PROVIDING GEO-INFORMATION FOR THE MONITORING OF THE CLUSTER ACTIVITY OF THE REGIONS AND DEVELOPING THE BASIS OF WEB-MAPS (IN THE CASE OF FERGANA REGION)

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Abstract: This article presents the methods of providing geo-information for monitoring cluster activities in the Fergana region and the development of web-maps as a basis for analysis and decision-making. The outdated methods of collecting and providing geo-information have resulted in difficulties in decision-making and have hampered the region's growth and development. The development of web-maps can provide real-time data that can be used for better decision-making, planning, and policy formulation. The article outlines the steps involved in developing web-maps, including data collection, processing, and developing a web-based platform for presenting the data. The article concludes that the development of web-maps can promote transparency and accountability and enhance the region's economic growth and development.

Keywords: geo-information, web-maps, Fergana region, monitoring, cluster activities, decision-making, real-time data, transparency, accountability, economic growth.

Аннотация: В данной статье представлены методы предоставления геоинформации для мониторинга кластерной деятельности в Ферганской области и разработки веб-карт как основы для анализа и принятия решений. Устаревшие методы сбора и предоставления геоинформации привели к трудностям в принятии решений и препятствовали росту и развитию региона. Разработка веб-карт может предоставлять данные в режиме реального времени, которые можно использовать для более эффективного принятия

решений, планирования и формулирования политики. В статье описываются этапы разработки веб-карт, включая сбор данных, их обработку и разработку веб-платформы для представления данных. В статье делается вывод о том, что разработка веб-карт может способствовать прозрачности и подотчетности и способствовать экономическому росту и развитию региона.

Ключевые слова: геоинформация, веб-карты, Ферганская область, мониторинг, кластерная деятельность, принятие решений, оперативные данные, прозрачность, подотчетность, экономический рост.

Introduction.

Geo-information and web-maps have become critical tools for monitoring cluster activities and understanding the patterns of economic, social, and political development of regions. Governments, private organizations, and individuals can use geo-information and web-maps to keep track of regional activities, which can help in better planning and decision-making. In this article, we will explore the methods of providing geo-information for monitoring cluster activities in the Fergana region and the development of web-maps as a basis for analysis and decision-making.

The President of the Republic of Uzbekistan signed a resolution "On additional measures for the further development of the fruit and vegetable and viticulture industries and the creation of a value chain in the industry." In recent years, consistent measures have been taken to reform agriculture and introduce market mechanisms into the industry.

In particular, a cluster production method has been established in agriculture, the size of agricultural land, divided into clusters by types of crops, is 67 percent for cotton and textiles, 8 percent for animal husbandry, and 7 percent for horticulture. 5 percent. The processing of raw materials grown by the cluster method makes it possible to deliver it to the consumer in the form of a finished product [1].

Today, more than 80 types of agricultural products grown in our republic are exported to 66 countries of the world. If in 2010 cotton fiber accounted for 11.3 percent of exports, by 2018 this figure dropped to 1.6 percent.

At the same time, the lack of a systematic introduction of effective market mechanisms, especially in the development of horticulture and viticulture, and an insufficient scientific approach lead to underutilization of the industry's existing opportunities.

Study area or subject.

The Fergana region is one of the most densely populated regions in Central Asia, and its economy largely relies on agriculture and industry. The region has been facing several challenges in terms of providing reliable geo-information for monitoring and analyzing the activities of industrial clusters in the region (fig.1).
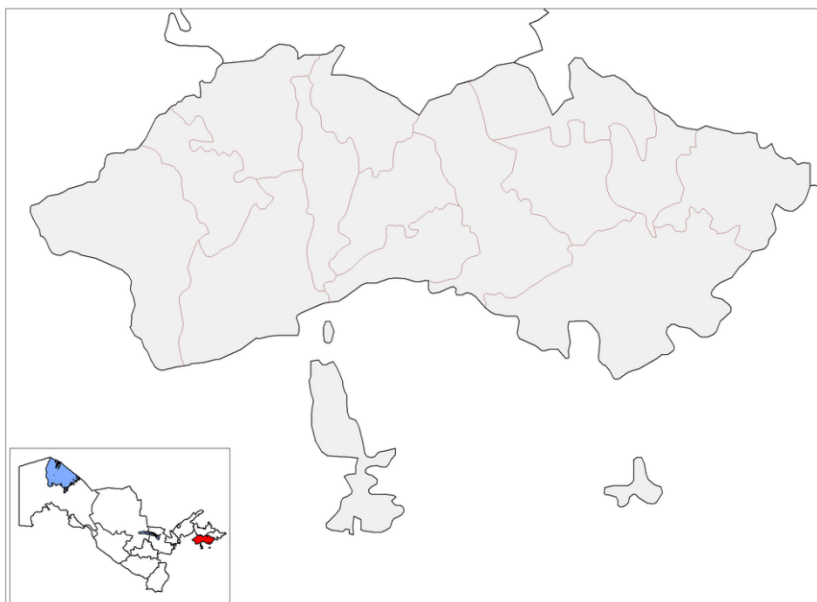

Figure 1. *Study area, Fergana volley.*

Fergana region is one of the industrially developed regions of the republic. There are 86 large industrial enterprises in the region. The leading branches of industry: fuel energy, chemistry, mechanical engineering, construction materials, cotton cleaning and processing, light and food industry and other. . All states are integrated into the unified energy system of Central Asia. The largest enterprises of the chemical industry are located in the cities of Fargona and Ko'kan. "Azot" production association, chemical fibers, chemical plants of furan compounds, Kokan superphosphate plant and others are among them. Fergana oil refinery is located in the province. The building materials industry is developed. The cement plant in Kuvasoy produces more than a quarter of the cement produced in the republic. Factories of slate, brick and other building materials, glass and porcelain vessels are operating in Kuvasoi. Equipment and spare parts for other branches of industry are produced at "Elektromash", "Tekstilmash" and other metalworking factories in Kok. The food industry is developing every year. Various types of oils, flour, bread, macaroni, canned goods and other products are produced in the enterprises of this branch. 84 joint enterprises and more than 22 thousand small enterprises operate in the region. "Nodira", "PSMK3", "Polina" in Fergana;

"Margilon Tong" and "Zilola" small enterprises, "Ozsalaman", "KabulFargona", "Besteks", "Ishanch" joint enterprises are operating in Margilon.

The current methods of collecting and providing geo-information are outdated, and many of the available maps are not up to date. This has resulted in difficulties in decision-making and has hampered the region's growth and development. The development of web-maps can be a solution to these problems as they provide real-time data, making it easier to monitor and analyze cluster activities.

Methods:

The first step in developing web-maps for monitoring industrial clusters in the Fergana region is to collect and process the necessary data. The data should include information about the location of factories, the types of industries, and the number of employees. The data can be obtained through surveys, satellite imagery, and other remote sensing techniques.

The next step is to develop a web-based platform where the data can be aggregated and presented in the form of web-maps. The platform should be user-friendly and interactive, allowing users to view and analyze the data in various ways. The platform should also provide tools for visualization, such as heat maps, charts, and graphs, to help users understand the patterns and trends in cluster activities.

The web maps should be regularly updated to ensure that the data is accurate and up to date. This can be achieved through continuous monitoring and feedback from users. Furthermore, the web maps should be accessible to a wide range of users, including government agencies, private organizations, and individuals, to ensure that everyone can benefit from the data.

Results.

The development of web-maps for monitoring industrial clusters in the Fergana region has several benefits. Firstly, it provides real-time data that can be used for better decision-making, planning, and policy formulation. Secondly, it promotes transparency and accountability in cluster activities, as the data is publicly available. Lastly, it enhances the region's economic growth and development by providing valuable insights into the region's industrial activities.
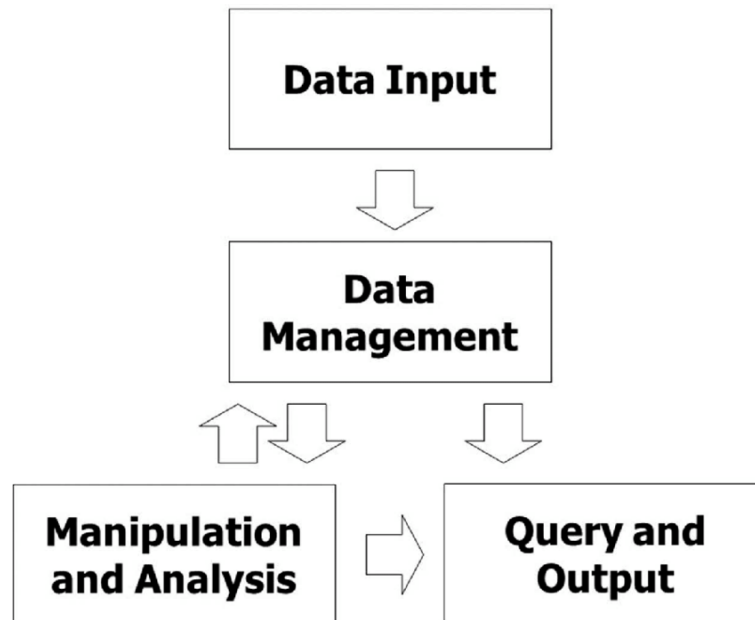
Figure 2. Picture of procces that data changes to map.

- The development of web-maps for monitoring industrial clusters in the Fergana region provides real-time data that can be used for better decision-making, planning, and policy formulation.

- The use of web-maps promotes transparency and accountability in cluster activities, as the data is publicly available.

- The development of web-maps enhances the region's economic growth and development by providing valuable insights into the region's industrial activities.

- The web-based platform developed for presenting the data is user-friendly and interactive, allowing users to view and analyze the data in various ways.

- The platform provides tools for visualization, such as heat maps, charts, and graphs, to help users understand the patterns and trends in cluster activities.

- The web-maps are regularly updated to ensure that the data is accurate and up to date, which is crucial for informed decision-making and planning.

- The web-maps are accessible to a wide range of users, including government agencies, private organizations, and individuals, to ensure that everyone can benefit from the data.

Conclusion.

Geo-information and web-maps are essential tools for monitoring industrial clusters and understanding the economic, social, and political development of regions. The development of web-maps for monitoring industrial clusters in the Fergana region can provide real-time data that can be used for better decision-making, planning, and

policy formulation. It is essential to continuously update the web maps to ensure that the data is accurate and up to date. The development of web-maps can promote transparency and accountability and enhance the region's economic growth and development.

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