Site Suitability Analysis for water management using Geospatial Technologies in arid areas

By: Jane M, Nancy F, Kpadonou E, Magdalene M, Esubalew N, Poulman O

	Topic Name	Learning Outcomes	Learning Activities	Basic Learning Materials
Day 1	Concept of R program and Geospatial technologies	• Comprehend the concept of R and its applicability • Know the application of Geospatial tools in site suitability analysis	• Download R Studio • Familiarize with R through import data and other operation • Perform land cover classification	• R studio program • R packages • PowerPoint presentations • Flipchart • Notebook and pen
DAY 2	Site suitability analysis for water harvesting	• Recognize the existence of a problem • Locate, obtain and review information relevant to the problem • Generate a variety of approaches to the problem • Find meaning in spatial patterns and relationships • Build spatial models to solve a problem	• State the problem • Break down the problem • Select appropriate parameters for suitability analysis • Assign each parameter a score as per their suitability for water harvesting • Combine the maps using the weighted overlay technique • Make a decision on the best option	• Q GIS software • R Studio • PowerPoint • Laptops • Flip charts • Notebooks • Pens
DAY 3	Field Validation	• Verify the situation analysis with ground truth • Identify the major landmarks for comparison with Landsat data • Experiment how to take coordinates using GPS • Record the opinion of different stakeholders	• Trip to the field • Verify the problem being addressed • Confirming availability of parameters needed • Carry out question and answer session with relevant stakeholders • Oral interviews	• Pen, pencil and notebook • Questionnaire • Cameras • GPS
DAY 4	Project work on suitability analysis	• Carry out a suitability analysis for their particular area of interest (e.g. coffee production) • Produce a high end suitability map that can maintain the basic criteria of cartographic principles	• Define the area of interest (AOI) • Identify the base criteria (variables) required to conduct a suitability analysis • weight the value of the variable using certain standards • Download relevant data for their project • Perform analysis and make a decision	• Software such as QGIS, R studio • Laptop/Desktop computer
DAY 5	Project presentations and farewell dinner	• Prepare presentations • Apply presentation skills • Present their output • Network and socialize	• Presentations • Question and answer • Certificates award for the participants • Sharing snacks and socializing	• Projector • PowerPoint

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