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Contribution by Gambia

to the CSTD 2022-2023 priority themes on "Technology and innovation for cleaner and more productive and competitive production" and "Ensuring safe water and sanitation for all: a solution by science, technology and innovation"

UNCTAD Commission on Science and Technology for Development

Q&A FOR THEME 1: Technology and innovation for cleaner and more productive and competitive production.

1. Some specific examples (from the public and private sector) of green technology and innovation for cleaner and more productive and competitive production in your Country?

Answers:

a) Ministry of Petroleum in collaboration with UNIDO (United Nations Industrial Development Organization (UNIDO) implemented the UNIDO/GEF project" Greening the productive sectors in the Gambia". This is to promote the use and integration of small to medium scale renewable energy system in the productive sector. The setup of grid systems to provide electricity power supply that resulted to a clean, sustainable energy supply.

Youtube Link: https://www.youtube.com/watch?v=a0kFnXuUJ30

- The university of The Gambia also benefited from this project.
- The MRC unit the Gambia at the London school of hygiene & Tropical Medicine in Fajara also benefited from this project and installed the largest renewable energy solar system in the Gambia with total capacity of over 500 kilo watts at peak power while also breaking down the gender barriers by organizing capacity building trainings for women on solar installation.

  Links
  - https://www.ukri.org/news-and-events/responding-to-climate-change/moving-towards-net-zero/solar-energy-in-the-gambia-supports-medical-research/#:~:text=In%20The%20Gambia%2C%20a%202019,Unit%20The%20Gambia%2C%20West%20Africa
  - https://www.mrc.gm/mrcg-at-lshtm-inaugurates-biggest-solar-power-generation-system-in-the-gambia/
  - https://www.mrc.gm/installation-of-the-solar-power-system/

b) Solar Mini-grid Plant Project in Nyamanarri Village: ECREEE - Praia, - 28th February 2022 - The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) in collaboration with Unique Group of Companies has commissioned a Solar Mini-grid Plant in the Gambia on Friday 25th February 2022. The colorful ceremony was graced by cabinet ministers, Members of Parliament, senior government officials and scores of local dignitaries.

This is Gambia's first-ever solar green mini-grid plant in the rural settlement of Nyamanarri in the Upper River Region with a beneficiary population of 6500 and in existence for over 145 years without electricity. The 120-kilowatt Peak power

Solar PV mini-grid was financed by Unique Energy and Unique Solutions through the Unique Group of Companies with part funding from the U.S Agency for International Development (USAID) through The ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE). The Solar PV mini-grid also supported by government of the Gambia through the Ministry of Petroleum and Energy as well as GIEPA is set to provide 24 hours of electricity daily for over 200 households and businesses.

Links:

- https://www.gn-sec.net/news/ecreee-inaugurates-solar-mini-grid-plant-gambia

2. What are the national strategies, policies, and laws concerning green technology and innovation for cleaner and more productive and competitive production in your country?

Answer:

- National strategy on small to medium renewable energy system was developed

Links:

- Policy/Strategy and Others: https://www.mope.gm/downloads
- https://www.mope.gm/download-file/6a6b0362-195f-11ed-86ec-022a5fa1767e
- https://www.afdb.org/fileadmin/uploads/afdb/Documents/Procurement/Project-related-Procurement/GPN_%E2%80%93_Gambia_-_Green_Mini-Grid_Country_Support_Programme.pdf
- https://nawec.gm/wp-content/uploads/2022/02/The-Gambia-Strategic-Electricity-Sector-Roadmap.pdf

3. Key industries that are pioneering green innovation in the country?

Answers:

- Ministry of Petroleum and Energy (MoPE): https://www.mope.gm
- Ministry of Environment, Climate Change and Natural Resources (MECCNAR): https://meccnar.gov.gm/
- National Environment Agency (NEA): http://nea.gm/
- National Water and Electricity Company (NAWEC): https://nawec.gm/
- Public Utilities Regulatory Authorities (PURA): https://pura.gm/
- MRC Gambia: https://www.mrc.gm/
- MBOLO&FANDEMA: https://m-bolo.org/en/presentation-2/

Key actors in the national ecosystem of innovation related to green innovation in your country (firms, university, financial institution, regulators?

Answers:

- Ministry of Petroleum and Energy (MoPE): https://www.mope.gm
- Ministry of Environment, Climate Change and Natural Resources (MECCNAR): https://meccnar.gov.gm/
- National Environment Agency (NEA): http://nea.gm/
- National Water and Electricity Company (NAWEC): https://nawec.gm/
- Public Utilities Regulatory Authorities (PURA): https://pura.gm/
- Ministry of Higher Education, Research, Science and Technology: https://www.moherst.gov.gm/
- University of the Gambia: https://www.utg.edu.gm/
- GCCI: https://gcci.gm/
- GCCPC: https://gcc.gm/

4. Key networks of the ecosystem in your country(online networks, innovation hubs , forum?

Answers;

- National renewable energy forums organized by PURA, https://allafrica.com/stories/201406181357.html
- Youth Empowerment Project (YEP): https://yep.gm/opportunity/project-starting-tech-hub-gambia-digital-entrepreneurship
- https://nyc.gm/wp-content/uploads/2020/04/Gambian-Tech-Startups-Directory.pdf
- https://nyc.gm/wp-content/uploads/2020/04/Entrepreneurship-Ecosystm-in-The-Gambia.pdf
- NAWEC workshop

5. Challenges that the government have faced or may face in promoting green technology and innovation in the country to contribute to national development priorities and accelerate the progress towards the SDGs?

Answers:

- Funding is a major challenge
- Human Resource in green technology is a challenge
- Availability of Innovation or Technology Hubs with focus on Green Technology is a challenge
- Research and Development (R&D) initiatives and R&D funding in Green Technology is a challenge
- High Level of Poverty is a challenge
- Culture for change is also a challenge etc.

6. What should governments, the private sector, organized civil society, and other stakeholders do, so that developing countries can benefit from these technologies?

Answers:

- *Civil societies to create more awareness and sensitize the public about the significance of green technology*
- *Governments and private sectors to invest in green technology and initiate more renewable energy projects in the country*
- *Support developing countries financially and capacity wise*
- *Collaboration and Partnership*
- *Promote Research, Development and Innovation*
- *Skills Transfer, Twinning and Exchange Visits etc.*
- *Technical Assistance and Financial Aid*

7. Examples of international cooperation mechanisms , project, programmes or strategies, including triangular and south -south coorperation, in green technology and innovation that your country is part of?

- ECOWAS Regional Centre for Renewable Energy and Energy Efficiency- ECREEE
- UNIDO: **UNIDO**/GEF Project is industrial **energy** efficiency, renewable **energy:** **https://www.unido.org/news/unido-gambia-sign-usd-5-million-country-programme-agreement**
- USAID: Power Africa in Gambia: https://2012-2017.usaid.gov/powerafrica/gambia
- EU-Gambia: GCCA+ climate resilient coastal and marine zone project for the Gambia: https://www.gcca.eu/programmes/gcca-climate-resilient-coastal-and-marine-zone-project-gambia
- EU-Gambia: EU Support to The Gambia Sustainable Energy Sector Programme: https://ec.europa.eu/eu-external-investment-plan/projects/eu-support-gambia-sustainable-energy-sector-programme_en

8. Contacts persons of the nodal agency responsible for project/polices and international collaboration in this context(from academia , private sector, civil society, or gov) dealing with projects in this area?

- MoPE: https://www.mope.gm/contact-us
- MCCNAR Contact Info on Footer: https://meccnar.gov.gm/
- National Environment agency (NEA): http://nea.gm/contact-us/
- Civil society- Greenup Gambia email: greenupgambia@gmail.com.com

9. Any references, technology assessments, future studies, reports on the priority theme in the Gambia or region?

Answers:

- Gambia – Green Mini-Grid Country Support Programme: https://www.afdb.org/fileadmin/uploads/afdb/Documents/Procurement/Project-related-Procurement/GPN_%E2%80%93_Gambia_-_Green_Mini-Grid_Country_Support_Programme.pdf
- https://www.mope.gm/downloads
- Green Gambia: EU: https://europa.eu/capacity4dev/file/122597/download?token=iOCGOiAx
- https://mofea.gm/downloads-file/planning-a-green-resilient-covid-19-recovery-in-th
- https://www.researchgate.net/publication/355202375_THE_IMPACT_OF_GREEN_INNOVATION_STRATEGIES_ON_HOTEL_PERFORMANCE_IN_THE_GAMBIA
- http://unfccc.int/files/focus/mitigation/application/pdf/the_gambia_final_nama.pdf
- https://gambia.un.org/en/download/53738/98399
- https://www.conservation.org/docs/default-source/gef-documents/20210617-prodoc-_cigef-the-gambia-cbit_r.pdf?sfvrsn=39fc2ec6_0
- https://open.unep.org/docs/gcf/UNEP%20FP011%20Gambia%20Environmental%20and%20Social%20Impact%20Assessment.pdf
- https://www.ndcs.undp.org/content/dam/LECB/docs/pubs-reports/undp-ndcsp-gambia-circular-GHG-mitigation-report.pdf?download
- https://www.unicef.org/gambia/media/606/file/The-Gambia-National-Social-Protection-Policy-2015-2025.pdf

Q&A FOR THEME 2: Ensuring safe water and sanitation for all: a solution by science , technology and innovation.

1. What are the concrete challenges that your country has encountered in managing water and sanitation and providing access for all to these services?

Answer:

In The Gambia, 61.8 per cent of the population has access to improved sanitation, with 1 per cent still practicing open defecation, and only 30.9 per cent of the population practicing hand washing with soap or other detergents.

Efforts to ensure access to safe drinking water have been effective over the past years. Children and their families in The Gambia have gained improved and equitable access to and utilize safe drinking water with 90 per cent of the population accessing improved water sources in 2018 from 86 per cent in 2010, however only 34 per cent (one third) of households are using safely managed drinking water services. 1 per cent of the population is practicing open defecation an improvement from 2.8 per cent in 2010 with 62 per cent having access to improved Sanitation. In line with the SDG service ladders of sanitation, only 47 per cent of the household population

have access to a basic level of service. The proportion of household members with a hand washing facility where water and soap or detergent are present remains low at 31 per cent compared to 30.3 per cent in 2010 which requires intensified efforts (MICS 2010, 2018).

Inadequate water supply and improved sanitation in schools, health care facilities, and public places remains a challenge. In spite of 84 per cent of primary schools having WASH facilities that met national standards, there are significant disparities exist between the urban and rural schools. Ensuring provision of gender separated facilities that meet the specific needs for girls remains a key focus for the country office. Water quality in The Gambia is also of great concern, as 45.3 per cent of the water sources are contaminated with E.coli, and 73.2 per cent of the household population had E. coli in household drinking water.

Links - for more information:

- https://gambia.un.org/sites/default/files/2020-10/VNR.pdf
- https://www.sanitationandwaterforall.org/sites/default/files/migrate_default_content_files/The_Gambia.pdf
- https://documents1.worldbank.org/curated/en/931641468250806665/pdf/855900UNDP0Box000PUBLIC00CSO0Gambia.pdf
- https://www.sanitationandwaterforall.org/sites/default/files/2020-12/2020%20Country%20Overview_The%20Gambia.pdf
- https://www.afdb.org/fileadmin/uploads/afdb/Documents/Environmental-and-Social-Assessments/ESMP%20Summary%20-%20The%20Gambia%20RWSS%20Final%20EN.pdf
- https://www.unicef.org/gambia/water-sanitation-and-hygiene#:~:text=Water%20quality%20in%20The%20Gambia,coli%20in%20household%20drinking%20water.
- https://www.unwater.org/app/uploads/2017/05/GMB_spread.pdf
- https://ccij.io/article/water-paradox-in-the-gambia/

2. What project/policies has your country implemented to use the above -mentioned range of technologies and innovations or other STI, including frontier technology (AI and drones) to address these challenges? What are the main outcomes? What are the main difficulties confronted while trying to implement these projects/policies? Including gender dimension.

Answers:

- Strategy for promoting technology-enabled education (tee) & science, technology and innovation (sti) 2021-2024: https://moici.gov.gm/sites/default/files/2021-05/Technology-Enabled%20Education%20AND%20Science%20Technology%20and%20Innovation%20Strategy.pdf
- Environmental and Social Commitment Plan (escp): https://moici.gov.gm/sites/default/files/2022-03/Environmental%20and%20Social%20Commitment%20Plan%20%28ESCP%29_1.pdf

- National Science, Technology and Innovation Policy (2013 – 2022): https://moherst.gov.gm/sites/default/files/2020-09/NSTIP_0.pdf
- National Science Technology and Innovation Report 2019: https://moherst.gov.gm/sites/default/files/2021-12/NIS%20Report%202019-%20EDITED%20%281%29.pdf
- GO --> SPIN Country Profiles in Science, Technology and Innovation Policy Report:https://moherst.gov.gm/sites/default/files/2021-12/GO-SPIN%20Report2017Draft0.pdf
- STEM & Gender Advancement (SAGA) The Gambia Country Report, 2018 (2.03 MB):https://moherst.gov.gm/sites/default/files/2021-12/Gambia-SAGA%20Country%20Report-DRAFT02.pdf
- https://ndma.gm/ndma-kick-starts-drone-training/
- Using **Drones** and Early Warning Systems for Pre- and Post-Floods Disaster: https://info.undp.org/docs/pdc/Documents/H42/UNESCO%20Document%20Project.pdf

Main Outcomes:

- Higher level of STI adoption in Basic and Secondary Education and at Higher Education
- Higher political commitments and wills in adopting STI to address societal challenges
- More funding commitments from Government, Private Sector and international partners in implementing such policies/strategies and projects
- More recognition and visible role of gender when designing and implementing these policies, strategies and projects etc.

Difficulties:

- Inadequate funding to implement policies, strategies and projects related to STI
- Inadequate skills or human resource to sustain and implement such policies, strategies and projects
- Environment, Sustainability and Climate Change issues
- Gender mainstreaming is still considered low and a challenge
- Absence of comprehensive resource mobilization plan in implementing such policies, strategies and plans still a challenge.

3. Examples of policies/projects/initiatives aimed at strengthening national STI capabilities in managing water and sanitation for ensuring their access by all population in your country? One example is what institutional and regulatory arrangements are in place to stimulate R&D and innovation in managing water and sanitation for access by all.

Answer:

- National Science, Technology and Innovation Policy (2013 – 2022): https://moherst.gov.gm/sites/default/files/2020-09/NSTIP_0.pdf

- GO --> SPIN Country Profiles in Science, Technology and Innovation Policy Report:https://moherst.gov.gm/sites/default/files/2021-12/GO-SPIN%20Report2017Draft0.pdf
- National Health Policy 2012-2020: https://www.uhc2030.org/fileadmin/uploads/ihp/Documents/Country_Pages/Gambia/Gambia%20National%20Health%20Policy_2012-2020%20MoHSW%5B1%5D.pdf

4. Could you share case studies of regional and international cooperation that have helped your country in strengthening STI capacities? Can you provide success stories in this regard?

Answers:

- Role of STI during Pandemic: https://www.un.org/ldc5/sites/www.un.org.ldc5/files/pdf/stateLDC_2021/14_stateldc_2021_f.pdf
- Science Education in The Gambia: https://brill.com/view/book/9789463510899/BP000003.xml
- Gambia Digital Economy Diagnostic Report: https://thedocs.worldbank.org/en/doc/1f7221545bf1b7c89b850dd85cb409b0-0400072021/related/The-Gambia-Digital-Economy-Diagnostic-Report-Final.pdf
- Mapping Research and Innovation – Gambia: https://www.moherst.gov.gm/sites/default/files/2021-12/GO-SPIN%20Report2017Draft0.pdf
- TVET Roadmap: https://nyc.gm/wp-content/uploads/2020/04/Youth-and-Trade-Road-Map-TVET-Sector-2020-2024.pdf
- https://www.un.org/ldc5/sites/www.un.org.ldc5/files/final_national_ldc_report_for_the_gambia.pdf
- Entrepreneurship Ecosystem in The Gambia - A network analysis of institutions supporting entrepreneurships: https://nyc.gm/wp-content/uploads/2020/04/Entrepreneurship-Ecosystm-in-The-Gambia.pdf
- BTI Transformational Report – Gambia Country Report: https://bti-project.org/en/reports/country-report/GMB
- Country STI Profile - A framework for assessing science, technology and innovation readiness in African countries: https://archive.uneca.org/sites/default/files/PublicationFiles/sti_report_en_revised.pdf

Please indicate contact persons responsible for project/policies and international collaboration in this context in case we need clarification on inputs.