



The Amorgos Incident and Establishing Oil Spill Response System in Taiwan

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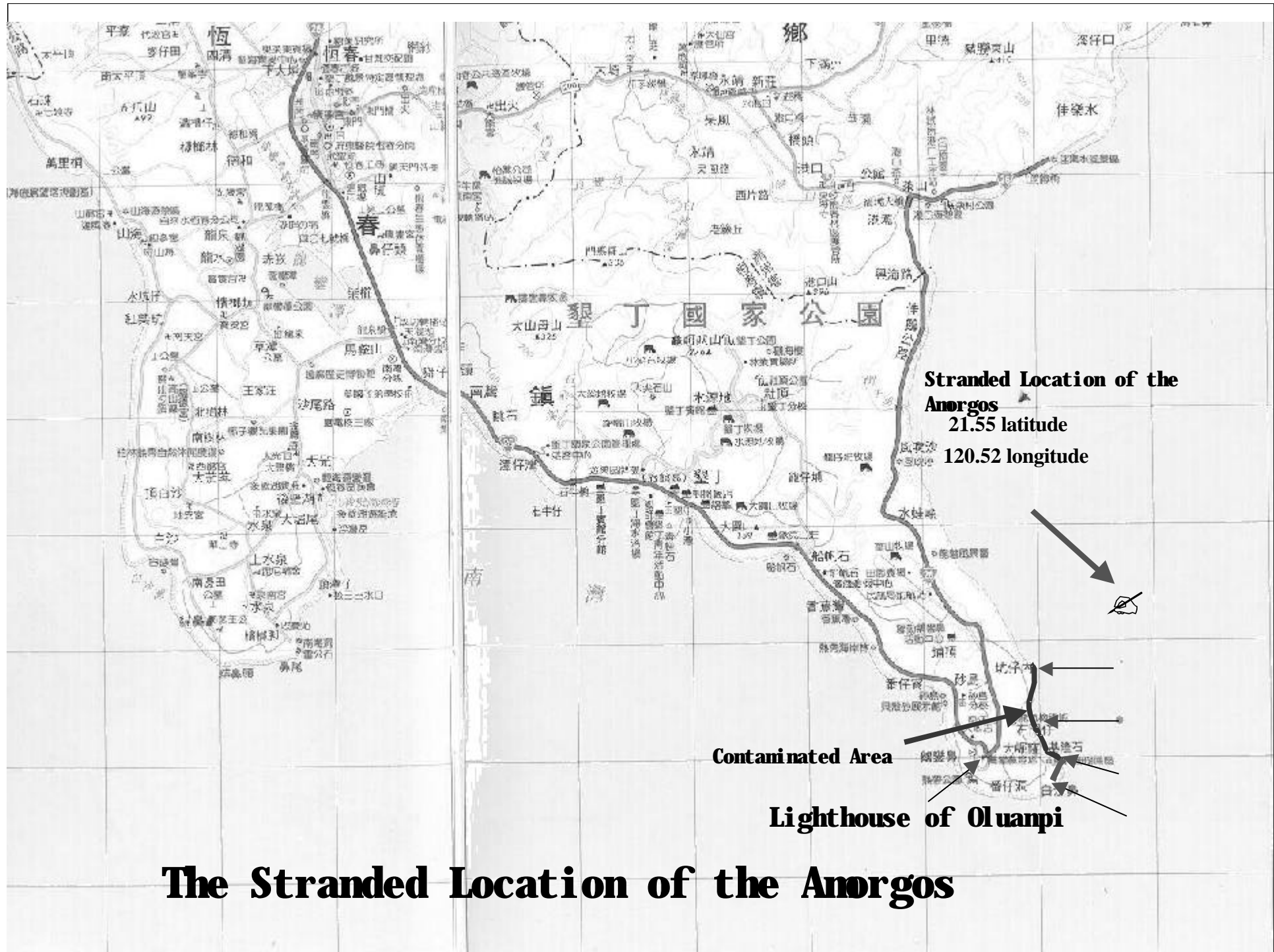
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II. Review of the Amorgos Incident

1. Forward:

✍ The Amorgos, a-3,5000-ton Greek Cargo full-loaded with ore departed from India for Mainland China , had lost its power and stranded in the waters off the coast of Oluanpi, Pingtung County, the Southern Part of Taiwan, at the night of Jan. 14th, 2001, after 12 hours' drifting.

- ✍ The 14th Ocean Patrol Team of the Coast Guard Administration (CGA) rescued the crews at the initial stage of stranding.**
- ✍ Due to bad meteorological condition, the fuel oil began leaking from the Amorgos on Jan. 18, 2001 and contaminated nearby coastline and coral reef. Considering terrain restriction, ocean phenomenon and ecological protection area, the clean-up had been carefully planned.**



Stranded Location of the Anorgos
21.55 latitude
120.52 longitude

Contaminated Area

Lighthouse of Oluanpi

The Stranded Location of the Anorgos

2. Events of the Incident

✍️ Initial Stage (Jan. 14 ~ Jan. 19)

✍️ Rescue process:

Around 8 PM of Jan. 14th, both the Taipei Mission Control Center of the Salvage and the Army Rescue Center received the reporting from Keelung coast radio station. A rescue mission was launched immediately. At 9 PM, the Army Rescue Center coordinated the the vessels of Maritime Patrol Agency and the seagull helicopter of Air Force, and all 25 crews of the Amorgos were safely rescued around 11 PM.

✍️ Approach to anti-leakage:

✍️ According to the Article 13 of Regulations for Salvaging Ocean Disasters, the Hwaiien Harbor Bureau, the Ministry of Transportation and Communication (MOTC), established a crisis management center on Jan. 15, 2001. The center kept sending mail, fax and phone calls to advise the ship owner and insurance company to avoid enlarging the damage of oil pollution in the shortest time. Even further, the center contacted the SMIT salvaging company in Singapore and filed application for related rescue works. Nevertheless, the deteriorated whether had confined the mission to be executed.

✍ Upon receiving a phone call from the Kaohsiung Harbor Bureau reporting oil leakage from the ship in the morning on Jan. 15, the Environmental Protection Administration (EPA) immediately notified the Environmental Protection Bureau of Pingtung County, and commended it to supervise the situation according to Article 32 of the Ocean Pollution Prevention Act and contact the Hualien Harbor to demand the shipping company to extract the oil from the ship lest it should pollute ocean.



- ✍ **Meanwhile, the Center for Space and Remote Sensing Research of the National Central University was asked to assist in remote survey and evidence collection, so as to ascertain the distribution of oil pollution.**
- ✍ **On Jan. 18, the hull cracked and oil began to leak. The EPA advised the shipping company of its liability. The EPA also asked the Chinese Petroleum Corporation (CPC) for help in oil pollution settlement. However, the weather condition was bad and ships were not able to go out to sea.**

✍️ Emergency Response Stage (Jan.20 ~ Feb. 4)

- ✍️ The sluggish traffic in the oil contaminated coast area and Long Kun Area's specific terrain caused the difficulties for personnel access. The oil stuck at coral reef tidal trench and pool and polluted the coral reef that made the cleanup difficult.**

- ✍ During the period of incident occurred, north-east monsoon and down-hill wind were strong, which resulted in bad ocean condition and operational difficulties.**
- ✍ The EPA had demanded the shipping agency to increase manpower for cleanup and requested ship owner to submit an effective clean-up plan before the 5th of Feb.**
- ✍ The EPA also requested relevant agencies to engage in collecting related evidence for further compensation claiming.**

Clean-up Period

-  **Until Feb. 3rd, up to 217.6-ton oil had been drawn out by the workers hired by ship owners.**
-  **On February 6th, the EPA invited the Ministry of the Interior (MOI), the MOTC, the Ministry of National Defense (MND), the CGA, CPC and local government agencies to organize the details of the clean-up plan and its follow-up.**

3.Pollution Situation :

- ✍ The offshore areas of Long Kun (started from Pai-Sa-Pi to Kun-Tze-Nee about 3.5 kilometers in length) was polluted by fuel oil, and the serious polluted areas were estimated about 750 ~900 meters long. So far, all of the clean-up works have been completed.**
- ✍ The residue oil and ore in the wreck had been removed completely. The wreck hull, in addition to the stem and stern, had been broken into pieces.**
- ✍ The sea surface has no more sign of oil pollution, and the water quality from seawater examination also appeared to meet the standard at present time.**

4. Offshore cleaning situation

Items.	Timing	Throwing Manpower	Cleaning and Handling the Greasiness Volume	The Cleaning Volume of the Waste.
		Grand total (Manpower)	Grand total (Ton)	Grand total (Cubic Meter)
Coast- Greasiness Dredge Up	1/25~2/16	*9,794	462	-
Coast- Greasiness Cleaning	2/17~3/24	21,560	513	2,071
	3/25~5/18	34,896	549	3,574
* : Including military soldiers approximately 8000 manpower				

✍️ Considering safety and prevention of the oceanic ecology from violating, we adopted the forms of natural force to decompose the pollution the stain on the reef rocks. Water jet was used to wash off the stains on the upper area of the tide flat. The cleanup area was 6,987 square meters and recovery effect was evident. Thus, the reservation area has been reopened recently.

5. The pumping situation of the residue oil in ship:

✍️ The civil vessels hired by ship owner dredged up 366.4 tons of oil on June 12.

6. Wreck Removal Work:

- ✍ A task force of cargo removal was organized by the MOTC. The task force was originally established to buoy up the wreck hull and removed it to a proper location. Owing to the influence of typhoons, the ship was broken into several sections, the plan was then modified. The wreck removal work was not conducted until April, 2001, when the weather condition became fair .**
- ✍ So far, the ore in the wreck had been completely dredged out.**

✍ The precautions measurement of secondary pollution:

✍ Monitoring: Keeping visual contact from the watching ship during daytime and dividing the employees into three shifts at night.

✍ Operational method: deployed boom, sorbent, dispersant.

✍ Regarding pumping operation, any leaking situation happened should be handling in emergency.

- ✍ If any floating oil or waste were found, they should be swept away, dredge out and set into barrel or bag.**
- ✍ Asking CPC for providing vessels and Kaohsiung Harbor Bureau to stand by on the second line. In case of any situation happened, they could support the cleaning work immediately .**

7. The measurement to reduce the impact on ecosystem :

- ✍ Given fragments of the destructive wreckage the precedence over the removal : in addition to the cabin sheet on shore and the fragments in the wave-strap that had been removed on Aug. 9th and 10th, the civil company hired by ship owner and the related units were checking up the surrounding water areas and the fragments of wreckage on shore for the rapid removal.**

- ✍ In order to adopt the measurement in time to reduce the impact on ecological environment, the Administration of Kenting National Park committed National Taiwan University and National Oceanic Biological Museum to investigate and conduct research the influence data of the ecological environment in this water area.**
- ✍ Administration of the Kenting National Park had enhanced the control of personnel entering to prevent from any inappropriate demolition.**

8. Claims and recovery :

✍ The EPA committed attorneys and summoned the experts of Pingtung County Government, the Council of Agriculture and the Administration of Kenting National Park...etc, aiming at the damage of fishery, ecology, maritime and pollution cleaning to conduct investigation and evaluation for claimed request.

- ✍ The statistic work has been completed in the first stage so far, and the second stage of damage evaluation in ecology and economics (fishery, sightsee) is handled by the international expertise company that is committed by the EPA.**
- ✍ The sequential recovery was also actively proceed with the project, assessment and investigation by the Administration of Kenting National Park and the Council of Agriculture respectively.**

II. Establishment of the Major Oil Spill Response System

1. Preface:

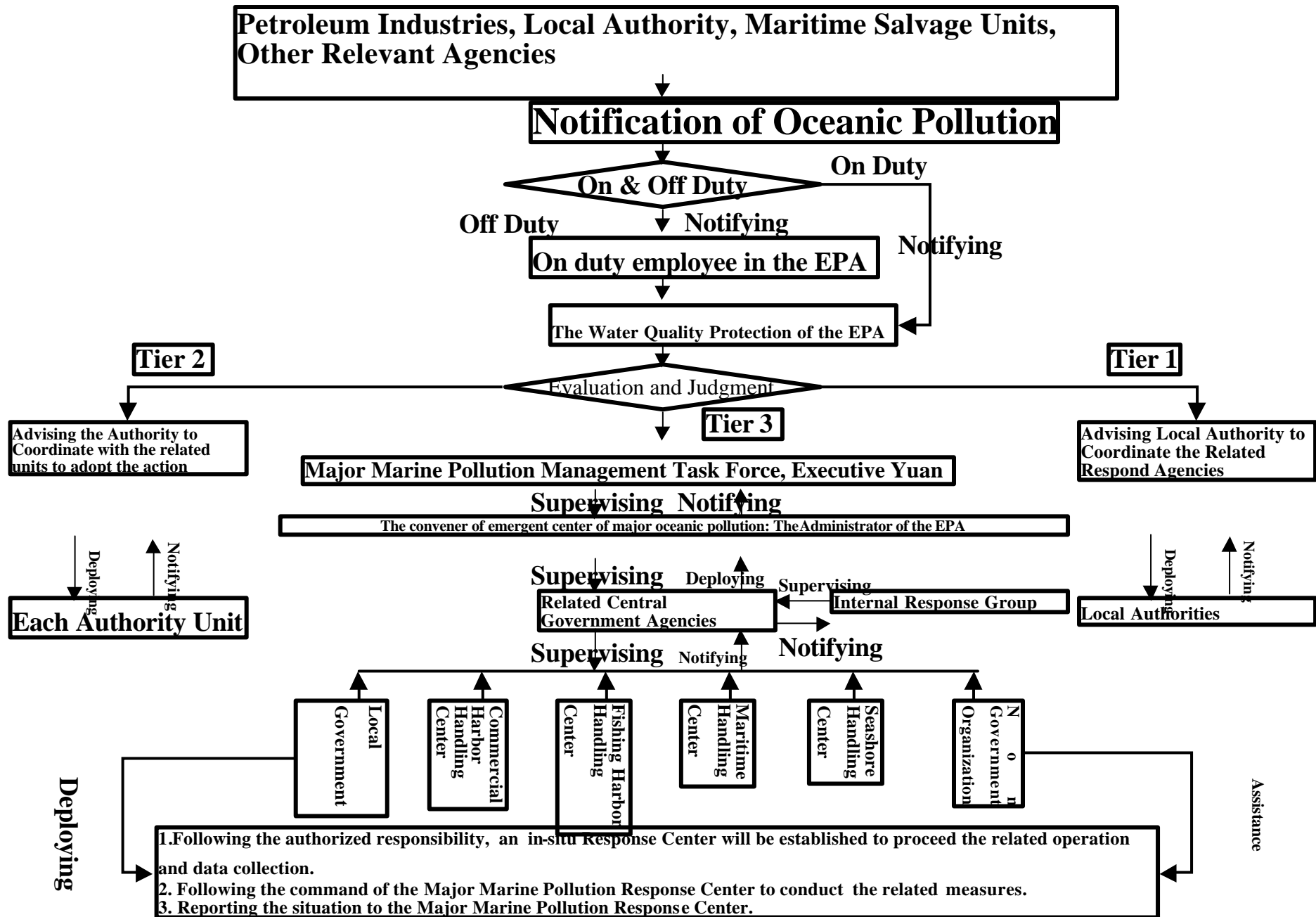
✍ According to the Article 10 of Ocean Pollution Prevention Act, which was promulgated on Nov. 1st, 2000, the central Competent Authority should draft a Marine Oil Pollution Contingency Plan and submit it to the Executive Yuan for approval.

2. The Scope of Application :

- ✍ The oil tankers accidents that will or could result in oil leaking .**
- ✍ Whenever there are the shipwreck or other accidents, which will or could result in leakage and then will or could endanger the human health or pollute the environment seriously.**
- ✍ Any emitting, spill, leaking and discarding waste or hazardous materials that will or could endanger the human health or pollute the environment seriously**
- ✍ Dumping waste, sewerage or fuel oil to pollute the marine environment seriously.**

3. Notification System:

- ✍ Upon receiving the notification of oceanic oil pollution from local authority, maritime salvage unit and related unit, should inform the EPA and the General Maritime Patrol Agency of the CGA.**
- ✍ The EPA has to evaluate whether the oceanic pollution belongs to the major incidents. If the answer is affirmative, then, the EPA should report to Executive Yuan to convey Major Marine Pollution Management Task Force and set up a Major Marine Pollution Emergency Response Center.**



Flow chart of the notification system for major marine pollution.

4. Organizations and Their Responsibilities

✍ The members of the Emergency Response Center for major marine pollution incidents :

✍ EPA, MOI, Ministry of Foreign Affairs, Ministry of Finance, Ministry of Economic Affairs, MOTC, MND, Ministry of Justice, Department of Health, CGA, Research Development and Evaluation Commission, Council of Agriculture and National Science council of the Executive Yuan (Structure shown as figure 1).

- ✍ **Each member should set up an internal response group simultaneously to execute the related events.**
- ✍ **Each member of the Emergency Response Center has to conduct its duty.**
- ✍ **The name-list of the Emergency Response Center has to be kept updated from time to time.**

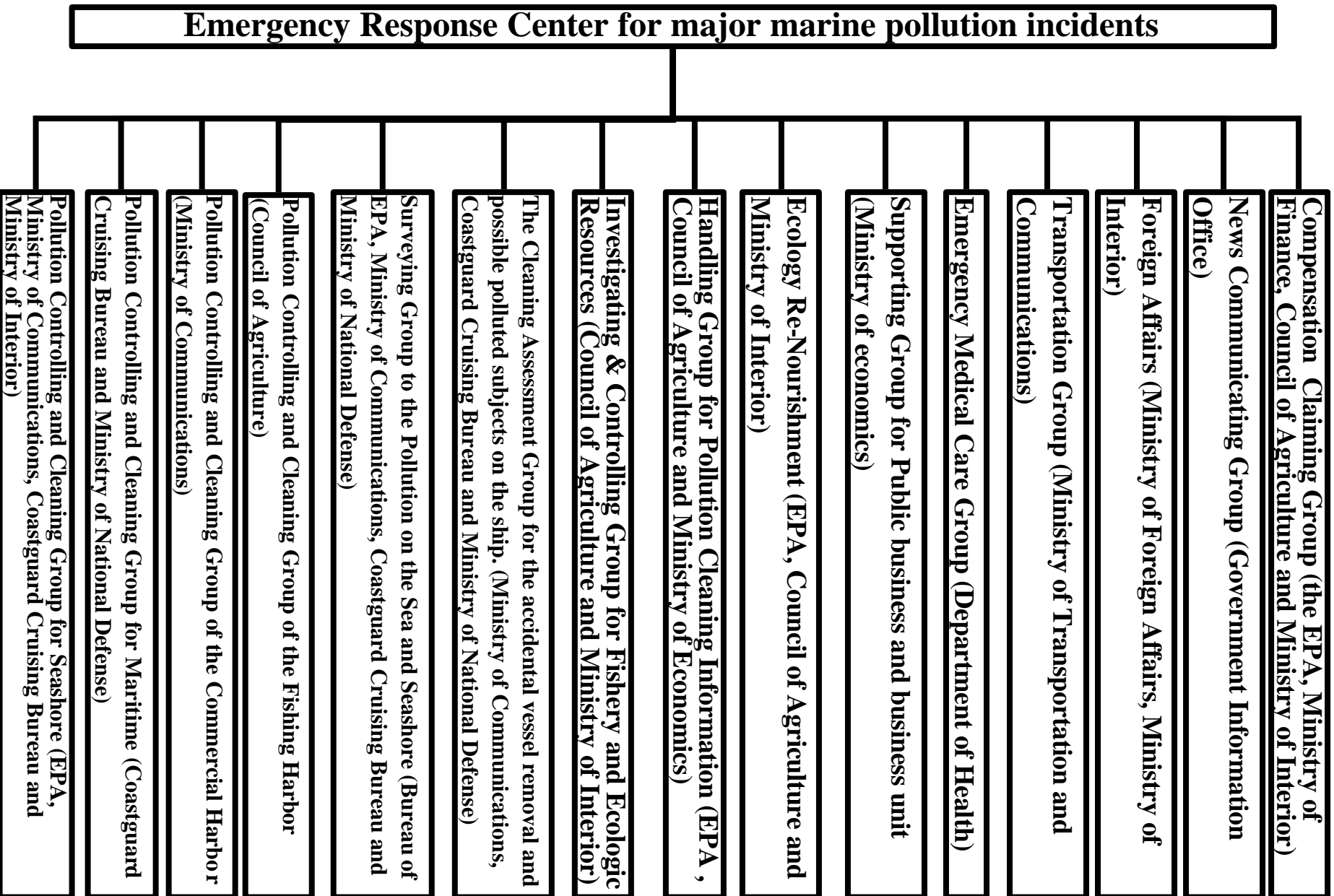


Figure 1. The Structure of the Emergency Response Center for major marine oceanic pollution incidents

5.Establishing the Emergency Response Center for major marine pollution incidents

- ✍ Establishing the Emergency Response Center for major marine pollution incidents , setting up the related units by vertical and horizontal connecting channel and using the electronic information and satellite communicating equipment, provides commander and responding agencies with the update disaster situation when accidents being happened, and issue the order to avoid pollution enlargement.**

- ✍ **Employing the appropriate fund or supplementary budget to purchase the boom, skimmers, sorbent, dispersant, personal protecting gear and handling outfit and establishing Mobil Emergency Response Center to strengthen the response capability.**
- ✍ **Contracting out the clean-up work for urgent marine pollution accidents on the northern, central and southern regions of Taiwan and mobilizing the civil manpower and efficiency to cleanup the oceanic pollution.**

6. Establishing International Cooperation, Conducting Pollution Prevention R & D and Training

- ✍ Establishing remote sensing technologies and digital map. Developing ocean model system to evaluate and predict the major oceanic pollution.**
- ✍ Conducting a research to develop a compensation claiming guidance for major marine pollution incidents.**

- ✍ Holding five domestic training programs (362 officials from relevant government agencies were trained); and one on-scene commander training program in UK (25 officials were trained).**
- ✍ Holding and participating in domestic joint drills (7 times) , and desktop exercise (100 officials participated in) ; holding a Hands-on Oil Spill Response Training in Canada (70 officials were involved).**

. Conclusion

✍ Taiwan, Republic of China, like Japan, is a oceanic nation as well as the shipping center in the South-East Asia. Thus, the navigation had brought the oceanic pollution whose burden and risk and the organized work of the handling abilities became more and more important than ever.

✍ According to expertise's presumption, if our nation intends to be capable of handling the major marine pollution, it will take five years at least. In addition to integrate the manpower resources in each authority and the common consensus supported by the publics, our nation will continuously obtain technical and manpower support from our international friends through various cooperation framework in mutual effort for protecting our earth and marine environment.