ABSTRACT

Irrigation management is essential to support the management and determination of water needs, especially on agricultural land. Irrigation management can be optimized by conducting an inventory of irrigation data on a webmap. This is intended so that the spatial data exchange scenario, especially related to irrigation management, can run optimally. The data exchange scenario can be optimal if the existing information dissemination can be integrated. Dissemination of information or data related to water needs for agricultural land is available in a separate source, making it difficult to analyze the results of the integration of these data. This problem can be solved by harmonizing data (effective rainfall, evapotranspiration, porosity, total water loss, irrigation efficiency, irrigation plots, irrigation canals and irrigation plots) so that data can be integrated and can be utilized by users.

In this study, 5 stages of activity were carried out, namely planning and data collection, analysis, system design, implementation and evaluation. In the planning and data collection stages, the data collected includes spatial data related to irrigation (irrigation channels, irrigation buildings, irrigation areas and climatological data used as parameters for calculating irrigation needs), standardization documents and regulations related to agricultural irrigation management. At the analysis stage, an analysis of user needs and system requirements is carried out which aims to collect information related to user needs and system requirements that will be used for recommendations in the system design to be made.System design is divided into 3 categories, namely system processes, interfaces, and databases.

The result of this research is a platform used to facilitate the availability and access of spatial data in the form of a website that contains irrigation and climatological data. The result of this research is a webmap that is used to facilitate the availability and access of spatial data in the form of a website which contains irrigation and climatological data. In the webmap display there are facilities including reading data, adding data, updating data, deleting data and downloading data. The webmap, called SIRISKA (Irrigation Information System and Water Requirements), is a dynamic webmap that uses the CRUD (Create Read Update and Delete) function to the database which is an integration between Back end components consisting of PostgreSQL (database), PHP (server-side). scripting), Apache (web server) and Front end components consisting of JavaScript, HTML and CSS. SIRISKA web is evaluated using several parameters including website appearance, data availability, data sharing capability, map display, easy access, and CRUD facilities. Based on this evaluation, it can be concluded that the information system created can make it easier for users to exchange data and obtain information on irrigation water needs for each irrigation plot.

Keyword: Irrigation, CRUD, SDI, Webmap, SIG, Management