

Geographical Information Systems – Overview and History

Lemma Tadesse*

Arbaminch University College of Social Science & Humanities, Arbaminch Ethiopia

INTRODUCTION

Geographical Information System (GIS) is a technology that that gives the means to gather and use geographic records to help inside the event of Agriculture. A virtual map is usually of a lot greater price than the identical map printed on a paper as the virtual model can be combined with other resources of facts for analysing statistics with a graphical presentation. The GIS software makes it possible to synthesize huge quantities of different statistics, combining distinctive layers of records to manipulate and retrieve the facts in a more useful way. GIS presents an effective way for agricultural scientists to better carrier to the farmers and farming network in answering their query and supporting in a higher selection making to implement making plans sports for the improvement of agriculture.

Overview of GIS

A Geographical Information System (GIS) is a system for shooting, storing, analysing and handling facts and associated attributes, which are spatially referenced to the Earth. The Geographical Information System is also called as a geographic information gadget or geospatial information machine. It's far an information machine able to integrating, storing, editing, analysing, sharing, and displaying geographically referenced facts. In a more accepted sense, GIS is a software tool that permits users to create interactive queries, analyse the spatial records, edit records, maps, and gift the effects of these kinds of operations. GIS generation is becoming important device to combine diverse maps and remote sensing records to generate various models, which are used in actual time surroundings. Geographical Information System is the technology utilising the geographic concepts, packages and structures. Geographical information system can be used for medical investigations, useful resource management, asset control, environmental effect assessment, city planning, cartography, criminology, records, sales, marketing, and logistics. as an instance, agricultural planners might use geographical records to determine on the exceptional places for a vicinity precise crop planning, by means of combining statistics on soils, topography, and rainfall to determine the size and place of biologically appropriate regions. The very last output may want

to

2include overlays with land ownership, transport, infrastructure, labour availability, and distance to marketplace centres.

History of GIS development

The idea of portraying different layers of data on a series of base maps, and relating things geographically, has been around much older than computers invention. Thousands years ago, the early man used to draw pictures of the animals they hunted on the walls of caves. These animal drawings are track lines and tallies thought to depict migration routes. While simplistic in comparison to modern technologies, these early records mimic the two-element structure of modern geographic information systems, an image associated with attribute information. Possibly the earliest use of the geographic method, in 1854 John Snow depicted a cholera outbreak in London using points to represent the locations of some individual cases. His study of the distribution of cholera led to the source of the disease, a contaminated water pump within the heart of the cholera outbreak. While the basic elements of topology and theme existed previously in cartography, the John Snow map was unique, using cartographic methods, not only to depict but also to analyze, clusters of geographically dependent phenomena for the first time. The early 20th century saw the development of "photo lithography" where maps were separated into layers. Computer hardware development spurred by nuclear weapon research led to general-purpose computer "mapping" applications by the early 1960s. In the year 1962, the world's first true operational GIS was developed by the federal Department of Forestry and Rural Development in Ottawa, Canada by Dr. Roger Tomlinson. It was called the "Canada Geographic Information System" (CGIS) and was used to store, analyze, and manipulate data collected for the Canada Land Inventory (CLI). It is an initiative to determine the land capability for rural Canada by mapping information about soils, agriculture, recreation, wildlife, forestry, and land use at a scale of 1:50,000.

3CGIS was the world's first "system" and was an improvement over "mapping" applications as it provided capabilities for overlay, measurement, and digitizing or scanning. It supported a national coordinate system that spanned the continent, coded

Correspondence to: Lemma Tadesse, Arbaminch University College of Social Science & Humanities, Arbaminch Ethiopia.

Received: July 31, 2021; **Accepted:** August 14, 2021; **Published:** August 21, 2021

Citation: Lemma Tadesse. (2021) Geographical Information Systems. J Remote Sens GIS 10:7

Copyright: © 2021 Lemma Tadesse. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

lines as "arcs" having a true embedded topology, and it stored the attribute and location specific information in a separate files. Dr. Tomlinson is known as the "father of GIS," for his use of overlays in promoting the spatial analysis of convergent geographic data. In 1964, Howard T Fisher formed the Laboratory for Computer Graphics and Spatial Analysis at the Harvard Graduate School of Design, where a number of important theoretical concepts in spatial data handling were developed. This lab had major influence on the development of GIS until early 1980s. Many pioneers of newer GIS "grew up" at the Harvard lab and had

distributed seminal software code and systems, such as 'SYMAP', 'GRID', and 'ODYSSEY'.

ACKNOWLEDGEMENT

The author is very thankful to all the associated personnel in any reference that contributed in/for the purpose of this research.

CONFLICT OF INTEREST

The authors have declared that no competing interests exist.