KAJIAN PENANGANAN BANJIR DI SUNGAI MUKE KABUPATEN TIMOR TENGAH SELATAN PROPINSI NUSA TENGGARA TIMUR

Petrus Gridzon Bay
Nim: 16717/PS/MPBA/05

Telah dipertahankan di depan Dewan Penguji
Pada tanggal 8 Maret 2007

Pembimbing Utama
Dr. Ir. Bambang Agus Kironoto

Pembimbing Pendamping
Dr. Ir. Istiarto, M.Eng

Anggota Dewan Penguji Lain
Prof. Dr. Ir. Bambang Triatmodjo, CES., DEA

ABSTRACT

Muke River, with the total basin area of ± 423 km 2 , is situated on the Southern Coast of Timor Island, South Amanuban Sub-district of TTS Regency of NTT Province. The flood occurred almost yearly in Muke River, beside of internal activity of natural impact, is also caused by the change of land use management and nomadic farming system resulting in high sediment supply in the stream channel. The mentioned condition causes the resulted flood discharge overloading the stream profile capacity and inflicts losses on inhabitants.

The research is intended to study the flood management on Muke River by analyzing the hydraulic capacity of stream wetted cross section for the amount of discharge design of 2- year, 5-year, 10- year, 25- year and 50-year return periods. Analysis of flood modeling was done by using HEC-RAS software of version 3.1.2. After flood water surface elevation on each cross section was found out, the proceeding analysis is flood controlling using dike and channel normalization to minimize the inundation for 10- year return period flood.

After adding the dike and channel normalization on the critically assumed stream cross sections for RS 250 to RS 285, RS 114 to RS 119 and RS 40 to RS 74, the controlled discharge by the main stream channel *(Q C h a n n e l)* was become 98.104 % from previously managed 94.792%. Whereas, from the river's estuary RS 0 to RS 38, the controlled discharge was 83, 397% from previously managed = 72.178 %. It is concluded the best alternative to minimize the flood inundation in Muke River is by using flood dike and channel normalization.