

Role of agricultural extension and RASs systems in food security and sustainability of family farmers' livelihoods

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Agricultural mechanization was an innovation of 20th century. The increasingly enhance of human population, restricted natural resources, and inefficiency of agricultural productions' inputs and methods caused human to use more resources by the available technologies at that time. The procedure approached extravagance and environmental degradation which affected the production sustainability, attracted the mankind attentions into the sufficient application of inputs by utilizing appropriate technologies. Therefore, mechanization has not been considered just application of machines and technical/economic management of it, since then; but it followed agricultural systems management and the production components, human being and environment, were also considered in system analysis and decision making. The paper aims to review the mechanization from formation and introduction to Iran till now, as well as, analyses the future status. It also covers the concepts such as agricultural geology (agro geology), sustainable agriculture, precision agriculture, and automation and their roles in production sustainability. Finally, suggestions would be represented.

Key Words: agro geology, precision agriculture, automation, bio systems