

Mapping and Display Paddy Production Information in Sri Lanka from 2005 to 2019: Application of GIS and Web GIS

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Crop data is very useful in terms of agriculture sector. Combination of spatial and aspatial crop data make greater awareness and more accurate knowledge in agriculture industry. New technology can be used to collect, display and analysis the crop data in decision making process. Web GIS which is a type of distributed information systems, comprising at least a server and a client, is one of the technologies that can be used to display and analyze spatial and aspatial data on the Internet. Objective of this study is to use of capability of GIS and Web GIS to collect, manipulate and display the paddy data and in each district of Sri Lanka for Yala and Maha seasons from 2005 to 2019. Paddy production statistics from agriculture & statistic environmental division, Department of Census & Statistics and districts data layers from Survey Department were collected as secondary data. District wise total production of paddy collected data were entered to excel sheet with compatible format to Web GIS. After that, entered excel sheet was joined to attribute table of district shape file through ArcGIS 10.1 software. Likewise, two shape files with attribute tables were prepared to show Yala and Maha total production of paddy. After that, shape files with the attribute table were included to Web GIS and prepared it in user friendly way. Results on district-wise paddy production from 2005 to 2019 with the datasets in Sri Lanka indicate the system can effectively manage regional agriculture spatial information and show a good applicability & guidance on agriculture management. This study reveals that GIS and Web GIS support a large number of users simultaneously; it makes better cross-platform capability; it is easy to use for end users; it gives opportunity for map handling, agricultural spatial information query and analysis; it is a collaborative collection of geospatial information; it can be used for cropping system evaluation, ecological distribution of farm products, estimation of cropping potential production, visual display of results and system maintenance. However, when considering the data and information displaying and sharing, Web GIS is user friendly than ArcGIS.

Keywords: Agriculture, Arc GIS, Crop data, Paddy, Web GIS