

# South Sudan Flood Impact Mapping

November 2025 | Panyijiar County

This assessment applies an integrated **spatial detection and proximity modelling approach** to quantify the impact of floods on critical infrastructure and community services across affected counties. The analysis combines remotely sensed flood data with building and facility datasets to identify exposure levels, assess vulnerability, and inform targeted recovery planning. A description of the methodology is provided in [this methodology note](#). The flood impact maps can be accessed here: [health facilities](#); [education facilities](#); [water points](#); [administrative buildings](#).

**Spatial flood analysis for Panyijiar County indicates that approximately 62% of the population (78,000 individuals) had been affected by floods in 2025 as of 30 September**

**Out of 325 mapped public facilities, 234 (72%) had been affected by floods in 2025 as of 30 September.**

The highest flood exposure levels were recorded among education centers (83%), health facilities (87%) market (66%) and water points (65%). The most affected areas, according to the analysis, were Nyal (6 health facilities, 32 water points & 20 education facilities), Mayom (4 health facilities, 18 water points & 4 education facilities) and Kol (6 health facilities, 18 water points & 6 education facilities) Payams.

**The analysis mapped 20,714 buildings across Panyijiar County, of which 12,536 (60%) fall within the flood-affected area.** Proximity modeling reveals communities'

vulnerability may increase with distance from public services, especially health, education and water facilities. Buildings farther than 2 km from schools and health centers, and beyond 1 km from water points, face heightened vulnerability due to compounded access constraints and service dependency.

- **Buildings far from education facilities:** these buildings represent households and communities isolated from learning opportunities, where floodwaters not only damage homes but also deepen educational access issues. During floods, children in these zones may likely be cut off from schools, impeding recovery and long-term human capital development. Tiap, Nyal, and Pachaar record the highest proportions (10%) of flooded structures (12,536)

more than 2 kilometers away from education facilities. Of the 12,536 flood affected structures in Panyijiar, 10% of these structures are located more than 2km from an educational facility.

- **Buildings far from health facilities:** these areas face movement difficulty in times of crisis — when flood-related diseases (cholera, malaria, respiratory infections) surge, the distance to care becomes a barrier. It highlights a compound vulnerability: physical exposure to floods plus poor access to health services results in humanitarian risk hotspots. Tiap, Nyal, and Ganyliel payams record the highest proportions of flooded structures more than 2 kilometers away from health facilities. Of the 12,536 flood affected structures in Panyijiar, 19% of these structures are located more than 2km from health facility.
- **Buildings far from water points:** in flooded conditions, these communities are likely to be doubly affected — not only are their homes inundated, but their safe water sources become inaccessible or contaminated especially where floodwaters mix with waste and stagnant pools. Taip, Nyal, and Kol payams record the highest proportions of flooded structures more than 1 kilometer away from water facilities. Of the 12,536 flood affected structures in Panyijiar, 16% of these structures are located more than 1km from a water point.

**Table 1.** Proportion of potentially flooded facilities in Panyijiar County

Population and facility type (number)	Potentially flooded %
Population (126,239)	62%
Building (20,714)	60%
Administrative (10)	60%
Market (12)	66%
Religious building (21)	47%
Transport (18)	10%
Water point / facility (181)	65%
Health (31)	87%
Education (62)	83%
Building ≤2Km to Education facility (17,492)	51%
Building > 2Km to Education facility (3,222)	10%
Building ≤2Km to Health facility (13,418)	41%
Building > 2Km to Health facility (7,296)	19%
Building ≤1Km to Waterpoint (14,811)	45%
Building >1Km to Waterpoint (5,903)	16%