Application of Fuzzy Logic for Decision Making in Remote Sensing Problem

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***Abstract*— Making decisions is undoubtedly one of the most fundamental activities of human being. We all come across with variety of alternate actions in our daily life which are available to us and at least in some instances; we have to decide which of the available actions to take. Decision making is the study of choosing alternatives options and identifying based on the preferences & best values of the decision maker. It is also a process sufficiently reducing uncertainty and doubt about alternatives to allow reasonable choice to be made from among them. It is most important scientific, social and economic endeavor. The remote sensing problem plays an important role in the data acquisition system. In this research, we studied an Application of Fuzzy Logic for Decision making in Remote Sensing Problem. Here, we have used a Multiobjective Decision making Method for solving a Remote sensing problem. From this method, we have calculated the expected utility, prior probabilities, conditional and unconditional probabilities of perfect and imperfect information and value of information is calculated.**

The problem of Decision making in Remote Sensing for Fuzzy logic technique is solved using the MATLAB programming software.

***Keywords*— Remote Sensing, decision making, Fuzzy Logic, Multiobjective.**

I. INTRODUCTION

1.1 FUZZY LOGIC

The real life is very difficult and complex, as the complexity of the life is increases , our potential to make precise and accurate statements about its behavior is reached beyond which precision and significance become almost exclusively characteristics. These are the super words of the Prof. Lotfi Zadeh who had introduced the fuzzy logic in 1965.

When there is more uncertainty and inaccurate data, the fuzzy logic method is very useful for solving problems. When the cost of information increases then the cost of fuzzy information is far less than the perfect or imperfect information. Thus, there are two most important advantages of the fuzzy logic technique: Understanding of difficult problems becomes easier and makes the system is very costs effective.

The fuzzy logic is most popular in consumer products such as Refrigerator, washing machine, elevators, air conditioners, cameras, rice cookers, automobile etc.

1.2 DECISION MAKING

Decision making is the selection and identifying the alternatives based on the preferences and important of values of the decision maker. It is also a process sufficiently reducing uncertainty and doubt about alternatives to allow reasonable choice to be made from among them. It is most important scientific, social and economic endeavor. To be make able to make consistent and correct choices is the essence of any decision process imbued with uncertainty.

In the decision making, there are number of alternative choices to be considered, and in case we have to choose the one that best fits with our desires, lifestyle, goals values and so on.

For Example:- A manager makes a good decision, but the outcome is bad and the manager gets fired. “A doctor uses the best established procedures in a medical operation and the patient dies; then the doctor gets sued for malpractice”. In all these situation the outcomes have nothing to do