

**Possible Trilateral Cooperation in HA/DR :**

**Lessons learned from the Great East Japan Earthquake  
(Preliminary, Not for Citation without Permission)**

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**1 . Overview and characteristics of the Great East Japan Earthquake disaster**

**Triple tragic disaster of earthquake, tsunami, and nuclear plant accident**

**( 1 ) Outbreak of the great earthquake**

On the afternoon of March 11th this year, an earthquake occurred with the epicenter in the Pacific Ocean off the coast of eastern Japan. The scale of the earthquake was magnitude (M) 9.0. The entire area is 500 km long, north to south, and 200km wide, east to west.

The earthquake triggered a massive tsunami and the ensuing nuclear crisis

**( 2 ) Attack of the massive tsunami**

- The tsunami occurred due to the earthquake, and the coast was attacked. It reached 5-5.5km inland from the coastline, and the wave of about 2.8m in height repeated two to three times in the 2-3km inland from the sea shore and swept away the houses, cars and ships, etc.

**( 3 ) Outbreak of the nuclear power plant crisis**

- A massive tsunami of 22 meters in height attacked the Tokyo Electric Fukushima No.1 Nuclear Power Plant.  
The nuclear power plant lost all functions by the tsunami, and a lot of radioactivity was released in the air, ground, sea by hydrogen explosions and brought about the secondary damage.
- Meltdown of the Fukushima Nuclear Power Plant made the crisis even more seriously.

**( 4 ) Outbreak of serious damage**

- The damage of the earthquake and the tsunami is approximately 20,000 people dead or missing, and the 92% are death by drowning caused by the tsunami.

The scale of damage amounts to 4% of Japanese GDP.

## **2 . The support from the various countries in the world for the East Japan Great Earthquake disaster**

- Support expressed: 159 countries, regions, and 43 organizations
- The rescue teams: accepted from 28 countries, regions, and the organizations.
- Relief supplies: Accepted from 56 countries, regions, and the organizations.
- Donations : Received from 83 countries ,regions and organizations

## **3 . Rescue operation of the Japanese Self Defense Forces and the U.S. Forces**

### **( 1 ) The Japanese Self-Defense Force**

- The Self-Defense Force sent 107,000 people which is approximately 40% of the capacity, approximately 55 war vessels, approximately 550 planes including the helicopters for approximately four months.
- Number of SDF personnel dispatched totaled up to about 10,630,000 people.
- The Joint Staff Office of the Self-Defense Forces organized two headquarters of the rescue operation and radioactivity response operation in the stricken area.

### **( 2 ) The United States Armed Forces**

- The U.S. Forces sent to the earthquake support of Japan and the action for the No. 1 nuclear power plant accident in Fukushima on the scale of about more than 20,000 soldiers, 160 planes and about 20 warships including nuclear-powered aircraft carrier "Ronald Reagan".
- The U.S. Forces commander, as the U.S. Navy Pacific Fleet commander established Joint Support Force (JSF) by integration of 300 persons on the U.S. Navy Pacific Fleet Headquarters.

### **( 3 ) • Coordination between U.S. and Japanese forces**

- The joint staff office ,JSDF and U.S. military headquarters ,U.S.F Japan, established a joint coordination office in each staff office , coordinated individual activity.

#### **(4) The activity of the Japan-U.S. military unit**

##### **A For the earthquake, tsunami damage**

- The Self-Defense Forces did the activity such as the intelligence with the plane, the lifesaving of the victims, the accommodation, the transportation of the corpse, the removal of the debris, the staff and supplies transportation, lunch and water supply support, bathing support, medical care support, the repair of the road, the reporting to the Prime Minister's Office by the helicopter picture transmission, the refugee acceptance to Self-Defense Forces facilities, the consolation performance, and so on.
- The United States Armed Forces performed the intelligence with the plane, the lifesaving of the victims, the accommodation, the transportation of the corpse, the removal of the debris, the staff and supplies transportation, lunch and water supply support, medical care support in the area where the force of the Self-Defense Forces was short, as a result of coordination with Self-Defense Forces.

##### **B • For Fukushima Nuclear Power Plant crisis**

- The Self-Defense Forces performed works such as the call for refuge, refuge support, water supply support, transportation of the goods and the people of the local area, government and Tokyo Electric Power Company, and decontamination of the people exposed to radiation.
- Furthermore, SDF performed activities such as spraying water and aerial-sprinkling water for cooling the reactor, monitoring reactors, aerial photography of ground works and the accident damages, support for aerial measurement of radio activity level and reactor temperature from helicopters, flight support for collecting aerial dusts, information provision to Prime Minister's Office by transmitting helicopter pictures.
- The U.S. Forces collected information by aircrafts, offered protective clothing, and rented the pump vehicle for water-drainage activities to the TEPCO. In order to pour fresh water into a nuclear power plant, two naval barge ships were dispatched.

Furthermore, U.S. Forces dispatched special units, such as the U.S. Marine Corps. radioactivity," (CBIRF) and the local health inspection team (AML) of US Army. Also while dispatching the radioactivity environmental assessment team (AFRAT) of U.S. Air Force and

supporting residents' decontamination and medical services by the Self-Defense Forces by information dissemination etc., it prepared for the "unexpected situation" of nuclear power plants, such as a large-scale radiation leak.

#### **4. Evaluation and Lessons learned from Tomodachi Operation**

- This collaborative operation was conducted on the largest scale in the history of U.S.-Japan Alliance and has been highly praised in both countries.
- Secretary of State Hillary Clinton commented in March "The alliance with Japan with a firm and strong base will be strengthened increasingly from now on" in an interview of mass media.
- One of the reasons for offering large-scale support was that the U.S. had a concern that if Japan's influence in Asia decreases, it will give ways to countries which do not share the democratic values.
- If Japanese political and economic power remains stagnant for a long time as a result of the Great Earthquake, China will clearly and rapidly gain power. At the same time, Japan, which has supported the U.S. in global issues and international economy, will lose power and eventually the U.S. economy will be directly affected.
- It was proved that the U.S. Forces which is deployed to the Pacific Ocean could play an important role in logistic support, material support, etc. as public goods of East Asia also in HA/DR.
- The armed forces of any country must prepare themselves for immediate response to emergency, crisis, a man-made or natural disaster.

#### **5. Possible Trilateral Cooperation in HA/DR**

##### **(1) • Coordination among the participating countries, especially India, Japan and the U.S.**

- A • Establishment of joint coordination office
- B • Dispatch of staffs working in headquarters and the establishment of the joint headquarters
- C • Construct common communication measures

##### **(2) • Secure base of operations and transportation**

- A · Airport is secured as the transportation node, and transportation vehicles/engineering equipments are brought in.
- B · If land transportation cannot be used as a transportation hub, use aircraft carriers/ transportation warship
- C · Utilize helicopters and hovercrafts for the area where a vehicle cannot come in

**(3) · Rescue operation by each country**

- Dispatch a relief units quickly  
(seeking to arrive within 24H from the disaster outbreak)

**(4) Activity Guidelines**

- A · Allocates the area of operation to each country
- B · Use regional and cross-regional functions such as road construction and medical treatment.
- C · Functional activity must work across region.

**(5) · Everyday preparedness by foreseeing disaster rescue**

- A · Each country stores its own necessary equipments
- B · Shipping exercise of stored necessary equipments
- C · Execution of joint training (adjustment in joint coordination office and Field training)

**6. Conclusion**

HA/DR is another area where preparation, exercise, sufficient coordination after the outbreak and swift rescue operation are all required.