Flash flood in the northern Vietnam

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Geohazards, in particular landslides, debris flows, flash floods and rock falls, are increasing in intensity and frequency in the northern Vietnam, causing severe human and economic losses. Aiming for geohazard reduction, the IUGS Task Group on Geohazards plans a cooperative project with Vietnam.

A meeting in Hanoi on cooperative project of geohazards and a preliminary field excursion in the northern Vietnam were held during 14 -16 March 2019. Participants to the meeting were from General Department of Geology and Minerals of Vietnam (GDGMV), Vietnam Institute of Geoscience and Mineral Resources, Vietnam Institute of Geodesy and Cartography and National Remote Sensing Department all under the Ministry of Natural Resources and Environments of Vietnam.

In the field we visited Son La, Muong La District about 300 kms to the north-west off Hanoi (Fig.1).

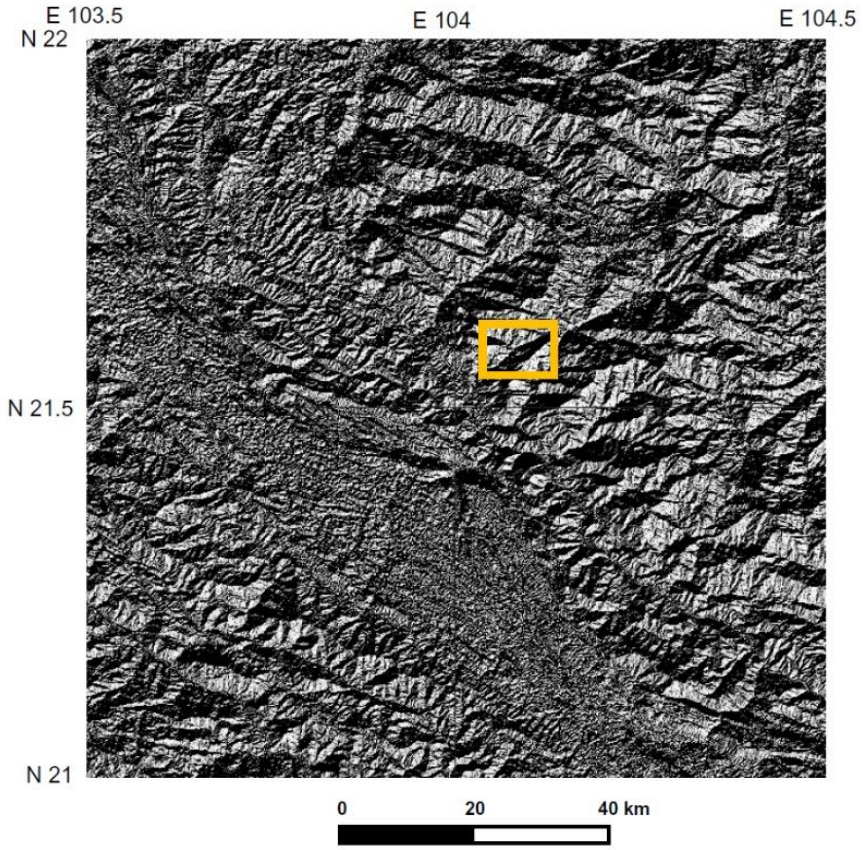

Fig.1 Shaded relief map of ASTER GDEM. Yellow box shows the field area, Son La, Muong La District.

Fig.2 shows a 3-D image by Google Earth taken in 2nd March 2015. There is a winding river running through steep mountain valleys. Along the river terraced paddy fields were developed.

Fig. 2 3-D image by Google Earth taken in 2nd March 2015.

Flash floods along the river occurred August 2017 and a large amount of debris flowed and filled all narrow valleys. Then almost all houses and rice fields disappeared. The flash floods are thought to be induced by local torrential rains. Fig.3 shows flash flood in Son La, Muong La District August 2017 taken by drone.


Fig.3 Photo of flash flood in Son La, Muong La District August 2017 taken by drone.

The road to the disaster area is paved and good but as usual in mountain areas it took 6 hours by car for the 300 km rout. Now in the area the mud flow deposits are disappearing and hard rocks remain.

Fig. 4 A flash flood on a hill and remains of debris flow.

Fig. 5 Recovery of rice field.

At the foot of numbers of scars of landslides on hill slopes local people are developing new rice fields by removing the rocks.