Examination of Farming Systems for Sustainable Agricultural Development Using Analytical Hierarchy Process (AHP), the Case of Ilam Province, Iran

Alireza Poursaeed1 --- Said Mehdi Mirdamadi2 --- Iraj Malekmohammadi3 --- Said Jamal Farajollah Hossaini4

1Associate Professor of Department of Agricultural Extension and Education, Ilam Branch, Islamic Azad University, Ilam, Iran
2Associate Professor of Agricultural Extension and Education. Islamic Azad University Science & Research Branch
3Professor of Agricultural Extension and Education. Tehran University- Tehran- Iran
4Associate Professor of Agricultural Extension and Education. Islamic Azad University Science & Research Branch

Abstract

Farming Systems play a key role in achieving sustainability. Therefore, the main purpose of the present study was to define an appropriate farming system which provides Sustainable Agricultural Development (SAD) in "Iran". The population consisted of the 15 research experts were interviewed to determine the sustainable agricultural development criteria and appropriate farming systems. The sampling of the experts was carried out via Non probability Sampling (Purposive and Chained). Analytical Hierarchy Process (AHP) was applied for the decision making stage. The required statistics were carried out by the use of EC2000 software. A questionnaire was developed based on the Analytical hierarchy Process (AHP). Each question consisted of a pair-wise comparison of two criteria. Therefore, the six criteria and four alternatives resulted in a total of 42 questions. First the respondents were asked to indicate the relative importance of the two criteria with respect to the overall goal. Finally, the Experts were asked to indicate the relative importance of the two alternatives (Farming systems) with respect to the each criterion. The results indicated that using less amount of chemical fertilizer, using less amount of chemical pesticide, crop rotation, reducing tillage operation, land fragmentation and reducing soil erosion criteria are the most important criteria for sustainable agriculture of Iran. The results of farming systems prioritizing by experts using AHP indicated that the private and cooperative farming systems are the most useful farming systems for sustainable agricultural development.

Keywords: Farming system, AHP, Iran, Sustainable agricultural development.