

**STUDI AUDIT KONSUMSI ENERGI PADA SISTEM
PRODUKSI PADI**

INTAN PERTIWI
No. BP: 1411112007



Dosen Pembimbing:

- 1. Dr. Renny Eka Putri, S.TP, MP**
- 2. Khandra Fahmy, S.TP, MP, Ph.D**

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Intan Pertiwi, Renny Eka Putri, Khandra Fahmy

ABSTRAK

Analisis *input* energi dievaluasi berdasarkan enam kegiatan dan enam sumber *input* energi. Kegiatan tersebut terdiri dari penanaman, pemupukan, penyemprotan, penyiangan, manajemen irigasi dan pemanenan sedangkan sumber energi yang akan diaudit selama kegiatan budidaya meliputi energi manusia, energi bahan bakar, energi mesin, energi pupuk, energi pestisida kimia dan energi bibit. Penelitian ini bertujuan untuk menghitung jenis konsumsi energi yang dikeluarkan dari penanaman hingga pemanenan. Jenis *input* energi yang dikonsumsi oleh petani meliputi energi manusia, energi pupuk dan energi bibit. Berdasarkan sumber *input*, energi pupuk sebesar 5.373,884 MJ/ha sebagai kontribusi energi terbesar. Energi bibit dan energi manusia berturut-turut sebesar 866,994 MJ/ha dan 841,657 MJ/ha sedangkan energi mesin, energi bahan bakar dan energi pestisida kimia bernilai 0 MJ/ha. Berdasarkan kegiatan, pemupukan memiliki kontribusi energi terbesar yaitu 5.390,177 MJ/ha. Energi yang dikeluarkan pada proses penanaman, penyiangan dan manajemen irigasi masing-masing sebesar 1.065,059 MJ/ha, 159,954 MJ/ha dan 235,088 MJ/ha. Kontribusi energi terendah terdapat pada proses pemanenan sebesar 232,257 MJ/ha. Rasio energi yang diperoleh sebesar 13,385, artinya keuntungan energi yang didapatkan sebesar 13,385 kali lipat dari energi *input*. Berat hasil gabah per satuan luas didapatkan sebesar 5.662,892 kg/ha. Intensitas energi, produktivitas energi dan energi bersih yang diperoleh berturut-turut sebesar 1,250 MJ/kg, 0,799 kg/MJ dan 87.714,280 MJ/ha.

Kata kunci - Audit Energi, *Input*, Intensitas, *Output*, Rasio

STUDY OF ENERGY CONSUMPTION AUDIT FOR RICE PRODUCTION SYSTEM

Intan Pertiwi, Renny Eka Putri, Khandra Fahmy

ABSTRACT

Energy input analysis was evaluated based on six operations and six input energy sources. The six operations comprise planting, fertilizing, spraying, weeding, irrigation management and harvesting while the six input energy sources comprise human, fuel, machinery, fertilizer, chemical and seed energy. This research is for counting energy consumption expended from planting to harvesting. The kind of energy inputs consumed by the farmers comprise human, fertilizer and seed energy. In terms of the input sources, the energy embodied in fertilizer accounted for the highest share with 5.373,884 MJ/ha. This was followed by seed, 866,994 MJ/ha and human energy, 841,657 MJ/ha while machinery, fuel and chemical energy amounted were 0 MJ/ha respectively. In terms of the operations, fertilizing had the highest share contribution of 5.390,177 MJ/ha. The energy embodied in planting, weeding and irrigation management were 1.065,059 MJ/ha, 159,954 MJ/ha and 235,088 MJ/ha respectively. Harvesting had the lowest share contribution about 232,257 MJ/ha. Energy output/input ratio of 13,385, it means that the farmers in the study area reaped as much as 13,385 times the energy they invested. The average paddy yield was found to be 5.662,892 kg/ha. Energy intensity, energy productivity and net energy gain were 1,250 MJ/kg, 0,799 kg/MJ and 87.714,280 MJ/ha respectively.

Key words – **Energy Audit, Input, Intensity, Output, Ratio**