

## **Predicting Groundwater Level using Soft Computing Tool: An Approach for Precision Enhancement**

SreeKanth P D<sup>1</sup>, Sreedevi P D<sup>2</sup> and Shakeel Ahmed<sup>2</sup>

<sup>1</sup>*National Research Centre for Cashew, Puttur, Karnataka, India.*

<sup>2</sup>*National Geophysical Research Institute, Hyderabad, Andhra Pradesh, India.*

Groundwater is a prime source of drinking as well as irrigation. This is often abundant resource, however due to over-use or overdraft had been resulting in serious problems to mankind and environment as well. So, monitoring this non-linear phenomenon by cost-effective technique is a quite difficult task. To overcome these limitations, soft computing tools are being used increasingly to predict the groundwater level with high accuracy. In the present study, a soft computing tool called Support Vector Machine was used for predicting groundwater levels well in advance using weather parameters at Maheshwaram watershed, Hyderabad, Andhra Pradesh, India. The accuracy of this approach was measured based on statistical tools called Regression Coefficient ( $R^2$ ), Root Mean Square Error (RMSE), and Error Variation (EV). For performance evaluation, model presented outputs were compared with traditional multiple regression models outputs.

**Keywords:** Prediction, groundwater level, soft computing tools, support vector machine, regression analysis.