

Lessons from Japanese earthquake , tsunami and Nuclear disaster-7

By
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Flaws in earthquake prediction systems?

- In the region affected by earthquake/ tsunami, there have been two large devastations in the last 1200 years the 125-foot Sanriku tsunami of 1896 that killed 22,000 and the Jogan tsunami of 869 that was similar in size to the March 11, 2011 tsunami.
- Had these events been studied these , there could have been some forewarning for Mar 11 disaster, says Geophysics professor Robert Geller of University of Tokyo.
- Japanese rely on annual “hazard maps” to highlight parts of the country deemed at higher risk from major temblors, but there is no reliable scientific basis for that technique,
- He says: these maps are based on two assumptions -- the “characteristic earthquake” and “seismic gap” theories -- which date from the 1960s and 70s and have not been supported with evidence.
- He says entire Japan is earthquake/ tsunami prone but the scientists have been only concentrating on Tokai, Tonankai and Nankai zones.

Lesson 37

- After some time we tend to believe what we normally do as being superior. We do not challenge our assumptions often enough.

Innovative solutions for immediate relief

- A group led by Yasutaka Yoshimura Architects has formed the Ex-Container Project with the intention of providing old shipping containers as disaster relief housing for people displaced by the earthquake and tsunami in Japan.
- With shipping containers being used around the world as permanent buildings, these temporary residences are low cost and can eventually be turned into long term residences if needed.

Lesson-38

- In disasters one has to look at innovative solutions which can be actioned immediately rather than wait for permanent solutions which can take a lot of time
- Risk management should look at such solutions when doing 'what-if' studies.

Kizuna binds Japanese people

- Kizuna (The strong bonds of Japanese people) creates a great bond and solidarity during disasters.
- The entire nation has been in mourning
- Throughout the mourning period, television stations have refrained from showing frivolous programs and gaudy commercials.
- Many of the hanami events, for celebrating the annual eruption of cherry blossoms, a much-loved activity for us Japanese, have been cancelled.
- Music and sporting events, along with town gatherings, have also been cancelled or postponed.

Lesson 39

- The rest of the world should learn Kizuna from the Japanese .

Lessons for the Scientific community 40

- Lessons for the Scientific community- interview with *Research seismologist Walter D. Mooney*
 - Assume earthquakes will be stronger – be more conservative in estimates
 - What took us by surprise was the tsunami effect and how big these waves were. It brings up questions of land-use policy.
- Joshua S Hill reports:
 - The level of soil liquefaction that took place as a result of the Japanese earthquake has surprised researchers
 - Liquefaction is when saturated soils lose their strength and integrity and begin to flow like water during an earthquake. When this happens, foundations shudder and structures can shift or even sink. And, as a result, liquefaction significantly enhances the damage done as a result of the earthquake.

Stoicism lessons -41

- AID worker Mark Pearson says:
 - He saw no one cry though he had never seen such a devastation in his life , though he had seen many
 - They were incredibly welcoming and grateful for our help
 - Japanese would not dream of taking anything that was not theirs. They have a very deep respect for other people's belongings and space.
 - Many who had lost most of their possessions, their homes and even family members - would stoically queue in an orderly manner for hours if not days for fuel. He said: "There were five kilometre long queues for the petrol station.

Reconstruction lessons - 42

- Local communities and emergency workers have not waited for central government funds to arrive before starting the job of cleaning. Japanese are known for cleanliness.
- It is arguably the largest clean up job in history.
- Estimated 24m tonnes of debris littering coastal areas in Miyagi, Iwate and Fukushima – the hardest-hit prefectures. That is roughly equivalent to half Japan's annual total waste.
- This does not include hundreds of thousands of vehicles. Boats and ships destroyed Plus there are the millions of tonnes of sludge left behind by the waters.
- The upside: “The waste could be used to restore the original level of the land . . . and the amount of concrete that needs to be taken to landfills can be reduced,”

The search for bodies -43

- 25000 troops searched for bodies
- Robots from Japan and USA were also being used to search for bodies as military divers are hindered by large volume of debris.
- One of the robots is equipped with sonar to search for underwater objects and a high definition camera to distinguish between bodies and other objects.

Sources for part 7

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