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1. Introduction

Today, the world is facing with health crisis due to COVID-19 pandemic with no end yet, and this situation is being compounded by recurrent natural disasters beyond human control that resulted in hundreds of thousands of people homeless, school shut and power cut across the world.

It has recorded tremendous losses and damages in some Asian countries caused by typhoons and torrential rains during only one month of May, 2022.

Recently, UNDRR looked out more natural disasters could be recorded with higher intensity and frequency in the future. During the period of 2001 ~ 2020, it has recorded 350 - 500 events of medium and large scale disasters globally, and the average loss and damage reached USD170 billion of worth during the period of 2011 ~ 2020. And the most affected area was an Asia-Pacific region. If this trend is left with no other intervention, it is predicted 560 events of natural disaster could be recorded per year by the time of 2030 which means 1.5 happenings of disasters per day.

Shown as above, no countries or regions are free from the unpredictable impact of disastrous weather pattern. Therefore, we can say that the present century is characterized with challenges of natural disasters driven by climate change. It is, without any doubt, a leading factor that hampers the sustainable development of economy and more civilized world.

The world has achieved 7 times growth of GNP during the period of 1980 ~2017 with too many misfortunes accompanied such as food shortage, refugees, epidemic diseases and life losses due to heat waves, droughts, floods and storms.

In order to cope with natural disasters by joint effort of all the nations so as to prevent or reduce substantial losses and damages while to ensure sustainable socio-economic development, the universal communities had several meetings, adopted numerous joint resolutions and action plans, and are still striving hard to implement them.

The UN, during the past three decades since 1994, had convened 3 world conferences, 9 regional ministerial conferences and 7 global platforms for DRR where strategies, guidelines, declarations and action plans including <Yokohama Strategy for a Safer World and its Plan of Action>, <Hyogo Framework for Action 2005-2015> and <Sendai Framework for Disaster Risk Reduction 2015-2030> were adopted, and called upon all countries to take joint steps.

The 3rd World Conference on Disaster Risk Reduction was convened on 14th ~ 18th of March, 2015 in Sendai City of Miyagi Prefecture in Japan with participant of 185 states, where the Sendai Declaration and Sendai Framework for Disaster Risk Reduction 2015-2030 were adopted.

Practically, the concept of the Sendai Framework is consistent with the policy and strategy of DPRKorea.

Hereupon, The Government of DPRKorea has newly developed the <National
Strategy for Disaster Risk Reduction 2019 – 2030> (NSDRR) based on state policy and in line with the Sendai Framework to keep step with UN for its global activities for DRR and to give more strength to the capacity building of national disaster emergency response, thus to be able to have fast recovery of the affected economy and livelihood of the people. The Government is now on its way with the strategy following the action plans by stages.

The Government is governing the implementation of the NSDRR in connection with SDG and to be aligned with UNFCCC and UNCBD.

There were several times of update to the laws and regulations concerned with DRR which contributed to the reinforcement of DRR mechanism.

The Government has enhanced the capacity for hazard forecasting and warning, too.

Sendai Framework was adopted as of a UN resolution with aspirations of all nations to be protected of their lives from raving nature and to be ensured of their economy for sustainable development.

DPRKorea is one of the member states that accepted the Sendai Framework 2015–2030, and is subject to the UN resolution to take Midterm Review of the Implementation of the Sendai Framework for Disaster Risk Reduction 2015–2030 (MTR-SF), therefore, has conducted national consultations and reviews and hereby present its national report with an approval of the Cabinet on September 12, 2022.

2. MTR SF Methodology and Process

UN General Assembly adopted a resolution A/RES/76/204 on 17 December, 2021, recommending member states to take MTR-SF from end of 2021 to end of 2022.

The purpose of MTR-SF is to assess progress, gaps, and challenges in the implementation of the Sendai Framework and share findings, good practices, and recommendations with UNDRR, set out recommendations, and submit the results to the high-level meeting to be held in May 2023 to adopt political declaration to renew commitment and accelerate the implementation of Sendai Framework.

Following the recommendation from the UNDRR to ensure objectivity and transparency of MTR-SF through all-of-society engagement and partnership, the Government of DPRKorea had full, sound debates and consultations with governmental institutions and stakeholders related with the implementation of the NSDRR.

The review was taken in a way of online or virtual and in-person consultations keeping public health rules of COVID-19 while literature review of existing reports and studies were taken at the same time. Talks with local women and old natives were taken, too.

The Government of DPRKorea has authorized the State Committee for Emergency and Disaster Management (SCEDM) to take MTR-SF.
SCEDM organized a team for MTR-SF consisted of members from relevant line ministries and institutions.

The team took review mainly on the progress of the NSDRR while taking case studies on disaster responses recorded from 2015.

The State Planning Commission, the Ministry of Finance, the Agricultural Commission, the Ministry of Railways, the Ministry of Land and Environment Protection, and other line ministries were involved in MTR-SF. The Red Cross Society of DPRKorea, the Korean National Insurance Corporation, the Korean Federation for the Protection of the Disabled, the Korea Federation for the Care of the Aged, and other stakeholders took part in the review.

Stiffs who were engaged in anti-epidemic emergency joined the review comparing the DRR activities with anti-epidemic activities to drag out more efficient DRR approaches.

3. Geographic Background

DPRKorea lays in eastern part of Asian Continent. The northern part of the country is connected with broad Continent of Asia, while the east, west and south is surrounded by three seas; Korean East Sea, Korean West Sea and Korean South Sea. The northern part of the peninsula borders with People’s Republic of China and Russian Federation with Amnok River and Tuman River running between, whilst east faces with Japan with Korean East Sea between.

74% of the land is covered with mountains, formulating countless valleys and rivers. The western part is plain along the coastline, while the alpine belt is laid in northern and eastern part that is gradually lowering down to the west and south. There are many high mountains with long narrow valleys and steep sloping lands in the country.

The country has four distinct seasons and high precipitation for its specific geographical location and natural condition, since the country is laid on the part of middle latitudes connecting the Asiatic Continent and Pacific Ocean.

The annual mean temperature of the country is 0.7°C ~ 12.4°C. The average temperature of August, the hottest time of the year, is 16°C ~ 25.4°C and the average temperature of January, the coldest time of the year, is -17.9°C ~ -0.4°C. The lowest temperature recorded in Pyongyang is -30.2°C, whereas the highest temperature is 37.9°C. The annual average precipitation is 483.2mm ~ 1,635.4mm and more than 50% of the rain comes during the rain spell of the year.

The country is generally affected by monsoon, that it is cold in winter, dry in spring and rainy in summer. It is almost clear every year with dry season and rainy season, and so is it with hot time and cold time every year. The decisive contributor to the process of climate formation is an atmospheric circulation by monsoon. There is southwest wind blowing during the summer season, while is there northwest wind blowing during the winter season.
The humidity of the country reaches around 75% ~ 91% in July which is the sultriest time of the year and around 58% ~ 74% in January ~ April.

Because of mountainous with valleys the country is, it has many long and short rivers and streams. These rivers and streams are generally running off from mountains, so there are big changes in depth and volume as season changes.

The country is one of those countries with high density of river network. The rivers of Tuman and Amnok are the two major rivers of the country starting from Lake Chon on Mt. Paektu of which the former flows to the Korean East Sea while the latter flows to the Korean West Sea bordering People’s Republic of China and Russian Federation. The Taedong River, which runs across the central part of Pyongyang, starts from ridge Hanthae, the eastern pass of Mt. Rangrim, runs to the south-west across the South Phyongan Province and Pyongyang City and flows out to the West Sea of Korea.

4. The Typical Natural Disasters in DPRK

The country suffers from disasters driven by hydro-meteorological hazards almost every year for its geographic location and topographical features.

The typical disasters recorded during 2015 - 2021 were generally from floods, droughts, storms, high temperature and yellow winds.

The major meteorological hazards are heavy rains and downpours. The country, generally, suffers from floods and landslides due to heavy rains triggered by typhoons or during the rainy season from July to September every year, and sometimes from tidal waves, lightening, thunderbolts, hailstones and high winds. There used to be flooding only in heavy rain areas, but are now in occasional rain areas due to frequent downpours. Especially, the Rimwon-dong of Ryongsong District in Pyongyang witnessed heavy rains of highest record in history peaking at 107mm/h on August 24, 2017.

The country is also threatened by high temperature and drought.

Droughts were witnessed in west coastal areas once every 1.5 ~ 2 years in the past. But now, it is observed in almost all areas of the country during the spring season and early of summer season as temperature rises fast due to global warming. North and South Hwanghae provinces, and Nampho City suffered severe drought with only 72.8mm, 105.2mm, 76.0mm of precipitation respectively from April to June, 2017 which were the lowest on record.

The recent high temperature is giving adverse impacts to the national economy and livelihood. The average temperature was 32.6℃ during July 12 ~ 31, 2021 which was 5.3℃ higher than average. And this record was the second for its duration and intensity after the record of 33.5℃ on July 17 ~ August 5, 2018.

Typhoon is, also, a main hazard in our country.

The record shows that typhoons usually came during the period of June ~ October, of which 95% came during the period of July ~ September. The country was hit by 8
typhoons from 2015 to 2020. In particular, the country was hit three times in series between August and September, 2020.


Earthquake is regarded as a hazard that might bring severe disaster to the country.

Earthquakes were occasionally recorded in the country for its low seismicity comparing to China and Japan, so had the country devastating earthquakes as scarce as hen’s teeth in the past, yet is it in danger of earthquake with weak seismic tremors felt frequently in the peninsula. Because of its location laid between China and Japan of frequent earthquakes, there are still rather strong seismic tremors being observed from the depth of 500 km ~ 600 km down the Korean East Sea and Jilin Province.

Volcano, also, is regarded as one of the hazards to the country.

Since Mt. Paektu had volcanic eruption 1,000 years ago, minor eruptions were recorded several times. There was sudden increase of seismic activity of volcanic origin from 2003 ~ 2005, which were recorded in seismometer as many as 7,000 times.

There is no dust storm blowing in the country, but is there affection of yellow wind that originated from China and Mongolia. This yellow wind usually comes in spring, passing our country and Japan and then, moves to the Hawaiian Islands, then to the Alaska crossing over the Pacific Ocean. The country was affected by 5 yellow winds recently. Yellow wind was noticed on March 16, 2021 in Jagang Province, Kangwon Province, Ryanggang Province and in some parts of the west coastal area. And strong yellow wind was noticed in some parts of Kangwon Province, Ryanggang Province, South Hamgyong Province, Jagang Province and in west coastal area including Pyongyang on May 7, 2021.

5. National Policy for DRR

Kim Jong Un, the President of the State Affairs of DPRKorea instructed that every life of people is precious and that ensuring the safety of people is ensuring the existence of party, government and everything of this land. Following this notion, the Government, bearing the responsibility of people’s lives whenever disasters or pandemic situation occur, takes every possible measure on top priority to recover the livelihood of the affected people as soon as possible.

It is the policy set out by the government; to reduce all disaster risks in advance, to respond in time to the natural disaster to prevent or minimize loss and damage, especially, of lives of the people, and to make full recovery better than before.

And the Government has to improve the national system of crisis management which is programmed as to enhance the national capability to cope with any crisis, thus to protect its citizens, as well as public and private properties from all natural disasters or any other factors.
6. NSDRR

SCEDM developed the <National Strategy for Disaster Risk Reduction 2019-2030> with an approval of Cabinet in March, 2019, and is now underway with its implementation by mirroring 4-year periodic action plans to the national economic development plan.

The NSDRR was opened to UN in June of that year.

The NSDRR is composed of 8 Chapters and 4 Annexes with 3 stages of implementation.

They are as follows:

- Chapter 1: General Perspective of Disaster Management
- Chapter 2: Context of Disaster Management Policy and its Legislation
- Chapter 3: Principles
- Chapter 4: Goal
- Chapter 5: Objectives by Stages
- Chapter 6: Specific Objectives
- Chapter 7: Evaluation of Strategy Implementation
- Chapter 8: Organizations

The Annex is given with the context of the national disaster management and three action plans.

The overall Goal of the NSDRR is to minimize losses and damages in lives, livelihoods, and in economic, social, cultural and environmental assets of the state, and ensure sustainable development of society and economy through reducing existing disaster risk, preventing future risk, and strengthening resilience and recovery with well preparation for response and restoration under the unified control and management of the Government during the period of 2019 ~ 2030.

The 4 priorities set out by the Sendai Framework are reflected in the specific objectives of NSDRR.

The NSDRR is to be implemented in three stages every four years, 2022, 2026, and 2030. However, it is to be assessed in relation with yearly national economic plan.

7. Governing System of DRR

The national focal point for DRR in DPRK is SCEDM.

SCEDM is a governmental organ authorized to supervise whole country with strict execution of the state policy and the law on disaster prevention, relief and recovery, and to manage the national or the local emergencies.

And it represents the government for an international cooperation for DRR.

There are permanent DRR departments or sections or staffs in all ministries, local authorities and organizations at national level, which ensures the state level supervision.
by sectors and areas, and to let them take responsibilities for their own DRR activities.

And this is the same in all sub-national levels and root levels.

The Government has made practical system of centralized control for rapid reaction to any emergencies by launching Non-Standing Anti-Calamity Measures Committees (NACC) at national and local levels that can tap all the possible resources, and even call army or rescue team from air or naval forces. All entities are to obey to their regional NACCs and these regional NACCs are to obey to central NACC.

The Government has, therefore, systematized disaster management vertically and horizontally, which shall be strengthened further more.

8. Retrospective Review

This year is the last year of the 1st stage of NSDRR in DPRK.

The stage has produced the heaps of success during this term.

Big progress was made in its capacity building of emergency management to respond to yearly recurrent disasters, and lessons and experiences were drawn in this term, as well.

All local authorities have made lots of outcomes starting with drafting of DRR plans in line with the NSDRR.

The outcomes are the consolidated national disaster management system, the raised public awareness of DRR, the near completion of nationwide risk survey, the improved natural disaster warning system.

Plus to this is there a UNDP driving project the <Community Based Disaster Risk Management> (CBDRM) terminated in 2020.

1) Formulation of local DRR Plans

Drafting local DRR plan is a must for all local authorities to start with stage 1 of NSDRR, and this plan must be reflected to the local economic development plan being assessed yearly and updated.

Disaster does not occur as we predict or forecast, therefore, it requires some amendments and supplements to the strategy according to the annual assessment. And this update is mirrored to all local DRR plans and to local economic development plans.

2) Progress in building national capacity for emergency management

(1) The institutional and legal condition of DRR has been improved.

- <The Law of the Democratic People’s Republic of Korea on the Disaster Prevention, Relief and Recovery> was adopted in Junse, 2014 as Decree No.76 issued by the Presidium of the Supreme People’s Assembly of DPRK,
and was updated 4 times, followed by the same updates for the bylaws. And many DRR concerned guidelines and regulations were announced.

- The Regulation for the Establishment of Natural Disaster Warning System was updated as Decree No. 136 issued by the Cabinet of DPR Korea in December, 2020. And its detailed regulation was updated in February, 2021.

- The Regulation for Emergency Management of Typhoon and Flood was enacted as Decree No.42 issued by the Cabinet in June, 2020, which was updated as Decree No.75 issued by the Cabinet in July, 2021.

(2) The national disaster management system has been consolidated.

The Government carried out the work on a full scale from March, 2020 to establish well organized system of national crisis management with perfect structure that can respond to natural disasters effectively under the centralized control of Non-Standing National Anti-Calamity Measures Committee (NNACC). And this NNACC is more powered up through the rearrangement of the membership.

(3) Raising nationwide public awareness of disaster and resilience was conducted to start with DRR activities.

- Two workshops were held in 2019 separately in east and west of the country aimed at upgrading qualification of DRR staffs. But from 2020, due to COVID-19, it was required to have online workshop only once a year. Around 2,200 staffs in total participated in the workshop where they reviewed their DRR activities, recognized the importance of DRR, found gaps and mistakes, shared lessons and experiences, and introduced models of successes. The participants received handbooks for DRR that would help them with much useful information.

- <Rules of emergency disaster managing>, <How to respond to disasters> and <Actions for Emergency> giving concrete information of what to do for all institutions, organizations and individuals were published and distributed to whole country.

- All institutions and enterprises had to do with enhancement of understanding of DRR among staffs and citizens on regular basis using various ways and means. SCEDM produced a variety of e-publications on DRR practices and knowledge, and disseminated to the public through computer network. In order to make DRR is understood among the population, SCEDM edited <Family Early Action Guideline>, <Emergency Response Guideline> and <Emergency Tips for Children>, and printed 2,000, 1,000, 500 copies of them respectively. SCEDM is publishing the periodical e-bulletin <Managing Emergencies> monthly through network site <Disaster Response> which contributes to the DRR awareness raising.

- SCEDM is on its way with the program to set up emergency response
exhibition gallery where various types of equipment and tools for warning and rescue, emergency tent, family goods, building materials, medicine and common relief supplies are to be displayed, to bring public concern of emergency response.

- The system is established to broadcast on TV and by mass media about DRR technologies, approaches during the period of raining season, dry spell, and winter season and of forest fire prevention campaign.

(4) The programme to ensure DRR backed up by science and technique has been propelled so far.

- The long term plan was drafted in September, 2019 described as to conduct overall survey for those disaster prone areas threatened by typhoon, flooding and storm rain, and to afforest permanent wind breaks, build durable sea dikes and draining facilities.

- Disaster Prevention Technique Exchange Institute was set up under SCEDM, which has the mission to do research for DRR in collaboration with academy and universities, share the information, disseminate the findings and cooperate with national and international communities.

(5) Capacity building for reserving emergency materials and relief supplies has been carried out sturdily.

- SCEDM produced a catalogue of emergency tools and instruments listed as damp-proof bag, tent, waterproof sheet, rescue net, sack, life vest and etc., and made it a must for all the entities to prepare.

- Disaster Prevention Fund was founded in July, 2020 to bring public attention and to encourage international aid and cooperation.

(6) The work to reduce current and potential disaster risks was progressed patiently.

- The national survey was conducted to find out all disaster risks prior to any activity.

First of all, the nationwide disaster risk survey has been conducted, and relocation, repairing for and reducing of those risks were programmed to be driven by years.

All governmental and local authorities, enterprises and communities identified all of their disaster risks to map out their own disaster risk mitigation maps.

The surveys in various sectors were conducted as follows: safety of highways, roads and bridges; risk factors of public health and educational facilities; risks to be identified in coal and other mining industry sectors; safety of all power facilities and installations vulnerable to hazard; dangerous conditions of reservoirs and spillways, dams, floodgates and irrigation facilities; risks of infrastructures like water supply and drainage
facilities including pumps and motors; safety of breakwaters, sea dikes and barrages.

The coastline areas were surveyed in 2020 for the safety of the people in those areas and the coastline protective structures.

- Along with the risk survey, the Government carried out the disaster risk mitigation work at the same time.

To ensure high water catchment, and to prevent loss and damage from drought and land slide, the Government proceeded afforestation toughly year by year in line with the national forest restoration plan.

In 2019, the State Hydro Meteorological Administration (SHMA) increased stations at east and west coastal areas and reservoirs likely to have storms, flooding and sea overflowing, and furnished with automatic observing instruments to inform the observed data in time to the local authorities so that they can take proper measures to respond to or avoid any disaster.

Signals of flood warning or flood stage were marked or installed on bridges or nearby rivers and streams.

(7) The system of emergency response is strengthened.

- The natural disaster warning system in national level was established in June, 2018. And the network site for emergency warning program is accessible for all entities.

SHMA or Bureau of Seismology (BS) shall issue the warning of hazard with no allowance of moment’s delay when it forecasts a certain hazard. After receiving details of the hazard from SHMA or BS, the SCEDM shall estimate the targeted area and its scale, then informs to the Central Broadcasting Committee of Korea (CBCK) and Ministry of IT Industry (MITI-former Ministry of Posts and Telecommunications), and gives alert to the targeted NACCs. The CBCK shall broadcast the information on TV repeatedly, while the MITI sends warning SMS to all mobile phone users. All NACCs that have received alert from SCEDM shall arrange watch posts to all risk places and if it reaches warning stage, shall give warning to evacuate immediately using all means available including siren, bells and other possible communication tools.

- Along with natural disaster warning system, a mass watching and emergency call system is established with emergency call number for disaster warning set newly, so the promptness of warning and communication is ensured.

- Every institution, organization and family has received a leaflet with information of disaster warning signals and rules of actions described in.

- DRR activity has turned into inclusive activity comprising all of society.

Korea Federation for the Care of the Aged and Korean Federation for the
Protection of the Disabled are deeply involved in keeping keen relationship with the SCEDM so that women, the aged and disabled persons are welcomed to free sharing of experiences, lessons and tips of DRR they have, and these people shall be under primary care by the Government when disaster occurs.

A Disaster Prevention Society is organized as an NGO, to encourage public attention for DRR.

- All institutions, enterprises and factories are to organize self-rescue and relief team, and medical care team, and to have evacuation drill, rescue and relief mock drill, and medical service training twice a year appropriate to their context. And, the guideline for evacuation drill is announced.

- The evacuation drill is to be conducted aiming for all citizens to be skilled with rules of actions of what, when, how to do.

  But, the drills were hampered by COVID-19, and they were done in a way of virtual simulation in 2022.

3) Disaster Response and Recovery

Since 2014, shocking disasters have been frequently recorded in DPRK. From 2015 to 2021, relentless nature hit the country near annually.

The Sonbong area of Rason City was flooded by unusual torrential rain in August, 2015.

The northern part of the North Hamgyong Province suffered damages from flooding and landslide caused by storm rain kicked down by typhoon Lionrock in 2016, which is recorded as catastrophic on record in the country since 1945.

West coastal areas including North and South Hwanghae provinces, North Phyongan Province, Nampho City and some parts of South Hamgyong Province were affected by the typhoon Lingling, 2019.

A series of three typhoons from August to September, 2020 caused widespread of property damage to residential and commercial properties, and severely affected the agriculture.

The heavy rain in August, 2021 in South Hamgyong Province resulted in damage of embankments, loss of farm lands and damage of bridges.

However, trails of disasters are hardly found in the country.

It is a principle of the Government to respond to any crisis promptly by means of all resources, thus to bring fast recovery of the affected economy and livelihood.

DRR is finally proved by the result of response and recovery.

Once the disaster is witnessed, the Government starts with action to eliminate disaster trails prior to any activities.
It is principle to build back better than before that no one can recognize the previous state.

There are too many events of timely response to and full recovery from disasters by the appropriate measures taken by the Government, which proved the superiority of its system as a country of people valued.

The President of the State Affairs of DPR Korea gave his instruction to take into account the opinions and recommendations of the suffered people in selecting the safer location to avoid any further loss and damage from future recurrent floods or any disaster, and to bring the renovation of that area with better conditions that can meet the demand and aspiration of the people there and standard of the developing era.

So, it became the firm policy to ease the sufferings of the affected people by providing them homes to live in first.

The followings are the case studies of the recovery from disaster.

**Case 1:**

The disaster in north region of North Hamgyong Province caused by flooding on August 29 ~ September 2, 2016 was costliest ever recorded since 1945.

538 people were missing or dead. 68,990 people were evacuated from their homes. 16,513 buildings were completely destroyed, 29,839 houses and hundreds of public and manufacturing buildings were damaged, 183 blocks of roads, 66 bridges were destroyed, many power substations were affected and power lines were cut resulting in power outages, communication system was paralyzed. 27,411 ha of farm land were submerged, and 150 places of dams, banks and sluices were damaged.

On September 2, 2016, the Government, on the principle of giving priority to disaster recovery, decided to suspend other major construction projects for the time being, and took every possible measures to provide all the necessary materials and emergency supplies to complete the construction of new dwelling houses within one or two months, and on September 3, made its decision to modify the national plan as to concentrate all its resources to the disaster recovery in North Hamgyong Province, especially, to the house building.

Together with this, the Government never tolerated the education in this region being halted or delayed, and took every possible measure to bring the interrupted education normalized. The government appealed all other local authorities to give emergency aid to the suffering people.

As a result, the northern part of North Hamgyong Province recovered its local commerce and industry, and livelihood of the population with new appearances.

**Case 2:**

There was torrential rain from August 1 - 2, 2021 in South Hamgyong Province. Dike failure and flooding were experienced due to extensive water pressure from the elevated water-levels. Around 1,170 residential buildings were destroyed or
submerged and around 5,000 people were evacuated from their homes.

Substantial damages were witnessed in more than 16,000m of road, 8,000m of banks and dikes, numerous bridges and in agricultural land.

A national disaster recovery managing team was organized and dispatched to the spot to take all necessary actions instantly with financial and material support.

The Government called the armies stationed in the area to restore the damaged roads and therefore, the transportation and commerce were recovered in short time.

The Government paid primary attention to the displaced people and provided foodstuffs and medicine, and ensured the people to drink purified edible water.

As is evident, the disaster resilience and recovery in DPRK is ensured by policy with its full execution.

※The 5year casualties and missing compared to population increase is shown in the table appended.

9. International Cooperation for DRR

It is indicated clearly in 7 global targets of Sendai Framework to substantially enhance international cooperation to developing countries through adequate and sustainable support to complement their national actions for implementation of the present Framework by 2030.

Up to 2020, before the outbreak of COVID-19, UN agencies and international NGOs in DPRK had been active in their support of humanitarian assistance in DPRK for frequent natural disasters, and had launched numerous DRR related projects.

UNDP approved 5 year project, the "Community Based Disaster Risk Management" starting from 2015. The project was to enhance the resilience in 15 Ri level communities in Yangdok County of South Phyongan Province and Singye County of North Hwanghae Province with the activities of disaster risk survey, public awareness raising of disaster risks, disaster risk mapping and structural construction.

The outcomes of this project were the "Framework for Community Based Disaster Risk Management in DPRK", "Community Based Early Warning Protocol" and "Ri Level Disaster Risk Management Plan". And disaster risk maps and evacuation routes were developed in 15 communities which will contribute to the DRR of these areas. Together with these non-structural outcomes, there were structural outcomes produced. 5 panels of evacuation map and water level marks were placed in 9 communities each. 4 communities in Yangdok of South Phyongan Province, 8 communities in Singye and 3 communities in Yonsan of South Hwanghae Province were provided with 3,953t of cement in total, to build bridges, culverts, gully check dams, spillways, greenhouses, shelters and warehouses, and to repair those schools, clinics and assembly halls in danger. This project was completed in November, 2020.

European Union Project Support (EUPS) 2(Save the Children) had completed the DRR
projects in Yonggwang County and Sinpho City of South Hamgyong Province in 2017. The outcome of this project was the publication of <Emergency Note for Children> printed in 150 copies and distributed to the DRR staffs and education personnel in Yonggwang, Rakwon counties and Sinpho City of South Hamgyong Province, Yonsa County of North Hamgyong Province, Sungho County of North Hwanghae Province and Chonnae County of Kangwon Province.

The constructions for the high schools in Jadong-ri in Yonggwang County and Sinpho City of South Hamgyong Province were completed in 2017. A workshop for DRR staffs and educational personnel from 6 counties of South Hamgyong Province was taken in September, 2017.

EUPS7 (Handicap International) had workshops in Pongsan County of North Hwanghae Province, Hamhung City of South Hamgyong Province and Sinuiju City of North Phyongan Province in collaboration with KFPD for those DRR staffs and handicapped protectors on how to develop disaster risk management plan for the people with disabilities. The EUPS 7 had supported the rebuilding of a school for deaf and dumb in Pongsan County of North Hwanghae Province. This humanitarian partner had contributed in raising DRR awareness among the people with disabilities including drafting and distribution of a Guidebook on DRR Planning for the Handicapped in 2018.

EUPS 4(Deutsche Welthungerhife) gave cooperation for the publication of a book <Common Sense for DRR Personnel> with print of 1,000 copies and production of DRR multimedia in 2019.

EUPS 3(Concern Worldwide) also, contributed to the country’s DRR including the construction of gully check dams and development of Ri-level DRR Plan in Munyang-ri and Hoam-ri in Koksan County of North Hwanghae Province.

International Federation of Red Cross and Red Crescent Societies (IFRC) had offered substantial assistances to DPRK with an integrated community resilience program (ICRP) being implemented in combination with DRR in several areas of the country. IFRC had also contributed to the DRR awareness raising through the publication of <Family Early Action Guideline> and <Emergency Response Guideline> with 2,000, and 1,000 copies printed respectively.

UN agencies and international NGOs remained steadfast in their support of humanitarian assistance in DPRK whenever the country is affected by disasters.

When Rason area suffered damage by floods due to typhoon *Chan-Hom*, 2015, UN agencies, EUPS and IFRC offered substantial emergency supplies with tents, family kits, metal roofing, oxygen producer, neonatal resuscitator and portable heaters accounting for 592,926 pieces of 67 items. The Red Cross of China, also, had donated USD100,000 for an emergency aid.

Typhoon *Lionrock*, 2016, struck the northern part of North Hamgyong Province in August. International humanitarian community including UNICEF, UNFPA, WHO, WFP, EUPS, SDC(Swiss Agency for Development and Cooperation) offered emergency supplies with hundreds of thousands pieces of tens of items like kitchen things,
toiletries, first-aid kits, water purifiers, school things, teaching tools, tents, foodstuffs, clothing, toys, metal roofing, cement, tiles and so on. Besides, the governments of several countries and outside international humanitarian partners had offered emergency aid. Thanks to all these humanitarian contribution, the construction of 11,928 residential buildings and 105 public buildings were able to be completed in success and in time.

UN agencies and NGOs in DPRK had contributed to the easing of emergencies during the drought and flooding occurred in 2017 through the supply of motors, pumps, transformers, medicines, foods and etc. When Munchon City of Kangwon Province and Kowon County of South Hamgyong Province were hit by flood due to shower and extensive rain, IFRC had released emergency relief supplies for 800 families with nearly 20,000 pieces of 1,760 sets of 8 categories.

And for the disasters happened in 4 counties of South Hamgyong Province due to typhoon Lingling, 2019, IFRC released emergency supplies for nearly 80,000 pieces of 2,900 sets of 8 categories. And other UN agencies including UNICEF, UNFPA, WHO, WFP had offered emergency aid with substantial amount of supplies with 148 sets of 4 items such as first-aid kit, medical supplies for delivery, fortified biscuits and so on.

Availing itself of this opportunity for the MTR-SF, the Government of DPRK would like to extend deep gratitude to the Governments, UN agencies, international NGOs and other charities for their devoted humanitarian assistances with sincere regrets to people and the country for the disaster suffering.

10. COVID-19

Obviously, the worldwide health crisis due to pandemic disease has affected DRR outcomes adversely and even national plan.

In early 2020, our neighboring countries fell into emergency state of epidemic disease named later by WHO the COVID-19, and the Government, bearing heavy responsibility to protect its population from the disease, took grim measures instantly on its initiative to block all borders of the country, thus to build tight cordon sanitaire across the country. And the Government also transformed the system of industry into self-reliance system based on domestic resources.

The national emergency anti epidemic headquarter was set up to manage and supervise the emergency, while the related regulations and guidelines were drafted immediately and notified to all over the country.

A regulation for emergency control of epidemics (provisional) was worked out in June, 2020, and two months later, on August 22, <The Law of the Democratic People's Republic of Korea on Emergency Prevention of Epidemics> which consists of 5 chapters and 75 provisions was adopted as a Decree No.369 of the Presidium of Supreme People's Assembly. The law was updated several times later. Through this approaches the epidemiological system of the country could have been strengthened further.
All institutions and enterprises were ordered to have meetings through network.

The country fell into panic in early May, 2022, for the outbreak of COVID-19 BA.2 across the country. To cope with this situation, the Government raised epidemiological level to the highest level from 12th of May closing all provinces and counties, blocking all working places and residential buildings, and ensured all population to be examined.

The major task for the Government was to take measure to keep medical observation and appropriate treatment, and to eliminate the source of spreading, that it required all working and living units to sterilize their environment every day, every hour.

At the same time, the Government released central emergency medical supplies to ensure unhindered treatment and care, and dispatched 3,000 military surgeons to the public drugstores to enhance the medical care service. All of the drugstores have been provided with emergency medical supplies from the Government, and were ordered to open 24hr to give service to the patients.

Together with this, foodstuffs and relief supplies were delivered to all residential blocks to avoid any inconvenience in families.

Around 1,428,000 health care providers were engaged in anti-epidemic campaign. Medical service groups were arranged in all communities for medical examination and care. About 2,400 medical veterans volunteered in the group. All students from universities and colleges of medical care joined here. A number of voluntary helpers were increased day by day. Besides, there were many admirable behaviours recorded during this period of time such as helping each other among neighbours and between servicemen and civilians. Actually, it became all-out campaign to resist the infection.

This perfect unity of government and people brought worst situation eased in 20 days and showed the trend of mitigation.

Though the worst situation is eased, the Government never tolerated the people to be relaxed with COVID-19, on the contrary, stayed persistent with more tightened control of quarantine, and raised higher of awareness of epidemic risk.

DPRK has, finally been recovered from the shock of COVID-19 BA.2 in 100 days from the time of outbreak or in 91 days from the day of raising epidemiological level to the highest. And now, the whole country is at ease as before. It is ensured in the country with the condition to control the source of outbreak of COVID-19.

Consequently, the COVID-19 BA.2 has been completely removed away with its outbreak source from the country, and the trend of observing rules for epidemic control is being more encouraged in public. Of course, the sterilization is further required, and every possible routes are blocked in the country.

The Government of DPRKorea has formally declared on 10th of August, 2022 that the country overcame the unprecedented health crisis in history and fully recovered stability and calmness of community and economy after extirpating the malignant virus, and consequently, lowered the epidemiological level from highest to normal, but highly strained and intensified.
Numerous charming happenings were recorded these days.

The President of the State Affairs of DPRKorea offered his family first-aid medicines with humble wish to contribute to the health care of the infected people. Of course, this offer was delivered to the families in difficulty of livelihood. This left another episode of his people loving legendary.

And even at this emergency, all of the children under 5 in the country received baby milk powder and dairy products from the government in 24hr thanks to the special measure taken by the President of the State Affairs of DPRKorea.

There are too many laudable episodes about military personnel etched into the heart of our people which are of; emergency obstetrical service, revival of patients by their devoted care, food cost paid to the household to avoid any bother, and so on. And also, are there many praisable episodes about civilians, that neighbors endured pains by sharing scanty medicines, inspiring others helping those running out of foodstuffs, voluntary joining to the medical checking, and so on. All these episodes proves the good harmonization of the ruling party, the government and the people that enabled the state to overcome the crisis.

**11. Prospective Review and Recommendations**

The followings are the examples of DRR being launched in the country that might be advisable to other nations.

*Announcement of the Term of Natural Disaster Emergency Response*

The DPRK Government, from the experience of recurrent disasters, fixed the period from June to September as the Term of Natural Disaster Emergency Response to be initiative and active in responding disasters. Then, task forces named as the Disaster Emergency Managing Group (CDCG) start their operations at national, local and root levels to cope with the disasters instantly.

This mechanism proved to be very effective in ensuring timeliness of disaster response from the early of emergency so as to minimize loss and damage.

*Immediate tasks after warning of Typhoon*

Once the typhoon warning is issued, the Government gives following instructions to all local authorities, institutions, enterprises and communities.

- To assess their own resilience based on chronic records.
- To prepare for protection of lives of people and prevention of damage to public and private properties.
- To find out all possible risks and check all vulnerable zones.
- To ensure all prevention works to be conducted through mass campaign.
- To ensure all human beings evacuated from mountains, valleys, rivers, lower
areas, flood risk areas, landslide-prone areas, underground and risk buildings.

- To ensure all the water levels of reservoirs and irrigation ponds are controllable and minute-to-minute communication.
- To ensure all power sectors ready to be protected from typhoon by giving special alert to them.
- To ensure agricultural sector prepared to minimize damage to or loss of crops and land which are the most vulnerable to hazard.
- To take action to protect sea dikes and bank revetment sites from typhoon and storm wave.
- To check highways and roads, and remove all risks.
- To ensure all thermal power stations, mines and coal mines, land and marine transportation sector, fishing sector ready to cope with typhoon and storm waves.
- To ensure all workers, equipment and structures in major construction sites protected from loss and damage.
- To ensure task force of search and rescue at national level stand by to be dispatched in time to disaster areas. Local rescue teams must be ready with enough manpower and thorough equipment.
- To ensure the collaboration between civil and military force.

Empirical study

**People who conserved mountains and rivers**

Unsan County of North Phyongan Province in DPRK is a mountainous region with many rivers and streams. In the past, this region used to suffer damage and loss from landslides and overflowing.

The mountains and rivers were to be blamed of disasters but the people there persistently pushed ahead with afforestation and water conservancy, that these mountains and rivers are now beneficial to them. The authority paid attention to the renovation of the land with constant afforestation and water conservancy. And now, there is no speaking of <disasters because of mountains> or <disasters because of the rivers>, but speaking of <benefits from mountains> or <benefits from the rivers> that will hand down to generations.

Unsan County carried out river improvement project for long years. They dredged the rivers, reinforced river banks and built roads on top of dykes.

They also reclaimed soil and swamp, and planted trees for erosion control so that arable land will no longer be susceptible to various natural disasters.

Having broadened passes and constructed retaining walls, they improved the
technical standard and safety of roads.

Furthermore, they built tree nurseries to produce millions of saplings every year, which were all planted on the mountains, thus, all the mountains are now covered with thick green forests.

The people of Unsan County say that afforestation and water conservancy should be a top priority work to avoid natural disasters.

Their experience is worth to be disseminated to all across the country.

12. Conclusion

Whatever or whenever natural disasters or a sudden unwanted state of emergency occur in the country, it is surely possible to overcome any crisis successfully once the government launches timely appropriate policy and interventions backed up by high public awareness of crisis, voluntary engagement and harmonious cooperation.

The strengthened resilience to future natural disasters is certainly important, however, the Government of DPRK would like to post its comment availing this opportunity, that since the world is clear with the climate change due to global warming being one of the main reasons of recurrent disasters, it should be a principal global target to find out the solution that can stop the global warming.

This global warming invites climate change, destruction of biological diversity, desertification, forest fire, sea-level rise and new viruses due to iceberg melting and so on which give only major adverse impacts to the human beings.

Accordingly, to hamper the global warming that generates the climate change followed by natural disasters is considered to be the root task prior to all global actions to protect global livings. And the whole world should keep pace for the common interest of mankind.
13. Table

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<tr>
<td>2020</td>
<td>2,555.40</td>
<td>0.00</td>
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</tr>
</tbody>
</table>

**Number of Deaths and Missings to Population, 2015 - 2020**

(Population in 0,000)

**Annual average of Deaths and Missings per 100,000 people, 2015 - 2020**
Each Year's Proportion to Total Mortality, 2015 -2020

- 2015: 26.21%
- 2016: 20.63%
- 2017: 18.45%
- 2018: 12.61%
- 2019: 1.21%
- 2020: 1.21%

Each Year's Proportion to Total Missing, 2015 -2020

- 2015: 78.13%
- 2016: 14.65%
- 2017: 14.65%
- 2018: 2.34%
- 2019: 0.59%
- 2020: 0.59%