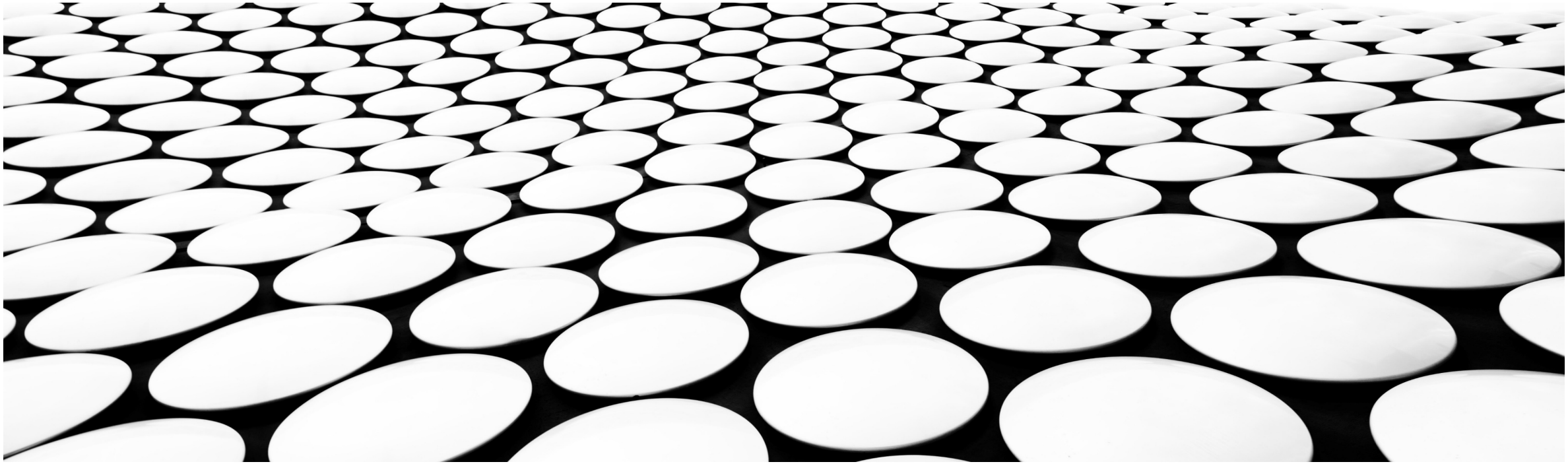
IRDR
Integrated Research on Disaster Risk

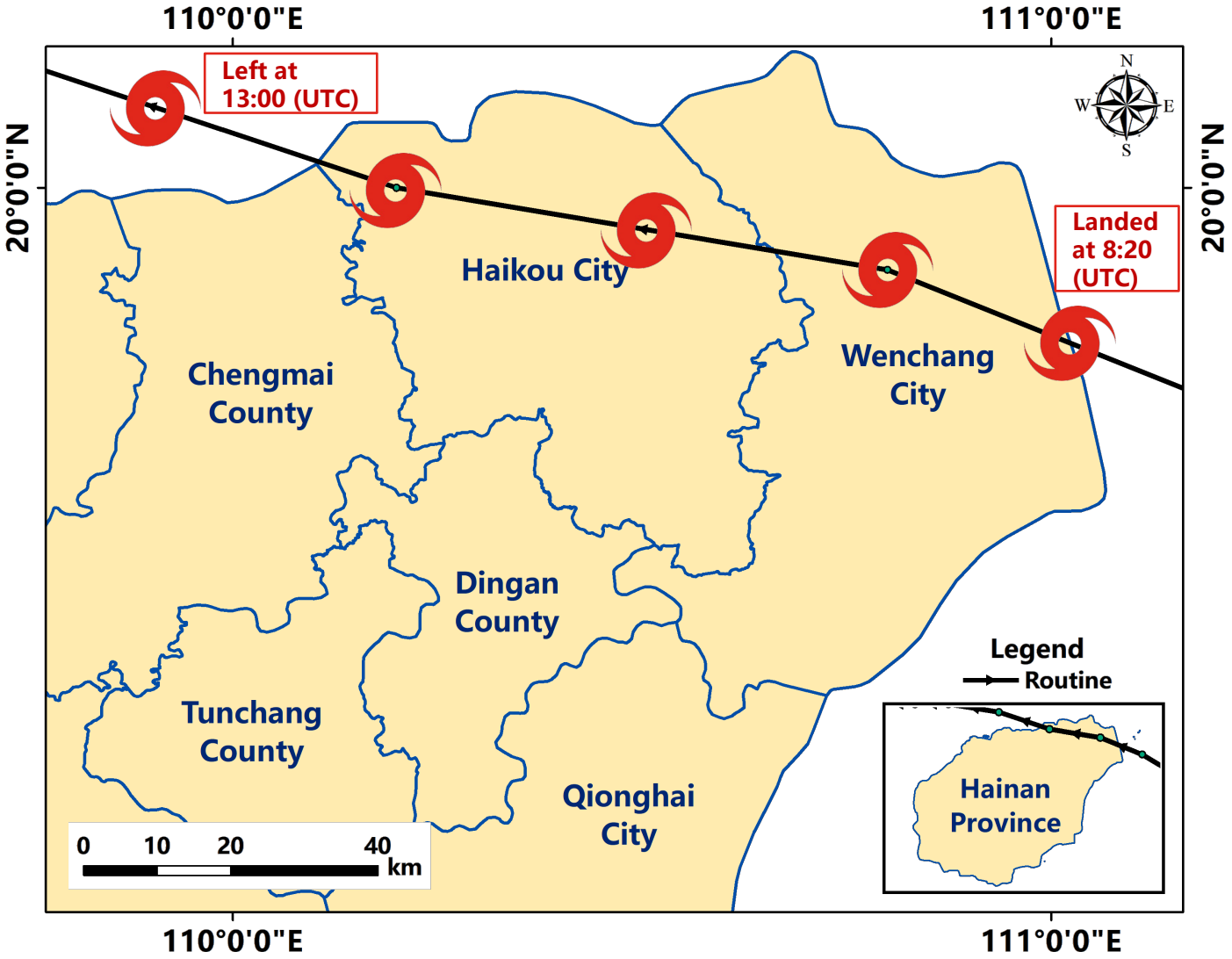
CBAS
INTERNATIONAL RESEARCH CENTER OF BIG DATA FOR SUSTAINABLE DEVELOPMENT GOALS
可持续发展大数据国际研究中心

PRELIMINARY ASSESSMENT OF POWER SUPPLY CAUSED BY THE SUPER TYPHOON YAGI



2024-09-20

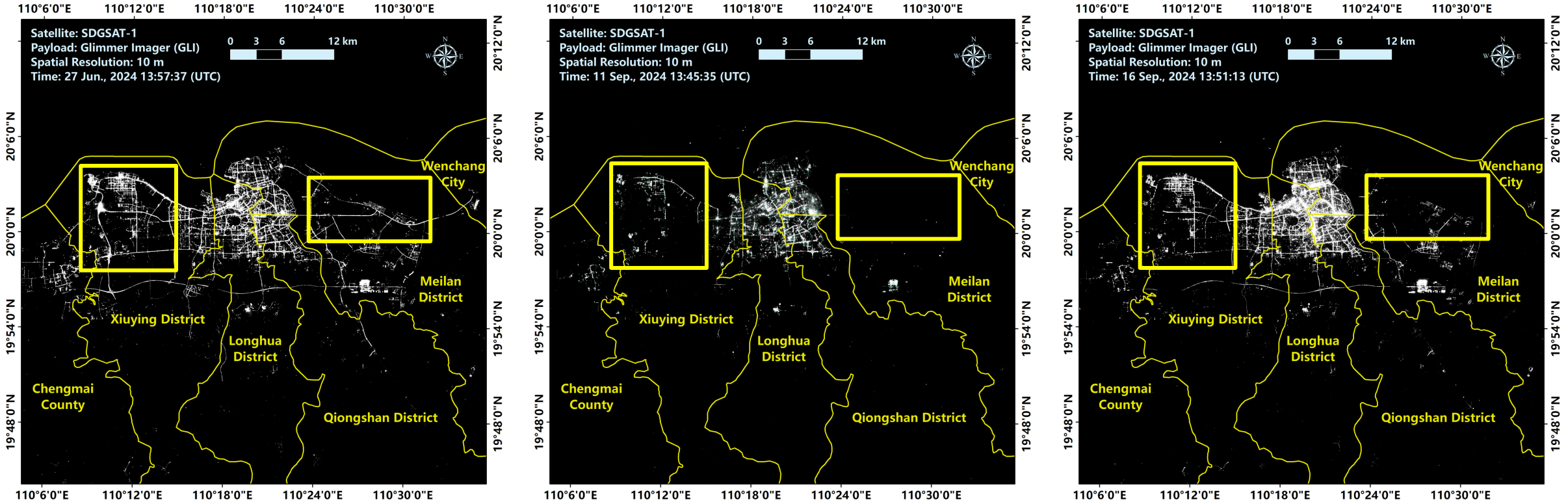
INTRODUCTION



- Asia's strongest storm this year, Super Typhoon Yagi, landed in Hainan Province, China at Wenchang City (east of Haikou City) on 6 Sep., 2024, at 8:20 (UTC), bringing violent gales and heavy rain that triggered widespread power outages, paralysing the tourist island province known as "China's Hawaii".
- The International Research Center of Big Data for Sustainable Development Goals (CBAS) conducted emergency mapping of typhoon affected areas.
- The SDGSAT-1 satellite was scheduled to conduct overpasses to capture Glimmer Imager (GLI) data of Hainan Province (especially Haikou City and Wenchang City) on 11 September, 2024, and 16 September, 2024, respectively.

ANALYSIS

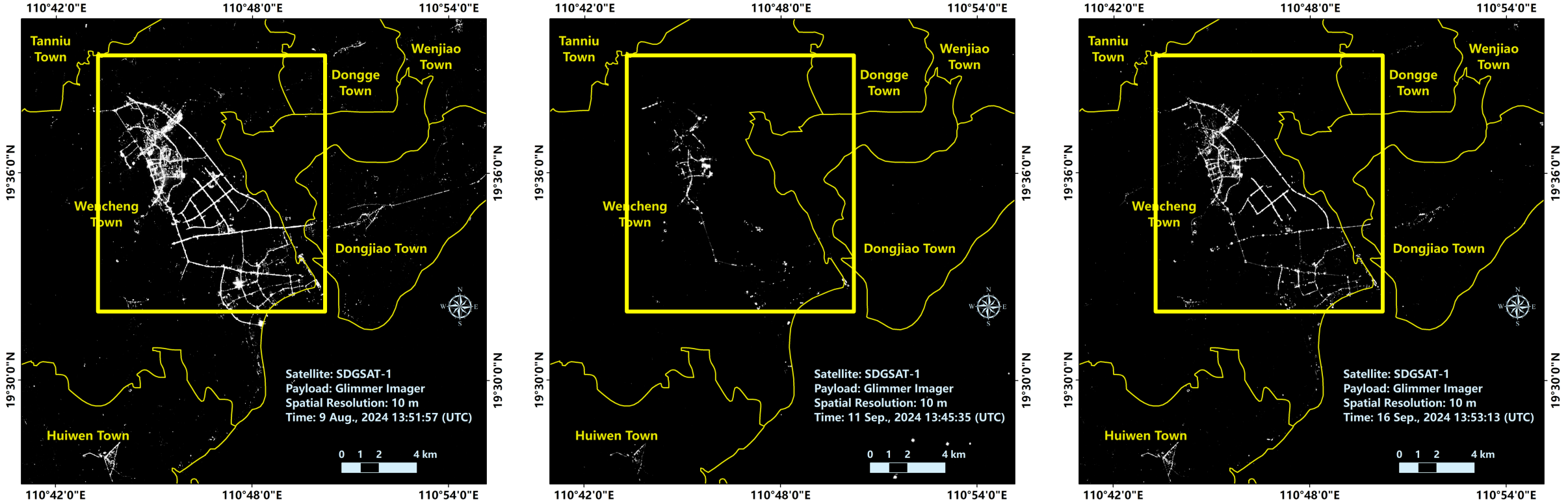
Power outage was detected at Haikou City on 11 Sep., 2024, and recovered to pre-disaster level on 16 Sep., 2024.



- On 11 Sep., 2024, Super Typhoon Yagi led to a significant decrease in the power supply area of Haikou City, which was reduced by 49.22% compared with 27 Jun., 2024, and the areas with light reduced were concentrated in Meilan District, Qiongshan District and Xiuying District.
- On 16 Sep., 2024, the power supply of Haikou City was recovered to pre-disaster level, except some rural area and roads that link towns.

ANALYSIS

Power outage was detected at Wenchang City on 11 Sep., 2024, and recovered to 80.00% of pre-disaster level on 16 Sep., 2024.



- In Wenchang, where the typhoon landed, there were 172 main lines in the city, 139 power lines affected by the typhoon, and almost the entire power distribution network was paralyzed.
- On 11 Sep., 2024, 84.31% lit area of Wenchang City lost power supply due to Super Typhoon Yagi, especially at Wenchang Town, Dongge Town, Dongjiao Town, Huiwen Town, and Wenjiao Town, respectively.
- On 16 Sep., 2024, the power supply of Wenchang City was recovered to 80.00% of pre-disaster level, except some rural areas.

ANALYSIS

Power outage was detected at Wenchang City on 11 Sep., 2024, and recovered to 80.00% of pre-disaster level on 16 Sep., 2024.


Fallen Power Pole


Damaged Power Pole


Fallen Power Poles


Fallen Power Poles


Fallen Power Pole

Damaged Power Supply Infrastructure in Suburbs and Remote Towns of Wenchang City (Site Photos Taken on 9 Sep., 2024)

- The damged power supply infrastructure (i.e., transmission line) in suburbs and remote towns of Wenchang City caused by Super Typoon Yagi resulting in these areas are still under pressure to restore power on 11 Sep., 2024.
- With the efforts of local government, 92 out of 139 affected power lines in Wenchang City have resumed power supply, which is highly consistent with the monitoring results on the 16th.

SUMMARY

- **Super Typhoon Yagi cased widespread power outages in Haikou City and Wenchang City, respectively.**
- **Power supply in Haikou City recovered to 50.78% and 100.00% of pre-disaster level on 11 Sep., 2024 and 16 Sep., 2024, respectively.**
- **In Wenchang, where the typhoon landed, there were 139 power lines affected by the typhoon, and 84.31% lit area lost power supply on 11 Sep., 2024, especially at Wenchang Town, Dongge Town, Dongjiao Town, Huiwen Town, and Wenjiao Town, respectively.**
- **On 16 Sep., 2024, power supply of Haikou City was recovered to 80.00% of pre-disaster level, except some rural areas.**
- **Continuous monitoring is scheduled.**

SOURCES

(1) Satellite Images

Satellite Data: SDGSAT-1 Glimmer Imager (GLI)

Imagery Date: 27 Jun., 2024, 9 Aug., 2024, 11 Sep., 2024, and 16 Sep., 2024.

Resolution: 10 m for GLI.

Copyright: International Research Center of Big Data for Sustainable Development Goals (CBAS)

Source: International Research Center of Big Data for Sustainable Development Goals (CBAS)

(2) Ancillary data

Administrative boundaries are downloaded from Database of Global Administrative Boundaries (GADM).

(3) Acknowledgement

Thanks Hainan Aerospace Technology Innovation Center (HATIC) for kindly providing the site photos of damaged power supply infrastructure.

(4) Analysis & Production

Analysis: International Research Center of Big Data for Sustainable Development Goals (CBAS)
Production: International Research Center of Big Data for Sustainable Development Goals (CBAS) & Integrated Research on Disaster Risk (IRDR)

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