

Briefing Note – 13 September 2016

DPRK Floods



Need for international assistance	Not required	Low X	Moderate	Significant	Major
Expected impact	Very low	Low	Moderate X	Significant	Major

Crisis overview

Major flooding in northeastern DPRK, primarily in North Hamgyong province, has affected 600,000 people, left 140,000 in urgent need of assistance, and displaced 107,000. 395 people are missing, and 133 have died. Considerable damage to vital health, water, and transport infrastructure leaves much of the affected population without shelter and vulnerable to waterborne diseases and food insecurity.

Key findings

Anticipated scope and scale

Lack of access means that the damage is greater than the current figures estimate. Estimated damage has already risen sharply.

The humanitarian situation (WASH, food security and shelter) may worsen if access is constrained further, and prevents a timely response.

Priorities for humanitarian intervention

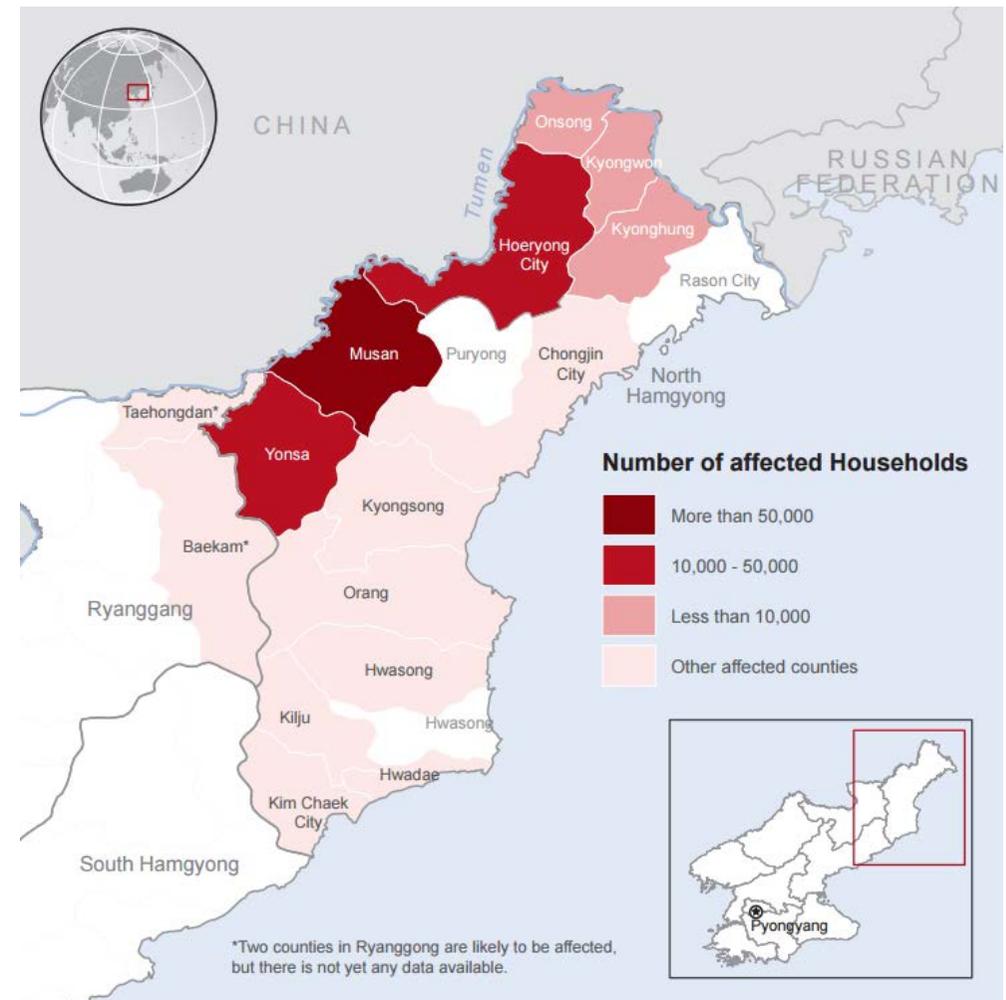
- **Shelter** for the 107,000 displaced, particularly as sub-zero nightly temperatures will begin in late October.
- **WASH:** Safe drinking water, rehabilitation of infrastructure, dissemination of safe hygiene practice information.
- **Health:** Treatment for waterborne diseases, rehabilitate health delivery capacity, immediate care for the displaced.

Humanitarian constraints

Damage to roads and bridges has rendered the most affected areas completely inaccessible.

Humanitarian activities are also likely to be restricted for political reasons, although flood response has been relatively unconstrained in the past.

Counties in DPRK affected by flooding



Source: OCHA 11/09/2016

Limitations

Despite concerns of government bias, DPRK's state media has historically been reasonably accurate in flood reporting, and it cited near identical damage estimates to OCHA in the week following the initial heavy downpour (The Guardian 3/9/2007, Pyongyang Times 09/09/2016, OCHA 05/09/2016).

However, there has been no independent needs assessment and there may be gaps in reporting..

Lack of access means information is not available on Yonsa and Musan counties.

Crisis impact

Typhoon Lionrock swelled after colliding with a low pressure system above northeastern DPRK on 30 August, triggering heavy rains that caused the Tumen River, which forms the border with China, to overflow. By 11 September, it was estimated that flooding had affected all counties in North Hamyong province and, to a much lesser extent, parts of neighboring Ryanggang, leaving 600,000 people affected, 140,000 in need of urgent assistance, 395 missing, and 133 killed. The damage is thought to be far worse than current estimates indicate (Washington Post 12/09/2016).

Within North Hamyong, Hoeryong city and Musan and Yonsa counties are the most severely impacted (OCHA 11/09/2016). DPRK state media have claimed that the damage includes submerged railways, factories, roads, power supplies and farmland along with "tens of thousands" of houses and public buildings that collapsed (KCNA 11/09/2016).

Shelter: 107,000 people have been displaced. 24,000 homes have been destroyed and another 11,500 damaged (FloodList 12/09/2016).

WASH: Safe drinking water is a priority. Lack of WASH access has already led to diarrhoea among the affected, and the situation is expected to worsen. 600,000 people have been affected by interrupted water supply, including 104,000 people in Hoeryong city, North Hamgyong, who have no water access (OCHA 11/09/2016). Much of North Hamyong has lost its sanitation and water supply infrastructure (IFRC 12/09/2016).

Health: Cases of diarrhoea has already been reported among those affected. Much of North Hamgyong's health delivery facilities have been damaged (IFRC 12/09/2016).

Food: Urgent food assistance is required by many of those displaced. 16,000 hectares of farmland – mainly rice – was destroyed only weeks before the harvest was due (IFRC 12/09/2016).

Education: At least 23 schools have been damaged (OCHA 05/09/2016, Pyongyang Times 9/9/2016).

Impact on critical infrastructure

A hydroelectric dam was destroyed, according to DPRK state media (KCNA 9/9/2016).

Vulnerable groups affected

Children and older people are typically affected disproportionately in floods, but no specific information is available regarding the present crisis.

Humanitarian and operational constraints

- At least 112km of road and 2,215m² of bridge parts have been severely damaged (OCHA 05/09/2016). The worst affected areas in Musan and Yönsa counties are completely inaccessible (FloodList 12/09/2016, Pyongyang Times 9/9/2016)
- Operations by UN agencies and NGOs are usually heavily restricted by the government (WFP 07/2016). However, DPRK authorities have historically been quite open to international agencies during flood disasters, and state media have reported on IFRC assistance (KCNA 08/09/2016). The state has a monopoly on food distribution and allocation has in the past been discriminatory (OHCHR 17/03/2014).
- Sanctions on DPRK have disrupted aid work in the country, and if international pressure increases following the major nuclear test of 9 September, operational constraints may grow (China Post 28/07/2016).

Aggravating factors

Seasonal factors

Rainy season: The rainy season is from June until October in DPRK, and the tropical storm season from June to November, making further rain or natural disasters a possibility. Extensive flooding damage has occurred from July to September in five of the last six years (Reliefweb 13/09/2016). In 2015, Rason City in North Hamgyong was the most affected (UN One 2016).

Lean season: The traditional lean season is also ongoing – it runs from May to September (WFP 2011) This is particularly acute as DPRK has also been moderately impacted by drought in this year's El Niño event (WFP 04/2016). North Hamgyong is particularly vulnerable as it was one of the four provinces worst affected by drought in 2015 (UN One 2016).

Winter: By the end of October, overnight temperatures in North Hamgyong province may dip below zero, which makes the reconstruction of shelters extremely urgent. Winter begins in December, and temperatures can drop to 30 degrees below zero at night (IFRC 12/09/2016).

Population density

Densely populated areas are more significantly impacted by flood disasters. Density in the most affected counties are 31.5 people per km² in Yonsa, 95/km² in Musan, and 88/km² in Hoeyong City. This is below both the overall population density of North Hamgyong (110/km²) and DPRK (199.5/km²) (DPRK Census 2008).

Location and type of housing/infrastructure

In North Hamgyong, as of the 2008 census, 53% of the 587,844 houses are row houses, 25% are single detached houses, 16% are in apartment buildings, and 6% are other types. 72% of homes have 50–75 m² of floor area (DPRK Census 2008).

Key characteristics

Demographic profile: The total population of the most affected areas (Yongsa county, Musan county and Hoeyong city) is 314,735. In North Hamgyong, there were 2,326,362 people in 2008 (DPRK Census 2008). 9.9% of DPRK's population is over 65 and approximately 48.4% of the population is male (CIA Factbook 2015).

Food security: an estimated 18 million people, or 70% of the population, are food insecure (WFP 07/2016, IFRC 05/09/2016).

Nutrition: 10.5 million people are undernourished (FAO 2015).

Health: Under-five mortality: 24.9/1,000 live births; infant mortality: 19.7/ 1,000 live births; maternal mortality: 82 per 100,000 live births (World Bank 2015).

WASH: 20% of the population do not have access to clean water and adequate sanitation facilities (UN 01/2016)

Lighting and cooking: Coal is the main fuel used in cooking and heating among urban households (63% use coal), while rural households rely mostly on wood (77% use wood) (UNFPA 2008).

Literacy 100% of the population over 15 is estimated to be literate (CIA Factbook 2015).

Response capacity

Local and national response capacity

DPRK authorities are responding, and evacuated over 50,000 people before the floods struck. The government has also pledged to rebuild 20,000 homes by early October. The military will be involved in the response (CNN 12/09/2016).

1,000 DPRK Red Cross volunteers were immediately deployed and assisted in search and rescue operations as well as first aid (IFRC 12/09/2016).

International response capacity

Relief materials stockpiled in-country by humanitarian agencies have been released; these include water purification and sanitation supplies, food assistance, shelter kits, and nutrition supplements (OCHA 11/09/2016).

IFRC and OCHA are currently providing assessments, coordination or assistance (IFRC 12/09/2016, OCHA 11/9/2016). Five UN agencies (FAO, UNFPA, UNICEF, WFP, and WHO) and four international NGOs operate in DPRK (UN One 2016).

Information gaps and needs

- The lack of access means information is not available for all areas.
- No completely independent needs assessments may be carried out in DPRK. There may be gaps in the government-led assessment of 6–9 September (Amnesty 05/12/2013, OCHA 05/09/2016).
- DPRK Red Cross assessments have previously under or overestimated the level of damage (IFRC 31/01/2014).

Lessons learned

- Of the three provinces that experienced flooding in 2015, North Hamgyong was the most affected. In total, over 22,000 people required assistance across 20 counties. Shelter, clothing, WASH and NFIs were the highest priorities in budgetary terms (IFRC 08/09/2015).
- In 2013, flooding severely impacted 800,000 people across the country, displaced over 48,000, and destroyed over 11,000 hectares of farmland. Response priorities

included shelter kits, water infrastructure, messaging on safe hygiene practices, immediate healthcare, and emergency food aid (UN DPRK 23/09/2013).

- Reports were produced to enhance the needs assessment capacities of volunteers that worked in the field, as information on the scale of damage in 2013 was often under or overestimated (IFRC 31/01/2014).
- In 2013, transportation of materials into affected communities took much longer than estimated. Additionally, more hygiene promotion, personal WASH treatment kits and SETA units were required (IFRC 31/01/2014).

The repeated extensive damage caused by floods in similar areas, at identical times in the year, suggest that previous resilience efforts have not been successful.