Evolution of CTBT

What is the issue?

- Suspicions were recently raised in the U.S. on China violating the Comprehensive Test Ban Treaty (CTBT).
- In this backdrop, here is an overview of the evolution of the CTBT and its effectiveness.

What is CTBT?

- The Comprehensive Nuclear-Test-Ban Treaty (CTBT) is the Treaty banning all nuclear explosions - everywhere, by everyone.
- The Treaty was negotiated at the Conference on Disarmament in Geneva and adopted by the United Nations General Assembly.
- It was opened for signature on 24 September 1996.
- The Treaty has not entered into force yet.
- [The signature to a treaty indicates that the country accepts the treaty.
- The ratification symbolizes the official sanction of a treaty to make it legally binding for the government of a country.]
- The CTBT is essentially a **"zero-yield" treaty**.
- This means that the agreement prohibits all nuclear explosions that produce a self-sustaining, supercritical chain reaction of any kind whether for weapons or peaceful purposes.

How has banning nuclear testing evolved?

- For decades, a ban on nuclear testing was seen as the necessary first step towards curbing the nuclear arms race.
- But Cold War politics made it impossible.
- A Partial Test Ban Treaty was concluded in 1963 banning underwater and atmospheric tests but this only drove testing underground.
- By the time the CTBT negotiations began in Geneva in 1994, global politics had changed.
- The Cold War had ended and the nuclear arms race was over.
- The USSR had broken up and its principal testing site, Semipalatinsk, was in Kazakhstan (Russia still had access to Novaya Zemlya near the Arctic circle).
- In 1991, Russia declared a unilateral moratorium on testing, followed by the U.S. in 1992.

- By this time, the U.S. had conducted 1,054 tests and Russia, 715.

What were the challenges in the process?

- Negotiations on nuclear test ban were often contentious.
- France and China continued testing, claiming that they had conducted far fewer tests and needed to validate new designs.
- They argued that the CTBT did not imply an end to nuclear deterrence.
- France and the U.S. even exploited the idea of a CTBT that would permit testing at a low threshold, below 500 tonnes of TNT (trinitrotoluene) equivalent.
- This was one-thirtieth of the "Little Boy", the bomb that U.S. dropped on Hiroshima on August 6, 1945.
- Civil society and the non-nuclear weapon states reacted negatively to such an idea and it was dropped.
- Some countries proposed permanently shutting down all test sites as the best way to verify a comprehensive test ban.
- This was unwelcome to the nuclear weapon states.

What was the U.S-proposed idea then?

- The U.S. came up with the idea of defining the "comprehensive test ban" as a "zero yield" test ban.
- This would prohibit supercritical hydro-nuclear tests but not sub-critical hydrodynamic nuclear tests.
- [Hydronuclear experiments, as distinguished from hydrodynamic ones, use actual fissile material assembled to form a supercritical mass in which a chain reaction be-gins.
- Dynamic experiments are used to gain information on the physical properties and dynamic behavior of materials used in nuclear weapons.]
- Once the UK and France agreed, the U.S. was able to prevail upon Russia and China to accept this understanding.
- This was a moment of the U.S.'s unipolar supremacy.
- The Clinton administration in the U.S. announced a science-based nuclear Stockpile Stewardship and Management Program.
- This was a generously funded project to keep the nuclear laboratories in business and the Pentagon happy.
- Accordingly, the CTBT prohibits all parties from carrying out "any nuclear weapon test explosion or any other nuclear explosion."
- The above terms are neither defined nor elaborated.

Why does CTBT lack authority?

- Another controversy arose regarding the entry-into-force provisions (Article 14) of the treaty.
- India's proposals for anchoring the CTBT in a disarmament framework did not find acceptance.
- In June 1996, India announced its decision to withdraw from the negotiations.
- Unhappy at this turn, the U.K., China and Pakistan took the lead in revising the entry-into-force provisions.
- The new provisions listed 44 countries by name whose ratification was necessary for the treaty to enter into force and included India.
- India protested that this attempt violated a country's sovereign right to decide if it wanted to join a treaty; but this was ignored.
- The CTBT was adopted by a majority vote and opened for signature.
- Of the 44 listed countries, to date only 36 have ratified the treaty.
- China, Egypt, Iran, Israel and the U.S. have signed but not ratified.
- China maintains that it will only ratify it after the U.S. does so but the Republican dominated Senate in the U.S. had rejected it in 1999.
- In addition, North Korea, India and Pakistan are the three who have not signed.
- All three have also undertaken tests after 1996; India and Pakistan in May 1998 and North Korea six times between 2006 and 2017.
- The CTBT has, therefore, not entered into force yet, and lacks legal authority.

What role does CTBTO play?

- Despite the above, an international organisation to verify the CTBT was established in Vienna.
- This, the Comprehensive Nuclear-Test-Ban Treaty Organisation (CTBTO), functions with a staff of about 230 persons and an annual budget of $130 million.
- Ironically, the U.S. is the largest contributor with a share of $17 million.
- The CTBTO runs an elaborate verification system built around a network of over 325 seismic, radionuclide, infrasound and hydroacoustic (underwater) monitoring stations.

Source: The Hindu



SHANKAR
IAS PARLIAMENT
Information is Empowering