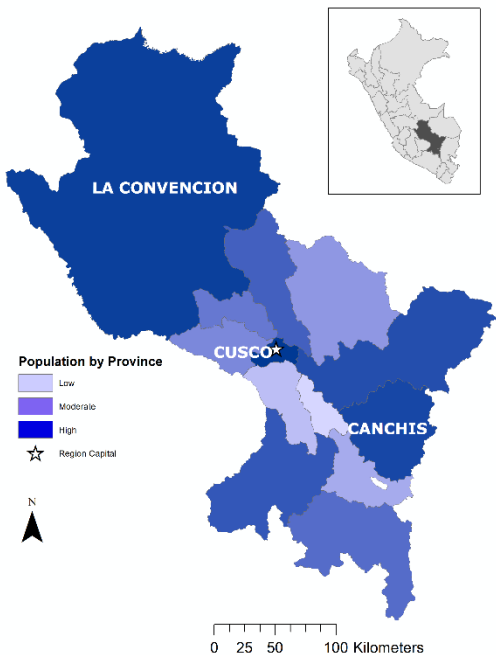**PDC | GLOBAL**

Peru:
Regional Profiles

National Disaster Preparedness Baseline Assessment

Region: Cusco

Region Capital: Cusco
Region Area: 76,383 km^2

Cusco is one of twenty-five regions in Peru. Located in the southern interior of Peru, the colonial city of Cusco, a former Incan capital, has a rich natural and cultural history. Cusco is a popular destination for national and international tourists, and tourism is an important economic activity. Mining is also a predominate economic activity in the region. As of 2015, the regional population was estimated at 1,316,729; with the highest percentage residing in the provinces of Cusco, Canchis and La Convencíon. Relative to the rest of Peru, the population of Cusco has lower than average life expectancy (70.3 years), low poverty (18.8%), high illiteracy (12.7%) and higher than average access to improved water sources (88.5%).

1,316,729	70.3 yrs	18.8%	12.7%	88.5%
Population (2015)	Average life expectancy	Population in poverty	Illiterate population	Access to improved water

Multi-Hazard Risk (MHR) [1]

Score = 0.531, Rank = 8 of 25

Of the twenty-five regions of Peru, Cusco ranks 8th in multi-hazard risk (MHR = 0.531). Table 1 outlines the individual components that contribute to risk. As shown, Cusco's high multi-hazard risk is a function of its high multi-hazard exposure (MHE = 0.661), moderate vulnerability (V = 0.432), and moderate coping capacity (CC = 0.498). The ternary graph at right shows that Cusco' exposure is higher than the national average, while vulnerability and lack of coping capacity are in line with national averages for these components.
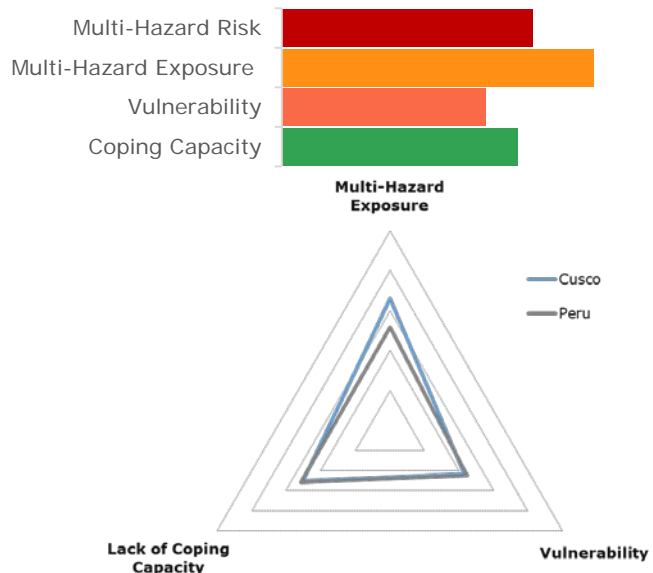
Figure 1. Components of the Multi-Hazard Risk Score compared to the national average.

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[1] **Multi-Hazard Risk**: The likelihood of losses or disruptions to a region's normal function due to interaction between multi-hazard exposure, socioeconomic vulnerability and coping capacity.

Components of Multi-Hazard Risk (MHR) [2]

Table 1. Scores and ranks for each component of the Multi-Hazard Risk Score.

Multi-Hazard Exposure (MHE)		Vulnerability (V)		Coping Capacity (CC)	
High		Moderate		Moderate	
Score	Rank (of 25)	Score	Rank (of 25)	Score	Rank (of 25)
0.661	10	0.432	13	0.498	11

Multi-Hazard Exposure (MHE) [3]

Score = 0.661, Rank = 10 of 25

Cusco has high multi-hazard exposure relative to other regions of Peru (MHE = 0.661). Percentages of the region's population exposed to varying hazards are summarized below.

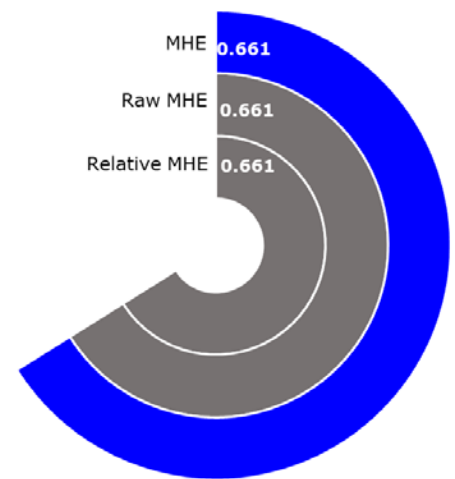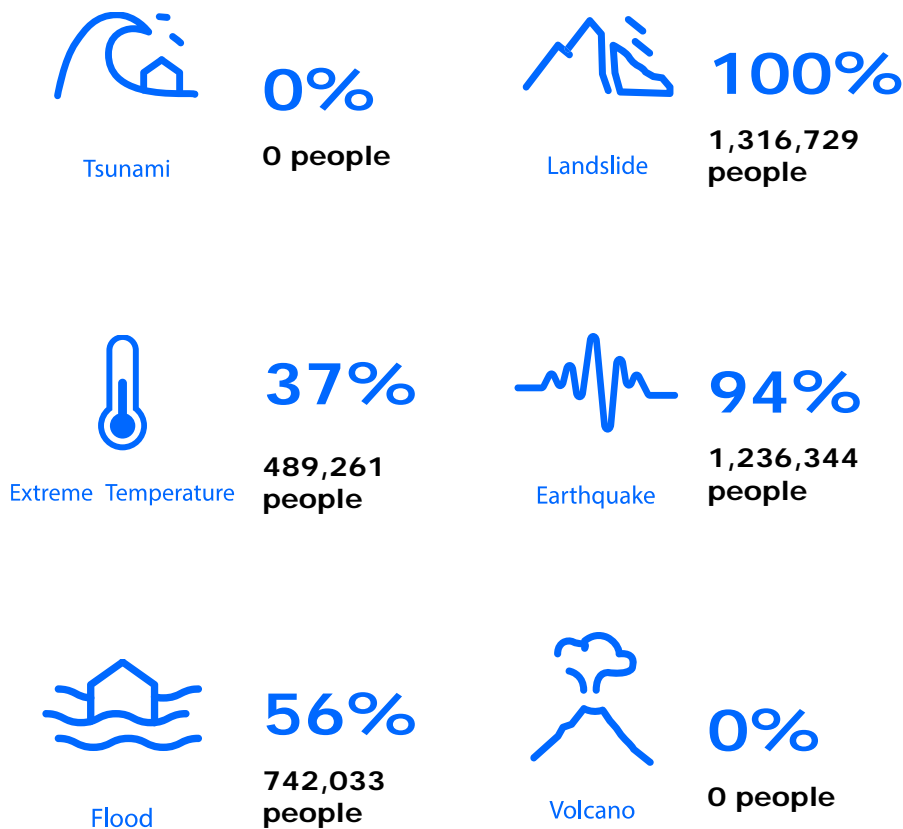*Table 2. Estimated ambient population[4] exposed to each hazard type.*

Tsunami — 0% — **0 people**

Landslide — 100% — **1,316,729 people**

Extreme Temperature — 37% — **489,261 people**

Earthquake — 94% — **1,236,344 people**

Flood — 56% — **742,033 people**

Volcano — 0% — **0 people**

MHE	0.661
Raw MHE	0.661
Relative MHE	0.661

Figure 2. Average, raw and relative Multi-Hazard Exposure Scores.

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[2] **MHR** = (MHE + V + (1-CC))/3.
[3] **Multi-Hazard Exposure**: Average exposure of the population to hazards.
[4] **Ambient Population**: 24-hour average estimate of the population; typically differs from census population.

Vulnerability (V) [5]

Score = 0.432, Rank = 13 of 25

Cusco has moderate vulnerability relative to other Peruvian regions (V = 0.432). The bar chart on the right displays the composition of its overall Vulnerability Score. As shown, vulnerability in Cusco is driven primarily by recent disaster impacts, vulnerable health status, and gender inequality. The table below summarizes the individual indicators within each socio-economic theme.
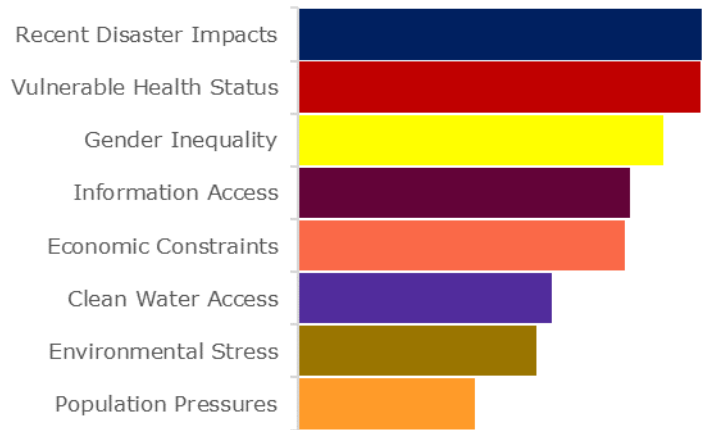

Figure 3. Components of the Vulnerability Score by relative contribution.

Table 3. Indicators of vulnerability grouped by theme.

	Theme					
	Environmental Stress	**1.3** % of total regional area with irrigation-fed agriculture	**6.6** % of total regional area with severe erosion			
	Vulnerable Health Status	**29.7** Infant mortality rate per 1k births	**73.2** Maternal deaths per 100k births	**70.3** Average life expectancy (years) at birth	**20.0** % of children under 5 years of age that are malnourished	**3.5** % of population with 1 or more disability
	Clean Water Vulnerability	**88.5** % households with access to improved water	**58.5** % households with access to flush toilets			
	Information Access Vulnerability	**12.7** % of population 15yrs and older that are illiterate	**9.2** Average years of schooling	**80.4** % primary school enrollment	**11.4** % households with internet	**74.4** % households with television	**90.7** % households with radio
	Economic Constraints	**0.55** Ratio of dependents to working age population (15-64 years)	**60.21** Ratio of average monthly household expenses to income	**18.8** % of population monetarily impoverished		
	Gender Inequality	**0.49** Proportion of female representatives in local government	**0.69** Ratio of female to male secondary enrollment	**0.90** Ratio of female to male labor participation		

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[5] **Vulnerability**: The socioeconomic conditions that are associated with susceptibility to disruptions in a region's normal functions.

	Population Pressures	0.7 % Average annual population change (2010-2015)		
	Recent Disaster Impacts	346.4 Average annual hazard-related deaths per 10k persons (2010-2014)	8.6 Average annual number of homes destroyed by recent hazards per 10k persons (2010-2014)	

Coping Capacity (CC) [6]

Score = 0.498, Rank = 11 of 25

Cusco has a moderate coping capacity relative to other regions (CC = 0.498). The bar chart on the right displays the composition of its overall Coping Capacity Score. As shown, coping capacity in Cusco is hindered primarily by its environmental and infrastructure (healthcare and transportation) capacities. The table below summarizes the individual indicators within each socio-economic theme.
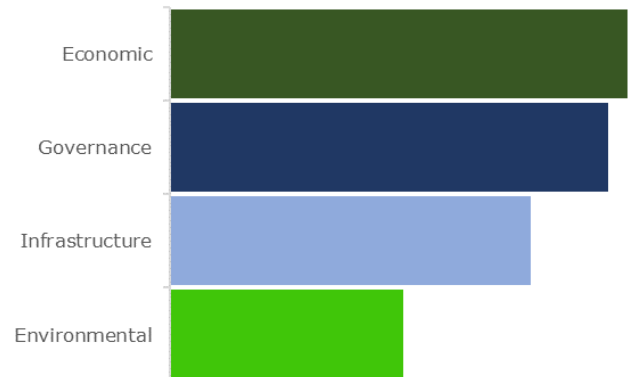

Figure 4. Components of the Coping Capacity Score by relative contribution.

Table 4. Indicators of coping capacity grouped by theme.

	Economic Capacity	$1,081 Average monthly income ($)	$18,000 Gross domestic product per capita		
	Governance	1.83 Registered cases of sexual violence per 10k persons	4.55 Registered cases of missing persons per 10k persons	0.008 Average annual number of social conflicts per 10k persons (active and resolved)	6,730 # of voters per 10k persons (2014 election)
	Environmental Capacity	9.4 % protected or reforested land			

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[6] **Coping Capacity**: The systems, means and abilities of a region to absorb and respond to events that could potentially disrupt normal function.

**Infrastructure
Capacity**

	Healthcare Capacity	**13.6** # of hospital beds per 10k persons	**23.6** # of nurses per 10k persons	**14.8** # of physicians per 10k persons
	Communications Capacity	**10.8** % households with fixed phone line	**80.2** % households with mobile phone	
	Transportation Capacity	**1.2** Port/airport density per 10,000 sq km	**1,616.7** Road/rail density per 10,000 sq km	

Resilience (R) [7]

Score = 0.533, Rank = 11 of 25

Resilience is a function of both vulnerability and coping capacity. Cusco is slightly less resilient than the national average, and its moderate Resilience Score (R = 0.533) is due to its moderate vulnerability and moderate coping capacity. The region's baseline indicators suggest a focus for resilience-building efforts. In Cusco, the thematic areas with the weakest relative scores are summarized in the table below. Readers can additionally consult Appendix 1 for a comprehensive assessment of its need for specific program types relative to other regions.

Table 5. The top 3 thematic areas with the weakest relative scores.

Vulnerable Health Status   **Recent Disaster Impacts**   **Transportation Capacity**

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[7] **Resilience** is a hazard-independent look at current socio-economic conditions affecting the short-term ability to absorb, respond to, and recover from disruptions to a region's normal function.