

Rapid Hazard Assessment Report

ژاغه: شایوزو چھت ژاسپور خیبر پختونخواہ

مولک: پاکستان

عرض بلد: $35.84726^{\circ} \text{N}$

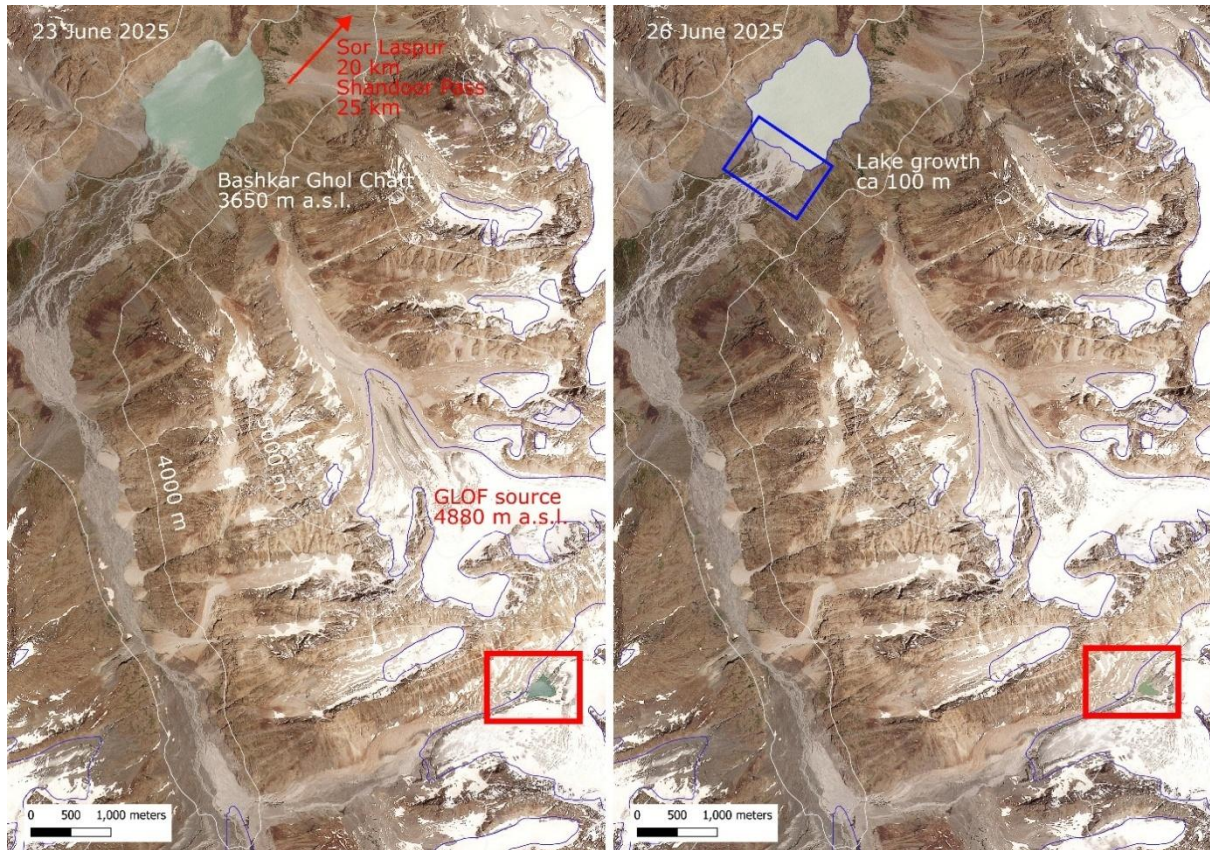
طول بلد: $72.38435^{\circ} \text{E}$

سطح سمندر آری ژانگی: 4880 میٹر

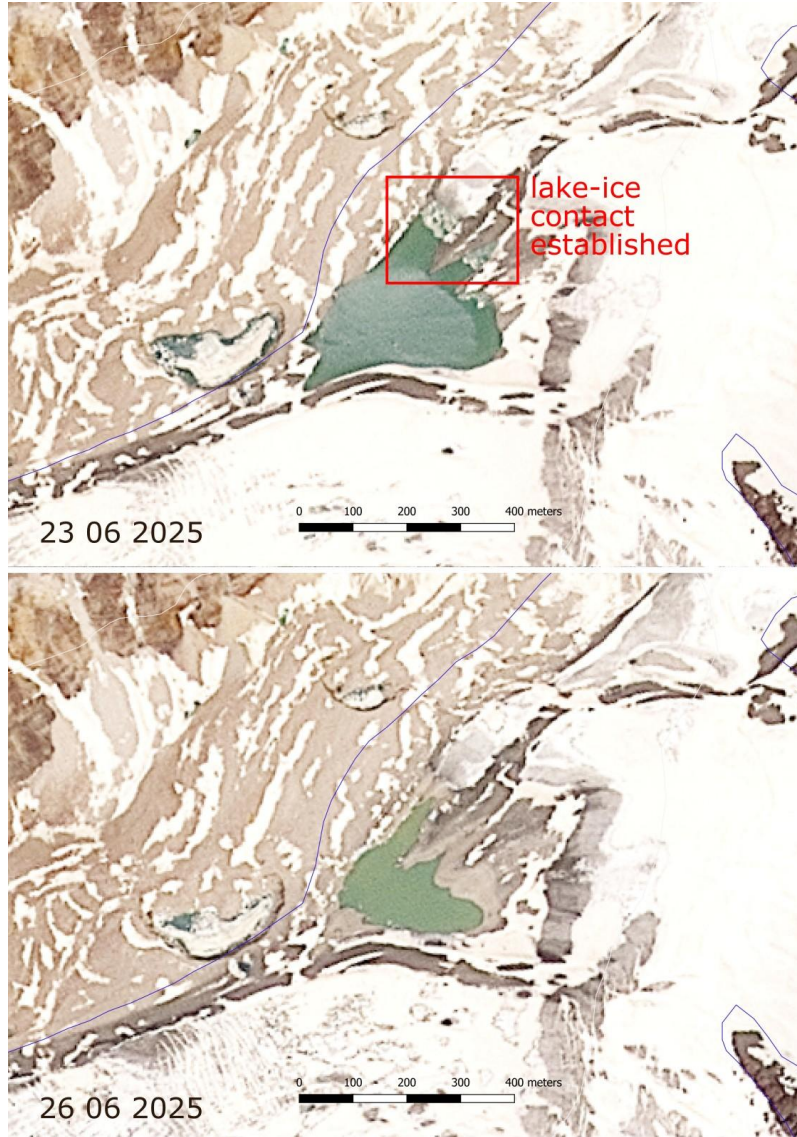
مقامی وخت: پتہ نکی

آفتو قسم: شایوز چھت نشپوڑی چٹی بوئے بیک (GLOF)

تصویرو حوالہ: پلانٹ سپر ڈو، 23 تا 26 جون 2025



شکل 1: شایوزو چھت بیکو واقعات پر وشتی و اچی پورا راہ



شکل 2: شایوزو چھتان سلسلہ، جو ایتو چوکیرو چھت ای بیتی سوز بونیان، اوچھ لکیر شایوزو حد بندیو نشانو دویان کی هیس لوٹ چھتو پڑ غیجھی شیر

قدرتی آفتو ابتدائی اندازہ:

23 جون چھوچھو 11 بجار گنی 24 جونو چھوچھو 11 بجو موڑی بشقار گولو 4880 میٹر ژانگیہ تروئے چھت ایار ایا چوکی 20 کلو میٹر موڑی بشقار گولو چھتو (3690 میٹر پستیو) ویشکی چق ہونی۔ بشقار گولو چھت دی شوغور گنی اٹیلی بیتی غیجھی ہائے۔ اویلو چھت ریکارڈہ نو گیتی شیر ہورو هیش کورہ نو پاشیران۔ 2023 آر پروشتی اویلو ہے چھت نو اوشوئی۔ هیس لش بیتی 2024 و آخرہ غیجھی ہائے۔ 23 جونہ پت هیس چھت غیرتائے RGI ریکارڈہ نو گیتی شیر۔ 2000 نمبر 1 (v7.o-G-14707) نمبرا پوشین بویان۔

هیه چھت شایوزو اپاکہ 70 ہزار مربع میٹرو چے 29300 مربع میٹر بیرو غنیہ گیتی شیر۔ ہمونیه پت شایوزو اپاکہ شیرو خور چھت اٹیلینو بیتی شیر۔



آب وبوا بديل بيكو اثر

هيه ديهيا هيم كوريكو، شا يوزان يا قدرتي آفاتان سورا مكهمل تحقيق نو بيتي شير- هيه اي نوغ ساوز بيرو شه يوزو چهت شير- وا هيه تيز ساوز باك خطرناك پهوك گلف مثال شير-

مالي وا سماجي خطرات-

مالي وا سماجي خطراتان اثراتان ايڪ لوٽ قدرتي چهت (هوسار نسين بيكو وجهين) كم كوري شير- به وجهين انساني ژانان وا آباديا تين كيه نقصان نو توري شير-

اويلا خبردار كوريكو بچي نظام: كيه نظام موجود نكي-

جو باره كيه واقعه بيكو امكان-

هيه ژاغه همي چهتان سر پروشٽي گلف رپورٽ نو بيتي شير- وا هيه لوٽ شايزو چهت 2023 پروشٽي نو اوشوئي- وا هيه 2023 آر ايمتي لوٽ باو گويان-اگر هيه چهت كي وا ساوز هونئي تهه گياك زمانه هموش وا دي شايزو و- چهت ساوز بوني-

هموش قسمو واقعات پروشٽي بيكو لو-

هيه ديهيا هموگار پروشٽي بوخت اموشٽي هون گيكي واقعات باو شيني-مگر هاتيتان كيه خاص نويشيرو ركارڊ موجود نكي

Rapid Hazard Assessment Report

Location: unnamed Lake, Luspur, Khyber Pakhtunkhwa

Country: Pakistan

Lat: 35.84726°N - Lon: 72.38435°E - Elevation: 4880 m a.s.l.

Date: 23rd to 24th June 2025

Local time: Unknown

Hazard type: Glacial lake outburst flood (GLOF)

Imagery: (Source: Planet SuperDove, 23rd of June, 26th of June)

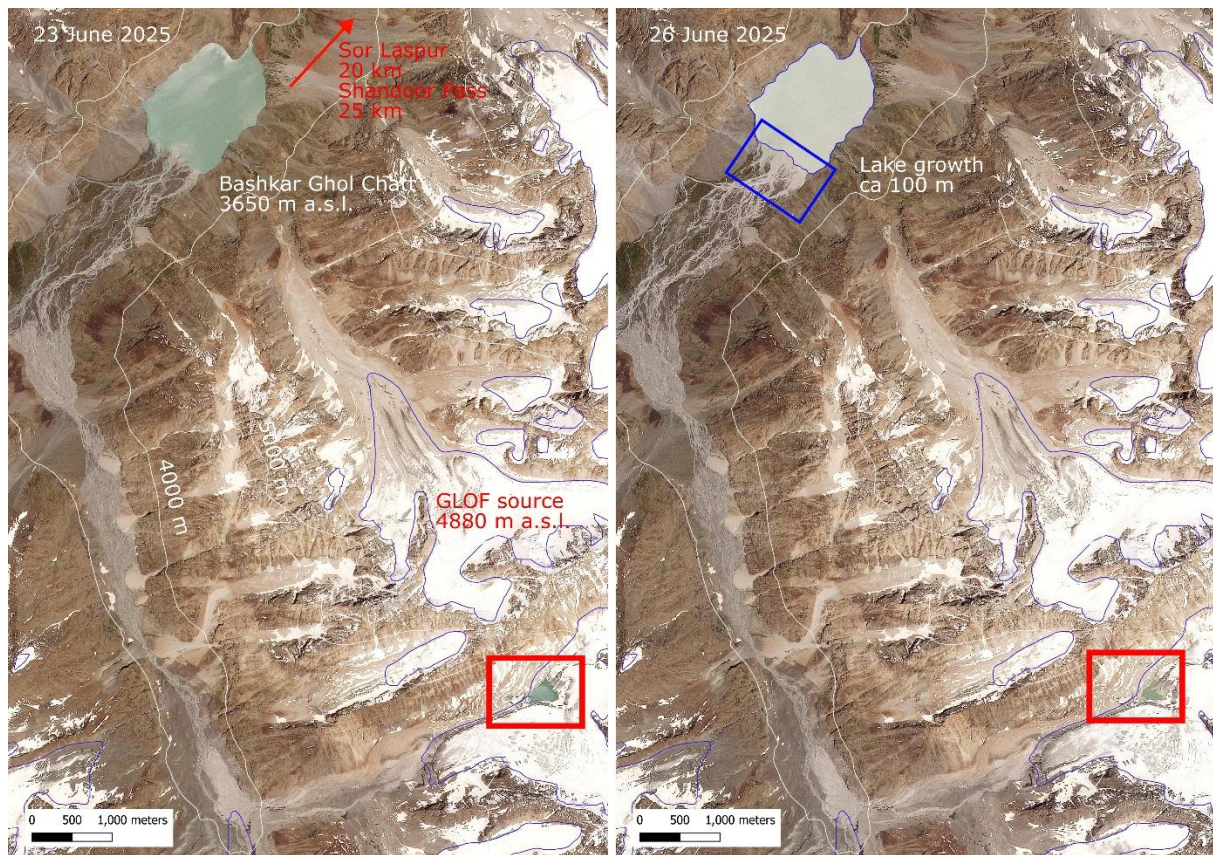


Figure 1: Complete GLOF path before and after the event.

Preliminary process understanding:

Between 1100 local time on the 23rd of June and 1100 local time on the 24th of June a proglacial lake system, consisting of three connected lakes drained rapidly, reaching Bashkar Ghol Chatt 20 km downstream, which buffered the flood wave completely (Figure 1), becoming visibly affected by the sediment load. The drained lake is in no inventory, located at an elevation of 4880 m a.s.l. It is located at a location that is still mapped as glacier ice in the RGI inventory (unnamed glacier, RGI2000-v7.0-G-14-03707).

The main lake did not exist before 2023, since growing steadily until coming into contact with glacier ice at the end of 2024. Parts of the ice calved into the lake just before the 23rd of June

(Figure 2). The main lake drained from an area of 70 000 m² to 29 300 m². A further lake downstream along the glacier tongue was not affected and remains intact.

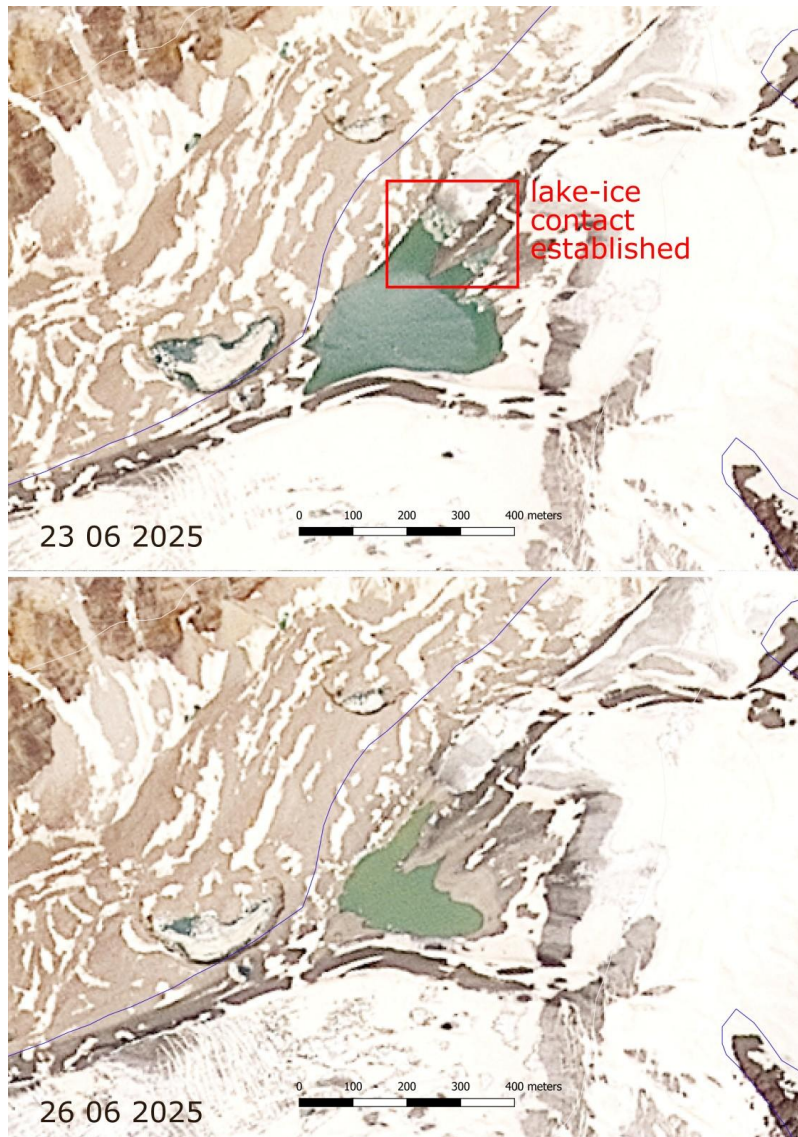


Figure 2: Lake cascade, with two connected lakes draining at the same time. The blue line marks glacier outlines, which cover the main lake.

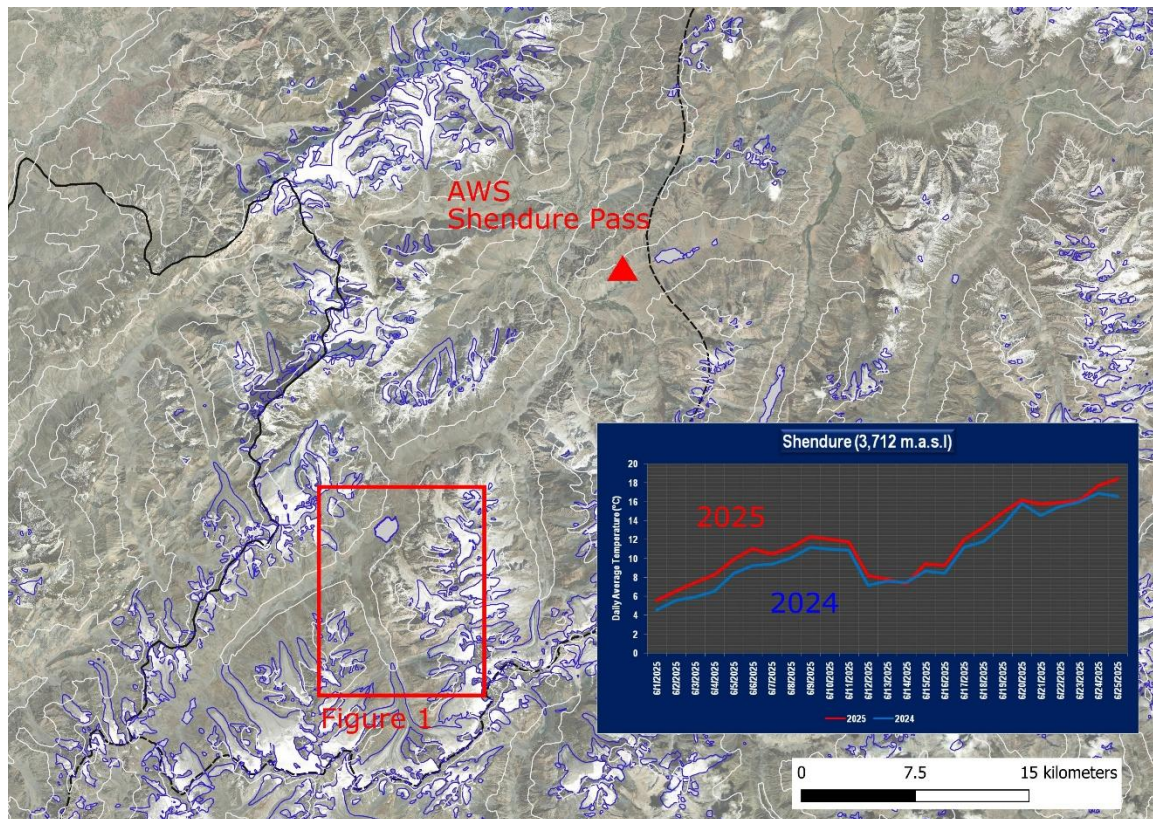


Figure 3: Daily average air temperatures from nearby AWS Shendure operated by GMRC-WAPDA.

Climate change context: There is no in depth study on cryosphere or hazard contexts in the valley, but the valley has previously been mentioned of potential concern for floods from glacial environments (Khan et al., 2022). Multiple GLOFs have been documented both towards Ghizer (East) as well as Chitral (West) from here (Shrestha et al., 2023) and last year's [Kumrat GLOF](#) happened only 20 km away.

In-situ measurements of air temperature from the Shandur Pass AWS operated by GMRC-WAPDA, suggest that temperatures have been rising steeply just before the event, and were consistently higher than last year (Figure 3). With a lot of snow still present, intense snow and ice melt could have facilitated the sudden drainage.

As this is a GLOF from a newly formed lake, it provides an example of the threat of rapidly appearing lakes of relatively small size for GLOF hazards.

Socioeconomic risk context: The GLOF was buffered by a larger natural lake, hence not further affecting any infrastructure or human life.

Early warning: Not in place.

Potential for recurring events: No GLOFs have been previously reported for these lakes. However, the main lake has not existed before 2023 and only since then grown constantly. If formed again, recurring events are possible.

Similar events/frequency: Previously, debris flow events were reported but not properly documented in the valley.

**Literature:**

Khan, S., Nisar, U. B., Hussain, A., Ahmad, N., & Siddique, B. (2022). Hydrological investigation of subsurface Glacial Lake Outburst Floods at Bindo Gol Valley under changing climate, Pakistan. *Journal of Applied Geophysics*, 201, 104633.

<https://doi.org/10.1016/j.jappgeo.2022.104633>

Shrestha, F., Steiner, J. F., Shrestha, R., Dhungel, Y., Joshi, S. P., Inglis, S., Ashraf, A., Wali, S., Walizada, K. M., & Zhang, T. (2023). A comprehensive and version-controlled database of glacial lake outburst floods in High Mountain Asia. *Earth System Science Data*, 15(9), 3941–3961. <https://doi.org/10.5194/essd-15-3941-2023>