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AGRICULTURAL LAND MONITORING AND ELECTRONIC MAPPING USING MODERN TECHNOLOGIES

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Abstract: This article provides information on monitoring agricultural land and creating and updating electronic digital maps in agriculture using modern technologies.
Keywords: Agricultural land, monitoring, scale, electronic digital map, land structure, scoring, contour

Enter. Introduction of a new system of monitoring agricultural land and crops, prevention of agricultural land looting, further acceleration of land surveying, remote sensing and digitization, strengthening of the material and technical base, training with qualified personnel It is aimed to improve the provision and service system.

In accordance with the decision of the Cabinet of Ministers No. 22 dated January 14. 2022 "On approval of regulatory legal documents regulating the implementation of monitoring works on agricultural land, land protection and land development activities" Monitoring of agricultural lands and cultivated areas is carried out by land types, area, land owners, land users and tenants of the state land cadastre in the National Geographic Information System of the Republic of Uzbekistan. implementation based on information about;

The Ministry of Agriculture of the Republic of Uzbekistan, the Ministry of Agriculture of the Republic of Karakalpakstan, regional agricultural departments and district (Kuvasoy city) agricultural departments of monitoring agricultural lands and cultivated areas implementation by the "Ozdaverloyiha" institute and its regional units;
monitoring of agricultural land and arable land in the form of periodic, current and rapid monitoring;
It was decided to use the information obtained during the monitoring of agricultural land and arable land in the preparation of reports on the state of agricultural land and their use.
For this reason, in the following years, the work of updating or creating agricultural maps in our republic is carried out using remote sensing of the earth and digital aerial photography. This situation led to the following inconveniences in the creation of orthophoto plans on the territory of the republic:
taken aerial photos are black and white (without color);
high costs of photographing the area (aircraft, fuel, etc.);
a lot of time is spent in performing work without a camera (images are not geolinked, software is outdated, etc.);
a lot of manual labor;

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It was estimated that a lot of time and money was spent on connecting the coordinates in plan and height.

Fig. 1. Aerial view of agricultural land monitoring

Currently, remote sensing drones have been brought to our republic by the "Cadastre Agency under the Ministry of Economy and Finance of the Republic of Uzbekistan" and the "Uzdaverloyiha" institute, according to the order of our government, and are being used by system organizations in performing large-scale work. The flight of unmanned aerial vehicles is carried out in accordance with the legislation in special areas for the flight of aircraft. Flight control of unmanned aerial vehicles is carried out by the State Inspection of Flight Safety Control of the Republic of Uzbekistan.

"Uzdaverloyiha" state scientific-design institute improves geospatial information infrastructure.

In order to carry out scientific and research work in the territorial divisions of the State Scientific and Design Institute "Uzdaverloyiha", it was decided to establish training-experimental farms and to plant agricultural crops and carry out constant observation and monitoring.

As of January 1, 2022, the "Cadastre Agency under the Ministry of Economy and Finance" of the Republic of Uzbekistan regularly integrates data on land types and areas of agricultural land. (in terms of land owners, land users and tenants) it is necessary to submit the land report to the Ministry of Agriculture in electronic form.

The unmanned aerial vehicle is used in the following areas:
cartography (making and updating maps on a large scale);
monitoring (in the case of agriculture without destroying arable land);
a close-up image (during the implementation of internal land development works on the farm);
The tasks of an unmanned aerial vehicle in agriculture are:
on-site examination and inspection of land;
identification of lands in a serious state of land reclamation;

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to carry out agrotechnical activities in land use at the level required by law;
Drones have several advantages not only in aerial photography, but also in chemical protection of plants.
Agrodron advantages:
the density of the field soil layer does not increase, the crop does not appear;
crops, branches and elements of the crop are not damaged;
artificial spread of crop diseases is prevented
facilitates the processing of fruit trees;
aircraft and wind-powered sprayers are convenient for processing areas that are inaccessible from the ground.
As a result of the use of drones in agriculture, creation of an electronic map of the field by automatic aerial photography and automatic processing of data, inventory of agricultural crops, assessment of the volume of work performed and control of their implementation, condition of crops provides an opportunity for operational monitoring, control of the yield of agricultural crops, control of the germination of agricultural crops, checking the quality of tillage, as well as sending data for analysis. Another innovative technology in the updating (creation) of electronic digital cards is the monitoring data carried out with the help of an unmanned aerial vehicle in agriculture. Another innovative technology is the creation of orthophotoplans from space photos taken from satellites, purchased from a Korean company, and the specialists of the enterprise use orthophotoplans in camera and field conditions. can be widely used in decryption by.

CONCLUSION

1. In recent years, world-wide scientific progress has been in all sectors, as well as a number of innovations can be brought to the technologies of creating cards of agriculture and many other areas, which are used in various sectors of the economy.
2. Using space and aerial photographs on a large scale, it is possible to establish the technology of leveling, transformation and creation of electronic digital cards with a high level of accuracy
3. Selection of land from electronic digital cards, allocation of land, placement of agricultural crops and their monitoring, land preparation, implementation of land cadastre works, creation of soil map of lands, land owners, land users and tenants, as well as cluster and farmer to clearly indicate the location and boundaries of the land areas used by farms, to give them cadastral numbers in the prescribed manner, to show the location of infrastructures serving farms and to be used in many other directions can be achieved.
4. Resolution No. 22 of the Cabinet of Ministers dated January 14, 2022 "On approval of regulatory legal documents regulating the implementation of monitoring works on agricultural land, land protection and land development activities", based on the decision, permanent land control was made possible.

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