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# Impact on Society of a Landslide and Emergency Response taken to Mitigate its Impact

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Recent frequent concentrated intensive rainfall and land development activities have tended to increase the risk of landslides. If roads, railways, or other infrastructure are damaged by a landslide, traffic is blocked, impacting regional social and economic life. So local authorities must promptly plan and implement landslide countermeasures considering not only data obtained by monitoring the states of landslides, but also the regional social and economic background.

To support future emergency measures, the authors took Japan's Shizuoka Prefecture where a regional arterial road was damaged by a landslide in July 2007 as a sample case to clarify the background and response to the disaster and to survey the damage it caused.

Traffic volume on the arterial road is 5,800 vehicles/day, making it a route important for the daily life of the local people and the surrounding tourist industry. When the landslide was checked, it was about 40m wide and 60m long. It was an extremely active landslide that moved at a maximum rate of about 230mm/hour. A ground extensometer was installed and dynamic monitoring started immediately after the landslide. Because the end of the landslide expanded as it moved downhill, it was decided to take measures to stop the movement of the landslide soil mass by removing soil from the top of the slide and by anchor work. The measures were taken promptly, stabilizing

the landslide in mid September, 2 months after it occurred.

During this period, the landslide did not cause any casualties, but the road had to be reopened immediately after the landslide to sustain the social and economic life of the surrounding region. Considering the landslide dynamics estimated by monitoring and a field survey, a temporary bridge was installed where the road was damaged to ensure alternating one way traffic 19 days after the landslide was checked.

The landslide disaster presumably impacted the regional economy by reducing the number of people visiting nearby tourist sites and stores, lowering their income below that in the same period of the previous year. But by taking prompt action, the authorities successfully minimized its impact on social and economic activities.