

IMPACT OF TRIPLE TRAGEDY OF 11TH MARCH IN JAPAN ON WORLD ECONOMY AND NUCLEAR ENERGY INDUSTRY

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The occurrences of earthquakes, Tsunamis and nuclear power accidents are not uncommon in Japan. Besides Japan has the unique experience of coming out of the Atomic attacks. Earthquakes are felt in Japan frequently and are also of a fairly high intensity. Japan, as a nation, is fairly prepared to handle emergent situations arising out of earthquakes and is able to contain the damages caused and recoup such damages. Japan has also the experience of facing Tsunamis in the past; the one of 1933 was fairly disastrous. Japan has had the experience of nuclear reactor accidents caused by human errors and also because of reasons of earthquakes. Accidents triggered by earthquakes occurred in 2007 and 2008 also. The accident of 2007 occurred at Kashiwazaki and Kaniwa Nuclear Power Plant as a sequel to an earthquake of 6.8 Richter causing spillage of radioactive water in the Sea of Japan. The plant remained shut down for an indefinite period for damage verification.

The tragedy of 11th March combined the impact of earthquake, Tsunami and Nuclear damage simultaneously and the resultant impact caused, has been of unprecedented intensity surpassing previous records. The damage and losses would also be undoubtedly very large compared to the previously recorded. The triple tragedy struck Japan at a particularly bad time when Japan has been struggling to pull out of a period of economic stagnation and has been plagued by political volatility. The Nuclear damage is turning out to be worse affecting even the food chain. The loss caused by earthquake and Tsunami can be assessed and restored in an accelerated manner. The damage caused by uncontrolled radiation is humongous and covers wide areas much beyond the prefectures affecting earthquake and Tsunami. Radiation spread not only retards the restoration task, it makes it hazardous. The otherwise grown up population of Japan is handicapped from giving its full in the reconstruction process.

Quick estimates have been made by World Bank, HIS Global Insight and IDSA about the impact on the world economy caused by the Triple Tragedy of Japan. Without offering its

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own estimates, World Bank has indicated on some private estimates, the cost of Japan's disaster in the range of \$ 122 billion to \$ 235 billion or 2.5 to 4 per cent of GDP compared to a loss of \$100 (2 per cent of GDP) consequent to earthquake of Kobe in 1995. Private resources are likely to bear a small portion of cost leaving most to be covered by households and the government. According to an estimate the insurance companies may be required to shell out between \$ 20 billion to \$ 50 billion. However, the damage caused due to nuclear impacts is generally not covered by the insurers. In the scenario of triple tragedy of Japan, some of the insurance claim can run into difficulties and prolonged court battles cannot be ruled out as the insurance companies may perceive some claims bad as they might be occasioned by radiation effects.

IDSAs study referred to above has highlighted that the triple tragedy has impacted most the prefectures of Iwate, Miyagi Fukushima and Ibaraki which represents 7% of Japan's economy. The region has steel plants, oil refineries, nuclear power plants and auto and electronic parts manufacture. The activity in all these centres of production has come to a stand still and will remain shut for quite some time. There has been disruption in transport and power networks which would be re-established at a distant future. Domestic plants of Toyota and Honda Motor companies have been shut down due to shortage of auto parts. Sony Corp. Has to close down its six factories in Tohoku for non availability of electronic parts. Other big names whose operations have been suspended in various regions of Japan are Toshiba Corp, Mitsubishi Electric Corporation, Renesas Electronic Corporation, Fugitsu Ltd. etc. Thus the electronic, TV, semi conductor, space industries etc. have been jolted. Many prominent departmental stores had to be shut.

The disaster in Japan would also impact the global economy as well which was yet to recover from the downturn it has faced. According to a study made by Nariman Behraves, Chief economist at HIS Global Insight, the impact, however, on world economy will be limited. However, this study was made when there was a downward trend of prices witnessed in oil in the expectations of low take off because of halt of supplies to Japan following the triple tragedy in Japan and also when the radiation impact was not fully comprehended. In any case, as the nuclear power supplies etc. would remain disrupted for a longish duration, Japan's dependency on oil for recouping its power generation would increase and hence there would be north ward impact on oil prices globally with consequent impact on oil dependant economies.

Bank of Japan has taken care to check the financial panic by inducting \$ 250 billion dollars worth of liquidity into the Japanese economy and has indicated its readiness to pump more money as required. This would also ensure that yen dollar parity remains unaltered in case the Japanese corporates wish to draw on their reserves kept in dollars for boosting up their recovery.

As far as Japan is concerned there may be a negative growth in GDP of a few decimals during the current year which would be off set in the following year when reconstruction activities are on way. However, this estimate may be off mark in case nuclear fallout gets out of hand. With this caveat, Japan's economy will not get significantly impacted as a whole but there would be disruption in supply chains of auto, electronic parts, food trade and there would be upward requirement of construction materials including cement and steel. Keeping the impact of Radiation impact aside, the global economy would also remain relatively unaffected as a whole.

Different regions would be impacted differently depending upon their trade linkages. However markets are ruled sometimes by sentiments. The sentiment of uncertainty of the extent of disaster in Japan persists because of unfathomed nuclear damage. Even the conditions of Middle East and foreseeable rise in oil prices would make the consumers and businesses circumspect and the duration of such sentiments would be determined by the stability of the disaster damage and its extent particularly on account of radiation threat.

Individual entrepreneurs and the countries would need to assess their strategies based on the pattern of existing trade and the new demands that are likely to emerge in the stages of reconstruction and in the network of global business model where one can fit in. For example, if there is going to be continued shortage of parts is electronic, telecommunication and auto segments; there would be opportunity of manufactures to bridge the gap by substitute parts and even products. Therefore, any fall out in trade would be met with by-substitution effects.

As far as India is concerned, only 3% of Indian exports are to Japan. However, the ODA loans may be impacted and thus projects like Metro rails, Delhi Mumbai Industrial Corridor may be in for delays.

The biggest impact is going to be on civilian Nuclear Business affecting Nuclear Industry generally and US particularly and also nuclear energy aspirants like India. The demonstrated

inability of nuclear establishments to handle nuclear reactor accidents is going to make the task of establishments of nuclear reactors for energy difficult. India has an ambition of investing US \$ 150 billion dollars by 2020 for establishing state of art reactors to meet its energy needs. Public would have renewed concerns of safety of nuclear reactors as a source of energy and would seek assurances in handling nuclear wastes. Further, there would be fresh questions about the suitability of sites and the associated evacuation zones in a densely populated country like India. Thus the task of political management for establishing new nuclear reactors would be exposed to fresh and intense public scrutiny. Nuclear reactor accidents have been reported and catalogued. Earthquakes, of intensity close to 6.5 Richter have also resulted in serious nuclear reactor accidents. Such concerns would be raised not only in India but also in European Union, where the movement against continuing with nuclear energy reactors is fairly strong. Three mile Island Accident in 1979 put cap on Nuclear energy programme of US and Chernobyl accident in 1986 set the European Union (except France) against expansion, Kashiwazaku Kaniwa Nuclear Plant accident in 2007 got the plant closed for unacceptable periods and the latest one at Fukushima is sure to make the waves among public mind which would beg addressing in all seriousness.