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MANAGEMENT OF DRIVERLESS FARMING MACHINERY

Automation of production is a modern trend in the economy development, which does not bypass agriculture. It is because efficient farming systems with remote control through IT are the key to reducing costs, improving product quality, saving resources and protecting the environment.

The most significant achievements in the sphere of innovative self-driving technologies of precision agriculture were obtained by the world's leading companies such as John Deere (the USA), CNH Industrial N.V. (the Netherlands and the United Kingdom), Kubota Corporation (Japan), AGCO (the USA) CLAAS (Germany). Tractors and combine harvesters offered by them work on GPS navigation with the option of full autopilot, when remote control is performed either by the farmer himself from a smartphone, or these functions are delegated to artificial intelligence. For some time, farmers in Europe, the United States, Canada, Australia and Japan have been testing and actively using this machinery which can operate independently 24/7 and contributes to the development of sustainable agriculture.

Ukrainian agriculture should also implement this experience during the post-war reconstruction of farming. It is invaluable concerning the complexity of the terrain and configuration of the fields after hostilities and explosions as well as expected seasonal labor shortages. With significant benefits of remote control, management of autonomous farming equipment needs to take into account the optimal technological maintenance schedule, reduction of fuel costs or transition to equipment running on electric batteries, protection of workers from poisonous operations when applying fertilizers, pesticides and herbicides, reduction of crop losses due to human error or untimely harvesting.

The main challenge of driverless farming machinery management is the price factor since prices for such cutting-edge equipment start from \$50000 up to \$400000 or even more. But for strategic reasons, these expenses are justified because they are prospective investments aimed at restoring competitiveness and increasing Ukrainian contribution to global food security.

Certainly, the use of driverless farming machinery may cause concerns about jobs redundancy in rural areas, but this is not the case. Indeed, locals can be allocated to less complicated farm work, which makes sense in view of the upcoming shortage of skilled labor force and young people's reluctance to build a career in agriculture.

Therefore, the management of agricultural production when using driverless farming machinery can become much more effective in planning, organizing, monitoring and controlling the entire cycle of field work, which benefits both the state and the farmers in economic, social and environmental dimensions.