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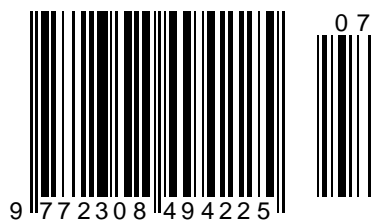
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Article



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TRANSFORMATION AND CURRENT ECOLOGICAL STATUS OF PLANT TYPES SPREAD IN THE UPPER MOUNTAIN REGION OF AHANGARAN BASIN

Abstract: This article describes 5 types of plant species distributed in the mountainous region of the Ahangaran River Basin and their ecological status. We describe the monitoring sites according to the life forms of the listed plants. Information on the distribution patterns of these plants is also given.

Key words: geobotany, region, ballad mountain, pasture, plant types, monitoring areas, map, plant composition, plant species boundary.

Language: English

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Introduction

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Today, modern florist research in the world, especially the identification of the taxonomic diversity of regions with a rich composition of specific endemic and relict species using modern methods of scientific research, requires the study of the genesis of flora and the centers of formation of endemic fractions. The botanical and geographical region of the Ahangaran River basin is no exception. A high degree of taxonomic diversity, the richness of rare, endemic and relict species characterized this region. Determining the composition of its flora, defining its boundaries as a botanical-geographical region, assessing the current

state of populations of rare and endangered species, creating an electronic database of flora plays an important scientific and practical role in revealing the peculiarities of the national flora of Uzbekistan [9].

In the Ahangaran basin, there are all regions of Uzbekistan: deserts, hills, mountains and pastures, each of which has its own vegetation cover. Many botanists have studied the plant species of the pasture region since ancient times and given different definitions and classifications. We can find this information in many publications. V.P.Drobov, 1956; S.E.Korovin, 1959, 1963; E.P. Korovin, 1962; G.T.Sidorenko, 1953; E.M. Demurina, 1972, 1975, 1976; A.Ya.Butkov, 1969; Z.A.Maylun, 1984, 2002; N.I.Akjigitova, 1984, 2002; U.Allanazorova,

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T.Rakhimova, K.Tajiboev, 2002, O.Kh. Khojimatov, R.W. Bussmann, D.T. Khamraeva, 2021, and others [4,5,6,7,10].

In the literature listed above, different descriptions and descriptions of plant species distributed in the high mountain-pasture region have been given.

A.Ya. Butkov showed that in the pasture zone of the Chirchik-Ahangaran basins from the watershed of the Chatkal and Qurama mountains there are 5 types of vegetation: mountain umbellarias, mountain grasslands, carpet quality grasslands, mountain meadows and tragacanth [2,5,6].

We have also found most of the plant species listed above in the Ahangaran Basin pasture region. 65 species were recorded at the monitoring sites and grouped according to their life forms. We found that their distribution limits, composition, and structure have changed to varying degrees because of desertification under the influence of many anthropogenic factors [1,3,8].

In the compiled 'Plants' map, it showed the areas affected by the crisis in indices (A.B.C.).

Almost as many anthropogenic factors in the Ahangaran Basin: large geological quarries, roads, reservoirs, the impact of plants, tree-shrub cutting, unplanned harvesting of medicinal and medicinal plants and haymaking all lead to a crisis of vegetation.

The studied basin pasture zone is one of the most common plant communities in the vegetation: prangos, ferula, festuca, high mountainous densely covered meadows, mountain meadows and tragacantha – acantholimon meadow, the distribution patterns of which are shown on the map "Plants".

In the high mountain-pasture region, 7 plant species have been identified.

- Wetlands (sazy) - Sasophyta.
- Densely covered low-lying meadows - Cryonanopoa.
- High mountainous or subalpine meadows - Cryomesopoa.
- Highly mountainous cryoxeromesophilic semi-shrubs- Cryoxeromesohemithanisca.
- High mountainous xerophylic or tragacantha - Cryofriganophyta.
- High mountainous turf steppe - Cryoxeropoia.

-Mountain high meadows - Theropoia.

Of these types, the most common in the basin are high mountain grasslands and tall grasslands, which form the main pasture lands. Among the plant communities found in the high mountain region, the following can be shown. Tragacantha-acantholimon (*Acantholimon korolkovii*, *Lagotis korolkovii*, *Geranium regelii*, *Astragalus lasiosemius*). Festuca-mixed grass-acantholimon meadows (*Acantholimon korolkovii*, *Cousinia bonvolotii*, *Poa relaxa*, *Puccinella subspicata*, *Artemisia lexmanniana*, *Festuca valesiaca*) in some places along the springs along the low-lying alpine meadows mixed (*Polygonum hyssaricum*, *Puccinella subspicata*, *Geranium regelii*). Ligularia-ferula (*Ferula tenuisecta*, *Ligularia alpigena*) mixed with low-lying Alpine meadows (*Carex orbicularis*, *Allium monadelphum*, *Ranunculus rufosepalus*, *Poa relaxa*) in the wetlands around the spring. - Mixed grass-ferula-prangos (*Prangos pabularia*, *Ferula tenuisecta*, *Poa relaxa*, *Thermopsis dolichocarpa*, *Srachyopsis oblongata*, *Potentilla desertorum*, *Ligularia alpigena*). Mixed grass-artemisia-prangos (*Festuca valesiaca*, *Aremisia lehmanniana*, *Arenaria griffithii*, *Geranium collinum*, *Cousinia angrenii*, *C.bonvolotii*) in some places acantholimon herb mixture (*Acantholimon korolkovii*, *Ligularia thomsonii*, *Ranunculus rubrocalyx*). Lagotis-in some places ligularia mix-prangos (*Festuca valesiaca*, *Lagotis korolkovii*, *Ligularia thomsonii*, *L.aipigena*, *Polygonum hissaricum*). Mixed and spiked grasses (*Polygonum hissaricum*, *Festuca valesiaca*, *Puccinella subspicata*, *Geranium regelii*). Prangos-acantholimon herb-thorn-cushion (*Onobrychis echidna*, *Acantholimon korolkovii*, *Festuca valesiaca*).

We divided the Ahangaran Basin into a single independent area, the most pressing issue today is to determine the patterns of distribution of its vegetation cover by regions, typological structure, phylogenetic diversity and stratification, and types of anthropogenic factors.

The occurrence of 7 plant species in the pasture zone of the studied basin and their phylogenetic diversity were studied and evaluated on a combination of traditional geobotanical and mapping methods.

References:

1. Azimov, I. (2005). Kartografirovaniye pastbishhnoy rastitel'nosti bassejna reki Ahangaran. *Jekologija habarnomasi*, №5, pp. 28-31.
2. Akzhigitova, N.I., & Majlun, Z.A. (1984). *Vysokogornye dernovinistye stepi - Cryoxeropoia. Rastitel'nyj pokrov Uzbekistana*. Tom IV. Tashkent: Izd-vo «FAN».

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3. Allanazorova, Ÿ., Rahimova, T., & Tozhiboev, K. (2002). *Kartografirovanie rastitel'nogo pokrova Zapadnogo Tjan'-Shanja*. Ohrana i racional'noe ispol'zovanie.
4. Butkov, A.Ja. (1969). *Vysokogornaja rastitel'nost' Zapadnogo Tjan'-Shanja i ee hozjajstvennoe znachenie*. V kn. Oчерki po geografii rastitel'nogo pokrova Uzbeksnyf. Tashkent: Izd-vo «Fan» Uzbekstan.
5. Drobov, V.P. (1956). *Osobennosti pojasnogo raspredelenija rastitel'nosti Kura-minskogo hrebta v Zapadnom Tjan'-Shane*. V.kn. Akademiku V.N.Sukachevu k 75 letiu so dnja rozhdenija. Iz-vo. M-L.
6. Korovin, E.P. (1962). *Rastitel'nost' Srednej Azii i Jyzhnogo Kazahstana* kn.2. Tashkent: Izd-vo AN Uzbekistana.
7. Sidorenko, G.T. (1953). *Rastitel'nost' i kormovie resursi Kuraminskogo hrebta*. Tr. In-ta Botaniki AN Tadzh. T.IX. 2.
8. Tazhiboev, K.Sh., & Azimov, I.T. (2016). Jendemizm flory bassejna reki Ahangan (Zapadnyj Tjan'-Shan'). *Vestnik Karakalpakskogo otdelenija Akademii nauk Respubliki Uzbekistan*, N№1, pp. 67-69.
9. Hanazarova, A.A., & Butkova, E.A. (2001). *Problemy sohraneniya geneticheskogo raznoobrazija drevesnyh i kustarnikovyh porod v gornyh lesnyh jekosistemah Zapadnogo Tjan'-Shanja*. Kn: *Bioraznoobrazie Zapadnogo Tjan'-Shanja: Ohrana i racional'noe ispol'zovanie*. Nauchnaja konferencija Tashkent, 28-29 marta 2001g. «Ehinor ENK». Tashkent.
10. Khojimatov, O.K., Bussmann, R.W., & Khamraeva, D.T. (2021). Some aspects of morphobiology, conservation of resource potential, crop cultivation and harvesting of raw materials of promising *Ferula* species. *Ethnobotany Research & Applications*, 22:31, pp. 1-8. Retrieved from <http://dx.doi.org/10.32859/era.22.31>

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Article



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ANTI-INFLAMMATORY EFFECT AT SOME NATURAL COMPOUNDS, POSSESSING THE NORMALIZING EFFECT OF CARBOHYDRATE EXCHANGE IN THE ORGANISM

Abstract: In this work, it is shown that the effect of anti-inflammatory activity in some natural compounds can have an inhibitory effect on the exudative phase of inflammation similar to diclofenac-sodium in the body in rats. And it was also revealed that some stimulating processes of proliferation of the studied synthetic anti-inflammatory drugs.

Key words: Diabetes mellitus, anti-inflammatory activity, hypoglycemic agents.

Language: English

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Introduction

UDC: 615.322

Diabetes is often accompanied by the development of various kinds of inflammatory processes in the organism [1, 3]. Therefore, by conducting a search for hypoglycemic agents among substances of plant origin, possessing, as a rule, with a versatile therapeutic effect, an important value should be given to the presence of their potential anti-inflammatory effect [6, 7, 8]. In the actual work, the data analyzes are given, received under the study of the antiflogistic activity of the sums of triterpene glycosides from *Zygophyllum oxianum* (the main glycoside is zygophyloside E), the bicyclic diterpenoidaclerodane ranges – salvipholin, isolated from *Pulicaria salvifolia*, the sums of phytoecdisteroids from *Silene brahuica* (it contains ecdisteron, sileneozids of C, D, E, and etc.) and polyprenols from *Alceae nudiflora*. For all these substances, it was shown previously the presence of either a pronounced sugar-lowering effect or a positive effect on the impaired carbohydrate metabolism in the organism, as a whole [2, 9, 10].

The experiments were performed on male rats by weighing of 160-170 g. The anti-inflammatory effect

of the studied substances was evaluated on models of acute inflammation as the ability to inhibit paw edema (determined oncometrically), caused by the administration under plantar aponeurosis, of 0.2 ml of 1% formalin solution, 0.1 ml of 6% dextran, 0.5% serotonin, 0.1% histamine and 0.01% bradykinin, as well as a decrease in the amount of serous fluid, generated during pleurisy or peritonitis, caused by the introduction of 0.2% silver nitrate solution in 0.5 and 1.0 ml into the pleural or abdominal cavities accordingly. The results were taken into account at the maximum of the development of the corresponding changes in the control (with formalin edema after 3 hours, with others after 2 hours).

To determine the antiproliferative properties of substances, rats were implanted with sterile cotton balls of weighing 10 mg under the back skin. After a week, the rats were sacrificed (under light ether anesthesia), the pellets together with the granuloma developing around them were husked and dried in an oven to constant weight at $t = 75^{\circ} \text{C}$. The mass of granulation-fibrous tissue was determined by the difference between the masses of the dried granuloma and the implanted ball. The sum of triterpene hyaicosides (SuTG) from *Zygophyllum oxianum*, salvifoline from *Pulicaria salvifolia*, the sum of

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phytoecdio-steroids (SPE) from *Silene brahuica* and polyprenols from *Alceae nudiflora* were administered to animals at doses of 10.0, 10.0, 5.0 and 25 mg/kg respectively orally: under studying of antiexudative properties - on the eve of the experiment, and after for 2 hours until and through 30 minutes after inoculation of phlogogenic agents, under studying of antiproliferative properties - once a day for 7 days. The comparison preparation was diclofenac sodium, administered in a similar manner at a dose of 25 mg /

kg. All obtained material during the experiment was statistically processed using t-criteria of Student t-test.

The results of the conducted researches showed, that all the studied substances, significantly inhibited the exudative phase of formalin, dextran, serotonin, histamine and bradykinin inflammation, that developing in rats after subplanetary administration of the used phlogogens. However, their effect in this regard was quite significantly different.

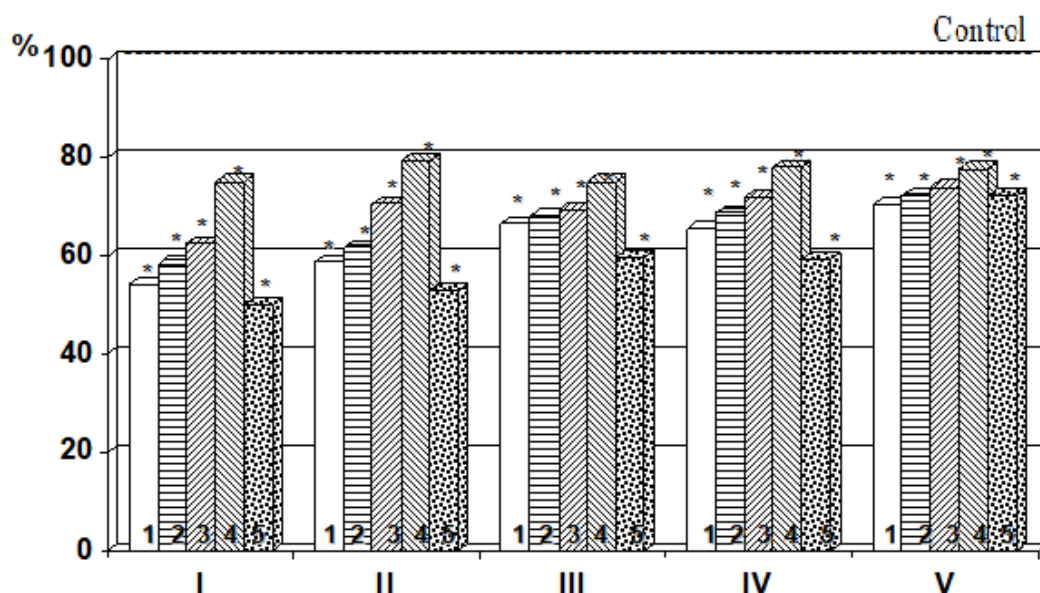


Fig. 1. The effect of the sums of triterpene glycosides from *Zygodphyllum oxianum* (1), salvifolin (2), the sum of phytoecdysteroids from *Silene brahuica* (3), polyprenolysis of *Alceae nudiflora* (4) and diclofenac sodium (5) on aseptic inflammation (growth in foot volume in % of the initial at the peak of the action of the phlogogenic agent): I - formalin, II - dextran, III - serotonin, IV - histamine, V - bradykinin, n = 6. * - Reliable in relation to control (confidence level was adopted at p < 0.05).

We can see from Figure 1, the anti-inflammatory activity decreased in this test in the following sequence: SuTG from *Z. oxianum* > salvifolin > SPE from *S. brahuica* > PP from *A. nudiflora*. Moreover, while SuTG from *Zoxianum* and salvifoline did not significantly differ on antiflogistic effect from the corresponding effect of diclofenac-sodium (although, as a rule, they were slightly weaker), then SPE from *S. brahuica* and, especially, the polyprenol fraction from *A. nudiflora* were noticeably inferior to it on activity. A similar picture was observed with experimental serositis (Fig. 2).

Under the influence of SuTG from *Z. oxianum* and salvifolin, the amount of exudate (after 6 hours from the start of the experiment) in the pleural cavity

was 35.8-33.3% less than in the control, and in the abdominal cavity it was 36.7-35.9% less than in the control. Under the influence of SPE from *S. brahuica*, this effect was 26.7 and 28.3 %, and under the action of polyprenols from *A. nudiflora* - 18.3 and 20.1%. Diclofecan-sodium decreased the amount of exudate in the pleural and abdominal cavities by 36.7 and 37.4%. As for the results, obtained in the study of the antiproliferative activity of the studied substances, they were multidirectional in nature. SuTG from *Z. oxianum* and salvifolin, similarly to diclofenac-sodium, significantly reduced the mass of granulation-fibrous tissue, formed around animals implanted into the subcutaneous tissue balls

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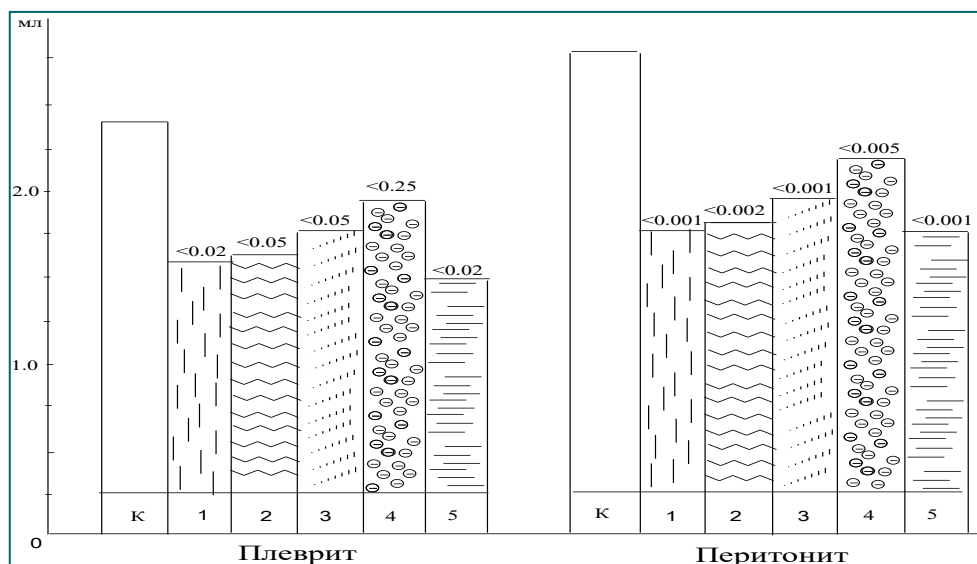


Fig. 2. The effect of the sums of triterpene glycosides from *Zygophyllum oxianum* (1), salvifolin (2), the sum of phytoecdysteroids from *Silene brahuica* (3), polyprenols from *Alceae nudiflora* (4) and diclofenac-sodium (5) on the severity of exudation in experimental serositis (pl) rats, n = 6. To - control.

(in the control, it was 68.2 mg, in rats that were injected with SuTG from *Z. oxianum* - 47.4 mg, salvifolin - 54.6 mg, and diclofenac sodium - 44.3 mg). The inhibitory effect in the case of using SuTG from *Z. oxianum* and salvifoline was 30.5 and 19.9%, and in the case of diclofenac sodium, it was 35.1%. The introduction of SPE from *S. brahuica* and PP from *A. nudiflora* to rats with implanted cotton balls for 7 days led to an increase in the mass of granulation-fibrous tissue (table), that is, both of these

substances stimulated the proliferative phase of inflammation.

Data on the absence of phytoecdysteroids from *S. brahuica* and polyprenols from *A. Nudiflora* in the amount of the inhibitory effect on the tissue regeneration phase to some extent confirms their previously identified ability to exert a stimulating effect on the regenerative processes in the organism, as a whole [4, 5].

Table 1. Effect of the sum of triterpene glycosides from *Zygophyllum oxianum*, salvifolin, the sums of phytoecdysteroids from *Silene brahuica*, polyprenols from *Alceae nudiflora* and diclofenac sodium on the formation of “cotton granuloma” in rats (M ± m, n = 6)

Experiment Conditions	The mass of granulation tissue, mg	Change,% of control	P
Control	68.2±4.6	—	—
SuTG from <i>Z. oxianum</i>	47.4±2.6	-30.5	<0.01
salvipholin	54.6±2.8	-19.9	<0.05
SPE from <i>S. brahuica</i>	86.2±5.2	+23.6	<0.05
PP from <i>A. nudiflora</i>	80.5±2.8	+18.0	<0.05
Diclofenac - sodium	44.3±2.2	-35.1	<0.001

Thus, the sums of triterpene glycosides from *Z. oxianum*, salvifolin, the sum of phytoecdysteroids from *S. brahuica*, and polyprenols from *A. nudiflora* have an inhibitory effect on the exudative phase of inflammation similar to diclofenac-sodium. At the

same time, the studied amount of phytoecdysteroids and the fraction of polyprenols, unlike diclofenac-sodium (as a representative of synthetic anti-inflammatory drugs), stimulate proliferation processes.

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References:

1. Balabolkin, M.I., & Gavriilyuk, L.I. (1983). *Diabetes mellitus*. (p.200). Chisinau: Stiinza.
2. Khushbaktova, Z.A., Tashmukhamedova, M.A., Syrov, V.N., Mirtalipov, D.T., & Grunina, I.N. (1992). The effect of salvifolin on carbohydrate and lipid metabolism in the liver of rats under conditions of alloxan diabetes. *Ukrainian Biochemical Journal*, No.3, pp.86-91.
3. Syrov, V. N., Shakhmurova, G. A., Yuldasheva, N.K., Yusupova, S. M., & Khushbaktova, Z. A. (2021). Pharmacological correction of ecdisten of hyperglycemic states, morphological changes in the pancreas and immunobiological status of the organism of rats with alloxan diabetes. «*European science review*», № 5-6, pp. 3-8. <https://doi.org/10.29013/ESR-21-5.6-3-8>
4. Syrov, V.N., Weiss, E.V., Tursunova, N.V., Shakhidoyatov, H.M., & Khushbaktovaz, A. (2011). *On the pharmacology of polyphenols from Alceae nudiflora*. VII All-Russian Scientific Conference "Chemistry and technology of plant substances". Abstracts of reports. Syktyvkar. (p.134).
5. Syrov, V.N., Yuldasheva, N.H., Egamova, F.R., Ismailova, G.I., Abdullaev, N.D., & Khushbaktova, Z.A. (2012). Assessment of the hypoglycemic effect of phytoecdysteroids. *Journal of Experimental and Clinical Pharmacology*, Vol.75, No. 5, pp.28-31.
6. Ways, Y. V., Yusupova, S. M., Khidirova, N.K., Shakhmurova, G. A., Egamova, F.R., Khushbaktova, Z. A., Zakirova, U.T., & Syrov, V. N. (2020). Comparative study of hepatoprotective activity of polyphenols from *Vitis vinifera* (Vitaprenol) and carsil in experiences on rats with hepatitis, caused by four-chloride carbon. *Journal of Critical Reviews*, Vol. 7, Issue 13, pp.724-727. DOI: <http://dx.doi.org/10.31838/jcr.07.13.127>
7. Ways, Y. V., Yusupova, S. M., Khidirova, N.K., Shakhmurova, G. A., & Syrov, V. N. (2020). Experimental evaluation of the immunotropic effect of the polyphenols from *Vitis vinifera*. *European Science Review*, № 5-6, pp. 22-26. <https://doi.org/10.29013/ESR-20-5.6-22-26>
8. Ways, Y. V., Yusupova, S. M., Shakhmurova, G. A., Khushbaktova, Z. A., & Syrov, V. N. (2021). Influence of polyphenols from *Alcea Nudiflora* and *Vitis Vinifera* to the healing process of experimental skin wounds in laboratory animals. *American Journal of Medicine and Medical Sciences*, 11(1), pp.7-11. DOI: 10.5923/j.ajmms.20211101.02
9. Weiss, E.V., Van, E.V., Tursunova, N.V., Zahidova, L.T., Khushbaktova, Z.A., & Syrov, V.N. (2013). Pharmacotherapeutic effect of polyphenols in toxic liver damage. *The journal "Infection, immunity and Pharmacology"*, No. 3, pp.7-9.
10. Yuldasheva, N.H., Sasmakov, S.A., Khushbaktova, Z.A., & Syrov, V.N. (2012). On the hypoglycemic effect of the sum of triterpene glycosides from *Zygophyllum oxianum*. *Reports of the Academy of Sciences of the Republic of Uzbekistan*, No. 1, pp. 58-60.

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Article



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FACTORS AFFECTING THE FOOD SECURITY IN AGRICULTURE OF DEVELOPING COUNTRIES

Abstract: The world's population is growing, and with it, so is the demand for food. According to the Food and Agriculture Organization of the United Nations (FAO), grain production will reach 2.1 billion tons by 2030, while global grain consumption will climb to 2.7 billion tons. However, despite a decrease in population growth, food production must increase by at least 50% by 2050 in order to keep up with the rising population. There are many internal and external factors impacting food security in agriculture of developing countries. This paper studies the factors affecting food security of developing countries.

Key words: food security, agriculture, FAO, food production, developing countries.

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Introduction

It is possible for governments to increase their agricultural output through increasing investment and aid for domestic farmers; promoting climate-friendly technologies; rehabilitation of damaged farms; expanding postharvest storage and delivery networks. In spite of the fact that agricultural output has become more unpredictable, issues including soil degradation, groundwater depletion, and climate change are all to blame.

Concerned about feeding the world's population in a way that is both environmentally and socially responsible, governments are looking for ways to do this. When foreign and domestic factors are combined, a country's food security may be threatened at any time. To live a healthy and active life, everyone must always have access to enough food that is both safe and nutritious. Reconstruction efforts produced a global food regime, and commercial measures such as trade liberalization and economic market opening were sought after. Emerging countries are becoming net consumers of food, rather than producers. In recent years, food security has become a key concern for a number of countries. Because of this, they are re-evaluating their intentions to achieve food self-

sufficiency rather than food security, and they are looking at ways to defend their domestic food markets from rising imports.

A country is said to be self-sufficient in food if it is able to meet its own dietary needs only through the use of local resources

The FAO's approach to food security goes beyond domestic production and trade, in contrast to food self-sufficiency. Access to food is intertwined with the other three pillars that make up this system's stability. Governments that want to lessen their reliance on food imports have enacted policies that restrict the availability and accessibility of food. Millions of people have been forced into poverty as a result of rising food prices, which has exacerbated income inequality and placed food security at danger. If living conditions get worse and food becomes scarce and riots ensue, price volatility is a major problem for the world's poorest. In poor countries, 2 billion people spend up to 70% of their disposable income on food. Both importers and exporters are anxious about the volatility of the worldwide market for their products, despite the importance of international trade in maintaining food prices and supplies. Even wealthy nations are concerned about

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the volatility of the food market and want to assure long-term food security.

Literature review

These conditions necessitate a deeper knowledge of the volatility of the global food market and its impact on food supply and food security. Food insecurity is impacted by a variety of factors, including population growth, water scarcity, and climate change (Premanandh, J). Food insecurity was exacerbated by natural disasters and extreme weather events in 2016, particularly in nations with limited capacity to respond, according to Nkunzimana. Global demand and uneven supply contribute to food insecurity, but domestic agricultural output determines a country's ability to meet its own food demands rather than physical factors (Tiwari, P.C.; Joshi, B.). Based on their research of the state of food security in Nigeria, Abu and Soom have concluded that larger rural families are more productive and, as a result, more protected against food shortages. According to a research by Saravia-Matus et al., low agricultural output is just one of many reasons limiting food supply in low-income countries. According to Anderson, this might be characterized as either a scarcity of food on the domestic market or an inability to secure appropriate food at home.

There are occasions when a country's volume of domestic production has no influence at all. Food insecurity can exist in addition to a lack of availability to food or a lack of purchasing power. When it comes to food security, according to Smith et al, the dynamics of income and purchasing power are crucial (Smith, L.C.; El Obeid, A.E.; Jensen, H.H.) According to Eicher and Staatz's study on food security in Sub-Saharan Africa, many of the hungry in the region are malnourished not because of a scarcity of food, but rather because they lack the money to acquire it. "Food security" is the ability of a country to ensure that its food system provides timely, stable, and nutritionally acceptable supply of food for all its population over the long term, as per Eicher and Staatz. Considering aspects such as domestic production and imports, as well as economic variables like purchasing power, food price inflation, and distribution networks when analyzing food supply in developing markets is a must. Smith asserts that both

supply and demand factors (such as weather, production, and governmental incentives) have an impact on food security (population growth, income growth and distribution, and export revenue) (Smith, L.C.; El Obeid, A.E.; Jensen, H.H.) It was observed that macroeconomic (volume and dynamics of GDP, agricultural production, level of employment, real wages for individuals) as well as subjective (market components) criteria describe food markets in developing nations (Ulezko, A.; Pashina, L.). It is determined by elements such as the volume of agricultural commodity production and sales, whereas Kostrova analyses demand and supply, price, market infrastructure and market rules to determine the food market potential in emerging nations.

At the macro-level, the macroeconomics of a developing country's consumption, production, stock, and trade policies all play a part in food security assessment. International trade and market stability, according to Saravia-Matus et al., are crucial to food security on the macroeconomic level. According to Nkunzimana, rising food prices have harmed food security by making it harder for people to buy food. According to Reeves et al., the combination of rising food prices and stagnating income is one of the key drivers of food insecurity. When food prices fluctuate, volatile market dynamics affect the domestic food market. Food security is very vulnerable as a result of this influence and the lack of coordination in the policy actions taken by many nations to ensure adequate food supplies in their local markets (Restuccia, D and et.al).

Analysis and results

Food security and food self-sufficiency have recently been studied in relation to numerous aspects in developing countries, and many efforts have been made to capture this link (Table 1). Regression analysis can be used to study food security, which is a common tool for this purpose. There have been a number of studies studying the elements that influence food security on a global level, but the majority of them have focused on micro or meso levels of security. Almost never are regression analyses used to find out why farmers export their products and how this affects food security and self-sufficiency in the country they are studying. (table 1.)

Table 1. Approaches to assessing factors influencing food security in developing economies

Authors	Countries under Study	Methodology Employed	Variables Considered
Hentschel et al.	Ecuador	Small-area estimation method	Nutrient intake, consumption of the primary products, and socioeconomic characteristics.
Lekashvili	Georgia	Dynamic economic rows approach	Minimum living wage, average per capita income, expenditures for

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			food, domestic food prices, share of agriculture in GDP, food exports, and food imports.
Yao et al.	China	Evaluation indexes system	Food production resources, food availability and stability, food access, and food utilization.
Zou and Guo	China	Factor analysis	Arable land area per capita, degree of agricultural mechanization, agricultural labor force, and an inflation rate of grain price.
Sharma et al	India	Analytic hierarchy process approach and sensitivity analysis	Success factors in sustainable food supply chain management, and food safety.
Babu et al	Africa, the Middle East, and India	Factor analysis	Food-related indicators (staple food left in storage and expenditure by the household on food), assets, technology indicators, market access indicators, and household characteristics.
Mori-Clement	Uzbekistan	Autoregressive integrated moving average models	Water inflow, oil prices, market exchange rate, and international prices of imported commodities.

Immediate causes of food insecurity, underlying factors in a community (affecting poverty, food production, and ability to respond to shocks), and the impact of these shocks are what define food insecurity.

Causes of hunger in the short term

Agricultural output rates that are too low

It's been decades since agricultural productivity in Sub-Saharan Africa has kept pace with population growth, and the continent currently imports 25% of its grain needs. Large advances in food production (the "green revolution") in Asia were thwarted by inherent disparities in agricultural systems (Table 1). High-yielding rice and wheat cultivars were widely introduced in the 1960s-70s, along with increased fertilizer use and irrigation.

Access to food is difficult to come by.

All individuals are not guaranteed food security even if there is enough food available at the national or local level. People's food consumption is affected by a variety of factors, including poverty, a lack of access to good drinking water, health care, and education. There are more underweight children than there are in food shortage countries in some cereal-surplus countries. For example, despite the fact that India produces enough food, the country has a high rate of underweight children because of poor earnings, household food distribution inequities, and weak social ties.

Determinants of community health and well-being

Local markets and infrastructure

As a result of poor infrastructure, food costs rise and markets fail to adjust to changes in demand. Transporting goods and inputs (such as fertilizer) and

storing food are made more affordable with the development of infrastructure. In addition to providing farmers with access to new technologies, it facilitates the exchange of information between producers and the market. Only 13% of the roads in SSA are paved.

International trade and markets

International trade patterns are distorted by subsidies, tariffs, and trade obstacles. Farmers in developing countries depend heavily on agriculture for a large portion of their income, but the low prices in the market make it difficult for them to sell their products abroad. Subsidies for farming in affluent nations currently total more than six times the aid budgets of rich countries, despite World Trade Organization agreements to reduce trade barriers. Agricultural protection and commerce have been a contentious topic in the most recent round of trade negotiations (at Doha). Inter-African trade and regional trade obstacles were to be reduced by the African Union in 2006.

Investment power and finance gap

For the most part, poor farmers have no or limited recourse to short-term seasonal credit. Investing and inventing can be hampered significantly if money lenders are unable to support the financial needs of small farms.

Natural disasters and climate change

The food insecure are particularly vulnerable to natural catastrophes and climate change. This is especially true for individuals who live in nations where rain-fed agriculture is the norm and for those who are heavily reliant on agriculture. Climate shocks and fluctuation have a greater impact on the poor.

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Securing our food supply with science and technology

As a result of new crop varieties, better storage and marketing techniques and labor-saving technologies; as well as better communication; food security can be improved through the use of science-

based solutions. It's also important to examine who technologies are designed for and how their use affects society, according to some. Access to and understanding of contemporary technologies and privately funded research should be improved as well.

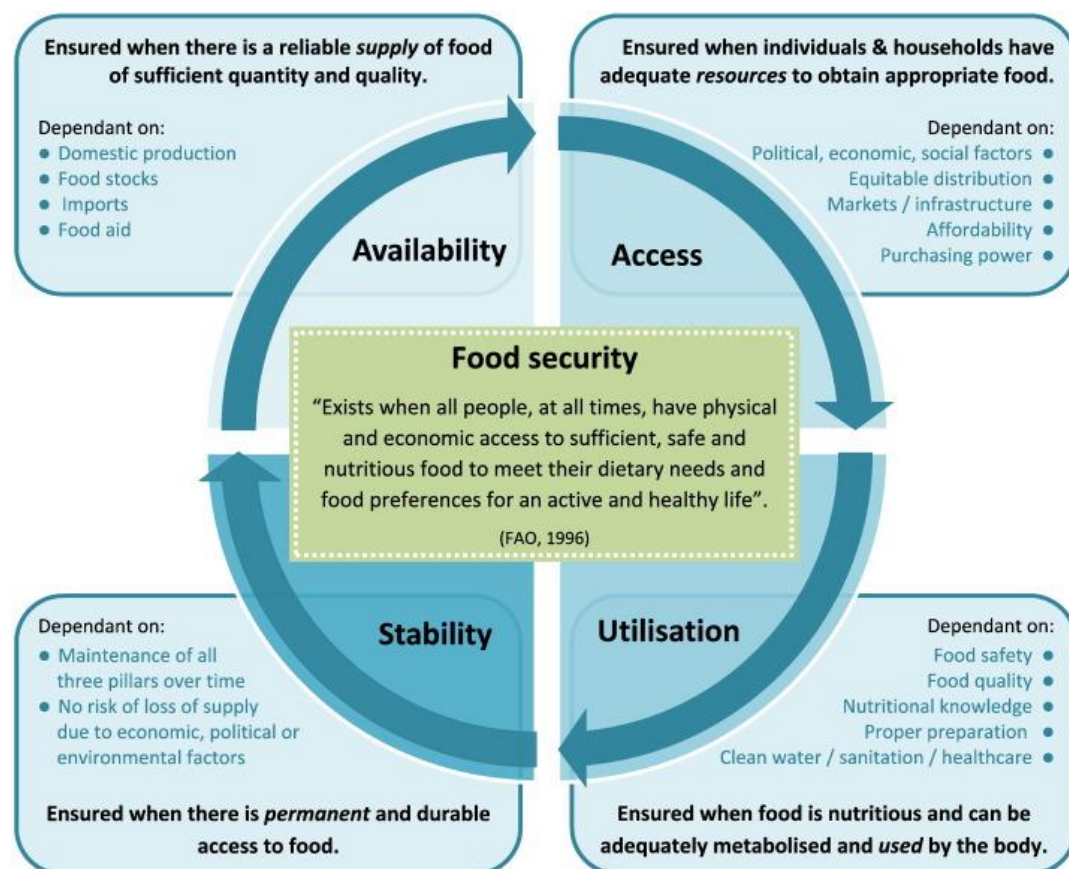


Figure 1. Pillars of Food security
 Source: Authors' compilation

According to this widely accepted definition, food security includes the following aspects:

Food availability. The ability of an individual to obtain adequate resources (entitlements) so that they can eat a healthy diet (e.g. through money). The term "entitlements" refers to a person's total access to all of the resources available to him or her as a result of the legal, political, economic, and social systems in the community in which they reside (including traditional rights such as access to common resources).

Food access. A proper diet, clean water, sanitation, and health care is needed to ensure that all of a person's physiological demands are being addressed. In order to ensure food security, non-food inputs must be taken into consideration.

Utilization. For a population, home, or individual to be considered food secure, they need to always have access to enough food for their needs.

Stability. Sudden shocks (such an economic or climate disaster) or cyclical events shouldn't put them

at risk of going hungry (e.g. seasonal food insecurity). As a result, food security's availability and accessibility can also be referred to as aspects of "stability."

Conclusion

Food insecurity can be defined by the immediate causes of food insecurity, the underlying conditions in a community (which affect poverty, food production, and the ability to adapt to shocks), and the consequences of these shocks. Even if there is an adequate supply of food on a national or local level, this does not mean that all individuals are guaranteed to have access to it. A range of issues, such as poverty, limited access to clean drinking water, inadequate medical care, and inadequate education, all have an impact on the amount of food that people consume. Minimum living wage, average per capita income, expenditures for food, domestic food prices, share of agriculture in GDP, food exports, and food imports.

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Food production resources, food availability and stability, food access, and food utilization. Arable land area per capita, degree of agricultural mechanization,

agricultural labor force, and an inflation rate of grain price are the common significant factors for food security.

References:

- (1992). *Food and Agriculture Organisation of the United Nations. Food, Nutrition, and Agriculture*; Food and Agriculture Organisation of the United Nations: Rome, Italy.
- Schanbacher, W.D. (2010). *The Politics of Food: The Global Conflict between Food Security and Food Sovereignty*; Praeger Security International: Santa Barbara, CA, USA.
- Valdés, A., & Foster, W. (2012). *Net Food-Importing Developing Countries: Who They Are, and Policy Options for Global Price Volatility*; International Centre for Trade and Sustainable Development: Geneva, Switzerland.
- (2017). *Food and Agriculture Organisation of the United Nations. Implications of Economic Policy for Food Security: A Training Manual*. Available online: Retrieved 16 June 2017 from <http://www.fao.org/docrep/004/x3936e/x3936e03.htm>
- Saravia-Matus, S., Gomez y Paloma, S., & Mary, S. (2012). *Economics of food security: selected issues*. Bio-Based Appl. Econ.
- Premanandh, J. (2011). Factor affecting food security and contribution of modern technologies in food sustainability. *J. Sci. Food Agric.* 2011.
- Nkunzimana, T. (2017). *Global Report on Food Crises 2017*; Food Security Information Network: Rome, Italy, 201.
- Tiwari, P.C., & Joshi, B. (2012). Natural and socio-economic factors affecting food security in the Himalayas. *Food Secur.* 2012.
- Abu, G.A., & Soom, A. (2016). Analysis of factors affecting food security in rural and urban farming households of Benue state, Nigeria. *Int. J. Food Agric. Econ.* 2016.
- Smith, L.C., El Obeid, A.E., & Jensen, H.H. (2000). The geography and causes of food insecurity in developing countries. *Agric. Econ.* 2000.
- Eicher, C.K., & Staatz, J.M. (1985). *Food security policy in sub-Saharan Africa*. In Proceedings of the XIXth Conference of the International Association of Agricultural Economists, Malaga, Spain, 25 August-5 September 1985.
- Smith, L.C., El Obeid, A.E., & Jensen, H.H. (2000). The geography and causes of food insecurity in developing countries. *Agric. Econ.* 2000.
- Ulezko, A., & Pashina, L. (2014). *Market of Food Resources in the Food Security System of the Far East*; Voronezh State Agricultural University: Voronezh, Russia.
- Kostrova, Y. (2014). *Analysis of Food Market of Russia*; Saint-Petersburg University of Management and Economics: Saint Petersburg, Russia.
- Meskhia, I.E. (2016). Food Security Problems in Post-Soviet Georgia. *Ann. Agric. Sci.* 2016.
- Restuccia, D., Spizzirri, U.G., Puoci, F., Parisi, O.I., Cirillo, G., Vinci, G., & Picci, N. (2013). *Food security: A global problem. In Advances in Food Science and Technology*; Visakh, P.M., Sabu, T., Iturriaga, L.B., Ribotta, P.D., Eds.; John Wiley and Sons Ltd. and Scrivener Publishing: New York, NY, USA.

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THE FRAMEWORK OF INTERNATIONAL TRADE BETWEEN UZBEKISTAN AND PEOPLE'S REPUBLIC OF CHINA

Abstract: China and Uzbekistan established diplomatic relations in 1992 after the collapse of the Soviet Union. Since then, the two countries have maintained strong ties and achieved several diplomatic successes. Uzbekistan joined the Shanghai Cooperation Organization (SCO) as a founding member in 2001, a regional economic and security alliance that today consists of China, Russia, Kazakhstan, Tajikistan, Kyrgyzstan, Iran, India, and Pakistan. This paper studies international trade theories and the evolution of international trade relationship between Uzbekistan and CPR.

Key words: trade, international trade, OBOR, imports, exports, China, Uzbekistan.

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Introduction

China and Uzbekistan established diplomatic relations in 1992 after the collapse of the Soviet Union. Since then, the two countries have maintained strong ties and achieved several diplomatic successes. Uzbekistan joined the Shanghai Cooperation Organization (SCO) as a founding member in 2001, a regional economic and security alliance that today consists of China, Russia, Kazakhstan, Tajikistan, Kyrgyzstan, Iran, India, and Pakistan.

In 2005, China and Uzbekistan signed the "China-Uzbekistan Treaty of Friendship and Cooperation", a bilateral treaty containing a number of initiatives, including cooperation in the fields of economy, trade, combating terrorism and drug trafficking, among other measures.

With the launch of the Belt and Road Initiative (OBOR) in 2013, Uzbekistan has become a strategic geopolitical partner in the region. Although the two countries do not share a common border, Uzbekistan's location places it directly in China's path to Turkmenistan to the west, which is a major source of natural gas. The Central Asia-China pipeline runs through Uzbekistan and connects Turkmen gas

supplies to China's energy system in the western region of Xinjiang.

In addition, Uzbekistan's proximity to the Caspian Sea makes it a viable corridor that opens trade routes to the ports of the Persian Gulf and the Black Sea. Uzbekistan itself also supplies China with significant amounts of natural gas, as well as other commodities, including cotton and inorganic chemicals.

Sino-Uzbek relations began to gain momentum with the appointment of President Shavkat Mirziyoyev in 2016. Significant market liberalization and economic reforms by the new president have made the country one of the five fastest growing in the world, giving a boost to bilateral ties as China's regional development goals align with Uzbekistan's economic ambitions. It has also made the country more investor-friendly and more hospitable to Chinese investment than some of its neighbors.

China has been Uzbekistan's largest trading partner since 2016.

In 2019, the volume of bilateral trade between China and Uzbekistan reached 7.2 billion US dollars, an increase of 15.1 percent. In 2020, that figure was about \$6.4 billion affected by the pandemic.

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China has been Uzbekistan's fastest growing import market over the past decade. In 2020, the share of Chinese products in Uzbekistan's total imports amounted to 22.2 percent. At the same time, 9.8 percent of goods from Uzbekistan are exported to China.

Literature review

International trade theories are simply different theories that explain international trade. Trade is the concept of the exchange of goods and services between two people, organizations and countries. Thus, international trade is the concept of an exchange between people or organizations in two different countries.

People or organizations trade because they believe they are benefiting from the exchange. Although at first glance many of them seem very simple, there is a lot of theory, politics and business strategy that make up international trade. Since the dawn of the history of civilization and up to the present time, man, in the pursuit of survival and progress, has always been involved in one form or another of socio-economic relations. The nature of the socio-economic relationships he enters into consciously or unconsciously controls and determines his achievements in terms of what he extracts from society in an effort to earn a living and become better. There are different types of theories of international trade. Below we analyze the evolution of these theories.

Theory of Mercantilism. Over time, socio-economic relations became aggravated, increased in different dimensions, improved in volumes and qualities as the greatest need and means of human existence, on which the satisfaction of other vital needs depends. Claude (1981) noted that the economic need is the most fundamental human need, as well as the most decisive of all other factors in society and generally determines the nature of other factors in society.

In the same vein, Gingrich (1995) affirmed that a country's ability to compete in the world market is a hallmark of economic growth; therefore, economic growth is the most important goal of socio-economic policy that a nation should strive for after ensuring the security of the lives of its citizens.

Classical theory of international trade. Tracing the evolution of what is today accepted as the standard theory of international trade, one can go back to the years between 1776 and 1826, when, respectively, Adam Smith's (1776) *An Inquiry into the Nature and Causes of the Wealth of Nations* was published.

Linder's dominant demand hypothesis. In contrast to the supply side explanations of the trading model in the literature, an alternative explanation of the trading model was proposed in 1964 by the Swedish economist Staffan Linder in terms of "overlapping demand". According to Linder, the

representative demand in trading countries for a range of goods that are usually in demand at a corresponding per capita income determines the possibility of trade between countries. For production and trade, representative demand in the respective countries must have an overlap in terms of the range of goods that are produced and consumed together.

Relying on the abovementioned theories, international trade between Uzbekistan and PRC have been conducted. The Belt and Road Initiative is a remarkable project that contains capital and building infrastructure system of transportations through the land, subterranean, airways and the marine (Wenxian, Ilan, & Christoph, 2018). It is considered as an extra-large global initiative by supplying nationwide with their joint interest, tranquil trading and sharing sustainable development through the establishment of a world-wide free and advantageous design (Alzghool, 2019). One of the prior matters of the Global Initiative is relieved the obstacles of the transnational market investigating the ways to achieve excellent transport links (Liu, 2018).

Analysis and results

As the "OBOR" long term project with the power to transform the geo-economic landscape which encompasses the countries from a different continent, road construction is the primary hub to propel the project to be global free trading initiative. The installation of new routes, pipelines, trains creates a great positive impact on the development of the economies of states which the road travels – through an expansion of international trade, investment, and infrastructure. As the historical Silk Road, an inevitable component of today's SREB spans Central Asian territories, including Uzbekistan (Stanojevic, 2016). Moreover, the distinctiveness of Uzbekistan in Central Asia is that there is no mutual border with PRC, that makes the countries free of possible boundary strife and as the trans fixture with regional centrality advantage railroads and highways are established, simultaneously countries are attempting to develop road links (Imomov, 2018). Because of not sharing a border with China, corporate transit relations involve going across routes crossing Kazakhstan or Kyrgyzstan. From the Chinese point of view, Uzbekistan is the safe and stable, short and low costing route to the western states, the market for "Made in China" manufacture, area to import raw materials at the optimum price because of advanced transport facility and while Uzbek Government is facing various transport problems in bringing its products to the world market (Javaid, 2017), this road line is the way for double landlocked Uzbekistan towards to the open world market, road construction will contribute internal economic development of the country and at the same time government van benefit from the transit fee. China's business activities in Uzbekistan didn't start to become more noticeable

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until after the year 2003. The state visit that Chinese leader Hu Jintao paid to Tashkent in 2004 was an important event in the city's history. Following the visit, a number of agreements concerning the expansion of political, economic, military-technical, and cultural cooperation were signed by both parties. The worsening of relations between Uzbekistan and the United States and the West in 2004-2005 was another significant element that had a significant role in the acceleration of Sino-Uzbek commercial relations. As we move toward the east, we find that the heads of state of Uzbekistan and China met not once, but twice in 2005 alone. The development of economic cooperation was one of the primary topics that were discussed at the meetings. As a result of these discussions, approximately 20 investment agreements, credit agreements, and contracts were subsequently signed between the two countries to the tune of \$1.5 billion, including \$600 million in the oil (0.07 percent of China's exports), while total trade increased by a factor of 7—from \$216 million to \$1.6 billion (approximately 11 percent of Uzbek trade, and 0.07 percent of China's trade). In turn, the volume of Uzbek exports to China reached \$741 million dollars. This represents approximately 8% of Uzbekistan's total exports and 0.8% of China's total imports.

However, trade between China and Uzbekistan decreased slightly in 2008. This was apparently due to a general decrease in trade as a result of the global financial and economic crisis as well as the significant

decrease in world prices for raw materials, which are the primary component of Uzbek exports. As a result, commerce between China and Uzbekistan decreased by 17 percent in 2008, going from \$1.6 billion to \$1.3 billion. The value of Uzbek exports to China came to \$544 million (representing approximately 5 percent of Uzbekistan's total exports and 0.05 percent of Chinese imports), whereas the value of Chinese exports to Uzbekistan came to \$791 million (representing approximately 10.5 percent of Uzbekistan's total imports and 0.05 percent of China's exports). The overall value of trade between China and Uzbekistan reached \$1.91 billion in 2009, representing a recovery and a 43 percent year-over-year rise from the previous year.

However, in 2014-2015 the trade volume has slightly decreased, which was apparently due to the reduction of trade as a result of global energy price reduction. Especially in 2015 trade volume between China and Uzbekistan dropped significantly by 18 percent (from \$4.27 billion to \$3.5 billion). Simultaneously China and Uzbekistan's mutual agreement on the "Belt and Road Initiative" in June 2015 was a great chance for Uzbekistan to rehabilitate the growth in the trade relationships. By 2016-17 trade volume had recovered respectively and in 2018 had increased by 78%, reaching a total of \$6.26 billion. Moreover, Uzbek export to China has exceeded, attaining a value of \$2.32 billion.

Year	Trade Million/USD	Uzbekistan's Export to China	Uzbekistan's Import from China
2010	\$2,481	\$1,300	\$1,181
2011	\$2,166	\$807	\$1,359
2012	\$2,874	\$1,091	\$1,783
2013	\$4,551	\$1,938	\$2,613
2014	\$4,275	\$1,597	\$2,678
2015	\$3,502	\$1,266	\$2,236
2016	\$3,639	\$1,606	\$2,033
2017	\$4,237	\$1,474	\$2,763
2018	\$6,266	\$2,324	\$3,942
2019	\$7,224	\$2,180	\$5,044

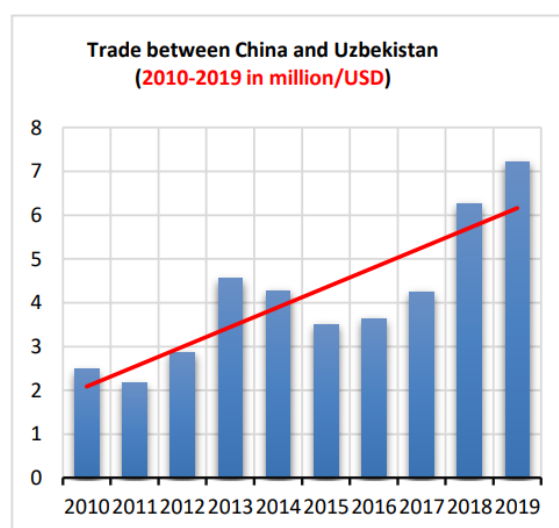


Figure 1. Trade between China and Uzbekistan (2010-2019)
 Source: International Trade Center (<http://www.intracen.org>)

In Figure 1 the dynamics of trade between China and Uzbekistan can be observed more vividly that the trade volume has drastically increased after the joint to the "Belt & Road" Initiative. Like other Chinese trading partners, the trade relationship with Uzbekistan is almost one-sided. China has been the first trade partner of Uzbekistan in recent years,

Chinese export to Uzbekistan amounted \$5,044 billion (about 23% of Uzbekistan's total imports and 0.2% of Chinese exports), Uzbek export to China amounted to \$2,180 billion (Approximately 0.1 percent of total Chinese import, and 14.4 percent of Uzbek export) in 2019. So, in terms of trade, China is much more important for Uzbekistan than Uzbekistan

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is to China. However, Uzbekistan's geographical location and political importance in OBOR are disproportionate to trade volume.

Let's find out what are the comparative advantage China Uzbekistan trade relationship (figure 2).

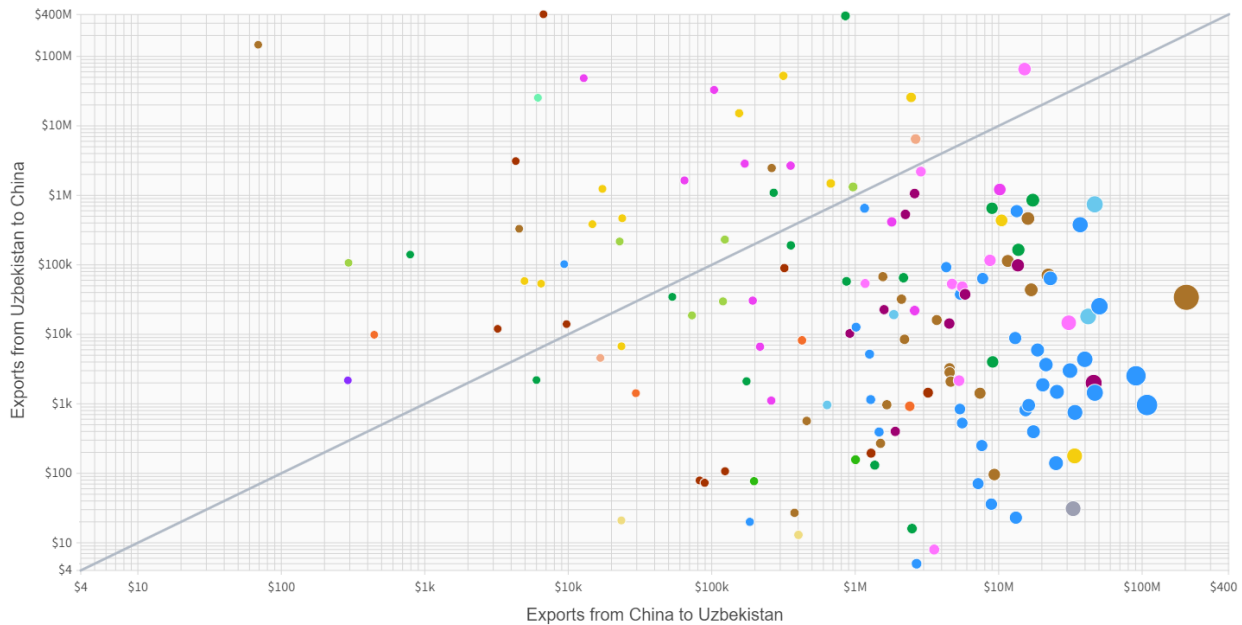


Figure 2. Comparative Advantage China – Uzbekistan

Source: <https://oec.world/>

This figure 2 compares trade between [China](#) and [Uzbekistan](#) by product, considering products traded by both, [China](#) and [Uzbekistan](#). During 2020, China had a large net trade with Uzbekistan in the exports of [Machines](#) (\$2B), [Metals](#) (\$576M), and [Textiles](#) (\$502M). During 2020, Uzbekistan had a large net trade with China in the exports of [Textiles](#) (\$437M), [Mineral Products](#) (\$406M), and [Metals](#) (\$151M).

Conclusion

By ensuring that political stability is maintained, the global initiative has been able to achieve a great deal so far in the field of five-way coordination of the project between countries in Asia, Africa, and Europe. As was noted above, the level of collaboration between Uzbekistan and China has increased in many different areas, including international trade and investment, transportation and logistics, education and tourism. After conducting research on the project's five top priorities, one may reach the conclusion that the level of bilateral cooperation between Uzbekistan and China is currently at the expansion stage. It's possible to attribute this to the following factors: The potential economic benefit of this partnership is noteworthy in "OBOR," and it is in China's interest to connect the land carriageway to the west market via CA including Uzbekistan as a transit state, uplift the Chinese RMB global level regionally by bringing investment and "made in China" products. Bilateral cooperation between two countries with the

long-standing experience and mutual benefit makes the aspects of the "Belt & Road" initiative free of political objectivity. At the same time, from the perspective of Uzbekistan, bilateral cooperation with China under "OBOR" Chinese investment on energy investigation, telecommunication, and construction of infrastructure contributes to the economic development of Uzbekistan and creates job opportunities for Uzbek nations; Initiative connects landlocked Uzbekistan not only to China but also leads to the world market providing safe and secure access; in the field of education, Uzbek students have the opportunity to receive Chinese education and training; and in the Uzbekistan's political and economic stability, as well as the capacity of this global project to bring the Uzbek state to a global scale, are all motivated by cooperation with China and other nations as part of OBOR. This cooperation motivates the Uzbek people both internally and outside. Integration into the global logistics system, collaborative investments, and the development of appropriate infrastructure all play a significant part in facilitating the export of Uzbek goods to foreign markets. Uzbekistan and China's partnership will thrive if the "OBOR" initiative is successful in fostering political stability, and the project will open up new opportunities for both nations in the future. As an example, the development of a new transport link will take Uzbekistan to the Persian Gulf. At the same time, Uzbekistan will have the opportunity to boost

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domestic production and export to states along the "OBOR." Concurrently, China's hand will reach to Europe over the land.

References:

1. Alzghool, M. (2019). *China's "Belt and Road" Initiative and its impact on the global economy*. Retrieved May 05, 2020, from <https://www.researchgate.net/publication/334761289>
2. Claude, A. (1981). *A Political Economy of Africa*. Nigeria: Longman Nigeria PLC
3. Gingrich, N. (1995). *To Renew America*. New York: HarperCollins.
4. Imomov, I. (2018, June 20). Impact of «One Belt, One Road» initiatives to the economy of Central Asian countries. *International Journal of Business and Economic Development*, 31-34.
5. Javaid, D. F. (2017, July). Sino-Central Asian Relations and Sino-US Rivalry in the Region: A Study. *Grassroot Research Journal*, 51, 315-330. Retrieved from https://www.researchgate.net/publication/317503674_SINO-CENTRAL_ASIAN_RELATIONS_AND_SINO-US_RIVALRY_IN_THE_REGION_A_STUDY
6. Smith, A. (1986). [1776]. *The Wealth of Nations*. London: Penguin Books.
7. Stanojevic, N. (2016, January-March). *The New Silk Road and Russian Interests in Central Asia*. *The Review of International Affairs*, LXVII, 142-161. Retrieved June 07, 2020, from https://www.diplomacy.bg.ac.rs/pdf/ria/2016/RIA-1161_2016.pdf
8. Wenxian, Z., Ilan, A., & Christoph, L. (2018). *China's Belt and Road Initiative Changing the Rules of Globalization*.
9. Liu, W. D. (2018, July 27). A discursive construction of the Belt and Road Initiative: From neo-liberal to inclusive globalization. *Journal of Geographical Sciences*, 1199-1214. <https://doi.org/10.1007/s11442-018-1520-y>

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Article



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METHODOLOGICAL APPROACHES TO THE DEVELOPMENT OF COMMUNICATIVE COMPETENCE

Abstract: *The purpose of this article is to study the essence of the communicative approach in education and its methodological foundations. The article substantiates the importance of the implementation of communication-oriented education at the present stage of the development of world society in order to increase the level of communication skills of future specialists, the formation of students' communicative competence, the communicative culture of an individual and society as a whole. To substantiate the need for the implementation of communicative-oriented education, the main methodological aspects of the communicative approach in education are analyzed in the work.*

Key words: *approach, approach in education, communicative approach, communication, pedagogical communication, communicative-oriented learning, communicative method, communicative competence, communicative culture, communicativeness, principles of implementation of the communicative approach in education.*

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Introduction

The main theoretical recommendation of the Council of Europe, which concerns the development of communicative competencies, are the following provisions: 1) learning a foreign language should primarily contribute not to the exercise of intelligence, but to mutual communication and mutual understanding of peoples; 2) the learning process should be aimed at mastering the "borderline level" of a foreign language, while it is teachers who play a significant role in choosing methods and means of teaching.

We believe that the training and advanced training of a student at a pedagogical university will be more effective if the following is done:

- when the following methodological approaches are used: personality-oriented, culturological, creative approach, which serves as a means and condition for the development of communicative competence;

- when implementing the above approaches, the principles of intensive foreign language teaching are used (G.A. Kitaygorodskaya).

The individual-oriented approach is the main one in the professional training of a student-a future teacher, associated with the formation of his personal and professional qualities. In the process of developing communicative competence, a foreign language is defined as a tool and conditions. The implementation of this approach allows teachers to communicate with each other at the level of personal content, expressing and realizing themselves as individuals.

In the process of developing communicative competence, the personality-oriented approach provides for the organization of the necessary conditions for the growth of the intellectual level of students based on their individual abilities. Realizing himself as a subject of activity in this process, the student will be able to fully develop his individual abilities. As a result, students develop the skills of

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mental actions and operations, their transmission, develop attention, will, creative imagination, mind, develop independence in cognition, the ability to discover new knowledge and find new ways of acting.

As M.V.Bulygina pointed out, "a foreign language by its nature is aimed at certain types of work: the absence of a natural environment for communication in a foreign language requires individualization in the formation and correction of reading skills, speaking, listening comprehension, human mental health, and without taking into account its features and specific features (mastery, efficiency, pace of development), an important principle is violated in teaching a foreign language - the principle of communication. age characteristics should be taken into account as much as possible.

In this case, the implementation of the principle of a personality-oriented approach requires the definition of conditions and compliance by the teacher with a number of rules: friendly relations and cooperation, the organization of an environment of joint management and self-government, joint creative activity of teachers and educators, the development of activity and independence of each student.

The effectiveness of interaction in this case depends on the knowledge and understanding of communication partners, who are instilled an opinion about a foreign language, which, accordingly, contributes to the development of their communicative competence. The implementation of this approach to the development of communicative competencies in teaching a foreign language involves the use of:

- the type of problem-based learning and the principles of developmental learning using heuristic methods;
- authentic texts for reading and understanding by ear;
- author's video recordings.

The culturological approach requires strengthening the positions of the humanities. For this reason, V.V.Safonova argues that a foreign language "forms teachers' own 'image' as a carrier of national culture, becoming a means of cognition in the context of communicative-oriented learning, as well as a means of socio-cultural education.

A foreign language occupies a special place in the system of professional and pedagogical training, enriching the culture of the group, and then society, determines the development of creative and cultural capabilities of the future teacher.

Taking into account this approach, in the process of teaching a foreign language, the emphasis is on the development of the future teacher's communicative competence, which implies the ability to involve students in a dialogue of cultures, to acquaint them with the achievements of national cultures in the development of universal culture, to understand their native language and culture in expression.

With the use of knowledge (linguistic, socio-cultural, subject, psychological and pedagogical) in communication situations in order to achieve cultural understanding with native speakers of culture, the use of socially and culturally related scenarios, adopted communication techniques in ethnocultural skills of national-specific behavior models lead to the development of tolerance to a native speaker of a foreign language, people, foreign culture.

The choice and organization of language and speech material, areas of communication, communication situations, the transition from a model of reproductive foreign language teaching to a productive, culturally oriented, contributing to the development of communicative competence, allows students to feel connected, to join the cultural, scientific and technical achievements of Uzbekistan and the whole world. We believe that this can be achieved by involving the student in activities related to cognition, that is, in a situation of "dialogue of cultures".

Comparing the elements of cultural identity of different peoples associated with the uniqueness of economic, political and social development helps to realize that this culture is considered one of the forms of cultural diversity of the world.

The creative approach should be the sphere of realization of the creative activity of the teacher and educator in the process of developing communicative competence when teaching a foreign language, should be aimed at the formation of creative individuality, the formation of a creative style of activity, non-standard solution of pedagogical tasks, the ability to introduce innovations.

G.S. Batishchev believes that creativity "primarily concerns the sphere of human relations, not the sphere of preparation of subjects and subjects" and is associated with the presence of certain qualities in a person.

For example, in psychology, creativity is understood as the ability of a subject to creativity, constructive and non-standard solutions and behavior, as well as the ability to understand and develop their own experience.

Creativity of communication, a professionally significant quality of the personality of a future teacher, is expressed in his ability to creatively solve communication problems that arise in the process of developing communicative competence, corresponding to tasks, partners, communication conditions in the process of communication. Communicative creativity makes it possible to effectively apply the knowledge, skills and abilities acquired by students to solve non-standard communicative tasks in new situations. It is with the help of communicative creativity that a student will be able to compose new ways of communication, discover new facets of this process, form the basis for

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acquiring new knowledge and forming new skills and abilities.

In the development of communicative competence, the creative activity of students has a wide scope of application, namely:

- when working with authentic texts while solving a cognitive task (studying understood and transmitted material, ways of storing information received, ways of implementing acquired knowledge, skills and abilities);

- communication is a type of communication (real conversation, discussion, lecture, communicative role-playing game, etc.).

During the development of communicative competence, in the process of implementing the above approaches, much attention is paid to taking into account the personal characteristics of the teacher, the motivation of communication of the educational process.

The main advantage of the communicative learning method is that the learning process is built adequately to the real process of speech communication, that is, the learning process is a model of the process of speech communication.

The use of the communicative method in the context of the implementation of the communicative approach in education involves the development of the level of communication of students, the formation of their communicative competence, improving the level of their communicative culture.

The substantiation of the communicative approach as one of the methodological foundations of educational activity provides for taking into account

the principles of the implementation of this approach in education. Based on the analysis of the works of Russian theorists of the communicative approach in education, we see that in modern pedagogical science there are a number of approaches to determining the principles of implementation of the approach analyzed in this study. Thus, N.S. Khmilyarchuk based on the generalization of the positions of E.I. Passov, V.V. Safonova, N.K. Sklyarenko defines as the leading principles of the implementation of the communicative approach in education:

- the principle of situativeness;
- the principle of speech-thinking activity;
- the principle of novelty;
- the principle of functionality;
- the principle of individualization;
- the principle of the dialogue of cultures [8].

Conclusions. Thus, the realization of the goals and objectives of education at the present stage of socio-cultural development of society provides for the formation of both the communicative culture of an individual and society as a whole. Qualified specialists should also have a high level of communication skills and the formation of components of communicative competence. All this justifies the need to implement a communicative approach in education, the essence of which is to ensure the real situational nature of educational communication, within which the above-mentioned personal qualities are formed by applying a communicative method and taking into account the principles of implementing a communicative approach in education.

References:

1. Abdullayeva, B.S. (n.d.). *Fanlararo aloqadorlikning metodologik-didaktik asoslari (Ijtimoiy-gumanitar yo'nalishlardagi akademik litseylarda matematika o'qitish misolida)*. Ped.fan.dokt...diss. avtoref.
2. Ashurov, A.A. (2020). Kommunikativ kompetensiya tushunchasi va uning mazmun mohiyati. *Scientific-methodological electronic journal "Foreign Languages in Uzbekistan"*, No 1(30), 76-83.
3. Batishhev, G.S. (1984). *Dialektika tvorchestva / AN Rossija*. In-t filosofii. (p.442). Moscow: Dep. v INION. № 18609.
4. Breuse, E. (1991). Rapport au Conseil de l'Europe I E. *Breuse II Cahiers Peda-gogiques*, № 290, p.182.
5. Bulygina, M.V. (1997). *Pedagogicheskie usloviya razvitiya kul'turologicheskoy kompetencii pri obuchenii inostrannomu jazyku*: Dis. kand. ped. nauk. (p.152). Ekaterinburg.
6. (1997). *Council for Cultural Cooperation. Education Committee. "Language Learning for European Citizenship"*. European Language Portfolio. Proposals for Development. (pp.243-328). Strasbourg.
7. Kitajgorodskaja, G.A. (1992). *Intensivnoe obuchenie inostrannym jazykam: teorija i praktika*. (p.254). Moscow: Rus. jaz..
8. Safonova, V.V. (1991). *Sociokul'turnyj podhod k obucheniu inostrannym jazykam*. (pp.146-178). Moscow: Vyssh. shk.; Amskort internjeshnl.
9. Hmiljarchuk, N.S. (2019). Kommunikativnyj podhod pri obuchenii inostrannogo jazyka studentov turisticeskogo profilja kak strategicheskaja problema pri podgotovke

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budushhego specialista turisticheckoj sfery.
Molodoj uchenyj, №9, pp. 421-424.
<https://moluch.ru/archive/56/7554/>

10. Shhukin, A.N. (2003). *Metodika prepodavanija
 russkogo jazyka kak inostrannogo.* (p.334).
 Moscow: Vyssh. shk.

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DEVELOPMENT OF THEORETICAL FOUNDATIONS OF EFFECTIVE INNOVATIVE TECHNOLOGICAL SOLUTIONS FOR THE PRODUCTION OF PRIORITY AND DEMANDED PRODUCTS

Abstract: *The article considers the possibilities of producing competitive and in-demand products, which are possible only if there are managers who are professionally trained and motivated for the results of their activities. The authors believe that the motivated responsibility of the leaders of light industry enterprises is the highest measure of expression of their professionalism. But if they do not fulfill their promises and statements, this is evidence either of their inability to engage in economic policy, or the use of economic management is carried out by them in interests alien to the interests of society, provoking the impoverishment of the people, characterizing the immorality of leaders, which, of course, is unacceptable. And it is understandable that the authors conducted the results of studies of objective reasons that would justify the decline in production in the light industry, therefore, the results of economic policy evaluation must be either beneficial or harmful - this should always be an axiom. If this does not happen, then something in this very economic policy is not a professional decision, actions are harmful to society and timely adjustments are needed. The authors recommend that the market reconsider the concept of forming it with demanded and import-substituting goods, taking into account their availability to consumers of products in the domestic and international markets. Such a concept will fully correspond to the desire of the consumer to satisfy his desire and desire to make a purchase, taking into account his social status, providing manufacturers with the full sale of their products and guaranteeing them sustainable TEP from the results of their activities.*

Key words: *paradigm, economic policy, team, success, quality, import substitution, demand, competitiveness, market, profit, demand, buyer, manufacturer, financial stability, sustainable TEP, priority, assortment policy, sales.*

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Introduction

UDC 319.63: 519.34

The authors confirmed that the interaction of the assortment policy with innovative technological processes, formed on the basis of the use of universal and multifunctional equipment, will allow the heads of light industry enterprises to form a price niche that guarantees them the replacement of imported products in the sales markets in the regions of the Southern Federal District and the North Caucasus Federal District, and the population of these regions - workers places and social protection from the economic crisis.

In addition, the authors analyzed the possibilities of the policy and objectives of the enterprise in the field of quality within the framework of the QMS in order to fight for defect-free production, for the reduction of defects and to guarantee consumers the high quality of manufactured products. The use of software for assessing the validity of the choice of innovative technological solutions for the production of import-substituting products by domestic enterprises creates the prerequisites for its demand and competitiveness not only in the domestic market, but, most importantly, in its export. The need to improve the quality management system at domestic enterprises is due to the following important reasons:

firstly, it is an increase in the confidence of potential consumers in the products that will be produced by domestic enterprises;

secondly, it is an opportunity to significantly strengthen one's position in existing markets, as well as significantly expand spheres of influence by entering new domestic and foreign markets;

and thirdly, this is a significant increase in labor productivity of any industrial enterprise, which is expected to introduce a QMS using participatory management.

The choice of light industry enterprises as an object for assessing the effectiveness of the socio-psychological factor in the implementation of the QMS is due to the fact that these enterprises are characterized by the presence of highly qualified workers and specialists. Thus, the Policy of goals and objectives of the QMS will be implemented much more professionally and at a lower cost due to three main aspects: employee involvement, process approach and systematic approach. In addition, the personnel of light industry enterprises are more effectively able to realize the goals and objectives of the QMS also because control activities are more professionally provided for the implementation of the following situations: persuasion, execution of delegated powers, creation of conditions for increasing productivity and effective use of the business qualities of employees.

The authors of most studies justifiably paid attention to solving the problem of combining state and market mechanisms for managing

competitiveness because it becomes a strategic resource for the economy of these regions. Today, and even more so tomorrow, in the global economy, the place of price competitiveness will be taken by the competitiveness of quality levels, which has widely increased its importance in connection with Russia's entry into the WTO and the need to use the ISO 9000 series, in this regard, the increase in the quality factor of the results of the domestic light industry in the strategy competition in world markets is a long-term trend. The task of increasing competitiveness is especially urgent for those enterprises that, due to external factors (increased competition due to globalization, the global financial crisis) and internal (inefficient management), have lost their competitive positions in the domestic and foreign markets.

Main part

The reasons for the de-actualization of interest in quality lie in plain sight, namely:

- The achievements of the quality management policy of the Soviet period were associated with the features of the socialist type of planning, built on the principle of directiveness, in which, unlike indicative planning, economic incentives were directly subordinated to political goals. When the administrative-command practice of enterprise management became unnecessary, the practice of quality management went down in history along with it;

- they tried not to integrate the Russian economy into world production, but to attach it in the interests of the existing architecture. We were given the place of producers and suppliers of raw materials, mainly of natural origin. The quality of such products is not due to production. The quality of production depends on the amount of added value - the lower the costs, the greater the difference between price and cost, the higher the profit. The production of a barrel of oil in Qatar and Saudi Arabia costs significantly less than in Russia. By refusing to control the market, the state has consistently freed itself from the obligation to control the production process. And this happened despite the fact that the bureaucratic apparatus and the costs of its maintenance increased by an order of magnitude. The very concept of "quality management" was lowered to the level of "quality control", after which each manufacturer could manage the quality himself. In the end, quality was simplified to technical regulation;

- the quality of production and the product of production are functionally related to the quality of the market, while the quality of the market, in turn, depends on the willingness to purchase products marked with a quality mark. A high-quality product is in demand under two mandatory conditions: the effective demand of the mass buyer and the seller's conscientiousness. Neither one nor the other is available on the domestic market. Even in boutiques

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and elite stores, the buyer does not feel guaranteed to be protected from counterfeit products and the manufacturer's deceiver.

The market is an integral part of society. The order in the market reflects the state of society, and the manufacturer focuses on the state of the market. For him, the barometer is not the national interest - the possibilities of the market. The market is the driving force behind production. If the culture of the market were really ahead of the culture of production, then the objections to the consumer approach to production would be reduced to a minimum. In fact, the culture of the market in Russia was not laid down by manufacturers, much less consumers with their skinny wallets. From the very beginning, intermediaries and speculators dominate our market. Legislation is also built under them, allowing a lot of different interpretations of actions and the same number of opportunities to avoid criminal liability. Quality management in such a situation has turned into the manipulation of quality in the interests of the market owners.

The manufacturer is currently not interested in producing a quality product, the costs are high, the cost of products will increase, the real price will be significantly increased by the intermediary and the seller. As a result, the market for such a product will not "digest" and the manufacturer will be struck by the deadly disease No. 1 according to E. Deming. On a limited scale, clearly scanty for Russia, quality things are guaranteed to be made, manufactured, but this practice has nothing to do with the situation in production, it is exclusive. Attempts by the executive branch in the 2000s to activate interest in TQM were again a local and temporary success. In Soviet times, orders from above looked logical and forced to reckon with them. Reality, which had changed from socialist to capitalist, reacted sluggishly to these initiatives, without any enthusiasm, one might say, purely educational, but not practical. Not surprisingly, defective rockets were added to the peeled off soles of the shoes, unable to rise into space.

To the above causal factors, let's add an old disease inherited by Russian management from the socialist period. "The creation of a quality system in Russia stumbles upon another problem typical of our country," writes B.S. Aleshin with co-authors. It consists in the fact that instructions are written for someone, and not for a specific employee. Therefore, the common situation has become a simple violation of instructions. This is fundamentally unacceptable at enterprises using a quality management system. Not trusting top management to solve this problem, B.S. Aleshin is looking for support at the corporate level - "...when preparing and creating a quality system in Russia, it is useful to expand the scope of the problem and consider creating a system of corporate standards that supports the quality system."

B.S. Aleshin is a well-known specialist in the field of management, he held the highest positions in the Russian government and knew the business from the inside. He should be familiar with the history of the problem of training managers, which is rooted in Soviet times. A.G. tried to solve it. Aganbegyan when he was the director of the Institute in the system of SOAN of the USSR. He did this very seriously, initiating the creation of the Board of Directors of the largest enterprises in Siberia. Outwardly, the question looked simple: an economist-manager (then the overseas "manager" was not used) is a "free artist", or his professional training should be built as a superstructure on a production-oriented foundation, i.e. first career-oriented training, only then economic education.

A discussion with A.G. Aganbegyan ended as expected - the majority considered it expedient to associate economic preparation with production specifics. Only in this way can it be given the necessary level of specificity. The reforms of the 1990s canceled the developed scheme, brought the training of managers in our country in line with the procedure established by them, whose economy was defined as a benchmark. The illogicality of economic policy was not concealed; on the contrary, it was extolled. Absolutization in science is not allowed as a brake on scientific creativity. Nevertheless, recognizing the need for a transitional stage, the economists who came to power took as teachers those who, from history textbooks, knew what to do during the transition. They wanted to be in the post-industrial economy at the expense of "one-two", bypassing the developed industrialization. With all the defects of socialist industrialization, it became an objective historical fact in two five-year plans, and in five "five-year plans" even re-industrialization was not carried out. As a result, we returned to the previous logic of development. The military-industrial complex and Roskosmos made the locomotives of industrial progress, hoping that they would pull the development of the rest of the industry with them. But, not being confident in the ability of the rest to cope with new tasks, because they do not fulfill the old ones either, the government called on the military-industrial complex to expand the production of an assortment of mass consumer goods in order to meet the household needs of the population. The military-industrial complex and Roskosmos made the locomotives of industrial progress, hoping that they would pull the development of the rest of the industry with them. But, not being confident in the ability of the rest to cope with new tasks, because they do not fulfill the old ones either, the government called on the military-industrial complex to expand the production of an assortment of mass consumer goods in order to meet the household needs of the population. The military-industrial complex and Roskosmos made the locomotives of industrial progress, hoping that they

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would pull the development of the rest of the industry with them. But, not being confident in the ability of the rest to cope with new tasks, because they do not fulfill the old ones either, the government called on the military-industrial complex to expand the production of an assortment of mass consumer goods in order to meet the household needs of the population.

One of the main rules of quality management experts consider the return to the original position, if the process has not started. Therefore, the restoration of the past model of economic recovery should be recorded as an asset of the authorities. The principle of consistency in the implementation of the socialist imperative about the unity of theory and practice should also be applied to this. Soviet VIPs from the Politburo did not develop a solution. They agreed and accepted them. Draft solutions were prepared by professionals, consultants, "subcontractors" and "initiators", they had scientists from the Academy of Sciences of the USSR and the most successful production managers. A random person could get into the industrial departments of the regional party committees, the Central Committee of the CPSU, only by being Stirlitz. Party and people's control was established. Naturally not perfect, but effective. The decomposition started when, with the advent of M. Gorbachev, his proteges declared themselves both scientists, and experienced production workers, and prophets, having lost their critical ability. Dialectics in management gave way to the desire to find an existing example, which gave rise to the rebirth of dialectical thinking, built on the basis of the historical concreteness of true knowledge, into the primitive eclecticism of E. Gaidar and Co. On the natural desire of A. Aganbegyan and his associates to combine scientific knowledge of the economy with common sense and practically verified experience, the liberal abstract fantasy washed away. The criterion for the level of subject-oriented knowledge is the quality of management of the corresponding area of subject reality. Dialectics in management gave way to the desire to find an existing example, which gave rise to the rebirth of dialectical thinking, built on the basis of the historical concreteness of true knowledge, into the primitive eclecticism of E. Gaidar and Co. On the natural desire of A. Aganbegyan and his associates to combine scientific knowledge of the economy with common sense and practically verified experience, the liberal abstract fantasy washed away. The criterion for the level of subject-oriented knowledge is the quality of management of the corresponding area of subject reality. Dialectics in management gave way to the desire to find an existing example, which gave rise to the rebirth of dialectical thinking, built on the basis of the historical concreteness of true knowledge, into the primitive eclecticism of E. Gaidar and Co. On the natural desire of A. Aganbegyan and his associates to combine scientific knowledge of the economy with

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The paradox of economic management lies in the specifics of the movement of social production. In order to manage competently, we need theoretical, therefore, general scientific knowledge produced by economic science, but almost always it is necessary to manage a single enterprise that closes the economic chain. In this sense, economic management already acts as an art, it is akin to medicine, the principle of which is also superficially simple: we define the disease, but we treat the patient, so the algorithms are good in the process of theoretical training of the doctor, but they are limitedly applicable in the treatment of the patient. Something close to economic management and fashion. High fashion determines the style, color preference, the specifics of the shape of the product, the nature of its combination with decoration and accessories, the type of material. As for the individual product, then its specificity is approved by the customer, based on the constitution and financial capabilities. It is usually believed that fashion enslaves, we do not agree with this. Fashion provides just enough freedom of action in the given parameters. It experiences the cultural development of the consumer's personality. The manager of an enterprise also has freedom, including in determining the attitude to product quality. The manager's dream is to get quality by reducing costs, the dream is understandable, because otherwise the selling price will have to be raised, which is wrong from the point of view of quality management theory. The authoritative Japanese management specialist I. Ishikawa has repeatedly said that it is immoral to talk about raising the price while improving the quality of products, since the improvement in quality is associated with the stabilization of production, a decrease in defectiveness, costs, and consequently, with a decrease in cost and price. According to I. Ishikawa, it is justified to judge a price increase only when the consumer receives a product of a new technical level.

Given the poor organization of the transition period to a modern high-tech economy, aggravated by a global recession and the Western policy of sanctions against Russia, it is hardly realistic to count on the professional responsibility of a particular manufacturer for the quality of its products. Morality was born before commodity production, but then economic development put morality under its control,

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securing a new relationship ideologically. Moral development only in novels is controlled by the internal forces of the characters. In economics, morality exists like a precious stone in the vise of a ring clamp. Why do ISO standards emphasize three points of application of forces - the responsibility of the manager, cost reduction and personnel policy? There are three "golden truths" of quality policy in quality management:

- ignorance - the root cause of all troubles in management, in the economy, above all;
- quality is a source of income, as it is associated with a reduction in production losses, in addition, it guarantees economic stability, improves the image;
- a careful policy towards professionally trained personnel, such people are the main wealth of any production.

The rules are valid when there is no reason not to comply with them - each violation is more expensive for yourself. In our country, in conditions of selective control over the rules, rare manufacturers follow the rules, they act much more according to concepts, that is, under the guise of imperfect rules and agreements with officials. And here we can formulate the essence of the political moment, as the leaders liked to say not very long ago. So what do we have?

First, it is no coincidence that economic theory was unhooked from politics, political economy was neutralized in economic science. Gaidar and the oligarchs really liked American economic liberalism, and they reflected it in a specific way. The freedom of enterprise was accepted with a bang, and they forgot to tell the people about the American draconian measures for violating the rules of economic activity. It was not profitable. They began to remember only after everything was divided, and the question arose of redistributing the products of privatization. In an effort to purify economic theory from the political burden, a practical, managerial component was hidden. Economic management was separated from the subject specifics of production, so that it would be like in theoretical mechanics, physics, and chemistry.

Second, the abolition of political economy and the priority in the management of production of its subject orientation has become the ascension of economic management as a universal factor.

Economic managers have become legislators of order in the development of production. Many economic advisers and consultants came to Russia in the 1990s, and almost the main financial speculator Soros became more active. The question is, why was all this necessary and who benefits? The answer is not so complicated - these changes provided a cover for the transition from a policy of managing the quality of production to a policy of manipulating quality. Quality parameters began to be determined by economic managers, naturally, based on managerial interests. K. Marx pointedly called the attempt of the

economist Proudhon to understand the philosophical foundations of poverty "the poverty of philosophy." Liberal economists stepped on the same "economic" rake as their French predecessor. The result was the same. Removing subject specificity, economists - managers - restored the scholastic philosophy of the "realists". Instead of moving towards the concreteness of true knowledge, they absolutized the abstraction of general ideas. Economics is called upon to reconstruct an objective, objectively defined reality, and not to be a producer of knowledge that is convenient for calculation. This is how the functions of science and philosophy were interpreted by theologians in the Middle Ages. However, apparently, there is a special interest in such a status of science, otherwise how can one explain the departure from the objectification of the criteria for scientific assessments. "Quality" is a philosophical category that, together with "quantity", forms a dialectical pair, that is, they are interdependent. In one of our publications, we identified three fundamental features of "quality": Instead of moving towards the concreteness of true knowledge, they absolutized the abstraction of general ideas. Economics is called upon to reconstruct an objective, objectively defined reality, and not to be a producer of knowledge that is convenient for calculation. This is how the functions of science and philosophy were interpreted by theologians in the Middle Ages. However, apparently, there is a special interest in such a status of science, otherwise how can one explain the departure from the objectification of the criteria for scientific assessments. "Quality" is a philosophical category that, together with "quantity", forms a dialectical pair, that is, they are interdependent. In one of our publications, we identified three fundamental features of "quality": Instead of moving towards the concreteness of true knowledge, they absolutized the abstraction of general ideas. Economics is called upon to reconstruct an objective, objectively defined reality, and not to be a producer of knowledge that is convenient for calculation. This is how the functions of science and philosophy were interpreted by theologians in the Middle Ages. However, apparently, there is a special interest in such a status of science, otherwise how can one explain the departure from the objectification of the criteria for scientific assessments. "Quality" is a philosophical category that, together with "quantity", forms a dialectical pair, that is, they are interdependent. In one

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- "quality" is a system of defining properties of a phenomenon;
- in the definition of "quality" quantity is always implied in one of its manifestations - wholeness, intensity;
- reflecting the subject diversity of the world, the quality reproduces in itself the objectivity of the difference of phenomena, it is structured.

"Quality management" is a concept of political economy, it allows for the variability of development, but within the limits of the objectivity of quality characteristics. Manipulation of quality is a definition of quality attributes free from actual characteristics in general, - theoretical and particular, - practical scales. In economic theory, until the 1950s, there was no specific procedure for estimating the cost of quality. The "traditional approach to determining the "optimal" cost of quality" dominated. 100% compliance of the product with the specifications was considered unattainable, so the price of quality was put into the after-purchase perspective. It was believed that the costs of the consumer for the operation of the goods are inversely proportional to the quality of the goods. They decrease as the quality of the goods, tending to zero. The concept of "optimum quality level" has appeared. It corresponded to the minimum cost of quality for the supplier and the consumer. The total costs were defined as the sum of the costs of the producer and the consumer.

A new economic reality emerged in the 1970s under the direct influence of the scientific and technological revolution. The technical complexity of the product has increased, the warranty period has increased. The changes that have taken place forced us to abandon the simplified model for determining the cost of quality. The concept of the cost of quality was born, based on reducing the cost of quality through more rational financing and reducing the overall cost of producing a product. They tried to make the economy economical. The emphasis in quality management has shifted towards solving common problems of production development and its standardization. G. Taguchi generally called its cost a measure of quality and gave the following calculations: one wash of a shirt costs 250 yen, usually a shirt is washed 80 times during the service. Laundry costs are 20,000 yen. If they can sew a shirt, wrinkled

and polluted twice as slowly, the consumer's savings reach 10,000 yen. Suppose a new shirt costs the manufacturer 1,000 yen more, and sales increase by 2,000 yen, the manufacturer will receive 1,000 yen in revenue, and the consumer will benefit 8,000 yen. Society will save 9,000 yen plus reduced environmental spending because there will be less laundry waste. We are not against quality manipulation. Within certain limits, this is a forced measure, indicating the limitations of cognitive and other possibilities. The theory need not be conservative, but quality manipulation is a tactical level of management as opposed to the strategic value and significance of quality management. Manipulation is one of the tools of government, and it must remain private,

The second thing to keep in mind when analyzing the perspective of private self-quality control. Private initiative is conditioned by the general political and economic situation. Socialism could be built in a single country, but it turned out to be impossible at this historical time to ensure the competitiveness of socialism. Capitalism is still strong. The same situation awaits private producers. He delivers a quality product. Will he be able to work sustainably in an environment that is not ripe for such a practice.

The considered method for assessing the competence of experts with their participation in the work of expert commissions of various organizations can be used if there is sufficient argument about the reliability of the results of their work. If there is a need for the head of the organization that forms these expert commissions to personally assess the competence of each participant, in this case it is proposed to use a new method, the essence of which involves a personal assessment of the competence of each expert using the developed software product.

The authors have managed to develop software that will make such a search justified and efficient and will allow finding the best solution to ensure the efficient operation of enterprises.

At the same time, as criteria for a reasonable choice of the optimal power in the formation of the algorithm, it was justified to choose those criteria that have the greatest impact on the cost of finished products, namely:

- *percentage of workload of workers, %;*
- *labor productivity of one worker, a pair;*
- *wage losses per unit of output, rub.;*
- *specific reduced costs per 100 pairs of shoes, rub.;*
- *production of shoes, 1 m²;*
- *cost of equipment per unit flow task (C)*
- *total price (Stotal);*
- *margin of financial strength (Zfp);*
- *break-even point (Tb.y);*
- *unit profit (Ex.);*
- *product profitability (R);*

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- costs for 1 rub. marketable products (Z1r etc.);
- conditionally variable costs (Zusl. per.unit);
- conditionally fixed costs (Zusl. pos.ed).

From the above criteria, in our opinion, the manufacturer can give preference to those that, from his point of view, would guarantee him the production of competitive and popular products, namely:

- labor productivity of 1 worker is the most important labor indicator. To some extent, all the main indicators of production efficiency and all labor indicators depend on the level and dynamics of labor productivity: production, number of employees, wages, wages, etc., to increase labor productivity, the introduction of a new techniques and technologies, extensive mechanization of labor-intensive work, automation of production processes, advanced training of workers and employees, especially when introducing innovative technological processes based on universal and multifunctional equipment;

- specific reduced costs - an indicator of the comparative economic efficiency of capital investments, used when choosing the best option for solving technological problems;

- reduced costs - the sum of current costs, taken into account in the cost of production, and one-time capital investments, the comparability of which with current costs is achieved by multiplying them by the standard coefficient of efficiency of capital investments;

- the margin of financial strength (Zfp) shows how many percent the company can reduce the volume of sales without incurring losses;

- the break-even point allows (Tb.y) to determine the minimum required volume of product sales, at which the enterprise covers its expenses and operates break-even, without making a profit, but also does not suffer losses, that is, this is the minimum size of output at which equality of income from sales and production costs;

- profit (loss) from the sale of products (Pr) is determined as the difference between the proceeds from the sale of products in the current prices of VAT and excises and the costs of its production and sale;

- product profitability (R) reflects the relationship between the profit from the sale of a unit of production and its cost;

- semi-fixed costs (total fixed costs of production of a unit of output) (Cusl.cons.unit), which change in proportion or almost in proportion to the change in the volume of production (1st - costs for raw

materials and materials; 2st - costs for auxiliary materials; 3st - fuel costs and energy for technological needs; 4st - the cost of additional and basic wages of production workers with insurance premiums to off-budget funds);

- conditionally variable costs (total variable costs of production of a unit of output) (Cusl. per.unit), which do not depend or almost do not depend on changes in the volume of production (5st - costs for the preparation and development of production; 6 st - costs for expenses for the maintenance and operation of equipment; 7st - costs for general production needs; 8st - costs for general business expenses, they, together with conditionally fixed costs, constitute the production cost; 9th article - costs for commercial expenses. All these articles are forming conditional variables and expenses and conditionally fixed costs make up the full cost, that is, conditionally variable costs can be defined as the full cost - conditionally fixed costs, and vice versa, conditionally fixed costs can be defined as the full cost - conditionally variable costs);

- costs for 1 rub. marketable products show the relative amount of profit for each ruble of current expenses, that is, this is the ratio of the cost of a unit of production to the wholesale price, which characterizes the effectiveness of the measures taken to increase the competitiveness and demand for products in demand markets.

To assess the effectiveness of the production activities of a shoe enterprise, it is necessary to analyze the annual results of the enterprise's work on the production of men's and women's footwear assortment.

These calculations indicate that with 100% of the sale of men's and women's shoes in the specified period of time, not only the costs of production and sale of products are covered, but there is also a profit in the amount of 4,739.6 thousand rubles. This indicates the effective operation of the enterprise, as well as the correct marketing and assortment policy. Product profitability is 13.2%.

As proof of their proposals, the authors confirmed the results of the calculation of technical and economic indicators using the software developed by them, which allowed them to choose production volumes that would guarantee the manufacturer an economic effect, in which the complex indicator of efficiency (Kef) estimating it would tend to its maximum value, and namely, to unity.

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Table 1. Calculation of the main costs for the assortment range for 12 shoe models (on the example of women's shoes)

Модель	Показатель	Модель А	Модель Б	Модель В	Модель Г	Модель Д	Модель Е	Модель Ж	Модель З	Модель И	Модель К	Модель Л	Модель М
36	Прибыль (руб.)	477,94	449,14	424,98	130,38	160,70	122,63	109,87	163,21	134,04	134,87	146,16	141,43
37	Рентабельность (%)	24,67	24,42	22,30	10,27	15,73	11,53	10,62	15,63	11,36	10,10	10,44	10,28
38	Затраты на рубль товарной продукции (руб.)	80,21	80,37	81,76	90,69	86,41	89,66	90,40	86,49	89,80	90,83	90,55	90,68
39	Затраты условно-переменные (руб.)	1129,88	899,23	951,25	507,63	412,21	417,47	353,46	363,21	489,66	565,85	562,24	531,81
40	Затраты условно-постоянные (руб.)	807,43	939,77	954,28	764,33	609,29	646,34	680,74	681,21	689,86	769,62	838,21	843,71
41	Точка безубыточности (пар)	7587,03	7559,24	6987,97	10745,25	7520,48	8591,87	8670,59	9232,90	9026,21	9363,18	9298,59	10065,70
42	Запас финансовой прочности (%)	37,18	32,34	30,81	14,59	20,87	15,95	13,90	19,33	16,27	14,91	14,85	14,36
43	Выручка от реализации (руб.)	29 171 390	25 563 100	23 538 151	17 645 356	11 235 629	12 127 790	11 520 785	13 821 325	14 160 177	16 179 621	16 888 981	17 828 713
44	Валовая выручка (руб.)	6 231 304	6 885 557	6 041 894	3 097 552	2 409 829	2 242 062	2 053 173	2 954 564	2 600 842	2 820 056	2 986 344	3 131 934
45	Чистая прибыль(руб.)	4 847 955	5 356 963	4 700 594	2 409 895	1 873 847	1 744 324	1 587 368	2 298 651	2 023 455	2 194 004	2 323 376	2 436 645

Table 2. Calculation of the cost of basic and auxiliary materials by models (model A)

Стоимость основных материалов на мужские зимние ботинки (модель А)						Стоимость вспомогательных материалов на мужские зимние ботинки (модель А)					
Модель А	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.	Модель А	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.
7	1 Яновка хромового дубления	дм ²	2987	9	=D7*E7	1	клей НК	кг	2	70	=K7*L7
8	2 Мех натуральный (овчина)	дм ²	2207	10	=D8*E8	2	клей	кг	4	125	=K8*L8
9	3 Козлина подкладочная	дм ²	507	4	=D9*E9	3	клей расшив	кг	0,5	152	=K9*L9
10	4 Термопластический материал для подносок	дм ²	200	2	=D10*E10	4	клей расшив полимерный	кг	0,5	152	=K10*L10
11	5 Термопластический материал для задника	дм ²	270	2,3	=D11*E11	5	краска для полиуретана	кг	0,05	216	=K11*L11
12	6 ТЭП	пар	100	1,20	=D12*E12	6	краска для	кг	0,5	20	=K12*L12
13	7 Картон марки ПР	дм ²	130	0,6	=D13*E13	7	смазочная жидкость	кг	0,8	15	=K13*L13
14	8 Картон марки СОП для подступальки	дм ²	536	0,8	=D14*E14	8	нити капроновые 50 НК	кг	0,3	38,82	=K14*L14
15	9 Картон марки СВП для вставки стельки 2 слой	дм ²	532	1	=D15*E15	9	нити	шт.	6	1,1	=K15*L15
16	10 Картон СОП для основной стельки	дм ²	530	1,6	=D16*E16	10	лента шпатель	м	0,45	3,5	=K16*L16
17	11 Металл	шт.	200	20	=D17*E17	11	гальк	кг	0,1	16	=K17*L17
18	12 Застежка молния	шт.	200	1,1	=D18*E18	12	тепл. машинный	кг	1	120	=K18*L18
19	13		Итого		=СУММ(F7:F18)	13	бумага упаковочная	кг	0,2	10	=K19*L19
20	14				С учетом транспортных расходов 15% =F19+F19*0,15	14	коробка	шт.	100	10	=K20*L20
21	15					15	вкладыш	пара	100	0,31	=K21*L21
22	16					16	этикетка	шт.	100	0,05	=K22*L22
23	23					17	растворитель	л	1	105	=K23*L23
24	24					18	краска для лакирования	кг	0,5	50	=K24*L24
25	25					19					
26	26						Итого				=СУММ(M7:M24)
27	27						С учетом транспортных расходов 15% =M26+M26*0,15				

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Table 3. Calculation of the cost of basic and auxiliary materials by models (model B)

Стоимость основных материалов мужских ботинок (модель B)						Стоимость вспомогательных материалов мужских ботинок (модель B)					
Модель B	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.	Модель B	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.
31	Выросток хромового дубления	дм ²	980	10	=D31*E31	1	клей НК	кг	1,4	70	=K31*L31
32	Велюр с водоталпозащитным эффектом	дм ²	1568	8	=D32*E32	2	клей полиуретановый	кг	3,5	130	=K32*L32
33	Байка шерстяная	дм ²	1914	2	=D33*E33	3	клей расщав полиамидный	кг	0,16	170	=K33*L33
34	Свиная подкладочная кожа	дм ²	546	3,5	=D34*E34	4	клей расщав полиэфирный	кг	0,39	180	=K34*L34
35	Бязь	дм ²	1430	1	=D35*E35	5	крем краска	кг	0,06	216	=K35*L35
36	Термопластический материал для подноски	дм ²	170	2	=D36*E36	6	краска для маркировки	кг	0,05	20	=K36*L36
37	Термопластический материал для задника	дм ²	270	2,3	=D37*E37	7	смысловая жидкость	кг	0,08	15	=K37*L37
38	ТЭП	пар	100	120	=D38*E38	8	нитки капроновые 50 НК	кг	0,7	38,24	=K38*L38
39	Картон марки ПР	дм ²	128	0,6	=D39*E39	9	иплы	шт.	6	6,5	=K39*L39
40	Картон марки СОП для полустельки	дм ²	527	0,8	=D40*E40	10	тесьма для загибки	м	0,95	1,2	=K40*L40
41	Байка шерстяная для вкладной стельки 1 слой	дм ²	535	2	=D41*E41	11	гальк	кг	0,1	16	=K41*L41
42	Картон марки СВП для вкладной стельки 2 слой	дм ²	535	1,6	=D42*E42	12	текс ручной	кг	0,32	20	=K42*L42
43	Картон СОП для основной стельки	дм ²	532	1	=D43*E43	13	бумага упаковочная	кг	0,4	10	=K43*L43
44	Металл	шт.	200	1,1	=D44*E44	14	коробка	шт.	100	10	=K44*L44
45	Застежка молнии	шт.	200	20	=D45*E45	15	вкладыш	пара	100	0,3	=K45*L45
46						16	этикетка	шт.	100	0,05	=K46*L46
47					итого =СУММ(F31:F46)	17	абразивное полотно	м ²	0,001	400	=K47*L47
48					С учетом транспортных расходов 15% =F47*F47*0,15	18					
49						19					
50											
51											
										итого =СУММ(M31:M49)	
										С учетом транспортных расходов 15% =M50*M50*0,15	

Table 4. Calculation of the cost of basic and auxiliary materials by models (model B)

Стоимость основных материалов для мужских полуботинок (модель B)						Стоимость вспомогательных материалов для мужских полуботинок (модель B)					
Модель B	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.	Модель B	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.
63	кожа свиная хромового дубления (союзка, деталь союзки, задника, язычок)	дм ²	1060	5	=D54*E54	1	клей НК	кг	1,1	70	=K54*L54
64	свиная подкладочная кожа (кожаподкладка под союзку, кожаподкладка под деталь союзки, кожаподкладчат, под язычок)	дм ²	784	3,4	=D55*E55	2	клей полиуретановый	кг	3	130	=K55*L55
65	термокань (междуподкладка под союзку)	дм ²	320	1,7	=D56*E56	3	клей расщав полиамидный	кг	0,15	170	=K56*L56
66	термопластичный материал (задник)	дм ²	260	2,3	=D57*E57	4	клей расщав полиэфирный	кг	0,18	180	=K57*L57
67	термопластичный материал (подносок)	дм ²	162	2	=D58*E58	5	крем краска	кг	0,04	216	=K58*L58
68	картон марки СОП (основная стелька)	дм ²	382	1	=D59*E59	6	краска для маркировки	кг	0,05	20	=K59*L59
69	поролон (мягкий подпяточник)	дм ²	46	1	=D60*E60	7	смысловая жидкость	кг	0,06	15	=K60*L60
70	металл (геленок)	шт.	200	3	=D61*E61	8	нитки капроновые 50 НК	кг	0,34	38,24	=K61*L61
71	термоэластичность (подощва)	пар	100	120	=D62*E62	9	иплы	шт.	5	6,5	=K62*L62
72	картон ПР (просипка)	дм ²	134	0,6	=D63*E63	10	тесьма для загибки	м	0,8	1,2	=K63*L63
73	бумажно-кард (междуподкладчат)	дм ²	125	0,9	=D64*E64	11	растворитель	кг	0,08	20	=K64*L64
74	целлюлоза	шт.	200	2	=D65*E65	12	нитрокраска	кг	0,07	21,5	=K65*L65
						13	гальк	кг	0,1	16	=K66*L66
						14	текс ручной	кг	0,38	20	=K67*L67
						15	бумага упаковочная	кг	0,4	10	=K68*L68
						16	коробка	шт.	100	10	=K69*L69
						17	вкладыш	пара	100	0,3	=K70*L70
					итого =СУММ(F54:F65)	18	этикетка	шт.	100	0,05	=K71*L71
					С учетом транспортных расходов 15% =F70*F70*0,15	19	абразивное полотно	м ²	0	400	=K72*L72
											итого =СУММ(M54:M72)
											С учетом транспортных расходов 15% =M73*M73*0,15

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Table 5. Calculation of the cost of basic and auxiliary materials by models (model D)

Модель Г	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.
1	вишневскожа-Т (деталь 1, деталь 2, деталь, вкладная стелька)	дм²	880	7	=D78*E78
2	картон марки ПР (простика)	дм²	120	0,6	=D79*E79
3	картон марки СОП	шт.	100	15	=D80*E80
4	формованная подошва из пористого полиэфируретана	пар	100	130	=D81*E81
5	фурицигура	шт.	200	3,5	=D82*E82
итого					=СУММ(F78:F90)
С учетом транспортных расходов 15%					=F91*F91*0,15

Модель Г	Наименование материала	Ед. изм.	Норма расхода (на 100 пар)	Цена за ед. изм., руб.	Стоимость материала на 100 пар, руб.
1	60	кг	1,1	70	77
2	клей полиуретановый	кг	2,8	130	364
3	клей расшив полиэфирный	кг	0,19	180	34,2
4	краска для маркировки	кг	0,05	20	1
5	смысловная жидкость	кг	0,08	15	1,2
6	нитки капроновые 30 НК	кг	0,2	38,24	7,6
7	ниты	шт.	3	6,5	19,5
8	тапек	кг	0,1	16	1,6
9	текс ручной	кг	0,27	20	5,4
10	бумага упаковочная	кг	0,2	10	2
11	коробка	шт.	100	10	1000
12	вкладыш	пара	100	0,3	30
13	этикетка	шт.	100	0,05	5
итого					=СУММ(M78:M93)
С учетом транспортных расходов 15%					=M94*M94*0,15

Table 6. Annual results of the shoe enterprise for the production of the entire range of footwear

Indicators	Jan.	Feb.	March	Apr	May	June	July	Aug	Sen	Oct	Nov	Dec.
1	2	3	4	5	6	7	8	9	10	11	12	13
Sales volume, pairs	26114	26114	29661	29661	29661	28168	28168	28168	25358	25358	25358	26114
Sales proceeds, thousand rubles	45032.84	45032.84	31026.82	31026.82	31026.82	24033.9	24033.9	24033.9	30640.47	30640.47	30640.47	45032.84
Unit cost of production, rub.	1435.54	1435.54	890.2	890.2	890.2	726.7	726.7	726.7	1024.58	1024.58	1024.58	1435.54
Full cost, thousand rubles	37487.78	37487.78	26405.04	26405.04	26405.04	20373.34	20373.34	20373.34	25747.78	25747.78	25747.78	37487.78
Profit from sales, thousand rubles	7545.06	7545.06	4621.78	4621.78	4621.78	3660.56	3660.56	3660.56	4892.69	4892.69	4892.69	7545.06

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Income tax, thousand rubles	1509	1509	924.36	924.36	924.36	732.112	732.112	732.112	978.5	978.5	978.5	1509
Net profit, thousand rubles	6036	6036	3697.4	3697.4	3697.4	2928.448	2928.448	2928.448	3914.19	3914.19	3914.19	6036
Product profitability, %	16.8	16.8	14.9	14.9	14.9	15.2	15.2	15.2	15.9	15.9	15.9	16.8

The formation of the assortment is the problem of specific goods, their individual series, determining the relationship between "old" and "new" goods, goods of single and serial production, "high-tech" and "ordinary" goods, embodied goods, or licenses and know-how. When forming the assortment, there are problems of prices, quality, guarantees, service, whether the manufacturer is going to play the role of a leader in the creation of fundamentally new types of products or is forced to follow other manufacturers

The formation of the assortment is preceded by the development of an assortment concept by the enterprise. It is a directed construction of an optimal assortment structure, a product offer, while taking as a basis, on the one hand, the consumer requirements of certain groups (market segments), and on the other hand, the need to ensure the most efficient use of raw materials, technological, financial and other resources by the enterprise. to produce products at low cost.

The assortment concept is expressed as a system of indicators characterizing the possibilities for the optimal development of the production assortment of a given type of goods. These indicators include: a variety of types and varieties of goods (taking into account the typology of consumers); the level and frequency of updating the assortment; the level and ratio of prices for goods of this type, etc.

The assortment formation system includes the following main points:

- determination of current and future needs of buyers, analysis of ways to use shoes and features of consumer behavior in the relevant market;
- assessment of existing analogues of competitors;
- critical assessment of products manufactured by the enterprise in the same assortment as in p.p. 1 and 2, but from the position of the buyer;
- deciding which products should be added to the assortment and which should be excluded from it due to changes in the level of competitiveness; whether it is necessary to diversify products at the expense of other areas of production of the enterprise that go beyond its established profile.
- consideration of proposals for the creation of new models of footwear, improvement of existing ones;
- development of specifications for new or

improved models in accordance with customer requirements;

- exploring the possibilities of producing new or improved models, including issues of price, cost and profitability;
- conducting tests (testing) of shoes, taking into account potential consumers in order to determine their acceptability in terms of the main indicators;
- development of special recommendations for the production departments of the enterprise regarding quality, style, price, name, packaging, service, etc. in accordance with the results of the tests carried out, confirming the acceptability of the characteristics of the product or predetermining the need to change them;
- assessment and revision of the entire range.

Planning and assortment management is an integral part of marketing. Even well-thought-out sales and advertising plans will not be able to neutralize the consequences of mistakes made earlier in assortment planning.

The optimal assortment structure should ensure maximum profitability, on the one hand, and sufficient stability of economic and marketing indicators (in particular, sales volume), on the other hand.

Achieving the highest possible profitability is ensured through constant monitoring of economic indicators and timely decision-making to adjust the range.

The stability of marketing indicators is ensured, first of all, by constantly monitoring the situation on the market and promptly responding to changes, and even better, taking proactive actions.

In addition, it is important that there are not too many product names. For the majority of Russian enterprises, the main reserve for optimizing the assortment is still based on a significant reduction in the assortment range. Too large assortment has a bad effect on economic indicators - there are many positions that, in terms of sales, cannot even break even. As a result, the overall profitability falls sharply. Only the exclusion of unprofitable and low-profit items from the assortment can give the company an increase in overall profitability by 20-30%.

In addition, a large assortment disperses the strength of the company, makes it difficult to competently offer goods to customers (even sales

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department employees are not always able to explain the difference between one or another position or name), and disperses the attention of end consumers.

It is generally accepted that the buyer needs a wide range. This widest range is often referred to even as a competitive advantage. But in reality, it turns out that for a manufacturer, a wide range of products is hundreds of product items, and for a consumer, 7 items are already more than enough.

Thus, the consumer does not need a wide assortment at all, but the variety necessary for him.

Of particular importance in such a situation is the role played by certain positions of the assortment. For this, products can be classified into the following groups:

A - the main group of goods (which bring the main profit and are in the growth stage);

B - supporting group of goods (products that stabilize sales revenue and are in the stage of maturity);

B - a strategic group of goods (goods designed to ensure the future profits of the company);

D - tactical group of goods (products designed to stimulate sales of the main product group and are in the stage of growth and maturity);

D - a group of goods being developed (products that are not present on the market, but ready to enter the market);

E - goods leaving the market (which do not make a profit and must be removed from production, withdrawn from the market).

After that, it is necessary to determine the share of each group in the total volume of production. For a stable position of the company in the assortment structure: the group of goods A and B must be at least 70%.

Thus, this makes it possible to evaluate the existing assortment set in the company and, correlating it with the profit received, to assess the correctness of the assortment planning, its balance.

In addition, an increase in the volume of goods of groups that bring the main income will not always contribute to an increase in the company's profit. Here it is important to pay attention to the balance of unsold goods (what increase it will give and the possibility of its further sale).

Production volume planning is one of the important problems of assortment policy. In the economy, forecasting of future expenses and incomes is widely used on the basis of calculating the cost of production at variable costs. The essence of this method lies in the fact that the costs of the enterprise are divided into fixed and variable, depending on the degree of their response to changes in the scale of production.

The basis of fixed costs is the costs associated with the use of fixed assets (fixed capital). These include the cost of depreciation of fixed assets, rent of industrial premises, as well as salaries of management

personnel, deductions for social needs of these personnel. The basis of variable costs is the costs associated with the use of working capital (working capital). These include the cost of raw materials, materials, fuel, wages of production workers and deductions for their social needs.

It should be emphasized that the total fixed costs, being a constant value and not depending on the volume of production, can change under the influence of other factors. For example, if prices rise, total fixed costs also rise.

The method of calculation by the amount of coverage provides for the calculation of only variable costs associated with the production and sale of a unit of output. It is based on the calculation of the average variable costs and the average coverage, which represents the gross profit and can be calculated as the difference between the price of the product and the sum of the variable costs. Limiting the cost of production only to variable costs simplifies the rationing, planning, and control due to the sharply reduced number of cost items. The advantage of this method of accounting and costing is also a significant reduction in the complexity of accounting and its simplification.

When applying the calculation method by the amount of coverage, it is advisable to use such indicators as the amount of coverage (marginal income) and the coverage ratio.

The coverage amount (marginal income) is the difference between the sales proceeds and the total amount of variable costs. The amount of coverage can be calculated in another way - as the sum of fixed costs and profits. The calculation of the amount of coverage allows you to determine the funds of the enterprise received by it in the sale of its products in order to recover fixed costs and make a profit. Thus, the amount of coverage shows the overall level of profitability, both for the entire production and for individual products: the higher the difference between the selling price of the product and the sum of variable costs, the higher the amount of its coverage and the level of profitability.

The coverage ratio is the share of the coverage amount in the sales proceeds or the share of the average coverage in the price of the goods.

It is also important to determine at what volume of sales the gross costs of the enterprise will pay off. To do this, it is necessary to calculate the break-even point, at which revenue or production volume is accepted that provides coverage of all costs and zero profit. Those. the minimum amount of proceeds from the sale of products is revealed, at which the level of profitability will be more than 0.00%. If a business earns more than the breakeven point, then it is profitable. By comparing these two values of revenue, one can estimate the allowable decrease in revenue (sales volume) without the danger of being at a loss. The revenue corresponding to the break-even point is

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called the threshold revenue. The volume of production (sales) at the break-even point is called the threshold volume of production (sales).

In order to assess how much actual revenue exceeds the break-even revenue, it is necessary to calculate the margin of safety (percentage deviation of actual revenue from the threshold). To determine the impact of a change in revenue on a change in profit, the indicator of production leverage is calculated. The higher the effect of production leverage, the more risky in terms of profit reduction is the position of the enterprise.

To separate the total costs into fixed and variable, we use the method of the highest and lowest points, which involves the following algorithm:

- among the data on the production volumes of various types of footwear and the costs of its production, the maximum and minimum values are selected;
- the differences between the maximum and minimum values of production volume and costs are found;
- the rate of variable costs per product is determined by referring the difference in cost levels for a period to the difference in production levels for the same period;
- the total value of variable costs for the maximum and minimum volume of production is determined by multiplying the rate of variable costs by the corresponding volume of production;
- the total value of fixed costs is determined as the difference between all costs and the value of variable costs.

In a market economy, in order to survive in a constantly changing economic environment, shoe companies need to focus on the target audience:

- an increase in the amount of profit as a result of a company in the volume of sales of products, a decrease in its cost and an increase in product quality.

In order to get the desired profit in an environment where prices for shoes and production volumes are dictated by the market, the company always faces a choice of what products and how much to produce in terms of production costs and taking into account the solvency of potential buyers.

The presence of high-quality, competitive footwear is a necessary prerequisite for the highly efficient functioning of a shoe enterprise.

An important criterion for the competitiveness of footwear in the market is its cost with its corresponding quality and the purchasing power of the population.

The main criterion for the viability and profitability of an enterprise is profit; in order to increase losses, it is first necessary to reduce the cost of footwear.

Changes in the total cost, which includes all costs for the production and sale of footwear, depend on the ratio of cost changes for each costing item.

An important factor influencing the level of costs for the production of footwear is the change in the assortment and the technological process.

Choosing a technology that can effectively achieve unlabeled goals in the face of fierce competition will ensure that the developed range of shoes will be chosen by the buyer and allow the enterprise to maximize profits.

To solve this problem, it is necessary to use the injection method most widely, which ensures the manufacture (production) of the entire range of high-quality footwear with different profitability of individual types of footwear to meet the demand of various population groups.

In the cost of footwear production, the largest share is the cost of raw materials and basic materials, and then wages and depreciation.

This is possible only if the heads of enterprises implement modern technological solutions based on the use of multifunctional and universal equipment, and at the same time it is necessary to remember that the innovative technological solution itself should not be expensive, that is, on the one hand, provide the enterprise with sustainable technical and economic indicators and guarantee them demand not only in the sales markets of the regions of the Southern Federal District and the North Caucasus Federal District, but in the regions of other districts of Russia and be attractive to foreign consumers. But on the other hand, consumers should have the choice to compare the price niche for the proposed products with analogues of foreign firms, and always have priority. This will be possible with the formation of production based on the use of innovations and innovative activities with the involvement of nanotechnologies and nanomaterials, creating the opportunity for manufacturers to use progressive methods for the manufacture of the entire range of footwear.

The wider use of such methods will allow enterprises in market conditions to receive such an amount of profit that will allow them not only to firmly maintain their positions in the sales market for their shoes, but also to ensure the dynamic development of its production in a competitive environment, this is especially important in the manufacture of the entire product range children's shoes.

Conclusion

The problems of improving the quality, competitiveness of materials and products at the present stage of development of the Russian economy are becoming increasingly important. As the experience of advanced countries that at one time emerged from such crises (the United States in the 1930s, Japan, Germany in the post-war period, later South Korea and some other countries) shows, in all cases the basis for industrial policy and the rise economy was put a strategy to improve the quality,

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competitiveness of products that would be able to win both domestic and foreign markets. All other components of the reform - economic, financial and credit, administrative were subordinated to this main goal.

The developed software for the formation of the technological process for the production of import-substituting products and the determination of specific reduced costs, which are the sum of current costs (cost) and capital investments, measured using the standard efficiency coefficient, taking into account the production program, allows you to calculate the static parameters of the technological process for the production of import-substituting products with various forms of organization of production. The developed software for calculating cash receipts from the operating activities of light industry enterprises based on assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures for their development, which are aimed at accelerating turnover products and reduce losses, which guarantees light industry enterprises to obtain stable TEP and prevents them from bankruptcy.

Models for the sale of products within a month at 100%, 80%, 50% are proposed. Calculations show that with 100% of the sale of footwear, compensation is provided not only for the production and sale of footwear, but also a net profit of 1900.54 thousand rubles remains, which indicates the effective operation of the enterprise, as well as the correct marketing assortment enterprise policy. It also provides a profit when selling 80% of men's, women's and children's shoes. When selling less than 50% of shoes from the volume of production, the company will incur losses. To solve this problem, the conditions for the sale of shoes within a specified period of time and the volume of sales of at least 50% are necessary.

Based on the current situation in the economy of our country, in our opinion, an equally significant problem in the development of the regional consumer market is the lack of a full-fledged legal framework that ensures the functioning of the mechanism of state regulation of the consumer market in the regions. Based on this, it is the state and regional intervention that should correct the situation on the market for domestic products of light industry enterprises in the regions, and thus there will be an opportunity for the development of competitive and import-substituting products.

The implementation of the planned measures will lead to covering the deficit for all types of products, increase labor mobility in the Southern Federal District and the North Caucasian Federal District and reduce negative processes in the labor market, as well as a stable balance of interests of consumers, employers and municipal, regional and

federal branches of government. For the successful implementation of all of the above activities, the interest of regional authorities in the development of production of competitive and import-substituting products, lower prices for components and energy costs, and benefits for transportation produced by enterprises of the regions of the Southern Federal District and the North Caucasus Federal District are most necessary for the regional authorities.

Therefore, only the emphasis on innovation, quality, competitiveness of products and services should be the basis of the industrial policy pursued at all levels yesterday, today and, even more so, tomorrow.

Other economic effect of the results of work is limited, which consists in increasing labor productivity, the level of mechanization of production, lowering work in progress and the cost of digital production. An accessible tool for digital production technologists to rationalize the design of technological processes is proposed, which allows the enterprise to form a competitive assortment and predict the maximum income from the production of import-substituting products.

An assortment policy has been developed for the formation of competitive products, taking into account factors affecting consumer demand: compliance with the main fashion trends, taking into account the economic, social and climatic characteristics of the regions of the Southern Federal District and the North Caucasus Federal District, the production of which using modern innovative technical processes, as well as to meet the demand of an elite consumer, with the use of manual labor create the basis for meeting the demand for shoes for buyers in these regions.

Innovative technological processes have been developed for the production of import-substituting products using modern technological equipment with advanced nanotechnologies, which form the basis for reducing the cost of import-substituting products and providing them with increased competitiveness with the products of leading foreign companies, with the possibility of a wide range of products not only by type, but also by gender and age groups, which guarantees its demand in full.

Layouts of technological equipment are proposed, on the basis of which it is possible to form a technological process for the production of import-substituting products with an optimal output volume, taking into account the production area and the form of organization of digital production.

Software has been developed for calculating cash receipts from the operating activities of light industry enterprises based on assessing the degree of implementation and dynamics of production and sales of products, determining the influence of factors on the change in the value of these indicators, identifying on-farm reserves and developing measures for their

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development, which are aimed at accelerating turnover. products and reduce losses, which guarantees enterprises to obtain stable TEP and prevents them from bankruptcy.

Software has been developed to form the technological process of digital production and determine the cost of production of import-substituting products. A computer simulation model has been implemented that describes the dynamics of the process of production of import-substituting products. The proposed methodology and the software implemented on this basis make it possible to reduce the duration of the technological preparation of production and increase, thanks to the rationalization of the technological process, the specific consumer effect of import-substituting products.

Complex indicators of the effectiveness of innovative technological processes for the manufacture of footwear, similar to other types of import-substituting products, have been calculated. Taking into account the production program, promising options for technology and equipment have been formed, the most effective one has been selected; the possibilities of streamlining the flow have been identified, which allow eliminating bottlenecks, minimizing equipment downtime, which is one of the conditions for designing innovative technological processes. The reliability of the calculations carried out to assess the effectiveness of technological processes using targeted programming methods for various technological and organizational solutions is confirmed by calculations of economic efficiency

indicators: cost, profit and profitability and other indicators.

The proposed technique allows to reduce the duration of technological preparation of digital production and reduce the time for expert work while maintaining the required depth and validity of engineering conclusions. The economic effect of the conducted research is expressed in the intellectualization of the work of a technologist with a reduction in time spent on developing an assortment of manufactured import-substituting products and evaluating the effectiveness of technological processes in comparison with a typical economic calculation of the full cost of manufacturing such products.

The analysis of the influence of forms of organization of digital production and manufacturing technology on the cost of import-substituting products is carried out using the example of the technological process of manufacturing children's, women's and men's shoes, taking into account the shift program. Theoretical dependencies are obtained to assess the influence of the factor "organization of production" on individual costing items in general and other technical and economic indicators in order to prevent enterprises from bankruptcy.

Thus, all this together will provide light industry enterprises of the regions of the Southern Federal District and the North Caucasus Federal District with a stable position both in the domestic and in the markets of near and far abroad. All that is needed is the good will and desire of the heads of enterprises.

References:

1. (2017). *The concept of import substitution of light industry products: preconditions, tasks, innovations*: monograph / Prokhorov V.T. [and others]; under total ed. doctor of technical sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.334). Novochoerkassk: Lik.
2. (2018). *The competitiveness of the enterprise and the competitiveness of products is the key to successful import substitution of goods demanded by consumers in the regions of the Southern Federal District and the North Caucasus Federal District*: collective monograph / Prokhorov V.T. [et al.]; under general ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.337). Novochoerkassk: Lik.
3. (2018). *Managing the real quality of products and not advertising through the motivation of the behavior of the leader of the team of the light industry enterprise*: monograph / O.A. Surovtseva [i dr.]; under general ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.384). Novochoerkassk: YuRGPU (NPI).
4. (2019). *Quality management system - the basis of technical regulation for the production of import-substituting products*: monograph / A.V. Golovko [and others]; under general ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the

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PIF (India) = 1.940
IBI (India) = 4.260
OAJI (USA) = 0.350

- Don State Technical University. (p.326). Novocherkassk: YuRGPU (NPI).
5. (2019). *On the possibilities of regulatory documentation developed within the framework of the quality management system (QMS) for the digital production of defect-free import-substituting products*: monograph / A.V. Golovko [and others]; under general ed. Dr. tech. sciences, prof. V.T. Prokhorov; Institute of Service and Entrepreneurship (branch) of the Don State Technical University. (p.227). Novocherkassk: Lik.
 6. Imai, M. (2005). *Kaizen: a way to reduce costs and improve quality*. transl. from English. (p.346). Moscow: Alpina Business Books.
 7. Porter, M. (2005). *Competition* / per. from English. (p.608). Moscow: Ed. house "Williams".
 8. Pande, P. (2004). *What is Six Sigma. Revolutionary method of quality management*. lane. from English. (p.158). Moscow: Alpina Business Books.
 9. Vume, D. (2005). *Lean production: how to get rid of losses and achieve prosperity for your company* / transl. from English. (p.473). Moscow: Alpina Business Books.
 10. Michael, G.L. (2005). *Lean Six Sigma: Combining Six Sigma Quality with Lean Speed*. from English. (p.360). Moscow: Alpina Business Books.
 11. Imai, M. (2005). *Kaizen: the key to the success of Japanese companies*. transl. from English. (p.274). Moscow: Alpina Business Books.
 12. (2016). *Research and analysis of innovative processes for the production of import-substituting products at enterprises in the regions of the Southern Federal District and the Siberian Federal District*: monograph / Korablina S.Yu. [and etc.]; under total and scientific ed. Dr. tech. sciences, prof. V.T. Prokhorova, ISOiP (branch) of DSTU. (p.358). Shakhty.

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Article



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OPENING OF PRODUCTIVE HORIZONS WITH INHIBITED DRILLING FLUID «ALKAR-3M» FOR DUAL COMPLETION

Abstract: *the article is devoted to the opening of productive horizons in the process of drilling a well with an inhibited drilling fluid "ALKAR-3M" for dual completion (DC) in difficult geological conditions. The article analyzes the state of oil and gas reservoirs opening at exploration and production areas, systematic studies of the effect of the inhibited drilling fluid "ALKAR-3M" on the reservoir properties of productive formations, as well as the preservation of the natural permeability of the productive formation. This work can be used when drilling exploration and production wells in fields with difficult mining and geological conditions and abnormally high reservoir pressure, in order to open productive layers while preserving natural reservoir properties.*

Key words: *inhibited solution, oil and gas recovery, proplast, oil and gas content, bottom-hole zone, alumocalcium solution, anions, defoamer.*

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Introduction

The choice and application of a rational method of opening productive formations is one of the most important and complex problems of modern technology and technology of drilling and production of oil and gas. High-quality opening of productive horizons leads to an increase in the efficiency of exploration and well productivity, improves the flow of oil and gas from low-permeable layers, which ultimately contributes to an increase in oil and gas recovery of reservoirs.

Analysis of the state of oil and gas reservoirs opening at exploration and production areas, systematic studies of the influence of various washing fluids on the permeability of a porous medium, as well as studies conducted in this area in different countries of the world, allow us to draw a definite conclusion that most productive reservoirs are opened without taking into account the geological and physical features of the reservoir and the physical and chemical properties of the reservoir. chemical characteristics of the liquids saturating it.

The effectiveness of geological exploration for oil and gas is largely determined by the possibilities of establishing the true oil and gas potential and reservoir properties of productive objects in the process of exploration drilling during the opening and testing of oil and gas-bearing formations [1].

One of the main conditions for improving the efficiency of geological exploration is the use of such methods of opening and testing that would ensure the preservation of the natural state of the reservoir and, consequently, sufficient reliability of the results of testing for industrial oil and gas.

It is quite obvious that only such data that reflect the actual natural state of the reservoir can be the basis for assessing the total and recoverable oil and gas reserves. However, in some cases, insufficient consideration of the geological and physical properties of the reservoir and the physico-chemical characteristics of the liquids saturating it during the opening process can lead to completely incorrect conclusions regarding the true industrial oil and gas

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potential of the object and even to the fact that some productive horizons of the section may be missed.

In oilfield practice, there are many facts when wells that showed good signs of oil content during drilling and showed themselves quite violently, after putting them into operation, either did not show signs of oil at all, or worked with low productivity. Such a situation significantly reduces the technical and economic indicators of the development of individual deposits or makes their drilling irrational and significantly hinders the timely identification of oil and gas potential in some promising areas.

The poor quality of the opening of the productive reservoir leads to a decrease in the production capabilities of wells, a decrease in the flow of liquid from the poorly permeable layers of the formation, and, consequently, leads to a decrease in the oil recovery coefficient. At the same time, there is a need to create increased depressions during the development and operation of wells, which has a particularly negative effect on the operation of deposits whose reservoirs are composed of uncemented or poorly cemented sands, as well as in the presence of plantar waters. An increase in depression with unstable reservoirs leads to a violation of the bottom-hole zone, which causes a violation of the production column and premature failure of the well; in the presence of plantar water, premature flooding of the well occurs.

One of the most important conditions for preserving the natural permeability of a productive reservoir during its opening is the maximum possible reduction of repression on the productive reservoir. When opening a productive reservoir, the greatest amount of hydrodynamic pressure at the bottom of the well is achieved when the drill bit is working. At this moment, the pressure at the bottom of the well consists of the pressure of the drilling fluid column, the pressure loss in the annular space behind the drill string and the hydrodynamic pressure caused by the vibration of the column during the operation of the bit. Reducing the pressure of the drilling fluid column is achieved by reducing its density and implementing the so-called "equilibrium" drilling method (or even depression).

Special attention should also be paid to the issue of regulating the speed of descent operations and compliance with technological discipline when opening a productive reservoir. This is due to the fact that the speeds of descent operations used in drilling practice can provide very high repression on the formation, up to the production of hydraulic fracturing.

However, no matter how perfect the technique and technology of minimizing repression on a productive reservoir when it is opened by drilling, it is hardly possible to completely exclude repression. Therefore, it is necessary to have a drilling fluid that would prevent the possibility of deep penetration of its

filtrate into the reservoir at the time of repression. In addition, a high degree of its purification from the drilled rock must be ensured in order to maintain a minimum density of drilling fluid and the absence of physico-chemical interaction with rocks of the productive zone and reservoir fluids [2].

When opening productive horizons (formations), the same technology and the same drilling fluid are usually used as when drilling the rest of the borehole. Very often, productive horizons (formations) are opened with the use of water-based drilling fluids. In the case of the use of such drilling fluids, the water is filtered into the reservoir.

At the wells of the Northern Goturdepe field №147 from a depth of 600 m to 3800 m., №37 (800 m – 4900 m), №156 (400 m - 4100 m) and №200 (600 m- 4900 m) were opened on the inhibited drilling fluid "ALKAR-3M".

All productive layers of wells №37 and 200 Northern Goturdepe were opened on drilling fluid of the ALKAR-3M type. To increase the stability of the well walls and prevent complications, the formulation of the inhibited system of alumocalcium solution "ALKAR-3M" was developed and introduced into production at the Institute of "Nebitgazylmytaslama". The system is stabilized with lignosulfonates. As an inhibitor containing simultaneously anions (chromate-aluminates, ferrates) and cations (calcium, potassium, magnesium), alkaline and acid hydrolysates of Portland cement are accepted. As a hydrophobic surface active substance (hereinafter surfactant), classes of polyoxyalkylenes in selective solvents are proposed, which perform the functions of a defoamer and a lubricating additive. The industrial surfactant product provides an inhibitor of paraffin deposits in HT-48 oil.

The ALKAR-3M system, due to its inhibitory properties, suppresses the lyophilicity of clays;

1. Allows you to pass colloidal clays without an accident (taking dangerous packs of black clays of the Absheron tier),

2. Leads to significant savings in chemical reagents by reducing the number of treatments, since the solution retains optimal viscosity and structural and mechanical properties for a long time during drilling.

The difference between the inhibiting solutions of the system and the ALKAR system is that they have an increased clay capacity, but ALKAR-3M still has the fastening properties of the filtration crust, due to which an increase in the stability of the borehole zone of the well is achieved. Therefore, the solutions transferred to the inhibited ALKAR-3M system can withstand large values of water yield by 1.5-2.0 times in comparison with the required values laid down in the geological and technical order and at the same time are able to maintain the stability of the borehole for a long time [3].

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One of the properties of ALKAR-3M is a set of structural strength over time. Therefore, after long stops (for the period of geophysical research and others) restoration of the circulation of the solution is carried out intermittently after the drilling tool is lowered into the cased part of the borehole (casing shoe). This causes the sedimentation stability of the solution for a long time and reduces the likelihood of the drill string being seized due to the retention of barite particles and drilled rock.

The productive deposits of the deposits of Southwestern Turkmenistan are characterized by a complex and ambiguous composition of rocks, waters and drilling fluid, and oil. Each of the components, interacting with the filtrate of the drilling fluid,

determines the deterioration of reservoir properties and a decrease in the flow rates of hydrocarbon fluids. This deterioration is mainly due to two processes, the swelling of clays and the formation of emulsions. The weakening of these processes is carried out through the use of drilling fluids, the filtrates of which have a combination of inhibitory and surface-active properties. Depending on the specific features, in particular, the degree of reservoir blockage, solutions containing mineral inhibitors and surfactants HT-48, in comparison with other types of clay drilling fluids have better c (minimal filtration of water into the reservoir) properties, both when drilling a well and when opening productive deposits.

References:

1. Deryaev, A.R., Gulatarov, H., Orazklychev, G., & Esedulaev, R. (2015). *Rekomendacii po kompleksnomu osvoeniyu metodom ORE mestorozhdenij Zapadnoj i Vostochnoj chasti Turkmenistana / Nebit we Gaz institutynyň makalalar ýygnyndysynyň 11-nji göýberilişi*, (pp. 194-202). A: Türkmen döwlet neşirýat gullugy.
2. Deryaev, A.R., & Orazklychev, G. (2015). *Vozmozhnost' uluchsheniya kachestva razobshcheniyea plastov pri kreplenii skvazhin. / Sbornik statej instituta Nefti i gaza, vypusk 12.- Ashgabat: Turkmenkaya Gosudarstvennaya sluzhba pečati, pp.187-195.*
3. Deryaev, A.R., Esedulaev, R., & Hancharov, N. (2017). *Vybor burovyh rastvorov dlya ORE i vskrytiya produktivnyh plastov. Nauka i tekhnika v Turkmenistane, №5, - Ashgabat: Ylym, pp.114-118.*
4. Deryaev, A.R., Gulatarov, H., & Mantrova, S.V. (2014). *Rekomendacii po burovym rastvoram dlya odnovremenno-razdel'noj ekspluatscii neskol'kih produktivnyh gorizontov na mestorozhdenii Severnyj Goturdepe, Sbornik instituta nefti i gaza, vypusk 8, Ashgabat, Turkmenkaya sluzhba izdaniya.*
5. Deryaev, A.R., Zhamiev, M.Ya., Gulatarov, H., & Mantrova, S.V. (2012). *Ogranichennyj patent: „Metod obrabotki glinistyh rastvorov s kompleksnoj ingibirovannoj dobavkoj KAIR”*. № 503 ot 13.02.2012.
6. Deryaev, A.R., Zhamiev, M.Ya., Gulatarov, H., & Mantrova, S.V. (2014). *Ogranichennyj patent: „Metod obrabotki glinistyh rastvorov s kompleksnoj termostabil'noj ingibirovannoj dobavkoj KAIR-T”*. № 604 ot 06.06.2014.
7. Deryaev, A.R., Mamedov, B., & Amanov, M. (2021). *Vnedrenie receptur burovyh rastvorov dlya bureniya naklonno-napravlennyh i vertikal'nyh skvazhin. Mezhdunarodnaya nauchno-prakticheskaya konferenciya studentov, magistrrov, aspirantov, soiskatelej i doktorantov. “Rynok i effektivnost' proizvodstva-18”, posvyashchennaya 30-letiyu Nezavisimosti Respubliki Kazahstan. Sbornik trudov. (pp.258-261). Kokshetau.*
8. Deryaev, A.R., Amanov, M., & Deryaev, S.A. (2020). *Vskrytie i osvoenie mnogoplastovyh produktivnyh gorizontov metodom odnovremenno-razdel'noj ekspluatscii. Nauchnyj zhurnal Aspirant i soiskatel', №5 (119), - M: OOO Izdatel'stvo Sputnik +., pp. 23-30.*
9. Deryaev, A.R. (2015). *Tekhnologicheskie osobennosti vskrytiya i osvoeniya mnogoproduktivnyh gorizontov dlya odnovremennoj razdel'noj ekspluatscii. / Sbornik nauchnyh trudov instituta nefti i gaza, Vypusk 11-Ashgabat: Turkmenkaya Gosudarstvennaya sluzhba pečati, pp. 183-193.*
10. Derýayew, A.R. (2022). *Treatment of drilling mud with “PACS-T” additive. “Innovative approaches in the modern science” Proceedings of CXV international scientific - practical conference. International scientific journal, №7 (115) - M, pp. 74-77.*

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Article



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OPENING OF PRODUCTIVE HORIZONS WITH HYDROCARBON– BASED DRILLING MUD FOR DUAL COMPLETION WELL

Abstract: *the article discusses the opening of productive horizons in the process of drilling a well with a solution of a hydrocarbon base of the "Versadril" type for dual completion (DC). In difficult geological conditions. The analysis of the state of oil and gas reservoirs opening at exploration and production areas, systematic studies of the influence of the drilling fluid on the hydrocarbon-based "Versadril" on the reservoir properties of productive formations, as well as the preservation of the natural permeability of the productive formation are given. Such work can be in demand and useful when drilling exploration and production wells in fields with difficult mining and geological conditions and abnormally high reservoir pressure, in order to open productive formations while preserving natural reservoir properties and increasing oil and gas recovery of formations.*

Key words: hydrocarbon-based solution, electrical stability, diesel, water, static shear stress, solid phase, zenith angle, offset from vertical.

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Introduction

For the opening of productive horizons with the preservation of natural permeability, as well as for drilling in particularly unstable clay saline deposits and the successful conduct of work, it is necessary to use oil-based solutions. In such solutions, the dispersion medium is represented by diesel fuel, and the dispersed phase is finely ground oxidized bitumen.

At wells №№ 147 and 156 of the Northern Goturdepe field, all productive horizons were opened on hydrocarbon drilling fluid. At well № 147 from a depth of 3800 meters to a design depth of 4400 meters, and at well №156 from 4100 meters to 4300 meters from the ALKAR-3M type system, the transition to a hydrocarbon base solution was ensured and the successful completion of the construction of wells to the design depths was achieved [1, 2, 4].

The construction and opening of the productive part of the above wells was carried out on a solution of a hydrocarbon base. At well № 147, when drilling a hole of Ø295.3 mm, a substitution was made for a

solution of a hydrocarbon base of the “Versadril” type, from a depth of 3800m. Further, the hole Ø 295.3 mm from a depth of 3800 meters to a depth of 4206 meters along the hole, was drilled obliquely at a zenith angle of 45 degrees and an azimuth of 264 degrees on a solution of a hydrocarbon base of the “Versadril” type.

Versadril drilling fluid is a hydrocarbon–based system that uses diesel as a basis to prevent the swelling of clays. The system “Versadril is one of the most ideal systems for drilling active clays, where the stability of the hole is the main issue, in addition, this system operates at high temperatures up to 180-190 degrees and has more improved rheological properties of the solution and inhibition. The system “Versadril” has a very low water output. The water output can be lowered, if necessary, by adding the Versatrol reagent (a water loss reducing agent) and VG-69 (clay to create a crust). This system will prevent hydration of clays and, subject to appropriate density regimes, instability of the hole and even prevent the process of cavern formation and oil seal formation, due to its

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high inhibitory abilities, and also has good lubricating characteristics [3, 5, 6, 10].

To drill this interval, the equipment of the company “Schlumberger” was used to set the angle and exit in the direction, which requires special control of the rheological parameters of the drilling fluid. The choice of a hydrocarbon system was based on the composition of this system, which is a direct emulsion, where the aqueous phase is a dispersed medium, which excludes the chemical reaction of the solution with rocks in the well. Calcium carbonate (SafeCarb) was added to this solution in order to prevent filtrate penetration and minor absorption. The addition of calcium carbonate makes it possible to stop the penetration of filtrate into microcracks and prevent instability of the borehole. The type, parameters and components of the used hydrocarbon drilling fluid for opening productive horizons for the

II technical and operational column at well № 147 Northern Goturdepe are given in the table.

At borehole №147 Northern Goturdepe, drilling of the hole Ø215.9 mm from a depth of 4206 meters to a depth of 4555 meters along the hole was performed obliquely directed at a zenith angle of 42 degrees and an azimuth of 264 degrees, with a displacement of 298 meters on a solution of a hydrocarbon base of the “Versadril” type. The system “Versadril” has a high emulsion stability with a diesel/water ratio at 70/30 with electrical stability, being maintained at 800-1500 Volts to create an emulsion and maintain the necessary parameters of the solution of this interval. Considering that this interval is with productive collectors, the water output readings were kept within 3ml/30 minutes. This water output minimized the likelihood of damage to the collector and sticking of the drilling tool [7, 8, 9].

Table 1. Parameters and components of the used hydrocarbon drilling fluid for the opening of productive horizons for the II technical and operational column for well № 147 Northern Goturdepe

Drilling mud parameters	II technical column (3800m-4206 m along the hole)	operational column (4206m-4555 m along the hole)
Barrel diameter, mm	295,3	215,9
Density, g/cm ³	1,40	1,46
Conditional viscosity (sec/kv)	45-60	45-60
Plastic viscosity	<35	<35
Dynamic shear stress (lb/100 ft ²)	15-25	15-25
Water output ml/30 min	3-4	3-4
Solid phase (%)	<5,0	<5,0
Electrical stability	800-1500	800-1500
Salt content, % by weight	26	26
Quicklime, kg/m ³	18-25	18-25
Additional quicklime, kg/m ³	8-12	8-12
Diesel/water ratio (%)	70/30 (75/25)	70/30 (75/25)
Static shear stress	10-20	10-20
Type of solution	"Versadril"	"Versadril"
Interval Components	Quicklime	Quicklime
	VG-69	VG-69
	Versamul	Versamul
	Versacoat HF	Versacoat HF
	Versatrol	Versatrol
	CaCl ₂	CaCl ₂
	Diesel	Diesel
	Water	Water
	Barit	Barit

So, in case of technological necessity of using drilling fluids with a solid phase, the mechanical rate of penetration and penetration into the bit is sharply reduced due to the deterioration of the working conditions of the drill bit. During the drilling process, it is necessary to eliminate or significantly reduce the

influence of the solid phase on the drilling fluid. In order not to damage productive reservoirs, the solid phase content indicators for well №147 Northern Goturdepe were reduced to a minimum of less than 5%.

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At the Northern Goturdepe field, well № 156, unlike well №147, was drilled vertically to a design depth of 4300 meters with a drilling fluid density of 1.40g/cm³. When opening productive horizons, all parameters (electrical stability, water output, emulsion creation, solid phase) were maintained at a stable required level.

In order to regenerate barite and remove the solid phase, hydrocyclones, a sitohydrocyclone and double centrifuges were used. Centrifuges were constantly used to avoid the solid phase in solution. Before cementing the casing columns Ø244.5 and 139.7 mm, the readings of the dynamic shear stress in the solution were reduced.

Thus, in order to preserve the natural permeability during the initial opening of the productive reservoir, it is necessary to minimize the repression on the reservoir (before drilling at "equilibrium"). When implementing such technology, the probability of occurrence of oil and gas occurrences and the danger of well gushing increases. In this regard, in order to control the productive reservoir and reduce the risk of open gushing, it is advisable to develop technical means for detecting the oil and gas occurrence of a productive reservoir at the initial stage, that is, fixing the moment of formation fluid appearance in the annular space in the zone of the productive reservoir. The opening of productive formations is mainly carried out with a chisel of the same diameter as drilling of the overlying interval. The production column descends to the bottom of the well, and the cement mortar behind the column rises to a great height up to the wellhead. At the same time, a high hydrodynamic pressure is created on the productive formation during cementing, which ensures the penetration of cement mortar into the pores and cracks of the productive formation and often

leads to hydraulic fracturing of the formation with subsequent withdrawal of significant volumes of cement mortar into it, as indicated by cases of under-raising of cement mortar to the calculated level. That is why a very important task when cementing an operational column is to reduce the hydrodynamic pressure of the cement mortar on the productive formation and, if possible, completely eliminate the contact of the cement mortar with the productive formation.

During the cementing process, the "Safety rules in oil and gas producing enterprises" were strictly observed at the wells under study. High hydrodynamic pressure was not created on the productive layer during cementing, and no absorption of cement mortar into productive layers was observed. In all cementing processes, the level of cement mortar rise is obtained to the calculated level [11, 12].

The methods of opening the reservoir depending on the reservoir pressure, the degree of saturation of the reservoir with oil, the degree of drainage and other factors may be different, but they must all meet the following basic requirements:

1. When opening a reservoir with high pressure, the possibility of open gushing of the well should be prevented.
2. The natural filtration properties of the rocks of the bottomhole zone must be preserved at a high level. If the permeability of rocks is low, measures should be taken to improve the filtration properties of the bottom-hole zone of the well.
3. Appropriate reservoir opening intervals must be provided to guarantee long-term waterless operation of wells and maximum relief of oil inflow to the bottom.

References:

1. Deryayew, A.R., Esedulayew, R., & Hançarow, N. (2017). Birnäçe gatlagy birwagtda aýratynlykda ulanmak üçin, buraw erginlerini saýlamak we önümlü gatklary açmak. *Türkmenistanda ylym we tehnika*, №5, A: Ylym, pp.114-118.
2. Deryaev, A.R. (2021). Rekomendacii po ispol'zovaniyu burovyyh rastvorov dlya uspehnogo burovyyh rabot na mestorozhdenij Severnyj Goturdepe. *Aktual'nye issledovani* №51 (78) - Belgorod: Izdatel'stvo "Agentstvo perspektivnyh nauchnyh issledovaniy", pp.14-22.
3. Deryaev, A.R. (2021). Prigotovlenie burovyyh rastvorov i metody regulirovaniya ih svojstv v slozhnyh termogeohimicheskikh usloviyah gorizonta'nogo bureniya skvazhin pri primere Turkmenistana. *Aktual'nye issledovanie*, №52 (79) - Belgorod: Izdatel'stvo "Agentstvo perspektivnyh nauchnyh issledovaniy", pp.13-19.
4. Deryaev, A.R. (2022). *Rekomendacii po burovomu rastvoru dlya bureniya sekcii 295,3 mm otkrytogo stvola naklonno-napravlennoj skvazhiny*. Sbornik statej II Mezhdunarodnoj nauchno-prakticheskoy konferencii "Nauka, obshchestvo, tekhnologii: problemy i

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- perspektivy vzaimodejstviya v sovremennom mire”. (pp.7-11). Petrozavodsk: Nauchnoe izdanie: MCNP “Novaya nauka”.
5. Deryaev, A.R. (2022). *Rekomendacii po burovomu rastvoru dlya bureniya sekcii 215,9 mm otkrytogo stvola naklonno-napravlennoj skvazhiny*. Sbornik statej II Mezhdunarodnoj nauchno-prakticheskoj konferencii “Nauka, obshchestvo, tekhnologii: problemy i perspektivy vzaimodejstviya v sovremennom mire”. (pp.17-22). Petrozavodsk: Nauchnoe izdanie: MCNP “Novaya nauka”.
 6. Deryaev, A.R. (2022). *Rekomendacii po zameshcheniyu burovyyh rastvorov v zavisimosti ot uslovij bureniya*. Sbornik statej II Mezhdunarodnoj nauchno-prakticheskoj konferencii “Tekhnologii 2022: osnovnye problemy i napravleniya razvitiya”. (pp.53-57). Penza: Nauchnoe izdanie: MCNP “Nauka i prosveshchenie”.
 7. Deryaev, A.R. (2022). *Proektnyj profil' naklonno-napravlennoj skvazhiny na ploshchadi Severnyj Goturdepe*. Sbornik statej II Mezhdunarodnogo nauchno-issledovatel'skogo konkursa “Luchshij issledovatel'skij projekt 2022”. (pp.8-14). Petrozavodsk: Nauchnoe izdanie: MCNP “Novaya nauka”.
 8. Deryaev, A.R. (2022). *Podgotovitel'nye raboty po prigotovleniyu burovogo rastvora na uglevodorodnoj osnove*. Sbornik statej II Mezhdunarodnogo nauchno-issledovatel'skogo konkursa “Innovacionnye nauchnye issledovaniya 2022”. (pp.47-49). Penza: Nauchnoe izdanie: MCNS «Nauka i prosveshchenie».
 9. Deryaev, A.R. (2022). *Rekomendacii po prigotovleniyu burovogo rastvora «Versadril» i rukovodstvo po ekspluatacii oborudovaniya*. Sbornik statej Mezhdunarodnogo nauchno-issledovatel'skogo konkursa “Nauchnyj impul's - 2022”. (pp.80-85). Penza: Nauchnoe izdanie: MCNS «Nauka i prosveshchenie».
 10. Gauf, V.A. (1998). *Programma po burovym rastvoram dlya bureniya vtoryh stvolov i vskrytie produktivnogo plasta Fedorovskogo UPNPiKRS OAO Surgutneftegaz*, - Volgograd.
 11. Lushpeeva, O.A. (2001). *Razrabotka i issledovanie receptur burovyyh rastvorov dlya bureniya bokovyh stvolov* O.A. Lushpeeva, G.B. Provodnikov, N.T. Keseva, L.V. Korikova. *Voprosy geologii, bureniya i razrabotki neftyanyh i gazoneftyanyh mestorozhdenij Surgut'skogo regiona: Sbornik nauchnyh trudov*. Ekaterinburg, - Vypusk 3.
 12. Deryaev, A.R., Gulatarov, H., & Mantrova, S.V. (2014). *Rekomendacii po burovym rastvoram dlya odnovremenno-razdel'noj ekspluatacii neskol'kih produktivnyh gorizontov na mestorozhdenii Severnyj Goturdepe*, *Sbornik instituta Nefti i gaza*, vypusk 8, Ashgabat, Turkmenkaya sluzhba izdaniya.

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