

# Satellite-Based Damage Assessment of Affected Villages in Maungdaw District

(Assessment based on satellite imagery recorded on the mornings of 22 October, 3 and 10 November 2016)



## Summary of main findings:

Human Rights Watch identified a total of 430 destroyed buildings in three villages of Maungdaw District from an analysis of very high resolution satellite imagery recorded on the mornings of 22 October, 3 and 10 November 2016.

Of this total, 85 buildings were destroyed in the village of Pyaung Pyit (Ngar Sar Kyu); 245 buildings were destroyed in the village of Kyet Yoe Pyin; and 100 buildings were destroyed in the village of Wa Peik (Kye Kan Pyin). Damage signatures in each of the assessed villages were consistent with fire, including the presence of large burn scars and destroyed tree cover.

Human Rights Watch also reviewed thermal anomaly data collected by an environmental satellite sensor that detected the presence of multiple active fires burning in the village of Wa Peik (Kye Kan Pyin) on 9 October and the village of Kyet Yoe Pyin on 14 October.

The discovery of both active fires and large burn scars in these villages is consistent with arson attacks occurring in Maungdaw District on and after 9 October 2016. In the village of Wa Peik (Kye Kan Pyin), it is likely that building destruction occurred during at least two distinct periods of time. The majority of destruction likely occurred on 9 October, followed by a smaller round of destruction occurring between 22 October and 3 November 2016.

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in Maungdaw could be higher.

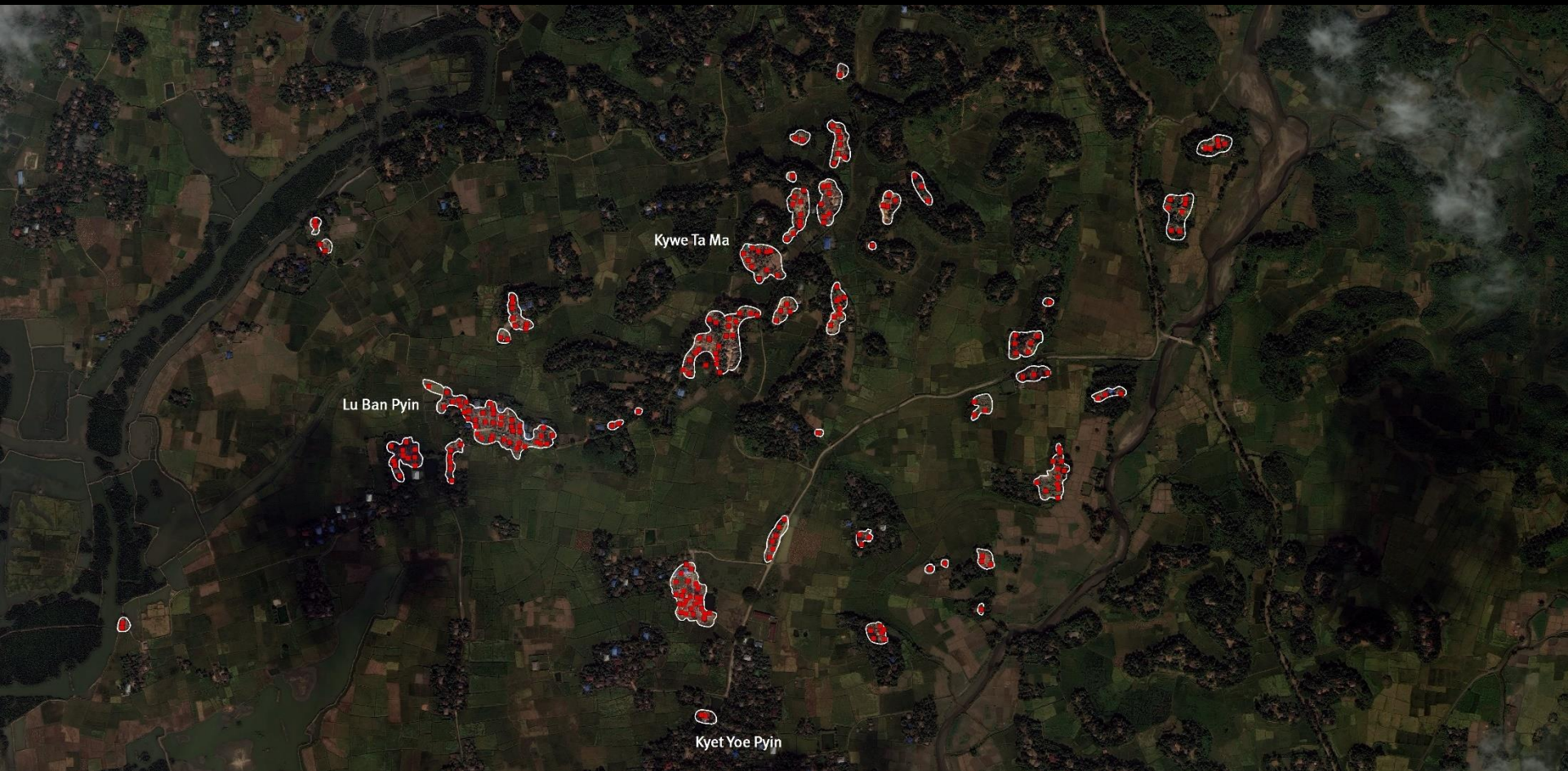
## Satellite Sensors:

- 1) Spot 07 - Date: 22 October 2016; © CNES 2016 - Airbus DS 2016.
- 2) Pléiades-1 - Date: 03 November 2016; © CNES 2016 - Airbus DS 2016.
- 3) WorldView 03 - Date: 10 November 2016; © DigitalGlobe 2016 – NextView.
- 4) SNPP/VIIRS - 09 and 14 October 2016; Source NASA 2016.

# Overview of Building destruction in the village of Kyet Yoe Pyin, Maungdaw District

## Village Assessment Summary:

A total of 245 buildings were destroyed in the village of Kyet Yoe Pyin (and the sub-villages of Lu Ban Pyin and Kywe Ta Ma) based on satellite imagery recorded on the mornings of 22 October and 10 November 2016. Active fires were detected in multiple locations in the village on 14 October by an environmental satellite sensor. The presence of extensive burn scars and active fires are consistent with arson.



## Village Center Coordinates:

92°20'6.954"E 21°1'6.61"N; 46QDJ3092224339 MGRS

## Assessment Notes:

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in Kyet Yoe Pyin could be higher.

# Overview of Building destruction in the village of Wa Peik (Kye Kan Pyin), Maungdaw District

## Village Assessment Summary:

A total of 100 buildings were destroyed in the village of Wa Peik (Kye Kan Pyin) based on satellite imagery recorded on the mornings of 22 October, 3 and 10 November 2016. Active fires were detected in multiple locations in the village on 09 October by an environmental satellite sensor. The presence of extensive burn scars and active fires are consistent with arson.



## Village Center Coordinates:

92°23'15.995"E 20°55'8.775"N; 46QDJ3633713316 MGRS

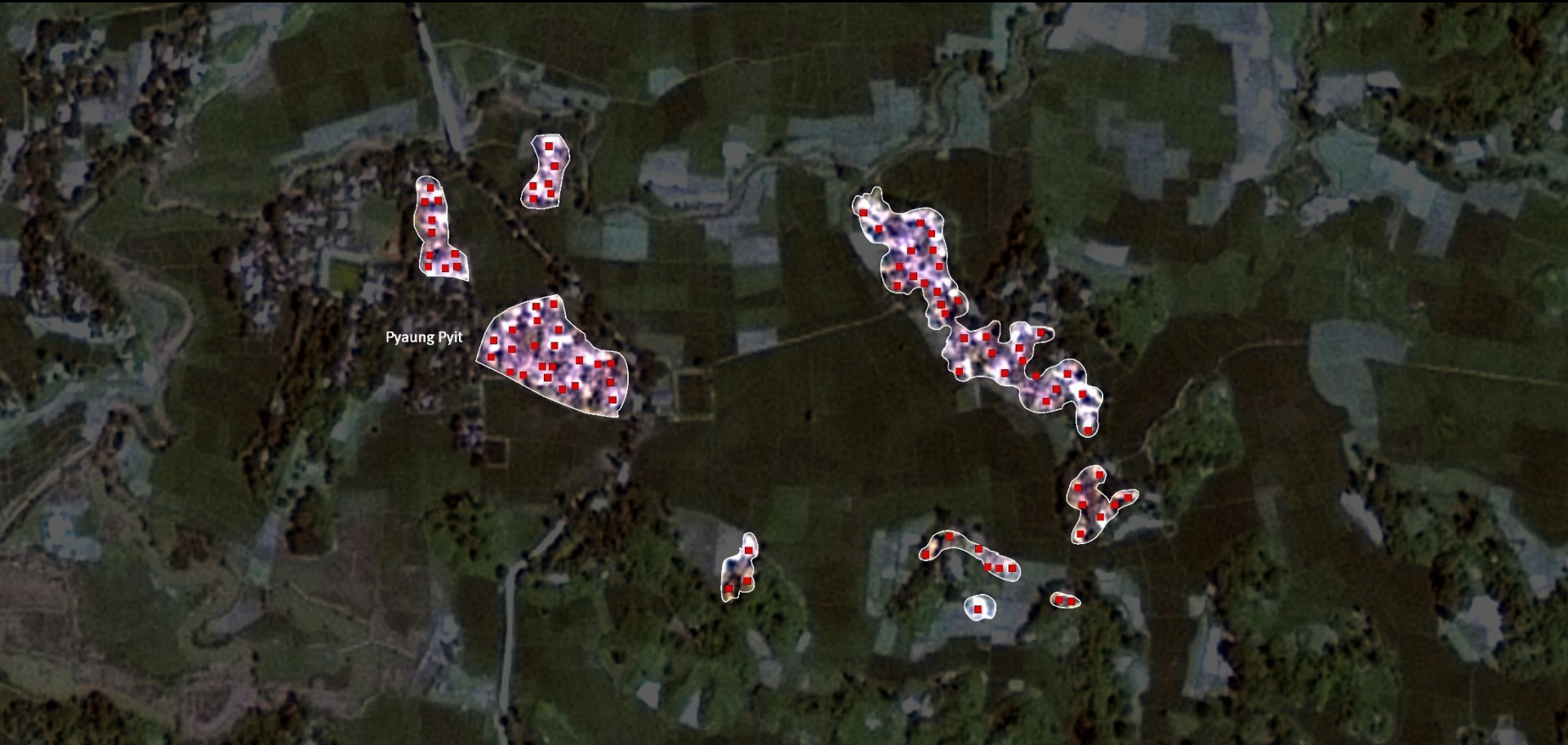
## Assessment Notes:

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in Wa Peik (Kye Kan Pyin) could be higher.

## Building destruction in the village of Pyaung Pyit (Ngar Sar Kyu), Maungdaw District

### Village Assessment Summary:

A total of 85 buildings were destroyed in the village of Pyaung Pyit (Ngar Sar Kyu) based on satellite imagery recorded on the mornings of 22 October and 10 November 2016. Damages are consistent with arson.



Village Center Coordinates:  
92°20'26.272"E 21°2'47.675"N; 46QDJ3149327444 MGRS

### Assessment Notes:

Because of dense tree cover it is possible that a limited number of fire-affected buildings were not detected. The actual number of building destruction in Pyaung Pyit could be higher.

Building destruction in the village of Wa Peik (Kye Kan Pyin), Maungdaw District  
Pre-destruction satellite image recorded in 2014



# Building destruction in the village of Wa Peik (Kye Kan Pyin), Maungdaw District

Post-destruction satellite image recorded on 10 November 2016



Building destruction in the village of Wa Peik (Kye Kan Pyin), Maungdaw District  
Post-destruction satellite image recorded on 10 November 2016 - Destroyed buildings annotated in red



Building destruction in the village of Kyet Yoe Pyin, Maungdaw District  
Pre-destruction satellite image recorded on 30 March 2016





Building destruction in the village of Kyet Yoe Pyin, Maungdaw District  
Post-destruction satellite image recorded on 10 November 2016



Building destruction in the village of Kyet Yoe Pyin, Maungdaw District  
Post-destruction satellite image recorded on 10 November 2016 - Destroyed buildings annotated in red

