

Geographical information system (GIS) and its applications on Agriculture

SHAGUFTA

Geographical information system (GIS) is a computer system which is specially designed for capturing, storing, manipulating, analyzing, managing, and displaying all the types of data which is related to the surface of earth. The modern world has greatly benefited through Geographical Information System (GIS) due to its vast implementations on different fields of life. It can include information about the landscape, such as the location of streams, different kinds of vegetation, and different kinds of soil. It can include information about the sites of factories, farms, and schools, or storm drains, roads, and electric power lines.

GIS has great healthy impacts on agriculture and the phenomenon of GIS is no newer to the world. Pakistan is an agricultural country and the agriculture sector is the backbone of the country economy. Implementation of GIS can greatly affects on development of the agriculture no strategy of economic reform can succeed without sustained and broad-based agricultural development, which is critical for raising living standards, alleviating poverty, assuring food security, generating a buoyant market for expansion of industry and services and making a substantial con-

tribution to the national economic growth. The problems that the traditional agriculture has brought out, such as the environment pollution, waste of resources and privation of living creatures' diversity etc. To resolve these problems and to realize the durable development of agriculture, the researchers all over the world began to consider the new farming modes, so precision agriculture came on and the corresponding system about technologies came into being. The precision agriculture means to finely adjust to all kinds of soil and crop management measures, to optimize usage quantity for all agricultural materials, such as fertilizer, pesticide, water, seed and so on, according to the special condition of each farming unit, so as to obtain high yield and most economic benefit, meanwhile to reduce the usage of chemical matter, and to protect agricultural environments and farming land resource. The precision agriculture can apply the information technology, such as GPS technology, GIS technology, RS technology and ES technology and so on, to differentiate the agriculture technical measures among plots even to the square meter, to obtain the better marginal benefit of economy and environment.

GIS technology provide strong technology support for intelligent

decision support system. The application of ES can provide the implementary scheme for the agricultural production. GIS can synthetically manage the various space-time data to provide the decision and the consultation services for the agriculture production. GIS technology provide strong technology support for intelligent decision support system. In agriculture the GIS fertilization modal adopts the target yield fertilization modal which gives the database of different regions and crops is established, to provide the decision for fertilization. The agriculture of Balochistan is passing through its worst era having many different types of problems such as drought, unawareness of farmers, communication barriers between the farmers and the agriculture specialists, less knowledge of fertilization and the most important field selection for a specific crop or plantation. So, to overcome these problems, the implementation of GIS and its proper maintenance can resolve all these challenges and will lead to a successful agriculture. As the agricultural sector opens its arms to embrace new technologies, in times to come, we hope to see every platter to be filled with more nutritious food and will increase the income of agriculture market to a great margin.