Mapping conditions in Rakhine State
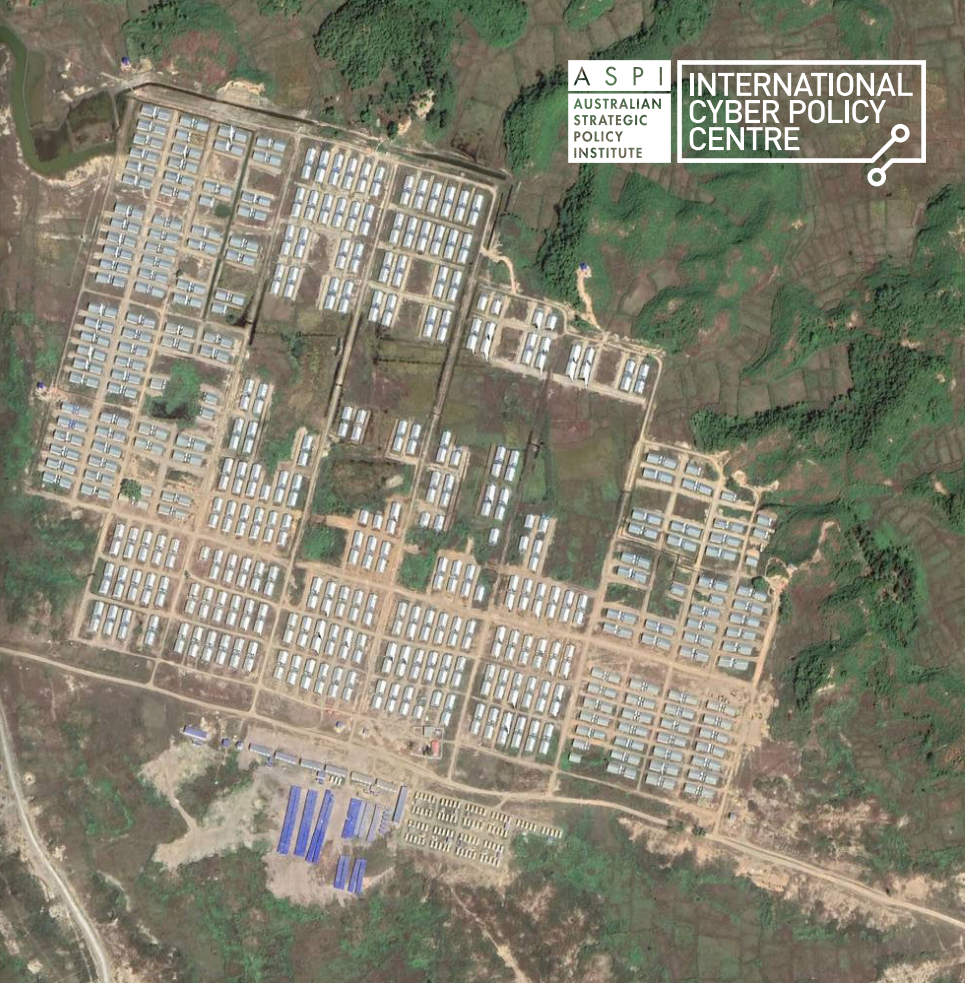
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The Australian Strategic Policy Institute's International Cyber Policy Centre has combined open-source data with the collection and analysis of new satellite imagery to assess the current status of settlements in northern Rakhine State, Myanmar, which were burned, damaged or destroyed in 2017. As part of this research project, we have also mapped potential repatriation camps and military bases constructed on the sites of former Rohingya settlements.

Our findings cast doubt on assertions that current conditions in Rakhine will enable refugees to return to safe, dignified and sustainable lives in Myanmar.

Satellite analysis shows minimal preparation for a return of half a million refugees. The preparations that are being made raise significant concerns about the conditions under which returning Rohingya would be expected to live. The ongoing violence, instability, disruptions to internet and communications technologies and the lack of information about the security situation in Rakhine add to those concerns.

Key Findings

This project mapped the current status of 392 Rohingya settlements that were identified by the United Nations' UNOSAT as damaged or destroyed during the 2017 crisis. We used this data, and our own satellite imagery collection and analysis, to make an updated assessment of the status of those settlements. Based on the latest available satellite imagery, which spans December 2018 to June 2019, we found as follows:

- More than 320 settlements show no sign of reconstruction.

- At least 40% of affected settlements have been razed.

- At least 45 camps have been constructed or enlarged (some of the camps are believed to be for internally displaced people, returning refugees, or both).

- Six military facilities have been built or expanded on former Rohingya settlements.

- In addition to the UNOSAT data, we have identified at least 58 settlements which have been subject to new demolition in 2018. Separate to these 58 settlements, satellite imagery also shows demolition has occurred in other settlements in 2019.

Click here to open a map of our findings in a new window.

See our methodology at the end of this report.

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The crisis

The Rohingya people have experienced decades of discrimination and violence in Myanmar. The Rohingya were stripped of their citizenship by a 1982 law. Periodic outbreaks of targeted violence against them, including in 1978, 1991–1992, 2012 and 2016, has caused hundreds of thousands to flee Myanmar, many of whom headed to Bangladesh.

In August 2017, the Myanmar military initiated a brutal crackdown on Rohingya living in northern Rakhine State. The army claimed to be responding to prior attacks by the Arakan Rohingya Salvation Army on police posts and an army base.

The Myanmar military has been accused of mass killings, widespread sexual violence and burning entire villages to the ground (pictured: freshly burned Rohingya villages in September 2017).

At least 392 villages were damaged during this crisis. Médecins Sans Frontières has estimated that 9,400 Rohingya were killed between 25 August and 24 September 2017. The UN's Independent Fact-finding Mission found that, by August 2018, nearly 725,000 Rohingya had fled to Bangladesh.

The UN investigation found that the Myanmar military committed 'consistent patterns of serious human rights violations' against the Rohingya that the media suggest may amount to crimes against humanity.

The International Criminal Court is considering opening a full investigation into alleged atrocities against the Rohingya in Myanmar.

Stalled return

The governments of Myanmar and Bangladesh signed an initial deal in November 2017 to work towards the possible repatriation of the Rohingya. The Myanmar Government has also signed a memorandum of understanding with UN agencies for the repatriation of the Rohingya.

As part of those agreements, the Myanmar Government said it has constructed 'reception' and 'transit' centres to facilitate the return of the refugees.

However, repatriation efforts have continued to stall because of a range of issues. Human rights organisations have continuously expressed concerns that conditions aren't in place to ensure a safe return.

In early 2018, a small number of refugees attempted to return to Rakhine of their own volition. They were arrested by the Myanmar Government, and some were given prison sentences. It was reported that they would be transferred to the Hla Pho Khaung Transit Centre in Rakhine State.

In November 2018, an attempt was made by Bangladesh to begin repatriation. While promising that the return would be voluntary, safe and dignified, the Bangladeshi authorities deployed the army into refugee camps in Cox's Bazar – the largest refugee settlement in Bangladesh. Under international pressure, however, the government later paused repatriation efforts.

As of April 2019, more than 910,000 Rohingya live in refugee camps in Cox's Bazar (pictured).

Current conditions on the ground: Arakan Army and Internet Shutdown

Since the beginning of 2019, fighting in Rakhine State between the Myanmar military and the Arakan Army (an ethnic Buddhist militia, which is unrelated to the Rohingya group, the Arakan Rohingya Salvation Army) has escalated dramatically. The conflict has triggered fresh waves of internal displacements of up to 35,000 people, as well as claims of further village burnings.

It's unclear how many civilians have been killed due to this conflict. According to reports at least 14 civilians have died while detained by the Myanmar military or police. The military has asserted that it will seek to investigate deaths in custody itself, rather than having an independent inquiry. Police are reported to be searching for young people who held a peaceful 'Rakhine Lives Matter' protest to call for justice for civilians who have died in custody.

On 22 June 2019, the Myanmar Government ordered telecommunications companies to shut down the internet in parts of Rakhine and neighbouring Chin State. UN Special Rapporteur Yanghee Lee said in early July that the 'information blackout is imperilling villagers, further obstructing the humanitarian response and shielding the military operations from scrutiny'. The rapporteur expressed concerns that fresh war crimes may be being perpetrated in Rakhine State. The internet remained shut down as of 19 July 2019.

The ongoing instability, violence, interruptions to communications technologies and lack of information about the security situation in Rakhine further complicate conditions on the ground for a safe return of the Rohingya refugees.

An injured man from Kyauk Tan village in Rathedaung township sits on a bed in a hospital in Sittwe, capital of western Myanmar's Rakhine state, 2 May 2019. Agence France-Presse.

The ASEAN Report

In June 2019, a report by the ASEAN Emergency Response and Assessment Team was leaked to the media. The report was 'a preliminary assessment' with a limited mandate and was undertaken by a team that was deployed for 10 days. The report attracted widespread criticism.

The ASEAN report outlines a process that would see 500,000 Rohingya refugees return to Myanmar over a period of six years. It also recommends how that process could be accelerated. As of April 2019, more than 910,000 Rohingya live in refugee camps in Cox's Bazar.
Returning refugees will first pass through 'reception centres', which are intended to process 300 refugees per day. From the 'reception centres', refugees will be sent to a 'transit centre'.

According to ASEAN, the Hla Pho Khaung Transit Centre (pictured) can accommodate 25,000 people in 'temporary shelters' at eight families per shelter. There's additional capacity to accommodate returning refugees in 'container-type' shelters.

According to the report, refugees will remain in the transit centre for up to 30 days.

After that time, there are three permanent relocation options available to returnees:

1. If their original houses are still habitable, they can return to them immediately.

2. They can move to relocation sites provided by the government if shelters are already built.

3. They can participate in cash-for-work programs to rebuild their houses in identified areas.

Civil society and human rights groups have criticised the ASEAN report, saying that the current conditions in northern Rakhine State don't support a safe, dignified and voluntary return for Rohingya refugees.

Rohingya community leaders in Bangladesh say they won't return unless a number of conditions are met, including reinstated rights to citizenship, access to their original land and international guarantees of their safety.

December 2018

We've found no evidence of widespread preparation for Rohingya refugees to return to safe and dignified conditions.

Instead, we've found ongoing destruction of additional settlements and the construction of highly securitised camps and military bases that have been built, fortified or expanded on the sites of razed Rohingya settlements.

The continued destruction of Rohingya settlements and the construction of military facilities on the sites of former settlements, such as the example shown here, cast doubt on the credibility of claims that refugees will be allowed to return to their homes.

A suspected dual-use military and administrative facility on the site of a burned village near Maungdaw.

The villages

UNOSAT data identified 392 Rohingya settlements that were burned, damaged or destroyed during the 2017 crisis.

We used that data, and our own satellite imagery collection and analysis, to make an updated assessment of the status of these settlements. We found as follows:

More than 320 settlements show no sign of reconstruction.

At least 40% of affected settlements have been razed.

In addition to the UNOSAT data, we have identified at least 58 settlements which have been subject to new demolition in 2018. Separate to these 58 settlements, satellite imagery also shows demolition has occurred in other settlements in 2019.

Click here to open a map of our findings in a new window.

Ongoing destruction

Even as the Myanmar Government says that it's offering the Rohingya refugees a safe return, the destruction of settlements, and broader land clearance, is continuing.

In our research, we have documented at least 58 remaining settlements that have been burned, partially destroyed or demolished in northern Rakhine State throughout 2018. Further satellite evidence shows continuing demolition in 2019.

The village of Maw with all buildings razed in April 2018.

The laws

The destruction of the remaining buildings in Rohingya settlements may have significant implications under Myanmar law.

The Vacant, Fallow and Virgin Lands Management Law was amended in 2018. Owners of land designated as vacant, fallow or virgin—including land in Rakhine—were given six months to apply for land-ownership permits. The deadline was 11 March 2019.

The application process for these permits was inaccessible to many Rohingya owing to the considerable restrictions on their movement within Myanmar and from settlements in Bangladesh. This means that they may be evicted, fined and, potentially, imprisoned if they try to return to their land without a permit.

In addition, Myanmar's Natural Disaster Management Law allows the government to 'manage' designated disaster zones, such as burned areas. Minister for Social Development, Relief and Resettlement Win Myat Aye said in 2017, 'According to the law, burnt land becomes government-managed land.'

Over 80% of the settlements considered in this study show no signs of reconstruction. We found no cases of significant residential reconstruction within destroyed areas. Therefore, it appears unlikely that most refugees will be able to return to their original homes and land. This raises questions about where the Myanmar Government intends them to live instead.

The camps

In our research, we mapped 46 camps (pictured) believed to be for internally displaced people, returning refugees, or both. This includes some that pre-date the 2017 crackdown, camps that have been significantly expanded since 2017 and new camps constructed after the crackdown.

The camps vary significantly in size and structure. By far the largest is the Hla Pho Khaung Transit Centre, which the Myanmar Government says can hold 25,000 refugees in 625 'temporary shelters'. An additional 1,090 'container-type' shelters may also be used.

The ASEAN report contains a number of details about conditions at the Hla Pho Khaung Transit Centre (pictured) that raise concerns:

- Refugees will have to sign in and out to leave the centre and adhere to a curfew. Restrictions on freedom of movement for Rohingya communities that remain in Rakhine have been identified as a major problem by UN human rights experts.

- Camp security will be managed by the Border Guard Police (BGP). The BGP has previously been accused of torturing Rohingya returnees.

- The health clinic at the centre currently has one doctor, two midwives, three beds and a small pharmacy. When more refugees arrive, this will be increased to a total of 11 staff from the Department of Health, to provide medical care for up to 25,000 people. Humanitarian agencies have been battling multiple serious disease outbreaks among Rohingya refugees in Bangladesh, including cholera and diphtheria.

Housing (top) and communal toilets (bottom) at Hla Pho Khaung Transit Centre. Source: ASEAN-ERAT "Preliminary Need Assessment for Repatriation in Rakhine State, Myanmar", 2019.

The relocation sites

Returning refugees are expected to stay at Hla Pho Khaung Transit Centre for a maximum of 30 days. If they can't return to their original homes, as is likely to be the case for most, they may be sent to 'relocation sites' such as Kyein Chaung in Rakhine State.

The Kyein Chaung relocation site is built on the site of a burned Rohingya village. The ASEAN report states that refugees in relocation sites may own their houses, but that the land is now owned by the Myanmar Government. According to the report, houses will be constructed in 10 days and are expected to last for 10–15 years.

The new construction at the site strongly resembles a camp, rather than the villages that existed before the crackdown.

Kyein Chaung with new construction as of 20 May 2019.

Newly constructed security post

2 June 2019

The military bases

Our research has identified six suspected military facilities built or expanded on the sites of former Rohingya settlements - some of these facilities appear to be 'dual-use' and may also act as administrative centres. These facilities contain a combination of features such as defensive trench positions, helipads and guarded entrances.

Aung Zan (North)

The ASEAN report highlights the need for 'heightened security measures for a safe community' and draws attention to the Border Guard Police (BGP) posts spread throughout northern Rakhine State. Satellite evidence confirms the highly securitised nature of northern Rakhine.

These trends are evident in the village of Aung Zan, a few kilometres from the Bangladesh border. This small village is split into two hamlets and includes roughly 50 structures. Large parts of the village were burned during the 2017 crisis. Throughout 2018, the only new construction in the village was of a security post near the town and the increased fortification of one of the suspected BGP posts in the village. In addition, outlying residential structures were demolished during 2018. The remaining structures in Aung Zan were almost all demolished in the first three months of 2019, with the exception of the BGP posts.

Newly constructed security post as of 2 June 2019.

Securitised reception centres

Taung Pyo Letwe is one of two reception centres identified in the ASEAN report. The centres are described as administrative facilities not designed for the long-term housing or detention of returnees.

But satellite imagery of Taung Pyo Letwe and suspected repatriation sites contradicts claims that preparations are being made for a dignified and safe return of refugees to northern Rakhine State. Many of the designated repatriation areas appear to be highly securitised camps more akin to detention facilities. For example, some new buildings constructed for the Taung Pyo Letwe Reception Centre are in a prison-like configuration, including housing areas fully surrounded by fencing and six watchtowers overlooking the 10,000 square metre facility. All of this construction has occurred on the sites of villages destroyed in the 2017 violence.

The Taung Pyo Letwe centre is nestled within multiple highly securitised areas. Between different administrative sections of the reception centre, there are five areas that appear to contain military components. They are likely to be BGP posts designed to monitor returnees in the reception centre. Additionally, roughly 300 metres to the south are two large military bases, which cover about 10 acres. Both bases include significant defensive trench positions, and one contains a large communications tower.

Conclusion

Our research does not support assertions that conditions are in place to support a safe, dignified and sustainable return of Rohingya refugees to Rakhine State.

Satellite analysis shows minimal preparation for a return of half a million refugees. The preparations that are being made raise significant concerns about the conditions under which returning Rohingya refugees would be expected to live.

Ongoing violence, instability, disruptions to internet and communications technologies and the lack of information about the security situation in Rakhine state add to these concerns.

This research seeks to add to the evidence base available to policymakers and relevant stakeholders about conditions in northern Rakhine, and Rakhine State more broadly. It also seeks to contribute to informed discussions about the best path towards a safe, dignified and sustainable future for the Rohingya refugees.

Methodology & about us

This project conducted original research through the collection and analysis of new satellite imagery. It also utilized existing datasets and open-source information including UNOSAT data, surveys, media reports and reporting conducted by civil society, human rights and multilateral agencies.

UNOSAT data was used to identify the 392 settlements that were burned, damaged or destroyed during the 2017 crackdown. UNOSAT describes itself as a technology-intensive program developed under the UN Institute for Training and Research. At the request of the Independent International Fact-Finding Mission on Myanmar, UNOSAT used satellite imagery analysis and fire-detection data to map the destruction of villages between 25 August 2017 and 18 March 2018.

We then used a combination of Google Earth, Planet Labs and commercial satellite imagery to find the most up-to-date satellite imagery of the 392 settlements. We assessed whether damaged settlements had been razed or left burnt. This was mostly assessed based on whether damaged structures and trees remained. If we saw reconstruction, we characterised it as residential, camp or military construction. Satellite imagery has been attributed on the image or credited to *Digital Globe, a Maxar Company,* via Google.

Satellite imagery is inherently varied in quality and acquisition dates. Our analysis conducted used multiple sources of satellite imagery, and we always sought to use and analyse the highest quality and the most recent imagery available. However, a limited number of ambiguous cases may be interpreted differently from our assessments, especially with the addition of more recent imagery. We don't expect those cases to cover a significant proportion of our sample or to affect the conclusions that we've reached.

We also looked beyond the 392 settlements identified by UNOSAT and identified cases where settlements have been subject to new burning and demolition in other parts of northern Rakhine state. Some of this has occurred in 2018 and in 2019 in settlements not previously identified in the UNOSAT dataset. In a similar manner, we also broadly surveyed satellite imagery for newly constructed repatriation sites in northern Rakhine State.

We corroborated our analysis with other open-source information including reports about the transit and reception centres from civil society organisations and information from the ASEAN report. This research has undergone peer review and external consultation.

About us

ASPI's International Cyber Policy Centre focuses on the growing importance of cyber and technology-related issues for broader strategic policy. The centre's growing team of analysts have a mixture of expertise that include specialisations in policy issues, technical capabilities, Asian languages, satellite analysis and human rights. The centre has a mixed funding base and receives project and sponsorship funding from a range of government, industry and civil society groups, in Australia and internationally. This research project had no primary funder.