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IPN Scientist Rules Out Earthquakes in Venezuela and Colombia Affecting Mexico

- **ESIA Ticomán Seismology expert highlights Mexico's strengths in earthquake early warning systems and Civil Protection programs**
- **Risk assessment through vulnerability identification is another area in which Mexico can support South American countries, researcher says**

The earthquakes that struck Venezuela and Colombia, resulting in tragic loss of life and material damage, were caused by the movement of the Nazca and South American tectonic plates. Therefore, their distance from Mexico rules out any scientific possibility that they could influence seismic activity in the country, explained Omar Cristian Chávez Hernández, a scientist at the National Polytechnic Institute (IPN).

The Seismology expert and researcher at the School of Engineering and Architecture (ESIA), Ticomán Unit, noted that, based on Mexico's experience with earthquakes, the country has developed important strengths, including the Mexican Seismic Alert System (SASMEX), which is recognized worldwide. He said that Mexico's expertise could be shared with South American countries to strengthen their Civil Protection programs and prevention initiatives aimed at improving the construction of homes and buildings.

The Mexican Seismic Alert System is part of the prevention strategy promoted by President Claudia Sheinbaum's administration, with support from Secretary of Public Education Mario Delgado Carrillo as part of efforts to strengthen a culture of prevention, particularly in schools throughout Mexico's education system.

Chávez Hernández, who coordinates the Geophysical Engineering program and heads the Educational Innovation Department at ESIA Ticomán and holds a postgraduate qualification in Seismology from the University of Chile, said that another area in which Mexico could support these countries is risk assessment through the identification of vulnerabilities in cities.

The researcher explained that in Colombia, the Nazca Plate moves beneath the South American Plate. As the former advances, it eventually fractures under its own weight,



triggering earthquakes of varying magnitudes. Although Colombia is considered a region of constant seismic activity in the Americas, he emphasized that Chile is one of the most seismically active areas in the world, where earthquakes exceeding magnitude 9 have occurred.

In terms of seismic activity, he maintained, the combination of vulnerabilities results in disasters, which do not occur on their own but are also influenced by human actions. "The accumulation of vulnerabilities is reflected in where we choose to live, how we choose to build, what prevention plans we have, and whether there is a soil study for the place where we intend to live," he stated.

The IPN researcher recalled that following the 1985 and 2017 earthquakes in Mexico, construction plans and standards were strengthened. He emphasized that these measures must be continuously updated so that future generations can build safer homes and structures.

"What is important in situations like these is that we do not forget to conduct drills regularly and establish family Civil Protection plans. We must remember that we have to live with earthquakes every day: remember so as not to forget, and do not forget so as not to repeat," he said.

In light of the loss of life and material damage caused by the earthquakes in Venezuela and Colombia, Chávez Hernández stressed the urgent need to strengthen international scientific cooperation. He proposed that countries with advanced expertise in seismic activity, including Japan, the United States, Chile, Taiwan and China, share technical knowledge, earthquake early warning systems, prevention programs and Civil Protection strategies with nations seeking to improve their preparedness.

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