Framework Convention on Climate Change

TEC/2024/28/1

Technology Executive Committee 19 April 2024

Twenty-eighth meeting

16–19 April 2024 (19 April TEC-CTCN Joint session)

NOTES PREPARED BY DR RENUKA THAKORE, Observer, RINGO, nominated by FUTURE EARTH. The views are personal and does not represent RINGO or FUTURE EARTH. Renuka took part in the TEC and TEC-CTCN joint session virtually on personal capacity.
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The full details of the documents and recording of Twenty-eighth meeting 16–19 April 2024 (19 April TEC-CTCN Joint session) is found here: https://unfccc.int/ttclear/tec/meetings.html

Provisional agenda

- **Opening of the meeting.**

- The chair mentioned that the last months were very busy.
- Invited new members to introduce themselves.
- Invited rest of the members to introduce themselves.

- **Organizational matters:**

(a) Election of the Chair and Vice-Chair of the Technology Executive Committee for 2024;

- Members from Annex 1 and non-Annex 1 are eligible to be the Chair and Vice-Chair
- Non-Annex 1 consultation – Chair – Thibyan Ibrahim
- Annex 1 consultation – Vice Chair -

(b) Adoption of the agenda;

- Agenda adopted

(c) Organization of work.

- **Update on relevant meetings, events and initiatives:**

(a) Outcome of the Dubai Climate Change Conference;

(b) Outlook for 2024: 60th Session of the UNFCCC Subsidiary Bodies.

- **Implementation of the rolling workplan for 2023–3027:**

(a) Update on the implementation of the rolling workplan for 2023 – 2027 and its activities;

(i) Emerging and transformational adaptation technologies: early warning systems;

- Emerging and transformation adaptation technologies: early warning systems was presented by the activity group.
  - Joint knowledge product was presented and discussed.
  - Sergio presented updates the progress on the work with GEO, including active participation on

Pillar 1, with UNDRR, and many other activities with various partners.
    - Product will be developed either as policy brief or paper.
    - Content will include policy insights, practical technology solutions for improving climate information and risk knowledge and fostering risk-informed adaptation policy and action in vulnerable context.
    - Rui mentioned the significance and role of the technology and innovation in enhancing climate information and risk knowledge for all, mentioned MHEWS and the EW4All, provides the snapshot of the content. Mentioned the policy landscape will include the status of the countries, technology needs and priorities in improving climate informed and disaster risk knowledge. Also mentioned barriers and enables to implementing and scaling up technologies and innovations, finally it would include trends and key consideration in technology application.
    - Soucan presented Preliminary findings, including reinforcing the virtuous cycle of data quality and effective technology application, promoting quality data.
    - Erwin advised on improvement on communication, stating it must be clear to policy makers and how it can be effective for various stakeholders to follow, making connections between space and surface related technologies, consideration to format the document with interactive tool, worth presenting this document on information day.
- UNDRR – Galimira expanded on the technology and innovation for EWS policy brief as part of the EW4All Pillar 1 Rollout Process. The product will be a part of the key toolkit, first level – it will be rolled out in the first 30 countries, it would be a part of online knowledge base, will include regional level training and learning. Described the roll out in a few countries such as Mozambique – collaboration of national institutions, government involvement in the driving seat, development of national roadmap and proven impact of making early warning systems, rollout completed in 20 countries, includes catalytic action and sustained action, followed by in depth implementation of the Pillar 1 workshop and the toolkit, have this data access open to all the user at national level, detailed handbook on the use of the knowledge product – test pilot in Ethiopia – under development. National rollout and dedicated training will be followed up throughout the year, and the product will be presented at the high-level global events such as COP and other thematic conferences, professional networks.

(ii) Digital technologies: artificial intelligence.

- Presented by Ariesta Ningrum
- Adopted in 2022 – four streams which is updated regularly,
- Overview of TEC deliverables
    - Two knowledge products and much more activities have been delivered.
    - 2025 – side events with CTCN and GAN
    - Development of associated products such as Climate weeks and COP meetings
    - Thanks to contribution to German government.
    - Budget is supported by UNEP.
    - Translation of TEC products in different languages with the support of UNIDO
    - In-kind contribution from various entities such as GEO, FAO, etc., to improve early warning systems.
    - Approved budget does not provide consultancies support from the core budget so supplementary funding will be required for any anticipated deliverables.
    - Heavier load for supporting intergovernmental process.
    - Breakdown of the TEC rolling work plan implementation presented.
    - New initiative – AI initiative implementation is challenging and would require support and full-time staff.
    - Challenges such as fundraising and awareness-raising of budgetary requirement.
    - Requested the board members to revisit their activities and deliverables to reprioritizing deliverables and find a partner who is willing to work with TEC.
- Erwin introduced the content included in the outreach document, which included definitions, call for urgency and introducing the AI in the context of LDCs and SIDS. Proposed to publish the document before September. Renuka highlighted the latest development on artificial intelligence at UN and shared the news and a document. Renuka shared her publication on artificial intelligence.

(b) National systems of innovation and collaborative research, development and demonstration and general-purpose technologies:

- Implementation plan presented by Moritz Weigel
    - TEC 26 endorsed the strategy, collaborative partnerships and engagement were developed.

    - Using the traffic light system, presented high level overview of the status of deliverables.
    - Challenges such as initiating work on energy storage highlighted that partner not found yet.
    - Analysis of TAP success stories – partnership with UNEP-CCC going ahead, partner for energy sector guidebook, including aspects of just transition not confirmed.
    - UNIDO's engagement with TEC with support from METI mentioned that they have a common interest in promoting TEC activities and partner to rolling TEC plans, supporting the TEC activities since 2016.
    - UNIDO with support TEC activities such as national system of innovation, digital technologies, water-energy-food systems, buildings and infrastructure and transformative industry
    - UNIDO highlighted that they have high experience in entrepreneurship, and facilitation of the technology deployment as well translating it for policymakers to French, Spanish and Arabic
    - UNIDO contributed to AI and climate actions.
    - UNIDO will continue its support with the activities it has been doing.
- Ambrosio explained the new strategy of having systemic approach to the technology mechanism and working with partners is not only for funding but to diffusion of the TEC work, for e.g., Grand Challenge of AI, promoting promotion of AI technology for climate problem. Invite everyone to engage with one activity and extend partnership with others.
- Sergio thanked the support of the secretariate.
- Stefanos highlighted to take practical approach – suggested expanded internship programme to get extra resources.
- Erwin appreciated the support of the donors. Stressed extra resources must be sourced, encourage TEC members to actively support resources management.
- Dietram encouraged the TEC members to establish the TEC green partners.
- Stig questioned the state of resources – asking how the TEC members can be helpful in
- Renuka highlighted that there are many free channels – social media, universities, and channel like the GSFN who conducts Global South Summits every month.
- Fred appreciated UNIDO achievement and contribution with TEC. The question raised was we are the TEC efforts going. TEC policy mandates must effectively work in collaboration with CTCN and with other partners. Visibility of TEC is important and must be increased.
- Ariesta stressed expanding the reach of the TEC, pro bono help with reports, attending events on the behalf of TEC, raising TEC visibility. Stressed GCF support.
- Thibyan mentioned that TEC members will be emailed the TEC activities and express their support.
- Ambrosio stressed that the TEC members who are a part of open workstream activities can invite partners to join the activities. Resources from CTCN will be discussed in the Joint CTCN-TEC meeting.
- Thibyan stressed that the resource mobilization issue will continue to be discussed throughout the 3 days meeting.
- Ambrosio presented the draft outline of the concept note on AI grand challenge, suggested consultation in May-July and launch in COP29.
- Erwin agreed that the paper was detailed, and it will bring valuable addition, added that the paper is ambitious and can be challenging in finalizing the paper while AI issue is rapidly increasing globally. Showed concerns on late publication and losing the momentum and motivation from the public. Suggested to publish a brief (short paper) that frames the issue and points out the major points of intersection and the major threats the AI poses. A short policy brief could be valuable and impactful. A long paper could have limited interest, so can be published later in time. Biggest gap in the paper was for AI for energy. Energy consumption is the biggest challenge in relation to AI and that is not fully highlighted in the paper. Inception 3.1 was pointed out and a separate section to be included was suggested. Shared an example of AI use case in improving the performance of batteries, suggesting that such case studies must be included. Mentioned Global Climate Hub must be mentioned.
- Ambrosio presented alternative of developing a paper that is not like a policy brief but as a paper that it can serve as a guidance to develop the initiative.
- Monique mentioned that they have been very successful in outreaching relevant stakeholders in the subject of AI, for e.g., resource management – this would give an opportunity achieve one deliverable. AI is spreading widely – suggested to use 'technical insight' instead of 'policy brief'.
- Fred reminded that he was the key person behind the AI to support its development. Fred highlighted that when we think of AI, we generally think of autonomous manufacturing, but thinking from the LCDs or SIDS, they can use it for communication and other implementation that can bring benefits to these countries. Fred highlighted the energy issues with AI, data protection, and many other things.
- Stefanos highlighted that the paper must be progressive and have a broad discussion of AI and the climate change.
- Liva highlighted that we could look at the EU Directive
- Sara proposed the engagement of TNA work with AI initiative.

- Observer highlighted high energy consumption of AI products.
- Co-chair concluded AI paper is important so extended summary must be prepared to be presented at the next COP.
- Bill Wright mentioned the benefits of AI for developing and developed countries. Mentioned how AI is helping in various application to understand the earth observations to education climate literacy for farmers in Tanzania. Stig appreciated the efforts. Stefanos appreciated the work Bill shared. Erwin also appreciated the efforts working with TEC. Ambrosio supported Erwin's comments. Added that RDD activity will progress and will be valuable to the TEC activities as well as it will be impactful.

(c) Technology needs assessments and technology planning tools to support NDC implementation:

(i) Technology Need Assessment: Analysis of success stories of implemented Technology Action Plans and identification of key elements of success;

(ii) Long-term technological transition pathways.

- TNA presented the draft annotated outline, includes common implementation plan key elements of success for TAP implementation – development, refinement and engagement with the partners for implementation.

- Main TNA guidebook was explain
    - Introduction to Global TNA project
    - Handbook development methodology explained.
    - 100 countries joined, first stage participants not necessarily joining the second stage
    - 2nd phase will help 17 new countries joining TNA process – 3 main steps
        - Identifying main countries- stakeholders
        - Building technology plans
        - Develop concept notes with funders such GCF.
        - Country coordinators
    - TNA phase V will provide recommendations from TEC's Guidance Gap Assessment
    - Updating the guide step-by-step – with all those engaged
    - Stig stressed that the finance resources problem must be solved technically rather than going through the traditional negotiation process that UNFCCC generally follows.
    - Ambrosio stressed the success story of Mongolia – translating the TNA into the national plan.
    - Fred stressed that the TNA guidance must resonant the countries need, why the technologies are not addressing today's need. Why are NAPs not involved with this activity? Revision of TNA guide must include the integration of the TEC and CTCN for the TNA actions on ground. Congratulated the new Chair and Co-Chair and emphasised that TEC meeting is not about negotiation but about collaboration. Support to LCDs was emphasised. Questioned where is the impact of the money that GCF puts into the technology.
    - Sara answered that 40 African countries participated in TNA projects, including LCDs and SIDS can benefit from the TNA phase 3. Countries joining the TNA phase 5 will benefit if they have participated in the previous phases. Just transition related work will be integrated in the guidebook, not sure if it is only related to energy or other areas. Gender aspect will be included throughout the guidebook. Impacts on the transformational change and developing countries technology plans will be included in the guidebook. Finance pathways and higher emphasis on implementation will be included. Most countries will know what their focus areas are. CTCN has mandate of identifying, support and co-finance GEF projects, so TNA closely work with CTCN. Noted that TEC publications will be taken into consideration for further alignment and strengthen contribution to NAP. Phase 5 includes preparing two concept notes for implementation in collaboration with CTCN and focus to TNA projects. 1.5 billion funds leveraged by GEF was mentioned in the presentation.
    - Anna highlighted the importance of mobilizing stakeholders at the country level to make the change and implementing technologies. Mentioned that she was supporting autonomous trains and AI. New phases of TNA are different that they emphasis the stakeholder engagement, including gender stakeholder engagement and the TNA barriers must be analysed considering gender aspects. The guidebook can inform NAPs but what about the loss and damage technology, must be address alongside. The gender aspects in involvement in transformation, and how it can be integrated into the just transition- energy transition, tripling renewable energy.
    - Fred called for redefining the role of TEC and CTCN in the implementation of the outcomes of TNA, it seems that TNA is growing on its own.
    - Shared experience of entrepreneurship in the climate change, how the projects reflect the work of TNA supported by TEC and CTCN, shared examples of clean cooking stove, incubators and other programmes in Uganda and other countries.

(d) Transformative and innovative solutions:

(i) Water-energy-food systems;

- Monique Motty from the TEC activity group, transformative and innovation solutions related activities – TEC collaborated with FAO to produce a knowledge product, case study guidance was to be developed, actions included to reach out to the stakeholders, including gender and indigenous aspects, proposed timeline is the develop a draft product by the next meeting, the agenda item will be discussed in the September meeting. Final document will be launched in the COP.
- Inkar Kadyrzhanava presented outline of the draft document which included climate change technologies, capacity needs and institutional requirements, financing needs and requirements, country specific case studies, policy, gaps/opportunities.
- Introduction will include the important source of livelihoods, healthy diet, reducing poverty, food insecurity in the broad context of climate change, social inclusion, close tracking of vulnerability, highlight climate technologies and specific enablers.
- Chapter 2 with set out the context and explain how it is relevant to the agrifood systems. Potential entry point and explain that the use of technology depends on the local country context and agrifood system.
- The discussion will be contextualized with the definition of technology defined by IPCC.
- Schematics of food security, availability of nutritious food, economic and physical access to food, increased resilience and future sustainability will be discussed.
- Schematics highlighting range of actors, interlinkages of value-adding activities and primary production of food and non-food agricultural products, food storage, post-harvest, transportation, processing and consumption.
- Resilience of agrifood systems will be discussed as it is under threat. Climate technologies will be discussed as enablers of food security system.
- Technology uptake from the user point of view will be discussed, from the institutional settings perspective.
- Climate finance flows at the global level, and financing needs to support the climate technology will be discussed.
- Chapter 5 will provide country specific examples, including sub-sectors, stages of the value chain and covering gender, inclusion, indigenous and livelihoods.
- NDC and NAP implementation will be supported through the discussion in this report.
- Last chapter will provide conclusions.
- High-level event will be in COP29 for the launch of the report, will consists of two panel highlighting the successful case studies/examples, the event will be information for implementers.
- Titus questioned if the presentation would include food security and indigenous knowledge – methods for providing food in the time of food scarcity.
- Stig
- Erwin highlighted that the report was not focused on the climate technologies, but rather focusing on general issues of water-energy-food.
- Monique Motty referred to the development of the paper.
- Rajiv shared experiences of CTCN, interaction with FAO was mentioned, mentioned integrated approach how it impacts the food value chain, mentioned innovative techniques such as pays-you-go, solar chilling plants to preserve milk, developing a manual for climate smart agriculture in Zimbabwe, use of drones for soil erosion, futuristic technologies such as agri-voltic technologies, aquaponic to grow more food.
- Renuka answering the lead questions for discussion mentioned the following:
    - NAP is focused on mitigation and adaptation, which mainly focusing to management and governance and resources and capacity building. NDC are focused on the targets and have plenty of indicators to report, so when we are presenting climate technology needs – we only talk about the technology. The question is are we talking about the diffusion of the technology, how it will manage and what resources will be needed for the technology adoption, also do we have indicators that would inform people for decision-making about how and why the technology would be beneficial to the country.
    - Agrifood systems is mainly the policies related to minimum literacy, insurance, infrastructure – such as soil labs, seeds quality and
    - Outreach to various stakeholders will be very significant, inclusion of digital tools and channels – mainly WhatsApp and so on, but also radio and TV and farm forums, etc., and training the leadership - cascading leadership structure that can be trained and can diffuse the knowledge and technologies to the end users.
- Anna highlighted women gender must be considered on its own, and highlighted promotion of agroecology and local knowledge.

- FAO appreciated the constructive responses of TEC members, Inkar mentioned they were happy to engage with the healthy nutrients, include indigenous knowledge, compare the use of traditional and modern agriculture practices, recognised that most of the food is produced by the small farmers, appreciated the suggestion to change the title, definition used in TEC guideline was believed to be the best definition. Adaptation technologies are the focus of discussion/reference point for the work of technology, agreed that climate technologies cover adaptation and mitigation. Highlighted the importance of water in food production, importance of energy in food storage, etc. so want to focus on water-energy-food nexus where relevant.
- Leslie responded to the Ambrosio's question on the Figure 3 – explained that the question is not about getting more money, but it is about dealing with the risk and the institutional change needed with it.

(ii) Buildings and infrastructure;

- Low carbon and low energy materials have been developed in the construction building and infrastructure. Global ABC and mitigation program members joined the meeting. CT Alliance also joined the
    - Gulnara Roll, Head of the Global ABC presented findings from the first climate forum – global status report – Global ABC work with plenty of other groups around the world, including local stakeholders.
    - Established several working groups and a global hub.
    - Very ambitious initiative of Near Zero emission, regular monitoring of the development and would be happy to work with TEC in implementing.
    - 70 companies joined Building and Climate Global Forum in Paris.
    - Ministerial declaration was adopted by 72 countries – Council will meet annual basis.
    - Status report was presented related to the policy gaps in the building sector such as green building codes, adaptation, retrofitting, data collection and monitoring, financial incentives, shift of reuse, circularity, and natural bio-based materials.
    - Finance requires communal attention.
    - Opportunities for collaboration for TEC – definitions, model technical requirements, identifying knowledge gaps and RD&D priorities, NDC guidance, data and monitoring frameworks, mitigation work programme and Climate Action Roadmaps.
    - 2023 Global Status Report for Buildings and Construction presented by Beyond Foundations – global reference document towards achieving Paris Agreement. Collaborative efforts from many other global alliances of construction. Construction emissions are growing, and investments are slowing. Global Building Climate Tracker has been developed based on the index – gap of 39.8 points identified and no progress has been noted since 2019. Emissions from the use phase has been growing.
    - Proposed next steps to collaborate, engage in dialogues and identify and discuss potential topic of focus at TEC 29- transformative industry and energy storage and MIT policy Lab and Cities Alliance, aligning climate policies with the policies and work on enabling framework.
    - Focus on local needs and resource mobilizing for LCDs.
    - How this related to Article 6.
    - Emissions of the whole-life cycle of buildings must be considered, especially important for affordability. Must also look into waste and reuse of the building material.
    - CTCN has complied many technical assistances to help comply with the building codes. The challenging time is about the existing buildings and existing appliances within the buildings, shared the example pilot carried out in Thailand, highlighted the issues that all buildings cannot be converted. Shared examples of IoT build in for energy efficiency from Korea and Bangladesh. Shared examples of Island states that the building must be resilient to the natural events, also mentioned about the schools that can work as shelter in such events. Shared example of adopting the buildings codes adopted to NAPs. CTCN expressed to collaborate with the TEC activities in buildings due to wide range of experience in this area due to previous studies.
    - Lola expressed interest in all the areas that were discussed for the buildings. Highlight the resource constraints of the resources and mentioned that the Global dialogue will be only for one day and how to bring the regional context due to the time constraint. Thus, proposed joint effort to accelerate the new build working.
    - Oliver highlighted that the solutions must not be developed for the technologies in the market today but for the future also. Decarbonization roadmaps are helping to do this.
    - Gulnara welcomed the cooperative activities coming to shape, stressed bringing social aspects in the discussion, reducing demand in energy and land and cost is also being looking into by the group (Global ABC)

- Anne mentioned about the Award given to the women organization in Bangladesh – buildings can be seen as hazard mechanism and adaptation mechanism – would be valuable link to the TEC women gender reporting. Mentioned the importance of locally sourced material – whole life cycle is important.
- Diana mentioned that if there is national document to guide the countries would be helpful.
- Ambrosio agreed that the documents must be relevant to geographic context. Endorsed CTCN collaboration would be valuable.
- Fred agreed that the discussion has been enlightening. Mentioned how the buildings are in the villages, giving example of his village in Uganda. He stressed the importance of looking at the building material, especially cement production. Mentioned the issue of building material waste, transport and production.
- Renuka highlighted that the technology exists for most better ways to move the buildings to low carbon pathway and readiness to address climate change, but the most issues Fred highlighted were the matter of education, management and governance, and regulatory frameworks to facilitate those development.

(iii) Transformative industry.

- Draft annotated outline: Policy brief on hard to abate industries in update NDCs was presented by the Co-Chair as a member of the activity group.
  - Started with the background mentioning the importance of promoting the planning and implementation of the activities.
  - Ken Wada shared the publication launch targeted at COP29 on Technology Day, suggested scene-setting presentation and 2 panel discussion, especially looking at how to integrate the cement and steel industry targets.
  - Erwin mentioned that it would be useful if the Mapping paper was distributed.
  - Ambrosio endorsed that the Mapping paper prepared previously were very important to be referred and must be in the public publication domain. Also endorsed the comments from Fred that steel and cement must be the focus, not only where they are fully developed but also to the countries where they are not fully developed.
  - Rajiv mentioned about the various work done by CTCN, including benchmarking for the cement industry, hydrogen technology in steel production. Mentioned that there was a huge interest in hydrogen technology and the steel sector will produce green steel production. Invited others to see how CTCN can collaborate. Mentioned various technologies such as waste reduction in steel production by 40-45%, mentioned LPC technologies- collaboration with steel industry, electrification of kiln in cement industry. Mentioned several policies and targets – focused on energy efficiency. CTCN has been helped by the government of Japan and work and knowledge can be made available.
  - Steel industry developments were shared by the TEC guest member (WIPO)
  - MIT asked how MIT Concrete Industry club can help in the activity.
  - Dietram responded to the interventions provided by the TEC members and ensured the integration of the interventions in the report and early publication of the TEC activity report.
  - Ken was thankful of the various technological advances mentioned and ensured that they would be integrated in the report.
  - Secretariate responded the question on the UNFCCC repository – the repository is stand alone just now due to resource constraints.
  - Ambrosio mentioned about the different data based, expressed concerned about overlapping the work, mentioned Mitigation division would be good to engage with.

(e) Collaboration and engagement with other UNFCCC processes and constituted bodies and other UN agencies:

(i) Collaboration and engagement with the Standing Committee on Finance and the operating entities of the Financial Mechanism;

- Hansol park presented on work of Green Climate Fund which included overview of the work with CTCN and TEC, replenishment ongoing included 31 contributors for a total amount of USD 12.833 billion. Further collaboration is ongoing. Shared existing windows of GCF support for technology such as new readiness strategy 2024-27, projects and programmes window are the key vehicles for channeling technology development on ground, supporting technology transfer, technology incubation and acceleration, various strong provisions exist for GCF to continue to support technology development and transfer. Specific examples were shared that have dedicated IRMF core indicator 6 for monitoring support

for technology. Shared a template to accelerate the process. Current progress was stated including readiness report for countries with strong focus on technology. Internal taxonomy tool allows GCF to include at least one technology aspect. A balanced proportion of technology elements in mitigation (33%), adaptation (36%) and cross-cutting (31%). All funding reports support strong technology elements, for e.g., SAP035 have block chain technology, electric bus systems have been a part of investment in climate resilient urban transport infrastructure and large-scale deployment. GCF continues to foster greater synergy between Technology mechanism and financial mechanism, regional dialogues have been used in developing the report. Representation of TEC members were very valuable. NDE and CTCN members participated. Hosted Zambia NDE delegation to GCF HQs, appreciated proactive participation of the NDE and network members.

(ii) Collaboration and engagement with the Executive Committee of the Warsaw International Mechanism for Loss and Damage;

- Camila shared interest in collaboration and engagement with the TEC. How TEC technical guidelines be important, subjects to be include – sea level rise and human mobility and climate change. Another key knowledge product is comprehensive risk management of COMPANION which discusses disaster risks and management.
- Sierra reported about continuous action towards developing the guidelines and mentioned that the first contact points would facilitate further engagement.
- Erwin endorsed strong collaboration.
- Diana endorsed support.
- Stig asked about the timings.
- Sierra shared future meetings and activities to be considered in this activity.
- Ambrosio mentioned that they can support the paper on early warning systems.
- Stressed the importance of early warning systems and comprehensive risk management systems, including participatory actions, issues like droughts
- Anne mentioned the inclusive of women gender.

(iii) Collaboration and engagement with the UNFCCC Gender team;

- Global Share of Parties shared by LT-LEDS
    - Key findings included low-emission climate resilient development such as climate change hazards, risks, vulnerability and impacts on priority sectors.
    - Long-term mitigation quantifiable goals were mentioned in terms of education, net zero emissions and mitigation goals.
    - Collective emissions projection was presented.
    - Updated on NDC alignments.
    - In conclusion many technologies development was aligned in the long-term strategies of LT-LEDS.
    - Yiaser Rubel shared Technology components of LT-LEDS, highlighted challenges such as electric vehicle. Highlighted that cement and steel can be decarbonize and beneficial. Farming can also benefit from Digital technologies. New blended wing concept and other new technologies were mentioned.
    - Walters Tubua shared landscape study on long-term low emissions strategies in Africa.
    - Beyond Africa, sub-Saharan region was studied and LT-LEDS partner beyond Africa.
    - Proving strong pollical signal and support for action in the short-term
    - The study captured the state of play, wanted to know what the challenges and opportunities are and to build on the lessons learned.
    - Expert interviews were conducted to understand practices and reflections of how NDCs are aligned with LT-LEDS working.
    - 33 countries responded – these countries saw it as a compliance, route for long-term planning.
    - The state of their NDC preparation was asked.
    - The challenges included lack of sector data, poor legislative framework, lack of private sector involvement, difficulties in engaging stakeholders and many more.
    - 5 countries finalized the process, 12 countries not started and other in transition.
    - Questions included asking support entities involved in leading NDC work – responses were varied, including workman, industry ministries and tech specialist team, etc., were supporting this work.
    - Practical guide for preparing countries has been developed.
    - Validation workshop 214-26 April Douala, Cameroon
    - Renuka highlighted the need of looking into the supply chain and understanding the barriers on how the work done by TNA and TEC and CTCN can be made visible to the communities, including the role of Local focal points of the countries and contact points that work as to link the

work of UNFCCC with the community.
    - Walkers answered that the stakeholder engagement is happening, highlighted low resources for studies to be carried out in other parts of the world.
    - Kenichi mentioned that stakeholder's engagement was high, such as 79% of communities were engaged, gender focus was also very high, gender NDC are also considered.
    - Monique mentioned that they (UNFCCC) have reports that highlight solutions, so asked how they can combine the efforts and join the dots.
    - Co-chair mentioned the floor to identify collaborations for the workshops.
    - Ambrosio highlighted that there is challenge in identifying the primary people who are doing the work.

(iv) Collaboration and engagement with the UNEP Copenhagen Climate Centre.

- UNEP shred the Climate Technology Progress Report
    - Scientifically credible, policy relevant
    - Shared that it will include emissions report and synergies between technology and emissions.
    - TEC role is appreciated their work in the steering committee, reviewing and signing off the report, and to provide strategic advice on the chapters, other TEC members will be invited to review the report depending on their expertise, have virtual or in-person (COP) launch of the report.
    - Focus of this year will be energy related issues, particularly renewable energy, considering that some countries may be agreed so it would be depending on the technology adoption and potential to close the gap between what has been done and what can be done. Feasibility study will investigate investment levels, and interventions, skills development and innovation (AI and digitalization). This year will focus globally. The report will include detailed case studies in specific context. 12 steering committee members (2 TEC members), 30 lead and contributing authors and 23 expert reviewers and 2 editors and coordinating secretariat and team of 6 people.
    - Ambrosio questioned the composition of TEC member involvement as there is no Annex-1 member, as it would give an opportunity to collect perspectives from Annex-1 and also balance the team members. Raised concerns about the Annex-1 and non-Annex-1 members representation in the TEC due to recent war situation.
    - Penny endorsed that such report was important and asked how the contributors to the report selected. The role of steering committee members is to select authors, i.e., to identify the authors and invite them to contribute.
- Patricia shared the work developed with the Global Environment Facility. Shared GEF-8 support to CCM technologies, including green hydrogen, energy resilience and security, zero-emission buildings and circular construction, energy efficiency and supply chain decarbonization. GEF-8 LDCF and SCCF funds were mentioned.
- Adaptation Fund team shared their activities. Mentioned they are a pioneer of Direct Access. Mentioned three strategic pillars, including innovation, AFCIA is growing and the projects from UNIDO, WEP, UNEP-CTCN (phase 2) were approved or under consideration by the Board. Locally led innovation session at the Community based Adaptation.
    - Penny enquired about the process of incorporating different entities and the process at country level how NDC and NDE collaborates.
    - Stig acknowledged GCF webinars and added that they should continue doing it.
    - Ambrosio appreciated the presentations made by the collaborative entities, TEC rolling workplan and its activities are being achieved.
    - Erwin highlighted that focus on TNA and TAP outcomes from the GCF's not visible.
    - Anne endorsed Erwin's interventions and highlighted how the women inclusion is working, and proposed to have women's inclusion and how it can be enhanced.

- **Gender mainstreaming.**

- Gender focal points were appointed.
- Olena agreed and expressed her gratitude.
- Anne requested to increase the participation of women in the various activities undertaken by TEC, particularly from the climate technologies, global south and gender policy – Roasters.
- Renuka endorsed the proposal by Anne.
- Ambrosio expressed his gratitude for focal point for gender inclusivity.

- **Monitoring and Evaluation:**

(a) Revision of the TEC monitoring and evaluation system to align with the rolling workplan for 2023–2027.

- **Preparations of workshop on linkages between the Technology Mechanism and Financial Mechanism.**

- Stephano presented the draft concept note for the activities developed for the workshop on linkages between the technology mechanism and financial mechanism, identified linkages to support the implementation of the priorities. Mentioned all the sessions, including presentation on taking stock, national level support, implementation of prioritized climate technologies and action with other actors.
    - Japan ministry representative, NDE contact point shared their contribution to the linkages, shared their interest in developing a concept note for GCF and GEF, shared interest in collaborating with UNIDO.
    - Stig stressed that the role of the workshop must be very clear.
    - Fred seeks clarification on the role of GEF – that it manages adaptation fund. It also requires how it can help LDCs. All components of GEF must be included. Objectives and maintenance of this agenda item at COP – not clear.
    - Stefanos clarified that other entities such as World Bank, etc. were part of this as the most desired objective was to translate the technology mechanism to financial mechanism.
    - Erwin clarified that terminology and references must/could be clear.
    - Anna's concern on addition of women constituency was clarified, ensuring that it was added to the draft.

- **Joint session of the Technology Executive Committee and the Advisory Board of the Climate Technology Centre and Network:**

(a) Matters related to the TEC and CTCN;

- UNFCCC priorities were shared which ensures that the technology related work is being supporting in more than 100 countries.

(b) Implementation of the Joint Work Programme of the Technology Mechanism for 2023–2027;

- UN COP28 Presidency representative mentioned that the COP28 was a testimony of building multi-cooperation for climate change and has established a clear roadmap for the Paris Agreement. Ensured that policy development will allow us to achieve Paris Agreement. Recognised the efforts of TEC and CTCN made in the technology mechanism, particularly in the developing countries. Technology is not only about data, but it is a mechanism to provide sustainable solutions to abate climate change. Stressed that they have worked with consensus with everyone. Mentioned that green zone at COP highlighted technologies and was very successful. Mentioned that technology mechanism and financial mechanism were important for the progressive sustainable and resilient future, while addressing the most pressing challenges. Mentioned that UAE national strategy includes AI development. COP28 increased the visibility of technology mechanism and are looking forward to build on the achievements.
- UN COP29 Presidency representative mentioned that building the commitment on the previous alignment and consensus would continue. Added transparency would be center for the way forward. Noted the issues raised in the meeting and would work in delivering tangible results and agreed that technology plays a crucial role in adaptation and mitigation and its contribution to the Paris Agreement is important. COP29 will work together with TEC and CTCN to move the technology mechanism forward.
- Chair mentioned that significance of renewable, energy efficiency, carbon storage, climate smart agriculture, all contribute to the Paris Agreement. Mentioned that policies, resources, etc., is needed as well as stakeholders' engagement is needed. Stressed that systemic transformation at the fast pace is required. Financing the shift is important and must be aligned to the technology goals. Technology is the key player in climate change. NDEs, and all focal points need to play an important role. Mentioned the role of AI can play an important role. The joint workplan would guide the way forward, which includes systems transformation approach.
- Adopted Advisory Board Joint Agenda.
- Bhava provided a brief outcome of the Dubai Climate Change conference.
    - Two decisions were taken. TEC and CTCN must continue working jointly.
    - Fred raised the question asking what the message from the summary at the COP28 was. Linkages between financial mechanism and financial mechanism is missing. Stressed that the NDEs role is significant, and their capacities must be enhanced.
    - Renuka endorsed the points raised by Fred. Pointing to the recent flooding in Dubai, added that the technology mechanisms must take linkages to adaptation and loss and damage funds.
- TEC activities were discussed by the TEC Chair, stressed working together for EWS, water-energy-food systems, TNAs, buildings, AI, transformative industry, and workshop on the linkages between TM and

FM.

- CTCN Chair shared the TA implementation projects. Appreciated that the visibility of CTCN was highest in the COP28. Stressed that TNA must be supported to prepare bankable projects.
- Halima added that the water-energy-food nexus must include water and sanitation.
- Ambrosio suggested alternative name such as fundable projects rather than bankable projects.
- Gender consideration and mobility was raised by providing examples and at every areas of the TEC, CTCN and TNA
- Justine complemented the CTCN's progress, including visibility and people's voices.
- Many stressed the point of discussion on bankable and fundable project terminology

- Renuka stressed the point that TNA work must be transformed to bankable projects. Raised concerns regarding the bankable/fundable projects being conceptualized by the public but are not in the local or national agenda. Highlighted a deep gap between various stakeholders, such as universities, environment and climate priorities, research funding, and the national level priorities. NDEs role is significant in bringing stakeholders' together.
- Workstream 2- Enhance the capacity of stakeholders from LDCs and SIDS regarding the use of AI for climate action, in a way that is responsive to gender and vulnerable communities. Draft terms of reference were shared by the secretariat, including advisory group for the joint task force on AI, providing inputs in the knowledge products, awareness-raising, technology, law, policy, regulation, education and risks, will also have Chair and Vice-Chair, identified by TEC and CTCN advisory board. Mode of work- meetings – online or in-person. Technology Mechanism AI Climate Application Hub was presented by Bill Wright, Chair, Enterprise Neurosystem, mentioned that IBM related software will launch in 2024.
- Capacity building series shared by Rajiv – Technology Mechanism Initiative on AI4Climate Action. CTCN will work on policies for systems transformation by national government, developing regional AI network, and evaluate digital/AI capacities. NDE forums are proposed in July in Asia and Pacific, Africa in September and LAC – TBC. The workshops will be of 2 days in conjunction with NDE forum and more than 50 individuals will be invited. Specific case on Applying AI technologies for energy systems, building and infrastructure, business and industry, agriculture and sustainable mobility will be organised.
- YOUNGO supported AI and its development, particularly with youth.
- Ichiro stressed prioritization of resource mobilization for the AI project.
- BINGO raised that there were milestones to achieve. Stressed that there was public interest and enabler for the broader portfolio for CTCN activities.
- WCG emphasised the issues of AI related to gender biases and may other issues.
- Christopher from EU recommended AI foundation and expressed the support a balanced structure of the advisory group. Pointed to national digital imbalance research already done by the National university.
- Renuka endorsed Fred's comments on making AI an integral part of the technology development and advancement, particularly for the developing countries. Renuka added that there is a digital divide but there is for all technologies, not particularly for AI, however, the AI motivational program can reduce digital divide. In relation to gender biases, we must acknowledge that AI is not something that it can do this analysis and biases on it itself. AI works on the previous legacy data which is already bias. More the involvement of gender and developing countries can only change this, thus procrastinating AI use and application will only increase its limited role in the development of developing country and will never get opportunity to serve developing countries. In this case sensible implementation and be helpful in promoting transition and change for better practices, which requires working on law and regulations, education, awareness, capacity development, and adopting the AI technology with purpose, scope and users need.
- Sigrid stressed prioritization of human resources for the initiative.
- Ambrosio reviewed the TEC and CTCN advisory board rules of procedures and highlighted that CTCN cannot provide for the establishment of an advisory group.

(c) Monitoring and Evaluation:

- Anne provided the report on the activities in TEC and CTCN in relation to gender policy, development and stressed that the monitoring and evaluation process is in place, consortium partners must also follow the same policies and processes. WGC highlighted lack of gender responsive TNAs and other areas needed improvement. Pointed to the gender-check list, including in all the phases and each technology.
- Joint TEC and CTCN has challenges of continuing due to legal and resources status.
- Call for partnerships is announced by the UNFCCC.
- Joint monitoring and evaluation with proposed indicators was presented.

(d) Dates and Venue of the next meeting.

- **Other matters:**

  (a) Potential collaboration with the UN Climate Change Global Innovation Hub;

  (b) National Designated Entities forum;

  (c) Re-thinking the TEC annual report.

- Re-thinking the proposed approach – discussion on streamlining the report, not to repeat many subject matters. Anne mentioned that she was pleased to see a specific women topic, and still streamlining it. Susan appreciated the comments and ensured that the mapping of the report has helped to limit repetition. Suggestion for reporting on Joint actions of TEC and CTCN activities and discussed.

- **Closure of the meeting.**