Egyptian Farmers' awareness of Nano Technology and their readiness to utilize its applications for promoting their Agricultural production and marketing activities, A case study in Giza and Menoufia Governorates

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Abstract

Nano Technology (NT) is one of the latest scientific innovations that have many useful applications in resolving agricultural production and marketing problems. NT facilitates and improves many processes, services, and activities needed to effectively manage the production and marketing of many crops and agricultural commodities. Egyptian Farmers' (EFs) awareness and knowledge about NT innovations, such as NT-designed devices, materials, practices, and interventions contribute to their readiness for the proper application and wise utilization of these innovations.

This study aimed to identify EFs' awareness and information about NT, to measure their readiness, and their opinions concerning the readiness of their rural community, to utilize NT-based applications to facilitate and improve their Agricultural production and marketing activities.

Data were collected from a purposive sample of 87 farmers through personal interviews. A questionnaire was designed and pretested to achieve the study objectives. Frequencies and percentages were utilized for data analysis and presentation .

The study revealed the following results:

The respondents' characteristics were as follows:

(78%) were from middle and old age categories, the majority are relatively less educated (respondents with preparatory and secondary education represent only 12.6 %, the majority have relatively high levels of experience in agriculture (around 69% have more than 30 years of experience), the majority of the respondents (around 71 %) are involved in farming animal husbandry activities, land holding varies from renting (60.9%), land ownership (31%), and share cropping (10.1% as), the cultivated summer crops include green beans (56%), fruits (21.8%), vegetables (25%), and corn (19%). Winter crops include wheat (33.3%), potato (27.9%), clover (20.7%), and cabbage (19.5 %).

This highly diversified cropping pattern, combined with e long levels of experience in agriculture, could positively impact the respondents' knowledge and farming practices, in addition to influencing the individual and community decision-making processes related to the adoption of new technologies.

Medium and high levels of readiness were found among farmers for utilizing various NT-based applications in agriculture. These high levels indicate farmers' expectations to get the advantages of increasing access to production requirements, improving marketing activities, improving veterinary vaccination and treatment of farming animals in addition to using chemical fertilizers and increasing farming net return.

Keywords: Nanotechnology, Egyptian Farmers, Agricultural production and marketing, Sustainable Development Strategy.