ABSTRACT

Water has a benefit value which is appropriate with its existence to fulfill the needs that have been specified by the user. Sustainable development in the effort to preserve water resources in watersheds (DAS) is a development process that optimizes the benefits of natural resources, water resources, and human resources in a sustainable manner. In this program, of course, it takes a long time. Calculation of river width or changes in river area from year to year, therefore it is important for the system to detect river width quickly.

In this final project, the author makes a software using digital image processing from the Google earth application and the Matlab application. This final project research can detect the width of the river using the Region Growing method, which is a method of property analysis. On Google Earth, determining the width is still using a manual method, whereas this system can detect the width of the river automatically.

The gained results from this final project research are the application of river width measurements using Matlab-based Google earth image that can be used to detect river widths. The results that have been obtained from this study are the best image size using a size of 600 x 1030, and a threshold value of 10 with a height of 915 meters is the best average accuracy value, it is 92.47%. The results of this study are expected to be suggestions of improvements and alternative models in finding the width of the river.

Keywords : *River Width Detection, Matlab, Image Processing, Region Growing.*