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Free Public Access on Glacier Lake Inventory in the Bhutan-Himalayas using ALOS Data

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We started to make a new glacier lake inventory for the Bhutan-Himalayas, which have resulted from a Bhutan glacier lake studies in JICA/JST project (2009-2011). In the Himalayas, glacier lake outburst floods (GLOFs) have occurred once or twice per decade. Because GLOFs cause serious damage in downstream regions, the inventory shows the basic data of glacier lakes, and useful for disaster planning, prevention, and glacier lake studies in the world.

The present study is intended to generate pan-sharpened image using PRISM (2.5 m spatial resolution) and AVNIR-2 (10 m resolution) onboard ALOS, and extracted glacial lake manually. Glacial lakes in our definition are bodies of water that lay between the terminus of the mother glacier and the Little Ice Age moraine. Lakes located within 2 km of the Little Ice Age moraine down-valley are also included to take into account a possible flooding event with multiple lakes being involved. In addition, supra-glacial lakes on debris-covered glaciers are included. Finally, we set 0.01 km2 as the minimum lake size considering small lakes contribute a less amount of GLOFs risk. In present, a sample of the glacial lake inventory is preparing to open free access via. online, will be released on March 2011. It is including glacial lakes ID, satellite paths, observation date, latitude, longitude, watershed name, area, length, width, altitude, direction, type of glacial lakes, and ICIMOD ID which will be consisted with the glacial lake polygon information. This presentation introduces development of the inventory and opens to public on March 2011.

Keywords: Glacier lake, Inventory, ALOS, GLOF, Bhutan-Himalayas