

## ABSTRAK

**SUKARMAN**, Analisis Kelayakan Penggunaan Metode Dewatering pada Proyek Pembangunan Bendung dan Rehabilitasi Jaringan Irigasi Bajo di Kabupaten Luwu (dibimbing oleh Dr. Ir. H. Iskandar BP, MSc dan Dr. Ir. H. Hanafi Ashad, MT).

Penelitian ini dilakukan dengan tujuan untuk menganalisis kelayakan penggunaan metode *dewatering* pada pembangunan bendung dan rehabilitasi jaringan irigasi Bajo di Kabupaten Luwu. Penelitian difokuskan pada dua hal yaitu: (1) besarnya penurunan pendapatan petani selama penutupan air saluran irigasi selama pelaksanaan konstruksi; (2) alternatif penggunaan metode *dewatering* yang tidak mengakibatkan penurunan pendapatan petani selama pelaksanaan konstruksi.

Penelitian besarnya penurunan pendapatan petani menggunakan data primer melalui survey sebanyak 71 orang petani sebagai sampel dari areal irigasi semi teknis seluas 3.194 ha, survey dilakukan pada bulan Maret dan April 2014. Data dianalisis dengan program Statistik SPSS 22. Penelitian kelayakan beberapa alternatif penggunaan metode *dewatering* menggunakan data sekunder dan informasi dari staff kantor terkait, penelitian dilakukan mulai bulan Maret sampai Mei 2014. Kelayakan teknis dianalisis dengan program Microsoft Project, sedangkan kelayakan ekonomis menggunakan Net Benefit dan Benefit Cost Ratio. Penelitian tanggapan terhadap penggunaan metode *dewatering* menggunakan data primer melalui survey sebanyak 25 tenaga ahli jasa konstruksi dari Balai Besar Walayah Sungai Pompengan-Jeneberang, Konsultan Supervisi dan Kontraktor, survey dilakukan pada bulan Juni 2014.

Hasil penelitian menunjukkan : (1) Alternatif-1, penggunaan metode *dewatering* dengan menutup air saluran irigasi selama satu musim tanam mengakibatkan kerugian petani sebesar Rp. 9.078.838.628; (2) Alternatif-1a, sama dengan Alternatif-1 ditambah penggunaan pompa air untuk irigasi agar petani tetap dapat tanaam padi, perlu biaya untuk pengadaan dan operasi pompa Rp 4.154.146.742, net benefit Rp. 4.924.694.846 dan B/C = 2,19; (3) Alternatif-2, penggunaan metode *dewatering* dengan menutup aliran air saluran irigasi selama 3 bulan sewaktu petani tidak tanam, perlu biaya tambahan untuk percepatan pekerjaan lining pasangan batu Rp 1.128.557.061, net benefit 7.950.281.567 dan B/C = 8,04; (4) Alternatif-3, penggunaan metode *dewatering* dengan menutup aliran air saluran irigasi selama 3 bulan sewaktu petani tidak tanam dan lining pasangan batu diganti dengan lining beton pracetak perlu biaya tambahan Rp 1.853.081.672, net benefit Rp. 7.225.756.956 dan B/C = 4,90.

Berdasarkan analisa tersebut diatas maka Alternatif-2 yang paling layak secara ekonomis, namun apabila ketersediaan tenaga kerja di lokasi pekerjaan terbatas maka alternatif ini tidak layak secara teknis, sedangkan Alternatif-3 adalah alternatif yang layak secara teknis maupun ekonomis, kebutuhan tenaga kerja tidak sebanyak Alternative-2 dan umur konstruksi lining beton lebih lama dari lining pasangan batu.

*Kata kunci: Penggunaan metode dewatering berpengaruh terhadap penurunan pendapatan petani*

## ABSTRACT

**SUKARMAN.** The Feasibility Analysis Using the Method of Dewatering on Weir Construction and Rehabilitation of Bajo Irrigation Scheme in Luwu District (supervised by Dr. Ir. H. Iskandar BP, MSc and Dr. Ir. H. Hanafi Ashad, MT).

This study was conducted to analyze a feasibility of using the method of dewatering on weir construction and rehabilitation of Bajo irrigation scheme. The study focus on two things: (1) the magnitude of decline in the income of farmers during the closure of irrigation water during the construction period, (2) the use of alternative dewatering method that do not result in a decrease of farmers' income during construction period.

The research of farmer income decrease using primary data through a survey of 71 samples of farmers in semi technical irrigation area of 3,194 ha, a survey conducted in March and April 2014, data were analyzed with SPSS statistic program. Study the feasibility of several alternative methods of dewatering using secondary data and related information from the office staff, the study was conducted from March to May 2014, technical feasibility analyzed using Microsoft Project, while the economic feasibility using the Net Benefit and Benefit Cost Ratio. The research of professional staff response to the use of dewatering methods using primary data through surveys of 25 construction experts from Pompengan Jeneberang River Basin Office, construction supervision consultants and contractors, a survey was conducted in June 2014.

The results showed: (1) Alternative-1, the use of dewatering method with water flow closing in irrigation canal during one planting season resulted in decrease of farmer income of 9,078,838,628 rupiahs; (2) Alternative-1a, similar with Alternative-1 plus the use of water pumps for irrigation so that farmers still can plants rice, necessary cost for the purchase and operation of the pump 4,154,146,742 rupiahs, the net benefit of 4,924,694,846 and B/C is 2.19; (3) Alternative-2, the use of method of dewatering by closing the flow of irrigation water for 3 months when farmers are not planting, need extra cost to expedite wet masonry lining work of 1,128,557,061 rupiahs, net benefit is 7,950,281,567 rupiahs and B/C is 8.04; (4) Alternative-3, the use of method of dewatering by closing the flow of irrigation water for 3 months when farmers are not planting and wet masonry lining replaced with precast concrete lining, extra cost of 1,853,081,672 rupiahs are needed, net benefit is 7,225,756,956 rupiahs and B/C is 4.90.

Based on the analysis above, Alternative-2 is most economically feasible, but if the availability of labor at work site is limited then this alternative is not technically feasible, while Alternative-3 is an alternative that is technically and economically feasible, do not need as much labor Alternative-2, beside that construction life of concrete lining is longer than wet masonry lining.

*Keywords: Use of the method of dewatering influence to farmers' income decrease.*