the federal government or donors)
	The flagship projects with emissions reduction potentials not successful or not fully completed:
	Share the Road Project was not successful; the main reason is that the site selected was not suitable as it was crowded by informal traders, cars, pedestrians and also affected by garbage dumping
	The electric railway (Addis Djibouti, passenger & cargo) not yet complete; electric vehicles not yet rolled out
	Lack of clear and accurate data: on emissions from vehicles including total mileage, fuel consumed, passengers travelled; GHG emissions data from cars is based on rough estimates; that includes also baseline figures
Interviews and focus group at regional level (SNNPR Transport and Road Development Bureau)	The structure is not conducive at the Bureau/Regional level to discharging CRGE activities
	Budget is insufficient
	Multiple responsibilities; the CRGE function is additional responsibility
	There is no baseline on emissions data from the sector in the Region & no skills in MRV
	No accountability system (The Regional government does not evaluate what the bureau is doing on CRGE issues)
	No accountability system (MoT does not request data/report from the bureau on CRGE issues)
	Major programs (like URRAP) have no assigned CRGE experts
Insights from sectoral case study (LRT project)	Lack of guidance and oversight from MoT (Region)
	Lack of understanding on the business case of putting in place MRV systems (LRT)
	Lack of skills in MRV systems (Both Region & LRT)
	Insufficient budget for CRGE related activities (Region & LRT)

Source of information	Capacity gaps and needs identified
	Structure is ambiguous when it comes to CRGE & NDC (LRT); and focal person is tasked with other responsibilities in addition to CRGE (Region)
	Guidance and support from EFCCC is not sufficient

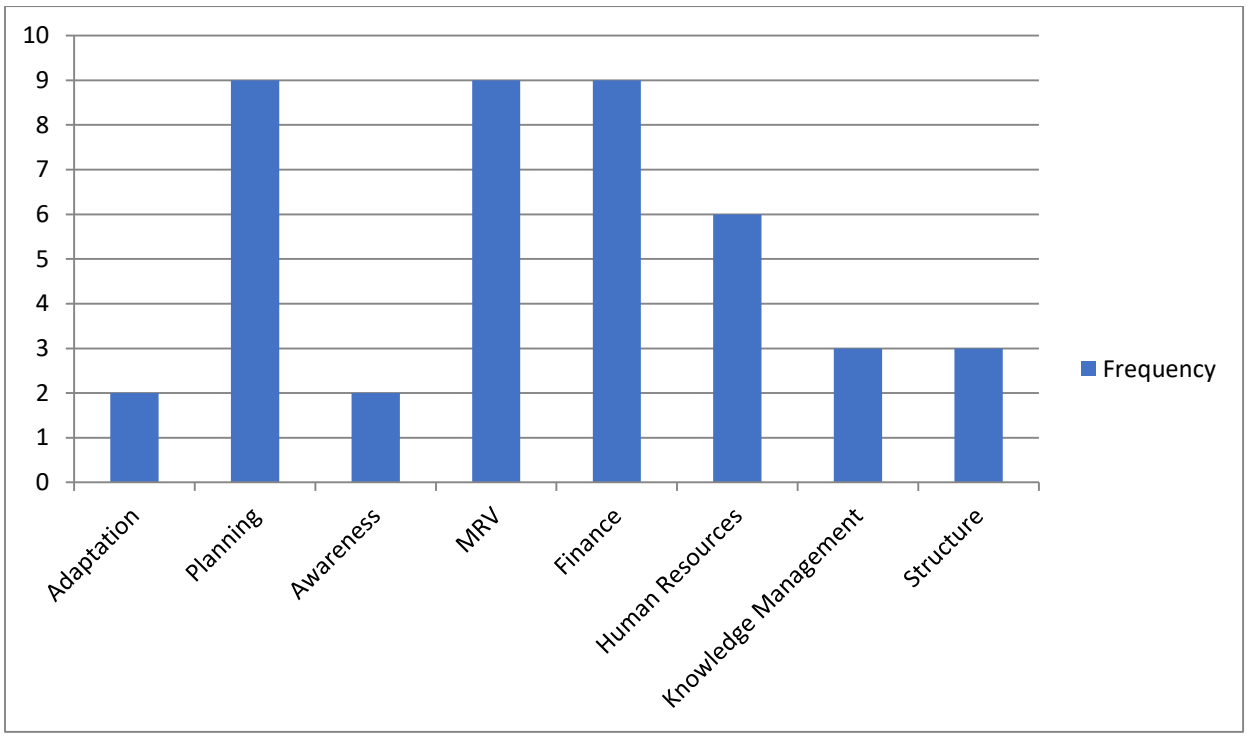
4.1.4. Interpretation of results

The above long-list is further analyzed to determine the most prevalent needs and to map those onto the capacity gap core issues. This is done in MS-Excel to be able to do the required sorting and analytics. **Figure 2** shows results of sorting for top ten capacity need themes.

However, care must be taken in the reading of the bar graph. The results must not be interpreted to mean they portray the capacity needs of the entire sector. At the risk of stating the obvious, it should be stated that the graph only depicts a small subset of the capacity needs of the sector, namely only of NDC implementation. Rightly so, the question of what are the capacity needs limiting the sector's ability to meet its PDP-10 targets could come to mind. However, that is a completely different question than the previous one, which this Study seeks to address.

Having said that, the bar chart must be viewed as a snapshot in time depicting the prioritization of respondents and past assessments this Study analyzed. The picture is expected to change over time as old problems get solved and new challenges arise.

Figure 2: Transport sector capacity need themes relating to NDC implementation



In light of the sector's PDP-10 objectives and targets discussed in **Section 5.1.1**, the following "reading" of the chart could be made keeping in mind NDC related objectives (**Table 3**).

Table 3: Revisiting NDC capacity needs with a PDP-10 lens: Transport sector

PDP-10 objectives and targets relevant to NDC implementation	**What does that mean <u>for NDC capacity development?</u>**
Strengthening the sector's institutional implementation capacity, including mainly human resources, organization, policies and legal frameworks	This must also cover NDC implementation capacity. The ECCD Directorate and concerned stakeholders must seek to leverage on this commitment.
Make transportation infrastructure and services resilient to climate change	The sector must build its capacity in the design, implementation and maintenance of climate-proof (resilient) transport infrastructure. Adaptation is an important NDC theme on which capacity needs to be developed. Strategic planning capacity for that needs to be strengthened as well.
Reduce transport sector's greenhouse gas emissions from 41 million metric tons to 27.8 million metric tons of carbon dioxide equivalent;	The sector needs to plan on the portfolio of mitigation projects, which will enable it to achieve that objective by coordinating vertically and horizontally with all actors. It must also put in-place the requisite MRV system for GHG inventory and mitigation. Last but not least, it should be able to raise the required finance in collaboration with the public sector, private sector, MoF CRGE Facility, EFCCC and also by mobilizing resources from multi-lateral and bilateral donors.
Increase the length of railway from 902 km to 4,199 km; Raise the capacity of the Addis Ababa light rail transport service from 75 thousand to 200 thousand passengers per day;	An MRV system for documenting the GHG emissions which would be offset from the choice of this clean technology must be in place. Also, there is a need to mobilize the required finance for planned activity and put a system to track same as CRGE/NDC related investment.
Increasing annual Road Fund income from Birr 2.94 billion to Birr 14.2 billion; increasing annual revenue from transportation related services fees from Birr 2.39 billion to Birr 7.71 billion; launching 23 public-private partnerships projects;	Could a portion of this Road Fund and expected revenues be earmarked for NDC related activities, e.g. NDC capacity development activities, identification and roll-out of feasible transport technologies (electric motorbikes, MMT systems, fuel efficient buses, etc.)
Expansion of transportation infrastructure and services: new roads, expressways, rural roads, truck terminals, dry ports, railways, product and input storage centers, cold storage facilities, etc.	Those infrastructure need to be climate proofed (made resilient. Hence Adaptation will be an important NDC theme in light of that planned investment
Raise transport service coverage from 67% to 100% in rural areas and mass transport service coverage from 34% to 70% in urban areas; Increase the number of cross-country rail passengers from 79.19 thousand to 448.6 thousand	Sector needs to improve its portfolio planning to determine how much of that will be from buses using fossil fuel and how much of that will be clean-tech (electric trains, NMT, etc.). Based on that its MRV system has to be properly adapted.
Creating 1.425 million job opportunities in the transport subsector.	Sector needs to proactively work to make sure that a portion of those are created in the clean-tech transport sector (which is possible given electric rail and LRT) and make sure those jobs are accounted for as green jobs.

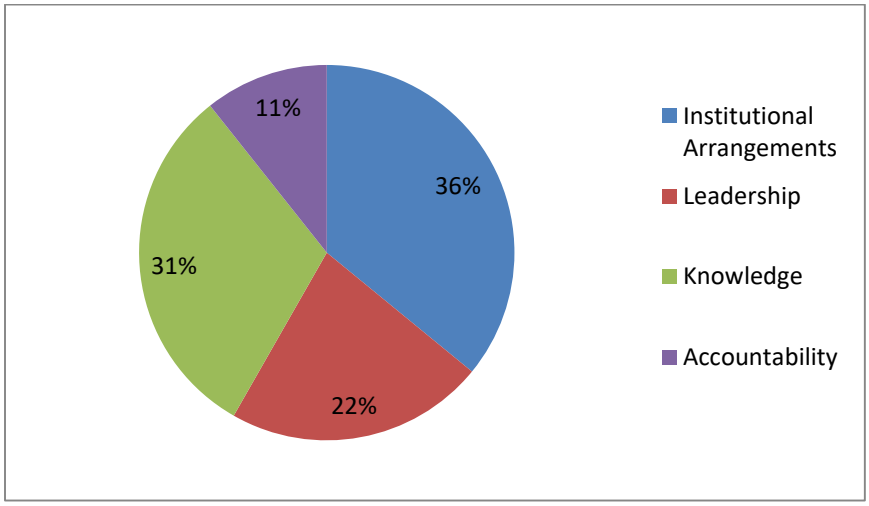
Another analysis of the data was conducted in line with the UNDP Capacity Assessment Framework, with a view to understand the "spread" of **the four capacity gap Core Issues** for the Transport sector. Why such analysis is important is explained in the framework itself, which contends that: "As observed from empirical evidence and UNDP's own first-hand experience, it is in the four CORE ISSUES of *Institutional Arrangements, Leadership, Knowledge and Accountability* that the bulk of change in capacity happens."[37]

When the capacity needs were mapped onto the four Core Issues, the following results were obtained: 37 counts related to Institutional Arrangements; 32 related to Knowledge; 23 related to Leadership; and 11 related to Accountability. The results are depicted in the Pie Chart shown in **Figure 3. The actual analysis (from which the pie chart is derived) is presented in the "Capacity Needs page" of the sector's Capacity Development Plan in Annex 9.7A: *Capacity Gap Core Issues*, columns G to J.**

The following guidance is drawn from this analysis:

- *Institutional Arrangements* and *Knowledge* are the two most important levers of change for the sector; hence, the formulation of the capacity development responses (interventions) should also place priority on these core issues (as will be discussed in **Chapter 7);** and
- The high-level recommendations (provided in **Chapter 8**) need also keep sight of these findings.

Figure 3: Transport sector capacity gap core issues



4.2. Energy

A high-level overview of the Energy sector as it relates to CRGE and NDC issues is presented in **Box 6**.

Box 6: Energy sector CRGE relevant information

Relevant policies, strategies and programs

[37] UNDP(2008). *Capacity Assessment Methodology: User's guide* and UNDP(2009). *Capacity development: A UNDP primer*

Draft Energy policy, Water Resource Development policy, Water and Energy sector CR strategy, geothermal development strategy, Basin Development strategic-WASH program, National Electrification Program (NEP 2), one WASH Program

CRGE structure (Federal):

- Ministry of Water, Irrigation and Energy
- Environment and Climate Change Directorate;
- Two teams: Climate Change Team and Environment and Social Impact Monitoring Team
- staffing plan: ESIA (9) and CRGE 8); Total = 17

CRGE structure (Regional)

- Different bureau structures in the Regions, e.g.: "Water, Irrigation and Energy", "Water Mining and Energy" and "Water"
- SNNP case: One focal person at regional level;

Project portfolio

- Completed/on-going: Gibe III- (870MW) Genale Dawa III (54MW), Energy + and fast track programs, Waste to Energy 25 MW, Biogas program
- Grand Ethiopian Renaissance Dam, Tulumoye Geothermal project, Koysha (Ghibe IV) hydropower project, Asela and Aysha Wind power projects, Gad and Dicheto solar project, other off grid projects (mini grid project, biogas project)

4.2.1. Sectoral PDP-10 overview

The main **focus areas** of the energy sector development plan are:

- Ensuring access to energy supply;
- Providing the rural population with **clean energy supply technologies**;
- Providing **high quality electric power service**;
- Building a **reliable electric power infrastructure**;
- Ensuring healthy financial position of the energy sector;
- Encouraging private investment in the sector; and
- Developing skilled and ethical manpower.

The main **objectives** of the energy development plan are to provide the economy with quality electric power service that is accessible, **equitable and affordable**; and to expand a **reliable energy infrastructure.** The following main **targets** have been set:

- Raise **power generation capacity from 4,478 MW to 19,900 MW;**
- Increase **power transmission lines from 18,400 km to 29,900 km;**
- Increase electricity export from **2,803 GWH to 7,184 GWH;**
- Increase the number of electricity customer from 5.8 million to 24.3 million;
- Increase coverage of grid-based electricity from 33% to 96% and reduce off-grid from 11% to 4%;
- **Reduce electric power wastage (loss) from 19.6% to 12.5%.**

4.2.2. Overview of CRGE performance and future perspective

According to the CRGE Implementation Assessment (2011-2019) report (EFCCC et al, 2019), the MoWIE was allocated funds for five CRGE Fast Track Investment projects – (a) solar power for water supply and

irrigation; (b) accelerating the national biogas program; (c) strategic support to improve water monitoring systems; (d) strengthening the monitoring of downstream petroleum operations; and (e) improving access to solar technologies. The report also notes that progress was made on the implementation of all five (*Ibid.*). During the same period, MoWIE also implemented projects on enhancing access to improved cook stoves through the National Cook stoves Program.[38]

[38] According to written feedback provided on the Inception Report by Ms. Belaynesh Birru (Environment and Climate Change Directorate Director) on January 4, 2021.

4.2.3. Findings of capacity gap and need assessment

Table 4 summarizes a comprehensive list of capacity gaps, which the **Energy Sector** is facing as gleaned from review of key studies and the interviews.

Table 4: Energy sector- Capacity need in CRGE & NDC mainstreaming and implementation

Source of information	Capacity needs
PDP-10 (Energy Sector)	Setting up an efficient, reliable and transparent MRV of GHG Inventory system for the Energy Sector
CRGE implementation assessment (2011-2019)	Limitations in data and information collection and organization; there is no centralized repository or database;
	Insufficient staff in the CRGE directorate pre-occupied with other day-to-day routines ;
	Operational planning and project management;
	Integration of climate risk into project and program planning and designs;
	CRGE related considerations are not being adequately mainstreamed into all parts of the Ministry;
	Financial planning and budgeting & resource mobilization;
	Poor M&E;
	Build the technical capacity of MoWIE and the Regional Bureaus on planning of adaptation and mitigation measures/projects in-line with the updated NDC and the PDP-10 plan
NDC Partnership preliminary scoping mission	No tracking or MRV system
	RE - planning in delivering equipment
	Low private sector engagement
	Lack of capacity and awareness at lower level
	Lack of sufficient energy efficiency intervention
National Capacity Development Program Gap Assessment	Human resource gaps in competence areas of:
	operational planning (to implement climate risk management processes into plans),
	effective and efficient use of resources (limited capacity to prepare accurate budgets,
	delivery management (the mandate for CRGE delivery is not integrated into staff responsibilities and no knowledge of climate resilience and growth options and technologies and practices that will support CRGE)
	in knowledge management (limited skills to use ICT, to capture and share lessons from CRGE implementation, establish and manage shared filing systems)
	Organizational gaps lie in the competence areas of:
	Operational planning (in analysis of local climate resilience and green economy opportunities or risks);

Source of information	Capacity needs
	Resource mobilization (Although funding opportunities are identified, no contracts negotiated and agreed that secure resources for CRGE delivery)
	Effective and efficient use of resources (financing management is not effectively Programmed; MRV requirements are not well understood
	Delivery response (although framework for CRGE performance indicators linked to GTP-2 is established, the reporting is not yet aligned to this)
	System-related gaps in:
	in analysis and strategic planning (no systems for capturing or making available to staff relevant technologies and practices that may improve response to CRGE priorities)
	Operational planning (no system of including local stakeholders and executing entities in planning and no systems for communicating the plan to affected parties and co-implementers)
	Resource mobilization (systems for prioritizing and applying for climate change related funding opportunities, systems for internal resourcing to respond to opportunities are weak)
	Delivery management, delivery response (already existing systems for disbursing CRGE for CRGE performance management are not regularly used; CRGE targets not integrated existing into existing M&E system)
	Effective coordination with stakeholders (although regular meetings to enable CRGE coordination exists, no formal structures have been established).
	Knowledge management (partially documented system for compiling and managing information but not always used in most region and Woreda bureaus).
Interviews and focus group at federal level (MoWIE, ECCD Team))	The federal and regional institutional arrangement made it difficult for robust coordination and for M&E activities
	There is also weak commitment at all levels
	Misconception of CRGE as if it is a project
	Lack of standardization of green technologies
	Affordability of energy technologies
	Insufficient involvement of private sector
	Low capacity of SMEs on production and dissemination of energy technologies
	High turnover of experts at all levels
	Weak integration between stakeholders

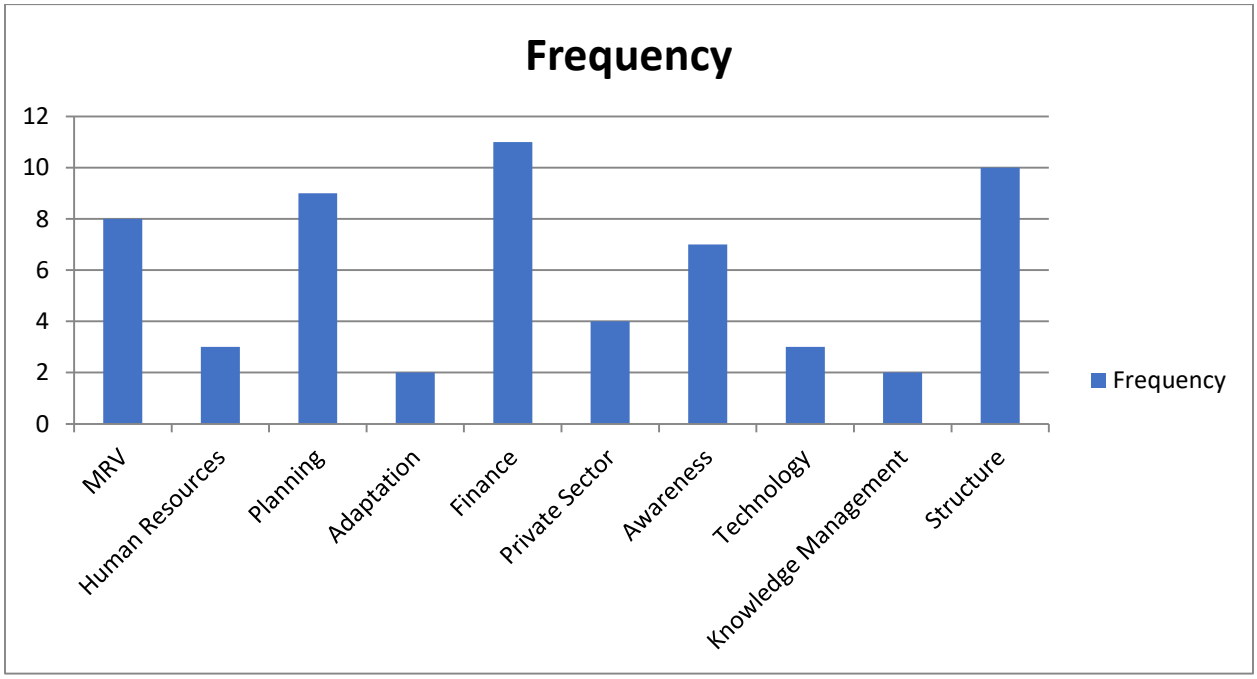
Source of information	Capacity needs
	The existing reporting system and communication (with EFCCC steering committee and technical committee) is regressing (partly due to insecurity and the Covid-19 pandemic)
	Mindset: Viewing and accepting CRGE activities as regular, day-to-day work by all colleagues (not the case)
	Work needs to be done on continuing awareness raising, upskilling
	Work needs to be done on continuing awareness raising, upskilling but financial resource for that are in short supply; [Anecdotes: there is an over-riding sense that whatever little money available is better spent on the next community water tap!]
	Limited technical capacity to tap into carbon finance opportunities; there is a need to learn from other countries on what has been practically done in this area
	The regional bureaus are not uniformly organized mirroring the federal WoWIE; existing structures include: "Water, Irrigation and Energy", "Water Mining and Energy" and "Water (in Harar)
Interviews and focus group at regional level (SNNPR, Mines and Energy Agency Team)	CRGE function is delegated; organizational structure not yet approved
	Insufficient budget CRGE/NDC implementation
	Lack of consistent communication from MoWIE (bureau not informed on CRGE projects)
	Incomplete GHG emissions database (date is on no of cook stoves, biogas generators, solar home systems)
	Week communication and oversight from/with FEFCCC and Regional environmental bureau
	Poor private sector engagement on solar home systems business and cook stove business up-take
	Poor understanding at zonal level on CRGE & NDC issues
	Lack of finance to forge partnerships with universities
	Lack of technical capacity on energy efficiency issues
	License issued on coal mining; future impact of that on CRGE/NDC (GHG emissions) not factored in
Insights from sectoral case study ("Solar Water Pumps") (Interview with Maikel Mulugeta and Review of Project Document)	Cost over-run of project
	No systematic concept on MRV across projects
	Poor awareness at Woreda levels on CRGE/NDC and on MRV and related concepts
	MRV is not ICT based (it is done in a traditional manner)
	Poor entrepreneurial capacity to maintain solar infrastructure
	Poor coordination amongst stakeholders
	Lack of integrated and participatory approaches in planning

4.2.4. Interpretation of results

The long-list is further analyzed to determine the most prevalent themes of capacity need and also to map those onto the capacity gap core issues (as per the analytical framework developed). This is done in MS-Excel to be able to do the required sorting and analytics. **Figure 4** shows the capacity need themes.

Again, care must be taken in the reading of the bar graph. The results must not be interpreted to mean they portray the capacity needs of the entire sector. At the risk of stating the obvious, it should be stated that the graph only depicts a small subset of the capacity needs of the sector, namely of NDC implementation only. Having said that, the chart must be viewed as a snapshot in time depicting the prioritization of respondents and past assessments this Study analyzed. The picture is expected to change over time as old problems get solved and new challenges arise.

Figure 4: Energy sector capacity need themes relating to CRGE & NDC implementation



In light of the sector's PDP-10 objectives and targets discussed in **Section 5.2.1**, the following "reading" of the chart could be made vis-à-vis NDC related objectives (**Table 5**).

Table 5: Revisiting NDC capacity needs with a PDP-10 lens: Energy sector

PDP-10 objectives and targets relevant to NDC implementation	**What does that mean <u>for NDC capacity development?</u>**
Providing the rural population with clean energy supply technologies	The sector needs to put in-place the requisite MRV system to document and report the GHG emissions which will be off-set as a result. That will have direct relevance to SDG 7 meaning the sector needs to develop its capacity to track and report on the results of

PDP-10 objectives and targets relevant to NDC implementation	**What does that mean for NDC capacity development?**
	PDP-10, SDG, NDC in an integrated way. Identification of locally appropriate technologies is another area the sector needs to focus on. How to mobilize and incentivize the private sector to contribute that objective is another capacity development area the sector needs to work on. Another area is finance including developing capacity for CDM.
Raise power generation capacity from 4,478 MW to 19,900 MW; Increase power transmission lines from 18,400 km to 29,900 km; Increase electricity export from 2,803 GWH to 7,184 GWH	Those infrastructures have to be designed, operated and maintained to be climate-proof. Hence the sector needs to develop its capacity in adaptive energy systems. That relates to SDG 9 (hence capacity for integrated reporting). It must also make sure the finance for that is raised from public, private and other sources (climate finance).
Build a reliable electric power infrastructure; provide high quality electric power service	The sector must hone its strategic planning capacity to make and track those investments assuming most of that will be clean-tech (hydro, wind, geothermal, solar, biomass, Waste to Energy (WtE), etc.). Identification of those technologies which will ensure that desired reliability should be another focus area again for the renewable energy sources which will be developed and integrated
Encouraging private investment in the sector	That is construed to mean in clean-tech and importantly in systems to enhance reliability, adaptive capacity to climate change and affordable to the rural population. The Sector needs to develop its capacity in project identification and green business case analysis and also in incentivizing the private sector with the right policies (coordinating with EFCCC, MoF and other actors)
Developing skilled manpower	Also skilled in CRGE and NDC implementation- hence needs to develop NDC implementation capacity.
Increase the number of electricity customer from 5.8 million to 24.3 million; Increase the coverage of grid-based electricity from 33% to 96% and reduce off-grid from 11% to 4%	Planning and Finance are key NDC themes on which the sector needs to develop capacity- of course as it applies to clean-techs
Reduce electric power wastage (loss) from 19.6% to 12.5%.	Sector needs to identify the right technologies to achieve that. Skill for (green) business case analysis is another are that needs to be developed: What are the investment costs (Capex, Opex), anticipated revenues, and feasibility indicators (Pay-Back-Time, IRR, NPV, etc.). Would that energy saving have relevance to GHG mitigation? Will it be interesting for CDM? Those would be additional areas of MRV, Planning, Business Case Analysis on which capacity needs to be honed

Again, a second analysis of the data was conducted in line with the UNDP Capacity Assessment Framework, with a view to show the "spread" of **the four capacity gap Core Issues** for the **Energy** sector. When the full-range of capacity needs was mapped onto the four Core Issues, the following results were

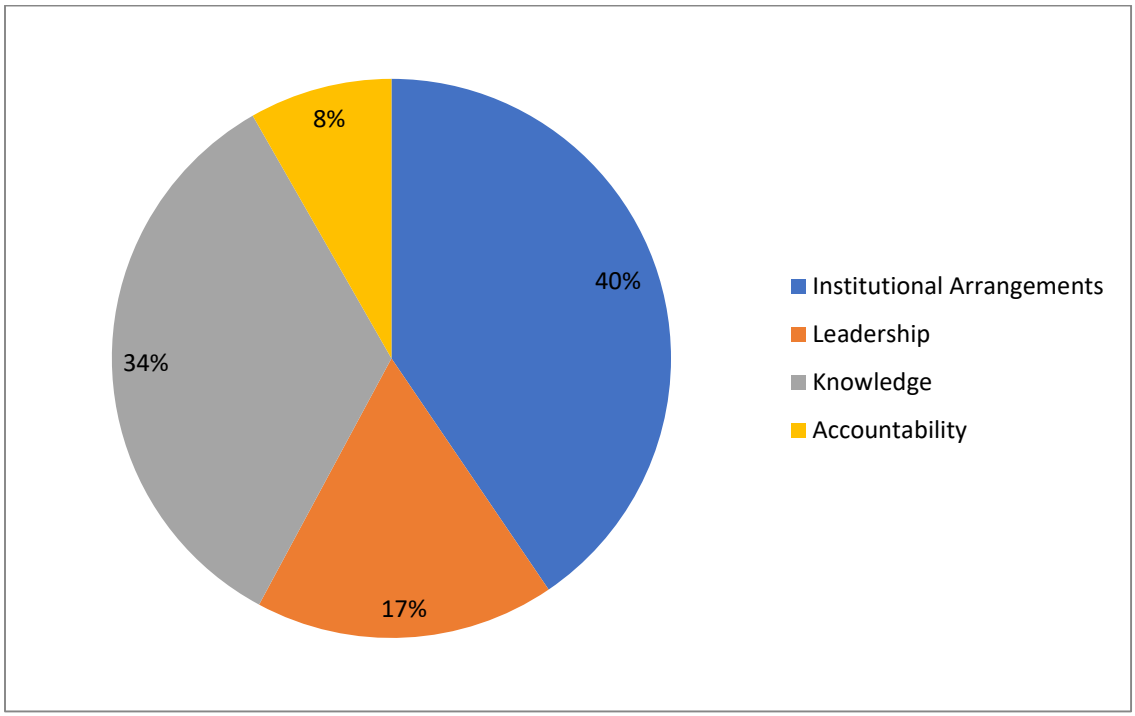
obtained: 49 counts related to Institutional Arrangements; 41 counts related to Knowledge; 21 related to Leadership; and 10 related to Accountability. The results are depicted in the Pie Chart shown in **Figure 5.**

The actual analysis (from which the pie chart is derived) is presented in the "Capacity Needs page" of the sector's Capacity Building Plan in Annex 9.7B: *Capacity Gap Core Issues*, columns G to J.

The following guidance is drawn from this analysis:

- *Institutional Arrangements* and *Knowledge* are the two most important levers of change for the sector; hence, the formulation of the capacity development interventions should also place priority on these core issues (as will be discussed in **Chapter 7);** and
- The high-level recommendations (provided in **Chapter 8**) need also keep sight of these findings.

Figure 5: Energy sector capacity gap core Issues relating to CRGE & NDC implementation



4.3. Industry

An overview of the Industry sector as it relates to its activities on CRGE and NDC is presented in **Box 7.** Given the fact that energy efficiency and energy management are key activities vis-à-vis NDC implementation for the industry sector, a more detailed update is provided on the status of these projects.

Box 7: Industry sector CRGE relevant information

Relevant policies, strategies and guides

- Green Manufacturing Strategy, Energy Efficiency Strategy, Industry Strategy (old), and CRGE communication material

CRGE structure (Federal):

- Ministry of Trade and Industry (MoTI);
- Industry, Environment and Climate Change Directorate (IECCD);
- Two teams: CRGE team and Environmental and Safeguards team;
- Staffing: 29 staff of which 10 already in place;
- Sub-sectoral institutes, namely: Ethiopian Textile Industry Development Institute (ETIDI); Leather Industry Development Institute (LIDI); Ethiopian Meat and Dairy Industry Development Institute (EMDIDI); Food, Beverage and Pharmaceutical Industry Development Institute (FBPIDI); Chemical and Construction Inputs Industry Development Institute (CCIIDI); Metal Industry Development Institute (MIDI); Federal Small and Medium Manufacturing Industries Development Agency (FeMSEDA); other trade-related sub-sectors (In addition MoTI also works with the Ethiopian Standards Agency (ESA) on CRGE issues).

MoTI coordination with Institutes on CRGE activities

- During the GTP I period, CRGE planning by the Institutes was not uniform, some indicated GHG reductions in percentages; a few in absolute figures; During the GTP II period, MoTI coordinated with the Institutes to standardize that.
- Also during the GTP I period, the Institutes did not have standardized Environment & Climate Change units; a few focused on environment; others on safety or energy.
- During the GTP II period, MoTI worked with the Institutes to standardize that; as a result, five of the Institutes (except for ETIDI) have environment directorates[39]; ETIDI has Lab & Safety combined.
- Concerning CRGE activities (e.g. GHG data collection): the institutes coordinate directly with the factories and they aggregate the information and share it with MoTI (e.g. CCIIDI does that with the cement factories).

CRGE structure (Regional)

- Various structures: Enterprises & Industry & Development Bureau; Industry Development Bureau; Zones (of Regions) and the sub-Cities (of Addis Ababa) have Industry Offices, whereas Woredas have Trade Offices but no Industry Offices;
- SNNP case: One focal person at regional level.

Project portfolio

- FTI: Energy efficiency project in five factories within the cement, metal, beverage, textile, leather sectors: namely, National Cement Factory, Almeda Textile Factory, Awash Tannery, Meta Abo Brewery and C&E Brothers Steel Factory;
- Energy audits to implement energy efficiency projects in the cement sector (EU, on-going);
- Energy Management (USAID, ended Feb 2021);
- MoU between Institutes and MoTI on MRV of GHG inventory (on going);
- Manufacturing industry energy baseline study (ToR completed, project has yet to start);
- 20-year GHG inventory(MRV) for manufacturing industry (EU, on-going);
- IPPU MRV training based on IPCC2006 software to sector institutes and other stockholder experts for five days completed (funded by EU and MoTI).

Status of Energy Efficiency Activities[40]

[39]Combining Environment, Energy and Safety

[40] Gleaned from interviews with Gebremichael Gebrekidan, Timnit Woldeghiorgis , Awash Yirga and Zewge Worku

- Through the EU energy efficiency project, audits completed in Ethio Cement, Derba Cement and National Cement;
- Through the USAID project, Energy Management System completed in 13 factories; most of the factories started implementation;
- Overall, currently, focus and continuing work on energy efficiency projects within industry (including those mentioned above) has lost momentum; of the five FTI projects, only Meta Abo Brewery and Almeda Textile factory are continuing with energy efficiency activities;
- The diminishing focus on energy efficiency is attributable to the following specific factors: lack of organizational initiative (commitment); lack of skills on energy efficiency issues within the factories; turn-over of staff qualified on those issues; broader contributing factors are**:** forex limitations, risks posed by the Covid-19 pandemic on market access and on the wellness of the workforce;
- Coordination with the EEA: The EEA is also working on energy efficiency activities (See **Case Study 4**). Going forward, MoTI and MoWIE (EEA) should align their efforts towards establishing a national Energy Efficiency Accord as this will also help avoid duplication of effort.

4.3.1. Sectoral PDP-10 overview

The major **focus areas** of manufacturing industry development plan are:

- Enhancing **capacity utilization**;
- Strengthening coordination;
- **Raising production and productivity** of existing industrial establishments;
- Satisfying domestic demands and export markets by producing **competitive industrial products;**
- Strengthening the value chain, interlinkages, and interdependencies within the manufacturing industry;
- **Attracting new investments in large numbers, varieties and qualities** into manufacturing based on studies, new investment incentives and simplified procedures, as well as enhancing the **role and partnership of the private sector**;
- Coordinating the **development of heavy metal and engineering industries, chemical and pharmaceutical industries, and other high tech industries**;
- Strengthening the cluster organization system;
- Expanding small- and medium-scale industries; and
- **Expanding job opportunities**.

The **objectives** are to:

- Create employment opportunities by **improving the production and productivity** of existing manufacturing plants and by attracting new high quality investments;
- **Expand manufacturing industries** that can produce strategic commodities that can substitute imports;
- Producing high quality export goods in volume and variety;
- **Increase the share of manufacturing in the gross domestic product** by creating a conducive environment for improved participation of private investors;

- Ensure that the development of manufacturing industry is consistent with **the country's sustainable and green economy development strategy.**

The following main **targets** have been set:

- **Increase average capacity utilization of the manufacturing industry from 50% to 85%;**
- **Raise domestic market share of locally manufactured products from 30% to 60% by expanding manufacturing industries that produce substitutes of imported goods;**
- Raise the competitiveness of the manufacturing industry by improving product quality;
- Raise the number of small and medium-scale manufacturing enterprises from 2,000 to 11,000 by attracting **high quality investments** and focusing on industries that employ **advanced technologies**;
- Create a total of **5 million new job opportunities** by raising the number of job opportunities created annually from 175 thousand in 2019/20 to 850 thousand in 2029/30.

4.3.2. Overview of CRGE performance and future perspective

The CRGE Implementation Assessment (2011-2019) report (EFCCC et al, 2019), provides the following details:

- The Ministry of Industry was allocated funds for two CRGE Fast Track Investment projects, i.e. (a) greening of the Bole-Lemmi Industrial Zone through increased tree cover; and (b) development of a baseline for GHG emissions and an MRV system for the industry sector, to strengthen energy efficiency measures in industries.
- Of the two, progress was made on the second one, and energy audits were carried out in the cement, textile, and leather sub-sectors.[41]
- An industry sector MRV system report (including international best practice, institutional arrangements, ICT systems database needs) recommended that MoTI put in place the technical capacity and administrative tools needed to adopt multiple MRV protocols: the Corporate GHG Protocol for Scope 1 emissions; the Cement Sustainability Initiative's (CSI's) CO_2 and energy protocol for Scope 1 emissions in the cement sector; and the Corporate Value Chain Accounting and Reporting Standard for Scope three emissions.

[41] According MoTI officials present in the final report de-briefing workshop held on June 14, 2021, it was pointed out that progress has since been made in the beverage and metal sectors as well.

4.3.3. Findings of capacity needs assessment

Table 6 summarizes the capacity gaps, which the **Industry Sector** is facing as gleaned from the review of the key studies and the interviews.

Table 6: Industry sector- Capacity needs in CRGE & NDC mainstreaming and implementation

Source of information	Capacity gaps
PDP-10	Poor understanding of industry business owners on climate change and environmental issues
	Limited financial resource allocated from government for the effort focusing on combating the adverse impacts of climate change on the industry sector
	Poor negotiation capacity (of GoE/MoTI) to influence donors' and financial institutions' focus towards national/sector's objectives (donors and FI's work to promote their interests)
	Prioritization of industry development without equal regard for combating climate change and environmental pollution
	Poor coordination amongst internal and external stakeholders
	Poor entrepreneurial capacity to innovate and adopt green manufacturing technologies
CRGE implementation assessment (2011-2019)	The foundation laid by the FTI projects has yet to be built upon due to both insufficient funding and technical implementation capacity;
	The Environment and Climate Change Directorate is not empowered to drive GHG emissions reduction activities and regulatory measures- which involve various directorates and Institutes;
	The Environment and Climate Change Directorate does not have enforcement powers over the private sector; given that the majority of players in the manufacturing sector in Ethiopia – particularly in the cement sub-sector – are private entities, the lack of any real power in relation to the private sector presents obstacles to the ECCD in achieving results;
	MoTI as a whole still does not have the legal framework to enforce energy efficiency and mitigation actions on private companies;
	The Environment and Climate Change Directorate has took part in a number of training and capacity-building initiatives, but these one-off events have not resulted in sustained, long-term enhancement of technical, administrative, or regulatory capacity;
	Challenges in mainstreaming CRGE goals and targets into national plans, as well as into actual regional bureau strategic plans;
	Low staff capacity for strategic planning, operational planning, delivery management, engagement with international climate funds, CRGE-related information and knowledge management systems;
	At the regional and Woreda level - gaps in terms of staff responsible for CRGE related responsibilities and functions
	Poor understanding of GHG inventory baseline-setting (both on why that is needed and on how to do it)
	Limited understanding of performance metrics and Key Performance Indicators (KPI) and how to measure them;
	M&E and data & information collection and management;

Source of information	Capacity gaps
	Poor MRV system: the Environment and Climate Change Directorate does MRV manually, i.e. populates data sheets and reports manually because of the lack suitable software and automated databases;
	MoTI operates within significant budgetary constraints and does not have sufficient budgetary support to undertake more comprehensive CRGE activities.
NDC Partnership preliminary scoping mission	Limited technology and finance to implement the industry sector CRGE interventions;
	Limited technical capacity at national and subnational level;
	Limited private sector access to climate finance;
	Lack of strong MRV system and capacity to track emission and mitigation actions
National Capacity Development Program Gap Assessment	**Human resource** gaps in:
	Analysis and strategic planning **(while staffs have capacity for reviewing existing research and studies, nonetheless strategic CRGE options and the link to GTP-2 are not defined)**
	Operational planning (Staff lack skills to implement climate risk management processes in their planning) and
	Delivery management (mandate for CRGE delivery is not integrated into staff responsibilities and no knowledge of climate resilience and green growth options, technologies and practices that will support CRGE)
	Organizational gaps in:
	Analysis and strategic planning (CRGE goals exist but its goals and objectives are not mainstreamed into Ministry/ Bureau strategic plans, activities and goals)
	Effective and efficient utilization of resources (Financial management staff lack experience of managing national or international climate funds).
	Delivery management (human and physical resource needs for delivery of CRGE plan exist but they are not programed and allocated to CRGE delivery and executing entities are not engaged).
	System gaps in:
	Operational planning (No system of including local stakeholders and executing entities in planning; no systems for communicating the plan to affected parties and co-implementers)
	Effective and efficient utilization of resources (Templates to prepare and combine budgetary information and financial management systems and reporting systems are used consistently for CRGE Facility budgets; but are not always used effectively)
Interviews and focus group at federal level including (MoTI IECCD,	**Unclear mandate on regulation of private sector on EE & EMS:**
	No mandate to force private sector/business to implement energy efficiency projects
	No clear policies, regulations and guidance in this specific are [Lesson from other countries: From a policy perspective EE and EMS is also in the voluntary/self-regulation space; the consultant shared the Energy Efficiency Accord of South Africa and Kenya]

Source of information	Capacity gaps
CCIIDI, EU support project on IPPU)	Although fast track projects were executed by government (in the textile, leather sector), private sector did not pick that up, i.e. poor scale-up/up-take by the private sector
	Poor private sector understanding and willingness to implement mitigation and adaptation projects [Anecdotes, "We don't set up business for the sake of measuring GHG emissions!"]
	Finance as a binding constraint
	To finalize and scale-up fast track projects; the FTI were not as such need-driven
	Lack of finance for EMS project
	Lack of finance for capital projects
	Lack of incentives (including remunerative) to ECCD staff- could potentially lead to turn-over and loss of institutional memory
	Climate Change Mitigation and Adaptation issues are not seen as core business of MoTI
	Institutional Arrangement:
	Fragmented as the six Sectoral Institutes are under MoTI, while EIC, IPDC, Sugar Corporation are public enterprises, not directly under the ambit of MoTI
	Federal government is responsible for export oriented industries; while the regional governments are responsible for Small and Medium industries
	ECCD has a rather lax (weak) relationship with the Regional Bureaus
	MoTI is responsible for local industries whereas EIC oversees FDI industries
	Weak link with factories: MoTI needs to go through the six institutes to reach the factories, entities concerned with actual mitigation and adaptation issues; this affects energy efficiency and management interventions [Recommendation: The institutes should focus on R& D issues while MoTI should be able to engage factories and mitigation and adaptation issues)
	Inconsistent jurisdiction of regional bureaus: Federal: Ministry of Trade and Industry; Regional level Trade & Market Development Bureau; Trade Bureau; Industry (Enterprise) Development Bureau, etc.; the Zones (of Regions) and the sub-Cities (of Addis Ababa) have Industry Offices, whereas Woredas have Trade Offices but no Industry Offices
	CRGE is out of sync with current reality: the structure of industries have changes since 2011; for instance the metal industry has grown but the CRGE places emphasis only on the cement industry; at the moment we have 11+ Industrial Parks with a goal to reach 30 and four IAIPs with a goal to reach 17
	Insufficient technical and financial support: In connection with the above, support needs to be continued beyond the FTIs; currently only the EU support is filling the gap in that space (projects)
	Mainstreaming CRGE into PDP-10:
	The planning process was rather hasty;

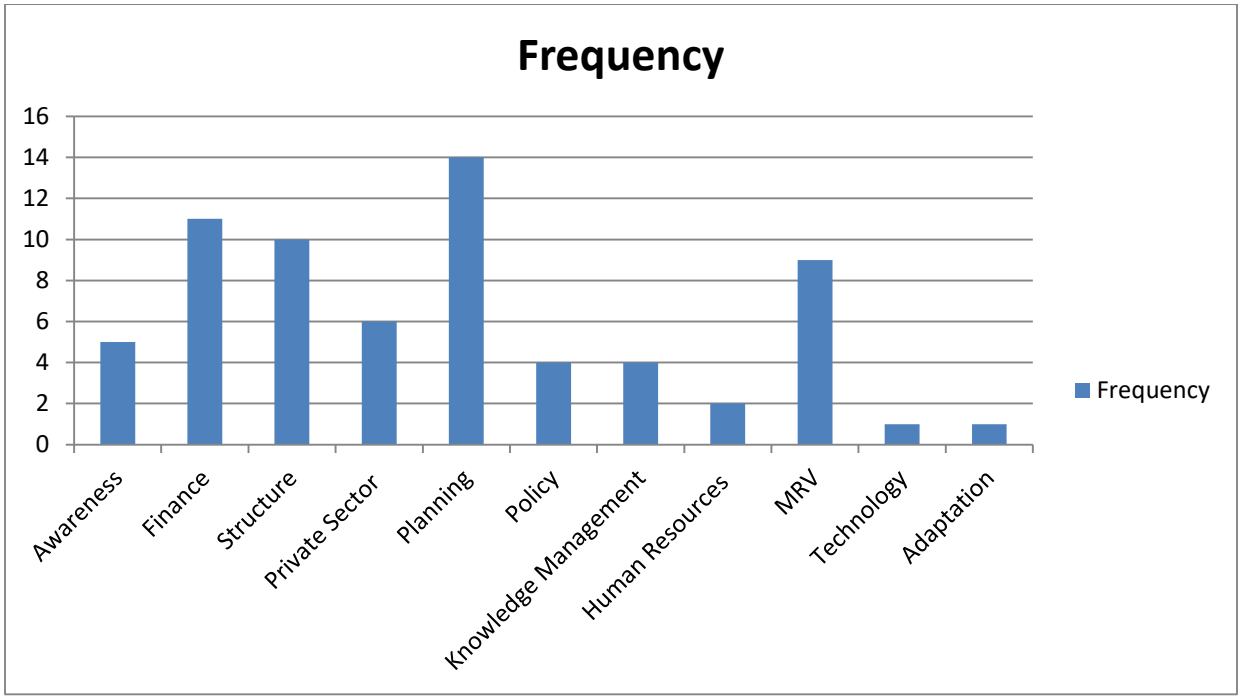
Source of information	Capacity gaps
	NDC revision was rather late to be adequately reflected into PDP-10
	CRGE is 10 years old: it needs to reflect current realities of IPs & IAIPs; growth of the metal industry and importantly emissions from product use-phase as well, e.g. refrigerators, e-waste
	Adaptation work: Although there is mainstreaming guideline for adaptation, the concrete activities for industry are not that clear; the guideline only sets out the principles, namely the need to develop "adaptive industry systems"
	CRGE Registry seems to be waning
	Planning:
	MoTI has done joint planning with EFCCC on mitigation &d adaptation plans of the industrial sector but not vertically with Woredas
	Knowledge Management and Capacity Development Practices:
	Practice is business-as-usual focusing on one-off activities [bolted-on vs built-in]
	Core KPIs for the industry sector is generation of Forex and employment; CRGE is not regarded as secondary
	MoTI lags behind the private sector in its technical capacity to advise on new (leap-frogging) technologies for IPPU; this needs to change
	Weak Private sector commitment:
	Uptake of EE and EMS projects by factories is donor dependent; they are not ready to pay for these services [Who Does? Who Pays? Not sustainable in the long-term]
	GHG inventory for other sectors (metal, glass, ceramic, petrochemical etc.) not fully developed (for instance, to the level of the cement industry)
	MRV is viewed as a one-off project (it is actually a process)
Interviews and focus group at regional level (SNNPR, Enterprises and Industry Development Bureau)	Insufficient budget
	No MRV system and no human capacity for that
	Structure of the bureau is not conducive to discharge CRGE responsibilities
	Weak private sector engagement on CRGE related issues; lack of transparency of private sector
	Budget as a constraint to forge effective partnerships
Insights from sectoral case study (Dangote)	Poor private sector engagement/lack of innovation in aggregating already existing biomass fuel for the cement industry
	No IPCC-2006 compliant GHG reporting system although GHG emissions measurement equipment is in place
	Lack of national standards and permit systems on which "renewable" fuel could be burned for what purpose

4.3.4. Interpretation of results

The long-list is further analyzed to determine the most prevalent themes of capacity need and also to map those onto the capacity gap core issues (as per the analytical framework developed). This is done in MS-Excel to be able to do the required sorting and analytics. **Figure 6** shows the capacity need themes/areas.

Again, care must be taken in the reading of the bar graph. The results must not be interpreted to mean they portray the capacity needs of the entire sector; rather they should be construed as a depiction of the capacity needs of NDC implementation only. The picture is expected to change over time as old constraints get resolved and new challenges arise.

Figure 6: Industry sector capacity need themes relating to CRGE & NDC implementation



In light of the sector's PDP-10 objectives and targets discussed in **Section 5.3.1**, the following "reading" of the chart could be made keeping in mind NDC related objectives (**Table 7**).

Table 7: Revisiting NDC capacity needs with a PDP-10 lens: Industry sector

PDP-10 objectives and targets relevant to NDC implementation	**What does that mean <u>for NDC capacity development?</u>**
Increase the share of manufacturing in the gross domestic product by creating a conducive environment for improved participation of private investors; Expand manufacturing industries that can produce strategic commodities that can substitute imports; Raise domestic market share of locally	The thrust of that is clearly increased volume of industrial produce to extent of changing the structure of the economy in which industry will have an increased share. With that resource utilization is also expected to grow and coupled with that GHG emissions. Hence the Sector needs to develop its CRGE planning capacity to have a balanced portfolio of green technologies to meet

PDP-10 objectives and targets relevant to NDC implementation	**What does that mean <u>for NDC capacity development?</u>**
manufactured products from 30% to 60% by expanding manufacturing industries that produce substitutes of imported goods; producing high quality export goods in volume and variety; Satisfying domestic demands and export markets by producing competitive industrial products	its CRGE/NDC targets. With that capacity for mobilizing finance and the private sector (for green tech) need to be on par as well. Without efficient vertical and horizontal coordination and MRV systems, achieving that will be difficult- hence capacity needs to be developed in these areas as well.
Attracting new investments in large numbers, varieties and qualities into manufacturing, based on studies, new investment incentives and simplified procedures, as well as enhancing the role and partnership of the private sector	Attracting investments need to go hand-in-hand with introducing Principles for Responsible Investment, such as good corporate governance codes, adoption of other internationally accepted compacts for environmental and social sustainability (e.g. the ten principles of the UN Global Compact, a locally negotiated Energy Efficiency Accord, etc.)
Coordinating the development of heavy metal and engineering industries, chemical and pharmaceutical industries, and other high tech industries;	The commensurate system for MRV of GHG of inventory and mitigation for that needs to be in place. Also, the question of how to design, install and maintain those assets as climate-proof investments needs capacity development (adaptive industrial systems)
Raising production and productivity of existing industrial establishments; Enhancing capacity utilization; Increase average capacity utilization of the manufacturing industry from 50% to 85%; Strengthening the cluster organization system;	Whereas increase in capacity utilization will be coupled with increase in resource utilization of generation of waste, increasing productivity will help counter that. The sector needs to ramp-up Resource Efficiency and Cleaner Production (RECP) initiatives. It also needs to build awareness and knowledge on those issues and demonstrate the business case for that.
Raise the number of small and medium-scale manufacturing enterprises from 2,000 to 11,000 by attracting high quality investments and focusing on industries that employ advanced technologies;	Here also RECP capacity as it applies to Small and Medium Enterprises (SMEs) need to be built and with that across the range on NDC themes.
Create a total of 5 million new job opportunities by raising the number of job opportunities created annually from 175 thousand in 2019/20 to 850 thousand in 2029/30.	How much of that will be accounted as green jobs? Systems must be in place to identify job opportunities within the green economy (green manufacturing). Capacity for doing that needs to be in place.
Strengthening coordination	That must also be construed to mean capacity for CRGE/NDC implementation. Hence, the sector should work towards that objective.
Ensure that the development of manufacturing industry is consistent with the country's sustainable and green economy development strategy.	This needs to be unpacked in concrete terms. What does that mean for capacity development vis-à-vis strategic planning and all the other NDC themes? The discussions made above also relevant here.

As with the previous sectors, a second analysis of the data was conducted in line with the UNDP Capacity Assessment Framework, with a view to show the "spread" of **the four capacity gap Core Issues of** the **Industry** sector. When the full-range of capacity needs was mapped onto the four Core Issues, the following results were obtained: 46 counts related to Institutional Arrangements; 41 counts related

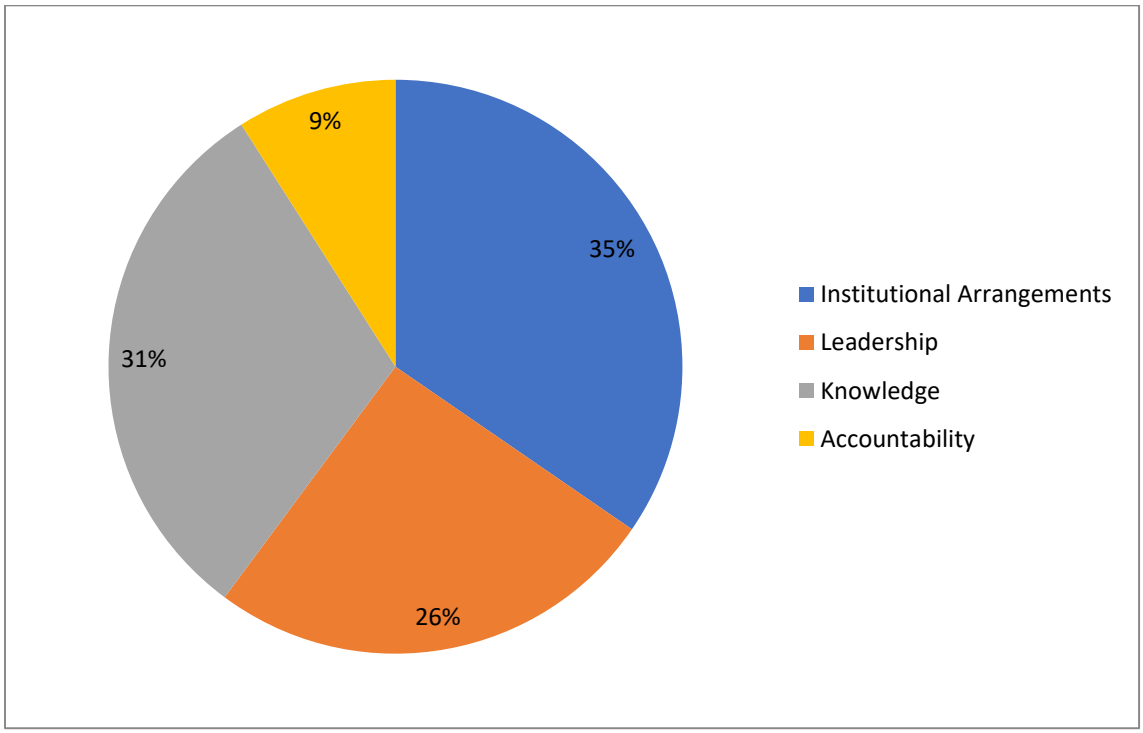
to Knowledge; 34 related to Leadership; and 12 related to Accountability. The results are depicted in the Pie Chart shown in **Figure 7.**

The actual analysis (from which the pie chart is derived) is presented in the "Capacity Needs" page of the sector's Capacity Development Plan in Annex 9.7C: *Capacity Gap Core Issues*, columns G to J.

The following guidance is drawn from this analysis:

- *Institutional Arrangements* and *Knowledge* are the two most important levers of change for the sector; hence, the formulation of the capacity development interventions should also place priority on these core issues (as will be discussed in **Chapter 7);** and
- The high-level recommendations (provided in **Chapter 8**) need also keep sight of these findings.

Figure 7: Industry sector capacity gap core Issues relating to CRGE & NDC implementation



4.4. Environment and Climate Change "Sector"

As pointed out at the beginning of this Chapter, this separate section on the "EFCC sector"[42] is added with a view to inform cross-sectoral interventions which the EFCCC need to own and drive as part of its support to NDC implementation in all CRGE sectors.[43]

[42] In the Final Report de-briefing workshop held in Bishoftu on June 14, 2021, an understanding was reached on use of the name "EFCC sector" for the cross-sectoral activities recommended to be implemented by the EFCCC.
[43] Explicitly speaking, a separate and independent capacity need assessment of (the EFCCC itself) is not called for in the ToR.

4.4.1. Sectoral PDP-10 overview

The **strategic focus** for Environment and Climate Change plan are "ensuring sustainable development by developing, enriching, maintaining and protecting the country's natural environment, forests, wild life and other biodiversity resources, and also through ensuring sustainable utilization as well as maintenance of healthy ecosystem interactions."

The **objectives** are:

- **To identify invasive foreign species and, through research, substantially mitigate the damage they cause**;
- Collect and preserve biodiversity and genetic resources;
- **Reduce the amount of sectoral greenhouse gas emissions**; and
- Strengthen the **development and protection of forests**, the ecosystem as well as the wild life.

The **goals** are:

- To **increase greenhouse gas emissions reduction capacity from the present 92.7 million metric tons of carbon dioxide equivalent to 162.3 million metric tons of carbon dioxide equivalent**;
- To increase the coverage of protection against illicit activities in wild life habitats from 62% to 92%;
- **To increase national forest coverage from 15.5% to 30%,** and increase the coverage of wild life habitats from the present area of 8.6% to 14%; and
- To increase the number of enriched wild life and biodiversity species from 311,470 to 743,447, and the number of species maintained from 179,285 to 764,361.

The strategies are:

- **Put in place systems to help align international environmental agreements to the interest of Ethiopia**;
- **Improve access to information and technology and transfer of same**;
- Put in-place **systems for environmental protection; improve enforcement capacity**;
- **Cascade the EFCCC structure down to Kebelles**;
- **Update the CRGE strategy (of 2011);**
- **Improve the national GHG inventory database and roll it out**;
- Put in-place national information database/center for ecosystems;
- **Put in-place payment for ecosystem services fund**; and
- Implement integrated land use management practices.

4.4.2. Findings of capacity needs assessment

Table 8 summarizes a comprehensive list of capacity gaps, which the "EFCC sector" is facing as gleaned from review of key studies and the interviews.

Table 8: "EFCC sector"- Capacity gaps in CRGE & NDC mainstreaming and implementation

Source	Capacity gaps
PDP-10	Limited capacity implement and coordinate the implementation of existing policies and strategies
	Inconsistent structure from federal down to regions, zones and federals limiting EFCCC's capacity to enforce policies strategies, regulations
	Lack of system that allows to determine the result of activities already carried on GHG mitigation
	Lack of financial capacity to monitor and regulate the ever-increasing type and quantity of polluting substances
	Lack of technology to mitigate the adverse impacts of the ever-increasing type and quantity of polluting substances
	Lack of finance to implement the CRGE strategy
	Lack of technology to implement the CRGE strategy
	Lack of coordination limiting implement the CRGE strategy
	Lack of ICT based information management system in the sector
	Poor participation of private sector in the sector
	Private sector (manufacturing entities) not respecting environmental regulations
	High turn-over of qualified staff
	Unstable and often changing structure of the organization itself
Interviews and focus group at federal level (including with experts from the EU project)	Poor coordination between the Finance and Environment bureaus at regional level
	Diminished stature of the EFCC sector resulting its re-organization as a commission: cannot attend inter-ministerial meetings; Regions perceive this has de-prioritized the priority given to the EF&CC sector
	The green legacy project is led by the Ministry of Agriculture although the Forest sub-Sector is within EFCCC's jurisdiction
	Structure in the Regions do not mirror the federal EFCCC system and different structures adopted by the nine Regions and the two city administrations
	No CRGE representation at the Woreda level; zonal representation not sufficient (EFCC sector
	Regions lack budget to cascade a uniform EFCC structure down to zone and Woreda levels (EFCC sector)
	No consistency as to how sectoral ministries cascade the ECCD function to Regions, Zones and Woredas
	CRGE strategy itself needs regular updating (ten years old)
	Wrong perception of sectors and regions on who allocates budget for CRGE; some mistakenly expect for EFCCC to allocate budget

Source	Capacity gaps
	No pro-active and direct engagement of the private sector
	Training and capacity development not systematized
	Mitigation: A lot remains to be desired on the **Transparency** aspect of MRV systems and also on **National Communication and Biennial Reports**
	Adaptation: Not clear who needs to be trained; mainstreaming has not cascaded down to Woreda level
	No result oriented training system: Trainings are output focused not outcome and impact oriented
	Turnover of ministers, state ministers (Implementing Entities)
	Donors do not always inform on what they do: lack of feedback/communication; duplication of effort
	Backstopping support and monitoring given to implementing entities is not well developed (based on a simple Amharic checklist)
	Inter-ministerial committee not regularly meeting
	Lack of a complete and updatable map of donors: who does what and what is missing
	CRGE data of implementing entities at the Regional level often resided with individuals
	CRGE Forum: Information shared is not always complete on who does what
	More needs to be done on engaging/leveraging private sector
	Misalignment of priorities: More focus on mitigation whereas adaptation is the priority (donor support)
	Lack of skills in navigating the complicated processes of donors and climate financiers
	Insufficient funding from climate finance sources (Ethiopia in the lower categories of $50 million USD)
	Technical skills for preparation process for climate negotiations is low (vis needs of the updated NDC; the meticulous planning requirements and doing it in a sustainable manner)
	Limited technology options for private sector/business use (More is desired from the Green Technology Forum)
	No formal and institutionalized training on skills for climate change negotiations;
	Special skills gap at Zonal and Woreda levels on MRV systems
	Poor reporting from regions (Woreda> Zone> Region> Federal) affecting international commitment
	Appropriate technology of mitigation not identified not cascaded to regions
	Staff at EFCCC overseeing national MRV agenda are not adequate (only 7 employees)
	National capacity for National Communication and biennial report missing
	Poor incentive system for staff
	poor private sector consulting capacity on MRV issues
	Frequent reshuffling of leadership and staff at implementing entities (sectors)
	High institutional memory loss

Source	Capacity gaps
	Implementing entities (sectors) not obliged to report GHG emissions or other CRGE data
	Role ambiguity between EFCCC & MoF (CRGE Facility) on training at Regional levels
	Turn-over of staff qualified in the environment and climate change profession including senior climate change negotiators
	Limited technical capacity to respond to available/promising funding calls
	No coordination (joint planning) amongst EFCCC, sectors and Regions to jointly raise funds
	Lack of technical capacity to tap into carbon markets
	Lack of an accredited, local private sector facility for CRGE activities
	Slow process to enact/implement the National green (Eco) Tax proclamation
	Slow process to table Forest Fund at parliament (in the making)
	Payment for ecosystem services proclamation not yet endorsed and implemented
	There are no structures for verifiers of carbon market activities (could be universities, private consultants)
	Determining which MRV Tier to use based on sectoral hot-spots (not all need to remain in Tier 10)
	Missing data source for 3rd National Communication
	Missing official, Institutional and Procedural set-up for MRV of GHG Inventory (IPPU & Energy)
	Existing database system is not suitable for Biennial Reporting (need to migrate to cloud systems)
	MRV directorate's organizational position (mandate) does not mirror its international and national responsibilities
	Absence of quality assurance entity for GHG inventory data; universities need to build capacity [e.g. AAU/ASTU: IPPU, Energy]
	No certification systems for GHG inventory (EFCC needs to gear up to certify experts or reporting agencies)
Interviews and focus group at regional level (SNNPR Environment Office)	Climate proofing of sectors is key as drought and flooding is a key adaptation risk in the Region
	Mitigation interventions under the various sectors are known by activity; they are not matched by corresponding MRV systems
	Trainings are episodic not institutionalized
	No qualified MRV expert in the Region
	CRGE related baselines are missing primarily owing to budget limitations
	CRGE related baselines are missing
	Serious budget limitations constraining the following activities: Awareness-raising on CRGE; identification of green technologies; training for the numerous Woredas for the 23 Zones of the Region
	Limited field observations/studies due to lack of vehicles (only two for the bureau)
	More is desired on public awareness activities
	The often changing and “unstable” organizational structure of the sector is a major challenge (broad mandate at the federal level which narrows down at the regional, zonal and Woreda levels)

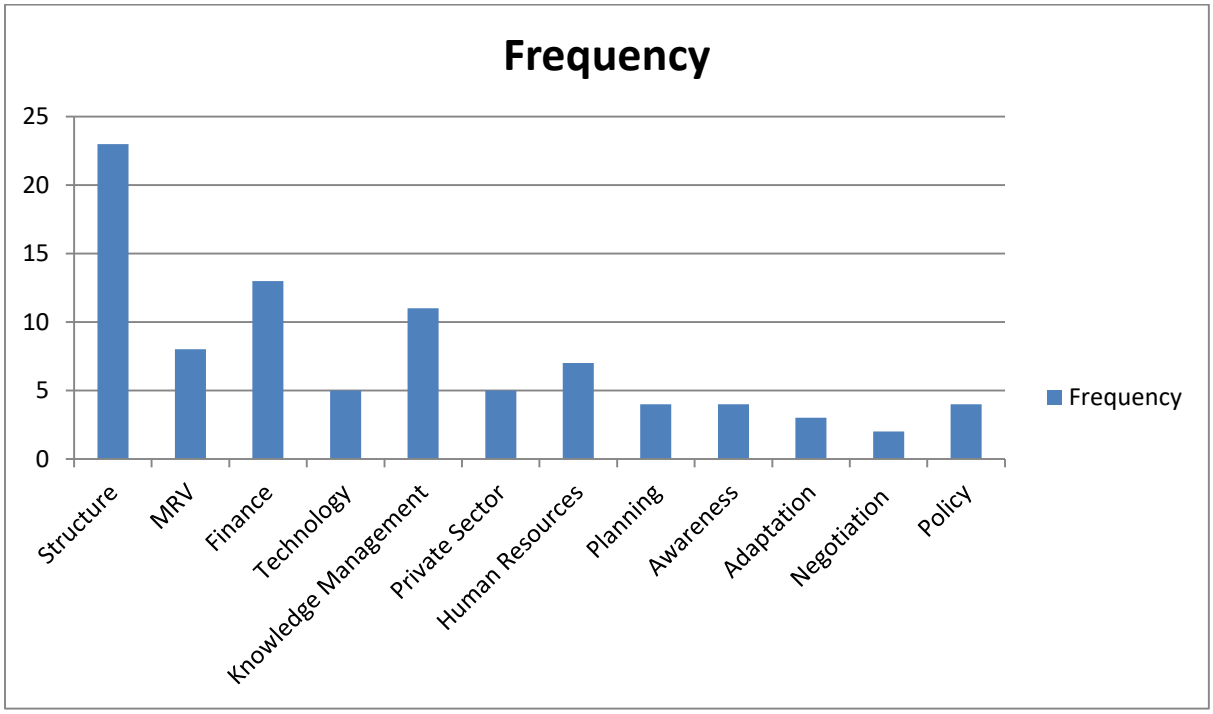
Source	Capacity gaps
	There are instances in which the federal EFCCCC and donors shunt the bureau and deal directly with Woredas to implement projects-without involving or seeking feedback from the bureau.
	Incomplete/missing structure of a steering committee, a technical committee, and a focal person for each of the sectors (implementing entities).
	Issues discussed with EFCCC are not always more on pertinent technical issues (they are increasingly focusing on mundane administrative issues)
	Viewing CRGE as a project or at best as a program
	Poor planning/joint visioning with the Regional Civil Service Commission for allocation of staff and resources
Insights from case study (Hawela Tula, Sidama Regional state)	Serious lack of financial resources; even desks and chairs are not sufficient; no vehicles
	Lack of awareness on CRGE/NDC, MRV issues; training is almost non-existent
	No seedling centers because of lack of budget
	No financial capacity to demarcate the huge wetlands straddling the various kebelles
	No GPS technology systems to map/demarcate the huge wetlands straddling the various kebelles
	Lack of human resources to cover the 12 kebelles with around 200k population

4.4.3. Interpretation of results

The long-list is further analyzed to determine the most prevalent themes of capacity need and also to map those onto the capacity gap core issues (as per the analytical framework developed). This is done in MS-Excel to be able to do the required sorting and analytics. **Figure 8** shows **the complete range of** capacity need themes for the EFCC sector. In addition to the common themes shared by the three CRGE sectors, the EFCC sector has identified Climate Negotiation Skills as an additional need area.

Again, care must be taken in the reading of the bar graph. The results must not be interpreted to mean they portray the capacity needs of the entire sector; rather they should be construed as a depiction of the capacity needs of NDC implementation only. The picture is expected to change over time as old constraints get resolved and new challenges arise.

Figure 8: "EFCC" sector capacity need themes relating to CRGE & NDC implementation



In light of the sector's PDP-10 objectives and targets discussed in **Section 5.4.1**, the following "reading" of the chart could be made keeping in mind NDC related objectives (**Table 9**).

Table 9: Revisiting NDC capacity needs with a PDP-10 lens: "EFCC" sector

PDP-10 objectives and targets relevant to NDC implementation	What does that mean for NDC capacity development?
Reduce the amount of sectoral greenhouse gas emissions; increase greenhouse gas emissions reduction capacity from the present 92.7 million metric tons of carbon	That will mean capacity across all the NDC need themes need to be developed and streamlined to meet that objective.

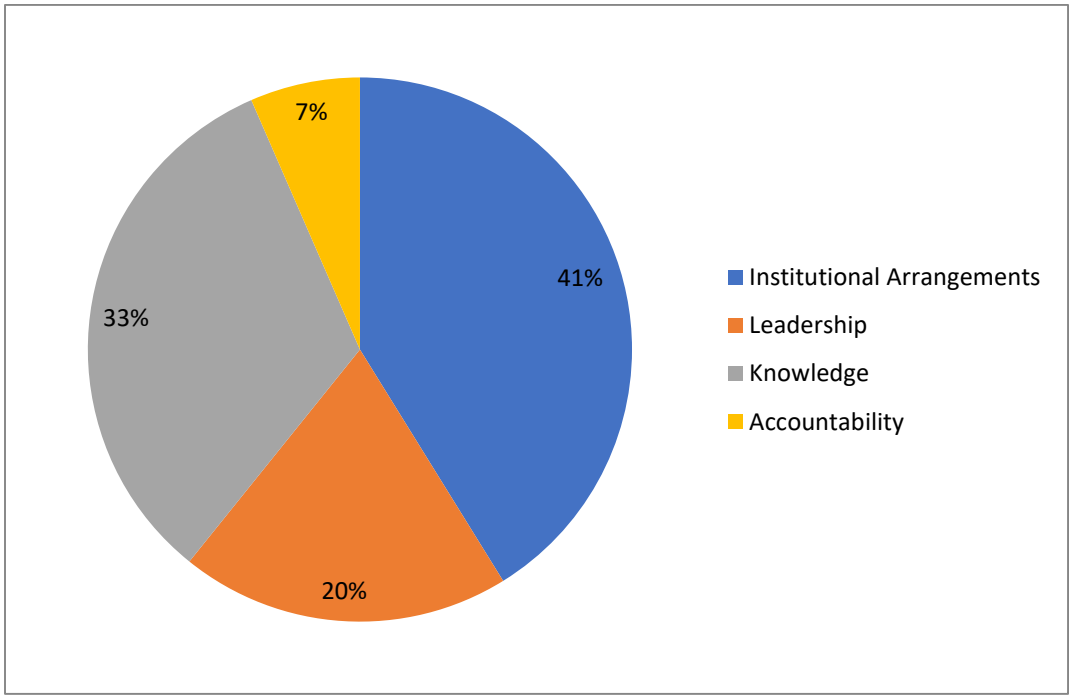
dioxide equivalent to 162.3 million metric tons of carbon dioxide equivalent	
Strengthen the development and protection of forests & the ecosystem; put in-place national information database/center for ecosystems; increase national forest coverage from 15.5% to 30%	Again capacity for managing those adaptive systems have to be built- also in terms of planning, MRV, pertinent databases, etc.
Put in place systems to help align international environmental agreements to the interest of Ethiopia	Negotiation capacity of the country and the sector on MEAs has to be developed
Improve access to information and technology and transfer of same	Knowhow and skills for Identification, piloting and roll-out of green technologies to the CRGE sectors must be honed including for green business case analysis. With that Information and Knowledge Management capacity has to be built in parallel to support the efforts of the CRGE sectors both in mitigation and adaptation issues.
Put in-place systems for environmental protection; improve enforcement capacity	Capacity for enforcement of existing regulations, standards and bylaws must be strengthened and as well for putting new ones which are effective. With that the sector needs to hone its capacity in the ex-ante and ex-post evaluation of policies, regulations and standards.
Cascade the EFCCC structure down to Kebelles	How to put in-place effective Structure (Coordination and HR) is a key NDC theme in which the sector needs to develop capacity
Update the CRGE strategy (of 2011)	That must be interpreted to mean also to take into account new sub-sectors which have come into stream after 2011 (e.g. in the Industrial sector). The Strategy also pre-dates the NAP, PDP-10 and the SDGs; hence its revision should be done mindful of those plans and goals. To that end, the question of capacity development for Integrated Reporting comes to the fore.
Improve the national GHG inventory database and roll it out	The need for Capacity development in MRV of GHG inventory comes to light, especially of the CRGE implementing sectors (connecting them to the national data center, on quality control & assurance issues, etc.)
Put in-place payment for ecosystem services fund	The sector needs to develop its capacity in many related fronts here: policy formulation, implementation and evaluation; valuation of eco-system services; administration of revenues from eco-systems; and the whole issue of mobilizing finance to the green economy.

A second analysis of the data was conducted in line with the UNDP Capacity Assessment Framework, with a view to show the "spread" of **the four capacity gap Core Issues** for the **EFCC sector**. When the full-range of capacity needs was mapped onto the four Core Issues, the following results were obtained: 63 counts related to Institutional Arrangements; 50 related to Knowledge; 30 related to Leadership; and 10 related to Accountability. The results are depicted in the Pie Chart shown in **Figure 9.**

The actual analysis (from which the pie chart is derived) is presented in the "Capacity Needs" page of the sector's preliminary intervention guide for the EFCCC sector in Annex 9.7D: *Capacity Gap Core Issues*, columns E to H.

As with the implementing entities, the analysis indicated that *Institutional Arrangements* and *Knowledge* are the two most important levers of change for the "EFCC sector" as well. The high-level recommendations which will be discussed in **Chapter 8** will keep sight of these findings.

Figure 9: "EFCC sector's capacity gap core Issues relating to CRGE & NDC implementation



5. Towards a Systemic Capacity Development Plan

This Chapter is a bridge between the earlier chapter dealing with NDC capacity needs assessment and interpretation and the next chapter which will deal with capacity development plans.

In order to make the transition from need to response, we will need principles on the basis of which we could design interventions. The second tool we need is a Theory of Change (ToC) to illustrate the anticipated result chains. These are briefly discussed in the Sections below.

5.1. Principles guiding intervention design

The literature review, interviews and case studies resulted in a long-list of capacity development needs in the three sectors. Hence, preparing the respective capacity development plans calls for screening criteria/principles for prioritizing the needs and defining the desirable features of the plan itself.

The PCCB draft toolkit suggests that prioritization of capacity development intervention areas need to be done with the help of a set of criteria. However, it offers little bay way of principles on the basis of which those criteria could be determined. It does however provide some **desirable focus areas** (as already discussed in the literature review section).

The UNDP framework, on the other hand, provides useful guidance on how to frame the principles/criteria and how to develop the plans. The following are important re-iterating here:

- The over-arching questions we need to try and answer in such an exercise are: **"capacity for why?", "capacity for whom?", and "capacity for what?".**
- We need to take note of the following **considerations**, which determine **the sustainability of a capacity development response and its results**:
    - Because an assessment usually covers several core issues and because the core issues are mutually reinforcing, **a capacity development response will be more effective if it combines actions to address more than one core issue**. Similarly, a capacity development response should address more than one level of capacity, i.e. *organizational* and *enabling environment* levels;
    - A capacity development response should try to combine short- to medium-term initiatives (one year or longer) with quick-impact activities (less than one year). Together, these can build the foundation **for continued capacity development**.
    - A capacity development response should include **exit strategies, such as strengthening the base of local experts and consultants and involving regional, national and local educational and training institutes.**
    - **A capacity development response should integrate with national budget structures to ensure continued funding.**

Another "principle" or philosophy of capacity development is the one that is advocated by the MoF CRGE Facility.[44] The CRGE Facility advocates a fully-integrated and mainstreamed approach[45] to CRGE capacity development- and not one which follows a sectoral approach. This is an important and strong voice, so deserves some merit and de-merit analysis in this section. The conclusions drawn (of course based on the understanding of the Consultant) will feed into the Recommendations section (**Chapter 8.)**

The merits of a fully-integrated and fully-mainstreamed capacity development approach are understood to be the following:

- It has a very high potential for cost-effectiveness, especially as there is strong similarity in NDC capacity development-need themes across sectors;
- It implies that adaptation and mitigation interventions are synchronized/dovetailed across the sectors hence preventing duplication of effort and projects;
- If successfully implemented, it will give a more focused, high-level overview (national and impact-level) on the anticipated results of the mitigation and adaptation national endeavors;
- Again if successfully implemented, this approach could pave the way for another desirable planning philosophy: "one fully mainstreamed plan".[46]

The demerits of fully-integrated and fully-mainstreamed capacity development approach are believed to be the following in the Ethiopian context:

- It can't practically happen in a situation where the CRGE strategy itself and its "auxiliary" adaptation strategies are sectoral themselves; the mitigation targets of the CRGE strategy are set by economic sectors as well;
- In the same vein, the NAP itself is sectoral in its design; it was formulated drawing heavily on the GTP II, the CRGE strategy and its sectoral adaptation strategies; the eighteen adaptation options are also sector-specific in their nature;[47]
- While mainstreaming capacity development **in program design makes sense and must be done** especially for (new) projects and programs soliciting funding from the Adaptation Fund, GCF, etc., the sectoral ministries (which have established the ECCD directorates at the federal level and CRGE focal points in the Regions) need to take responsibility for their own **institutional** capacity development relating to CRGE/NDC implementation;
- The IPCC 2006 guideline is also sectoral in itself: IPPU, AFOLU, Energy and Waste; for instance, while AFOLU will rely on Tier-1 methodology for GHG inventory, IPPU can make efforts to move to Tier-2 methodology;[48]

[44] From discussions held with Adugna Nemera and Medhin Mekonnen of the MoF CRGE facility on 01.04.2021
[45] That is meant to say fully-integrated (across sectors) and fully-mainstreamed (within programs & projects)
[46] This same thinking was held and recommended by the PDC (discussions held with Abas Mohammed on 25.01.2021.
[47] Have a look at the following pages: p. i & ii (Sectors and the proposed 18 adaptation plans); pages 13 (source documents used by the NAP; and p 77 (NAP-ETH governance arrangements);
[48] Based on discussion held with Yosef Melka (Dr.) on 10.02.2021.

- The ToR of this Study itself followed the CRGE strategy and the NDC "thinking"; indeed, the assessment and corresponding plans are required to be prepared sector by sector, namely Transport, Energy and industry;
- Hence, a fully-integrated and fully-mainstreamed capacity development approach can happen only after the CRGE strategy, its adaptation strategies and the NAP have been revised in that spirit;
- In actual fact, both the CRGE strategy and the NAP pre-date the PDP-10; the CRGE strategy pre-dates GTP II and the NAP draws on GTP II.

Therefore, while the fully integrated, fully-mainstreamed capacity development proposition is noteworthy, it will be a difficult undertaking to achieve for the reasons mentioned above. For that to happen, the sectors need to move away from the current "silo" working culture towards a cross-sectoral, fully-integrated planning and reporting system (which is not currently the case). In fact, all of the CRGE capacity needs assessment studies carried out so far (including the National Capacity Development Program Gap Assessment (2015) and the CRGE Strategy Implementation Progress Assessment 2011-2019 (2020) were sector-wise studies in themselves.

Notwithstanding the demerits of the fully mainstreamed/integrated capacity development proposition, the following concepts distilled from its desirable objectives will be used to develop the principles of intervention design discussed further below.

First, owing to the fact that almost all of the NDC capacity-building themes (e.g. planning, structure (coordination & reporting), structure (HR), finance) are common constraints, a more coordinated approach to the capacity development response is recommended. That is to say the capacity development plans to be proposed (while sectorally organized for the reasons mentioned above) will strongly advocate for joint visioning and planning and coalition building (by all CRGE sectors). An idea worth considering is for the sectors to start working with existing PDP-10 auxiliary documents such as financing and add new ones relevant for CRGE and NDC implementation, e.g. adaptation, HR, etc.

Eventually, a capacity need assessment will have to come up with interventions- whether sectors choose to implement those jointly or independently.

Coming back to the question of how to design interventions, the principles of environmental policy evaluation are also instructive. To that end, the following five central "values" are often cited as desirable design/evaluation criteria[49], namely:

- Goal effectiveness;
- Cost efficiency;
- Incentives for long-run improvement;
- Equity (inclusivity; political acceptability); and
- Enforceability.

[49] For instance, Barry, F. (2006). *Environmental Policy: An Introduction*; Bemelmans-Videc, et al. (2003). *Carrots, Sticks and Sermons: Policy Instruments and their evaluation*

The UNDP framework seems to embody a number of these central values. It states three clear "principles", on the basis of which the SUCESS of an INSTITUTIONAL capacity development plan should be gauged against. These principles are:

- **Performance,** which embodies elements of *efficiency* and *effectiveness*;
- **Stability**, which integrates elements of *risk mitigation* and *institutionalization*; and
- **Adaptability**, which contains element of *investment for growth and change* and *continuous improvement*.

By combining these central principles with the action areas recommended for capacity development of NDC implementation (identified by the PCCB draft toolkit and pertinent literature as reviewed in Section 4.3) and with the consultants own insights as a practitioner in the field of sustainability, green growth and capacity development, the following five criteria are recommended (**Table 10**):

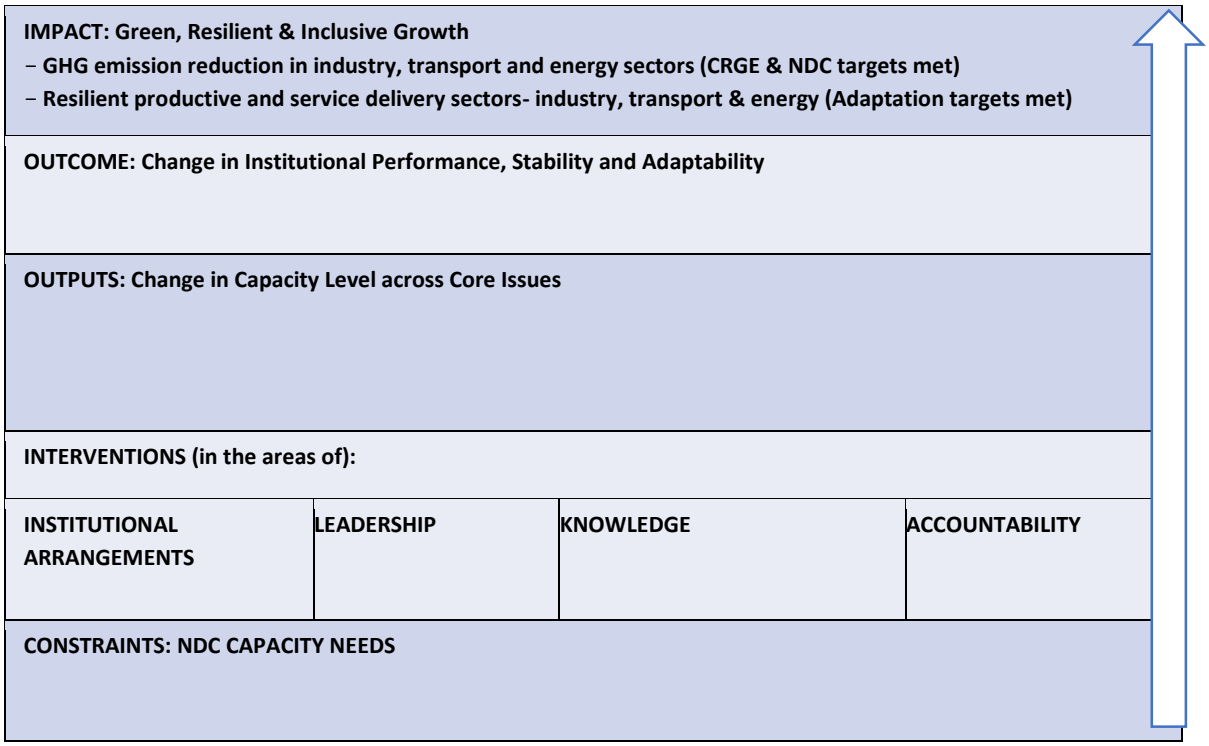
Table 10: Criteria for intervention design for NDC capacity development plan

No.	Criteria (short naming)	Description	Values, principles and success considerations it is expected to address
1.	Focus on often cited gap and prioritized by sector as NDC related need	Gaps and needs often identified in the key literature reviewed, in the interviews and case studies, and **importantly** prioritized by the sectors will be the focus of the intervention.	Political acceptability, likelihood of enforceability. *This will also address the "Capacity for What" and "Capacity for Whom" questions*.
2.	A systemic/institutionalized approach to capacity development	Interventions will be designed in such a way that they will be "enduring, systematic and specific" and offered by entities which take this as core business (as against the traditional "one-off, episodic broad, and supply-driven approach and offered by organizations which take capacity development as a side activity".	Goal effectiveness, incentives for long-run improvement, to a certain degree cost effectiveness as well- if interventions are focused and done on demand basis. *This will address the "Capacity for Why" questions.*
3.	Alignment with national priorities (PDP-10) and the SDGs	As highlighted in the "key insights" distilled from NDC Capacity development literature, it makes sense to frame the objective of Ethiopia's NDC and subsequent capacity development plans with the climate resilient and green economy approach of the GoE. With that what is done in NDC/CRGE must also contribute to the SDG goals.	Political acceptability, goal effectiveness, equity (inclusive of women and poor people) *This will address the three questions of "Capacity for Why", "Capacity for What" and "Capacity for Whom" questions in that order of relevance*
4.	Based on the development of endogenous capacity	This is a key criteria highlighted by the PCCB and other literature reviewed. Although routine and certain capacity development activities could be carried-out in house, specialized and continuing interventions should be outsourced to universities, which have the capacity development objective as their core business.	Cost effectiveness, incentives for long-run improvement and goal-effectiveness *This will respond to the question, "Capacity for Why" question*
5.	Balance on national and local level	Interventions need to address needs both at the federal and regional and woreda levels.	Political acceptability, enforceability, goal effectiveness *Addresses "Capacity for Whom" question*

5.2. Theory of Change for Capacity Development

Another important tool for the design of a capacity development plan is a theory of change, which illustrates anticipated result chains from capacity needs to impact. **Figure 10** below is one such illustration adapted to the case of NDC implementation.

Figure 10: A broad theory of change for capacity development for CRGE/NDC implementation



Source: Adapted to the CRGE/NDC issue from: *Capacity development: A UNDP primer* (UNDP, 2009).

We will use this tool to illustrate the anticipated result chains of the system of interventions proposed for the three sectors.

6. The Capacity Development Action Plan

This section presents the capacity development plans for the three sectors based on the analysis carried out in the foregoing sections. A short summary of the process followed is depicted in **Figure 11** and briefly described further below.

Figure 11: The capacity development action plan formulation process

The capacity needs identified from the various sources (key gap assessment studies, interviews, focus group discussions and case studies) were gathered and analyzed to determine NDC relevant, capacity-need themes of the sectors.[50] The most recurring themes were sorted (with the help of MS Excel) to determine the ranking. Based on the principles drawn for the design of systemic capacity development actions, various interventions were designed. The sectors[51] were then asked to review the findings. Specifically, they were asked to determine which identified needs were still relevant for NDC implementation within the ambit of PDP-10. Following from that, they were requested to do a self-assessment of the sector's capacity to respond to those needs.

Although initially the self-assessment ranking scheme used by the National Capacity Development Program (NCDP) Gap Assessment study was considered, later on, the five-point rating of the UNDP Capacity Development Framework was adopted in place of the former. The NCDP scale[52] with its zero to three rating was prone to misinterpretation as was evidenced in the discussions held in the validation

[50] The common themes for Ethiopia
[51] Represented by the Environment and Climate Change Directorate
[52] Based on the following rating: *0= If they gauge sector to have no capacity; 1= If sector's capacity is roughly about 25%; 2= If sector's capacity is about 50%; and 3= If sector's capacity is 100% (no support needed).*

workshops. Importantly, the relatively narrow four-point scale of the NCDP did not allow for capturing existing capacities, which were estimated to be above zero but less than 25% forcing sectors to round them off to zero.

Hence, the following five-point, UNDP Ranking Scheme was adopted:

1= No evidence of relevant capacity;
2= Anecdotal evidence of capacity;
3= Partially developed capacity;
4= Widespread, but not comprehensive, evidence of capacity; and
5= Fully developed capacity.

They sectors were also asked to gauge if the interventions proposed if they were adequate to address the confirmed needs. Where possible, the Consultant sat with the ECCD team and facilitated the process by explaining the rationale behind the interventions and provided clarifications as needed.

A high-level summary of the proposed capacity development plans is presented in the sections below. The detailed plans are separately appended in **Annex 9.7**. They are prepared in MS Excel as **Intervention Guides** with separate sheets describing:

- Capacity needs;
- Validation, by the sectors, of needs and interventions for NDC implementation[53];
- An aggregated theory of change for the interventions; and
- An activity schedule detailing intervention activities, indicators, estimated budget and proposed timelines of implementation.

For the reasons discussed in Chapter 6 (question relating to fully integrated vs. sectoral plans), this report opts for the sectoral approach tor NDC capacity development plans- of course with additional recommendations made for EFCC to mobilize the effort towards the former (a more collaborative, integrated approach).

That implies, it is intended that the three sectors will be responsible for their respective plans. **Ownership** and responsibility is the key success factor when it comes to capacity development. In the case of this Study, the sectors which reviewed their respective plans have confirmed willingness to own and drive the interventions.

However, as already discussed, there is strong commonality on the need themes of the sectors. Mindful of that, the concepts of coalition building, joint visioning & planning, communities of practice and professional networks have been adopted to design the plans. This brings to the fore the question of whether there could be **a second alternative**: Could the EFCCC **own the plans** and also drive the interventions for and across the sectors?

[53] The MoT and MoTI completed this exercise within the limited time frame available.

For the very argument already made above, it would be more feasible for the sectors to own their respective plans and for the EFCCC to coordinate and facilitate the process across all the CRGE sectors.[54] That way, some of the common constraints and interventions (e.g. to do with planning, finance, structure (coordination & mandates, HR issues) and partly systems for MRV of GHG inventory could be addressed cross-sectorally. Doing so will offer a better value proposition, e.g. improved cost effectiveness. Such an approach could also help create a culture of joint visioning and planning as advocated for by PDC experts. On the other hand, other NDC-themes could be more sector-specific, e.g. taking responsibility for ones' internal Knowledge Management system and technology choice.

With the above in view, the capacity development plans are proposed with the following proposition:

- The sectors will be the custodians of their plans and will be responsible to drive them;
- EFCCC will assume a coordination, facilitation and oversight role[55];

The following arguments could be made in favor of the above proposition.

First, as already pointed out, it makes sense to place the responsibility of capacity development with the entity whose capacity we want to build.[56] The sectors are the ones at the coalface of all the constraints and will as a result have the strongest incentives to try and resolve them. At the highest level, it is the sectors' and their leaderships' responsibility to nudge their respective ministries or bureaus to adopt a sustainability policy, which will be the starting point for taking CRGE and NDC issues as core businesses and not fringe issues.

Second, as most of the need-themes are identical, cross-sectoral collaboration offers a strong business case: better scale for the interventions and cost effectiveness as a result. That will be the case for: (a) procurement of services and equipment; (b) advocacy for changes in common structural constraints (e.g. those within the jurisdictions of the Ethiopian Civil Service Commission (CSC), National Disaster Risk Management Commission (NDRMC), Regional governments); (c) capacity for partnering and resource mobilization, and related to that of coordination with the MoF- CRGE facility; (d) creating endogenous capacity within our universities and local professional networks . Here, it makes sense, if the EFCCC takes the lead while the sectors (and bureaus) create a joint-front with the Commission.

When it comes to budgets, the understanding is that once the sectors have owned the plans, they will determine which activities they will be able to cover from their own sources- e.g. for drawing up their sustainability policies; setting up internal Knowledge Management systems, institutional twinning arrangements[57]; setting up their sector-specific professionals databases; etc. On other activities, they will definitely be looking for external finance. Here is where the EFCCC could come with a strong value proposition. For instance, they could identify potential multi-lateral and bilateral donors; identify calls for funding to NDC capacity need areas; offer to put joint proposals; help identify the service providers; and

[54] For all CRGE sectors- not just the three for which this Consultant was tasked to look into.
[55] Of course, this does not include the other common/(basic trainings the EFCCC offers based on its own existing plans. Of course, it can align those to the sectoral needs for better effectiveness and vale-for-money.
[56] The same is true for personal Continuing Professional Development (CPD) objectives.
[57] For instance the Ethiopian Leather Development institute (LIDI) has identified the Indian Central Leather Research Institute (CLRI) as its knowledge partner.

give oversight and control on the implementation of the services. In the same vein, the EFCCC will determine the sources of the budget for these activities, i.e.: own source, from the sectors, external.

The details of this collaborative work could be specified through a Memorandum of Understanding (MoU), which could be signed by EFCCC, the sector ministries (and their sub-sector agencies) and, as the case may be, with other partners, e.g. PDC, MoF, CSA, CSC, NDRMC, the Regional Governments (presidents' office) and the various bureaus in the Regions . With this understanding, the last columns in **Tables 11-14** list potential partners from within the public sector which the concerned sector could mobilize for coalition building. A starting list of development partners is also provided as gleaned from the assessment but should not be taken as exhaustive. In addition, a separate column is included in the plans, which provides a cursory overview of existing work and experience to draw on. Going forward, sectors will have to identify donors, centers of excellence and service providers for the interventions on a case by case basis.

With the above in view, the plans are summarized in **Sections 7.1-7.4** and the details provided in **Annexes 9.7A-9.7C**). Of course, there is a possibility that they could be streamlined, dovetailed for a coordinated and cost-effective delivery once the sectors, EFCCC, and other partners have committed to jointly work on them.

Finally a word of caution on the preliminary budgets indicated in the Plans:

The budgets must be viewed as ball-park estimates. The "Basis of Estimation", "The Level of Effort (LoE)" and the associated professional fees indicated do NOT necessarily imply the task should be carried out by external consultants. It can also be viewed as the LoE needed should the activities be "in-sourced" from within the ministry or its various agencies.

For the most part, the activities are intended to build endogenous capacity (within local universities, consulting firms) for training, certifications and related advisory services. For that reason, only pilot trainings are proposed; cost for repeat training in the following years is envisaged to be borne by the sector as a way of ensuring sustainability and ownership.

The CRGE sectors could use the Plans as an "Intervention Guides" to further concretize and refine their final NDC capacity development plans and, even better, to harmonize those across the CRGE sectors.

6.1. Transport sector

Annex 9.7A presents the full capacity development plan for the Transport Sector.

It must be emphasized that the capacity needs and corresponding interventions were validated and "signed off" in the review exercise conducted by the MoT held on March 23, 2021 at the MoT office in which four team members of the ECCD participated.[58]

Based on that collaborative process, the following eight interventions were identified (whose details are provided in **Table 11** below).

i. *Setting up a reliable MRV of GHG Inventory system for the Transport Sector;*
ii. *Build the resource mobilization and partnering capacity of the Transport Sector;*
iii. *Build the technical capacity of MoT, its sub-sectors[59] and the Regional Bureaus on planning of adaptation and mitigation measures/projects in-line with the updated NDC and the PDP-10 plan*
iv. *Build effective human resources management system;*
v. *Put in-place clear organizational structure and staffing plan;*
vi. *Set up an effective Information and Knowledge Management System (in addition to MRV system);*
vii. *Build technical capacity for climate-resilient planning, design, operation and maintenance of transport systems; and*
viii. *Raise awareness of top management, staff and local community on environmental sustainability (CRGE issues, adaptation and mitigation) as it relates to the transport sector.*

[58] These were: Jobir Ayalew (Director), Yizengaw Yitayih (team Leader), Behafta Hagos (CRGE Expert) and Wondwossen Tilahun (Climate Change Expert)
[59] MoT sub-sectors include the various Corporations, Enterprises, Authorities and Share Companies.

Table 11: Transport sector- Intervention ideas proposed for NDC capacity development

Theme	Intervention idea	MoT rating on relevance of intervention: H=High, M=Medium, L=Low	MoT willingness to own intervention? Y=Yes, N=No	Potential partners from the public sector for coalition building and Potential development agencies and donors
MRV	**1.** Setting up a reliable MRV of GHG Inventory system for the Transport Sector	H	Y	EFCCC, CSA, MoWIE[60], Ministry of Innovation and Technology (MoIT)[61] EU, UNDP, WRI, GGGI, DfID, GIZ, USAID, Word Bank, SIDA, Norway
Finance	**2.** Build the resource mobilization and partnering capacity of the Transport Sector	H	Y	MoF (CRGE Facility), PDC, EFCCC DfID, World Bank, IFC, GIZ, SDC, USAID, AfDB, GCF, GEF, CIF, P4G, Denmark, Norway, France, Italy, EU
Planning	**3.** Build the technical capacity of MoT, its sub-sectors and the Regional Bureaus on planning of adaptation and mitigation measures in-line with the updated NDC and the PDP-10 plan	H	Y	PDC, MoF, EFCCC, MoWIE, CSC NDC Partnership, GCF, WRI, EU, UNDP, GGGI, World Bank, GIZ/BMZ, DfID
Structure: HR	**4.** Build effective human resources management system	H	Y	EFCCC, CSC, PDC UNDP, GGGI, DfID, EU, GIZ
Structure: Coordination	**5.** Put in-place clear organizational structure and staffing plan	H	Y	EFCCC, CSC, PDC UNDP, GGGI, DfID, EU, GIZ
Knowledge Management	**6.** Set up an effective Information and Knowledge Management System (in addition to MRV system)	H	Y	CSA, MoIT, NMA, PDC, EFCCC, MoF CRGE Facility, NDRMC GGGI, WRI, UNDP, NDC Partnership CDKN, DfID, GIZ, EU

[60] As per IPCC 2006, both MoWIE and MoT are concerned with GHG emissions from the Energy sector.

[61] One of the services offered by MoIT is help companies who need physical data centers but don't have the need to build their own proprietary physical locations. The Ministry offers private data center rental; colocation, where a company rents server within a shared data center space; or a mix of the two. Data center as a service (DCaaS) is the provision of offsite physical data center facilities and infrastructure to clients. Clients rent or lease access to the data center, using the servers, networking, storage and other computing resources owned by the Ministry. Source: https://mint.gov.et/

Adaptation	**7.** Build technical capacity for climate-resilient planning, design, operation and maintenance of transport systems	H	Y	EFCCC, MoF, NDRMC, NMA, PDC Adaptation Fund, GEF, GCF, World Bank, EU, GIZ, GGGI, International Institute for Sustainable Development (IISD).
Awareness	**8.** Raise environmental awareness of top management, staff and local community on environmental sustainability	H	Y	EFCCC, MoF, PDC, NMA, NDRMC, Ministry of Science and Higher Education (MoSHE), Ministry of Education (MoE) UNDP, NDC Partnership, EU, GGGI, WRI GIZ, SNV, SIDA, DfID, USAID, World Bank, IFC, SDC, CDKN

6.2. Energy sector

The following interventions were identified for the Energy sector whose details are provided in **Table 12** below. **Annex 9.7B** presents the full capacity development plan for the Energy Sector.

i. *Build the resource mobilization and partnering capacity of the Energy Sector;*
ii. *Build the technical capacity of MoWIE, its institutes and the Regional Bureaus on planning of adaptation and mitigation measures/projects in-line with the updated NDC and the PDP-10 plan;*
iii. *Mandate and role clarification "CRGE" staff: MoWIE, its sub-sectoral agencies & Regional Industry Bureaus;*
iv. *Setting up an efficient MRV of GHG Inventory & Mitigation system for the Energy Sector;*
v. *Build effective human resources management;*
vi. *Raise environmental awareness of top management, staff and local community on environmental sustainability (CRGE issues, adaptation, mitigation) as it relates to the Energy sector;*
vii. *Build the "partnering" capacity of the private sector in engaging in IPPs, PPPs and development partnerships with donors;*
viii. *Build the technical capacity of the private sector in after-sales services and maintenance of solar home systems & biogas systems;*
ix. *Introduce a voluntary energy management program (National Energy Efficiency Accord) which could be jointly facilitated by EEA, MoWIE, MoTI and other sectors* **[NB. Case Study 4 provides a separate assessment of the experience so far, i.e. EEA's effort to date including its collaboration with Addis Ababa University.];**
x. *Standardization of green energy technologies;*
xi. *Build technical capacity for climate-resilient planning, design, operation and maintenance of energy systems; and*
xii. *Set up an effective Information and Knowledge Management System (in addition to MRV system).*

Table 12: Energy sector- Intervention ideas proposed for NDC capacity development

Theme	Intervention idea	MoWIE rating on relevance of intervention: H=High, M=Medium, L=Low	MoWIE willingness to own intervention? Y=Yes, N=No	Potential partners from the public sector for coalition building Potential development agencies and donors
MRV	Set up a reliable MRV of GHG Inventory system for the Energy Sector	H	Y	EFCCC, CSA, MoT[62], MoIT EU, UNDP, WRI, GGGI, SNV, GIZ, USAID, Word Bank, SIDA, Norway
Finance	Build the resource mobilization and partnering capacity of the Transport Sector	H	Y	MoF (CRGE Facility), PDC, EFCCC EU, SNV, Denmark, France, UNFCCC, GIZ, AfDB, UNDP, World Bank, USAID, UNICEF, Norway, Italy, GCF, Adaptation Fund, EU, GIZ, SDC, USAID, GCF, GEF, CIF, P4G
Planning	Build the technical capacity of MoT, its sub-sectors and the Regional Bureaus on planning of adaptation and mitigation measures in-line with the updated NDC and the PDP-10 plan	H	Y	PDC, MoF, EFCCC, CSC, MoT NDC Partnership, WRI, EU, UNDP, GGGI, GCF, World Bank, GIZ/BMZ, DfID
Structure: HR	Build effective human resources management system	H	Y	EFCCC, CSC, MoF, PDC UNDP, GGGI, DfID, EU, GIZ
Structure: Coordination	Put in-place clear organizational structure and staffing plan			
Knowledge Management	Set up an effective Information and Knowledge Management System (in addition to MRV system)	H	Y	CSA, MoIT, NMA, PDC, EFCCC, MoF CRGE Facility, NDRMC GGGI, WRI, UNDP, NDC Partnership CDKN, DfID, GIZ, EU
Adaptation	Build technical capacity for climate-resilient planning, design, operation and maintenance of transport systems	H	Y	EFCCC, MoF, NDRMC, NMA, PDC Adaptation Fund, GEF, GCF, World Bank, EU, GIZ, GGGI, International Institute for Sustainable Development (IISD).

[62] As per IPCC 2006, both MoT and MoWIE are concerned with GHG emissions from the Energy sector

Awareness	Raise environmental awareness of top management, staff and local community on environmental sustainability	H	Y	EFCCC, MoSHE, NMA, NDRMC, MoE, PDC, MoF UNDP, NDC Partnership, EU, GGGI, WRI GIZ, SNV, SIDA, DfID, USAID, World Bank, IFC, SDC, CDKN
Technology	Standardization of green energy technologies	H	Y	EFCCC, Ethiopian Standards Agency (ESA), Ethiopian Cleaner Production Center (ECPC), MoIT, MoF EU, SNV, Denmark, GEF, GCF, GIZ, UNDP, USAID, World Bank
Private sector	Build the "partnering" capacity of the private sector in engaging in IPPs, PPPs and development partnerships with donors	H	Y	EFCCC, MoTI, MoF, PDC [Also: ECCSA, EICG UNDP,EU, IFC, GIZ, P4G, DfID, World Bank, SNV, USAID
	Build the technical capacity of the private sector in after-sales services and maintenance of solar home systems & biogas systems			
	Introduce a voluntary energy management program (National Energy Efficiency Accord)(which could be jointly facilitated by EEA, MoWIE, MoTI and other sectors			

6.3. Industry sector

Annex 9.7C presents the full capacity development plan for the industry Sector. The needs and corresponding interventions identified are the results of the validation/review exercise conducted by MoTI on March 31 at the MoTI office in which two team members of the ECCD participated.[63]

Based on that collaborative process, the following interventions were identified whose details are provided in **Table 13** below.

i. *Build the technical capacity of MoTI, its institutes and the Regional Bureaus on planning of adaptation and mitigation measures/projects in-line with the updated NDC and the PDP-10 plan;*
ii. *Updating of the CRGE strategy relating to the Industry sector (planning for metal, glass, ceramic and other sub-sectors);*
iii. *Build the resource mobilization and partnering capacity of the Sector;*
iv. *Setting up an effective MRV of GHG Inventory system for the Industry Sector: Cement (existing); metal, glass, ceramic, textile leather, chemicals (scale-up);*
v. *Mandate and role clarification for MoTI, Institutes, EIC, IPDC, RIPDCs, Sugar Corporation;*
vi. *Mandate and role clarification for "CRGE" staff: MoTI & Regional Industry Bureaus;*
vii. *Build the "partnering" capacity of the private sector in engaging in PPPs and development partnerships with donors;*
viii. *Build the awareness of the private sector on sustainability issues;*
ix. *Introduce a voluntary energy management programs (National Energy Efficiency Accord (which could be jointly facilitated by MoTI, EEA, MoWIE, MoT and other sectors);*
x. *Set up an effective Information and Knowledge Management System (in addition to MRV system);*
xi. *Raise environmental awareness of top management, staff and local community on environmental sustainability (CRGE issues, adaptation, mitigation) as it relates to the Industry sector [NB: Separate intervention for private sector, see below];*
xii. *Build effective human resources management system for NDC implementation;*
xiii. *Identification and introduction of green technologies (adaptation and mitigation); and*
xiv. *Build technical capacity for climate-resilient planning, design, operation and maintenance of Industrial systems.*

[63] Awash Yirga (CRGE Team Leader) and Girma Mekonnen (CRGE Expert)

Table 13: Industry sector- Intervention ideas proposed for NDC capacity development

Theme	Intervention idea	Relevance of interventions (MoTI rating): H=High, M: Medium, L= Low	MoTI willingness to own intervention? Y= Yes; N= No	Potential partners from the public sector for coalition building Potential development agencies and donors
MRV	1. Setting up an efficient GHG Inventory system for the Industry Sector: Cement (existing, pilot); Metal, glass, ceramic, textile leather, chemicals (scale-up)	H	Y	EFCCC, CSA, MoIT EU, UNDP, WRI, GGGI, USAID/USFS, GIZ, Word Bank
Finance	2. Build the resource mobilization and partnering capacity of the Sector	H	Y	MoF (CRGE Facility), PDC, EFCCC GCF, GEF, CIF, Adaptation Fund, P4G, AfDB, World Bank, IFC, USAID, EU, DfID, GIZ
Planning	3. Build the technical capacity of MoTI, its institutes and the Regional Bureaus on planning of adaptation and mitigation measures in-line with the updated NDC and the PDP-10 plan	H	Y	PDC, EFCCC, MoF, CSC NDC Partnership, WRI, EU, UNDP, GGGI, GCF, World Bank, GIZ/BMZ, DfID, UNIDO
	4. Updating of the CRGE strategy itself relating to the Industry sector (planning for metal, glass, ceramic and other sectors)	H	Y	
Structure: Human Resources	5. Build effective human resources management system for NDC implementation	H	Y	CSC, PDC, EFCCC UNDP, GGGI, DfID, EU, GIZ, UNIDO
Structure: Coordination, Accountability	6. Mandate and role clarification for MoTI, Institutes, EIC, IPDC, RIPDCs, Sugar Corporation	H	Y	
	7. Mandate and role clarification "CRGE" staff: MoTI & Regional Industry Bureaus	H	Y	
Knowledge Management	8. Set up an effective Information and Knowledge Management System (in addition to MRV system)	H	Y	CSA, MoIT, NMA, PDC, EFCCC, MoF CRGE Facility, NDRMC
		H	Y	

				UNIDO, GGGI, WRI, UNDP, NDC Partnership, USAID/USFS,CDKN, DfID, GIZ, EU, Italy
Adaptation	9. Build technical capacity for climate-resilient planning, design, operation and maintenance of Industrial systems	H	Y	EFCCC, CSA, MoF CRGE Facility, NDRMC, NMA, PDC Adaptation Fund, GEF, GCF, World Bank, EU, GIZ, GGGI, UNIDO, Italy, IISD.
Awareness	10. Raise environmental awareness of top management, staff and local community on environmental sustainability (CRGE issues, adaptation, mitigation) as it relates to the Industry sector [NB: Separate intervention for private sector, see below]	H	Y	EFCCC, MoSHE, NMA, NDRMC, MoE, PDC, MoF UNDP, UNIDO, UNEP, NDC Partnership, EU, GGGI, WRI, GIZ, DfID, USAID/USFS, World Bank, IFC, SDC, CDKN
Private sector (Interfacing also with technology and finance & policy)	11. Build the "partnering" capacity of the private sector in engaging in PPPs and development partnerships with donors	H	Y	EFCCC, MoWIE-Ethiopian Energy Authority (EEA), MoF, PDC, Also: Ethiopian Chamber of Commerce and Sectoral Associations (ECCSA), Ethiopian Institute of Corporate Governance (EICG) UNDP, UNIDO, USAID/USIF, P4G, GIZ, UNEP, IFC, World Bank
	12. Build the awareness of the private sector on sustainability issues	H	Y	
	13. Introduce a voluntary energy management programs (National Energy Efficiency Accord (which could be jointly facilitated by MoTI, EEA, MoWIE, MoT and other sectors)	H	Y	
Technology	14. Identification and introduction of green technologies (adaptation and mitigation)	H	Y	EFCCC, Ethiopian Standards Agency (ESA), Ethiopian Cleaner Production Center (ECPC), MoIT, MoF UNIDO, USAID/USFS, SIDA/SIWI, GIZ, UNIDO, DfID, Italy

6.4. Cross-sectoral (EFCC sector)

These "cross-sectoral" actions below are actually intended for the EFCCC. They are proposed with the consideration that the EFCCC will assume the overall coordination and facilitation role. Needless to say, the EFCCC has oversight and regulatory responsibilities on environmental and climate change issues not just over the three sectors addressed in this Study but over all of the CRGE sectors.

The assessment indicated that, there is a strong commonality on the capacity development needs and corresponding interventions across the three sectors. That implies, ideally, these common interventions could be carried out with the optimal "economy of scale" and with cost effectiveness to all parties concerned. When it comes to these interventions, the budget which EFCCC needs to assign for NDC capacity development would be for coordination and facilitation (overhead). It only needs to set aside separate budget for strategic interventions, for instance relating to policy change, education reform for sustainability, etc. as discussed further below and in the Recommendations chapter.

With that understanding, **Table 14** below provides an overview of the interventions which the EFCCC could implement in the context of capacity development of the CRGE sectors for NDC implementation.

Table 14: "EFCC sector" intervention ideas for NDC capacity development

NDC CB-Need Themes	Interventions	Intervention activities	Potential partners from the public sector for coalition building Potential development agencies and donors
Structure: Organizational structure & accountability	**1.** Streamline organizational structure and accountability systems	1.1 Mandate and role clarification of the "Environment & Climate Change" function and the CRGE focal persons of Regions, Zones and Woredas	CSC, PDC, MoF, Regional Governments, MoT, MoWIE, MoTI UNDP, GGGI, DfID, EU, GIZ, USAID, World Bank
		1.2 Robust coordination and accountability mechanisms: Mandatory requirements for accountability (reporting) systems (vertical & horizontal)	
Finance & Negotiation	**2.** Build the resource mobilization and partnering capacity of the implementing entities (Transport, Energy, Transport) to support their adaptation and mitigation activities	2.1 Education reform: universities to introduce long and short courses resource mobilization, negotiations skills, proposals writing (relating to adaptation and mitigation objectives)	MoF, PDC, MoE, MoSHE, MoT, MoWIE, MoTI GCF, GEF, CIF, Adaptation Fund, P4G, AfDB, World Bank, IFC, USAID, EU, DfID, GIZ
		2.2 Partnering for sustainability: Introduce a center of excellence for building the capacity of the public (and private sector) on "Partnering for Sustainability" (in line with the requirements of SDG 17)	
		2.3 Joint planning and visioning for financing the NDC Implementation Plan: Form a working group (drawn from PDC, MoF CRGE Facility, Planning- & Finance Bureaus, Planning Directorates of implementing entities) and work with the PDP-10 Auxiliary document "Financing the Plan".	
Knowledge Management	**3.** Set up an effective Information and Knowledge Management System for green growth issues (NDC, Adaptation, Mitigation, etc.)	3.1 Build endogenous capacity on NDC implementation: Identify qualified local universities and forge collaboration for advisory support on NDC implementation (thematic: MRV, etc.; and sectoral: Energy, industry transport)	MoSHE, MoE, CSA, MoIT, NMA, PDC, MoF CRGE Facility, NDRMC, MoT, MoWIE, MoTI GGGI, WRI, UNDP, NDC Partnership CDKN, DfID, GIZ, EU
		3.2 Education reform strategy: work with the Ministry of Science and Higher Education (MoSHE) to gear education for sustainability: Adopt the Principles for Responsible Management Education; Introduce senior-year courses on Environmental Sustainability	
		3.3 Set-up professional & consultant Data Base and training & certification systems	

		3.4 Communities of Practice: on green growth, NDC/CRGE implementation issues	
		3.5 South-South learning solutions: Establish systems for experience and knowledge sharing with LCD and other developing countries	
MRV	**4.** Support implementing entities to put effective structures and systems for MRV of GHG inventory	4.1 Support sectors to put structure and systems for MRV of GHG inventory (MoU between EFCCC, CSA and sectors	CSA, MoIT, MoT, MoWIE, MoTI, NDRMC EU, UNDP, WRI, GGGI, DfID, GIZ, USAID, Word Bank, SIDA, Norway
		4.2 Support for setting up GHG data management system (all the way from Data Collection to Reporting)	
		4.3 Support for setting up Quality Control systems of GHG Inventory data including M& E systems	
		4.4 Building Endogenous Capacity specifically for MRV: Setting up Quality Assurance Systems (Identify and forge partnerships with qualified universities, environmental management systems advisory firms (e.g. DQS)	
Structure: Human Resources	**5.** Build effective human resources management systems	5.1 Sector-wide monetary and non-monetary incentives for "CRGE" staff: Joint visioning with PDC and Civil Service Commission (and Regional bureaus) to address HR issues (staffing, pay-scales & incentives) by making use of the PDP-10 Auxiliary document on HR	CSC, PDC, MoF, Regional Governments Also: MoSHE, MoE, MoIT UNDP, World Bank, GGGI, DfID, EU, GIZ
		5.2 Knowledge access and skills development for CRGE staff	
Private sector (specific)	**6.** Strengthen private sectors' commitment and concrete actions in the green economy (adaptation & mitigation)	6.1 Awareness: Introduce the concepts of Sustainability, Responsible Leadership, and Corporate Governance to the Private Sector	MoF, PDC, MoT, MoWIE, MoTI, Also: Ethiopian Chamber of Commerce and Sectoral Associations (ECCSA), Ethiopian Institute of Corporate Governance (EICG) UNDP, UNIDO, USAID/USIF, P4G, GIZ, UNEP, IFC, World Bank
		6.2 Partnerships for sustainability: Improve businesses partnering capacity with governments and donors	
		6.3 Access to finance: Strengthen green finance sources for the private sector (on-lending/lease financing from multi-lateral financiers; de-risking funds/grants from bilateral donors)	
Planning	**7.** Build the technical capacity of sectors and Regional Bureaus on planning- for	7.1 Joint planning and visioning: EFCCC to partner with the Planning Development Commission (and the Regional planning "Offices") to support/facilitate the CRGE/NDC planning & reporting of the sectors and bureaus	PDC, MoF, CSC, Regional Governments, MoT, MoWIE, MoTI NDC Partnership, WRI, EU, UNDP, GGGI, GCF, World Bank, GIZ/BMZ, DfID

	alignment of NDC and PDP-10 plans		
Technology	**8.** Identify and share locally appropriate technologies on adaptation and mitigation	8.1 Partner with the implementing entities to initiate opportunity studies and project profiles on locally appropriate adaptation and mitigation projects	MoIT, MoF, ESA, ECPC, MoT, MoWIE, MoTI EU, SNV, Denmark, GEF, GCF, GIZ, UNDP, USAID, World Bank, UNIDO, Italy, SIDA/SIWI
Awareness	**9.** Raise environmental awareness on CRGE and NDC issues	9.1 Executive courses on Responsible Leadership for federal, regional and zonal government officials	Regional Governments, MoSHE, NMA, NDRMC, MoE, PDC, MoF, MoT, MoWIE, MoTI
		9.2 Trainings on CRGE and NDC issues for Regions, Zones, Woredas (both for staff of the sectors and EFCC)	UNDP, NDC Partnership, EU, GGGI, WRI GIZ, SNV, SIDA, DfID, USAID, World Bank, IFC, SDC, CDKN
Policy	**10.** Build capacity for harmonization of policy instruments for CRGE/NDC implementation (regulatory, economic, informative & voluntary)	10.1 Collaborate with the sectors to roll-out and do policy evaluation (ex-ante and ex-post) of voluntary policy instruments which business could adopt for adaptation and mitigation actions (e.g. codes of practice, accords, compacts) as support tools to economic and regulatory instruments	PDC, MoSHE, MoF CRGE Facility, MoT, MoWIE, MoTI Also Policy Studies Institute (PSI)
		10.2 Enact, implement and "policy-evaluate" proclamations/laws in the pipeline: Payment for Eco-system Services; Green Fund	UNDP, UNIDO, UNEP, World Bank, GIZ, DfID, SIDA, USAID/USIF, SNV, Norway, Denmark, Italy
Adaptation	**11.** Build technical capacity of sectors on climate-resilient planning, design, operation	11.1 Mobilize the National Disaster Risk Management Commission, the National Meteorology Agency (Pilot the World Bank "Climate and Disaster Screening" tool)	NDRMC, NMA, PDC, MoF, MoT, MoWIE, MoTI Adaptation Fund, GEF, GCF, World Bank, EU, GIZ, GGGI, International Institute for Sustainable Development (IISD).

7. Recommendations

The recommendations given below are intended **to highlight actions, which need to be taken in order to re-inforce the Capacity Development plans.** Hence, they should not be viewed as stand-alone statements. They are distilled from the observations made during the course of the assessment and the consultant's own insights as a professional who has worked in the sustainability policy and green growth space for the last fifteen years.

a) For Government

A couple of persistent and critical observations made by informants during the interviews and focus group discussions are worth recapping here. First, concern was expressed from many quarters[64] that the priority afforded to CRGE is declining. Related to this, the informants voiced their concern that as a Commission, the "EFCC sector" has in practice become a junior partner to the many CRGE sector ministries, which it is supposed to engage on equal footing. The Consultant believes this is an issue that merits immediate attention from government.

At the very least, if the CRGE and the NDC are to live up to their full promises, government at the highest level and ministries should embed environmental and social sustainability **as their core business**. Currently, that seems to be not the case. The assessment indicated that, often times, the CRGE and NDC are viewed by sector ministries and regional bureaus as "add-on" tasks and not part and parcel of their organizations' DNA.

In response to the above, senior government officials (ministers, state ministers, Regional State presidents, and heads of regional state sector bureaus) need to demonstrate a continuing sense of accountability to the CRGE and to Ethiopia's NDC implementation. Put in another way: Our country needs to re-affirm the promise it made nationally and internationally (i.e. in the CRGE strategy and the Paris Agreement) by allocating sufficient resources (human and financial) for NDC implementation. **A starting point** could be for the sector ministries to put a matching **sustainability policy by** expanding on their stated missions and values.

From a review of the websites of the three ministries, no *sustainability policies* could be found. The purpose of such policies would be for the ministries to commit to take environmental and social sustainability (and CRGE in particular) as one of their core businesses. With a clearly articulated sustainability policy, NDC related constraints to do with structure, budget, planning, and Capacity Development for the CRGE function can be addressed in a systematic manner. An officially adopted sustainability policy also comes with the responsibility to publish the organizations' triple bottom-line performance on a yearly basis.[65] A change in this direction will strengthen the Environment and Climate Change Directorates and NDC implementation. It is also be one concrete way to align the CRGE and NDC implementation with the PDP-10.

b) For the Sectors

[64] Both from within the EFCCC colleagues, sectors and SNNPR bureaus

[65] Triple Bottom-line= Economic, Social & Environmental

First and foremost the sectors need to take responsibility for their NDC capacity development objectives. One concrete way to do that is to own the respective capacity development plans resulting from this work. It must be emphasized that these plans were prepared collaboratively with the sectors through working sessions and rounds of feedback. Hence, effort has been made to include interventions which are systemic in design and, crucially, respond to the needs identified in the assessments. Addition effort has been made to scrutinize the identified needs and interventions with a PDP-10 lens. That is to say, the ambitious targets the sectors have made towards PDP-10 are expected to amplify the NDC implementation capacity development needs as well- without forgetting PDP-10 also brings with it some opportunities for the green economy. With that note, the sectors must not view the action plans as carved in stone. Key will be to determine which ones they are able to address on their own and which other ones they would like to do through joint planning, coalition building and multi-stakeholder partnerships.[66] Going forward into implementation, it is highly recommended that the sectors use and further refine **Tables 3, 5, 7 and 9** as a helping lens to align their NDC capacity development efforts with PDP-10. In addition to other factors such as availability of funds and committed partners, the objectives, goals and targets of PDP-10 should be one criterion for prioritization of the interventions.

c) For EFCCC

The Consultant believes that the following three issues deserve the attention of the EFCCC.

In the short-term, two actions are flagged. The first one relates to ensuring **optimal "EFCC" structures** within the Regions, Zones and Woredas. The regional CRGE focal persons pointed out that they are assuming that function in addition to the other "regular" tasks and responsibilities they have been assigned to in the sector bureaus. A few interviewees assertively argued: "If the CRGE function is not clearly embedded in the organizational structure of the bureaus, then there is no basis or guarantee for the allocation of the commensurate budget; for effective reporting and accountability to happen; and even talking about capacity development per se does not make sense as well."[67] To address this constraint, EFCCC needs to work with the Regional Governments (Presidents' office, the sector bureaus, Civil Service bureaus and Finance bureaus) to resolve the issue. The recommendation made "For Government" (see above) will help re-inforce this intervention as well. The second action (in the short-term) has to do with policy issues: to be specific, the EFCCC needs to concretize well-designed economic incentives to motivate private sector participation in the green economy. Related to this, the EFCCC must see through the Payment for Eco-system Services and the Eco Tax (Eco Fund) proclamations[68] to their enactment by parliament and study their impacts through ex-post policy evaluations down the line.

[66] As pointed out in the foregoing sections, the ranking in which the NDC capacity need themes have turned out should not be automatically interpreted to determine the order or priority in which they will implement the interventions.

[67] This brings to the fore the "capacity for whom?" question.

[68] Whose approval by parliament is still pending.

In the short-to-medium term, EFCCC should put in-place a **strategy to advance a culture of sustainability thinking and responsible leadership** both within the public and private sector. As already mentioned, none of the sector ministries studied in this report has organization-wide sustainability policies. Commitment of top-leadership is the very first pre-condition for any concrete action on environmental and social sustainability. A starting point for EFCCC is to work on advancing the tenets of responsible leadership and good corporate governance. To give an example, many South African Universities have centers of excellence working on sustainability and responsible leadership offering training to top decision makers both within government and business. [69] In addition, South Africa has managed to come up with the world famous King Code of Corporate Governance. The first step towards achieving that in Ethiopia could be to partner with local universities to start "executive-level" courses targeted at top decision makers (See also below).

Related to the above, **Education Reform for Sustainability** is another action area for the EFCCC (**long-term horizon**). Our universities and business schools need to educate public and business leaders of the future on sustainability issues. Mindful of the importance of this, the UN Global Compact introduced the Principles for Responsible Management Education (PRME).[70] A quick check on the PRME website shows that, no Ethiopian university or business school has signed up to the PRME principles whereas universities from Kenya, Ghana, Nigeria, South Africa, Tanzania and Zimbabwe and more have done so.

Also, an increasing number of countries (e.g. Bangladesh, China, Brazil, Indonesia and the UK) are mobilizing their local financial institutions to rally behind the green economy agenda (through voluntary and regulatory means). On the voluntary side, the United Nations Environment Programme Finance Initiative (UNEP FI), which is a partnership between UNEP and the financial sector, seeks to mobilize private sector finance for sustainable development.[71] Once again, Ethiopian financial institutions are far behind their African peers in this respect as well; no Ethiopian financial institution (public or private) have yet subscribed to the UNEP FI. While the National Bank of Ethiopia is a principal signatory of the Sharm El Sheikh Accord on Financial Inclusion, Climate Change and Green Finance, the contribution of Ethiopian commercial banks (debt finance sector) in advancing the CRGE in a proactive manner is very limited.

For the CRGE (and sustainable development in general) to secure a strong place in the Ethiopian economy, it will be crucial for leaders from within the public sector, business, academia and civil society to embrace the tenets of responsible leadership. The EFCCC is better placed to mobilize national efforts in that direction.

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[69] For example: the University of Pretoria Albert Luthuli Center on Responsible Leadership; the University of South Africa Institute for Corporate Citizenship. The University of Stellenbosch's flagship initiative on responsible leadership is called "Social Impact".

[70] "Working through Six Principles, PRME engages business and management schools to ensure they provide future leaders with the skills needed to balance economic and sustainability goals, while drawing attention to the Sustainable Development Goals (SDGs) and aligning academic institutions with the work of the UN Global Compact: https://www.unprme.org/

[71] https://www.unepfi.org/

Additional specific actions for the EFCCC are the following:

- Seek to strengthen its MRV Directorate to match its national and international responsibilities. One option to achieve that could be to elevate it to a director-general level- with a view to give it more clout and resources.
- Deliver on what we owe to the UNFCCC, namely complete and submit the 3rd National Communication and the Biennial Update Report. Doing so will provide a real incentive and motivation to do MRV related activities.
- Plan ahead and prepare for the Transparency Update Report (with a focus on endogenous capacity development) and also for the 2nd NDC preparation and submission (for the 2025-2030 period) incorporating lessons from the global (NDC) stock-take scheduled for 2023.

d) Ministry of Finance and Planning Development Commission

The PDC and MoF (& it CRGE Facility) should actively support the "joint visioning" efforts of the implementing entities as discussed in the Capacity Development Plans. The two crucial NDC-themes recommended for joint visioning and coalition building with PDC and MoF are those for planning and financing.

e) Regional Governments

The recommendations made above ("For Government") are also intended for leaders of Regional Governments as well. With that in view, the following specific actions are flagged for Regional Governments:

- Demonstrate Leadership: Strengthen existing EFCC structures; allocate resources by joint planning with Civil Service Commission and Planning Development Bureaus; and
- Ensure Accountability: Seek and provide feedback from/to EFCC Bureaus.

f) Private Sector and Business Chambers (e.g. ECCSA)

Further to what has already been discussed in section b ("For EFCC") above, the following are actions recommended for the private sector and business associations:

- Responsible Leadership & accountability: work to adopt Corporate Governance codes, company sustainability policies;
- Innovation: Unpack or demonstrate the Green Business Case in adaptation and mitigation;
- Partnering Skills: Seek to work through partnerships with the public sector and development agencies (embrace SDG 17).

g) Academia

- Build endogenous capacity for NDC implementation (Energy Management, MRV of GHG Inventory and Mitigation, climate and disaster risk screening, Quality Assurance; Negotiation Skills, Green Business Entrepreneurship, Proposals for Climate Finance)
- Adopt Principles for Responsible Management Education (shape our future leaders in government and business); for instance introduce a mandatory course in sustainability and responsible leadership for all graduating class.

h) Development agencies & donors

- Coordinate for aid effectiveness: use the CRGE Forum to identify funding needs and gaps relating to NDC implementation and avoid duplication of effort; related to this, commit to regularly attend the CRGE Forum;
- Set up green funds for private sector partnerships, i.e. funds to de-risk green business entrepreneurs and investors.

i) For UNDP

Last but not least (and as a proponent of this Study), the following actions are recommended for UNDP:

- Seek to support (in coordination with other stakeholders) the action plans and recommendations put forward in this study also by harmonizing with the findings of the NDC Partnership preliminary scoping mission;
- Strengthen its participation in the CRGE Forum.[72]

j) Civil society

- Awareness raising on environmental sustainability for the general public;
- Play a well-informed watch-dog function to discourage socially and environmentally unsustainable practices.

[72] There were concerns voiced from some quarters that UNDP does not regularly attend the CRGE Forum meetings.

8. Annexes

8.1. Case studies

Case study 1- Responding to the increasing risk of drought: Building gender responsive resilience of the most vulnerable communities: The case of MoWIE

Objective

This case study is based on an on-going project implemented by MoWIE. It is prepared based on interviews held with the responsible project manager. Additional information obtained from published sources is also provided, mainly from the Project Implementation Manual (PIM). [73] Primarily, it is intended to inform the capacity gaps and needs arising or anticipated. In addition, it is also intended as a preliminary "partnership case study" which could shed light on successes, capacity needs, challenges and dilemmas. The project was selected in consultation with MoWIE's Director of ECCD. It is a unique project compared to other cases included in this report as it focuses both on adaptation and mitigation with women and poor people as the intended beneficiaries.

The organization

According to its official website[74], MoWIE is "a federal organization established to undertake the management of water resources, water supply, and sanitation, large and medium scale irrigation, and energy. The Ministry is a regulatory body that involves the planning, development, and management of resources, preparation, and implementation of guidelines, strategies, policies, programs, and sectoral laws and regulations. It also conducts study and research activities, provides technical support to regional water and energy bureaus, and special support to four emerging regions (Gambella, Benishangul-Gumuth, Afar, and Somali). In the case of transboundary water resources and regional developments pertinent to the sector, it engages in the negotiation and the signing of international agreements".

The objective of the project

According to the PIM, the objective is: "to increase resilience of the targeted rural community to the adverse impacts of climate change by introducing new approaches to water supply and management that are capable of increasing the productive capacity of the community and the carrying capacity of the natural water ecosystems. A key focus will be on increasing the supply of water through solar powered pump systems for effective adaptation benefits to the intermittent rainfall."

[73] MoFEC (2019). *Project Implementation Manual: Responding to the increasing risk of drought- Building gender-responsive resilience of the most vulnerable communities*

[74] MoWIE (2021). *About the ministry*. Available On-line at: http://mowie.gov.et/ [Accessed on 20.02.2021]

Project overview and partners

This is a GCF financed project that will be implemented over a period of five years (2020-2024). GCF will contribute USD 45 million in grants and the GoE will contribute USD 5 million in co-financing.

The accredited entity through which the GCF funds will be channeled is the MoF CRGE Facility. The executing entities will be MoWIE & MoA . The bureaus of Finance in the respective regions will be responsible for financial management, i.e. fund disbursement, account auditing and financial reporting. The bureaus of Agriculture and Water will be responsible for the implementation of the project at woreda and kebele levels.[75]

The project is based on a disaster risk profiling assessment of Woredas, which was carried out with a view to answer the following questions. First, how can Woredas most affected by climate change be more resilient? Second, how can we improve production and productivity of farmers? Third, how can we increase access to water?

Based on the risk profiling 22 target Woredas were selected from all regions except for Sidama and Addis Ababa. Implementation will take place in 66 Kebelles of the target Woredas. The total number of beneficiaries is 1,222,000. Out of this around 30% are supposed to be women. **Box 8** provides detailed information on the indicators obtained from the PIM.

Box 8: Project impact and output indicators

Fund Level Impact Indicators:

- Extent to which lives and livelihoods of the most vulnerable groups are enhanced and made more resilient to climate related hazards in the geographic area that can be attributed to GCF intervention;
- Change in expected losses of livelihoods and economic assets due to the climate change induced drought in the project intervention areas;
- Number of males and females with year-round access to reliable and safe water supply despite climate shocks and stresses;
- Coverage of degraded lands managed and protected in response to climate variability and change;
- Number of physical assets constructed or modified to increase resilience to climate variability and change

Project Outcome Indicators:

- Institutional and regulatory systems that improve incentives for climate resilience and their effective implementation;
- Number and level of effective coordination mechanisms and synergy at the national and regional levels, including between and among relevant sector ministries;
- Number of males and females made aware of climate threats and related appropriate responses;
- Hectare of land rehabilitated or existing forest protected around the water sources and water points

Project Beneficiaries

- 330,000 people directly (30% Female Headed Households)
- 990,000 people indirectly.

[75] The PIM provides detailed description of roles and responsibilities from the federal down to the Woreda sector offices.

- Direct beneficiaries include 330,000 people with year –round access to reliable and safe water supply, and make them food secured.
- 7,850 ha degraded land will be rehabilitated and managed, of which 5,000 ha shall be covered by trees
- Improvement in women participation in decision making and in productive activities and increased agricultural productivity are also expected.

The project has three components. Component one is concerned with improving access to water to build resilient livelihoods;[76] two outputs are expected here. The first one is build water institutions (developing water schemes).[77] The second one is developing small-scale irrigation infrastructure. Component one is overseen by MoWIE and MoA. Component two is concerned with, "management of natural resources for improved water availability".[78] The activities of this component will be carried out at Kebele level. Component three focuses on "enabling environment". This is a capacity development intervention that focuses on the Woredas.[79]

M&E and MRV

The M&E system of the project as a whole is based on MoF guidelines. The PIM will be the ultimate guide on project monitoring and evaluation issues. Teams are set up to follow up on planned activities, do assessments and reporting. In addition, regular technical review workshops are planned involving experts of MoWIE, MoA and respective regions. Field assessments will also provide additional monitoring opportunities. Within the ECCD, there are MRV and M&E focal points. According to the PIM, the project will have elaborate monitoring and evaluation techniques at four levels: federal, regional, woreda and community/kebelle levels.

The MRV concept for GHG emissions abatement of the project is based on comparison of the baseline emissions (which would have used diesel generators for pumping) versus the intervention solution (which will be based on solar pumps). The emissions reduction calculation will be based on a study (on renewable energy use) which was carried out to highlight these issues. MoWIE seeks to align its calculation to IPCCC 2006 guidelines.

Implementation status

In year one (Dec 2019- Nov 2020), the required studies and implementation plans of the project were ready. In year two (Dec 2020- Nov 2021), the objective is to carry out the engineering feasibility study, design works, civil works and install the equipment. Currently a tender is out for the purchase of the required electro-mechanical equipment (solar pumps, panels, controls, accessories).

[76] This component is designed to be aligned with four strategic priorities outlined in the CRGE Strategy with respect to the water sector (Project Implementation Manual).
[77] This will be informed by the water balance study completed and the accompanying pre-feasibility study, which is highlights the number of wells and springs that need to be developed.
[78] The intended activities under this component will improve water retention capacity of the soil, reducing run-offs, etc. and contribute to the sustainable utilization of both ground and surface water (Project Implementation Manual).
[79] Activities under this component will focus on supporting the woredas for integrated climate smart planning with strong emphasis on gender responsive integrated climate-smart water interventions (Project Implementation Manual).

The regions are doing the geo-physical survey and drilling. They have delegated the purchase of the electro-mechanical equipment MoWIE.

Strategy for sustaining the partnership

GCF-funded projects are development focused. That implies, once the infrastructure (including the solar pumps) is successfully commissioned, it will be handed over to the communities. The community will then set up water committees, which will set the water tariff. The revenue collected will be used to cover for the operation and maintenance cost of the solar pumps and auxiliary systems. The communities are not anticipated to pay back the initial capital investment cost. Operation and maintenance of the solar pumps is expected to be the responsibility of the communities. So far, only one training seminar was offered on maintenance of solar pumps at the federal level.

To ensure sustainability of the initiative at more programmatic level, the project is designed to include, "awareness rising, monitoring and learning initiatives to ensure this approach is developed and **implemented with the local community**, and that sufficient learning elements are put in place to ensure the results of activities can help inform future planning."[80]

The capacity gaps and needs identified

- **Financing gap:** Cost over-run is a reality due to inflationary effects. Construction costs have sharply increased creating a financing gap.
- **No integrated, centralized database system for MRV:** Although projects designed for climate finance deploy standard methodologies such as CDM methodology, the issue with MRV system is that, so far, there is no central database system to which the mitigation contributions of the various projects could be fed into. **Need**: There is an urgent need to set up an integrated, centralized database system for MRV.
- **Lack of technical capacity at the Woreda level:** The projects are implemented at the Woreda level. However concepts like adaptation, mitigation and MRV are not well grasped. **Need:** Staff responsible for implementation of the projects need to be trained on concepts including adaptation and mitigation and MRV
- **Lack of modern ICT systems:** MoWIE follows the IPCC 2006 Guidelines but it lacks data tracking system that is based on ICT. Currently, data is manually collected although that is interpreted and analyzed based on IPCC- 2006 guidelines. **Need**: MoWIE needs to invest on a modern ICT system/infrastructure for MRV systems.
- **Maintenance of solar pumps and auxiliary systems**: The communities need to be trained on routine preventive maintenance aspects. For major maintenance issues, technical capacity of private service providers and technicians (at federal, regional and woreda levels) needs to be built.

The project manual, in addition, identifies the following gaps contributing to poor implementation of Integrated Water Resources Management (IWRM) at the local level:

[80] According to the Project Implementation Manual

- Lack of proper coordination/collaboration among various stakeholders;
- Lack of integrated and participatory approaches in planning and implementation of water resources.
- Poor integration of IWRM procedures at the local level

Recommendations: The need to document learning

As the project is at an early stage of implementation, it is expected that more learning will emerge in terms of successes and challenges. As a hugely interesting project on mitigation and adaptation with multi-faceted social and environmental impacts anticipated, it would be important to prepare a detailed *partnership case study* on this project once it is at an advanced stage or completed. It is recommended that EFCCC coordinates this with MoWIE and MoF and the implementing entities.

Case study 2: The Addis Ababa Light Rail Transit system: The case of MoT

Objective

This case study is based on the Addis Ababa Light Rail Transit company. The company was selected by the MoT ECCD as the case study of choice for the transport sector. It is prepared based on site visit paid to the company head office in Addis Ababa and interviews held with the responsible manager on March 3, 2021. Additional information obtained from published sources is also included, in which case separate citation is provided. Primarily, the case study is intended to provide information on the on-going efforts and capacity constraints relating to CRGE implementation within the company. Hence, this write-up should not be taken as a promotional material of the company and other organizations mentioned. The exercise can also be viewed as a preliminary "partnership case study" which could shed light on successes, capacity needs, challenges and dilemmas.

The organization

- Commenced operation in September 2015
- Transports passengers only (no cargo)
- Length of railway network: a total of 34.5km
- Fully run on electrical energy
- Operates about 41 cars; each car carries a maximum of about 167 passengers
- Current capacity: about 100,000/day during the Covid-19 pandemic (according to the LRT office)
- Nominal (designed) capacity: 60,000 passengers across four lines, every hour (according to C40 Cities)
- Estimated mitigation potential: According to C40 Cities, "Full emissions reduction data are not yet available for the project but the cumulative emission reduction potential of the LRT system is forecasted at 1.8 million tCO2e by 2030."

CRGE implementation status

There are two Quality Safety, Security and Environment (QSSE) units within Rail Network Division and the Operations Division. In addition the Business Development Division oversees the Transit Oriented Development (TOD) initiative, a strategy which has direct relevance to the low carbon (green) economy. The AA-LRT also has the Railway Academy, which could (potentially) educate and train staff on environmental sustainability and climate change adaptation and mitigation issues. The TOD initiative seeks to develop ten of the 39 stations of the AA-LRT into one-stop centers (malls) accommodating markets, shops, restaurants, cinemas, pharmacies, etc. The objective is passengers would be able to find most of the things they need in those centers or malls thereby reducing travel for those purposes (helping also reduce GHG emissions assuming cars or buses were used for those purposes).

However, it appears there is no dedicated unit or divisions coordinating and overseeing the sustainability goals of the company. It is not clear, whether the company (AA-LRT) has a clearly

articulated sustainability goal, which has been integrated into the core business of the company. As the company has no website, it was not possible to verify this.

M&E and MRV

It appears about seven years ago (in 2013?), there was a one-year project supported by DfID, which offered training to selected employees from AA-LRT and ERC on pertinent issues including MRV, CDM and NAMA. This was in connection with the ERC Climate Finance Project and it was offered by Climate Focus and Carbon Africa (according to Semere Beyene).

However, AA-LRT did not follow the training with actual implementation such as: putting in-place the required MRV and M&E systems for GHG emissions avoidance (the LRT system compared to the base-line scenario of bus or minibus transit); allocating financial resources; putting necessary ICT systems; coordinating reporting with the MoT, etc.

The capacity gaps and needs identified

The following capacity gaps were identified:

a) **Guidance and oversight from the MoT is lacking** in terms of putting in-place clear reporting systems and accountability mechanisms (for reporting the GHG **mitigation** potential of the LRT system and also the work AA-LRT is doing on **adaptation activities** as it relates to the company)
b) **AA-LRT does not seem to have determined a clear business case** as to why it needs to spend resources on the measurement, verification and reporting of GHG emissions avoidance as a result of the LRT system although the MoT has set mitigation targets for the Transport sector in the CRGE strategy of which the LRT system is one flagship project expected to contribute towards this objective).
c) **Knowledge and skills gaps** in latest MRV and M&E concepts and tools, for instance, the requirements of IPCC-2006 guidelines
d) **Lack of budget for implementing CRGE related activities** (adaptation and mitigation) as budget allocation does not seem to cover these activities (An exception: there could be dedicated budget for the TOD initiative)
e) Unclear organizational structure as it relates to sustainability issues: The Company has functions and dedicated professionals for QSSE and TOD distributed in three divisions. However, it is not clear which division is responsible for CRGE issues. [NOTE: Ideally a clear company-wide sustainability objective integrated into the core business of the company, a dedicated sustainability unit could be the right approach to make sure mitigation, adaptation and other social and environmental risks and opportunities are strategically addressed by the company.]
f) EFCCC's focus is more on regulatory aspects of ESIA (approval and oversight of ESIA). Targeted support on MRV and related issues as it applies to AA-LRT is missing

Specifically on mitigation issues, the most important adaptation issue (risk) is flooding. The company has the "grey" infrastructure needed (i.e. culverts, bridges, retention walls, ditches, etc.) so that its assets are not damaged by flash floods. However, managing flooding risk requires coordination and partnerships on a number of issues: watershed management, MSW management, maintenance of roads and drainage systems, etc.

Case study 3: Dangote cement embarks on a fuel switching project: The case of MoTI

Objective

This case study is based on an on-going project being implemented by Dangote Cement PLC. It is the case study of choice for the industry sector (selected by MoTI and CCIIDI). It is prepared based on site visit paid to the factory located in Mugher town and interviews held with the responsible managers on February 23, 2021. Additional information obtained from published sources is also included, in which case separate citation is provided. Primarily, this case study is intended to provide information on the efforts underway and capacity constraints as these relate to fuel switching efforts in the cement industry. Hence, this write-up should not be taken as a promotional material of the companies and organizations mentioned cited. The exercise can also be viewed as a preliminary "partnership case study" which could shed light on successes, capacity needs, challenges and dilemmas.

The company

Dangote Cement is a leading cement producer in Africa with operations in 10 African countries and revenues of about US$2.3 billion.[81] Its annual production capacity of in 2020 was about 48.6 million tons per annum across Africa.[82] In Ethiopia, the Dangote cement factory is located in Mugher town (about 90m from Addis Ababa) with a production capacity of 2.5 million tons per annum; it was commissioned in May 2015.[83] It is the largest cement plant in Ethiopia producing 32.5 and 42.5-grade cements.[84]

Table 15 below presents some salient features of the factory as gleaned from the interviews at the factory site.

Table 15: Key features of the Dangote cement factory in Mugher, Ethiopia

Item	Value
Cement production	Nominal plant capacity :2.5 million metric ton/annum
	Planned for 2021: 2.35 million metric ton/annum (65% PPC, 35% OPC)
Clinker production	2015: 1.626 million metric tons
	2019: 1.391 million tons
	2020: 1.628 million tons
Number of full-time/regular employees	About 650
Fuel used in the kiln	– Initially 100% imported South African coal

[81] Dangote Cement (2021). *Overview*. Available on-line at: https://www.dangotecement.com/operations/ethiopia/ [Accessed on 25.02.2021]
[82] *Ibid.*
[83] Dangote Cement (2021). *Dangote Cement in Ethiopia*. Available on-line at: https://www.dangotecement.com/operations/ethiopia/ [Accessed on 25.02.2021]
[84] *Ibid.*

	– Currently 60% Ethiopian coal and 40% South African coal – Future: replacing the 40% Ethiopian coal with biomass
Current specific energy of clinker production	745 kCal/kg of clinker
Calorific value of South African coal	6000 kcal/kg
Calorific value of Ethiopian coal	4000 kcal/kg
Price of South African Coal	ETB 7000/ton
Moisture content of South African Coal	About 8% [w/w]
Moisture content of Ethiopian Coal	10-12% [w/w]
Moisture content of coffee husk supplied (on average)	20-25% [w/w]

The objective of the fuel-switching project

Across its factories, Dangote Cement has been experimenting with a number of alternative fuels. Its Sustainability Report (2019) makes the following interesting accounts about that effort:

- [Dangote] has begun to explore the use of alternative fuels in its kilns to reduce carbon emissions across the Group;
- Some of our operations have started exploring the feasibility of using alternative fuels in kilns through effective and fit-for-purpose reutilization of wastes produced in our sites, such as old tires and packaging materials; though still at the rudimentary stage, this is a positive step towards reducing the use of fossil fuels in order to minimize; emissions of greenhouse gases and other pollutants from our cement operation;
- The use of waste as 'alternative fuels and raw materials' in cement manufacturing for the purpose of energy recovery and waste recycling (known as co-processing), creates an opportunity for diversifying into the evolving 'renewable' waste management industry.[85]

The on-going effort at the Dangote cement factory in Ethiopia is a translation of that group-wide sustainability goal of "becoming a leader in alternative fuel substitution"- according to Jacinto Miranda, Plant Director. The motivation is two pronged, that is, both cost savings and minimization of GHG emissions by the plant- also according to Jacinto.

Project overview and partners

Dangote Cement PLC has put a clear target for substitution of coal with other "renewable" fuels including biomass. The targets for its plant in Ethiopia are: 15% (2021); 18% (2022); 33% (2023); and 38% (2024). The coal it has been using so far has been a mix of South African and local coal. The renewable fuels, which the factory has tried so far, include coffee husk, saw dust, bagasse, carbon black, old cement bags, old tires[86], and various types of spent engine and lubricating oil. To make

[85] Dangote Cement Plc (2019). *Annual Report 2019: Driving opportunities in new markets*

[86] For instance, it has used about old 29,000 tires already generated by its fleet of vehicles.

that possible, the company has already developed (in-house) and invested on various types of feeding mechanisms for tires and pneumatic feeding systems for coffee husk and saw dust.

The biomass project focuses on the use of an invasive plant species, namely *Prosopies juliflora* which is to be obtained from the Afar region of Ethiopia. The company is investing on a specialized feeding and burning system for Prosopies which is expected to cost at about EUR 6 million (installed cost). Based on its own calculation, the plant expects to make a saving of about EUR 1 million every year which implies it is looking at a pay-back period of about six years.

The European Union is the main partner in this project. As part of its technical assistance to MoTI and the CCIIDI, the EU is developing a system for the cultivation, harvesting, baling and supply of Prosopies biomass as alternative fuel to cement factories. The Cement factories need make their own investment for a feeding and burning system to be able to use this biomass fuel.

M&E and MRV

The factory has already invested on , real-time, **ambient air quality monitors** (5 units with gas and 5 units without gas); it has also GHG analyzer for CO_2, CO, NO_x, SO_X and H_2O (according to B.D. Prasad). The company is ISO 9001certified and the cement plant itself is working on ISO 14001 certifications, expected to be completed in 2021. However, the company does not have the required (IPCC 2006 compliant) MRV systems which would allow it to transparently capture its GHG emissions reductions.

Implementation status

Dangote plans to complete the procurement, installation and commissioning of the Prospopies mechanical feeding system in 2022. It also anticipates signing a contract with the supplier of the processed Prosopies biomass fuel by September/October 2022. The MoTI, the CCIIDI and the EU Commission (through its Ethiopia Climate Change Sector Reform program) will oversee the prosopies supply-chain project is timely completed and functioning to go with the fuel switching schedules of the cement factories.

The capacity gaps and needs identified

Concerning the biomass fuels currently used (coffee husk, saw dust, etc.) Dangote is facing huge aggregation and logistics challenges and cost as it is currently buying these items from individual suppliers. The suppliers (coffee de-husking plant, woodwork shops, etc.) do not store the materials properly; rather they expose them to rain- hence the unfavorable moisture content reaching 20-25% [w/w]; desirable would have been about 10-12% [w/w]. Because of the low bulk density of coffee husk the fuel, which is the biomass commonly used (weighing about 200kg/ton), transportation poses challenges. For instance, a standard "40ton" truck can only carry 15 tons of coffee husk. Loading more than that will surpass the permissible height of cargos, which trucks need to observe as per local traffic regulations. In addition, the materials are also not baled at source, which means they can be easily blown away by wind from source to factory gate in addition to the high transportation cost of the bulk/loose materials. Private sector operators could feel this gap by

developing the business and investing in the area of sourcing, aggregation, baling and transportation of coffee husk, saw dust and other agricultural residues.

Support in putting an IPCC-2006 compliant GHG reporting system is also another capacity need identified.

Another constraint (in the enabling environment space) identified is lack of standards and permit systems on which "renewable" fuel could be burned for what purposes and under what conditions. From local experience and from global practice cement industries can burn tires, combustible municipal solid waste, biomass, industrial waste and sludge for energy recovery and waste recycling (co-processing). There is a need to put in place the pertinent standards and guidelines based on global best practice.

The fact that there is no source segregation of municipal solid waste in Ethiopia was also raised as one constraint. The assumption is that surplus combustible waste (paper, plastics) which is not recycled could have been used in the cement kilns. With no source segregation and sorting taking place, that is not happening at the moment.

The Central effluent Treatment Plants (CETPs) of 11 Industrial Parks being developed and operated by the Industrial Parks Development Corporation (IPDC) and the four Integrated Agro-Industrial Parks under development by the Regional IPDCs will generate sludge which needs to be disposed of. There have been efforts underway by IPDC to determine the calorific value of the sludge generated by its CETPs. Through GIZ technical support to IPDC, a national Sludge Management Guideline has been prepared. There is a need to put this guideline to use as it applies to industrial and municipal sludge. If, the sludge meets the right calorific values, there is a need for IPDC to start talking to Dangote and other Cement factories.

Strategy for sustaining the partnership

The company has put use of alternative fuels and co-processing as one group-wide strategy. Following on that the Dangote cement factory in Ethiopia is investing on various feeding systems to suit different fuel types as discussed above. However it is relying on other partners (government, development agencies, and the private sector) to do their bit. That could be in terms of having the right standards and guidelines for burning biomass and other waste; unpack of existing guidelines (i.e. whether industrial or municipal sludge can be effectively co-processed in cement kilns?). The implications of the eco tax/eco-fund to this area, source segregation of waste, and application of the polluter pays principle in this area (MSW, sludge, etc.) is one area that needs to be looked into and clarified to have a workable strategy going forward.

Recommendations

The following two additional recommendations are worth making (on top of those already mentioned on capacity needs).

First, there is a need to harmonize existing efforts on the enabling environment space. Specifically, this relates to sludge guidelines. Another area which merits looking into is the relevance of the Eco

Fund tabled to parliament. A question to EFCCC and policy makers is: Could it benefit investors working to develop alternative fuels- including biomass such as prosopies, coffee husk, saw dust, municipal solid waste, etc.?

The second recommendation is to follow-up on this case study and do a "partnership case study" a couple of years down the line to examine how the Prosopies biomass project is faring and whether the respective partners (EU, MoTI, CCIIDI, Suppliers, Cement Factories) are partnering efficiently or if improvements are needed.

Case study 4: Universities as a hub for capacity development: The case of the Ethiopian Energy Authority and Addis Ababa University

Summary

This case study is prepared primarily based on the interview held with the Energy Efficiency and Conservation Directorate[87] of the Ethiopian Energy Authority (EEA). Additional information gleaned from EEA's website and relevant publications (available on the website) were used to provide additional background and context; this are cited as footnotes where deemed necessary.

The case is organized as a *learning case study*. Its objective is to portray what is already being done to address a particular capacity development gap, highlight the outstanding constraints and needs. Desirably, other sector ministries and their specialized institutes/commissions/authorities could learn from the good experiences of the EEA and adopt it with some improvements to serve their institutional capacity development objectives. In addition development agencies and donors could use this information to align their projects to fill some of needs identified in this case study.

As a final word, of caution: This case study is not intended as a promotional material (publicity stunt) for the EEA.

The organization[88]

The EEA is one of the specialized institutes under MoWIE. It is the regulatory body for electricity and energy efficiency. Its establishment follows the energy proclamation No 810/2013 issued in January 2014, which is the law that defines regulations of electricity, energy efficiency and conservation. This proclamation defines the powers of and duties of the EEA which was established with the Council of Ministers Regulation No.308/2014 as an energy sector regulatory body. It deals with license and certificate of competency issuance.

The EEA is a successor of the former Ethiopian Electricity Agency. Although the agency carried out a number of activities, it was not mandated to undertake energy efficiency regulatory activities. This gap was one of the main factors which resulted in the country to experience huge inefficiencies and losses in the power sector, among others, due to lack of awareness.

The context

The EEA identified a total of 26 project activities across six programmatic areas of which 14 projects are designated as high priority and slated to start "as soon as possible".[89] The top priority was to address industrial energy demand (including fossil fuels), followed by electricity use in residential and commercial buildings.

[87] Interview held with Ato Zewge Worku (Director) on 17.02.2021.
[88] Ethiopian Energy Authority (2021). *Organizational history*. Available on-line at: http://www.eea.gov.et/ [Accessed on 18.02.2021]
[89] EEA (n.d.). *Energy Efficiency program and activity plan*

The Energy Efficiency Strategy (overseen by EEA) focuses on three sub-sectors, i.e. industry, buildings and appliances (commercial and home).

In the last six years, the EEA (spearheaded by the Energy Efficiency and Conservation Directorate) has been evaluating energy losses within the industry sector through energy audits. In the beginning, this activity was carried out in collaboration with experts from India and by providing on-the-job training to EEA's own professionals. This, however, was rather an ad-hoc approach and lacked strategies to make it systematic and sustainable. In addition, EEA does not have a mandate to engage in delivering enduring trainings of that nature not to mention that as regulators (and professional license issuing body), they would have faced conflict-of-interest issues even if they wanted to engage in that.

The capacity gaps identified

Although EEA was able to carry out analysis of energy losses and audits on its own and initially in collaboration with experts from overseas, it lacked a system for certification of the energy auditors-be them individual experts or firms. A best practice "standard" for certification of energy auditors is for example the Certified Energy Manager (CEM) program of the Association of Energy Engineers of the US.

Approach followed

Mindful of this constraint, the EEA set out to find a qualified service provider. They drafted a ToR describing the kind of professional service thy needed and invited three short-listed universities locally known to be well established in the field of engineering and technology educations, i.e. Addis Ababa University, Addis Ababa Science and Technology University and Adama University. Based on the technical and financial proposal submitted by the three universities, Addis Ababa University was eventually selected. In parallel the EEA short-listed what would be the "first batch" of prospective energy auditors. This selection was made based on pre-screening criteria, which required the candidate, among others, to have worked in the energy sector for 5 years and have academic qualifications in the engineering and technology professions. Based on the screening criteria, 70 candidates were selected. The 70 candidates had to sit for a test administered by the EEA itself (test questions were prepared by EEA after review of similar exam questions used by international energy auditor trainers). Eventually, ten candidates were selected.

Following from that, the ten candidates were trained by AASTU for ten days. A total of 60 credit hours have to be completed by the trainees of which 40 are theoretical and 20 are practical; and they are expected to complete one audit. After that, the students will have to sit for a final exam. Those who passed the examinations can apply for professional licenses from the EEA to work as energy auditors.

Strategy for sustaining the partnership

Through this partnership, EEA aspires to establish the AASTU as the center of excellence on training of energy efficiency auditors in a sustainable manner. Concerning financial sustainability of the initiative, the trainees themselves are expected to pay for the AAU training, which is ETB 20,000.

Theoretically, industries are expected to pay for the audit fees and for implementation of the identified efficiency measures.

To create the demand/appetite for companies to engage in energy conservation activities, the EEA is has drafted a voluntary energy efficiency agreement drawing on the concepts of ISO 15001 standards. The objective is to attract industries with energy consumption of 20 GWHs and above. So far four factories have signed the agreement with EEA and more are expected to follow suit.[90] EEA expects, eventually Energy Service Companies will emerge which the authority will then certify as firms. These firms are required to have the requisite consulting capacity, in-house certified energy auditors, and the necessary equipment to deliver quality energy auditing and allied services.

Constraints and capacity needs that still exist

The main constraint that still exists is the fact that the AASTU trainers themselves are not certified energy managers. Actually, there is no energy manager (be it an individual or a firm), which is in EEA's current database, that is certified as per internationally recognized traditions (e.g. the CEM). The AASTU unit which gives the energy management/auditing services needs to be accredited by third parties for its services to be credible. Hence, support is needed in these two areas.

Another constraint is how to finance the measures identified by the audits. Businesses are not always expected to have the interest to cover those costs (as long as energy costs/tariffs remain low). To this end, the EEA has drafted a directive for an Energy Efficiency Fund, which is expected to be resourced by penalty fees (infractions), grants or revolving funds). However, the Consultant is of the opinion that the Energy Efficiency Fund has to be harmonized with the **Eco-fund bill**[91] that is tabled for approval to the Council of Ministers almost a year ago by the EFCCC.

[90] So far Meseobo, Almeda, Kombolcha and Heieken have signed. In the pipeline are Dashen, Mugher cement, BGI and Dangote cement.

[91] The Eco-fund is expected to be resourced in two ways: through eco-taxes levied on polluting goods and through proceeds generated by payment for eco-system services (Fortune Newspaper, dated January 11, 2020)

Case study 5: CRGE implementation capacity gaps and needs: The Case of Southern Nations Nationalities and Peoples Regional State and Hawela Tula sub-City of Hawassa City

This section provides an overview of the findings gleaned from interviews and focus group discussions held with various stakeholders working on CRGE issues in the SNNPR State- and to a lesser extent of the (newly established) Sidama Region State. The Consultant travelled to the two Regions in the period 16-19 March 2021 and met with informants from the Transport, Industry and Energy sectors.

The interview findings were compiled in the form of case vignettes of four sectors/bureaus of the SNNP Regional State, i.e. Environment, Transport, Industry, Energy and an additional assessment of the Hawela Tula sub-City Environmental Office. Hawela Tula is a rural sub-City of Hawassa under the Sidama Regional State. It was chosen for the case study for two reasons. First, it is a rural sub-City hence bearing similarities to rural Woredas. Second, it is close to Hawassa town and easier to access from a logistical point of view.

The case vignettes are expected to present an in-depth insight into the peculiar challenges of implementing CRGE at the regional level. The objective of the discussion was to understand the capacity gaps in the planning, mainstreaming and implementation of CRGE within the Region and determine the capacity needs for future implementation in the context of NDC and PDP-10.

Case vignette 5A: SNNP Regional State Environment and Climate Change Bureau

This short case is based on focus group discussions held with three personnel of the SNNP Regional state **Environmental Protection and Climate Change Authority.** The individuals who took part in the discussions were Misrak Kumalo, Tariku Tesfaye who hold various positions within the Environmental Protection and Climate Change Directorate.

Overall observation

There is a sense within the team that the **emphasis given to CRGE is comparatively decreasing** compared to the attention it was given in the past. However, the Directorate has tried to keep itself busy. To this end, **the bureau has prepared an adaptation plan** for the SNNP Regional State in consultation with sector bureaus and other stakeholders. The plan has been tabled to the regional parliament is expected to be endorsed this year. In addition sectoral, implementation guides (for mainstreaming adaptation aspects) have been finalized.

Adaptation as one focus area

Both drought and flooding are perceived as the most prevalent risks relating to adaptation. For instance, the bureau has done a cursory assessment which has revealed that during extreme droughts, food shortages result in migration which in turn leads to increased student absenteeism- overall negatively affecting the education sector. Similarly, the floods which happened in the rainy seasons of 2008-2009 E.C. caused damages to assets and livelihoods.

MRV system is a serious limitation

Concerning MRV systems, the team is of the opinion that there is a huge gap. Although the (on-going) mitigation interventions under the various sectors are fairly known, these are not matched by corresponding MRV systems. While training is offered on MRV (the last one was about two months ago), **there is clearly established schedule for that and follow-through is lacking**. The Region also does not have a qualified MRV expert. CRGE related data are not collected in a bottom up manner (i.e. Kebelles>> Woredas>> Zones>> Region>> Federal). Rather, the federal EFCCC seems to base its projections and analysis on what is already available in its database. CRGE related baselines are also missing primarily owing to budget limitations but lack of qualified MRV skills as well.

A case in point how to go about petrol allocation and the emissions arising from that in the Regional State? There was no consensus on that in the previous training.

Training and awareness is happening but with budget constraints

There are activities around awareness-raising on CRGE and identification of green technologies but with limitations. **Serious budget limitations** make it difficult for the bureau to organize systematic trainings covering the numerous Woredas for the 23 Zones of the Region (and the 100+ Woredas). For the budget year 2013 E.C., the operational budget of the directorate for training and awareness was only ETB 300,000. In addition, there are only two vehicles for about 21 staff members limiting field visits.

Public awareness campaigns are partly covered by Debub TV and FM radio programs. Preparation of the adaptation plan is believed to have also contributed to that end as well.

The most immediate training need is in MRV systems but tailored to allow the region/bureau to do an acceptable baseline CRGE data from the Woreda to the Regional level (for instance as per IPCC 2006 guidelines). The training which has been offered in the past (by the federal EFCCC or EU) has been broad and not focused to that level.

Organizational structure as the main challenge

The often changing and “unstable” organizational structure of the sector is a major challenge (broad mandate at the federal level which narrows down at the regional, zonal and Woreda levels) although the bureau has made repeated efforts to adjust and align that. Part of the reason for the problem is the disparity (apparent inequality) between a commission (as in EFCCCC) and a ministry (e.g. Ministry of Agriculture). There are instances in which the federal EFCCCC and donors shunt the bureau and deal directly with Woredas to implement projects- without involving or seeking feedback from the bureau.

Under optimal circumstances, there should have been a steering committee, a technical committee, and a focal person for each of the sectors (implementing entities). The current reality, however, is

that the steering committees are not functional. Therefore, work is done through the focal persons and partly through technical committees (where they exist).

Planning

The Bureau has a fairly good interaction with the federal EFCCC. The latter request and obtain reports from the bureau on a quarterly basis. In earlier years, the discussion were more oriented to pertinent technical issues which in recent years has changed to mundane administrative issues.

Because of the dysfunctional steering committee, the bureau does not have a well-coordinated planning system with the sectoral bureaus.

Resource limitations

Budget is another constraint that limits the bureaus capacity to conduct pertinent activities down to the Woreda and Kebelle level. The team mentioned that most Woredas do not have a computer let alone internet connection and in the worst cases desks and chairs are in short supply.[92] There are no sufficient vehicles to do field works in the 23 zones (and 157+ Woredas). Lack of financial resources has also limited the capacity to compile CRGE relevant baselines for the SNNP Regional state.

Viewing CRGE as a project or at best as a program

"CRGE is not project or a program; it is a strategic development direction!!" – Misrak Kumalo

There is a need to change the misconception surrounding CRGE- that it is a one-off project or program. It must be viewed as a policy choice (a strategic trajectory) which the country has already made. That implies there is a need to continue to internalize and mainstream it (both within the coordinating and implementing entities). In 2008/2009 E.C., the bureau tabled a propos l/structure for a steering committee; however, this has not been approved yet. **To this end, the Federal Civil Service Commission and its regional representations need to make plans for CRGE related activities in their human resources and budget allocations for the implementing entities at the federal and regional levels.**

Case vignette 5B: SNNP Regional State Enterprise and Industry Development Bureau

This short case is based on focus group discussions held with three personnel of the SNNP Regional state **Enterprise and Industry Development Bureau.** The individuals who took part in the discussions were Matusala Wada, Abaynesh Abera and Tigist Shiferaw, who hold various positions within bureau.

[92] The consultant was able to verify this during the visit paid to the Hawela Tula sub-City in (Sidama Regional State).

Overview

The Enterprise and Industry Development Bureau has two agencies and one "directorate[93]" under it. These are: the Urban Job Creation and Food Security Agency; the Rural Job Creation and Food Security Agency; and Small and Medium Manufacturing Industry Development directorate.

The "Environmental Protection Unit" (overseeing CRGE issues) is under the Infrastructure and Cluster Centers of the Small and Medium Manufacturing Industries Development Directorate.

Broadly speaking, the SNNP region does not have thermal energy-intensive industries relevant to CRGE discussions (e.g. no cement, metallurgy factories). The majority of the industries fall under the micro, small and medium enterprises category.

Main activities so far

The main activity which the bureau (through Environmental Protection Unit) has carried out is an environmental pollution assessment involving major beverage companies and soap factories. This study has spurred action on the part of the beverage factories covered, namely Moha Soft Drinks and BGI brewery. Both have invested in a wastewater treatment plant to rectify the emissions (discharges) identified in the study. Apparently, the effluent from the Moha factory had unpleasant odor (probably a result of sulfur containing gases) and BGI did some faring of methane.[94] With installation of the effluent treatment plants, both problems have been addressed.[95]

Training is not sufficient

The budget available for training is not sufficient to cover 23 zones. The recent training activity (December 2020) was one organized by the MoTI and FeMSEDA on energy management issues. One representative from each zone plus two candidates from the bureau were trained on a Training of Trainers basis. However, since the focus of the focus of the directorate and the unit is on SME clusters, the training is not well tailored to CRGE issues. In terms of budget allocation within the bureau, training seems to be the last in the row of priorities.

No MRV system

There is neither an MRV system nor qualified MRV personnel. The bureau has not conducted a baseline study to determine GHG emissions from the factories in the Regional State.

Sub-optimal structure and mandate issues

The team is of the opinion that the structure of the bureau is not conducive to discharge CRGE responsibilities. There needs to be a dedicated unit mirroring the MoTI at the federal level (which has a CRGE directorate) and matching that with the required personnel will also be essential. Currently, there are only two dedicated employees covering the whole region and working on a range of environmental issue- not just CRGE.

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[93] The proper Amharic name of this section is *zerf* (□□□)

[94] This is according to Matusala Wada (the consultant did not visit the factories to verify these claims.)

[95] Also according to Matusala Wada; he estimates the investment costs of the effluent treatment plants to be about ETB 40 million each.

When it comes to environmental issues the bureau's mandate is to support the environmental bureaus- not to lead. The Enterprise and Industry Development Bureau cannot strictly regulate the environmental performance of the very industry it seeks to advance (hence a mandate conflict issue).

Private sector engagement is weak

Although the bureaus has engaged and worked with beverage factories on effluent issues, the same cannot be said about GHG emissions. The bureau is not proactively seeking partnerships with donors and universities to advance implementation of CRGE issues. There is more to be desired when it comes to transparency of the private sector on environmental (GHG emissions). In the same vein the awareness of Civil Society Organizations and the community on climate change issues is low.

Weak partnerships with donors and universities

The bureau worked to forge partnerships with the Wondogenet Forestry College to advance its work on CRGE issues. This, however, did not materialize mainly due to the security issue in the Region in 2019. Lack of budget to carry out CRGE activities is another constraint, which still prevails. It is after that initiative failed, the bureaus started to engage individual companies such as Moha and BGI. However, the bureau has partnered with GIZ in the past on another issue (its core business): to help the SMEs access to finance to acquire efficient machinery.

Another constraint is lack of transparency surrounding the (donors- environmental bureau- industry bureau triangle. On industry-related environmental issues, donors engage the environmental bureau without communicating the industry bureau.

Leadership issues

Certainly decision makers across the board are not affording CRGE the priority it deserves. That is the case with political leadership and the leadership of sectors at the regional, zonal and Woreda levels.

Case vignette 5C: SNNP Regional State Transport and Road Development Bureau

This short case study is based on focus group discussions held with two personnel of the SNNP Regional state **Transport and Road Development Bureau.** The individuals who took part in the discussions were Shibabaw Getahun and Berta Dawit who hold various positions within the Environmental Protection and Climate Change Directorate.

Overview

Transport and Road Development Bureau oversees functions, among others, public transport issues, license, freight transport, tariff, quality and safety assurance issues. The transport and Road Development function is represented at the bureau level at the Region, at the department level in the zones and at the Office level in the Woredas.

Activities of the Bureau

CRGE-relevant activities of the Bureau include expansion of bicycle transportation in towns of the Region; expansion of non-motorized Transportation Systems in rural areas (also called Intermediate Mode of Transport); afforestation. In fact the Consultant was able to see prototypes of horse drawn carts (for passenger and goods) of much improved workmanship than the commonly used *Gharis*.

Regarding bicycles, the plan is to expand bike transportation in five towns, namely Hawassa, Alaba, Arba Minch, Wolaita Sodo, and Hosana. Although Hawassa used to be a popular bicycle city in the past, this is now changing as the number of motorbikes is on the rise. The team believes, Hawassa needs to put in place dedicated bike lanes (painted or demarcated) to bring back the dominance of bicycles. A plan has been finalized to that end; however the investment cost is high and the activity is still pending as a result.

The NMTSs seek to compete with motorbikes as a preferred mode of transportation. Currently, motorbikes are being used in rural areas at an increasing rate.

Structure not suitable for CRGE implementation

The CRGE function is represented by one focal person at the Regional level.[96] The focal person is responsible for many other duties, namely "Public Transport Service Development and Vehicle Worthiness Assurance Senior Expert". On top of that he doubles as a CRGE focal person. There are no CRGE representations at the zonal and Woreda levels. Because of this fluid (unclear) structure, there is no dedicated budget for CRGE activities. According to the focus group participants, the CRGE function could be pragmatic by emulating the HIV prevention mainstreaming function, which is briefly presented in **Box 9** below.

Box 9: Core business- Lessons from HIV prevention mainstreaming in the transport sector

This case study vignette is based on the short discussion held with Woinshet Tadesse, who is HIV Prevention Mainstreaming Officer with Transport and Road Development Bureau of the SNNP Regional State. The short interview was conducted based on the recommendation of the CRGE focal person.

Within the SNNP Regional State Transport and Road Development Bureau, HIV prevention mainstreaming is carried out by the HIV Prevention and Control Directorate. The mainstreaming work is coordinated with the various sub-sectors and projects (e.g. transport sub-sector, road safety sub-sector and the URRAP project). One of the flagship activities of this work is a project seeking to create job opportunities for HIV affected people by granting them job opportunities at bus stations or allowing them to start micro-businesses (e.g. shower services) in the stations. The "owners" of this initiative are zones- which see clear incentives by way of discharging their shared objectives of HIV prevention and supporting affected people. One factor, which contributed to the relative success of the HIV prevention mainstreaming work, is the fact that 2% of the total budget of the

[96] The representative/focal person is Ato Shibabaw Getahun. He is responsible for many other functions and the CRGE is an additional responsibility.. His full title: Public Transport Service Development and Vehicle Worthiness Assurance Senior Expert + CRGE Representative

Bureau is set out for this mainstreaming case. That is not the case with CRGE mainstreaming. Comparatively speaking, it appears the Bureau (and its leadership) have understood that HIV prevention is part of the core business of the transport and road construction sector.

Case study 6: A cursory assessment on the readiness of universities as centers of excellence for sustainability and CRGE issues

This cursory case study is based on the interview held with Abate Hailu, who is Coordinator of the Technology Business Incubation Center (TBIC) of the Institute of Technology of the Hawassa University. The objective is to get a preliminary understanding on where our universities stand in terms of setting up centers of excellence on sustainability issues and providing specialized training and advisory services.

From a policy perspective, it is the Ministry of Science and Higher Education (MoSHE) which has the regulatory responsibilities. To this end, MoSHE has already issued three policy directions relevant to the issue under discussion. These directions are on: (a) university-industry linkages; (b) community service; and (c) technology transfer. Hence, from a policy dimension, it can be argued that an enabling environment has been created.[97]

The universities in Ethiopia have been grouped in into three categories, namely *comprehensive, applied* and *research* universities. When it comes to the topic of this case study, it is the research universities, which are tasked to work towards setting up centers of excellence and focus on post-graduate research. With that in view, eight universities are currently selected as "research universities". These are: Hawassa University (HU), Mekelle University (MU), Addis Ababa University (AAU), Jimma University (JU), Bahir Dar University (BDU), Arbaminch University (AMU), Haromaya University (HU) and Gondar University (GU).

When we come to the work that Hawassa University has carried out so far, it has established a Science and Technology Park by collaborating also with Adama Science and Technology University (ASTU) and Addis Ababa Science and Technology University (AASTU). Within the Science and Technology Park, there is, for instance, a Solar Competence Center. Also, HU has partnered with BDU, JU, AASTU and MU to spearhead a "stakeholder engagement" and "Think Thank" forum; so far this has been supported by GIZ. Within that, a pilot project has been working on a university-industry platform. The stakeholder engagement forums have been taking place in the first week of every month and, among others, have been discussing issues related to Corporate Social responsibility (CSR) and resources towards the competence centers.

Other than that, the groups have not yet concretized specialized offerings to the sustainability/CRGE space. These could, for instance, be in delivering executive-level short training courses on sustainability and responsible leadership (targeted at leaders within government and business); setting us centers of excellence on responsible leadership or corporate citizenship/ CSR; offering certified energy management courses; offering (accredited) MRV services, etc. Abate Hailu admits, these aspects are missing but he remains optimistic that the Stakeholder Engagement forum should be the nucleus for working towards those objectives.

One glaring capacity gap that became clear during the discussion was, none of the capacity need assessments carried out so far on CRGE and NDC implementation has been systematically shared with the group- at least not the group HU is in (mentioned above). Hence, the immediate and

[97] Abate Hailu also concurs with this statement.

sensible action is for the CRGE coordinating entities (EFCCC, PDC, MoF-CRGE Facility) and the implementing entities (CRGE sectors) is to create a platform through which to share the CRGE/NDC related gaps and needs on which it would be desirable and plausible to create endogenous capacities.

In a separate discussion held on the same topic with Addisu Amare (Ethiopia Industry Expert for, EU Climate Change budget support project), the point was made that various universities have some existing capacity and focus in various renewable energy fields. For instance:

- AASTU has strong foundations of energy efficiency and management issues; it is better positioned to work towards establishing itself as a service provider on certified energy management trainings;
- ASTU has been focusing on solar technologies;
- BDU has projects on bio-gas and better placed to specialize on that;
- AU (traditionally as a water engineering university) is better placed on micro hydro-power;
- Last but not least, Wondogenet University is often sighted as having carved a niche in rendering services in MRV of GHG inventory in the AFOLU sector.

The EFCCC has also already working with the Environmental Science Department of Addis Ababa University on honing (climate) negotiation skills- as per interviews held with Habtamu Adamu.[98] Lack of professional negotiation skills was a gap identified in the many environmental conventions which Ethiopia negotiated. The cooperation with AAU was intended to fill that gap to a certain extent. Going forward, it will be important to have a more formalized (post graduate) course or program intended at turning graduates into qualified negotiators for multilateral environmental agreements.

As discussed in **Case Study 4**, the EEA is working with AASTU to train energy auditors. The main constraint identified is the fact that AASTU trainers themselves are not certified energy managers and AASTU (or the center offering the training) is not accredited in that line of service.

Based on the above cursory assessment, **Table 16** depicts a preliminary "road-map" as to how universities could gear education, research and service offerings for sustainability in general and to supporting CRGE and NDC implementation in particular. **Box 10** summarizes provisions from the Education and Training Policy and the Higher Education Policy and Strategy on the basis of which such effort could be based.

[98] To be specific with Dr. Satishkumar Belliethathan who has been Director, University Industry Linkage and Technology Transfer + Innovation Hub at AAU

Table 16: Course of action to gear university education and research for sustainability

Actions that needs to happen	Current status	What still needs to happen
Put policy directions: Creating enabling environment in the "rules" space	− The Education Policy and the Higher Education Policy of Ethiopia have enabling provisions to gear education for sustainability(See **Box 10** for details) − MoSHE has enacted policy directions for university-industry linkages, community service & technology transfer − Eight research universities identified which are mandated to work towards setting up centers of excellence and education for sustainability	The two policies have sufficient enabling provisions.
Universities put the Higher Education Policy to practice	The eight research universities have started some activities on Stakeholder Engagement and setting up Science and Technology Parks Various universities have identified niche renewable energy research objectives; some have established competence centers (as discussed above)	Based on the Higher Education Policy, Universities adopt (articulate) clear strategies to gear their activities towards environmental and social sustainability (e.g. adopt the UN Global Compact PRME; and work towards implementing those)
Strengthen University-Industry linkage with a focus on sustainability (CRGE and NDC implementation)	Some disparate activities are taking place (as discussed above). However, there is no indication that Universities have unpacked the CRGE Strategy of Ethiopia with a view shape education, research and service offerings towards that national objective.	− The research universities need to unpack the CRGE strategy (and its auxiliary strategies) to determine what it means for education, research and service offerings. − The research universities need to use their industry linkage initiatives to determine the capacity gaps and needs of the sectors concerning broader sustainability objectives and specifically CRGE and NDC implementation. − Universities need use their industry linkage initiatives to reach out to CRGE coordinating entities (EFCCC, PDC and MoF-CRGE Facility) to get access to already commissioned studies on capacity development needs for CRGE and NDC implementation − Based on the above, universities determine their existing capacity and their own capacity development needs.
Build own capacity based on identified gaps and needs	Yet to happen	− Create twinning arrangements with African universities and with other universities in the developing and developed regions; − Partner with qualified local consultants; − Allocate and/or look for finance and technical support to fill the identified capacity gaps

Formulate and roll-out the requisite "service offerings" in response to the identified capacity needs	Yet to happen	By matching their university wide policies with the capacity needs of the sectors, the research universities to: − Establish centers of excellence on various themes relating to sustainability, CRGE, etc.; − Formulate executive-level, short training courses targeted at top leaders within business and government; − Formulate under-graduate and graduate courses on sustainability; − Formulate and offer post-graduate programs on sustainability, green growth, etc.; − Formulate and offer certified courses or advisory services on CRGE related issues: Energy Management; MRV; Multi-Stakeholder Partnerships (MSPs); Climate Negotiation; Business Feasibility Analysis (Green Business Case Analysis); etc.; − Establish local communities of practice and professional (alumni) networks on the identified competences areas − Introduce systems for certification of professionals and consultants; − Introduce systems to get the established centers of excellence accredited by international accreditation bodies.

Box 10: Policy provisions supporting education for sustainability in Ethiopia

The Education Policy of Ethiopia[99] has the following provisions, which are supportive of endeavors to gear education to advancing environmental and social sustainability. The policy states the following:

- *The policy envisages bringing-up citizens endowed with humane outlook, countrywide responsibility and democratic values having developed the necessary productive, creative and appreciative capacity in order to participate fruitfully in development and the utilization of resources and the environment at large;*
- *Cultivate the cognitive, creative, productive and appreciative potential of citizens by appropriately relating education to environment and societal needs;*
- *To provide education that can produce citizens who possess national and international outlook on the environment, protect natural resources and historical heritages of the country;*

In the same vein, the Higher Education Policy of Ethiopia[100] has the following enabling provisions:

- *With climate change, increasing environmental degradation and pollution, and increasing demand for depleting natural resources, there should be a mechanism in how we meet energy, water, food, and health needs of the nation. All this demands high quality education that equips learners with competence in various disciplines.*
- *With changing and growing development needs of the country and emerging global challenges and opportunities, the higher education system needs well-designed policies and strategies to properly and effectively address the national needs and to achieve the desired Sustainable Development Goals (SDGs).*
- *Continuously build and practice skills like: ethical values, social values, social responsibility, environment awareness, etc.;*
- *Establish an Institute* ***that conducts needs assessment, research, evaluates and reviews*** *higher education curricula and academic programs engaging experts, professional associations, alumni,* ***sector institutions, private organizations, employers, industries*** *and other relevant stakeholders. The Institute shall approve the launching and closure of academic programs based on consideration of* ***national technology, social, environmental, and knowledge demands and dynamism.***
- *Design higher education curricula and academic programs to produce graduates equipped with theoretical knowledge, practical skills,* ***social responsibility****, and graduates who are intellectually competent and can effectively communicate, rationally debate, and* ***morally and ethically upright****.*
- *Higher education institutions shall give due attention to various cross-cutting issues such as gender,* ***environmental protection*** *and care, HIV/AIDS, emerging pandemics and crises, etc.*
- *Encourage higher education institutions to develop effective waste management system that keeps the environment clean and unpolluted.*
- *Strengthen institutional arrangements to create and manage linkages between higher education institutions, TVET institutions, research institutions and industry.*
- *Encourage higher education institutions to jointly design and run research projects and graduate programs with relevant research institutions and industry.*
- *Encourage higher education institutions to provide joint degree programs in specialized areas with industry to equip individuals with specific competencies.*

[99] FDRE (1994). *Education and training policy*
[100] MoSHE (2020). *Higher education policy and strategy*

8.2. Questionnaires and interview guides

Questionnaires for Sectors

Objective of the Study: To Conduct institutional capacity need assessment and to plan institutional capacity development that will enable the [transport/energy/energy] sector and its agencies to integrate current and future climate change adaptation and mitigation measures in their PDP-10 action plans as part of the updated NDC implementation and ensure that outcomes of updated NDC interventions and PDP-10 actions are sustainably climate proofed and resilient

1) Understanding of ministry/sector <u>in the context of implementation of NDCs</u>: Policies, Institutional Arrangements, Leadership, Knowledge and Accountability

a) Relevant policies, strategies
b) Human and Financial Resources Management
c) Coordination & accountability mechanisms: At federal level; regional level and Woreda levels
d) Collaboration and partnerships: Building support for climate action and mobilizing resources: government, business, donors, academia, civil society
e) Learning and knowledge management practices/traditions
f) Monitoring & evaluation and feedback mechanisms

2) **Integrating CRGE into Sector Development Plan**: CRGE Strategy implementation progress and FLAGSHIP projects (2011-2019):

a) Integrating mitigation and adaptation considerations into <u>GTP II</u>:

i. Coordination process: Who was responsible? Which departments, regional bureaus, institutes participated?
ii. Were there any planning guidelines used? If so, were they useful?
iii. What were the targets and the results achieved: Mitigation and Adaptation (per NAP)?
iv. What were the challenges faced? What lessons were learnt?

b) Flagship projects:

i. Description: What, where, capacity, how many?
ii. Results to date?
iii. Challenges?
iv. Which one do you recommend to visit? PLEASE PROVIDE CONTACT DETAILS & PUT ME IN-TOUCH

c) Yearly plans: Process followed and challenges faced

3) Integrating CRGE into the Sector Development Plan: Status and progress of Integrating sector mitigation and adaptation considerations into <u>Ten-Years Perspective Development Plan</u>

a) Integrating mitigation and adaptation considerations into PDP-10

i. Coordination process: Who was responsible? Which departments, regional bureaus, institutes participated?

ii. *Were there any planning guidelines used? If so, were they useful?*
iii. *What lessons learnt from the GTP II period were integrated in the new, ten-year year development plan?*
iv. *Alignment of sector's NDC roadmap project actions with PDP-10 and level of contribution of NDC road map to PDP-10 and SDGs;*
v. *Are there plans for capacity development? What are the key highlights?*
vi. *What were the challenges faced and lessons learnt?*

b) Flagship projects:

i. *Are these the same as those in the GTP II period? Any new/planned ones?*
ii. *What challenges are faced or anticipated?*
iii. *Which one do you recommend to visit?*

c) Yearly plans: Process followed; challenges faced; lessons from GTP II period used

4) Progress of capacity development during 2011-2019 CRGE FTP implementation versus pre-CRGE period at organizational level, enabling level and individual level capacity (on MRV, policy, institutions, finance and knowledge management, etc.)

i. Capacity gaps were identified during 2011-2019 CRGE project implementation period
ii. How does that compare to pre-CRGE period?
iii. What were the specific plans for capacity development for the 2011-2019 period?
iv. What were the results achieved?
v. What were challenges and lessons learnt?

5) Existing and the required capacity for sector's NDC implementation Capacity Development Plan for NDCs project implementation and for supporting PDP-10 implementation

6) Clarifying quantitative data on GHG emission reduction and adaptation results achieved by CRGE- project initiatives

i. *Contribution of CRGE-sectoral projects to national commitment on mitigation;*
ii. *Empirical data on contribution of fast track initiative projects to establish climate adaptive and green sector: any mitigation and adaptation success stories/ good practices?*

7) GHG-MRV system and Information and Knowledge Management System: Challenges facing sector with regard to setting up efficient systems and capacity development needs

8) Ideas and suggestions for actionable recommendations to bridge the gaps for meeting targets set for NDC roadmap and PDP-10;

9) Financing options and challenges:

i. *Budget CRGE FTP implementation period 2011-2019*
ii. *Budget for NDC implementation period (10 YDP)*
iii. *Green & climate finance sources: government, donors international climate finance, business*
iv. *Carbon trading: experiences so far, challenges? Recommendations?*

10) Level of women economic empowerment of the sector and social, environmental and financial benefits provided by CRGE project initiatives.

Questionnaire: Potential donors, development agencies

a) Major programs, projects, initiatives on CC adaptation and mitigation in the three sectors
b) Programs, projects or interventions specifically supporting capacity development of the sectors in elaborating their respective development plans and aligning those with the NDC of Ethiopia
c) Key technical capacity constraints they have identified and are supporting
d) Ideas/interests for capacity development interventions in the area
e) Resources available or are in the pipeline- which could be tapped into for capacity development on climate-proofing of sector development plans and better implementation of the NDC
f) Who is interested and what are its incentives, i.e. identifying potential partners/donors showing interest to participate/support the anticipated interventions.

8.3. Terms of Reference of the capacity assessment team (SEPARATELY ENCLOSED)

8.4. Capacity assessment work plan

The updated work-plan is presented in the Gantt chart below (**Table 17**).

Table 17: Gantt chart

No.	Activity	2020				2021																	
		Dec				Jan				Feb				Mar				Apr					
a)	Kick-off meeting with Client																						
b)	Inception Report																						
c)	Inception Report feedback																						
d)	Revised Inception Report																						
e)	Desk-work																						
f)	Field-work																						
g)	Presentation of findings/validation																						
h)	Draft Final Report																						
i)	Quick feedback on Draft Final																						
j)	Final Report																						

8.5. List of stakeholders consulted

No.	Name	Organization & Position	Contact Details	Date of Interview
1.	Ababu Anage	UNDP National Climate Change Specialist	E: ababu.anage@undp.org M: +251 911843801	21.12.2020 (Kick-off)
2.	Bemnet Teshome	UNDP/EFCCC Senior Climate Change Adaptation Expert	E: bemnet.teshome@undp.org M: +251934505470	21.12.2020 (Kick-off) + regular coordination
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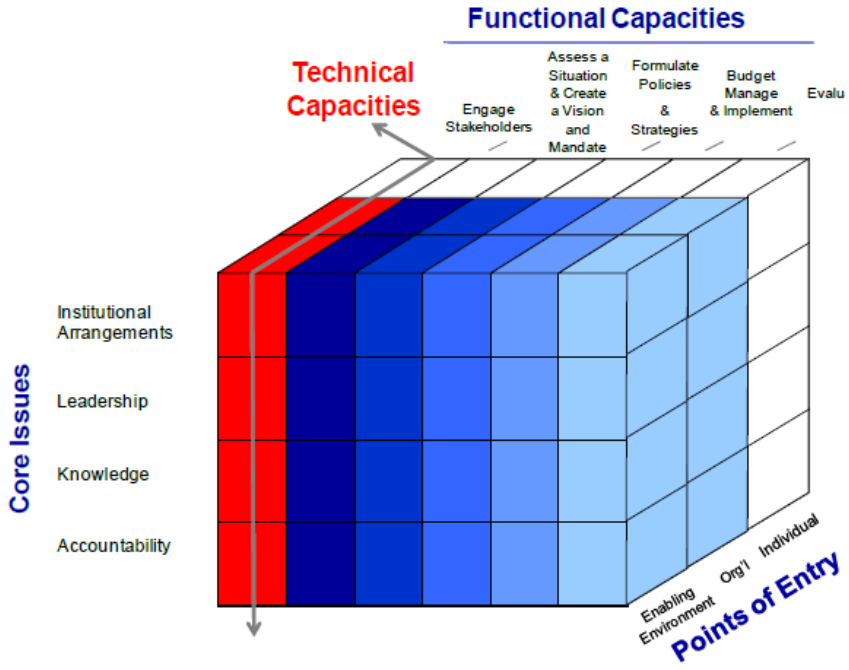
8.6. UNDP capacity assessment framework



Source: UNDP (2008). *Capacity assessment methodology: User's guide*

8.7. Detailed capacity development plans

Annex 9.7A: Transport sector NDC capacity development plan

Annex 9.7B: Energy sector NDC capacity development plan

Annex 9.7C: Industry sector NDC capacity development plan

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