RESCUE 1122

Khyber Pakhtunkhwa

COUNTING THE COST

Losses and Damages Report 2022

A Policy & Response Analysis Across All 35 Districts of KPK

January – December 2022

Prepared and Designed by

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Data Source: Rescue 1122, Government of Khyber Pakhtunkhwa

1. Executive Summary

The year 2022 was catastrophic for Khyber Pakhtunkhwa. Monsoon-driven floods, landslides, and severe weather events swept through all 35 districts, leaving behind a trail of human tragedy and infrastructural devastation. This report synthesises data collected by Rescue 1122 KPK to present a comprehensive, district-level picture of losses and damages sustained throughout the calendar year.

Category	Value
Total Deaths	518
Total Injuries	91,767
Houses Damaged	564
Schools Damaged	21,552
Livestock Perished	422

Key Findings at a Glance

- Children accounted for 38.4% of all deaths (162 out of 422): The single largest demographic casualty group, surpassing female deaths (66) by a ratio of nearly 2.5 to 1.
- Dera Ismail Khan was the most severely affected district, accounting for 82% of all house damage (75,338 of 91,767 structures) province-wide.
- Tank and D.I. Khan together suffered 94% of all livestock losses : 20,243 head out of 21,552, representing a severe blow to agro-pastoral livelihoods.
- Lower Dir, Tank, and Shangla topped school damage figures, with educational infrastructure losses that will affect thousands of children's academic continuity.
- The injury-to-death ratio of 1.23 province-wide suggests that rescue response was moderately effective, but geographic disparities reveal districts where response was slower.

Top Policy Recommendations

- Establish pre-positioned emergency supply depots and rapid-response teams in Tier 1 high-risk districts: D.I. Khan, Tank, Swat, Mardan, and Upper Dir.
- Introduce child-centred disaster protocols, dedicated evacuation routes, child shelters, and school-based preparedness drills in all high-risk districts.
- Launch a livestock insurance and emergency restocking programme targeting Tank and D.I. Khan, where livestock losses are existential for rural livelihoods.
- Prioritise school reconstruction in Lower Dir, Tank, Shangla, and Upper Dir, with build-back-better standards for flood and seismic resilience.
- Develop a real-time district vulnerability dashboard using Rescue 1122 data to enable evidence-based resource allocation ahead of each monsoon season.

2. Overview: KPK's Disaster Landscape in 2022

Pakistan's 2022 monsoon season was among the most destructive on record. Nationally, the flooding affected over 33 million people and inundated approximately one-third of the country's landmass. Khyber Pakhtunkhwa, with its mountainous topography, fast-flowing river systems, and high population density in valley floors, bore a disproportionate share of the human and economic toll.

Rescue 1122 KPK, the province's premier emergency response service, systematically collected loss and damage data across all 35 administrative districts throughout the year. The dataset covers five categories of impact: human deaths (gender and age disaggregated), injuries (gender and age disaggregated), livestock perished, houses damaged (fully and partially), and schools damaged (fully and partially).

> ***This report uses that dataset to generate a policy-oriented analysis. All findings are grounded exclusively in Rescue 1122's official records for the period 1 January to 31 December 2022.***

Geographic Context

KPK's 35 districts span a diverse range of terrain — from the relatively flat Peshawar Valley to the high-altitude peaks of Chitral and Kohistan. Districts in the west (D.I. Khan, Tank, Lakki Marwat) are prone to riverine flooding from the Indus and its tributaries, while northern and tribal districts face flash floods and landslides from glacial melt and intense monsoon rainfall. This geographic diversity means that disaster risk profiles differ significantly across districts.

About This Report

The analysis is structured around five thematic sections: i) human casualties, ii) housing damage, iii) educational infrastructure, iv) livestock and livelihoods, and a composite district vulnerability index. Each section combines descriptive statistics with visual analysis and concludes with specific policy implications.

3. Human Cost: Deaths and Injuries

3.1 Deaths: Province-Wide Summary

A total of 422 persons lost their lives to disaster-related events across KPK in 2022. Of these, 194 (45.9%) were male adults, 66 (15.6%) were female adults, and 162 (38.4%) were children. The disproportionately high child mortality is one of the most striking, and policy-critical findings in this dataset.

Category	Value
Male Deaths	66
Female Deaths	162
Child Deaths	422
Total Deaths	194

Figure 1 below shows deaths by district, broken down by male, female, and child victims. Swat (38), D.I. Khan (43), and Mardan (31) are among the hardest-hit, though each district presents a distinct gender and age profile.

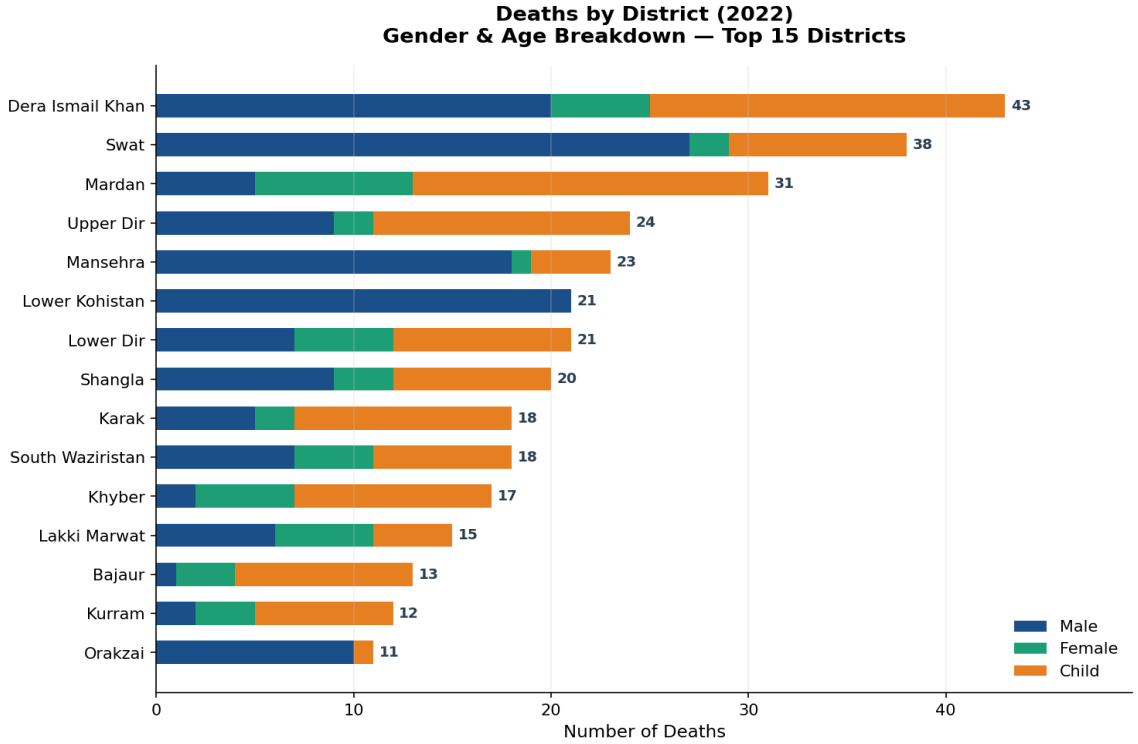

Figure 1: Deaths by District — Gender & Age Breakdown (Top 15 Districts)

3.2 Injuries — Province-Wide Summary

A total of 518 persons sustained injuries, exceeding the death count. The injury breakdown is 220 males (42.5%), 109 females (21.0%), and 189 children (36.5%). The province-wide injury-to-death ratio of 1.23 indicates that for every person who died, only 1.23 were injured, a relatively low ratio that may reflect the severe, sudden-onset nature of many disasters (landslides, flash floods) where escape is limited.

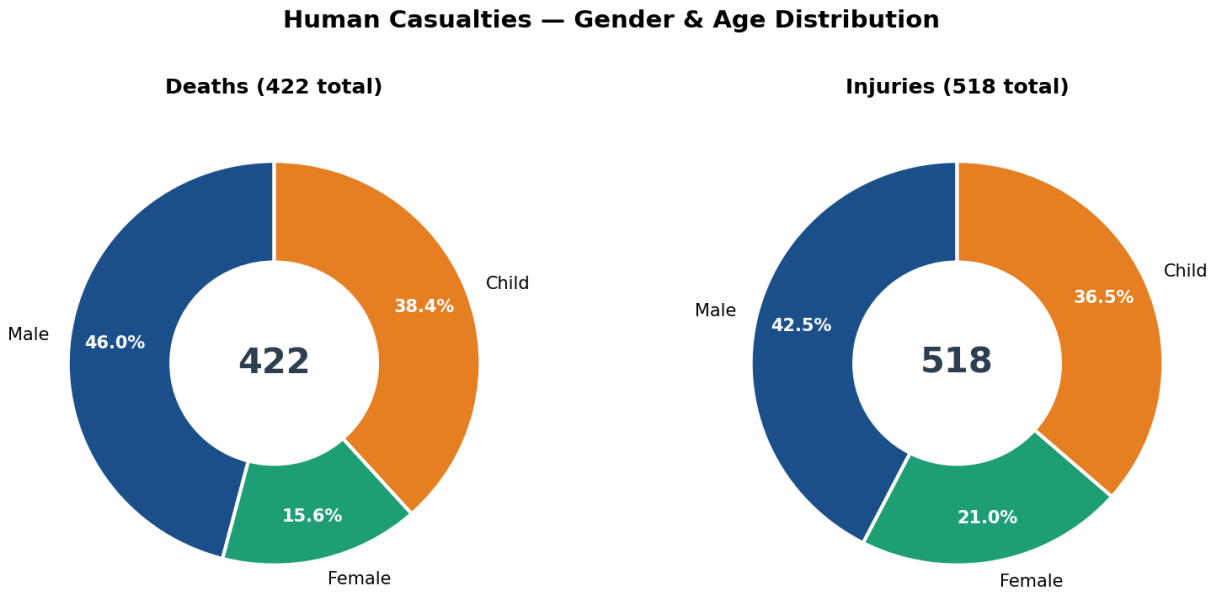

Figure 2: Gender & Age Distribution — Deaths vs. Injuries (Province-Wide)

3.3 Child Vulnerability Analysis

Children's disproportionate share of casualties, i.e., 38.4% of deaths, 36.5% of injuries—demands targeted policy attention. In districts such as Bajaur (9 of 13 deaths were children), Karak (11 of 18), and Upper Dir (13 of 24), child deaths account for the majority of total district fatalities.

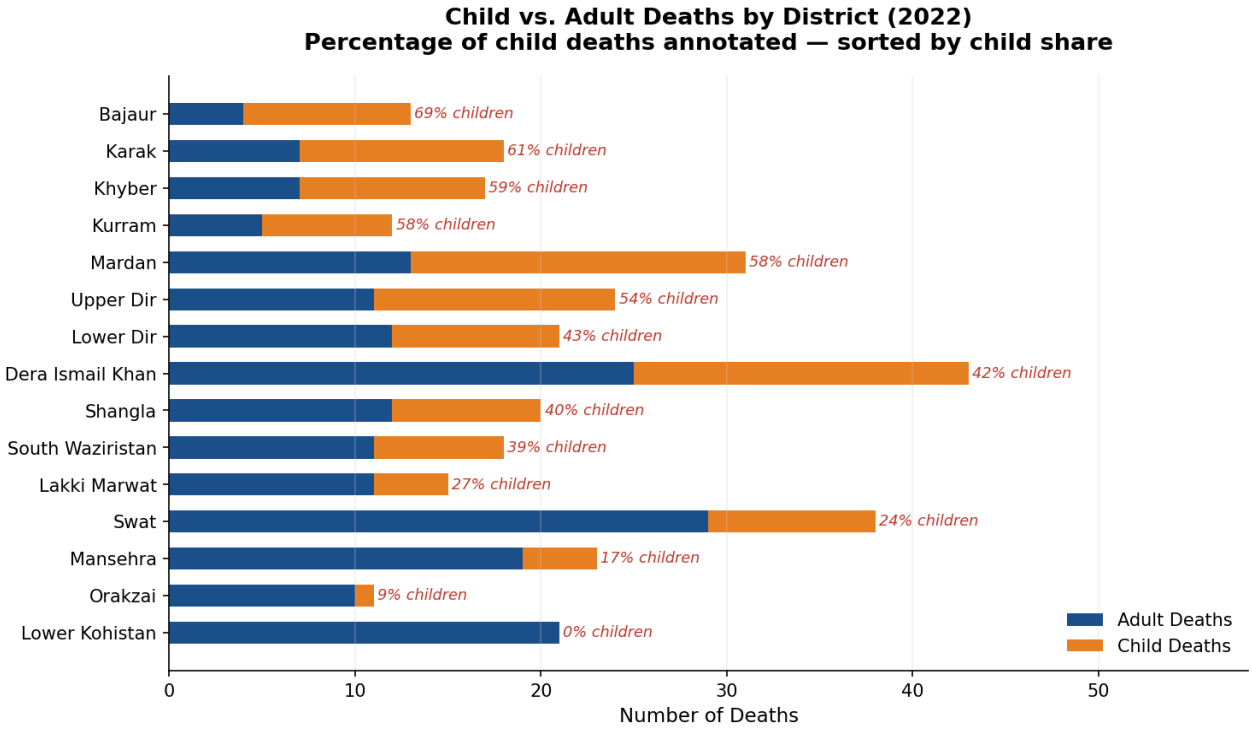

Figure 3: Child vs. Adult Deaths — Share of Child Fatalities by District

> ***Policy implication: Districts where children represent more than 50% of deaths should be prioritised for child-centred preparedness programmes including school-based drills, safe evacuation routes for children, and community-level child safety wardens.***

3.4 District-Level Casualty Data

District	Deaths (M)	Deaths (F)	Deaths (C)	Total Deaths	Total Injured	Injury/Death Ratio
Swat	27	2	9	38	33	0.87
D.I. Khan	20	5	18	43	91	2.12
Mardan	5	8	18	31	27	0.87
Mansehra	18	1	4	23	1	0.04
Upper Dir	9	2	13	24	23	0.96
Lower Kohistan	21	0	0	21	8	0.38
Karak	5	2	11	18	9	0.50
Shangla	9	3	8	20	10	0.50
S. Waziristan	7	4	7	18	31	1.72
Khyber	2	5	10	17	57	3.35
Kurram	2	3	7	12	17	1.42
Bajaur	1	3	9	13	24	1.85
Lower Dir	7	5	9	21	26	1.24

District	Deaths (M)	Deaths (F)	Deaths (C)	Total Deaths	Total Injured	Injury/Death Ratio
Lakki Marwat	6	5	4	15	1	0.07
Lower-Chitral	8	1	1	10	15	1.50

Table 1: District Casualty Summary — Selected Districts (sorted by total deaths)

4. Infrastructure Damage: Housing

A total of 91,767 houses were damaged across KPK in 2022, 37,541 fully destroyed and 54,226 partially damaged. The scale of housing loss represents one of the most significant drivers of long-term displacement and economic hardship for affected communities.

Category	Value
Fully Destroyed	37,541
Partially Damaged	54,226
Total Houses	91,767

4.1 The D.I. Khan Anomaly

Dera Ismail Khan stands as an extreme outlier in housing damage: 75,338 houses were damaged in this single district, representing 82.1% of the province's entire housing damage figure. Of these, 33,596 were fully destroyed. This scale of destruction reflects the district's vulnerability to riverine flooding from the Indus River system, combined with higher housing density and construction of lower structural resilience.

> ***D.I. Khan's housing damage alone (75,338 structures) exceeds the combined housing damage of all remaining 34 KPK districts (16,429 structures). This suggests a need for a dedicated district-level reconstruction programme rather than a provincial-level response only.***

4.2 Housing Damage Across All Districts

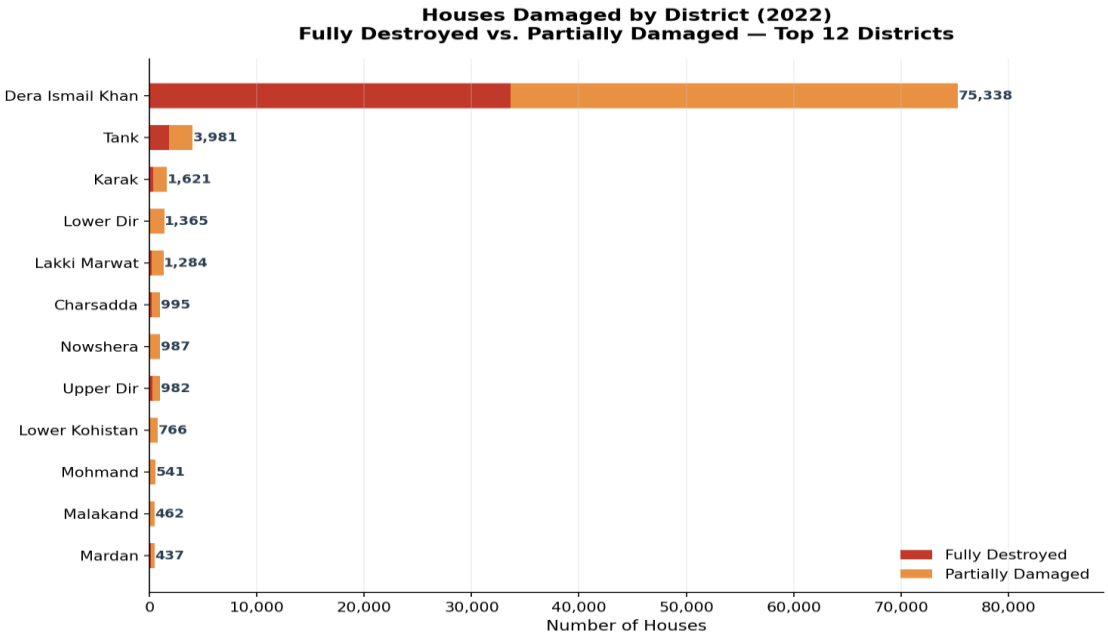

Figure 4: Houses Damaged by District — Fully Destroyed vs. Partially Damaged (Top 12)

Beyond D.I. Khan, Tank (3,981), Karak (1,621), Lakki Marwat (1,284), Lower Dir (1,365), and Nowshera (987) are the next most affected districts. Notably, the fully-destroyed ratio varies considerably, Tank shows a higher fully-destroyed share than Charsadda or Lower Dir, indicating more intense local destruction.

4.3 Fully vs. Partially Destroyed — Policy Implications

The distinction between fully and partially destroyed housing has direct implications for relief and reconstruction policy. Fully destroyed homes require complete reconstruction, likely requiring land clearance, material supply chains, and multi-year support programmes. Partially damaged homes may be repaired with shorter-term interventions, including cash grants, material support, and technical assistance to affected families.

> ***Policy implication: A differentiated reconstruction framework — with fast-track repair grants for partially damaged homes and a longer-cycle rebuilding programme for fully destroyed structures — would optimise relief spending and minimise displacement duration.***

5. Educational Infrastructure: Schools Damaged

A total of 564 schools were damaged in 2022, 30 fully destroyed and 534 partially damaged. While this number is smaller in absolute terms than housing damage, the educational consequences are profound: every damaged school represents disruption to children's learning, protection, and developmental continuity, often in communities already dealing with displacement and trauma.

Category	Value
Fully Destroyed	30
Partially Damaged	534
Total Schools	564

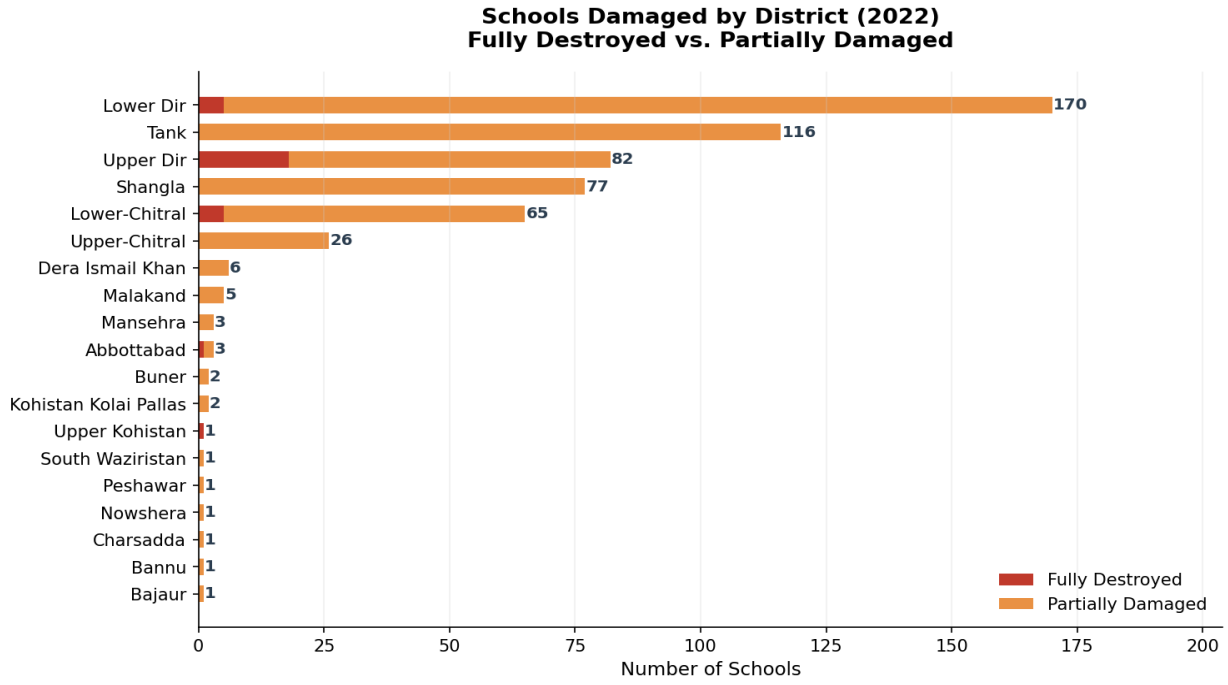

Figure 5: Schools Damaged by District — Fully Destroyed vs. Partially Damaged

5.1 District Concentration of School Damage

School damage is heavily concentrated in five districts: Lower Dir (170 schools), Tank (116), Shangla (77), Upper Dir (82), and Lower-Chitral (65). These five districts account for 510 of 564 damaged schools — 90.4% of the provincial total. Notably, Lower Dir and Lower-Chitral both record fully-destroyed schools (5 each), indicating more catastrophic localised damage.

District	Fully Destroyed	Partially Damaged	Total
Lower Dir	5	165	170
Upper Dir	18	64	82
Tank	0	116	116
Shangla	0	77	77
Lower-Chitral	5	60	65
Upper-Chitral	0	26	26
D.I. Khan	0	6	6
Malakand	0	5	5
Mansehra	0	3	3
Abbottabad	1	2	3

Table 2: School Damage by District — Districts with Reported Damage

> ***Policy implication: The Dir and Chitral regions, geographically remote, already underserved, and now with compromised school infrastructure, should be designated priority zones for accelerated school rehabilitation. Temporary learning centres and tent schools should be deployed immediately post-disaster to prevent permanent dropout.***

6. Livestock & Agricultural Livelihoods

A total of 21,552 head of cattle and livestock perished in 2022 across KPK. Livestock loss is not merely an economic statistic — in many rural and tribal districts of KPK, cattle represent the primary store of household wealth, the backbone of subsistence agriculture, and a critical buffer against future shocks. Their loss is therefore a livelihood crisis as much as an asset loss.

Category	Value
Total Livestock Perished	21,552
Tank + D.I. Khan Share	94%
Districts Affected	23 of 35

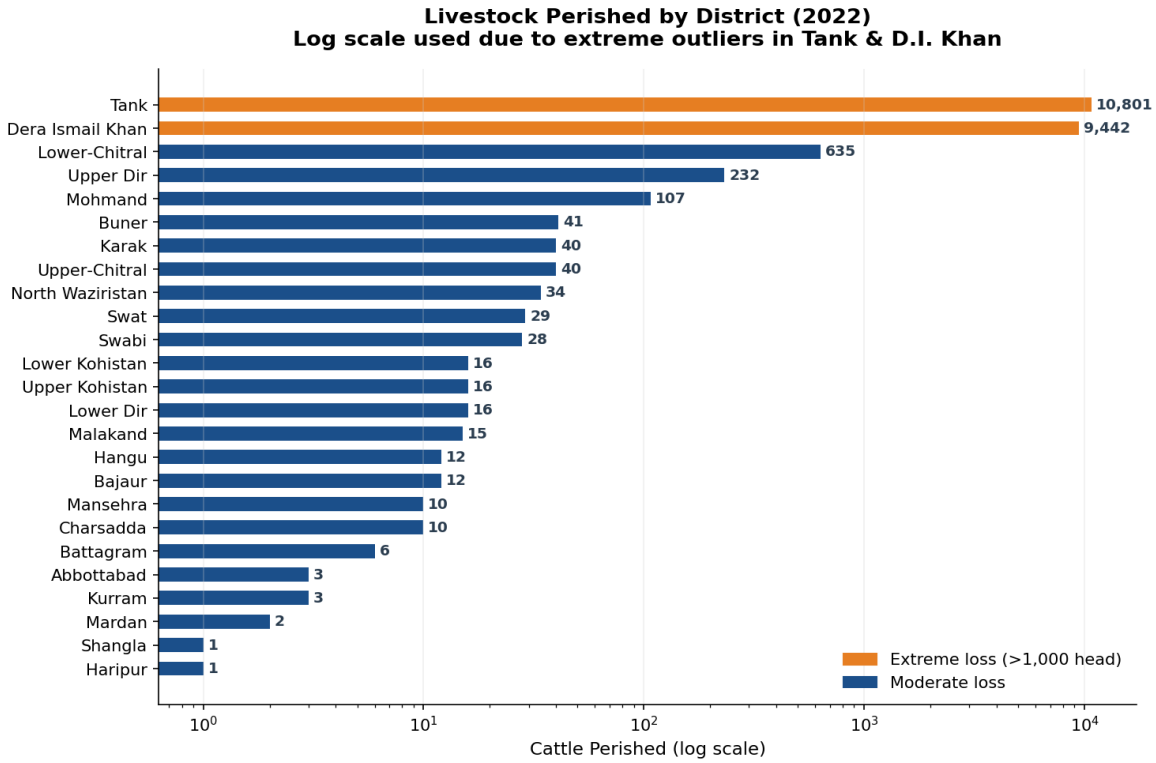

Figure 6: Livestock Perished by District (Log Scale) — Orange bars indicate extreme losses (>1,000 head)

6.1 The Tank and D.I. Khan Livestock Crisis

Tank district lost 10,801 head of livestock that is the highest of any district, representing 50.1% of the provincial total. D.I. Khan follows with 9,442 head (43.8%). Together, these two adjacent districts in the southern plains account for 93.9% of all livestock losses in KPK. The combination of riverine flooding, lack of elevated grazing land, and the tethering of livestock in low-lying areas likely contributed to this catastrophic concentration.

> ***The livestock losses in Tank and D.I. Khan alone represent a severe economic shock to pastoral communities. At even conservative market values of PKR 80,000–150,000 per head of large livestock, the financial loss in these two districts alone may exceed PKR 2 billion.***

6.2 Smaller but Significant Losses

Beyond the two outlier districts, Lower-Chitral (635), Upper Dir (232), Mohmand (107), and North Waziristan (34) report meaningful livestock losses. In these high-altitude or tribal districts, even smaller numbers represent a significant share of household assets given lower overall livestock densities.

> ***Policy implication: A targeted livestock compensation and restocking scheme, combining emergency cash grants, veterinary support for surviving animals, and subsidised restocking with disease-resistant breeds which should be deployed in Tank and D.I. Khan as a matter***

> ***of urgency, followed by a broader provincial livestock insurance framework ahead of the next monsoon.***

7. Composite District Vulnerability Index

To guide evidence-based resource allocation and disaster preparedness, this section presents a composite vulnerability index that aggregates performance across all five damage categories. Each district is scored on a normalised 0–100 scale, with a weighted methodology that reflects the relative severity of each indicator.

7.1 Methodology

Indicator	Weight	Rationale
Deaths (total)	30%	Highest-stakes irreversible outcome; directly measures disaster lethality
Houses Damaged (total)	30%	Proxy for scale of community-level destruction and displacement
Injuries (total)	20%	Measures survivable impact and rescue response exposure
Schools Damaged (total)	10%	Long-term social cost to education and child development
Livestock Perished (total)	10%	Livelihood impact, especially critical in rural/pastoral districts

Table 3: Composite Vulnerability Index — Indicator Weights & Rationale

Each indicator is normalised to 0–100 (where 100 = the district with the worst outcome on that indicator) and the weighted sum produces the composite score.

7.2 Vulnerability Rankings

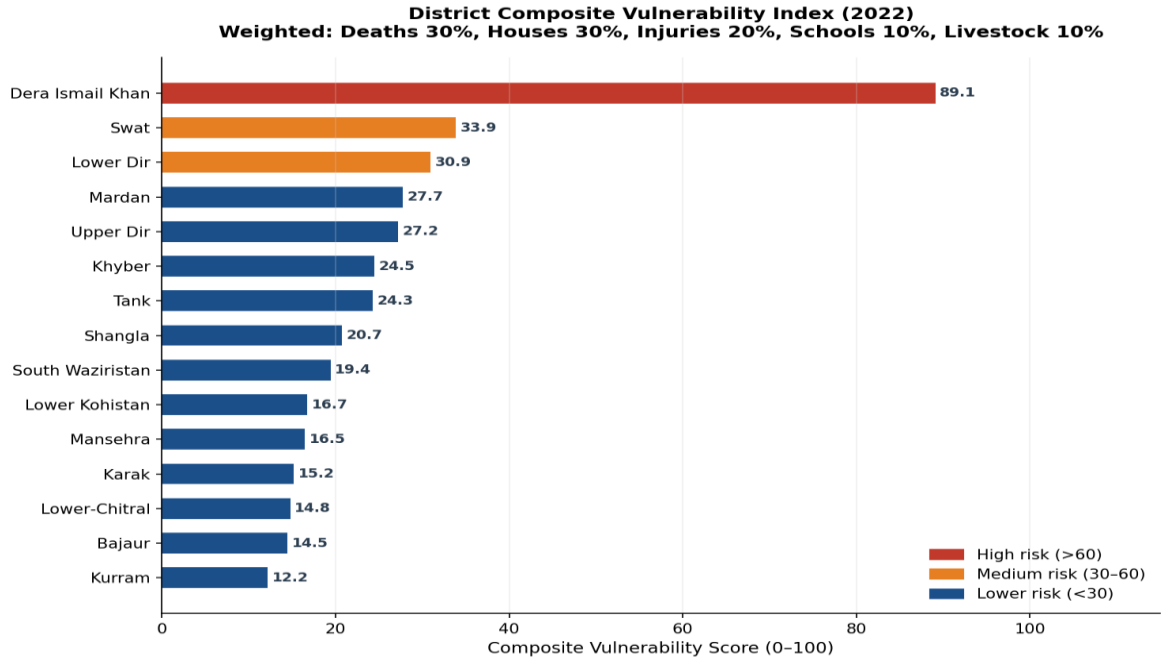

Figure 7: District Composite Vulnerability Index: Top 15 Most Affected Districts

7.3 Vulnerability Tiers & Policy Response

Based on the composite scores, districts can be grouped into three response tiers:

Tier	Districts	Recommended Response
Tier 1: Critical (Score > 60)	D.I. Khan, Tank	Dedicated district reconstruction plan; permanent emergency depots; flood barrier investment; livestock restitution programme
Tier 2: High Risk (Score 30–60)	Swat, Mardan, Upper Dir, Lower Dir, Karak, Lower-Chitral	Pre-positioned rapid response teams; school rehabilitation priority; community-based early warning systems
Tier 3: Elevated Risk (Score < 30)	Lakki Marwat, Shangla, Nowshera, Charsadda, and others	Seasonal preparedness exercises; capacity building for local Rescue 1122 stations; risk communication campaigns

Table 4: District Vulnerability Tiers & Recommended Policy Response

8. Gender and Age: Cross-Cutting Vulnerability

This dataset is uniquely valuable because it disaggregates both deaths and injuries by gender (male/female) and age category (child). This section draws cross-cutting insights that have direct implications for disaster preparedness and social protection policy.

8.1 The Child Mortality Crisis

Children represent 38.4% of deaths and 36.5% of injuries despite being a minority of the population exposed. This is not a statistical accident — it reflects structural vulnerabilities: children are less able to outrun flash floods or landslides, less likely to receive timely evacuation, and more physically vulnerable to trauma and exposure. In 9 of the 15 hardest-hit districts, children represent more than 35% of fatalities.

Category	Value
Child Deaths	162
Child Injuries	189
Child Share of Deaths	38.4%
Child Share of Injuries	36.5%

8.2 Female Under-Representation in Injury Data

Female deaths (66) are notably lower than male deaths (194) as an absolute figure, but the female injury count (109) is also much lower than male injuries (220). This is unlikely to reflect lower actual exposure among women. Instead, it may reflect under-reporting, reduced access to Rescue 1122 services, cultural barriers to reporting female casualties, or the mobility constraints that leave women trapped rather than injured-but-rescued during flood events.

> ***Policy implication: The low female injury-to-death ratio (109 injured vs. 66 dead = 1.65) compared to the male ratio (220 injured vs. 194 dead = 1.13) paradoxically suggests women who were caught in disasters were more likely to survive, i.e., potentially due to under-recording of female deaths, or that female exposure was more extreme when it occurred. A review of data collection methodology is recommended.***

8.3 Gender-Disaggregated District Hotspots

Three districts show disproportionately high female death counts relative to total deaths: Mardan (8 of 31 = 25.8%), Peshawar (5 of 8 = 62.5%), and Khyber (5 of 17 = 29.4%). These urban and peri-urban districts warrant investigation into whether specific disaster events (building collapses, indoor flooding) disproportionately affected women.

> ***Policy implication: Gender-sensitive early warning and evacuation protocols, including female-led community disaster committees and gender-specific shelter provisions that should be piloted in Mardan, Peshawar, and Khyber as priority districts.***

9. Policy Recommendations

The following recommendations are derived directly from the data analysis presented in this report. They are structured around five thematic areas corresponding to the five damage categories, followed by systemic recommendations for Rescue 1122's operational capacity.

9.1 Human Casualty Reduction

- Establish community-level early warning networks in all Tier 1 and Tier 2 districts, with last-mile connectivity to remote village clusters most vulnerable to flash floods and landslides.
- Develop child-specific disaster risk reduction (DRR) curricula for primary and secondary schools in high-risk districts, delivered through Rescue 1122's school outreach programme.
- Create dedicated child evacuation protocols, clearly marked routes, safe assembly points accessible to children, and trained child safety volunteers at the community level.
- Investigate and address barriers to reporting female casualties and injuries, including training Rescue 1122 data collectors on gender-sensitive reporting practices.

9.2 Housing Reconstruction & Resilience

- Develop a dedicated D.I. Khan Reconstruction Programme with multi-year funding, targeting the 33,596 fully destroyed homes as a priority cohort.
- Introduce a two-track recovery framework: cash-for-repair grants (6–12 months) for partially damaged homes; organised reconstruction with engineered designs (12–36 months) for fully destroyed homes.
- Mandate flood-resistant construction standards (raised plinths, reinforced masonry, flood-proof material specifications) for all government-supported reconstruction in Tier 1 and 2 districts.

9.3 Educational Infrastructure

- Launch an Emergency School Rehabilitation Programme targeting Lower Dir, Tank, Shangla, Upper Dir, and Lower-Chitral, deploying temporary learning facilities within 30 days of disaster and permanent reconstruction within 24 months.
- Adopt school-as-shelter dual-use design standards for new and reconstructed school buildings, enabling them to serve as emergency shelters while maintaining educational function.
- Conduct a child protection risk assessment in all districts where school damage coincides with high child mortality (Upper Dir, Lower Dir, Bajaur) to identify additional protection needs.

9.4 Livestock & Livelihoods

- Launch an emergency livestock restitution programme in Tank and D.I. Khan, providing direct financial compensation or replacement animals to affected households within 90 days.
- Pilot a parametric livestock insurance scheme in the 10 most livestock-vulnerable districts, triggered by verified flood events, to provide faster payouts than traditional indemnity insurance.
- Invest in elevated livestock shelters (raised platforms, flood-proof enclosures) in low-lying flood plains of Tank and D.I. Khan, financed through provincial agricultural development funds.

9.5 Systemic Capacity of Rescue 1122

- Develop a real-time District Vulnerability Dashboard using Rescue 1122 data, updated annually, to guide pre-monsoon resource pre-positioning, staffing decisions, and inter-agency coordination.
- Expand Rescue 1122's station network in currently underserved Tier 2 districts, particularly Lower-Chitral, Shangla, and Karak, where high vulnerability coincides with limited rescue infrastructure.
- Formalise a standardised data collection protocol across all districts to ensure consistent, comparable records year-on-year, enabling trend analysis and predictive risk modelling.
- Establish a quarterly data-sharing mechanism with PDMA (Provincial Disaster Management Authority), P&D Department, and relevant line ministries to embed Rescue 1122 data into provincial planning cycles.

Appendix: Complete District-Level Data Tables

A1. Deaths by District (Gender & Age Disaggregated)

District	Male	Female	Child	Total Deaths
Abbottabad	4	2	1	7
Bajaur	1	3	9	13
Bannu	2	0	0	2
Battagram	4	1	1	6
Buner	1	0	4	5
Charsadda	0	0	3	3
D.I. Khan	20	5	18	43
Hangu	3	1	4	8
Haripur	0	1	1	2
Karak	5	2	11	18
Khyber	2	5	10	17
Kohat	2	0	0	2
Kohistan Kolai Pallas	1	0	0	1
Kurram	2	3	7	12
Lakki Marwat	6	5	4	15
Lower Dir	7	5	9	21
Lower Kohistan	21	0	0	21
Lower-Chitral	8	1	1	10
Malakand	3	1	2	6
Mansehra	18	1	4	23
Mardan	5	8	18	31
Mohmand	1	0	7	8
N. Waziristan	1	3	1	5
Nowshera	3	0	0	3
Orakzai	10	0	1	11
Peshawar	2	5	1	8
Shangla	9	3	8	20
S. Waziristan	7	4	7	18
Swabi	1	1	5	7
Swat	27	2	9	38

District	Male	Female	Child	Total Deaths
Tank	3	1	1	5
Torghar	0	0	0	0
Upper Dir	9	2	13	24
Upper Kohistan	5	0	1	6
Upper-Chitral	1	1	1	3
TOTAL (KPK)	**194**	**66**	**162**	**422**

A2. Houses & Schools Damaged by District

District	Houses (Full)	Houses (Part.)	Houses Total	Schools (Full)	Schools (Part.)	Schools Total
Abbottabad	9	68	77	1	2	3
Bajaur	31	133	164	0	1	1
Bannu	5	8	13	0	1	1
Battagram	30	25	55	0	0	0
Buner	18	65	83	0	2	2
Charsadda	160	835	995	0	1	1
D.I. Khan	33596	41742	75338	0	6	6
Hangu	16	165	181	0	0	0
Haripur	1	37	38	0	0	0
Karak	304	1317	1621	0	0	0
Khyber	1	208	209	0	0	0
Kohat	0	2	2	0	0	0
K. Kolai Pallas	0	180	180	0	2	2
Kurram	56	93	149	0	0	0
Lakki Marwat	209	1075	1284	0	0	0
Lower Dir	63	1302	1365	5	165	170
Lower Kohistan	0	766	766	0	0	0
Lower-Chitral	94	149	243	5	60	65
Malakand	79	383	462	0	5	5
Mansehra	5	18	23	0	3	3
Mardan	90	347	437	0	0	0

District	Houses (Full)	Houses (Part.)	Houses Total	Schools (Full)	Schools (Part.)	Schools Total
Mohmand	24	517	541	0	0	0
N. Waziristan	66	40	106	0	0	0
Nowshera	23	964	987	0	1	1
Orakzai	0	2	2	0	0	0
Peshawar	4	125	129	0	1	1
Shangla	37	36	73	0	77	77
S. Waziristan	20	25	45	0	1	1
Swabi	16	232	248	0	0	0
Swat	91	148	239	0	0	0
Tank	1836	2145	3981	0	116	116
Torghar	11	2	13	0	0	0
Upper Dir	290	692	982	18	64	82
Upper Kohistan	175	258	433	1	0	1
Upper-Chitral	181	122	303	0	26	26
TOTAL (KPK)	**37541**	**54226**	**91767**	**30**	**534**	**564**

Document Information

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Data Source: Rescue 1122, Government of Khyber Pakhtunkhwa (official operational records)

> ***Disclaimer: All data presented in this report is sourced exclusively from Rescue 1122 KPK's official 2022 records. The composite vulnerability index and derived statistics are analytical tools intended to support planning decisions, not official government ratings. Figures should be interpreted in the context of each district's geographic and demographic characteristics.***