

Korean Disaster Management : Current Status and New Challenges

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Concept and scope of disaster

- Disaster : (Fundamental law on disaster and safety management, article 3) : Events that cause or may cause **damage to the life, person, and property of the people and the state**.
- **Natural Disaster**: Disasters caused by typhoon, flooding, torrential rain, storm, tsunami, snowstorm, draught, earthquake, yellow sand, red tide, or equivalent natural phenomenon.
- **Human Disaster**: Fire, collapse, explosion, traffic accident, chemical accident, environmental disaster, or similar disasters exceeding the magnitude set by presidential order.
- **Social Disaster**: Damage due to paralysis of state infrastructure such as energy, communication, transportation, finance, medicine, water, and spread of infectious diseases.
- **Foreign Disaster**: Disasters occurring outside Korean territory that cause or may cause damage to the life, person, and property of Korean citizens and requiring responses at a government level

Examples

<Natural Disaster>

- South Asia Tsunami (December 2004)
- Japan Magnitude 9.0 Earthquake and tsunami (March 2011)
- Pakistan magnitude 7.6 Earthquake / Turkey magnitude 7.2 Earthquake / Thailand Flooding
- Hurricane Katrina (Greatest number of casualties in US natural disaster history)

<Human Disasters>

- Japan Fukushima nuclear power plant (March 2011)
- France Radioactive leak (September 2011)
- Russian Airplane Crash (September 2011)

<Social Disaster>

- US 9/11 Terrors
- Suicide bombings
- SARS, avian flu, anthrax, swine flu

Domestic Cases

<Natural disaster>

- Typhoon Lusa and Maemi / Landside at Uh Myun Mt. due to torrential rains
- Mountain fires in Gangwon Province / Winter snowstorms

<Human disasters>

- Collapse of Shinhangju Bridge (July 31st, 1992)
- Collapse of Sungsu Bridge (October 21st, 1994)
- Collapse of Sampoong Department Store (June 29th 1995)
- Sealand Fire (June 30th 1999)
- Daegu Subway Fires (February 18th 2003)

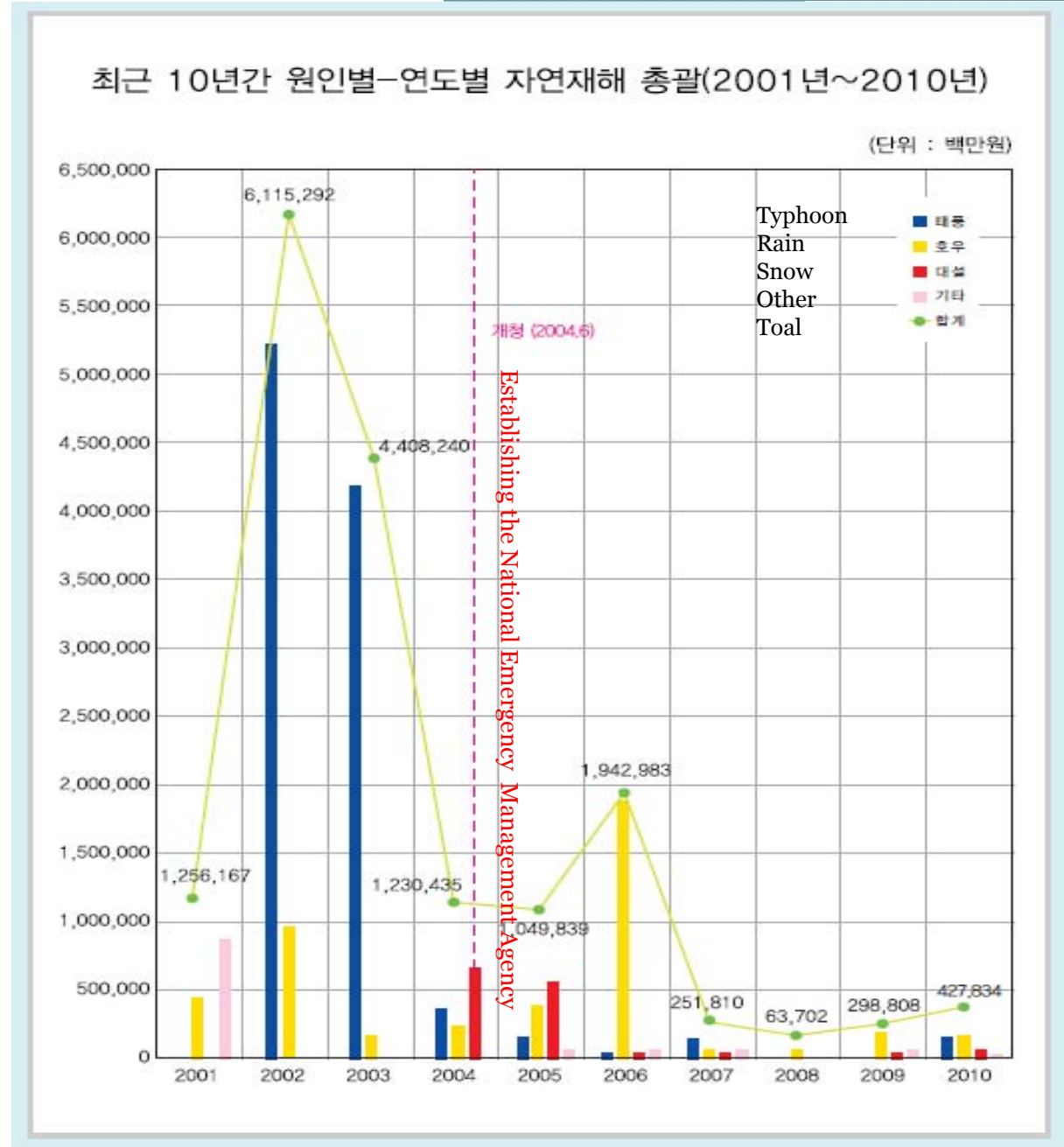
<Social Disasters>

- SARS, Avian flu, Foot and mouth disease, biological disasters
- Mass power shortages
- Terrorist threats

Disaster management policy

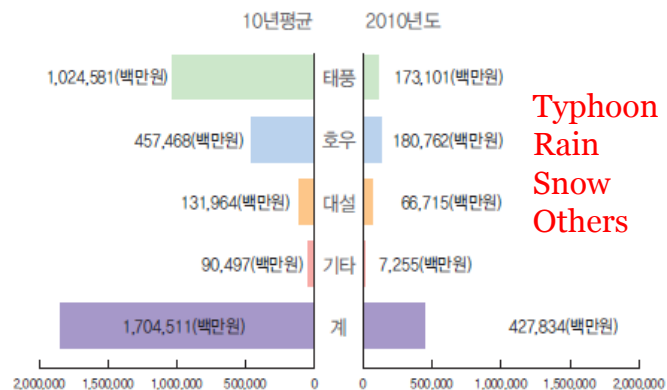
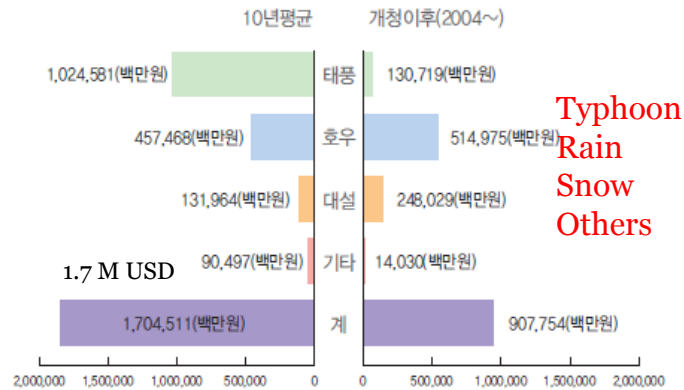
- **National disaster management policy** : government action in case of natural disasters where the state supports rapid response systems and carries out safety management activities of prevention, response, swift recovery, and post damage assessment against the factors that threaten human lives and properties.
- **Failures of disaster management policy** : disaster policy concerned with post-disaster recovery, lack of communication and cooperation between relevant disaster institutions, and low level of safety awareness among the general population

Natural Disaster by Type

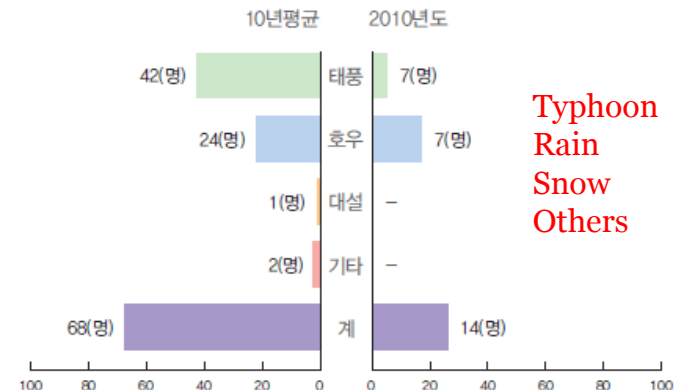
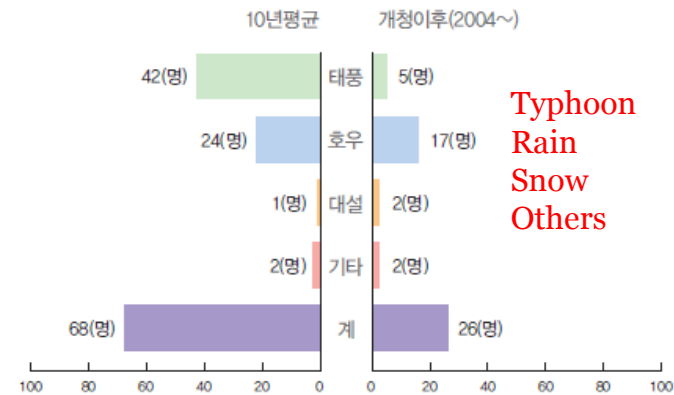


자연재해 (Natural Disaster Damages and Casualties)

* 재산피해 Property Damages

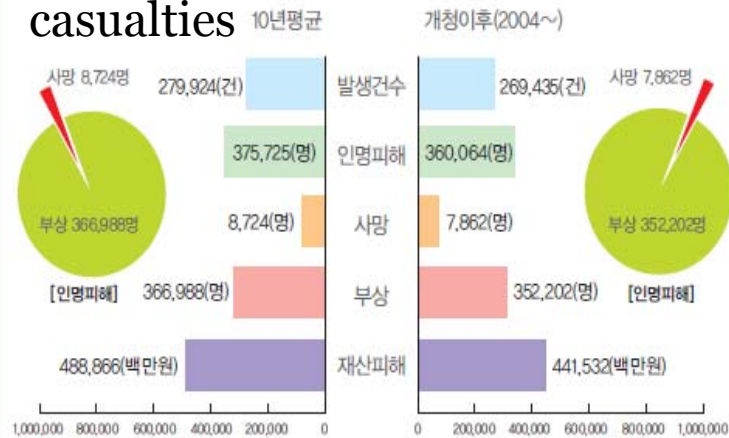


* 인명피해 Casualties

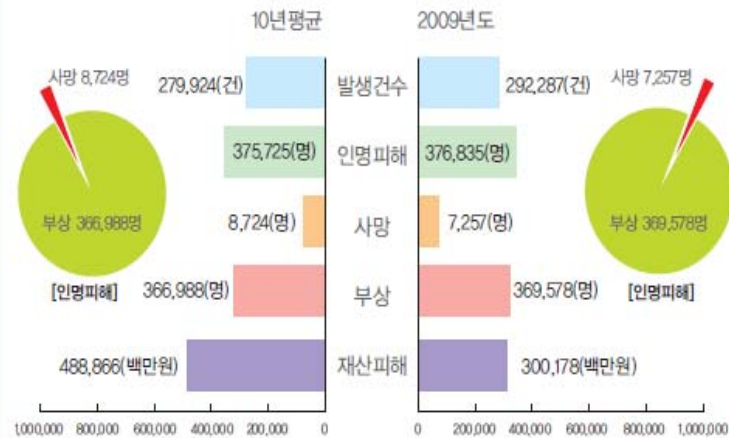


Human Disaster

casualties

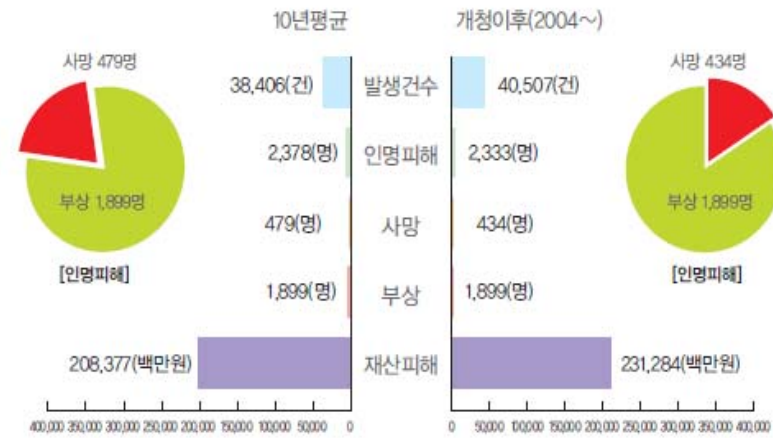


Frequencies, Casualty, Death, Injuries, Damage

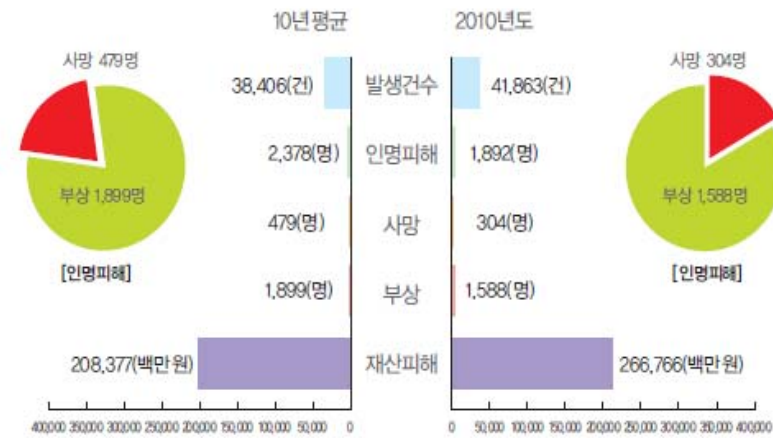


Frequencies, Casualty, Death, Injuries, Damage

Fire



Frequencies, Casualty, Death, Injuries, Damage



Frequencies, Casualty, Death, Injuries, Damage

Disaster related law system

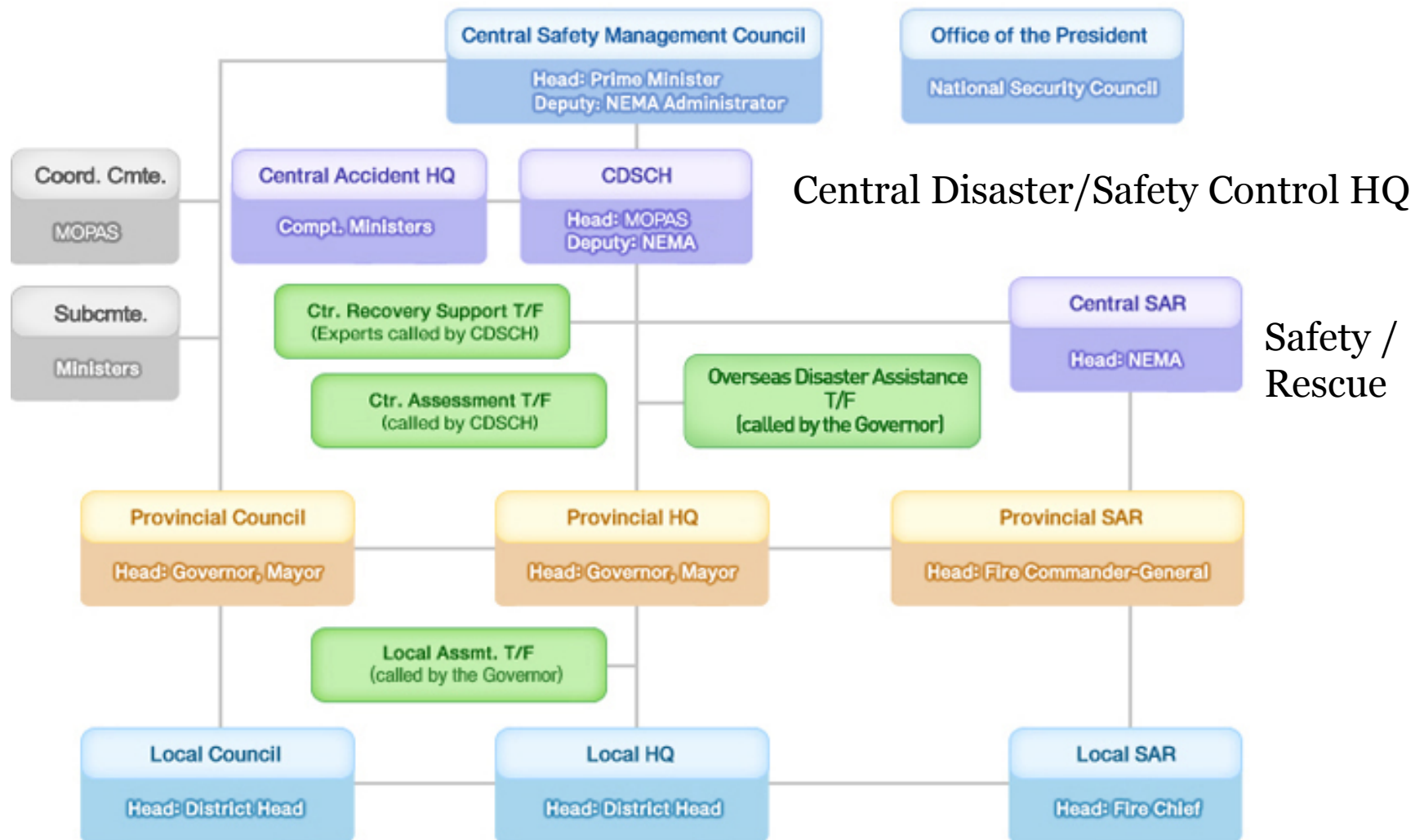
- Korean disaster related law system : three legal systems.
- **Disaster and safety management framework act**: Regulates the necessary clauses for the establishment of disaster and safety management systems of the state and regional governments, the process of disaster prevention, preparation, response, recovery, and other activities.
- **Natural disaster response act** : Regulates the necessary clauses for disaster prevention organizations, emergency plans, disaster prevention, and other disaster policies required for the protection of life, person, and property of the people from natural disasters.
- **Fundamental Law on Civil Defense** : Civil defense includes in addition to wartime disasters but floods, forest fires, storms and other disasters, civil defense system is the basic organization to manage national crisis.
- In addition, 13 ministries and offices concerned have designated construction laws, fire defense regulation, traffic laws, aviation laws, atomic energy laws, agriculture damage laws, disease control laws, electricity laws, water laws, and 70 other laws.



Disaster Management Policy System

- Disaster management policy system is composed of four steps ; prevention, preparation(preparedness), response, and recovery. (Choi Mi Ok 2010)
- **Prevention and preparation :**
 - development plans, evaluation of disaster effects
 - specialized disaster management personnel
 - preparation of responses for each form of disaster and educational training
- **Response and Recovery :**
 - Search and rescue, activating emergency organizations,
 - medical support, victim support, protection, damage control,
 - prevention and strengthening management ability.
- Korean disaster management policy system is separated into **central** government disaster management system and **regional** government disaster management system.

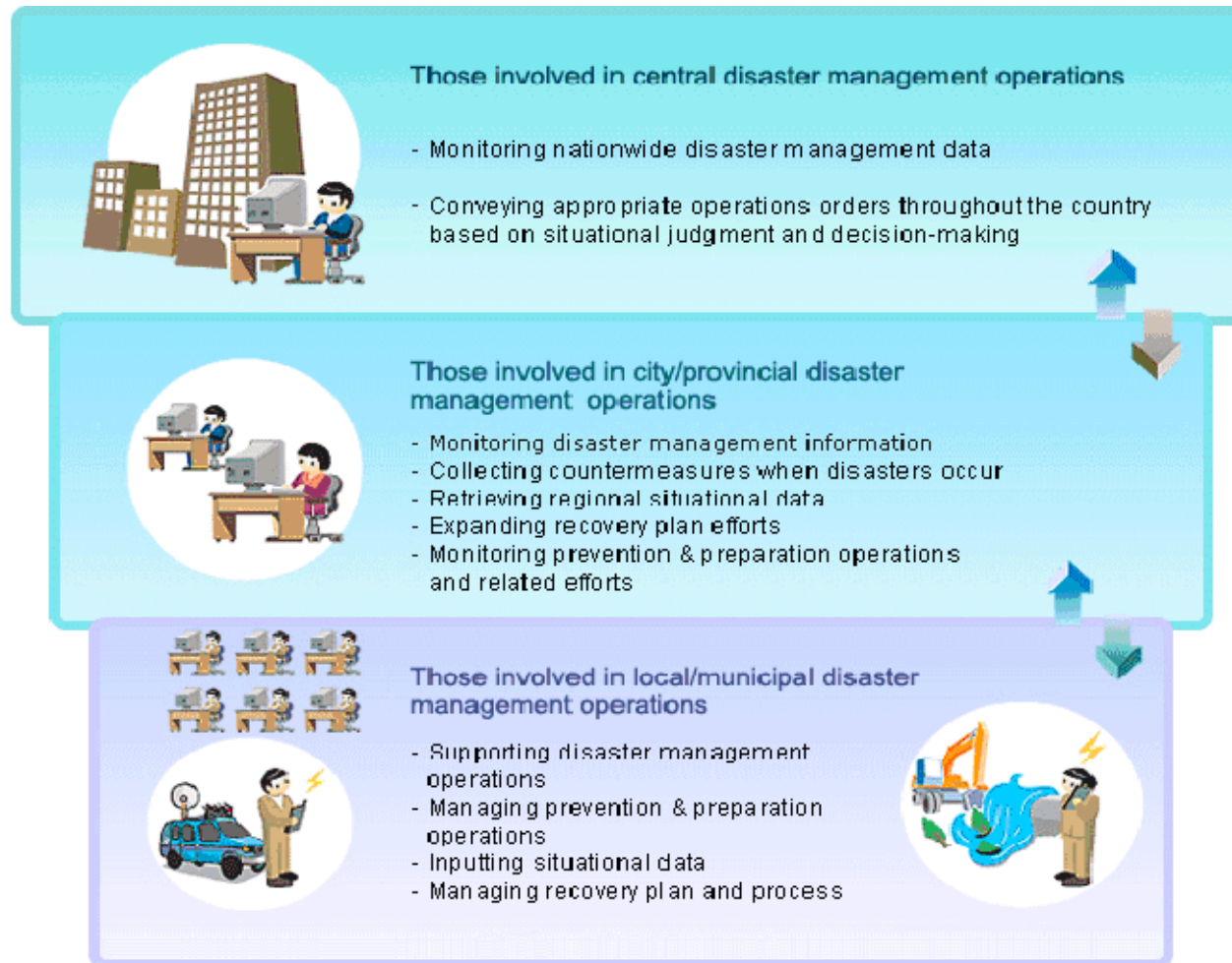
Organizational Map of National Disaster Management System



National Disaster Management Support System



Division of Labor between Disaster Management Organizations



Facilities, Resource, Regional MGT

Disaster prevention facilities management



- Rivers, streams, dikes
- Drainage pumps, sewers
- Flood gates, reservoirs
- Landslide prevention facilities
- Breakwaters, seawalls

Accommodation facilities management



- Schools, community centers
- Governmental offices, churches
- Senior centers
- Other accommodation facilities

CCTV management



- Chronic disaster zones
- Traffic (transportation) situations
- Etc.

Emergency rescue equipment management



- Bulldozers
- Dump trucks
- Payloaders (shovel loaders)
- Garbage trucks, etc.
- Excavator

Flood Prevention Equipment Management



- Sandbags
- Piles
- Ropes
- Water pipes

Disease prevention resource management



- Insecticide
- Disinfectants for wells
- Germicide
- Preventive inoculations

Relief Supplies Management



- Tents, blankets
- Clothes
- Necessities for daily life
- Grains

Disaster hazard district management



- Chronic flooding
- Deteriorating facilities
- Collapsed facilities

Landslide hazard district management



- Landslide hazard areas

Large-construction-area management



- Subways
- Highways
- Golf courses
- Industrial complexes

Isolation hazard district management



- Isolation hazardous area

Danger zone management



- Danger zones

Disaster Management Policy Budget

National Emergency Management Agency Unit: Million KOW

	Budget	Expenditure	Rolling over Amount	Not spent
2004	0	373,616	7,360	481
2005	90,220	377,800	5,466	3,597
2006	982,444	1,302,104	9,856	4,513
2007	132,027	291,942	8,312	4,366
2008	147,189	185,794	3,793	2,408
2009	135,877	285,204	3,732	3,054
2010	478,701	678,052	530	3,473



Problems of Korean Disaster Management Policy

- Fragmented Legal Framework
- Fragmented Roles and Responsibilities
- Overlapped and Dispersed in Disaster and Safety Management Legislation and Institutions
- Recovery-oriented
- Further applications of ICTs
- Learning Organizations



Future Directions for Effective Disaster Management

- Institution: Integrated Disaster Management System and Law
- Inter-border/trans-border Issues
- Information Technology-based Early Warning and Response System
- Information shared and spread quickly (TV and Radio, Internet, SNS, Mobile Phones, etc.)
- Prevention-oriented not Recovery-oriented
- Proactive not Reactive
- Personnel trained and specialized



ROSE



Things to Avoid: Learning Org?

- The paradox of prevention and preparation : disaster management manual (9/11 and recent Japanese Tsunami)
- Problem of pattern matching:
 - Avian Flu and Swine Flu—Foot and Mouth Disease
 - Katrina



Many Inter- Cooperation

- Inter-unit Cooperation
- Inter-governmental Cooperation
- Inter-agency Cooperation
- Inter-sectoral Cooperation
- Inter-NGOs Cooperation
- International Cooperation



Lessons from Experiences: TaeAn Oil Spill

- 10,000 ton Crude Oil Spill in December 7, 2007
- TaeAn is a 150 kilometers southwest of Seoul
- 1.8 million citizen volunteers participating in cleaning up the spilt oil by hands...
- Successful Example: Government-Nonprofit collaboration for Civic Engagement
- But.....

Frosbury Flop...

He jumped higher than anyone before by thinking the opposite from everyone else...

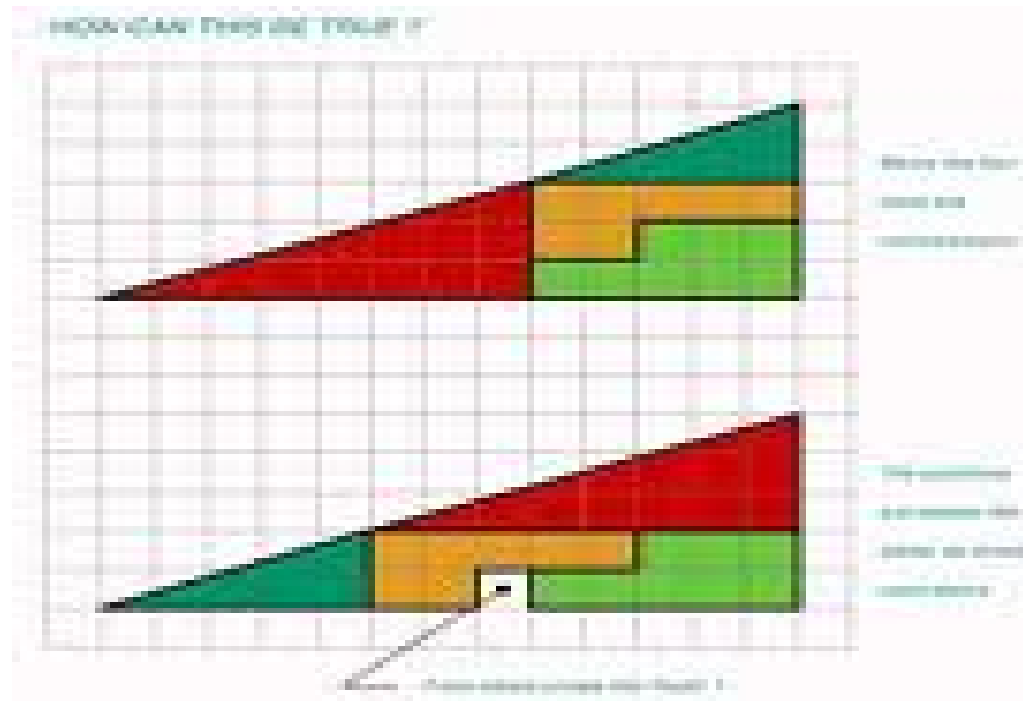





ICT Applications in Disaster Management

- eTeam
- GIS, Mobile Technologies, Satellite Technologies
- Monitoring, Prediction, Coordination,

Right Match:



- 
- Good to Great.....
 - Walk Alone then Go Faster
 - Walk Together then Go Farther



Thank you.....