ISNN 3030-3907

2026/3
VOLUME 7

DEVELOPMENT OF SCIENCE

ILMIY JURNAL



Development of science

Ilmiy jurnal

2026/3 VOLUME 7

ISSN 3030 -3907

Ilmiy jurnal OAK rayosatining 2024 yil 27 sentabrdagi 361-son qaroriga asosan 02.00.00 kimyo fanlari hamda 2025 yil 12 fevral 367- son qaroriga asosan 05.00.00 texnika fanlari bo‘yicha falsafa doktori (PhD) va fan doktori (DSc) ilmiy darajasiga talabgorlarning dissertatsiya ishlari yuzasidan dissertatsiyalari asosiy ilmiy natijalarini chop etish tavsiya etilgan milliy ilmiy nashrlar ro‘yxatiga kiritilgan.

BOSH MUHARRIR:
Temirov Alisher Hoshim o‘g‘li – texnika fanlari falsafa doktori (PhD),Dotsent.
TAHRIRIYAT KENGASH RAISI:
Fozilov Sadriddin Fayzullayevich – texnika fanlari doktori, professor
TAHRIRIYAT KENGASH A’ZOLARI

TEXNIKA FANLARI/ TECHNICAL SCIENCES/ ТЕХНИЧЕСКИЕ НАУКИ

Bozorov G‘ayrat Rashidovich
Buxoro Davlat Texnika Universiteti, professor
Abdurahmonov Olim Rustamovich
Buxoro Davlat Texnika Universiteti, professor
Adizov Bobur Zamirovich
O‘zbekiston Respublikasi Fanlar akademiyasi Umumiy va noorganik kimyo instituti, professor
Hayitov Ruslan Rustamjonovich
Buxoro Davlat Texnika Universiteti, professor
Jumayev Qayum Karimovich
Buxoro Davlat Texnika Universiteti, professor.
Berdiyev Dorob Murodovich
Islom Karimov nomidagi Toshkent Davlat Texnika Universiteti, professor
Maxmudov Rafiq Amonovich
Buxoro Davlat Texnika Universiteti, professor.
Tilloyev Lochin Ismatilloyevich
Buxoro Davlat Texnika Universiteti, dotsent.
Raxmonov Qahramon Sanakulovich
Buxoro Davlat Texnika Universiteti, dotsent.
Barakayev Nusratullo Rajabovich
Islom Karimov nomidagi Toshkent Davlat Texnika Universiteti, professor.
Jo‘rayev Xayrullo Fayziyevich
Buxoro Davlat Texnika Universiteti, professor.
Panoyev Erali Rajabboyevich
Buxoro Davlat Texnika Universiteti, dotsent.
Ataullayev Sherzod Nabiullyevich
Buxoro Davlat Texnika Universiteti, dotsent.
Murodov Malik Negmurodovich
Buxoro Davlat Texnika Universiteti, dotsent.
Axmedova Ozoda Bahronovna
Islom Karimov nomidagi Toshkent Davlat Texnika Universiteti.
Safarov Bahri Jumayevich
Buxoro Davlat Texnika Universiteti, dotsent.
Xaydarov Axtam Amonovich
Buxoro Davlat Texnika Universiteti, dotsent.
Safarov Jasur Alijon o‘g‘li
Buxoro Davlat Texnika Universiteti, dotsent.
Асадова Раъно Дилмуратовна
Тошкент Давлат техника университети доценти

KIMYO FANLARI/ CHEMICAL SCIENCES/ ХИМИЧЕСКИЕ НАУКИ

Axmedov Voxid Nizomovich
Buxoro Davlat Texnika Universiteti, professor
Umarov Baqo Bafoyevich
Buxoro Davlat Universiteti, professor
Kodirov Abduaxad Abduraximovich
Qarshi davlat Universiteti, professor
Qurbonov Mingniqul Jumagulovich
Qarshi davlat Universiteti, dotsent
Turemuratov Sharibay Naurizbaevich
O‘zbekiston Respublikasi Fanlar akademiyasi Qoraqalpog‘iston bo‘limi Bosh ilmiy kotibi, professor
Tursunov Kaxor Shonazarovich
Qarshi davlat Universiteti, professor
Do‘stov Hamro
Buxoro Davlat Texnika Universiteti, professor
Panoyev Nodir Shavkatovich
Buxoro Davlat Texnika Universiteti, dotsent.
Olimov Bobur Bahodir o‘g‘li
Buxoro Davlat Texnika Universiteti, dotsent.
Kasimov Sherzod Abduazimovich
Termiz Davlat Universiteti, professor.
Aliqulov Rustam Valiyevich
Termiz Davlat Universiteti, professor
Tropov Xamza Tursunovich
Samarqand Davlat Universiteti, professor

IQTISODIYOT FANLARI/ ECONOMICS/ ЭКОНОМИЧЕСКИЕ НАУКИ

Nizamov Aslitdin Badreddinovich
Buxoro Davlat Texnika Universiteti, professor.
Boboyev Akmal Choriyevich
Buxoro Davlat Texnika Universiteti, professor.
Ergashxojayeva Shaxnoza Djasurovna
Toshkent davlat iqtisodiyot universiteti, professor
Saidaxmedova Nodira Ilxomovna
Toshkent davlat iqtisodiyot universiteti, professor
Muxsinov Bekzod Toxirovich
Buxoro Davlat Texnika Universiteti, dotsent.
Shakarov Qulmat Ashirovich
Renessans ta'lim universiteti,dotsent.
Jumaeva Zulfiya Qayumovna
Buxoro Davlat Texnika Universiteti, dotsent.
Norova Salomat Yusupovna
Buxoro Davlat Texnika Universiteti, dotsent.
Avezova Shaxnoza Maxmudjonovna
Buxoro Davlat Texnika Universiteti, dotsent.
Jalilov Jamshid G‘anijonovich
Toshkent davlat iqtisodiyot universiteti, dotsent
Xasanova Gulruh Djumanazarovna
Buxoro Davlat Texnika Universiteti, dotsent.

PEDAGOGIKA FANLARI/ PEDAGOGICAL SCIENCES / ПЕДАГОГИЧЕСКИЕ НАУКИ

Siddiqova Sadoqat G‘afforovna
Buxoro Davlat Texnika Universiteti, dotsent.
Zoyirov Erkin Xalilovich
Buxoro Davlat Texnika Universiteti, DSc, professor
Gaffarov Feruz Hasanovich
Puchon Universiteti, *professor*
Ruziyev Davron Yuldashevich
Buxoro Davlat Universiteti, professor
Muradova Firuza Rashidovna
Buxoro Davlat Texnika Universiteti, professor.
Yunusova Gulandon Samiyevna
Buxoro Davlat Texnika Universiteti, professor.
To‘xtayeva Zebo Sharifovna
Buxoro Davlat Texnika Universiteti, professor.
Navro‘zova Gulchixra Nigmatovna
Buxoro Davlat Texnika Universiteti, dotsent.
Uzoqova Laylo Polvonovna
Buxoro muhandislik – texnologiya instituti, dotsent.
To‘raqulova Marjona Qiyom qizi
Buxoro Davlat Texnika Universiteti, dotsent.
Muradova Zarina Rashidovna
Buxoro Davlat Texnika Universiteti, dotsent.
Murodov Sanjar Aslonovich
Buxoro Davlat Texnika Universiteti, dotsent.
Shodiyev Jahongir Jo‘raqulovich
Buxoro Davlat Texnika Universiteti, dotsent
Gaffarov Laziz Hasanovich
Buxoro muhandislik – texnologiya instituti, dotsent.

Tahririyat a’zolarning to‘liq ro‘yxati jurnalning www.devos.uz saytida keltirilgan.

Tahririyat hay’ati a’zolarining tarkibini o‘zgartirish hamda qo‘shimcha kiritish yoki tahririyat a’zoligidan chiqarish bosh muharrir tomonidan amalga oshiriladi.

ISSN 3030-3907

Development of science ilmiy jurnali 2024 yil 15 aprel kuni №256445 sonli guvohnoma bilan Davlat ro‘yxatidan o‘tgan.

To‘plam elektron ko‘rinishda (pdf formatida) mualliflarga taqdim etiladi. To‘plamga kiritiladigan maqolalarning mazmuni, ulardagi statistik ma’lumotlar va me’yoriy hujjatlarning to‘g‘riligiga hamda har qanday fikr - mulohazalarga mualliflarning o‘zlari mas’ul hisoblanadilar. Talablarga javob bermaydigan maqolalar to‘plamga kiritilmaydi. Tashkiliy qo‘mita maqola matnini qisqartirish, qisman tuzatish kiritish, seksiyalarga joylashtirish huquqiga ega.

ISSN 3030-3907

USING AEROSPACE DATA AND GIS TECHNOLOGIES TO ASSESS LAND USE CONDITIONS

Qosimov Lazizbek Muxsinjon o‘g‘li
Assistant, Department of Chemical Engineering and Geodesy, Kokand State University, Kokand, Uzbekistan
E-mail: lazizbek.qosimov.4717@gmail.com

Abstract. Efficient use of land resources and continuous monitoring of their condition require the application of modern geoinformation technologies. In recent years, aerospace observation data have been widely used as an important source of information for analyzing and mapping land use processes. This article examines scientific and methodological approaches to assessing land use conditions based on aerospace imagery and GIS technologies. The study analyzes methods for decoding remote sensing data, identifying land fund categories, and creating thematic maps within a GIS environment. The obtained results contribute to improving land resource monitoring, assessing the condition of irrigated lands, and updating land use maps.

Keywords: aerospace data, GIS technologies, remote sensing, decoding (decoding), land use maps, irrigated lands, geographic information systems, land resources monitoring.

Аннотация. Рациональное использование земельных ресурсов и регулярный мониторинг их состояния требуют применения современных геоинформационных технологий. В последние годы аэрокосмические данные широко используются в качестве важного источника информации для анализа и картографирования процессов землепользования. В данной статье рассматриваются научно-методические подходы к оценке состояния землепользования на основе аэрокосмических снимков и ГИС-технологий. В ходе исследования были изучены методы дешифрирования данных дистанционного зондирования Земли, определения категорий земельного фонда и создания тематических карт в среде ГИС. Полученные результаты могут быть использованы для организации мониторинга земельных ресурсов, определения состояния орошаемых земель и обновления карт землепользования.

Ключевые слова: аэрокосмические данные, ГИС-технологии, дистанционное зондирование, декодирование, карты землепользования, орошаемые земли, географические информационные системы, мониторинг земельных ресурсов.

Annotatsiya. Yer resurslaridan samarali foydalanish va ularning holatini muntazam monitoring qilish zamonaviy geoinformatsion texnologiyalarni

ISSN 3030-3907

qo‘llashni talab qiladi. So‘nggi yillarda aerokosmik kuzatuv ma’lumotlari yerdan foydalanish jarayonlarini tahlil qilish va xaritalashda muhim axborot manbai sifatida keng qo‘llanilmoqda. Ushbu maqolada aerokosmik tasvirlar hamda GIS texnologiyalari asosida yerdan foydalanish holatini baholashning ilmiy-uslubiy yondashuvlari tahlil qilinadi. Tadqiqot jarayonida masofadan zondlash ma’lumotlarini dekodlash, yer fondi kategoriyalarini aniqlash va GIS muhitida tematik xaritalar yaratish usullari ko‘rib chiqildi. Olingan natijalar yer resurslari monitoringini tashkil etish, sug‘oriladigan yerlarning holatini aniqlash hamda yerdan foydalanish xaritalarini yangilashda muhim ahamiyat kasb etadi.

Kalit so‘zlar: aerokosmik ma’lumotlar, GIS texnologiyalari, masofadan zondlash, dekodlash (deshifrovka), yerdan foydalanish xaritalari, sug‘oriladigan yerlar, geoinformatsion tizimlar, yer resurslari monitoring.

INTRODUCTION.

One of the pressing issues today is the rational use and effective management of land resources. Accurate and updated data on land use play an important role in the development of agriculture, ensuring environmental stability and territorial planning. Population growth, increased urbanization processes, and increased agricultural activity significantly increase pressure on land resources. As a result, environmental problems such as soil degradation, soil salinization, desertification, and others arise. Under these conditions, reliable spatial data are needed to observe and analyze land use processes [1,2]. In recent years, the development of geographic information technologies has significantly improved the methods of collecting, processing, and analyzing spatial data. Geographic information systems (GIS) are one of the most effective tools for natural resource research and land management. GIS technologies allow you to combine spatial data from various sources into a single digital environment. This will help to effectively organize the process of in-depth analysis of territorial processes, drawing up various thematic maps, and making management decisions [3,4].

Along with GIS technologies, aerospace observation data is widely used as an important source of information for the study of land resources. Satellite images and aerial photographs allow you to observe the Earth's surface on a large scale, determine the composition of the Earth's surface, and analyze changes in the use of the Earth. The use of remote sensing data in combination with GIS technologies increases the accuracy and efficiency of the process of creating and updating land use maps [5,6]. In the process of decoding aerospace images, land use categories can be determined, the territorial structure analyzed, and the condition of farmland assessed. In particular, remote sensing methods are widely used to monitor irrigated land, determine the state of cultivated areas, and identify negative processes such

ISSN 3030-3907

as soil salinization, flooding or degradation. These technologies are also important in that they allow analyzing large areas in a short time [7,8].

Irrigated land in Central Asia is one of the most important land resources in the region. In these regions, agricultural production mainly depends on irrigation systems, and the efficient use of land resources serves as an important factor in ensuring economic stability. However, in recent years, problems such as water scarcity, soil salinization, and soil degradation have had a negative impact on the condition of irrigated land. In this regard, the need for modern geographic information data for assessing the state of land resources and their regular monitoring is increasing [9,10]. The combined application of aerospace data and GIS technologies will enhance land use analysis and land monitoring capabilities. More accurate and faster updating of land use maps is possible due to the integration of satellite images, spatial analysis methods, and digital mapping technologies. Such data are important in developing land management, agricultural development, and sustainable land use strategies [11].

The main objective of this study is to assess the state of land use based on the use of aerospace data and GIS technologies, as well as to analyze the effectiveness of the process of updating land use maps. The study examines methods of decoding remote sensing data and scientific and methodological aspects of monitoring land resources through their analysis in a GIS environment [12].

MATERIALS AND METHODS.

This study used data from aerospace observations and geoinformation technologies to assess the state of land use and study the processes of updating land use maps. The study used state-of-the-art GIS software tools to collect, process, and analyze spatial data. Geographic information systems are one of the important tools that allow you to systematically store, analyze and create various thematic maps of spatial information. The main sources of research were satellite images, aerospace observation materials, topographic maps, cadastral data and statistics. The available thematic maps of the categories of the land fund, irrigated land and agricultural areas were also analyzed. These data were introduced into the GIS system and on their basis a single spatial database was formed. By systematizing spatial data, it became possible to jointly analyze data from various sources.

In the process of processing aerospace images, methods of decoding remote sensing data were used. During the decoding process, the types of land cover, agricultural land, irrigation systems, reclamation networks and other categories of land use were determined. Using satellite images, the current state of the territories was analyzed and compared with the available cartographic materials. This made it possible to identify changes in land use and update the available information. In

ISSN 3030-3907

the process of spatial analysis, various geographic information operations were used. In particular, methods such as overlay analysis, territorial comparison, statistical analysis and processing of attribute data are applied. These operations made it possible to determine the structure of land use, assess the territorial distribution of land fund categories and analyze the state of agricultural land.

Methods of cartographic analysis were also used and the obtained data were visualized in the form of thematic maps. Maps created in the GIS environment made it possible to reflect the structure of land use, the territorial location of irrigated land and the general state of land resources. The created thematic maps determined the main directions of land use in the regions and their territorial features.

The methodological approach used in this study is based on the integrated application of aerospace data and geographic information technologies. This approach will allow you to effectively organize the process of integrating spatial data from various sources, analyzing them and updating land use maps. At the same time, with the help of geographic information technologies, it is possible to scientifically improve the processes of monitoring and managing the state of land resources.

The main tasks of land resource mapping are:

The main tasks of land resource mapping include the following:

– reflecting the natural characteristics and the current condition of land resources;

– identifying the structure of land use and the state of land reclamation;

– detecting negative anthropogenic impacts, including man-made factors that affect land conditions;

– improving the accuracy of determining land boundaries and calculating land areas;

– introducing modern technologies and advanced methods for land surveying and cartographic mapping;

– providing detailed spatial information necessary for the rational use, protection, and effective management of land resources.

The development of land use maps using GIS technologies provides several important advantages in the process of analysing and visualizing spatial information. GIS platforms allow different types of spatial and attribute data to be integrated into a single digital environment, which improves the accuracy and efficiency of land resource analysis.

ISSN 3030-3907

These advantages are illustrated in Figures 1 and 2, which present examples of complex cartographic legends and thematic diagram structures used for representing land resource categories.

Figure 1 shows an example of a complex legend used for representing different categories of land on thematic maps. Such legends make it possible to clearly classify land resources according to their functional use and spatial distribution.

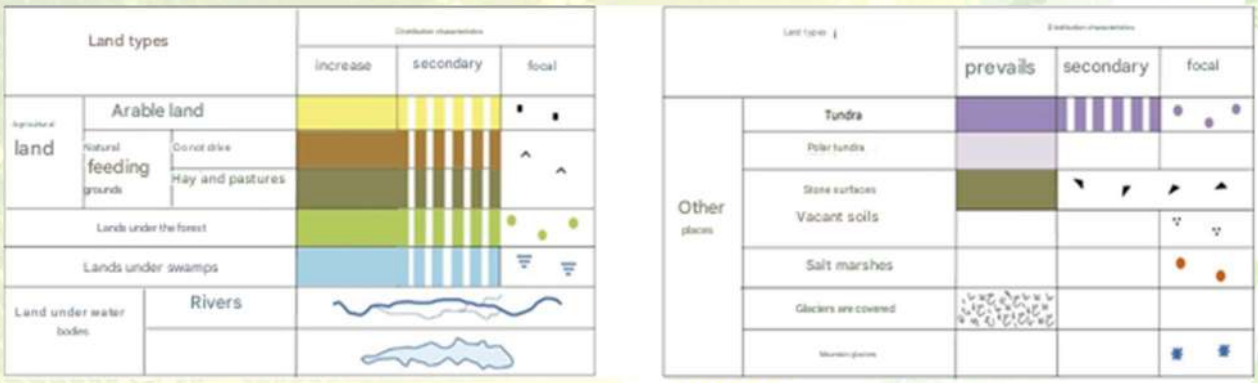


Figure 1. Complex legend for land categories on maps.

Figure 2 demonstrates the use of cartographic diagrams, including various modifications of circular and column diagrams. The application of such graphical elements allows additional characteristics of land resources to be presented in a visual and informative manner.



Figure 2. Complexity of cartographic diagrams, various modifications of circular and columnar diagrams.

The use of complex cartographic legends and thematic diagrams significantly improves the interpretability of land use maps and provides a more comprehensive representation of the spatial structure of land resources.

ISSN 3030-3907

RESULTS AND DISCUSSION

The study examined the processes of land use assessment and updating existing maps based on aerospace data and geographic information technologies. The results of the study showed that the joint use of remote sensing data and GIS technologies significantly expands the possibilities for analyzing land use structure and monitoring the state of land resources. In the course of the study, based on satellite images and available cartographic materials, the land use structure in the Ferghana region was analyzed. Decoding of aerospace images defines agricultural land, irrigated land, reclamation networks, settlements and other land use categories. The obtained data were formed as separate thematic layers in the GIS environment, and their spatial analysis was carried out. Space analysis revealed certain changes in land use patterns. In some regions, the area of agricultural land has been reduced, some of it is used for other purposes, while in some regions there are problems associated with the reclamation state of irrigated land. It was revealed that soil salinization, wear of irrigation systems and inefficient use of water resources have a negative impact on the fertility of individual agricultural areas.

According to the results of the study, the use of aerospace images allows you to quickly identify changes in land use. Satellite images allow you to observe and analyze large areas in a short time. This will contribute to a more efficient organization of the land monitoring process. GIS technologies make it possible to systematically process the obtained data, carry out their spatial analysis and visualize them in the form of thematic maps.

The study created thematic land use maps based on GIS technologies. These maps reflect the categories of the land fund, irrigation systems, the location of agricultural land and their ecological state. The created maps made it possible to more accurately assess the land use structure in the region.

In addition, the possibilities of obtaining high-precision space information using modern aerospace technologies, including unmanned aerial vehicles (UAVs or drones), were considered. Drone images can serve as an effective tool for studying small areas in detail, assessing the condition of cultivated areas and determining the processes of soil degradation.

The results of the study showed that the joint application of aerospace data and GIS technologies will significantly improve the process of updating land use maps. With the help of these technologies, you can quickly determine the current state of land resources, analyze territorial changes and more accurately determine the categories of the land fund.

Based on the results obtained, scientific and practical recommendations were developed to improve the ecological and reclamation state of irrigated lands and

ISSN 3030-3907

ensure the effective use of land resources. These recommendations are aimed at improving the land management system, increasing the fertility of agricultural land and preventing land degradation processes. In general, the results of the study showed that the use of aerospace data and geographic information technologies is an effective tool for assessing the state of land use and monitoring land resources. On a scientific basis, it is possible to organize processes for updating land use maps and land management through spatial analysis based on GIS and decoding of aerospace images.

CONCLUSION.

The results of the study made it possible to determine the possibilities of assessing the state of land use based on aerospace data and geographic information technologies, as well as improving the processes of updating land use maps. The results obtained during the study showed that modern geographic information technologies play an important role in organizing monitoring and effective use of land resources. First of all, the results of the study confirmed that modern geographic information systems are an effective means of collecting, storing, processing and analyzing spatial data. During the study, various sources of land data - aerospace imagery, mapping materials, cadastral data and statistics - were integrated into the GIS environment. It is possible to analyze the structure of land use and determine the territorial distribution of land fund categories by combining these data into a single spatial database. At the same time, it was found that the use of GIS technologies contributes to a more accurate and efficient organization of land management processes.

According to the results of the study, aerospace observations are an important source of information for identifying changes in land use and assessing the current state of land resources. Using satellite images, you can observe large areas in a short time and analyze their spatial structure. As a result of the analysis carried out on the example of the Ferghana region, problems associated with the reclamation state in certain areas of irrigated land were identified. In particular, in some regions, soil salinization, deterioration of irrigation systems and inefficient use of water resources have a negative impact on land fertility. This suggests the need for regular monitoring of irrigated land and irrigation networks. " Also in the process of research, the methodology for creating and updating land use maps has been improved. It was possible to determine the categories of the land fund through the joint use of aerospace data and GIS technologies, analysis of the location of irrigation systems and assessment of the ecological state of agricultural land. As part of the study, thematic maps based on GIS were developed, which made it possible to conduct a spatial analysis of the land use structure.

ISSN 3030-3907

In addition, the possibilities of using unmanned aerial vehicles (UAVs or drones) in the research process were justified. High-precision aerial photographs obtained using drones can be effective means for a detailed study of agricultural areas, determining the state of cultivated areas and determining land degradation processes. The use of UAV technologies will significantly increase the accuracy and efficiency of the process of monitoring land resources.

In general, the results of the study showed that the use of aerospace data and geographic information technologies is an effective tool in updating land use maps and improving land monitoring processes. These technologies will make it possible to regularly monitor the state of land resources, identify territorial changes and make scientifically based decisions on the effective use of agricultural land. Therefore, in the future, it is advisable to widely use aerospace monitoring and GIS technologies in the land management system.

REFERENCES

1. Abdullayev A.Q., Xolbayev G.X., Safarov E.Yu. Agrometrologiyada munosabatli tenglamalarni topishda matematik statistikani qo‘llash, EHM va geografik axborot tizimlaridan foydalanish uchun ko‘rsatma. – T.: GMITI, 2009. – 113 b.
2. Allanazarov O., Prenov Sh.M. GIS dasturlarida aloqa ob’yektlari kadastri uchun ma’lumolar bazasini shakllantirish haqida. “Geografiya va O‘zbekiston tabiiy resurs salohiyatini baholash muammolari”. Respublika ilmiy amaliy konferensiyasi materiallari. Toshkent 2016 y.
3. Abdullayev T.M., Karabazov S.A., Mayinov Sh.Q. Geodeziya va kartografiya sohasida geoinnovasion texnologiyalardan foydalanib ma’lumotlarni yangilash . O‘zbekiston Geografiya jamiyati axboroti maxsus son. Toshkent 2018. B. 5-9 b.
4. Babajanov O.R., Rahmonov Q.R., G‘ofirov A.J. Yer kadastri. – T.: Cho‘lpon, 2002 - 81 b.
5. Kosimov, L., Kosimova, S., Turdikulov, K., Ismoilov, M., Qosimov, L., & Hole, Y. (2025, August). AI-Powered Urban Planning: Transforming Smart Cities with Data-Driven Decisions. In 2025 World Skills Conference on Universal Data Analytics and Sciences (WorldSUAS) (pp. 1-6). IEEE.
6. Khakimova, K., Abdukhalilov, B., Qosimov, L., Abdusalomov, A., & Yokubov, S. (2023). Application of GIS technologies for improving the content of the tourist map of Fergana province, Uzbekistan. In E3S web of Conferences (Vol. 386, p. 04003). EDP Sciences.
7. Ganiyev, Y. Y., Qosimov, L. M., & Murodilov, K. T. (2023). Creating agricultural maps using geo-information systems as an example of Bandikhan

ISSN 3030-3907

district. Finland International Scientific Journal of Education, Social Science & Humanities, 11(3), 1132-1140.
8. Ganiyev, Y., Madumarov, B., Qosimov, L., & Murodilov, X. (2023). Examining the managerial structure and operational aspects of geodesy, cartography, and cadastre production. In E3S Web of Conferences (Vol. 452, p. 03013). EDP Sciences.
9. Zabidullaeva, R. K. (2024). The use of GIS technologies in the management and monitoring of land resources. American Journal of Applied Science and Technology, 4(2), 37–40.
10. Kasimov, L. M., & Ganiev, Y. (2022). The Essence of Using Electronic Tachometers and GPS (Global Navigation System) in Monitoring Areas. Eurasian Research Bulletin, 15, 48-51.
11. Oymatov, R., Musaev, I., Bakhriev, M., & Aminova, G. (2023). Monitoring agricultural land areas using GIS-online program EOS DA: A case study of Andijan region. Geospatial and Environmental Research Studies.
12. Qosimov, L. (2023). The Importance of Aerospace Instruments in the Research of Earth Types. American Journal of Technology and Applied Sciences, 17, 70-72.
13. Berdikulov, U. A. (2024). A promising solution for creating agricultural maps based on GAT programs and remote sensing data creation technologies. Modern Science and Research, 3(6), 163–170.
14. Ganiyev, Y. Y., & Yokubov, S. S. (2023). The use of remote sensing technologies in the design of agricultural land maps. International Journal of Scientific Research in Engineering and Management.

ISSN 3030-3907