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The objective of this study was to decompose the income difference in paddy farming caused by differential access to water. Two decomposition techniques referred to as Arithmetic decomposition and Production function decomposition were used. The result of the arithmetic decomposition showed that the yield effect was the major factor that contributed to the income difference as compared to cropping intensity, area and price effects. The result of the production function decomposition of the yield effect showed that the technological effect (effect of higher water availability) was the major factor that contributed to the income difference as compared to the effect of levels of other inputs used.

In addition in analysing the economic efficiency of input use, it was found that farms with high access to water tend to overuse inputs while farms with low access to water tend to underuse inputs for paddy production.