

## Leveraging On The Support CTBTO CBS Offers; The Lessons Learnt

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## Introduction

- The Comprehensive Nuclear-Test-Ban Treaty (CTBT) adopted by the UN General Assembly prohibits nuclear test explosions and any other nuclear explosions in all environments (in the atmosphere, oceans, and underground).
  - It is part of nuclear non-proliferation and disarmament measure to enhance international peace and security for a safer world.
- To monitor States Signatories compliance with the Treaty, the global verification regime is set-up for this purpose.
- In order for States Signatories to perform their verification responsibilities to ensure effective global monitoring, the IDC of the CTBTO provides them with technical assistance and services. [10].
- This technical assistance to States Signatories is provided through Capacity Building project [12].
- Under this project States Signatories such as Republic of Ghana are beneficiary of CB equipment & CB activities supports. (training/workshops /conferences /experts meeting)
- This study therefore seeks to demonstrate the opportunity to leverage on the available services and technical assistance that CTBTO provides under the treaty.



## The CTBT and the Verification Regime, the Purpose

- The CTBT was established with the sole purpose “of attracting the adherence of all States to this Treaty and its objectives to contribute effectively to the prevention of the proliferation of nuclear weapons in all its aspects, to the process of nuclear disarmament and therefore to the enhancement of international peace and security”. [1\_]
- Signing onto this treaty will contribute to - *preserving human lives and* - *the environment* from the harmful effects of nuclear explosions.
- Unique verification regime to monitor nuclear explosions comprising three main elements/pillars:

### IMS

Provides planned network of 337 monitoring facilities  
SHI, RN stations globally distributed .

### IDC

Receives real-time monitoring data from IMS stations, process and analyze them as well to made it accessible to States Signatory.

### OSI

Provides the opportunity *for* in-the-field observational measurements at a suspected explosion site. *Only invoked after EIF of the Treaty.*



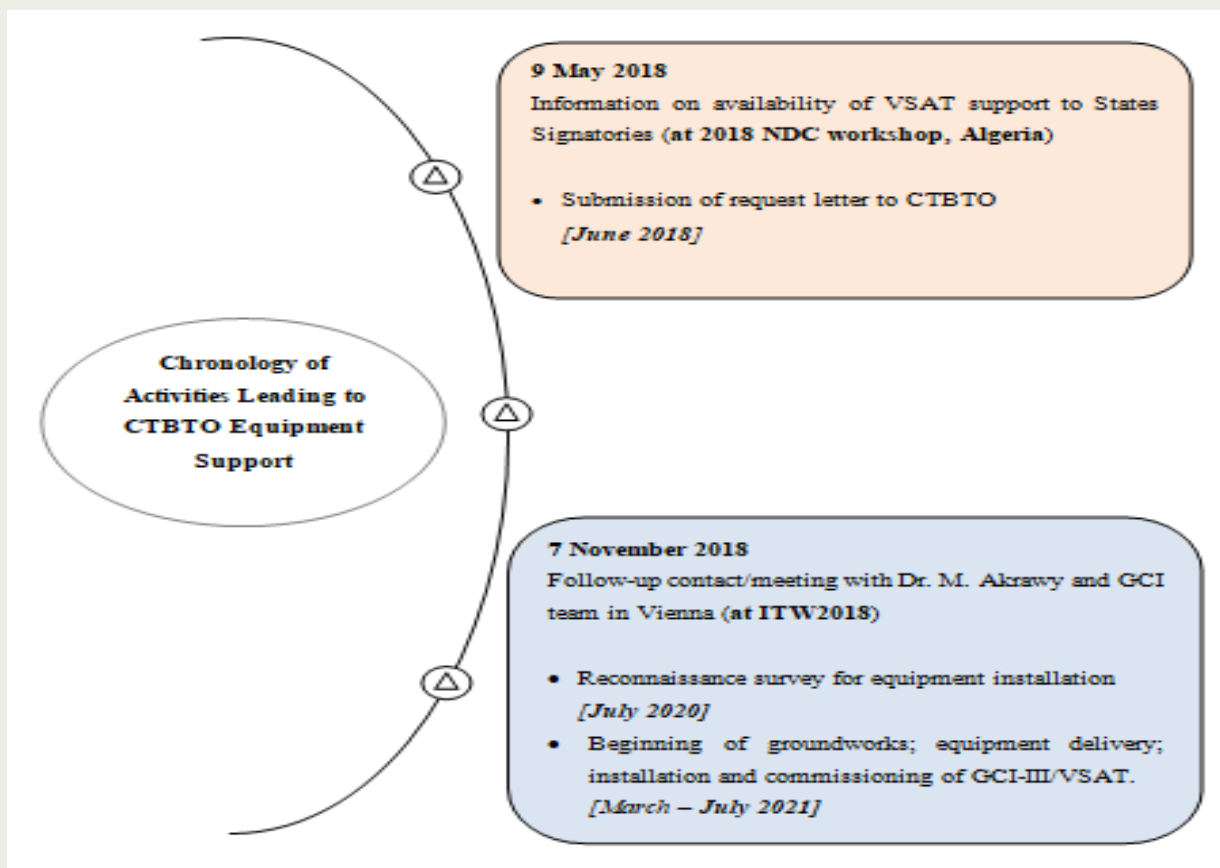
## Technical Assistance & Services of the CTBTO

- CTBTO offers technical assistance and services to States Signatories in order to provide them with requisite support to effectively participate in the global verification monitoring.
- To help in fulfilling the verification responsibilities of States Signatories.
- Achieved through the Capacity Building (CB) project under the IDC.
- To integrate States Signatories to fully participate and contribute to the implementation of CTBT verification monitoring.
- The Capacity Building project is aimed to provide States Signatories with sufficient knowledge and assistance for building their NDCs and/or improving their capabilities.
- Technical assistance offered through the implementation of a CB project using a five-step strategy:
  - Development of country profiles for States Signatories
  - Provision of regional NDC development workshop
  - Provision of various training courses for NDC technical staff
  - Provision of basic NDC equipment
  - Provision of experts for follow-up visit to NDC.
- States Signatories from developing countries NDCs are the main beneficiaries.



## Leveraging on Opportunities Around CTBTO Capacity Building Activities

- Training workshops/conferences/technical expert meetings are part of the technical assistance & services the CTBTO offers.
- An opportunity to tap into this engagement. For instance:





## GCI-III / VSAT Support for GH

- Technology is the elaborate formal mechanisms for monitoring and verification, with the desired goal to build confidence in the treaty.
- The Global Communication Infrastructure (GCI) transmit: - data from the IMS stations to the IDC, and - IMS data and IDC products from the IDC to authorized users at the States Signatories.
- This facility has built the capacity of the NDCs to be well established and enhance its performance of the verification monitoring role effectively.
- Thus, the equipment set, the GCI-III / VSAT received from CTBTO by the Republic of Ghana *upon request*.  
(installed in 2021)



Installed (GCI-III) / VSAT equipment



## Non Treaty Relevant Benefits of Capacity Building [1]

- The CTBT offers value-added advantages of non treaty relevant applications of the monitoring data, aside its significance measure to arms control and global security.
- This GCI-III/VSAT equipment received, is an essential element in the capacity building process, enabling the forwarding of monitoring data to NDC - GH.
- Also complementing /supporting the national technical means of monitoring seismological activities within the territory. Where States Signatories either lacking their own network or serve as a complement to theirs.
- Thus, demonstrating a strong CBS support to States Signatories like Republic of Ghana, beyond the treaty's primary purpose of banning and monitoring all nuclear explosions.



## Non Treaty Relevant Benefits of Capacity Building [2]

- Also, these applications of the data assist in mitigating the effects of natural or man-made disasters, contributing to human safety and welfare. As well as for protecting the environment.
- The monitoring technologies (radionuclide, seismic, infrasound and hydroacoustic networks) provide valuable data of civil and scientific significance, including:
  - tracking potentially harmful fallout from a nuclear accident,
  - prompt access to seismic activity information within territory to *help reduce* geophysical hazards and their risk;
  - tsunami warning to save live; - understand the movements of weather fronts, volcanic eruptions, with the resultant atmospheric turbulence;
  - among others.





## Non Treaty Relevant Benefits of Capacity Building [3]

### *Internal Capacity Building & Mentoring of Young Generation*

- Over the years beneficiary of capacity building activities (training/ workshops/ conferences /tech experts) supports by PTS.
- To build requisite skills as well as contribute to knowledge sharing in the expertise of relevant monitoring technologies' advancements.
- Active participants in these diverse opportunities that CTBTO creates.
- Thus, building technical capacity, cooperation as well as exchange of ideas.
- Resulting in effective conduct of internal trainings as well as effective & impactful mentoring of early-career scientists.



*Internal training programme organized for National Service Personnel and interns:  
- For skill boosters and mentoring.*



## Conclusion

- The CTBTO offers technical assistance and services through the various CB programmes to States Signatories.
- A State Signatory can leverage on these opportunities that are available to its advantage.
- Thus, reflecting on the lessons from GCI-III/VSAT equipment donated to Ghana by CTBTO and the capacity building activities it offers to States Signatories.
- This, fosters the building of requisite skills as well as contributing to knowledge sharing in the expertise of relevant monitoring technologies through the diverse opportunities that the CTBTO creates.



# *Thank you*

