



Hiroshima Black Rain

Why in News

Recently, a **district court of Hiroshima (Japan)** has recognised 84 survivors of the post-nuclear explosion “black rain” as the atomic bomb survivors enabling them to avail benefits like free medical care.

Key Points

▪ Nuclear Explosion:

- In **1945**, the **USA dropped the atomic bombs on Hiroshima and Nagasaki on 6th and 9th August respectively**, which marked the end of [World War II](#).
 - **2020 marks the 75th anniversary of the incident.**
- The explosion and resultant firestorms are believed to have killed around 80,000 people in Hiroshima and around 40,000 people in Nagasaki.
- Thousands more died in the following years due to the exposure to radiation from the blast and also from the black rain that fell in the aftermath of the explosions.

▪ Black Rain:

- The **debris and soot from the destroyed buildings in Hiroshima** (estimated 69% of the buildings was destroyed) **mixed with the radioactive fallout** from the bomb, rose high into the atmosphere in the form of a mushroom cloud.
- This **material combined with the vapour** in the atmosphere and **came down as dark drops of liquid** that have been called black rain.
- Survivors describe it as consisting of **large, greasy drops that are much heavier than normal raindrops**.
- **Nagasaki witnessed less black rain** despite the fact that the nuclear bomb dropped on it was more powerful than Hiroshima's.
 - It killed fewer people and its effects were confined to a smaller area because of **Nagasaki's geographical position between hills**.
 - The blast **did not produce firestorms** and the **material contributing to black rain was less**.

▪ Effects:

- Black rain is full of **highly radioactive material** and exposure to it can result in serious illnesses.
- A study conducted in 1945 showed that black rain had come down **as far as 29 km** away from **ground zero**.
 - In relation to nuclear explosions and other large bombs, **ground zero is the point on the Earth's surface closest to a detonation**.
 - In the case of an explosion above the ground, ground zero is the **point on the ground directly below the nuclear detonation** and is sometimes called the **hypocenter**.
- The rain **contaminated everything it came in contact** with. **Dead fish** were reported

- floating in water bodies and **severely ill cattle** were seen lying in the fields.
- Black rain caused **Acute Radiation Symptoms (ARS)** in many who were exposed to it.
 - These symptoms include **nausea, diarrhoea, fever, sore throat and loss of hair.**
 - Over time, many people who were exposed to black rain have **developed cancer** as well.
- **Addition to Survivors:**
- In **1976, Japan used a 1945 study to demarcate the area within which people could claim to have been affected** by black rain and be recognised as survivors of the nuclear blast.
 - It allowed people living in the area during the time of the black rain to **avail free medical care and other benefits** if they showed symptoms related to radiation exposure.
 - However, later studies have shown that **black rain could have come down on an area nearly four times the size of the one demarcated** by the government.
 - It was also argued that **people who moved to the area later, could also be affected** by the radioactive contamination caused by the rain.
- **Effects of the Ruling:**
- The Hiroshima District Court ruling **recognises the plaintiffs as Hibakusha (Japanese term for the survivors of the nuclear blasts).**
 - It gives **hope to many others** because the decision **may pave the way for the government to reconsider the limits** it has set on who can be considered a survivor of the atomic bomb.

Source: IE

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