

INTISARI

Dusun Nasiri berada dalam wilayah administratif Desa Luhu, Kecamatan Huamual, Kabupaten Seram Bagian Barat, Provinsi Maluku. Dusun Nasiri mengalami kejadian banjir besar pada tanggal 1 Agustus 2012 yang belum pernah terjadi sebelumnya. Dusun Nasiri hanya berukuran 8 hektar, terletak di tepi pantai dengan diapit dua buah bukit setinggi 260 meter dan 370 meter. DAS Nasiri hanya memiliki luas 10 km² dan saat itu tidak memiliki pos hujan serta alat pencatat debit. Hal ini cukup menyulitkan untuk mencari penyebab kejadian banjir tersebut. Sungai Nasiri hanya memiliki lebar 8 meter.

Penelitian dilakukan dengan mengidentifikasi aliran dasar, karakteristik tanah, mempelajari video kejadian banjir, menelusuri alur sungai dan DAS Nasiri, mencari data hujan dari pos hujan terdekat, dan wawancara dengan penduduk. Data dari lapangan dilengkapi dengan data satelit dan hasil penelitian yang berlokasi paling dekat dengan Dusun Nasiri. Seluruh data diolah dengan bantuan aplikasi AutoCAD 2007, IFAS 2.0.1.2, Geostudio 2004, ArcGIS 10.2, HEC-HMS 4.2.1, dan HEC-RAS 5.0.3. Peneliti menguji kondisi aliran sungai akibat hujan normal, hujan terkalibrasi, serta akibat adanya bendungan alam dalam mode penelusuran 2 dimensi.

Hasil penelitian menunjukkan bahwa DAS Nasiri mengalami banjir yang diakibatkan oleh dua buah bendungan alam yang runtuh dalam dua waktu yang berbeda. Bendungan alam pertama setinggi 7,55 meter runtuh pada pukul 09:52 WIT dengan debit puncak 83,58 m³/detik sedangkan bendungan alam kedua setinggi 8,91 meter runtuh pada pukul 14:24 WIT dengan debit puncak 54,16 m³/detik.

Kata kunci: Dusun Nasiri, banjir, bendungan alam, penelusuran 2 dimensi, AutoCAD 2007, IFAS 2.0.1.2, Geostudio 2004, ArcGIS 10.2, HEC-HMS 4.2.1, HEC-RAS 5.0.3.

ABSTRACT

Nasiri lays in the Luhu village, Huamual district, West Seram regency, Maluku province. Nasiri experienced in flash flood on August 1st 2012 which never been happened before. Nasiri is only 8 hectares in area, lays beneath coast with two hills; 260 meters and 370 meters high. Nasiri watershed is only 10 km² in area and there is no rainfall station and water level recorder at that time. It is rather difficult to find out the cause. And yet Nasiri river is only 8 meters wide.

The research starts with identifying baseflow, soil characteristics, learn flood video record, routing the river reach, finding the nearest rainfall station, and also interviewing some peoples there. Field data area complemented with satellite radars and several researches which have been carried out near from Nasiri. All of the data are simulated by means of computer applications. There are AutoCAD 2007, IFAS 2.0.1.2, Geostudio 2004, ArcGIS 10.2, HEC-HMS 4.2.1, and HEC-RAS 5.0.3. Those applications perform simulations of natural river with and without precipitation calibration, and also with and without landslide dam in the river. HEC-RAS is subject to perform 2 (two) dimensional flood routing.

The result is fairly satisfied. Nasiri watershed was experiencing in flash flood caused by 2 (two) landslide dams which collapse in 2 (two) different times. The first landslide dam is 7.55 meters high which collapse at 09:52 (UTC+9) with 83.58 cum of peak discharge. The second landslide dam is 8.91 meters high which collapse at 14:24 (UTC+9) with 54.16 cum of peak discharge.

Keywords : Nasiri village, flood, landslide dam, two dimensional routing, AutoCAD 2007, IFAS 2.0.1.2, Geostudio 2004, ArcGIS 10.2, HEC-HMS 4.2.1, HEC-RAS 5.0.3.