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OPPORTUNITIES FOR THE DEVELOPMENT OF AGRICULTURE IN MOUNTAINOUS AND FOOTHILL AREAS

Abstract: The article describes the current state of agriculture and its role in providing the population with food, features and capabilities of these regions. The problems that impede the development of mountain and foothill areas are also presented, and ways to solve them are justified. Formed scientific proposals and practical recommendations for the development of mountain and foothill areas based on targeted programs.

Key words: mountain and piedmont areas, food security, diversification, value chain, biodiversity.

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Introduction

In recent years, we have created a favorable business environment and value chains based on the rational and efficient use of natural resources in the agricultural sector, modernization of agriculture and diversification of agriculture across the regions, increasing the export potential of the sector, protecting the environment, and maintaining biodiversity. A number of new laws and regulations have been adopted to ensure food security of the population, and these measures have been identified as a priority. The concept, road maps and programs developed and implemented step-by-step measures [1; 2; 3].

Indeed, the "Strategy of Action" on the priority directions of development of the Republic, implemented by the President of the Republic Sh.Mirziyoyev, is aimed at further development and liberalization of the economy, rational and efficient use of land and water resources in the regions, the introduction of a digital economy in the field of agriculture, "green economy", "smart agriculture" and "organic agriculture". The priority given to the development is not surprising, of course. Along with strengthening the organizational and economic foundations of such large-scale and promising activities, the improvement of their legal and

regulatory frameworks in line with international standards is a distinctive feature of today's agrarian reform.

At the same time, in the regional and regional context, such sectors and industries, including mountainous and low-mountain areas, are subject to legislative, legal, organizational, economic, technological and implementation assistance for agro-economic and agro-bio-climate, labor and investment potential, and production and export opportunities. The innovative, scientific and practical base is not fully formed, and the existing ones need to be improved in accordance with the modern requirements.

The extent of the problem studied. Widespread use of opportunities in mountainous areas, the presentation of foreign scientists by F.K.Kocherga [4], M.A.Galbatsdibirova [5], S.A.Gashkina [6], A.E.Maltsev [7], G.E.Avakiyan [8], P.G.Abdulmanapov, M.N.Mirzon [9], Lester R.Brown and Christopher Flevin, Yu.Karaev, K.N.Fayzullaeva, E.A.Dostiev, A.Kaziev, E.A.Egorova, O.Yu.Voronkova, I.K.Gerter, S.A.Karyuk, V.S.Missakov, M.A.Morozov others works are noteworthy [10].

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From the Uzbek economists presented the peculiarities of agriculture in mountainous and piedmont areas A.Mukhtorov, T.Djumaev, H.N.Ammonov, A.S.Alibekov, S.L.Alibekova, K.A.Choriev, R.Adilchaev, T.H.Farmonov, Sh.Abdulazizov and others.

Methodology

The data obtained in the article based on statistical and monographical surveys and questionnaires is the research database. Summarizing and comparing results using economic analysis, expert evaluation and other economic research methods.

Analysis and Results

Currently, 43.6% of the total land area of the Republic of Uzbekistan (2018) is located in mountainous and mountainous areas, including 55.3% of agricultural land, 55.6% of pastures.

37% of the total population of the republic, including more than 46% of the rural population, lives in these regions. This territorial unit accounts for about 40% of the country's labor resources.

In the 67 (42.1%) districts of 9 regions of the country, agricultural activities are carried out by farmers and dehkan farms, production cooperatives of pasture users, LLCs, network and cluster systems and joint ventures, private businesses and other

agricultural enterprises. He has been doing so. In addition, 46.5% of gross domestic product, including 45.6% of livestock production and 47.2% of crop production, is being created.

Indeed, in the Republic 46% of grain crops, 53% of potatoes, 63-70% of fruit and grape fields are located in mountainous and mountainous areas, 38.5% of grain crops grown in the country, 55% of potatoes, 51% and 67% respectively. About one per cent is grown.

Mountain and piedmont areas account for more than 48% of the exported fruit and vegetable products (more than by some types).

As is well-known, mountain and piedmont pasture plays an important role in the pasture cattle breeding in our country. Currently, about 43-56% of the cattle and small cattle in the country are concentrated in the mountains and in the foothills, where 46-44% of meat and dairy products are grown.

More than 80-90% of meat and milk in these areas is produced by dehkan farms and farmers in the country as a result of organizational and economic measures and conditions aimed at supporting dehkan farms, developing family entrepreneurship, especially for rational and efficient use of pastures. Production of high value added products based on the processing of meat, dairy products.

Table 1. Information on cultivated area and gross yield of major types of agricultural and mountainous areas, in percent

Main types of crops	Crop area, %	Gross crop yield of agricultural crops %
Grain crops	46.0	38.5
Cotton	30.2	27.9
Potatoes	53.0	55.0
Vegetables	45.0	46.9
Melons	30.8	31.1
Fruit	62.8	51.0
Grapes	69.9	67.0

In mountainous and piedmont pasture-breeding areas, pasture fodder accounts for 56-65%, and even higher (70-75%) in the formation of livestock fodder base (depending on seasonality). At the same time, pasture productivity in the foothills ranges from 2.0 to 2.5 centners per hectare (Kashkadarya, Surkhandarya, Samarkand) and 2.5 - 3.5 centners per hectare (Jizzakh, Fergana, Andijan, Namangan regions), 8-5,5 c / ha (Namangan, Fergana, Andijan) 5.5 - 8.0 c / ha (Kashkadarya, Samarkand, Surkhandarya, Samarkand and Jizzakh regions) and above.

Meat and dairy cattle breeding and meat breeding have been developed in the foothills and piedmont areas, increasing pasture productivity,

limiting their degradation and sustainable supply of meat and dairy products not only in these areas but also in urban and industrial centers in the flat areas of the country. In markets, they provide a balanced price.

Grain per capita production in the mountainous and piedmont areas is 3% higher than the national average, potatoes 1.5 times, vegetables 1.3 times, fruits 1.4 times, grapes 1.8 times, meat and milk by 1.3 times. quitting. 76 kg (38%) of grain crops per capita, 48 kg (55%), potatoes - 138 kg (46.5%), fruit - 41.5 kg (51%), grapes - 32 kg. 66,7%), meat - 33 kg (45%), milk - 137 kg (43%) and 16 kg (42,1%) of honey - mountain and piedmont areas.

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The share of mountain and piedmont areas in the agriculture of the country is increasing as a result of the measures taken to ensure the innovative development of the agricultural sector in the country and the regions.

Most notably, these indicators have shown steady growth in recent years.

The role of the industry in ensuring food security and socio-economic development of the country, if we take into account that in these regions fruit and vegetable, dairy and meat products for consumption, as well as agricultural and raw materials for industrial and processing industries are being created. We can see that the Alpine and mountainous agriculture are a distinctive regional component of our national economy as a whole, and the specifics and capabilities of this region in agricultural production are as follows:

- Highly susceptible to climatic changes and impacts of agricultural production on mountain and foothill areas;

- plays an important role in providing water resources to the population and agriculture in mountainous and piedmont areas (70% and more of the agricultural water resources in the country are formed in mountainous areas);

- The formation of water flow depends on the cover and volume of glaciers in the mountainous regions, and in the context of mountain and mountainous ecosystem services, the "water quality and water" services of these areas are of not only regional but also national and interregional significance;

- High level of minimum natural amount of precipitation and humidity;

- high natural fertility of land resources and low level of bonuses of pastures and rainfed (non-irrigated) lands;

- Characteristics of natural environment of mountain and piedmont areas, ecosystem structure and wide range and range of ecosystem services - mountain, piedmont, forests, pastures and hayfields, reservoirs and others;

- The peculiarities of demographic processes in mountainous and piedmont areas, and as a consequence, uneven distribution of labor resources in mountainous and piedmont areas, high density in one area, and in others;

- Spatial distribution of industrial and social infrastructure facilities in mountainous and mountainous areas, underdeveloped infrastructure for agricultural production, and so on.

Possibilities of mountain and mountainous agriculture:

- Increasing employment of labor resources through the use of mountain natural conditions and resources, and the development of non-traditional, scientific and intellectual activities with a high proportion of intellectual labor;

- Non-traditional and traditional agriculture in mountain and piedmont areas (goat breeding and dairy farming, goat farming, intensive Greek nuts, almonds and pistachios, beekeeping in the final cycle, cultivation of green feed in the hydroponics system, vegetable growing in the vegetation system; , innovative development of plants used in the pharmaceutical and food industries, production of highly liquid and profitable products);

- application of water-saving technologies on mountain and mountain slopes;

- development of pasture cattle breeding based on the principles of cooperative pasture cooperatives and associations of pasture users based on pasture management planning in mountain and foothills;

- Possibility of development of ecologically pure, high-yield and original horticulture and fruit-growing branch;

- unconventional use of land and water resources (eg terrace);

- the availability of food for wild plants in the foothills and foothills, access to medicines, various dyes, and development of entrepreneurship in this area;

- the possibility of cultivation of relatively less demanding crops;

- production of traditional agricultural products;

- Opportunity to grow seedlings and seeds in favorable environmental conditions in the mountains;

- Opportunities for development of agriculture;

- Opportunities for fishery development, etc.

Our analyzes and observations show that today the main obstacles to further development of mountain and piedmont areas are the following:

- Lack of economic and financial resources, inadequate income for agricultural commodity producers to expand production and upgrade their material and technical base;

- Lack of technologies and enterprises for processing agricultural products;

- inadequate infrastructure of mountain and piedmont areas, taking into account the peculiarities of production in the mountainous and piedmont areas;

- Inadequate use of agricultural export potential of mountain and piedmont areas;

- There is no legal and regulatory framework for the production of ecologically clean agricultural products in mountainous and piedmont areas, and thus the organizational and economic foundations for the production of such products are broken down by regions and regions;

- Low level and narrow scope of attraction of investments in the agricultural sector in the regions, especially foreign direct investments;

- In agricultural production, the use of differentiated territorial norms (coefficients) in determining indicators of labor and material resource consumption, as well as in other areas, taking into

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account the natural-climatic and agro-ecological conditions of the mountain and mountainous regions, is considered appropriate;

- Inadequate consideration of existing and expected demographic processes and features of the region in the formation of production and social infrastructure, as well as the structure of agricultural production of mountain and piedmont areas;

- agricultural production in mountainous and foothill areas is extremely sensitive to climate change and its effects on plains and desert areas, and restriction on the formation and production of MTT systems, etc.

The analysis shows that at present time not only the mountainous and piedmont areas, but also the mountainous areas are not fully utilized.

As for the mountainous and piedmont areas, the development of the industry requires a comprehensive solution of a number of interrelated issues. That is:

A. Land resources of mountain and piedmont areas have not been fully explored, soil quality has not been studied sufficiently in quantity and quality. Also, the study of the water composition and water regime of mountain streams and springs was ignored, and the economic value of plants, meadows and pastures was not calculated. Measures in this area are not organized systematically and periodically.

B. Mountains and foothills, which have been making a significant contribution to the development of our national economy over the past half century, are beyond the scope of science, fundamental, applied and innovative research on agricultural economics, industry, management, financing and development left.

Only in the last two or three years, the views on these issues have changed, and the concept, roadmap, programs and measures have been developed and implemented, taking into account the agricultural features of the mountain and piedmont areas. This can be seen also in the tasks set out in the Decree of the President of the Republic of Uzbekistan dated 23 October 2019 "On approval of the strategy of agricultural development of the Republic of Uzbekistan for 2020-2030".

Ensuring the solution of the tasks specified in this Strategy and further development of mountain and piedmont agriculture can be carried out by the state on the basis of targeted, comprehensive programs.

Discussion of results

In agro-economic science it is desirable to prioritize the problems of economic, social and environmental efficiency of agricultural development of mountain and piedmont regions, land, water, labor resources and investments.

Due to the peculiarities of agriculture in the mountainous and piedmont areas, its present and future potential and impact in the national economy, as well as the experience of foreign developed and

high-growth countries, the Institute of Agricultural and Mountain Research in the Surkhandarya region. We think it is necessary to establish in Sariasiya (or Baysun) district.

The main task of this research institute is to conduct a comprehensive study of mountain and piedmont agriculture and to improve land, water, investment and labor resources in accordance with agro-economic and agro-climatic conditions, crop rotation, diversification of agriculture, livestock and livestock production. development of technological maps for the production of agricultural products, development of territories and scientifically-grounded plans and forecasts of agricultural production development of scientific recommendations and practical recommendations aimed at economic assessment of natural resources in mountain and piedmont areas, training of personnel, prevention of degradation of pastures and hayfields and drylands, formation of economic management systems adapted to climate change.

It is also important to note that most of the water resources used in agriculture are located in the mountainous regions of our republic and neighboring countries, and the prediction of food availability across the regions is not only national, but also regional and regional based on fundamental, applied and innovative projects is of global importance. The establishment of such an institute is the only one in Central Asia.

It is well-known that in the agricultural practice of the Republic, the organizational, technological and implementation measures for the formation of business plans of agricultural enterprises in the production of goods, works and services, the scope and direction of government support, the prospects of financial and economic activities of agriculture. Require cultivation of advisory agricultural products once every five years for use in decisions of financial and economic nature labor and material costs hitting the standards are systematically developed. That's a positive thing, of course.

As our analysis shows, the factors that shape and characterize regional mines (precipitation, land-grade bonuses, etc.) are not fully taken into account in the development of standard process maps. As a result, the demand for pruning, fuel and mineral fertilizers on government-produced products is based on the same approach for all, without regard to the nature of the regions. This does not ensure the high labor and material resources costs associated with the production of agricultural enterprises, especially the farms, their inability to compete in the agricultural products market, and, as a result, the re-establishment of the economic and financial situation.

One of these regional features is the coefficients of adjustment of production (works and services) and fuel costs, taking into account the "altitude of the territories relative to the sea level", which must be

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taken into account when developing the standard technical maps for agricultural production.

This normative document was approved in 1987, and it was stated in 1993 that the Ministry of Agriculture of the Republic would remain in place until new recommendations were developed and adopted. In the normative document, agricultural activity is carried out at a height of 500 to 2000 meters above sea level, with the amplitude of the coefficients of correction of work and production and the expenditure of fuel, depending on the terrain, the structure, and the configuration. It is recommended that the range from 0.88 and 0.93 to 0.82 be calculated from 1.04 to 1.12 per cent of fuel consumption and from 1.07 to 1.16.

If we take into account that in the republic 85-100% of the rural areas are located at 1000 meters above sea level and 18% in rural areas, the area is 500 to 1000 meters above sea level and is engaged in agricultural production under such conditions. the impact of the introduction of coefficients on the economic and financial performance of farmers, dehqan and other agricultural enterprises located in these regions.

According to our research, applying these correction coefficients for cereal crops (38-40% of the total area of cereal crops in the country) is averaged over 6.0% of income for farmers and other agricultural enterprises engaged in grain production. Increase to 11.0-15.0%, increasing the level of provision of petroleum products necessary for timely and qualitative carrying out of agro-technical processes from 6.0% to 9.0-14.0%.

93% district of Samarkand region, 85% of Kashkadarya region, 55% of Andijan region and 46% of Surkhandarya region apply the methodological approach to developing technology maps in mountainous and mountainous areas, and farmers and agricultural enterprises in these regions scientifically justified, objective reliability of the plans and plans for the future, the average income of each cultivated area 6,0-15,0 from 7.0 to 18.0%. Determining the cost of GRP required for technological processes is based on real and objective position, along with an increase in the average fuel demand by 7-12%, optimization of business processes, the use of innovative, resource-saving and multifunctional agricultural machinery and the optimal timing of agrotechnical measures. Increase the productivity by an average of 13-16% due to implementation and increase the level of mechanization of agricultural production by 16-20% to work.

For this purpose,

- Firstly, the development of phased and updated regional and regional peculiarities of labor and material resources required for agricultural production, as well as more than 260 standards, quality and regulations applicable to agricultural production; exit is offered;

- Secondly, we believe that these measures are practical in establishing joint activities of dozens of research institutes, laboratories and centers, standardization and standardization institutions in various directions;

- Thirdly, to integrate these standards in all processes of forming the value chain of agricultural products, to integrate the process into digitalization, to form a standard technological card of agricultural production in electronic software, and to the agricultural information and information centers of district-level information centers is recommended. This will allow farmers and peasants and other agricultural enterprises to use these regulatory documents online;

- Fourth, it is desirable to organize these tasks and activities within the framework of targeted projects in the category of "proactive" innovative and innovative projects provided by the network ministries.

Implementation of these measures was approved by the Decree of the President of the Republic of Uzbekistan dated October 23, 2019 "On approval of the Agriculture Development Strategy of the Republic of Uzbekistan for 2020-2030" No. 2 "Strategy of Agricultural Development of the Republic of Uzbekistan for 2020-2030". The strategic priorities set out in Chapters II and IV provide the solution of the goals and objectives for achieving them.

- Fifth, studies have shown that globalization and global economic integration in the mountainous and piedmont regions of our national economy and global warming have a direct impact on the level and scale of the use of natural resources in the mountainous areas, including land and water.

In this context, the need for improving the existing legal and regulatory framework is needed to maintain the integrity of natural resources in the mountainous and foothill areas, and to ensure the sustainable socio-economic development of these areas on the basis of their rational and efficient use.

World experience shows that the relationship between the use of natural resources in the mountainous and piedmont areas, the balanced development of these areas, and the preservation of ecological sustainability and biodiversity, is regulated by the Law on Mountainous Areas in each country.

Therefore, it is advisable to develop and adopt the Law of the Republic of Uzbekistan "On mountain territories of the Republic of Uzbekistan" aimed at regulating relations aimed at preserving the integrity of natural resources of mountain and mountainous regions of the republic, ensuring their sustainable socio-economic development. is calculated.

Local residents, farmers and dehqans, as well as rural entrepreneurs in Tashkent, Jizzakh and Surkhandarya regions on prospects of agricultural development in mountainous and mountainous areas, diversification of the network structure, organization

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of targeted and rational use of pastures and hayfields in the regions. Most of the beneficiaries participating in the interactive interviews and questionnaires with the Republic of Uzbekistan Ikast "the Law" On the pasture after the adoption of this law is critical to ensure the development of agriculture in the mountain and foothill areas of legal and normative basis of mutual respect.

This law is a hypometric measurement of each province and district, and its height is above sea level. Although there are various opinions on this issue today, there is no officially recognized scientific and practical framework. Therefore, in the area of construction and industry, mountainous regions are classified into one category, and finance, taxes, GRP, labor and social issues are included in another category. on the basis of another normative legal act.

With the adoption of this law, the classification of mountain territories is legal, and the natural features of mountainous areas are defined within the law, which is the legal and regulatory approval of the ecosystem that provides the conditions for a healthy life, health and employment. We believe that this law will serve as the legal basis for the state's policy in the area of mountainous areas, but will also ensure the state's regulation of the development of these territories.

- Finally, in our opinion, this law should specify the areas in which the use of mountainous areas should be paid or free of charge, the scope and amount of payments, directions and methods of use.

At the same time, priority is given to the state support of mountain territories, creation of favorable conditions for sustainable development of mountain territories, protection of economic and production and ecological basis, rational and effective use of natural resources, ensuring their integrity and stability without negative impact on natural resources of mountain regions. The basis for this law should be the creation of favorable conditions for the development of entrepreneurship on the basis of this principle.

The main objectives of the proposed law are:

- Creation of conditions for improving living standards and employment of people living in mountainous areas;
- Decreasing the mountainous regions from other regions by the level of socio-economic development;
- protection and protection of natural resources of mountain territories;
- Creation of favorable conditions for attracting investments while ensuring the investment attractiveness of mountain regions;
- development of entrepreneurial activity in the mountain regions, especially family business.

In order to further strengthen the cooperation of the agro-industrial complex of mountain and mountainous areas with industries and industries, to provide social support to mountain and mountainous agricultural activities, as well as to support the

development of mountain regions with various tools and mechanisms. land tax, legal entities and individuals registered in the high and medium altitude mountainous areas, electricity, utilities payments for water, irrigation, irrigation system, which for the use of water for irrigation to reduce by 50% the amount of payments that are considered appropriate.

As the experience of the neighboring country (the Kyrgyz Republic) shows, the legal introduction of such a regime ensures comprehensive development of mountain territories, rational and efficient use of natural resources, and balanced development of the territories.

Such a law was adopted in a number of foreign countries, including the Republic of North Ossetia-Alania (1998), the Kyrgyz Republic (2002), and the Republic of Tajikistan (2013). This indicates that it plays an important role in ensuring sustainable agricultural development.

Adoption of laws and regulations will ensure the saturation of the domestic market with agricultural products based on the development of the agricultural sector in the mountainous and piedmont areas, and the raw materials processing industry, as well as the export potential of the regions.

The law should also provide for a system of measures taken by state and local governments to create conditions for sustainable development of mountainous areas, and to protect their economic and environmental foundations.

Favorable climatic conditions of the mountainous and piedmont areas of the Republic, increase of export potential of these regions, creation of new jobs, increase of income of the population along with creation of opportunities for cultivation of many kinds of ecologically pure agricultural products, natural resources of which are currently formed separately in the market. and, ultimately, improve the welfare of the population.

However, this potential has been largely untapped today due to the lack of regulatory framework for further development and support of agriculture in the mountainous and piedmont areas.

This requires assessing the agricultural potential of these regions and implementing them within the targeted programs.

For this purpose, we believe that it is necessary to develop "Targeted development programs for mountain and piedmont areas of the Republic of Uzbekistan for 2020-2030". In the future, such programs should be developed periodically across regions, and should be developed over the years, in conjunction with other interested sector research institutes.

The objectives and directions of the state program of this category should be aimed at ensuring the objectives outlined in the agricultural development strategy of the republic, which clearly specify the mechanism and tools for implementation of measures,

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monitoring and support, timely and complete implementation of the tasks. We believe that it will also help us to make better decisions and decisions on management and regulation.

The first step in the development of such a targeted and comprehensive program is retrospective analysis of the sector, assessment of its status, preparation of conclusions and recommendations.

Conclusion and recommendations

Implementation of the above suggestions and recommendations is approved by the Decree of the President of the Republic of Uzbekistan dated October 23, 2019 "On approval of the strategy of agricultural development of the Republic of Uzbekistan for 2020-2030". Strategic Priorities, Strategic Priorities, Goals and Objectives for the Achievement of These Goals will provide a performance solution.

Based on the foregoing, we believe that it is necessary:

- First, to develop the Concept, target program and complex of measures for the development of agriculture in the mountainous and piedmont areas of the republic for 2020-2030 and 2040;

- Secondly, to expand the scope and scale of scientific research in the agricultural sector of mountain and piedmont areas.

In the development of such a Concept and Program it is recommended to consider the following:

- The formation of legislative or other normative acts specifying the special status of "mountain and piedmont areas" and regulating its agricultural development;

- Considering the vulnerability of mountainous areas to anthropogenic impact, their biodiversity is regarded as a reservoir of water, mineral and recreational resources, and is not considered a priority for the development and improvement of the legal framework to support sustainable agriculture in these areas;

- Development of mechanisms for the implementation of targeted state programs, targeting, financial support and implementation of the proposed measures based on the peculiarities of agricultural and mountainous areas.

The program should focus on the development of mountain and piedmont areas:

- Increasing agricultural production, including environmentally friendly and non-traditional products;

- specialization of mountain and mountainous areas for specific types of entrepreneurial activity based on the existing natural and climatic conditions, the national culture and skills, opportunities and conditions in the neighborhoods of villages and villages, the formation of "smart villages" on the basis of family business support; development (eg potatoes, beekeeping, Greek nuts, grapes and apricots, goats, sheep breeding, medicinal plants and feed crops, etc.);

- Creation of tourist resorts, mountain sports, various forms of recreation, development and stimulation of eco-tourism, mountain hunting, alpinism;

- development of production infrastructure of mountain and piedmont areas, ensuring ecological balance, etc.

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	GIF (Australia)	= 0.564	ESJI (KZ)	= 8.771	IBI (India)	= 4.260
	JIF	= 1.500	SJIF (Morocco)	= 7.184	OAJI (USA)	= 0.350

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