

## Was the disaster at Xiaolin Village natural or human?

Cut these into a set of cards for each student:

On August 9, 30 million tonnes of mud and debris washed down from Mount Xiandu burying Xiaolin village in just 100 seconds.	A second mudslide 30-50 minutes afterward buried the rest of the village.
The landslide debris reached a speed of 180kph	There were 490 confirmed deaths.
Over 200 houses were destroyed.	3km of road was damaged and four bridges destroyed.
Geologists attributed the mudslides to the unstable geological composition of the area and heavy rainfall.	Geologists couldn't rule out the effect that the large amount of explosives used in illegal gravel operations and construction of the Trans-basin water diversion tunnel in the area has on contributing to the landslides.
	The Taiwanese Government were heavily criticised for its poor management of the disaster.

<p>Betel palm was grown in the area by farmers and has a shallow root system. Combined with the clearance of vegetation for fields, it's believed that this contributed to soil erosion and increased the possibility of severe landslides.</p>	
<p>In total, 10 of the 14 bridges in the area were destroyed making it almost impossible to travel into or out of the valleys.</p>	<p>In the nearby Moalin Valley effective evacuation meant that there were no casualties.</p>
<p>Very few independent research studies were carried out before 2010 into the effects of typhoons on mountain communities.</p>	<p>The Government was slow to respond, and only sent in 2100 soldiers to help.</p>
<p>There was US\$3.3 billion in damage.</p>	<p>The peak rainfall was 2,777mm</p>
<p>Almost the entire southern region of Taiwan was flooded.</p>	<p>It took 26 hours for emergency response to reach Xialoin after the landslides.</p>
<p>People who live in the area and survived are more likely to evacuate the area if someone they trust asks them to.</p>	<p>Local residents did not trust the local or national government.</p>

<p>Road construction in the area has led to extensive development activities along the roads, increasing the clearance of slopes.</p>	<p>Existing evacuation plans and procedures were overwhelmed by the size of the storm and scale of the disaster.</p>
<p>There is evidence that the inhabitants of the Namasia valley failed to properly heed warning concerning the true intensity of the storm</p>	<p>Residents didn't know the correct evacuation procedures to follow once the typhoon made landfall.</p>
<p>Extreme flooding and landslides are common in the area around Xiaolin.</p>	<p>The area is not a National Park so inhabitants have less public funds to spend on typhoon mitigation.</p>
<p>In 2009, the emergency response system in Taiwan has confusing chains of command which meant that information was slow to get to emergency services</p>	<p>Senior disaster officials had little understanding of disaster operations and didn't understand fully what to do in an emergency.</p>
<p>The mayor of Xiaolin wanted to survey the damage by helicopter but the pilot refused until there was official permission from central government.</p>	