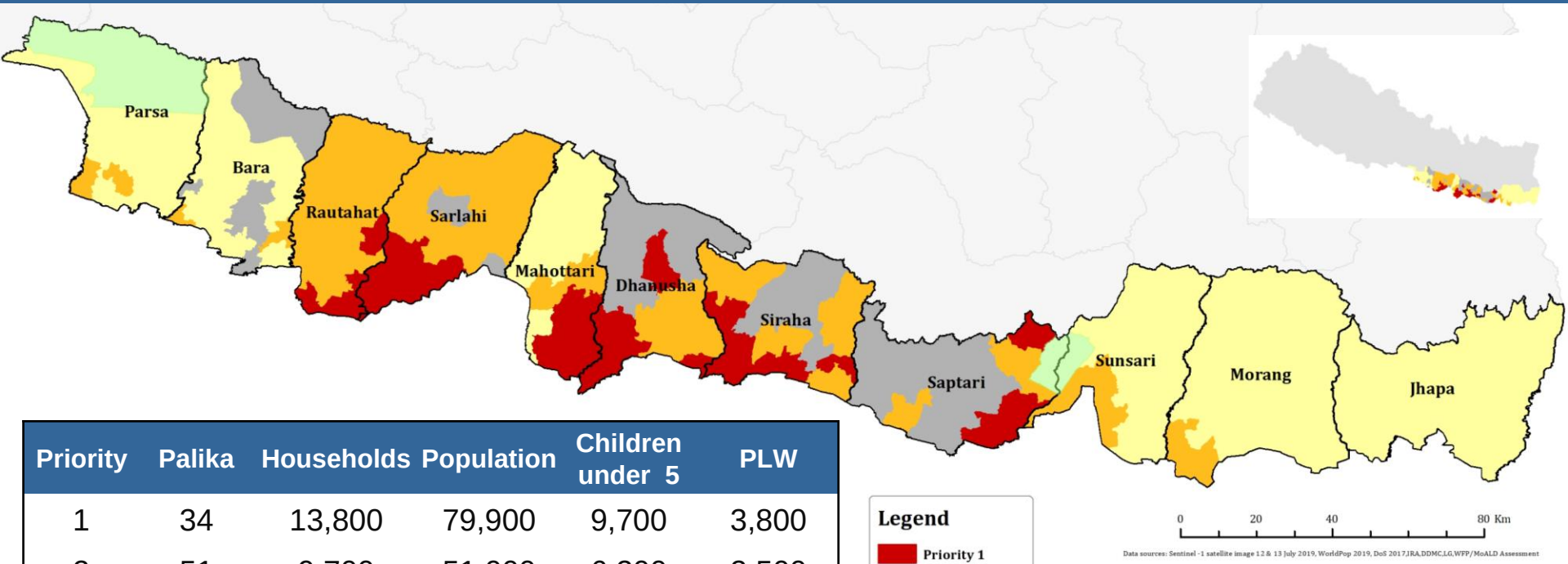
# NEPAL

Flood | July 2019

*72-hour assessment*
*Contents may change based on updated information*

VERSION_3
16 August 2019

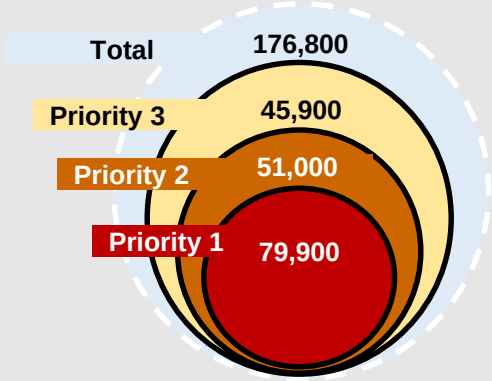



| Priority | Palika | Households | Population | Children under 5 | PLW |
|---|---|---|---|---|---|
| 1 | 34 | 13,800 | 79,900 | 9,700 | 3,800 |
| 2 | 51 | 9,700 | 51,000 | 6,200 | 2,500 |
| 3 | 64 | 9,500 | 45,900 | 5,500 | 1,400 |
| **Total** | **149** | **33,000** | **176,800** | **21,400** | **7,700** |

Heavy rainfall on 11-12 July caused landslides and flooding in 32 Districts, affecting the food security of an estimated 33,000 households. Flooding was most severe in 11 Terai districts of Provinces 1 and 2.

While food commodity markets have largely recovered, the destruction of household food stocks and of rice plantation (35,000+ hectares of rice losses) pose an immediate challenge for food security, and also through the end-of-year harvest period. Food security was also affected by extensive damage to assets, housing and water and sanitation infrastructure.

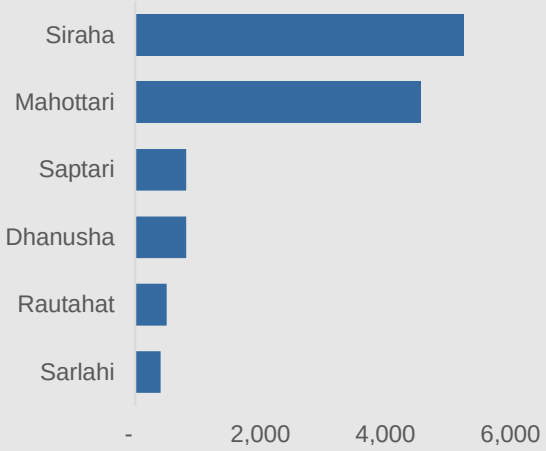
## Priority Populations for Food Assistance



# Overview

## Shelter and Displacement

### Displaced Families




Immediately after the flood, many of the affected households initially took shelter on higher ground in schools, tents, community and public buildings. Above 20,000 families were first estimated displaced.

At least 12,000 households were estimated displaced in six Districts as of 29 July, a majority of whom are in Siraha (5,300) and Mahottari (4,600) Districts. The number of displaced has decreased as water recedes and households who are able move back.

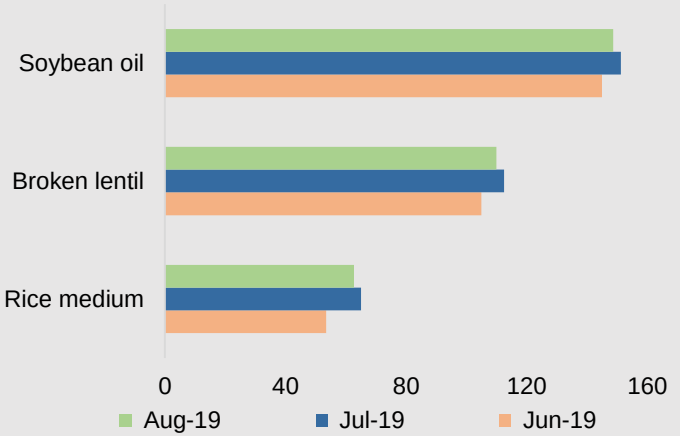
However many homes are still partially damaged or destroyed. Consultations within the most affected communities in each District suggest that close to half of all homes in affected areas of Rautahat, Siraha and Mahottari are either severely damaged or destroyed. An estimated one quarter of all houses in Sarlahi and Sunsari Districts' most affected communities were severely damaged or destroyed.

## Accessibility and Markets

Road connectivity has been reinstated in most flood affected areas as water levels have largely receded. Certain areas with serious road damage (Ishnath and Durga Bhagwati rural municipalities of Rautahat district and Balara, Dhankaul and Bishnu rural municipalities of Sarlahi district) are still only partially accessible.

Food prices increased across the board in July just after the flooding. While road connectivity has largely restored and market access almost back to pre-flood levels, prices have not all yet returned to normal levels. From their initial increase in July, August prices have slightly declined for rice, wheat flour, soybean oil and lentils. However certain areas and certain commodities saw increases from the post-flooding period, namely in tomatoes, lentils and soybean oil, focused in Siraha and Dhanusha Districts. Relatively higher rates of price declines in certain Districts could possibly be associated with an increase in supply from government and partner-led food interventions.

### Food Commodities avg. Price Changes




It is also reported that flood-affected municipalities bordering India are accessing Indian markets adjacent to Nepal, where they can get food commodities at relatively cheaper prices. This could also be having a stabilizing effect on Nepali markets, putting downward pressure on food prices and helping markets to regain pre-flood price levels.

### Post-flooding District-level Food Prices

| District | Rice coarse | Rice medium | Wheat flour | Soybean oil | Broken lentil | Potato | Tomato |
|---|---|---|---|---|---|---|---|
| Bara | 45 | 66 | 50 | 160 | 100 | 45 | 90 |
| Dhanusha | 42 | 60 | 55 | 150 | 120 | 40 | 150 |
| Mahottari | 40 | 60 | 50 | 130 | 120 | 40 | 160 |
| Parsa | 45 | 65 | 50 | 140 | 110 | 40 | 90 |
| Rautahat | 46 | 62 | 50 | 160 | 100 | 40 | 95 |
| Saptari | 40 | 60 | 60 | 140 | 110 | 50 | 120 |
| Sarlahi | 47 | 64 | 52 | 160 | 100 | 40 | 80 |
| Siraha | 40 | 65 | 55 | 150 | 120 | 40 | 160 |

25 to 35% | 1 to 24% | 0 to -2% | -3 to -11% | -12 to -25%

*Data (left) are shown for primary markets in each District. Colors represent the percentage change in price compared to immediately post-flood prices, as of early-mid August.*

*Source: DDRC, NRCS, NeKSAP*

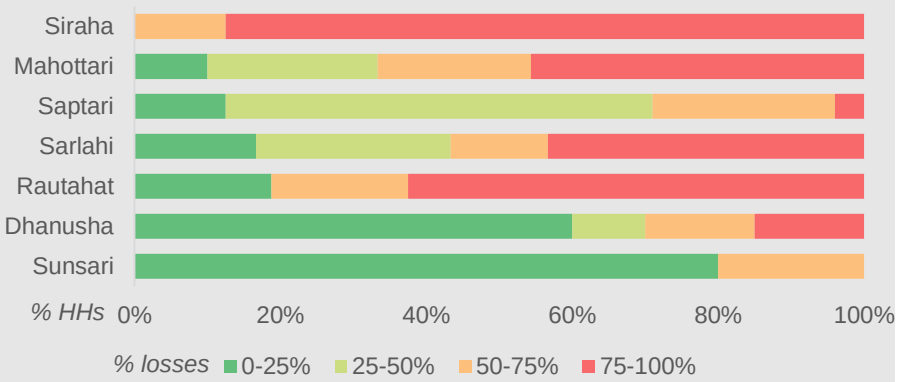
# Overview

## Food Security

**Food stock and food assistance**

Many households in flooded areas have lost food stock from the winter harvest (wheat), together with stored commodities such as rice, pulses and vegetables. Within the most affected communities of each District, losses were largest in Siraha, Rautahat, Sarlahi and Mahottari, with between 40-80% of households having lost upwards of 75% of their food stock. Many people in the flood affected areas are now depending on relief food distributed by the government, WFP and I/NGOs, for the most part consisting of dry food goods.

### Household food stock losses in most affected communities (% of households)

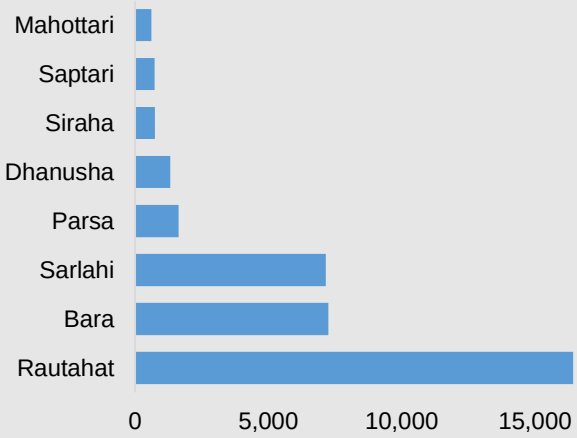



**Summer rice cultivation**

July is in the lean season and also a peak period for the plantation of rice in the Terai. Rice plan--tation in the Terai accounts for 70% of the country, and is normally harvested in October/November. At the time of the flooding, the Ministry of Agriculture and Livestock Development estimates that 35% of rice plantation was completed in the Terai (July 16 report).

It is estimated that the flood damaged 50% of planted rice. Agricultural Knowledge Centres (AKC) in affected areas have estimated that rice crop losses alone cover almost 36,000 hectares in these districts. The largest estimated rice crop losses are concentrated in Rautahat (16,400 Ha.) Bara (7,300 Ha.) and Sarlahi (7,200 Ha.) Districts.

### Estimated Rice Losses (Ha.)



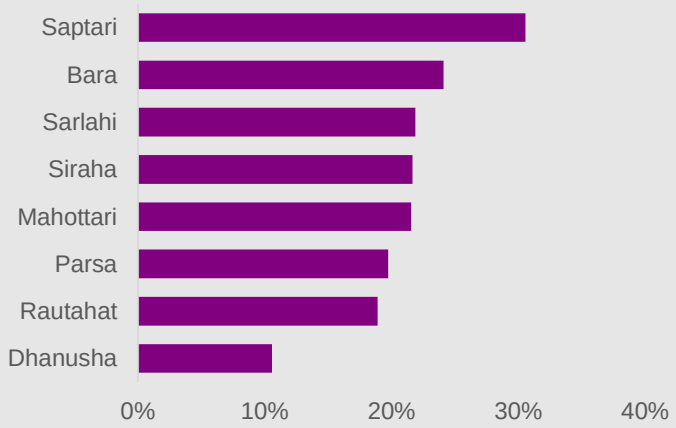

## Nutrition

**A dire malnutrition situation, exacerbated**

In the weeks following the flooding, Nepal's Nutrition Cluster conducted a Rapid Nutrition Assessment in the most-affected Wards, collecting MUAC measurements for over 5,000 children. While acute malnutrition is a serious issue in Province 2, with average rates of child wasting close to 15%, the July flooding has greatly exacerbated this situation.

The most affected areas across all studied districts note a Global Acute Malnutrition (GAM) rate well above the 15% WHO threshold used to guide intervention during emergencies. This is in contrast to GAM rates of 7.6% found through the SMART survey's MUAC measurement in 6 Terai Districts in 2018. This dramatic increase is an indication of effects of sudden flooding on the ability of children under 5 and pregnant and lactating women to access adequate nutritious foods, worsening an already poor malnutrition situation.

### Estimated Average GAM Rates in Most Affected Areas



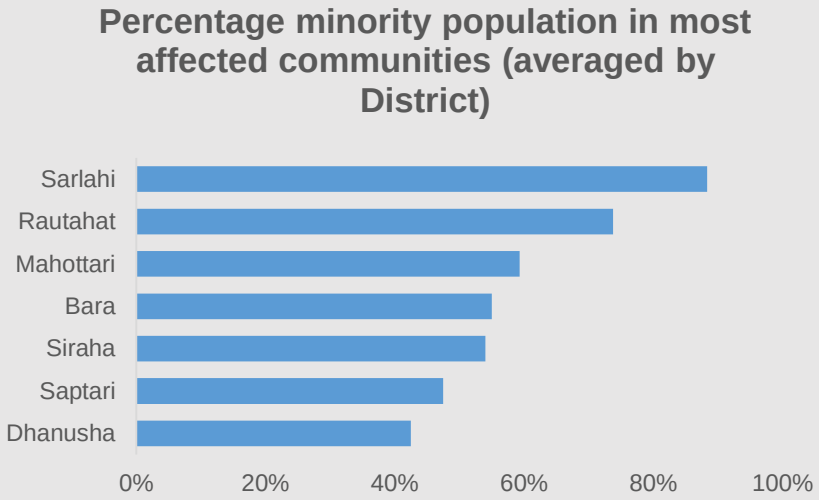

*Source: AKCs, DDRC, NRCS, NeKSAP, Nutrition Cluster*

# Overview

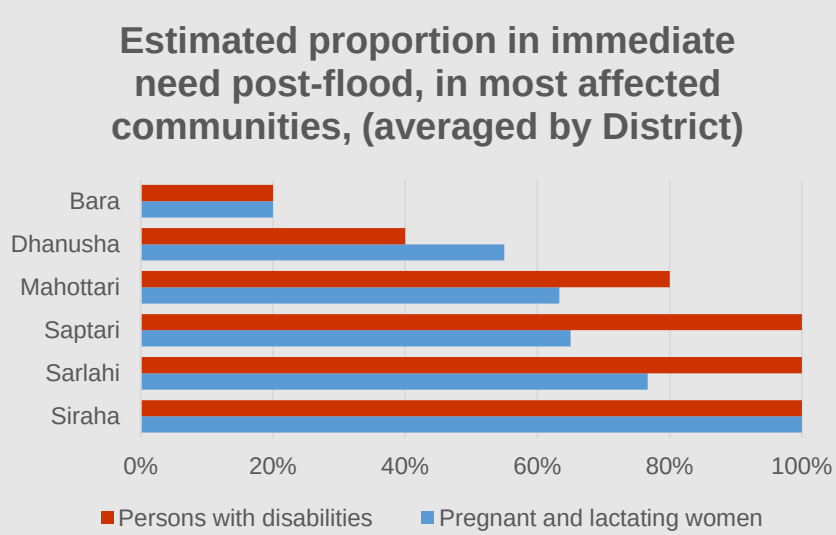
## Protection

**Socially marginalized groups**

Dalit and Janjati and other marginalized groups, were highly affected by the flooding. In fact, within the 21 most-affected communities in which in-depth community level consultations were conducted, over 60% of households were of minority groups. This ranged from an average of close to 40% in Dhanusha, up to nearly 75% in Rautahat District.




While base food poverty explains the large representation of these groups in the priority areas identified, inquiry on the ground suggests that minority households bore the brunt of the damages. These groups tend to have more precarious housing, often located in more risky or precarious areas. Their food stocks are also lower, which, combined with their poor livelihoods and assets, means that these groups were not only highly exposed and vulnerable to the flood, it will also be harder for them to recover.




**Pregnant and lactating women and persons with disabilities**

The flooding also seriously impacted vulnerable groups such as pregnant and lactating women and persons with disabilities. Most persons with disabilities in affected areas had shelter-related immediate needs, and mentioned the importance of having assistance delivered in a package, to minimize the unequal or piecemeal access to relief items and services.

## Resilience Profile

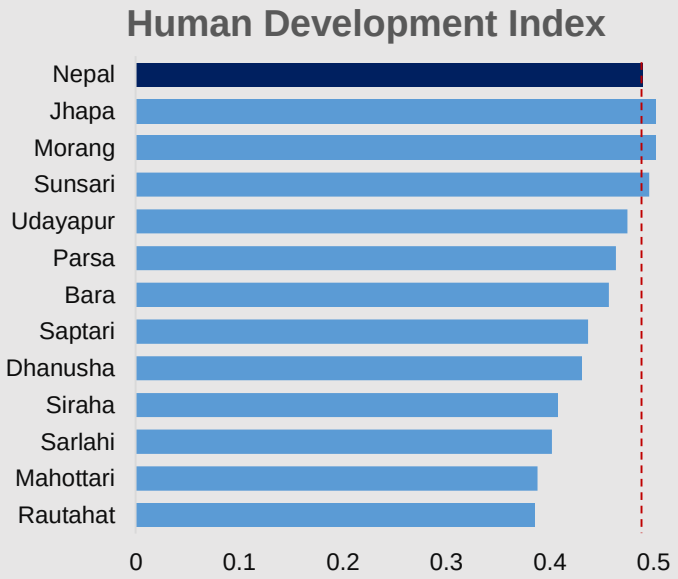
Most of the districts in Terai rate relatively low as measured by the Human Development Index (HDI): Rautahat, Mahottari, Saptari, Sarlahi, Siraha and Dhanusa are among the 25 districts in Nepal with the lowest HDI rating.

**Population living in poverty**

More than 20 percent of the population in Mahottari, Bara, Parsa, Rautahat, and Sarlahi live below the poverty line. The poorest are hardest hit by the flood.

**Housing conditions are poor**

60-70 percent of households in Jhapa, Morang, Sunsari, Siraha, Saptari, Dhanusa, Mahottari, Sarlahi, and Rautahat; 50-60 percent in Bara and Parsa; live in poor housing structures unable to withstand flooding.




*Source: AKCs, DDRC, NRCS, NeKSAP*

# Overview

## Situation in Udayapur District

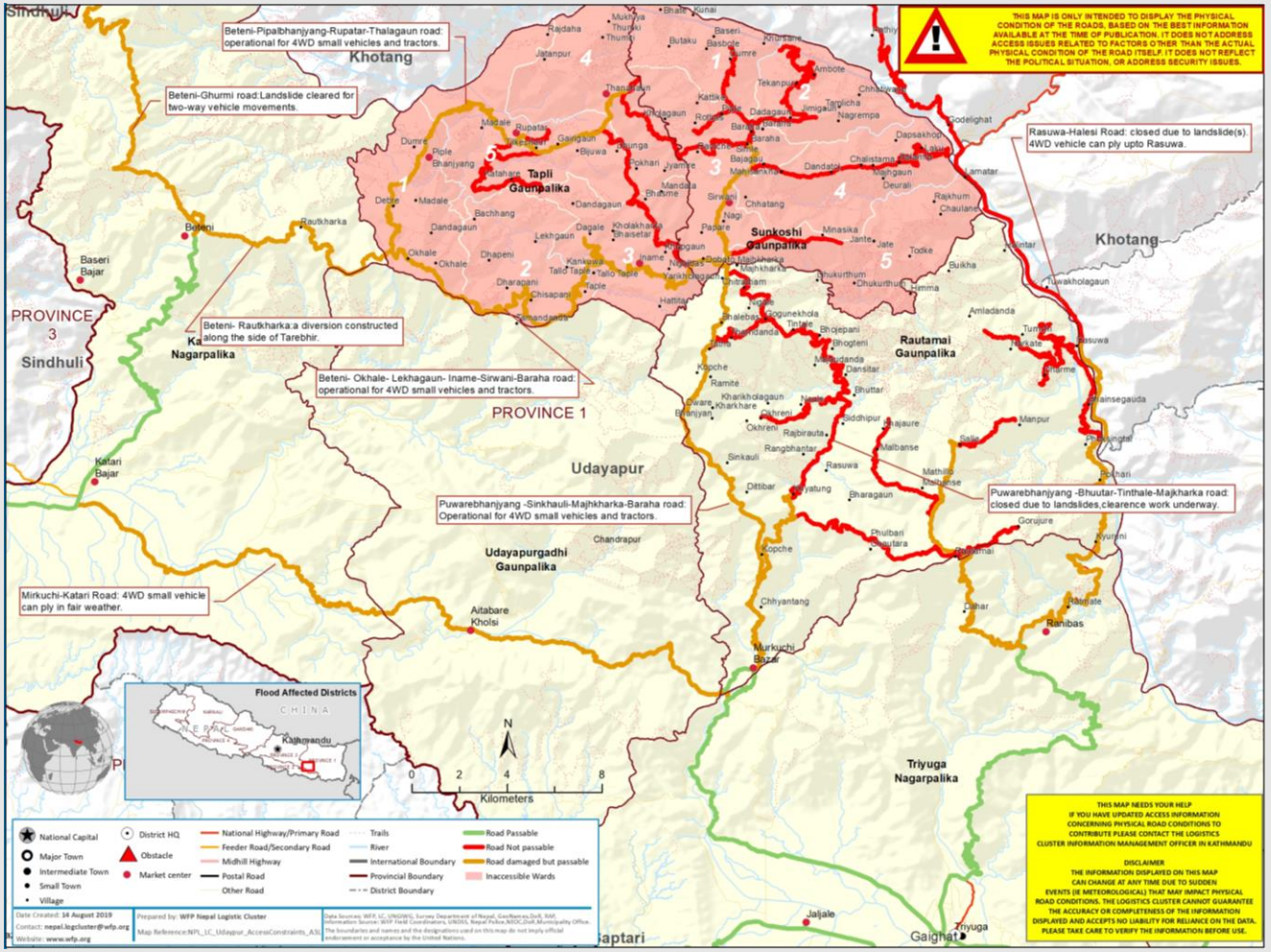
**Access issues creating food insecurity in Northern Municipalities of Udayapur**

Following the heavy rainfall on 11-16 July, massive landslides blocked almost all roads within Limchungbung (also known as Sunkoshi) and Tapli Rural Municipalities of Udayapur District, leading to serious constraints on the movement of goods and people.

Many households have depleted food stocks and reduced employment opportunities. Affected households are coping by consuming less preferred foods, borrowing from neighbours, and/or reducing the frequency of meals. Some 4,100 households are considered in immediate need of assistance, of which a significant number of already-vulnerable Dalit, Janjati and households with less land.

While road access has improved somewhat in the past two weeks (with some sections now becoming passable by light vehicles and tractors—see map), the market supply of food goods continues to be inadequate as loaded trucks are still not able to pass. This is reflected in food price increases, namely in rice (19-22%), lentils (8-13%), mustard oil (11-12%) and salt (20%). In addition, regular skilled and unskilled employment opportunities have temporarily decreased with the road blockage (by an estimated 30-40%).

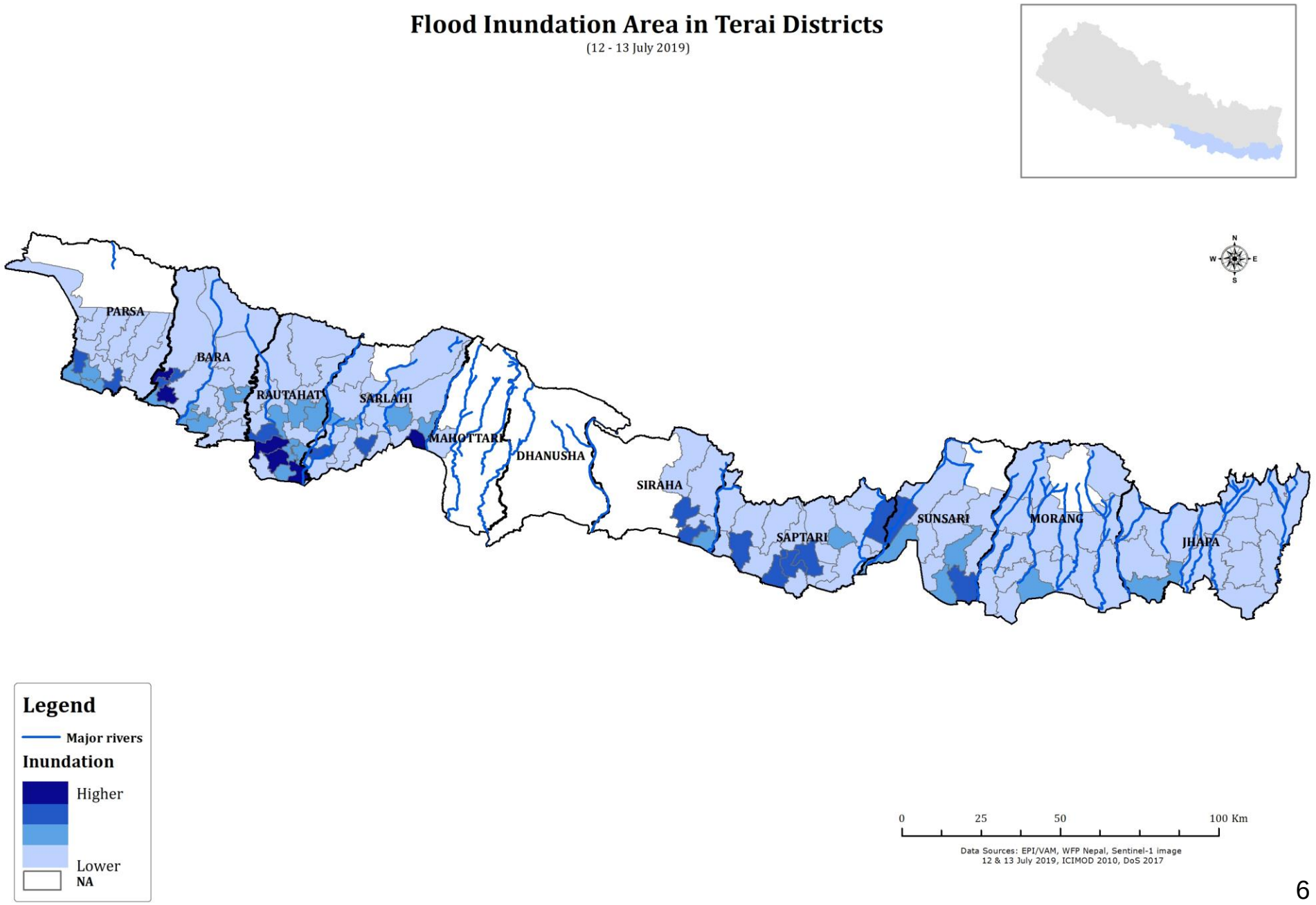
### Physical Access Constraints in Udayapur Districts as of 14 August



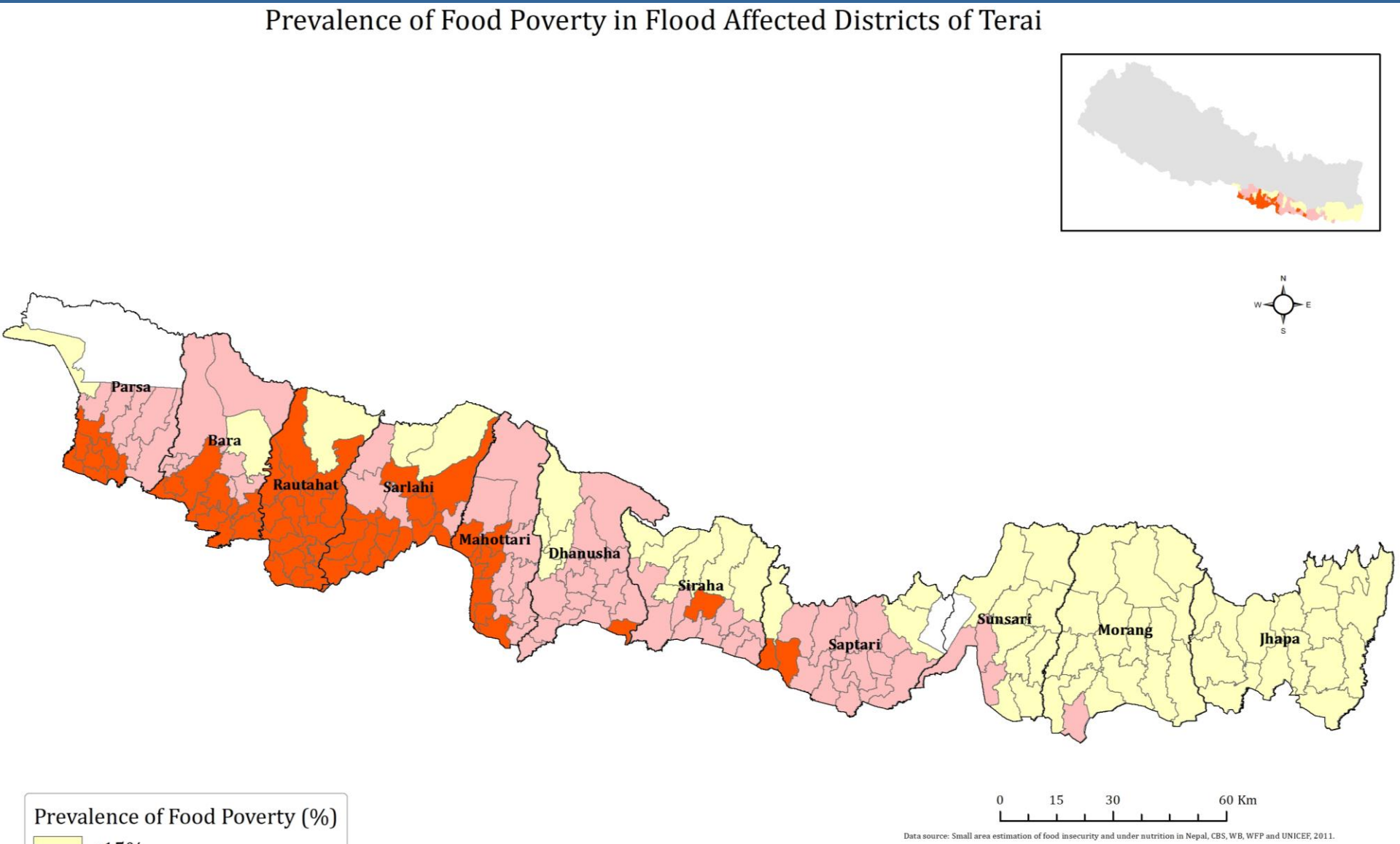

**A compounded problem of food security**

The existing physical access problem compounds the problem of severe localized drought faced by these two municipalities in particular. Estimated maize crop damages range from 80-100% in Limchungbung and 60-100% in Tapli, across different communities. Millet and rice production have also not fared well as seedlings were affected by the drought. The situation will remain precarious for the households until end October/early November, when employment opportunities will be available in neighbouring municipalities in agriculture activities, road heads and other development activities. The Provincial government airlifted a total of 8 Mt of rice, 500 Kg of lentils, 400 Kg of salt and 400 litres of oil to these two municipalities in end July as immediate relief support.

# Inundation area (12-13 July)



# Food poverty prevalence



# WFP's 72-hour Approach

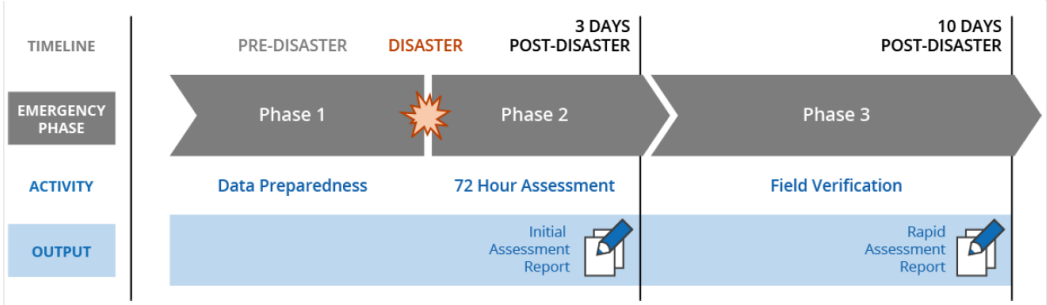
## Methodology

Initial estimations of area inundated were calculated by processing Sentinel-1 satellite images of 12-13 July. The inundation surface layer was then overlaid with settlement data to estimate the estimated population exposed to flooding. Priority population estimates were derived by overlaying the affected populations with small area estimates of food poverty at Municipality level (derived from the Small Area Estimation of Food Insecurity and Under-nutrition study, 2011), as well as with information from the Central Bureau of Statistics on types of building and building materials by municipality. Children under 5 years of age and pregnant and lactating women (PLW) were identified among the targeted population.

From these initial population estimates WFP undertook extensive ground verification and consultations with local government, District Disaster Management Committees, I/NGOs and the Nepal Red Cross Society, to produce revised and updated estimates of priority populations.

Focus group discussions were conducted across the most affected communities, defined as those areas generally within Priority 1 municipalities, identified by assessment teams in consultation with local authorities as having sustained the most damage to food stores and housing, the highest displacement, the lowest market functionality and in general with residents in most need of assistance.

### 72-hour Approach Timeline




## Frequently Asked Questions

***How are the 72-hour report's different priority levels derived?***

The estimated affected population is classified into three groups based the severity of socio-economic indicators, quality of buildings in the area and livelihood options, as well as ease of physical access, remoteness, are considered to categorize them in different priority groups.
The above factors are combined into a vulnerability index, with cutoff thresholds set at high, medium and low levels to create the three Priority groups used in the analysis. Priority 1 areas are considered highly vulnerable and in immediate need of support.

***How does the 72-hour approach guide WFP's response?***

The 72-hour approach allows WFP and the broader humanitarian community to formulate early plans and better coordinate in the early hours of an emergency. Its geographical targeting identifies those areas most in need of certain interventions; subsequent in-depth field consultations with local government and partners, as well as programmatic guidance decide which actual households benefit from what assistance.

***How does the 72-hour approach link to assessments like the Initial Rapid Assessment (IRA)?***

The 72-hour approach is complementary to the Initial Rapid Assessment. The IRA has a substantial coverage based on its ability to mobilize field personnel quickly across a broad area. The 72-hour approach provides a first snapshot of the event, which may guide the deployment and focus of the IRA tool. In turn, the IRA results' in-depth field information feeds back into the 72-hour reports and informs further study.

More on WFP's 72-hour rapid assessment approach can be found at:
https://www.wfp.org/72-hours-emergency-assessment

# Methodology

## Acknowledgement

Funding from the UK government has remained critical for supporting the capacity of the Nepal Food Security Monitoring system (NeKSAP), which was mobilized to produce this 72-hour assessment. NeKSAP is operated by the Ministry of Agriculture and Livestock Development (MoALD) with the strategic guidance of the National Planning Commission (NPC). WFP provides technical assistance.

Situation updates received from the Nepal Red Cross Society (NRCS) were used to supplement this report, namely through estimates of population displacement, casualties and asset losses/damages.

Satellite images received from Sentinel-1 SAR (European Space Agency) were used to map the inundation surface in the flood-affected Terai districts.

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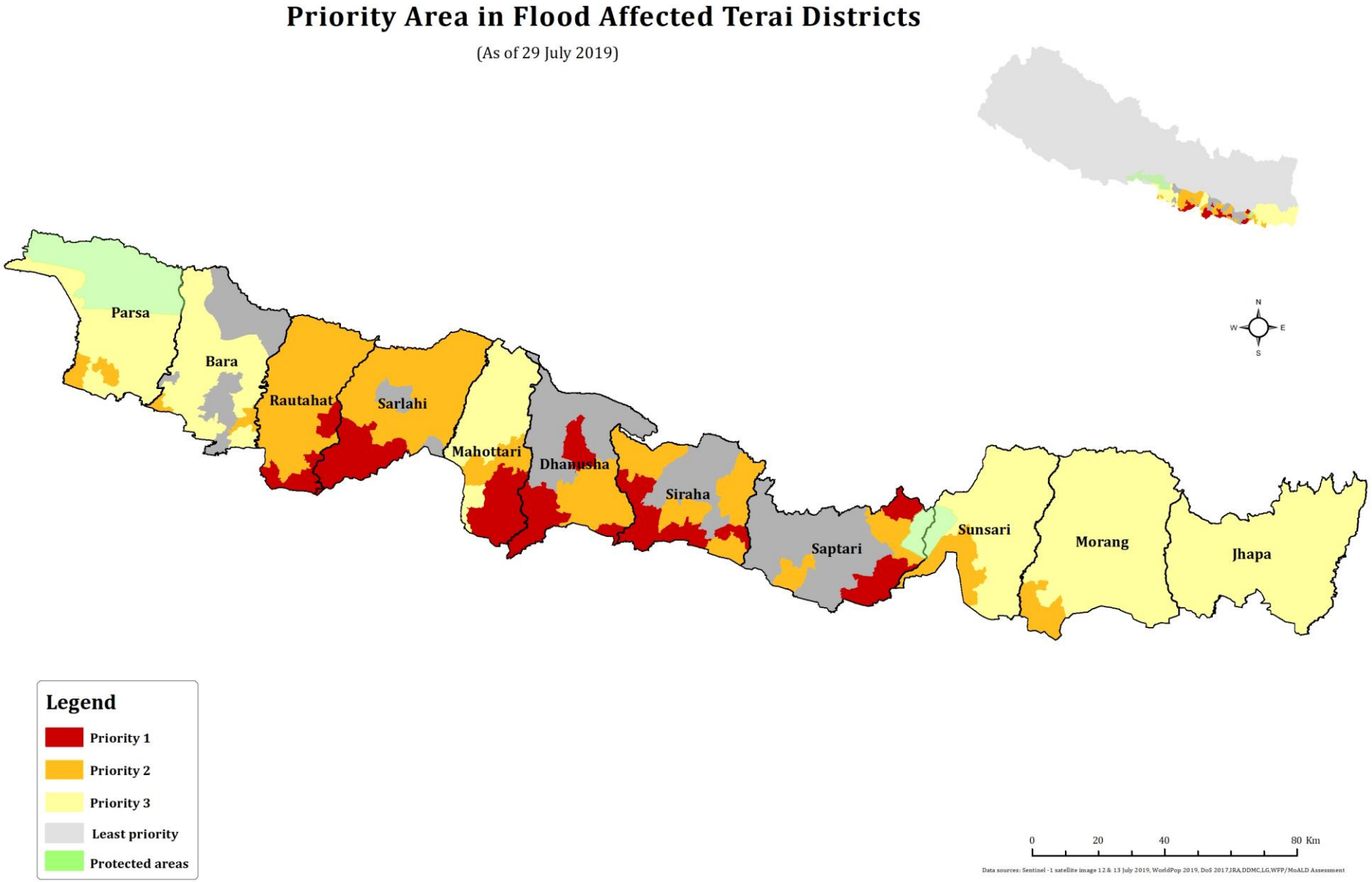
Nepal Khadhya Surakshya Anugaman Pranali (NeKSAP)
Nepal Food Security Monitoring System

# ANNEX

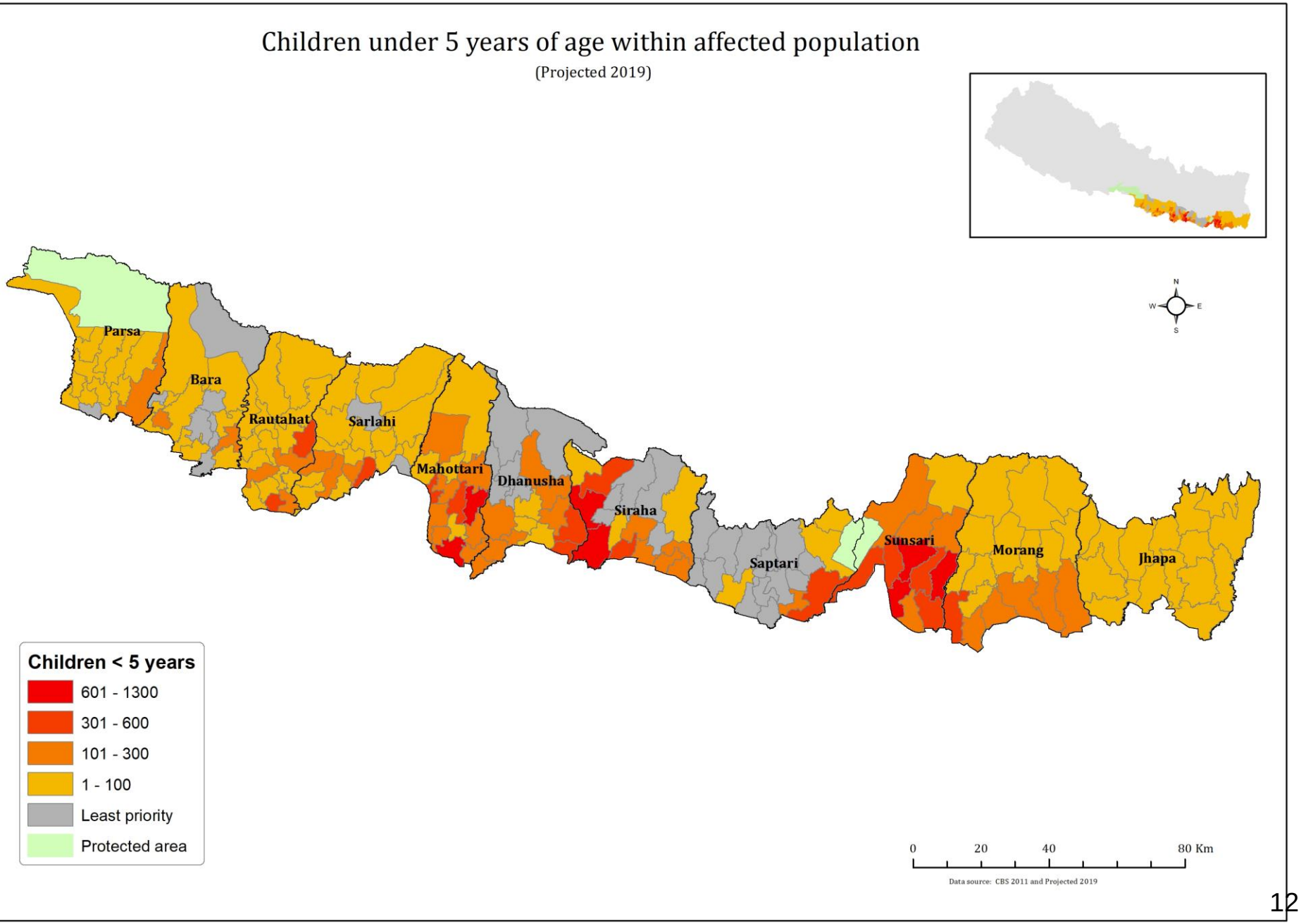
# ANNEX 1 Priority Population

| | Priority 1 | | | | | Priority 2 | | | | | Priority 3 | | | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| District | Palika | Population | HHs | Children <5yrs | PLW | Palika | Population | HHs | Children <5yrs | PLW | Palika | Population | HHs | Children <5yrs | PLW | Palika | Population | HHs |
| Siraha | 5 | 25,746 | 4,291 | 3,136 | 1,273 | 7 | 7,146 | 1,191 | 870 | 352 | - | - | - | - | - | 12 | 32,892 | 5,482 |
| Mahottari | 7 | 18,354 | 3,059 | 2,235 | 890 | 3 | 6,708 | 1,118 | 816 | 325 | 5 | 2,364 | 394 | 289 | 115 | 15 | 27,426 | 4,571 |
| Sarlahi | 8 | 10,722 | 1,950 | 1,307 | 501 | 10 | 1,341 | 243 | 162 | 62 | - | - | - | - | - | 18 | 12,063 | 2,193 |
| Rautahat | 5 | 10,121 | 2,023 | 1,233 | 465 | 13 | 6,451 | 1,287 | 786 | 296 | - | - | - | - | - | 18 | 16,572 | 3,310 |
| Dhanusha | 6 | 9,246 | 1,541 | 1,127 | 440 | 6 | 6,486 | 1,081 | 790 | 309 | - | - | - | - | - | 12 | 15,732 | 2,622 |
| Saptari | 3 | 5,730 | 955 | 697 | 278 | 2 | 432 | 72 | 53 | 21 | - | - | - | - | - | 5 | 6,162 | 1,027 |
| Bara | - | - | - | - | - | 2 | 1,635 | 233 | 199 | 76 | 9 | 2,340 | 333 | 286 | 108 | 11 | 3,975 | 566 |
| Jhapa | - | - | - | - | - | - | - | - | - | - | 15 | 3,874 | 884 | 469 | 196 | 15 | 3,874 | 884 |
| Morang | - | - | - | - | - | 2 | 5,084 | 1,133 | 619 | 250 | 15 | 5,501 | 1,227 | 670 | 271 | 17 | 10,585 | 2,360 |
| Parsa | - | - | - | - | - | 3 | 1,147 | 164 | 140 | 52 | 11 | 3,203 | 458 | 391 | 144 | 14 | 4,350 | 622 |
| Sunsari | - | - | - | - | - | 3 | 14,616 | 3,150 | 1,780 | 715 | 9 | 28,571 | 6,156 | 3,478 | 1,399 | 12 | 43,187 | 9,306 |
| **Total** | **34** | **79,919** | **13,819** | **9,735** | **3,847** | **51** | **51,046** | **9,672** | **6,215** | **2,458** | **64** | **45,853** | **9,452** | **5,583** | **2,233** | **149** | **176,818** | **32,943** |

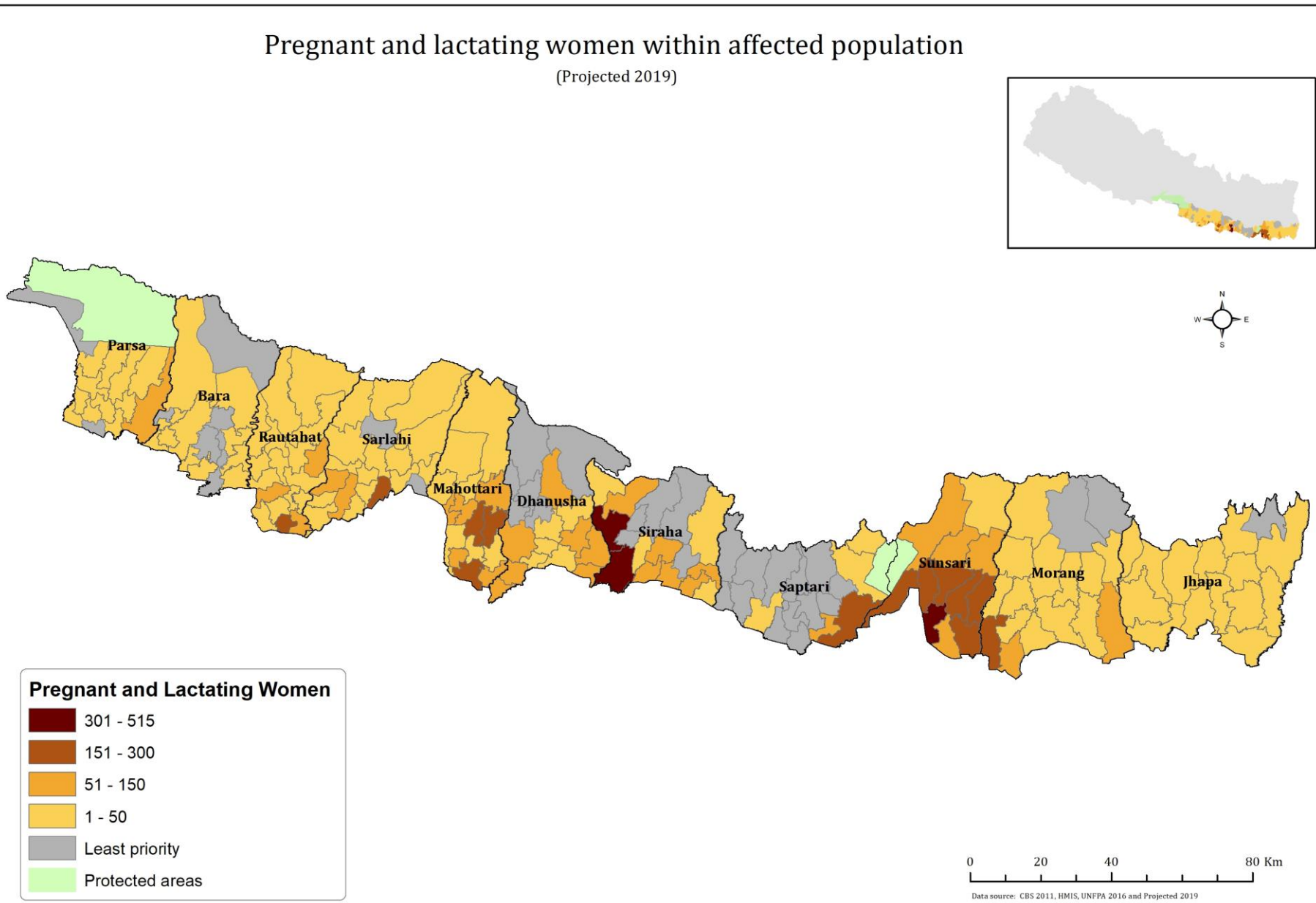
# ANNEX 2 Priority areas (29 July)



# ANNEX 3 Children under 5 years in affected population

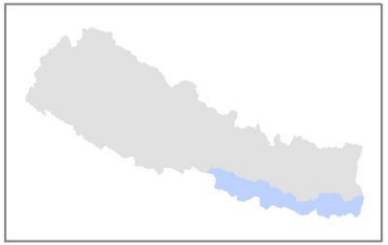


# ANNEX 4 Pregnant and lactating women in affected population



# ANNEX 5 Inundation Area

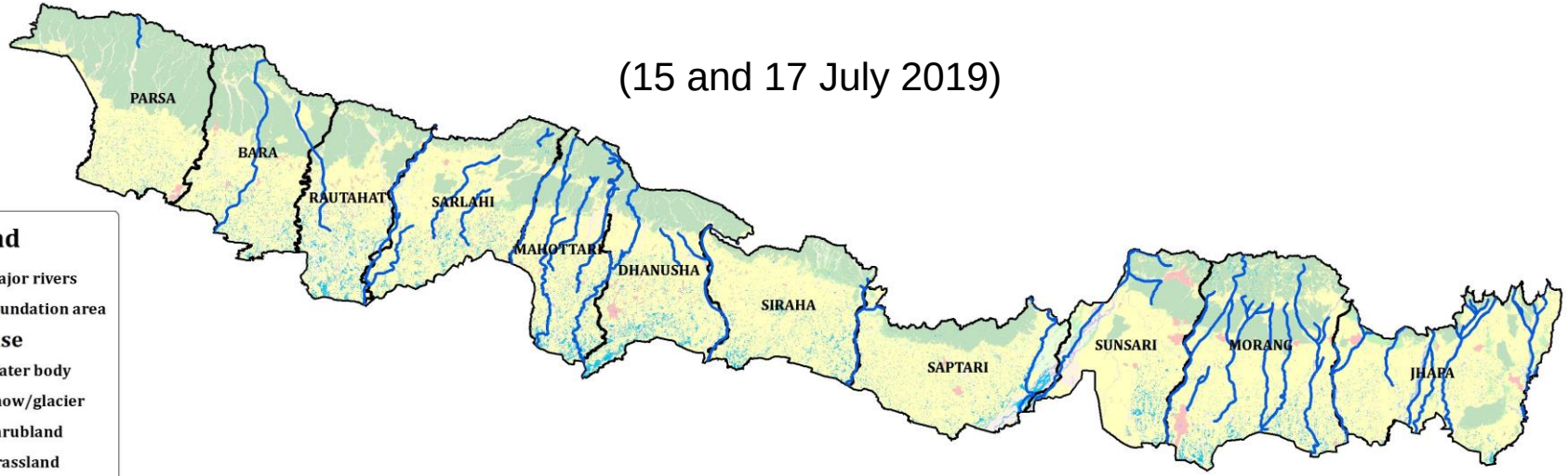
## Flood Inundation Area



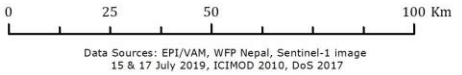
(12–13 July 2019)




(15 and 17 July 2019)

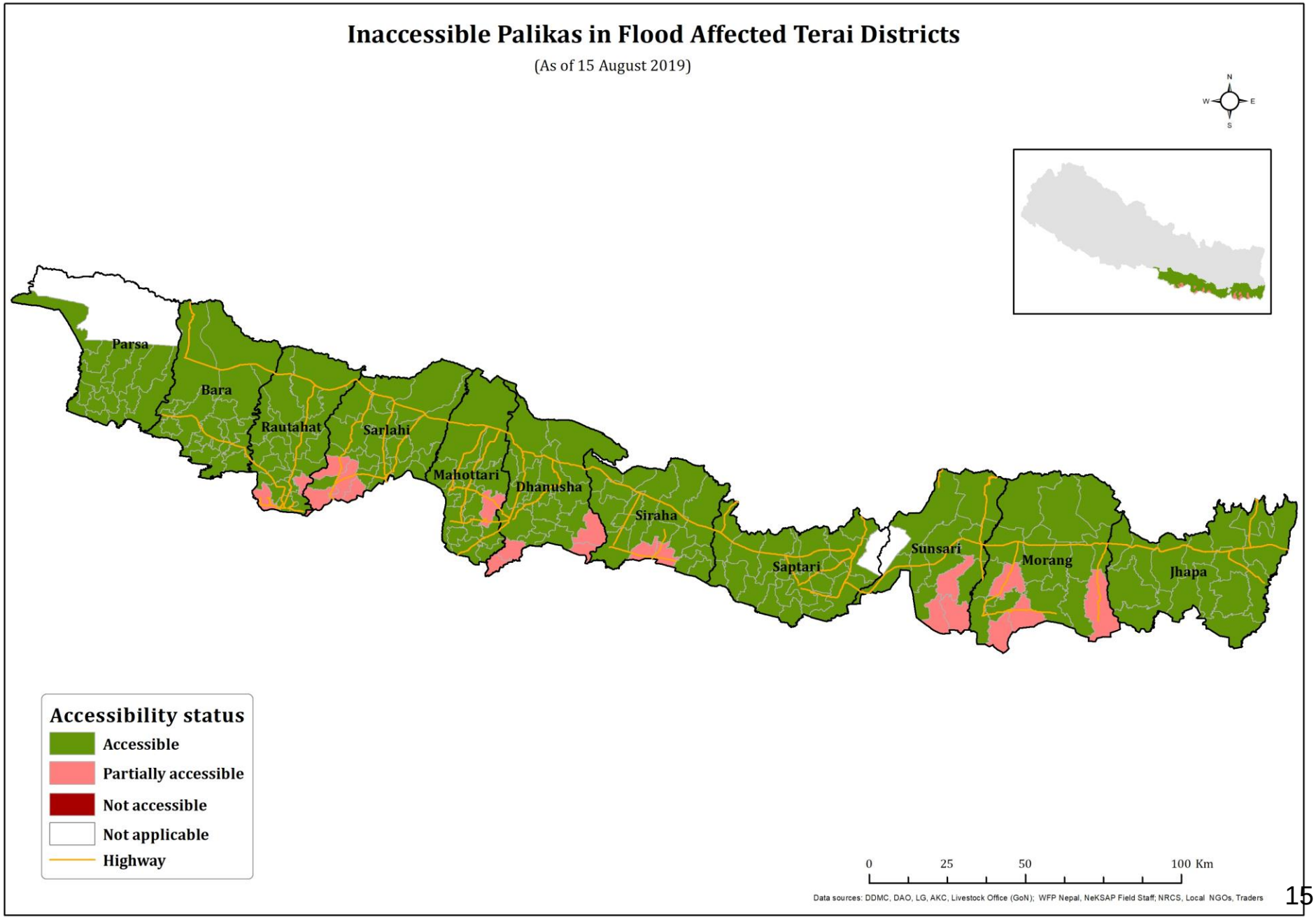




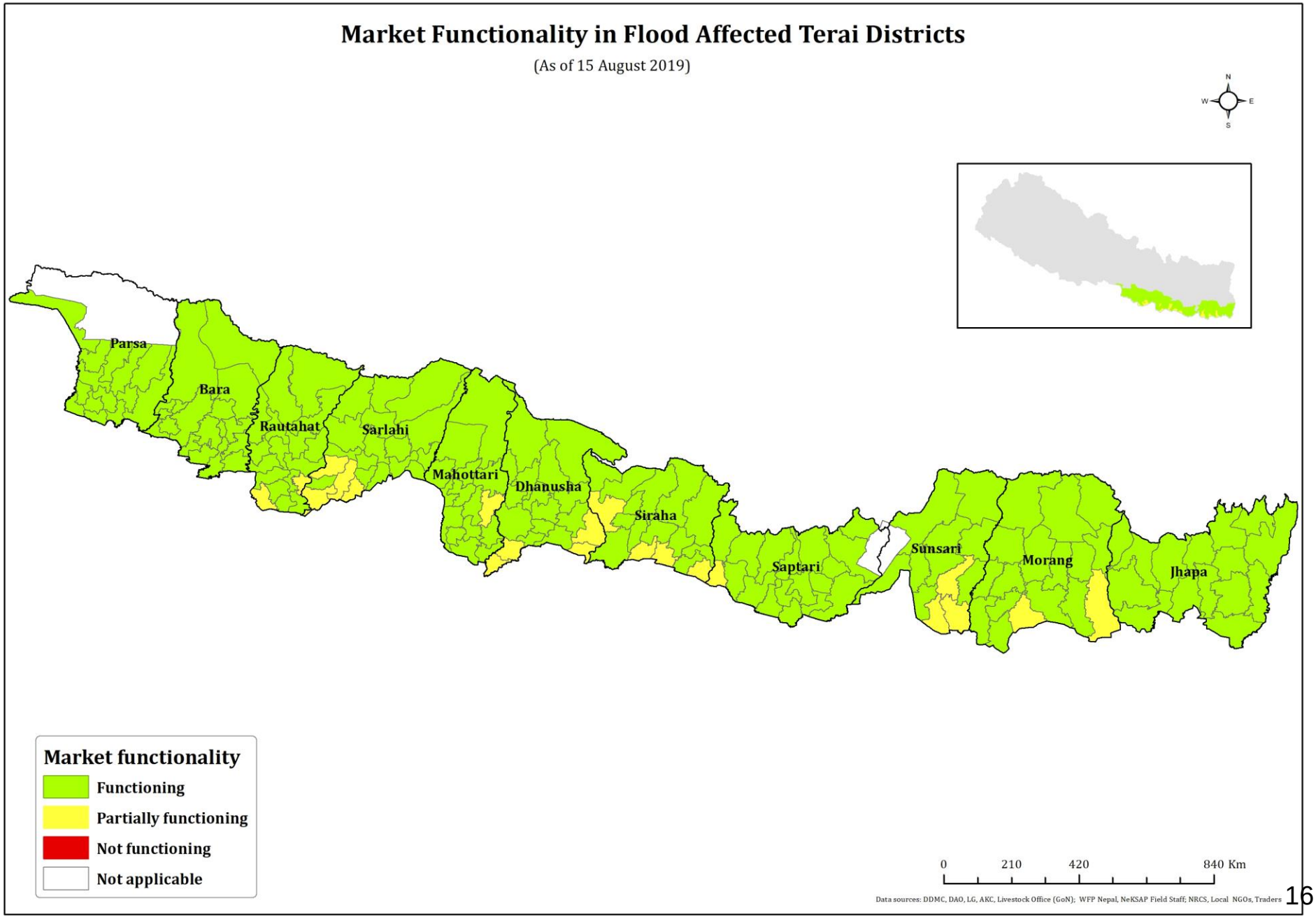



Data Sources: EPI/VAM, WFP Nepal, Sentinel-1 image
15 & 17 July 2019, ICIMOD 2010, DoS 2017

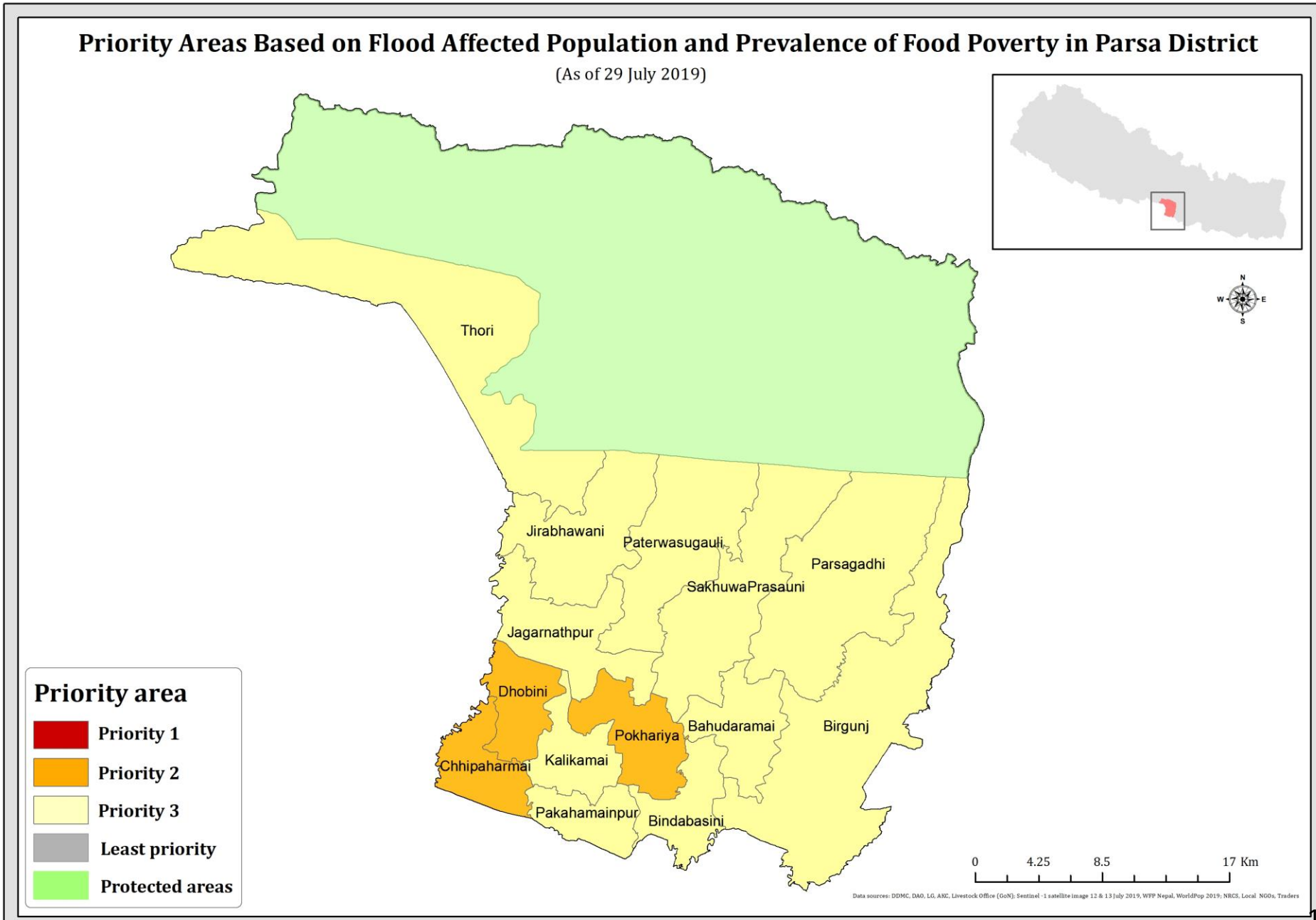
# ANNEX 6 Road Connectivity (15 August)



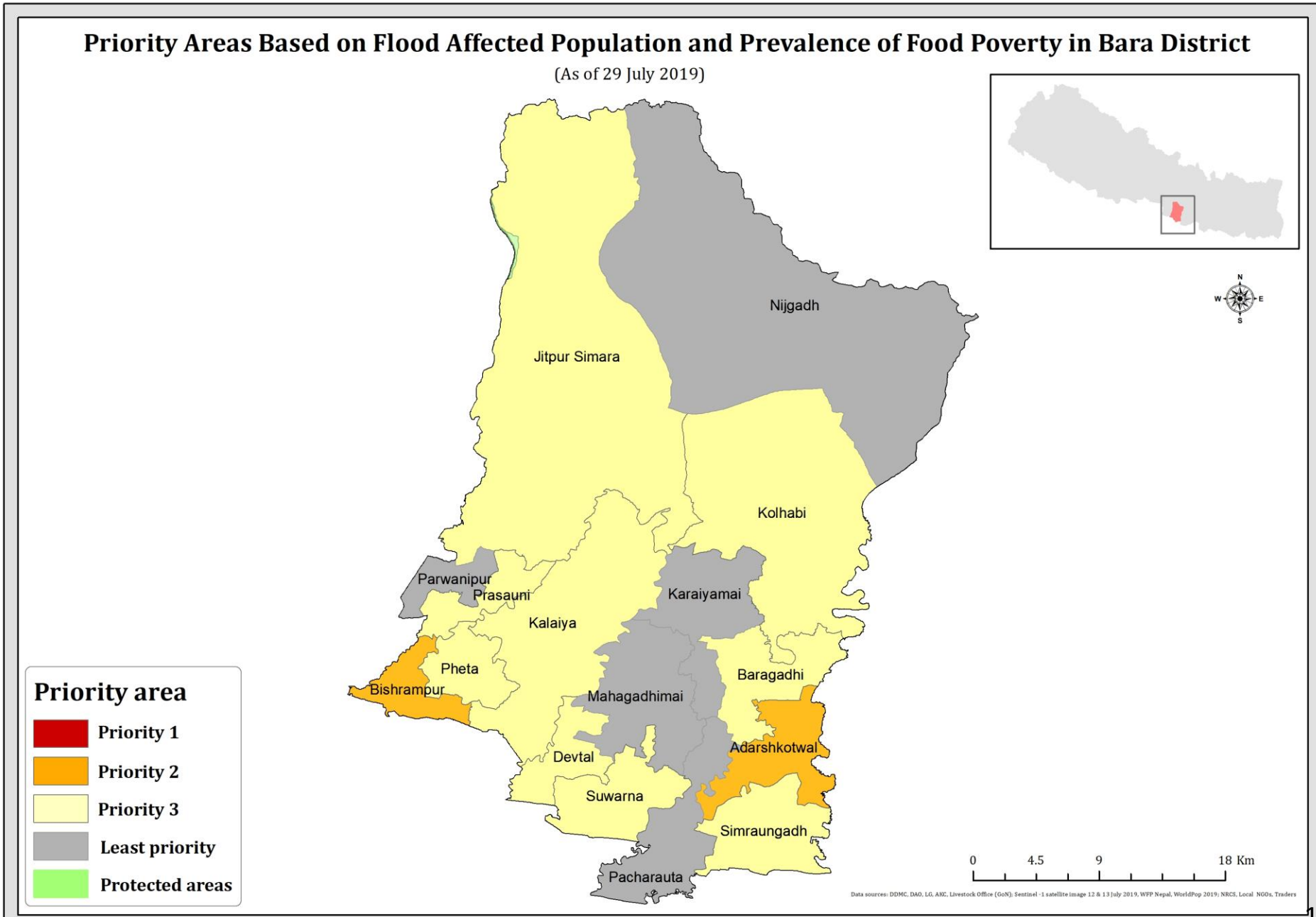
# ANNEX 7 Market Functionality (15 August)



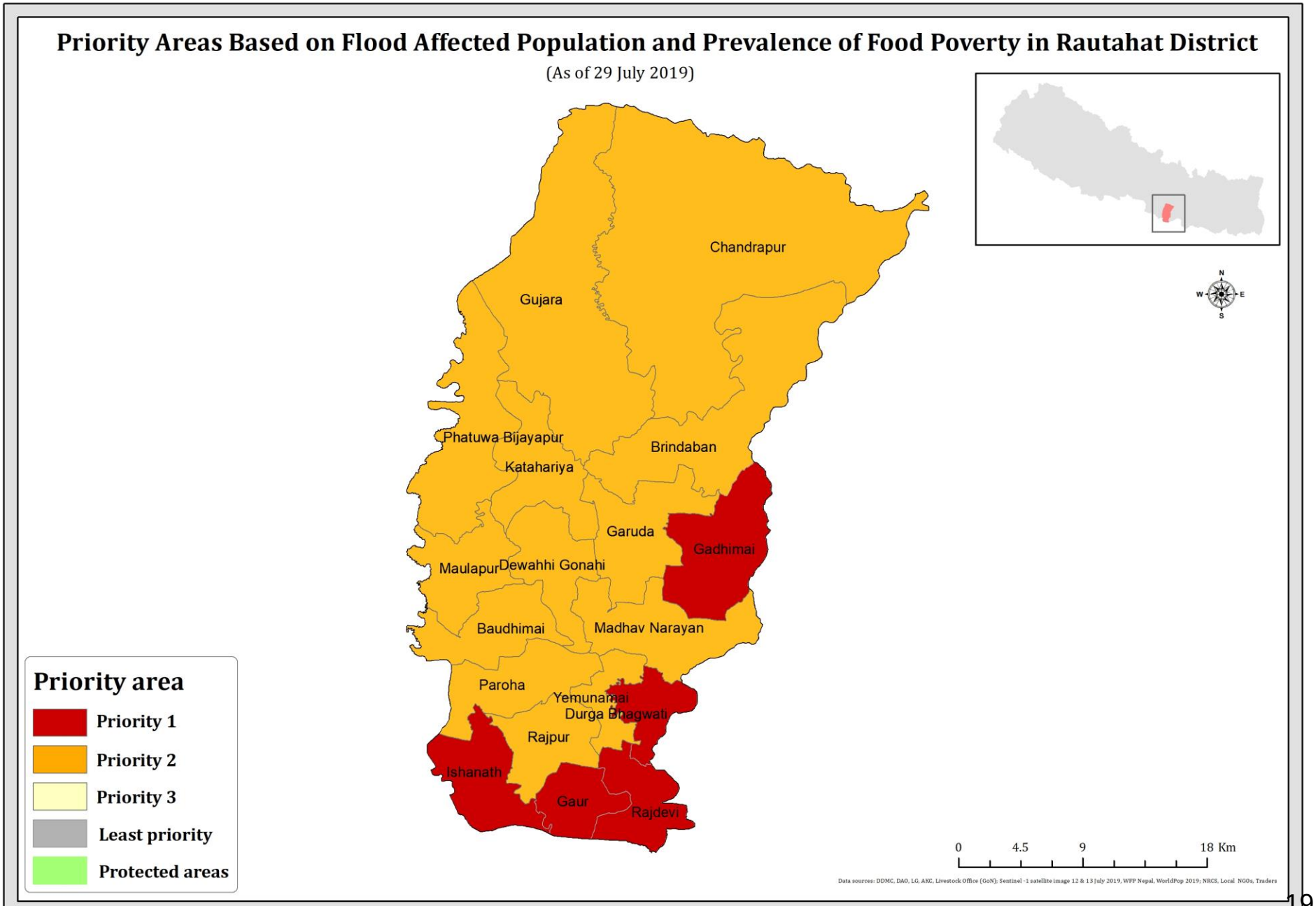
# ANNEX 8.a Parsa (29 July)



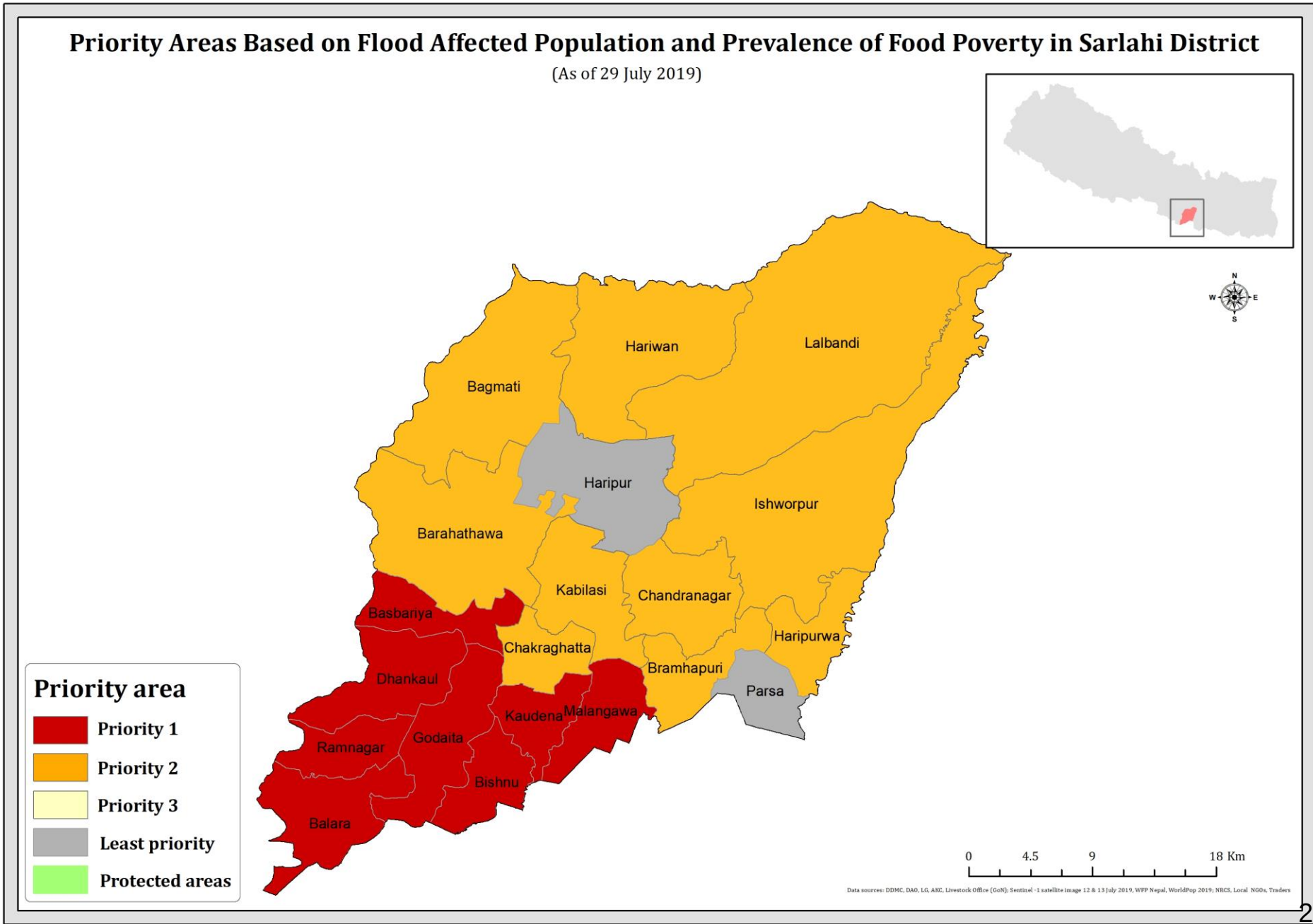
# ANNEX 8.b Bara (29 July)



# ANNEX 8.c Rautahat (29 July)



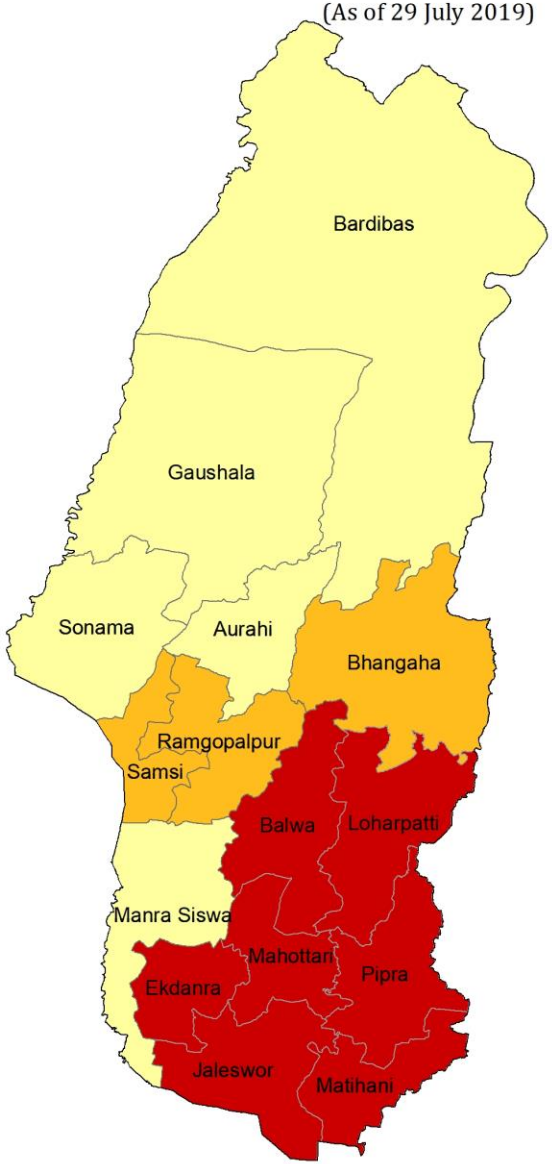
# ANNEX 8.d Sarlahi (29 July)

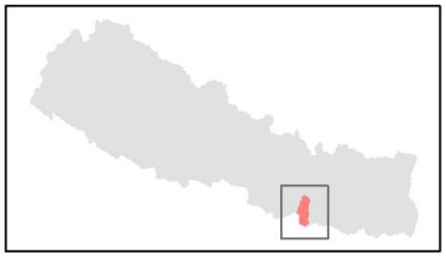


# ANNEX 8.e Mahottari (29 July)

## Priority Areas Based on Flood Affected Population and Prevalence of Food Poverty in Mahottari District

(As of 29 July 2019)



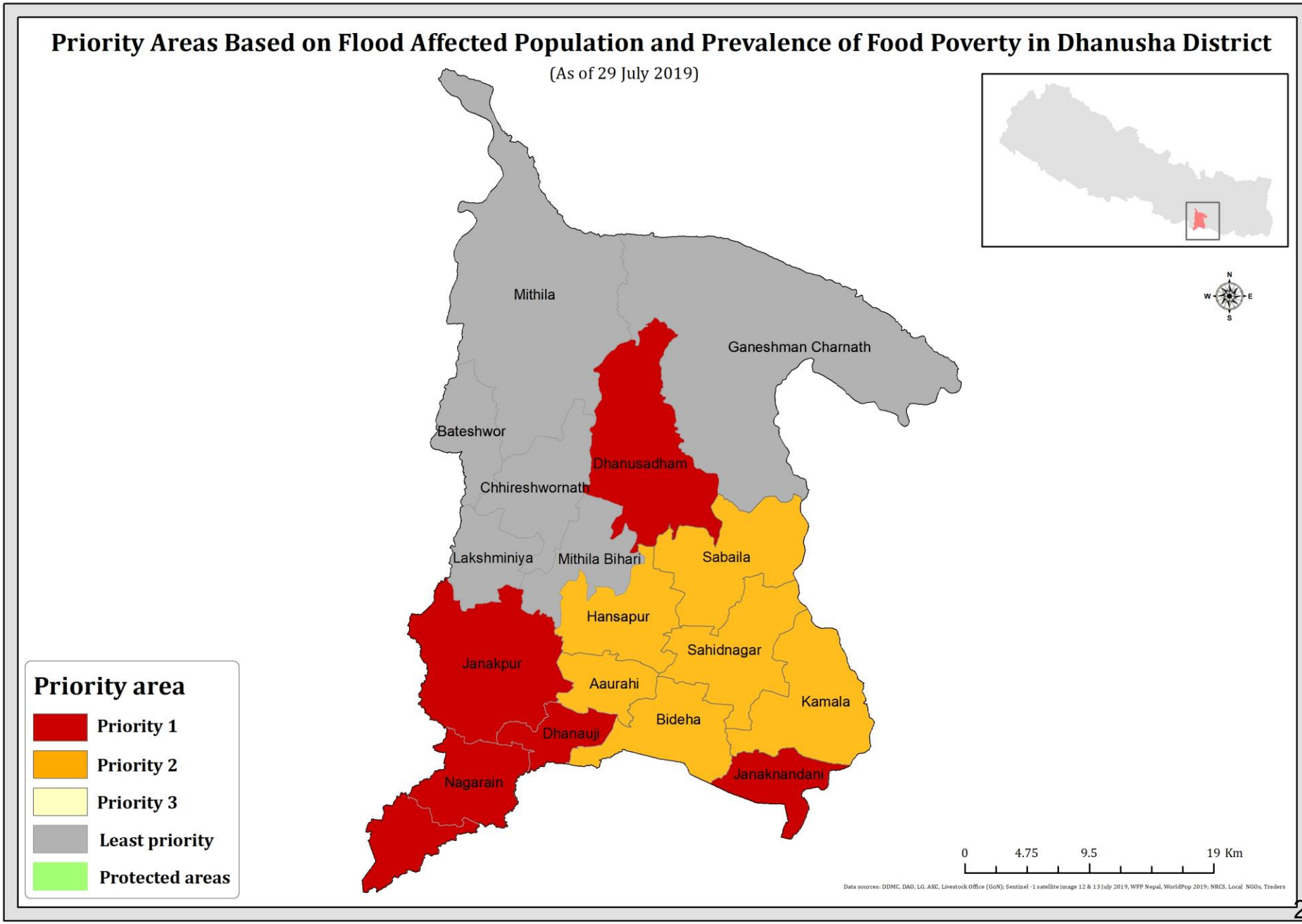

**Priority area**

- Priority 1
- Priority 2
- Priority 3
- Least priority
- Protected areas

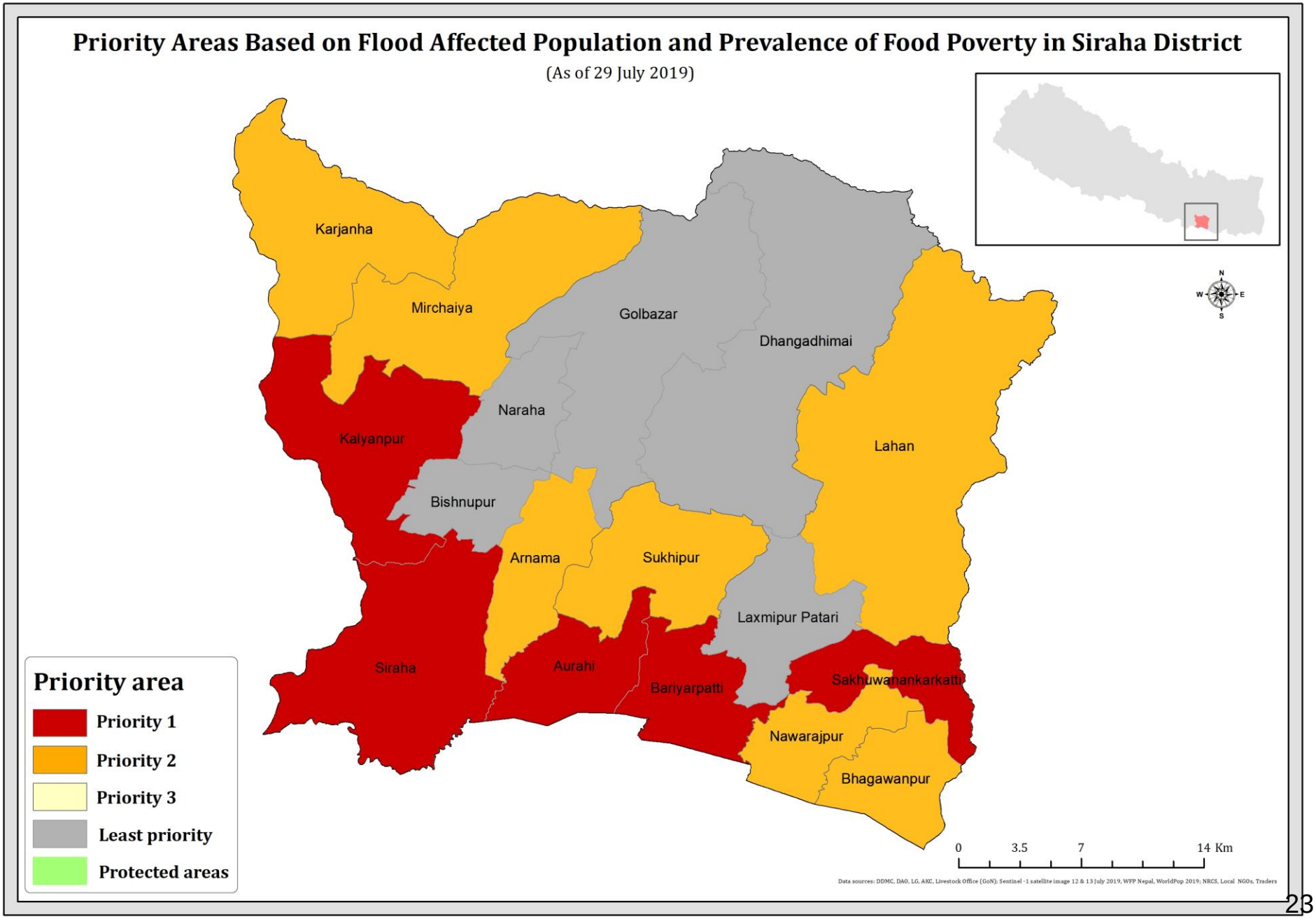
0 5 10 20 Km

Data sources: DDMC, DAO, LG, AKC, Livestock Office (GoN); Sentinel -1 satellite image 12 & 13 July 2019, WFP Nepal, WorldPop 2019; NRCS, Local NGOs, Traders

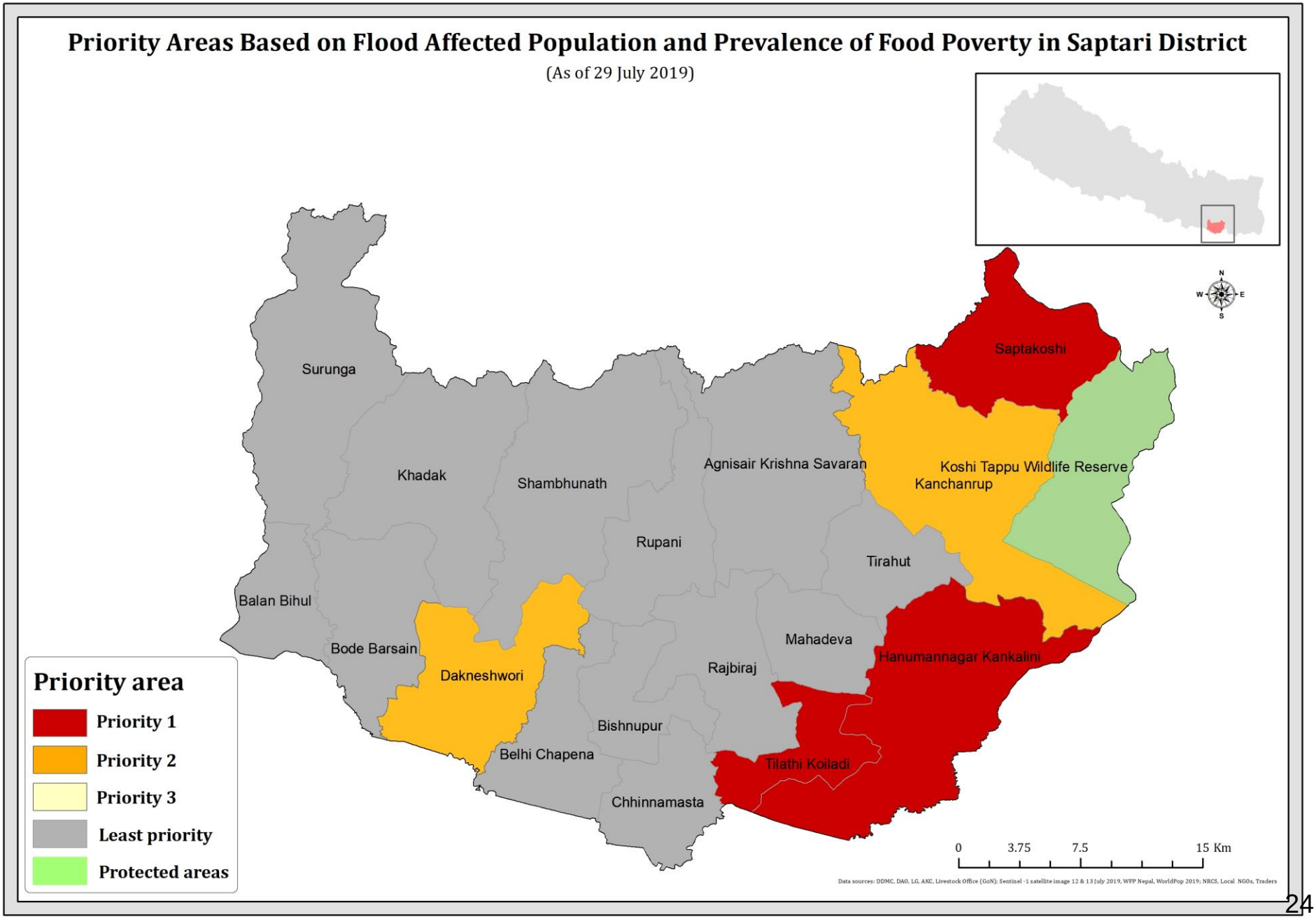
# ANNEX 8.f Dhanusha (29 July)



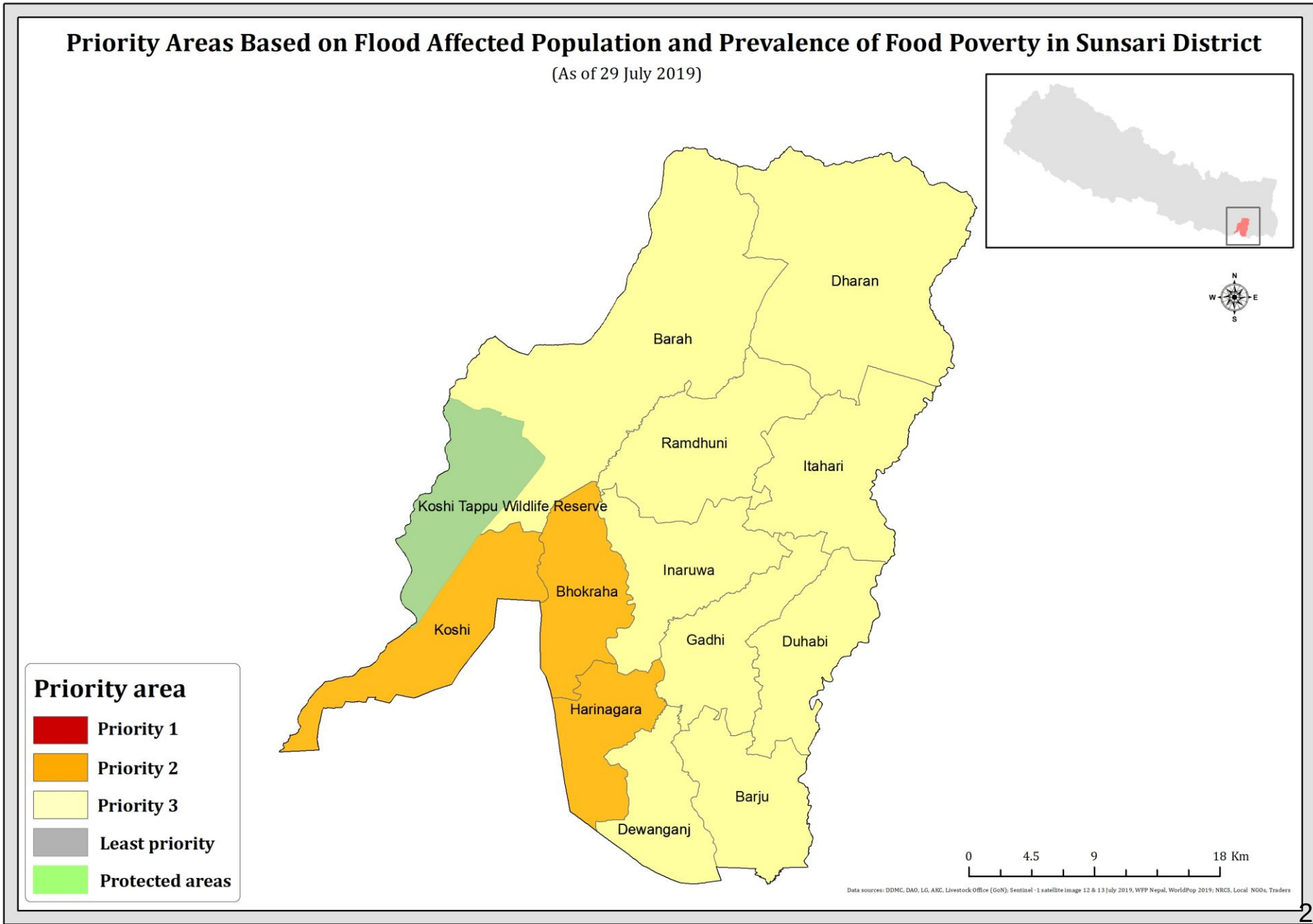
# ANNEX 8.g Siraha (29 July)



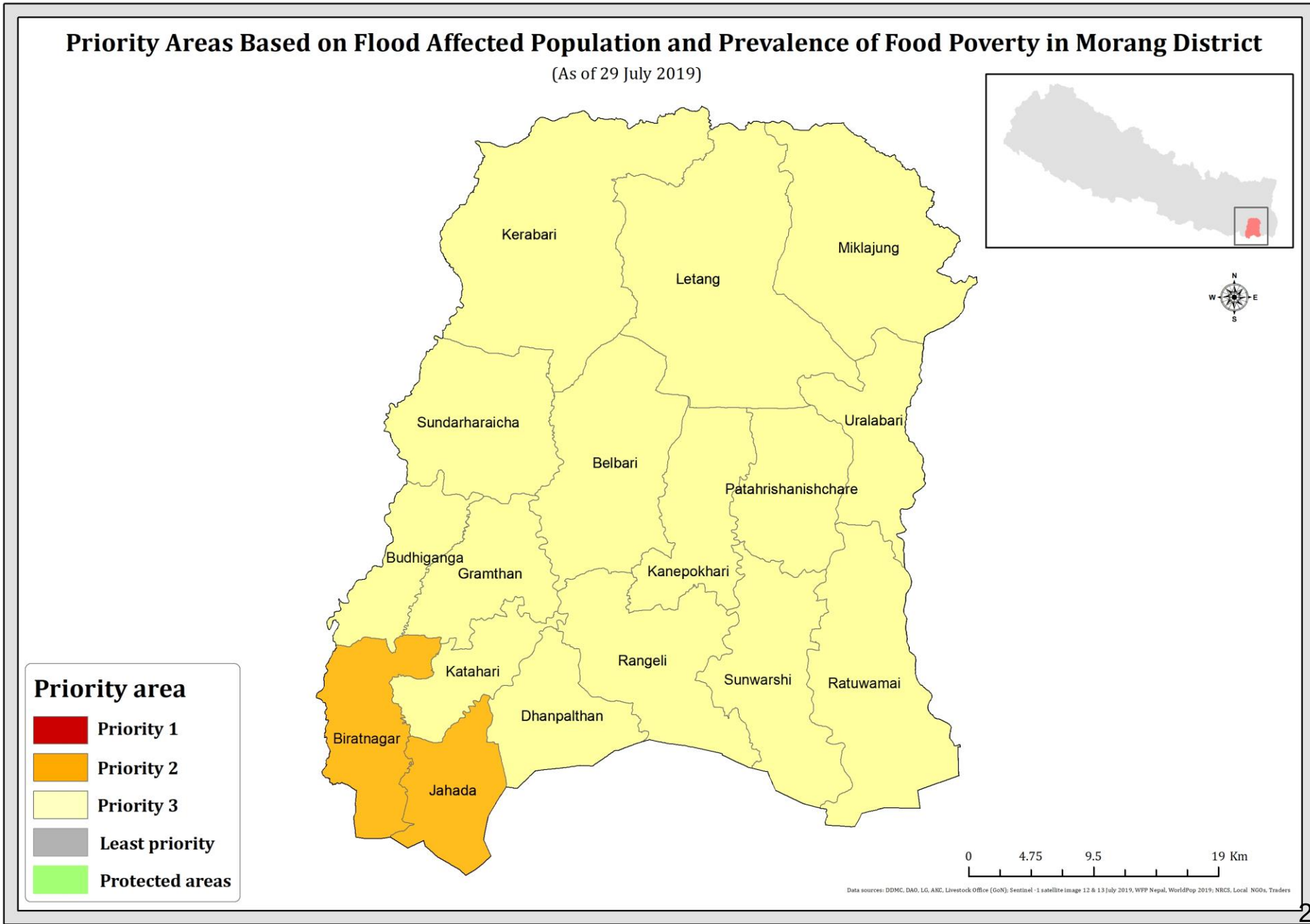
# ANNEX 8.h Saptari (29 July)



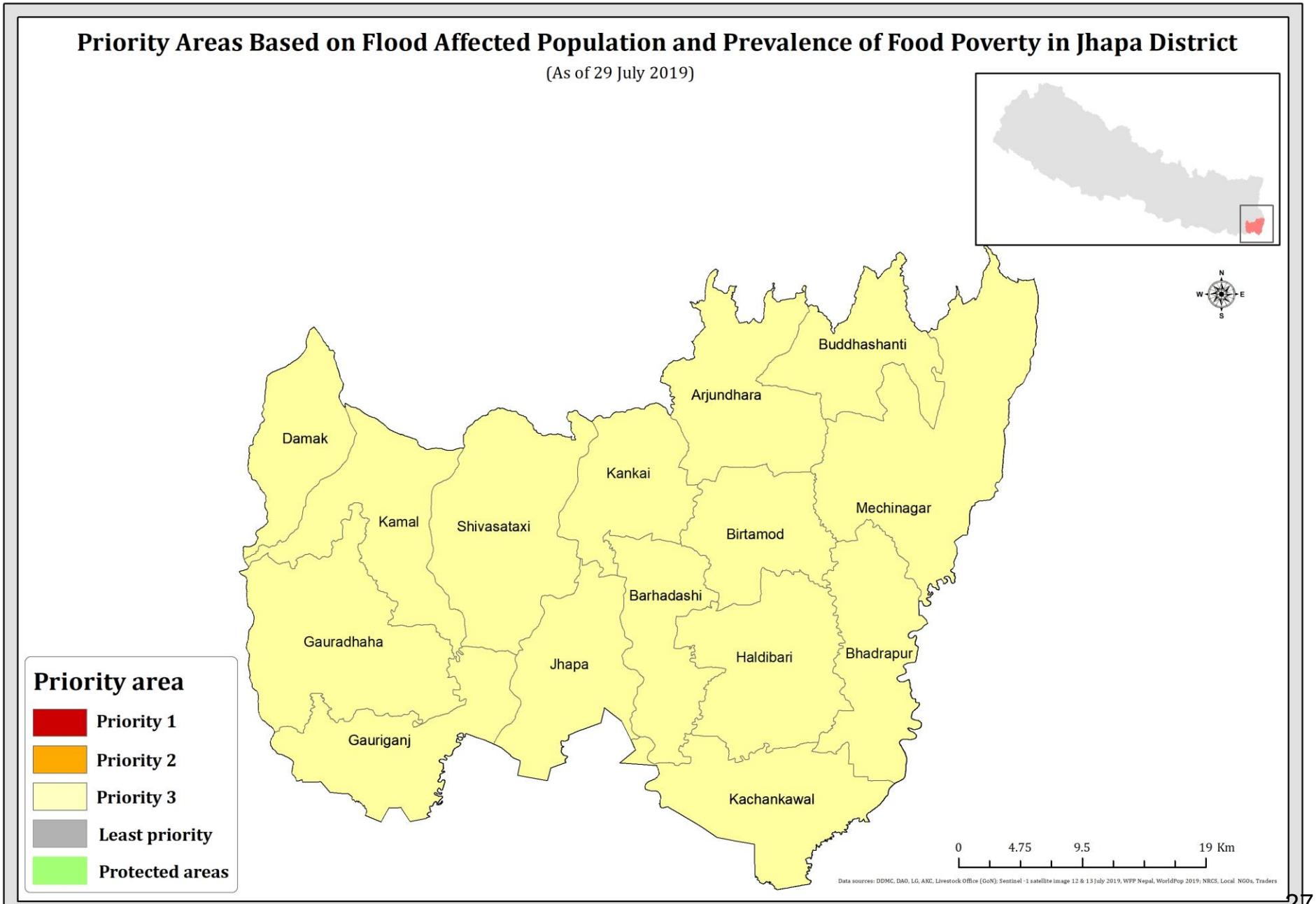
# ANNEX 8.i Sunsari (29 July)



# ANNEX 8.j Morang (29 July)



# ANNEX 8.k Jhapa (29 July)



# ANNEX 8.I Udayapur (1 August)