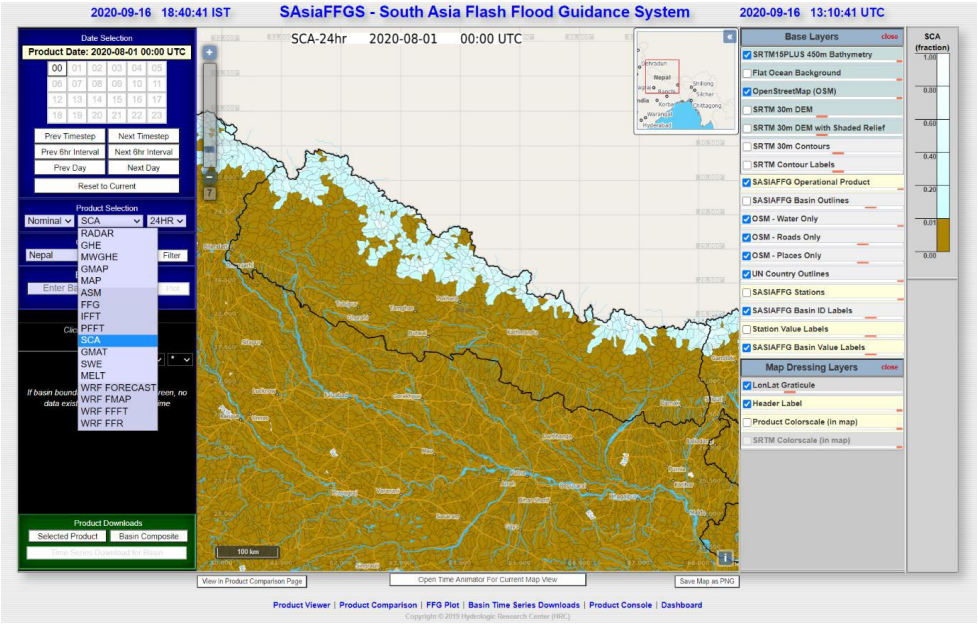
LATEST IMS SCA (SNOW COVERAGE AREA)

Accurate monitoring of global snow and ice cover is a key component in the study of climate and global change as well as daily weather forecasting.

The Interactive Multi-sensor Snow and Ice Mapping System (IMS) product was primarily created to improve the quality and timeliness of Northern Hemisphere snow and ice maps for National Centers for Environmental Prediction (NCEP) numerical forecasting. The IMS is produced daily using GIS technology. While there are potentially many uses, the primary function of the product is to provide cryospheric input for environmental modelling. Snow plays an important role in model input and can lead to substantial error in forecast results based on incorrect representations of snow distributions, age, depth, snow water equivalent (SWE), and snow density. The advanced resolution product begun in February 2004 allows for greater details of snow and ice information to be conveyed to the user community.

For the FFGS, snow cover is retrieved daily from the IMS, made available as a Northern Hemisphere product from the National Snow and Ice Data Center, NOAA. The product is made available daily around 23:00 GMT and it provides snow cover information at 4 km x 4 km and 1 km x 1 km resolutions that is based on summary of multiple sensors on-board of various satellites. These include geostationary and polar orbiters with sensors such as MODIS, AVHRR, and passive microwave sensors. The product, which has been operationally available since 2006, is developed in conjunction with modelling, climatological maps, and personnel expertise.
Outputs are provided graphically for each FFGS basin and as text. Figure below shows 24-hr SCA on 1 August 2020 at 00 UTC, indicating that still there are some sub-catchments in Nepal are covered by snow, and some of those sub-catchments are fully covered by snow.



Example of 24-hr Snow Coverage Area product for Nepal

Description of the IMS snow cover product is available at Helfrich et al. (2007):

Helfrich, S.R., D. McNamara, B.H. Ramsay, T. Baldwin, and T. Kasheta, 2007: Enhancements to, and forthcoming developments in the Interactive Multisensor Snow and Ice Mapping System (IMS). Hydrological Process 21: 1576-1586.

This document was prepared by WMO-FFGS team using South East Europe Flash Flood Guidance System Forecaster Guide[1], FFGS Operational Output Product Descriptions available in the FFGS Real-Time Product Console developed by the Hydrologic Research Center and National Oceanic, Atmospheric Administration (NOAA) materials and above-mentioned documents.

[1] https://www.wmo.int/pages/prog/hwrp/flood/ffgs/documents/SEEFFGS_Forecaster_Guide-Final_ES_TM-AS-PM.pdf