Academy of Economics
” Dimitar A. Tsenov “ - Svishtov

Department of “Industrial Business and Entrepreneurship“

Ayten Bayram Sabri

SUSTAINABLE DEVELOPMENT OF INDUSTRIAL COMPANIES

ABSTRACT

of a dissertation for the award of educational and scientific degree "doctor"

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Scientific Supervisor**:**

Prof. Aneta Deneva, PhD

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The dissertation work has been discussed and proposed for defense in accordance with the Law on the Development of the Academic Staff and the Regulations for its Implementation in CA "D. A. Tsenov" - Svishtov from the Department of "Industrial Business and Entrepreneurship" at the Faculty of "Manufacturing and Commercial Business" of the Academy of Economics "D. A. Tsenov" - town of Svishtov

The author of the dissertation is a part-time PhD student at the Department of Industrial Business and Entrepreneurship at the D. A. Tsenov" - town of Svishtov.

The dissertation consists of an introduction, three chapters, a conclusion, a list of references and appendices. Its volume is 178 pages, of which title page, table of contents, introduction - 6 pages, main text - 142 pages, conclusion - 1 page, sources used - 9 pages. Tables - 2 are included in the dissertation work. and figures – 17 pcs. The list of used literature is composed of a total of 71 literary sources in Cyrillic and Latin and 39. electronic sources.

The defense of the dissertation work will take place on …….. at …….. hours in the Rectorate Meeting Hall at SA "D. A. Tsenov", Svishtov. The defense materials are available to those interested on the website of the SA "D. A. Tsenov" - town of Svishtov - …….. .

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I. GENERAL CHARACTERISTICS OF THE DISSERTATION

1. Relevance of the topic

At the current stage, it is very difficult to give a complete and precise definition of the concept of "sustainable development". The difficulties arise from the peculiarities of the system itself, which is the object of study. It has a very diverse character. Moreover, there is a wide range in both the degree of satisfaction of needs and the needs themselves. There is also a difference in the level of development of individual countries. The ecological condition of the planet is not the same either. There is also a significant gap in social development.

The main dimensions of sustainable development are manifested in three interrelated aspects: economic, social and environmental. It should not be seen as a frozen process, a constant of production and consumption, but on the contrary, a dynamic process of applying progressive innovations in economic, ecological and social terms. The problem is global and unprecedented in its scale and forms of manifestation. However, it is insoluble without regional and national goals and strategies for its implementation.

There are numerous scientific publications in the field of sustainable development - Atanasov, T., 2009., Gechev, R., 2005., Rodionova, L. N., L. R. Abdullina. 2007., Bell, S., M. Stephen. 2013., Kaplan, R.S., D.P. Norton. 1994., Pires, S. M., T. Fidélis, T. B. Ramos. 2014, Blasco et al. 2018., Saner et al. 2019., Elder and Olsen 2019., Morseletto .2020. Worldwide, various program documents have been developed to define sustainable development policy, such as Agenda 2030, Agenda 21 of the World Bank, etc.

The present study is motivated both by the relevance of the problem of sustainable development and also by the lack of an objective method to measure the degree of development achieved in both global and regional contexts. Globally, various program documents have been developed to define sustainable development policy, such as Agenda 2030, the World Bank's Agenda 21 and the EU's SDGs, but they treat the problem more as a political-economic concept without proposing a

specific mechanism for measuring and quantitative tracking of the achieved results in the individual dimensions and in the overall manifestation of the process. Although there are many indices of sustainable development and a wide toolkit for quantitative analyses, none is sufficiently reliable and acceptable, given the specificity and complexity of the issue, as well as the influence of a number of exogenous factors, such as geographical location and political-economic status of the studied region /country. There are many purely theoretical developments regarding the essence, principles and features of sustainable development. There are too few of those related to its implementation in business practice.

There is a significant gap between theory and practice in this area. The theory emphasizes its concept, premises, principles of construction and areas of distribution. In contrast, the practical implementation of the concept of sustainability is associated with the development of specific policies, the constitution of various bodies and organizations, the adoption of laws and other normative acts and regulations directly affecting the three main areas of manifestation of sustainability - the economy, ecology and social sphere. Inside the enterprises themselves, the concept of sustainability is manifested in the formulation of a company policy in the field of environmentalization of production and human resources, the adoption of standards and indicators for evaluating and measuring the results achieved, the construction of specific management units, training of personnel, etc. . For these reasons, in this dissertation the main focus is not on the theory in the field of sustainable development, but on its practical interpretation in industrial business structures.

Based on an analysis of the Bulgarian policy for sustainable development of industrial enterprises in Bulgaria and the application of the integration approach, the guidelines for optimizing industrial programs and initiatives and the opportunities for improving the integration environment for sustainable development are outlined. Overall, the experience so far has been positive, but there is still much to achieve.

2. Object and subject of the study

The object of research are active non-financial enterprises from sector C - "Processing industry", section 10.4 "Production of vegetable and animal oils and fats", item 10.41. - "Production of vegetable and animal oils and fats, without margarine", according to NKID-2008, which is a traditional subsector of light industry in Bulgaria.

The subject of research are good practices for the sustainable development of enterprises from the vegetable-oil industry. The emphasis is placed on the developed and implemented programs and initiatives with a view not only to achieving sustainable development, but also to ensuring it in a long-term aspect.

3. Research thesis

The main research thesis to which the author adheres is that sustainable development is the modern concept of business development. Its application provides opportunities to increase brand value and increase the competitiveness of enterprises.

4. Purpose and tasks of the research

The purpose of the present dissertation work is based on research and analysis of existing policies and mechanisms for sustainable development and by means of research, analysis and summarization of the practical dimensions of the sustainable development of vegetable-oil production to establish its state and outline the main directions of the sustainability policy.

Achieving the present goal implies solving the following main research tasks:

1. Clarification of the nature and specificity of the sustainable development policy.

2. Study of the priorities and guidelines in the implemented programs and initiatives in the field of sustainable development.

3. Analysis and evaluation of the sustainable development of the vegetable-oil industry.

4. Development of a methodology for the analysis of the sustainable development of enterprises from the vegetable-oil industry.

5. General evaluation of the applied policies for sustainable development of the enterprises from the studied industry.

6. Formulation of possible solutions to ensure sustainable development of enterprises from the vegetable-oil industry.

5. Research methodology

A set of quantitative and qualitative methods is used, the choice of which is conditioned by the need to obtain practically useful information, allowing reaching correct conclusions and generalizations for the scientific research. The analytical, intuitive and systematic approach is applied, as well as the methods of observation, induction and deduction, the expert method.

6. Sources of Information

Information was used: - from data published by the National Statistical Institute (NSI); analytical reports of the Ministry of Economy (MI), materials of the Association of producers of vegetable oils and oil products in Bulgaria; the websites and company e-mail addresses of the surveyed companies (oil producers, agricultural producers and distributors), the annual financial reports of the oil producers published in the Commercial Register of the Republic of Bulgaria and other sources.

The empirical research is based on:

1. A survey to collect quantitative data on a specific group and quantitative analysis of these data using descriptive statistics, intended for managers and entrepreneurs.

2. A survey designed for managers whose purpose is to equate the terminological terms managers and entrepreneurs in terms of conceptual, communicative, interpersonal and performance skills.

7. Restrictive conditions and limitations of the study

During the development of the dissertation, certain limitations were introduced. The definition of the conceptual apparatus of the sustainable development policy for the purposes of the studies was partially limited both by its lack of unambiguity among researchers and experts, and by the specificity of the studied population. Difficulties arose from the impossibility of covering all programs and initiatives in the context of the researched issues. The difficulties and obstacles in the development of the branch that have occurred in recent years, the intensified inflationary processes, the problems with the availability and price affordability of some of the basic foodstuffs, and in particular the oil in 2021-22, further complicated the implementation of the stud

8. Approbation

The dissertation work has been discussed and directed for defense by the "Industrial Business and Entrepreneurship" Department at the Economic Academy "D. A. Tsenov" - town of Svishtov. Separate parts of the dissertation have been published in specialized scientific publications. Some ideas related to the present study have been presented during participation in national and international scientific conferences. The results of the theoretical and empirical research are brought to the attention of the directly studied vegetable oil companies

II. STRUCTURE AND CONTENT OF THE DISSERTATION

The dissertation consists of an introduction, three chapters, a conclusion, a list of references and appendices. Its volume is 178 pages, of which title page, table of contents, introduction - 6 pages, main text - 142 pages, conclusion - 1 page, sources used - 9 pages. Tables - 2 are included in the dissertation work. and figures – 17 pcs. The list of used literature is composed of a total of 71 literary sources in Cyrillic and Latin and 39. electronic sources.

The content of the dissertation is presented in the following logical sequence:

Abbreviations used

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Chapter One. ESSENTIAL CHARACTERISTICS OF THE POLICY

FOR SUSTAINABLE DEVELOPMENT

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1.2.1. Institutionalization

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Chapter two. METHODOLOGY FOR ASSESSING THE SUSTAINABLE DEVELOPMENT OF INDUSTRIAL ENTERPRISES

2.1. Regulatory framework

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Chapter Three. ASSESSMENT OF THE ECONOMIC SUSTAINABILITY OF ENTERPRISES FROM THE VEGETABLE OIL INDUSTRY

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BRIEF DESCRIPTION OF THE DISSERTATION

Introduction

In the introductory part of the dissertation, the relevance and significance of the development are substantiated. The object, the subject and the research thesis of the study are defined. The main goal and tasks related to its achievement are formulated. The research methods applied and the limiting conditions introduced are indicated.

Chapter One. ESSENTIAL CHARACTERISTICS OF SUSTAINABLE DEVELOPMENT POLICY

Chapter one has a theoretical orientation. It is focused on the emergence of the idea of sustainable development and its institutionalization, different theories and views on sustainable development, sustainable growth indicators, sustainable development strategies. Structurally, the first chapter consists of three paragraphs, each with sub-paragraphs.

Paragraph 1.1. considers the idea of sustainable development. The 60s of the 20th century can be taken as the conditional beginning of the emerging global consciousness, when a strong public resistance against the dominant economic model of development began to take shape in highly developed Western countries. It was also then that the first large-scale studies of global environmental issues began, from research institutes and non-governmental organizations specially formed for the purpose. The beginning of organized environmental protests by the so-called "green movements", whose task is to alert the public to the ecological consequences of the industrialization of the economy.

1.1.1. Institutionalization – it takes place over a long period of time, characterized by upward dynamics and complex systemic structuring. In 1967, the first official institution with an environmental focus was created - the Environmental Protection Fund in the USA. In 1969, the non-governmental organization "Friends of the Earth" was founded. In the same year, the first National Environmental Protection Act was adopted in the USA, and the Council for Quality Environment was formed to enforce it.

The formulation given by Brundtland in 1987 underwent many revisions related to the more complex interpretation of the problem, but became the basis for a number of subsequent world forums.

In the last quarter of the 20th century and in the new 21st century, high-level meetings, such as Helsinki`75, Nairobi`82, Reykjavik`86, Amsterdam`89, Malta, played an increasingly important role in stimulating supranational interaction in

global problem areas. `89, New York `90, Geneva'91, Rio`92, Vienna`93, Cairo`94, Oslo`94, Copenhagen`95, Beijing`95, Istanbul`96, Kyoto`97, Aarhus`98, Davos` 99, Doha`01, Monterey`02, Johannesburg`02, New York`05, Montreal`05, Nairobi`06, etc. As a result, in 2015 the UN developed and adopted a special document called Agenda 2030 (https://www.nsi.bg/en/content/19408/sustainable-development-goals-2030), in which 17 Goals were formulated for sustainable development (SDG) - (fig. 1):

1. End poverty in all its forms and everywhere.

2. Eliminate hunger, improve food quality and sustainable agriculture.

3. Good health and well-being.

4. Quality education.

5. Gender equality.

6. Availability and sustainable management of water resources.

7. Cheap and clean energy.

8. Decent work and economic growth.

9. Industrialization, innovation and infrastructure.

10. Reducing inequality.

11. Sustainable cities and towns.

12. Consumption and production.

13. Combating climate change.

14. Conservation of marine ecosystems.

15. Preservation of terrestrial ecosystems.

16. Peace, justice and effective institutions.

17. Partnership for sustainable development.

Fig. 1. Goals of sustainable development

Source: https://www.europarl.europa.eu/committees/bg/achieving-the-un-agenda-2030/product-details/20230213CAN68764

1.1.2. Sustainable production and sustainable production process

Sustainable production is a system that involves all parties (suppliers, customers, stakeholders, local authorities, governments, etc.) in the global community. It is a holistic system that depends on the decisions of local governments and parliaments.

In this context, the full development of a sustainable production system cannot be achieved by business or industry/sector alone. It is essential to have local, regional, national and international cooperation and coordination. In other words, to achieve sustainability goals, the attitudes and behaviors of all relevant stakeholders must also be integrated into production processes.

Sustainable manufacturing is connected to the local community in which the business operates, to the global community where it sells its products or buys and supplies its raw materials and parts. Because of these connections, sustainable production has a social characteristic. Despite the strength of its social characteristic, sustainable production, which is not easy to realize, covers the entire

industrial segment, with a wide range of responsibilities, and therefore must be a system covering the entire industry of the country, raw materials, semi-finished products, materials, logistics, service, service, recycling, etc. It also has a holistic characteristic, requires decisions at a high level, depends on the decisions of local governments and parliaments, the demands and expectations of users.

Unlike the principles of sustainability, whose main goal is to prevent environmental damage and restore the environment and are related to the three dimensions of sustainability - economic, ecological and social, and the balance between them, the principles of sustainable production are significantly more numerous and have a slightly different scope. According to some authors (European Parliament, "Report on Environment Policy and Sustainable Development: Preparing for the Gothenburg European Council", Reporter: A. Hulthén, Final A5-0171/2001, 15 May, 2001) 20 principles can be identified, which clarify and make the concept of sustainable production more understandable. These 20 principles actually address three main issues: the production system, the social system, and the earth system (ecological system).

A sustainable production process can be defined as a process that has economic, social and environmental dimensions. On the other hand, it is a collection of multiple sub-processes:

- Introduction process;
- Product realization process;
- Improvements;
- Output process;
- Recycling process.

The growing importance of the environment and social well-being, the advent of virtual factories and networks, require an increasing focus on the sustainability of production processes.

With a sustainable production process, environmental impacts are assessed at each stage of the production function and the sustainability of each process is reviewed, including the provision and use of raw materials.

1.2. Indicators for sustainable development

Sustainability indicators are described as a set (category) by different authors. (Repetto, R. 1985; Spangenberg, J. H. 2005; Alber, 2002; Okladsky, 2000; Stoichkova, O. 2016, etc., Basiago, A. D. 1998) The categories (sets) of sustainability indicators are presented in five dimensions of sustainability, based on mutual similarity: environmental management, economic growth, social welfare, technological progress and performance management.

Many different indicators and indicators have been developed and used in theory and practice to measure and evaluate the sustainability of production processes. The most commonly applied among them are: Global Reporting Initiative (GRI), Dow Jones Sustainability Index (DJSI; Dow Jones Global Total), Environmental Performance Index (ÇPI), Environmental Performance Assessment developed by the World Business Council for sustainable development (WBCSD) in 2000.

Indicators can also be used to perform comparative analysis between enterprises, but this depends on the willingness of enterprises to report or not to report data related to some of the indicators. The international standard ISO 14031 is a supplement to performance indicators.

1.2.1. Indicators for assessing sustainable development - the review of the sustainability of business indicator frameworks shows that there are no lists of indicators and guidelines for their application over time, with the aim of increasing sustainability (Veleva, V. Ellenbecker, M., 2001). Therefore, the main challenge is to select the appropriate performance indicators to support operational decision-making in enterprises (Fig.2).

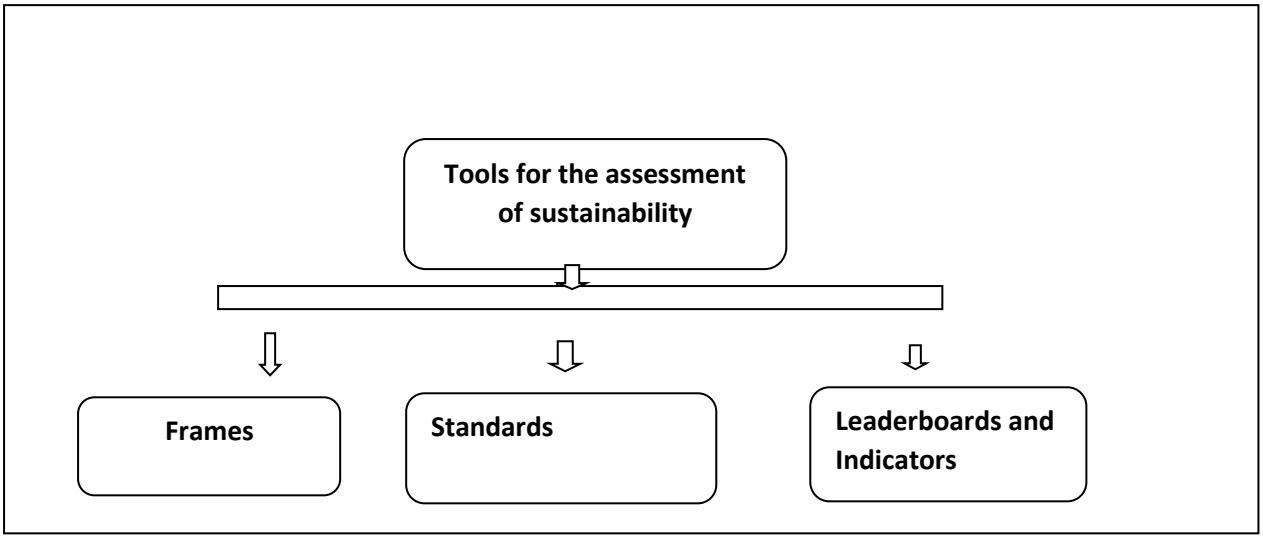


Fig. 2. Tools for assessing sustainable development

Source: Adapted from: Siew, R. A review of corporate sustainability reporting tools (SRTs). Journal of Environmental Management. 164. 2015. p. 180–195

In order to organize indicators of sustainable production, they are most often classified into five levels (Veleva, V. 2001, p. 447-452):

• First level: Business Compliance / Compliance Indicators.

• Second level: Indicators of the use of materials and the efficiency of the company.

• Third level: Business performance indicators.

• Fourth level: Related to supply chain and product life cycle.

• Level Five: Indicators related to sustainable systems.

There are four main types of quantifiable indicators:

a/ absolute indicators,

b/ relative indicators,

c/ aggregate indicators

d/ indexed indicators.

Aggregate and indexed indicators include data in specific categories or in a representation of the level of performance.

Such indicators could be useful in the overall performance evaluation of the enterprise, but they lack detailed information and this fact limits their practical use from the point of view of identification of performance opportunities. In this regard, the use of absolute indicators is recommended. Relative indicators are particularly useful in decision-making because they allow observing the changes of specific values (eg pollution) in relation to a common denominator (eg raw material or production unit).

Absolute and relative indicators can be expressed in natural units (tons, liters) and monetary units. Taking into account the nature of decision-making (eg strategic, operational, innovation generation), performance indicators should be defined at the enterprise, department or process level. To ensure effective decision-making, indicators should be used for all indicated levels.

The specific sustainability indicator at a given time is calculated as an arithmetic average based on the pre-calculated progress of each enterprise in relation to the selected indicator. The formula used is the following:

$$K_n = \frac{\sum K_{mn}}{m}$$

Kn is the coefficient of progression in the nth order of the industrial zone;

m-indicator;

Kmn is the progress coefficient of the m-th enterprise in relation to the n-th indicator.

Despite the wide spread of the concept of industrial sustainability, there is a lack of research and publications on the set of indicators for its measurement.

Regardless of the efforts made since 1998 until today, such studies are still scarce, presenting not only the theoretical but also the practical limitations in the formulation of indicators to measure industrial sustainability.

For this reason in the thesis in paragraph **1.2.2. Optimization models** are considered. Their original purpose was to calculate the optimal allocation of available resources to achieve the stated military objectives (see Moffatt et al., 2001: 194). At a later stage, their application entered various spheres of production and scientific research. Allen (1962) and Chiang (2004) stand out as foundational works in the field of modeling and its role in accounting for influence effects in the consumer decision-making process, and significant in recent years are the studies of Sarker and Newton (2008), Sarker et al. (2002) and Schweinzer (2004).

The relationship between the economic and social dimensions of sustainable development is traced in the study of "social capital" (Inkeles 2000, Woolcock 1998). The term "social capital" is a defining and unifying concept for the human resource that helps to achieve the goals of companies. As dimensions of the sustainable development process, however, social and economic development and their interaction are seen across the spectrum of state-provided (public) goods/services (as a social system) and privately provided ones (economic system) (Gladwin and Kannelly, 1995).

The social dimension is often perceived as the weakest pillar of sustainable development, especially in theoretical and analytical models, and the relationship between "environment" and "society" is still under-researched. In the most general sense, social development, as part of the overall process of sustainable development, is a process of improving all social structures and maximizing the aggregate function of public welfare.

In search of a way out of the created situation, humanity paid serious attention to management approaches and requirements for the implementation of business processes, with the help of which to limit the rate of seizure of the already almost exhausted resources of the planet and, in parallel, to increase the supply of goods

and services, as well as to provide opportunities for the sustainability of economic sectors and economies as a whole.

In this context in **paragraph 1.3**. emphasis is placed on Sustainable Development Approaches. The approach that was valid in manufacturing management until the 1700s was the mastery-based manufacturing approach. After the industrial period, the tendency to produce a lot with the mass production approach caused excessive consumption of natural resources and environmental pollution. With the flexible manufacturing approach, concepts such as product variety, customer focus, total quality, continuous improvement, shortening the product life cycle, rapid integrated computer manufacturing emerge.

Sustainable development finds expression in the creation of products using economic processes that minimize the negative impact on the environment, save energy and natural resources, are safe for employees, communities and consumers. It is a set of technical and organizational solutions that reduce impacts and ensure that products have a life cycle that does not harm the environment. The integration of environmental requirements throughout the product life cycle requires a new way of thinking or management and the application of new decision-making tools, which have found their interpretation in the concept of "cleaner production".

"Cleaner production" approach - compliance with environmental legislation and sustainable development through savings and business optimization.

Sustainable production approach - the sustainable production approach constantly reduces the amount of energy required for production. The main factor related to the sustainable production approach that causes an increase in productivity is the reduction in the use of energy required for production.

Sustainable consumption and production approach - The sustainable consumption and production approach has come to the fore because resource supply systems or resource providers cannot meet the increasing demand for natural resources. Resource efficiency often means improving existing energy and water supply systems and is important for sustainable development. The

Sustainable Consumption and Production (STU) approach is a long-term strategy for sustainable development. The STU approach is an interdisciplinary approach that takes into account the material and energy flows that are common to the life cycle and related methods, as well as the sociological insights that arise from studying the behavior and relationships between stakeholders.

While in manufacturing (industry) steam in the 19th century and automation in the 20th century were considered the driving force, in the 21st century such a force will be sustainability. It obliges the production sector, organizations and the state not only to create a healthy society, but also sustainable production systems that minimize the negative effect on the environment.

Ensuring sustainability in green management can only be achieved by reducing and improving the potential risk situation. Sustainable enterprises that adopt a green management style can expand the corporate business ecosystem by designing new business models that offer value to shareholders, employees, supply chains, social institutions and even all stakeholders who care about the environment and redefine processes by revising them (Duarte and Cruz-Machado, 2013: 228-250).

Sustainable production unlike green production is more comprehensive and deals with all components of sustainability in the form of environment, society and economy. It also includes environmental issues (issues) such as materials and carbon emissions. On the other hand, sustainable production is not a component of the environmental management system. As a result, when we compare green production and sustainable production we can say that sustainable production is a broader production approach that also includes green production.

Chapter two. METHODOLOGY FOR ASSESSING THE LEVEL OF SUSTAINABLE DEVELOPMENT OF INDUSTRIAL ENTERPRISES

The second chapter has a methodological character. It is focused on building the methodological foundations of the research. Structurally, the second chapter consists of four paragraphs.

In paragraph 2.1. a normative framework for the sustainable development of the Bulgarian industry has been outlined. The sustainable development of the Bulgarian industry is a problem that is analyzed by a number of scientists such as R. Gechev, P. Penchev, Yu. Dobreva, etc.

The institutional foundations for the development of strategies for sustainable development in Bulgaria, consistent with global and continental trends, began to form in the last quarter of the 20th century, but conditions for the construction of functional ecological administrative-political management mechanisms arose only after the democratic reforms in the 90s those years. The most important impetus for the institutionalization of the mechanisms for the transition to sustainable development is given by Bulgaria's commitments regarding the activities of UNEP and the already mentioned other geo-ecologically involved divisions of the UN. We should note that one of the main chapters in the negotiation process for Bulgaria's accession to the EU is Chapter 22 "Environment", opened in 2001 and closed in 2003. With the greatest role in the efforts to transition to sustainable development of national level is the "Opportunities 21" Program, directly aligned with the global framework of "Agenda 21" and EU program documents.

At the end of 2020, a National Program for Sustainable Development with a 2030 horizon was developed and adopted by Protocol No. 67 of the Council of Ministers of 02.12.2020 (Portal for public consultations (strategy.bg)). The main strategic objectives of the national program are as follows:

- Accelerated economic development - A main objective of the policy until 2030 is to accelerate economic convergence within the EU, through targeted and focused government support to increase specialization in products and industries characterized by higher technological and research intensity
- Demographic upsurge - the main strategic goal of the government is the mitigation of unfavorable demographic trends and their reversal in a longer-term perspective.

- Reduction of inequalities - despite the observed process of smooth real convergence after Bulgaria's accession to the EU and the significant progress achieved in improving the standard of living of the population, the realized economic growth is not inclusive enough to contribute to the reduction of social inequalities.

The National Program for Sustainable Development is a strategic document forming the framework of the national policy in the field of sustainable development. It specifies 8 priority directions, directly corresponding to the implementation of the UN Agenda 2030. These include - production of products with high added value, better education, poverty reduction, sustainable management of natural resources, innovation, improved institutional environment, energy security and efficiency, improved transport. The program is fully aligned with the previously developed and adopted sector strategies for the planning horizon after 2020. The most significant among them are:

1. National strategy for the development of scientific research in Bulgaria 2017-2030.

2. Integrated transport strategy until 2030.

3. Updated National Strategy for Sustainable Development of Tourism in the Republic of Bulgaria - 2014 - 2030.

4. Action Plan of the National Strategy for Sustainable Development of Tourism in the Republic of Bulgaria - 2014 - 2030.

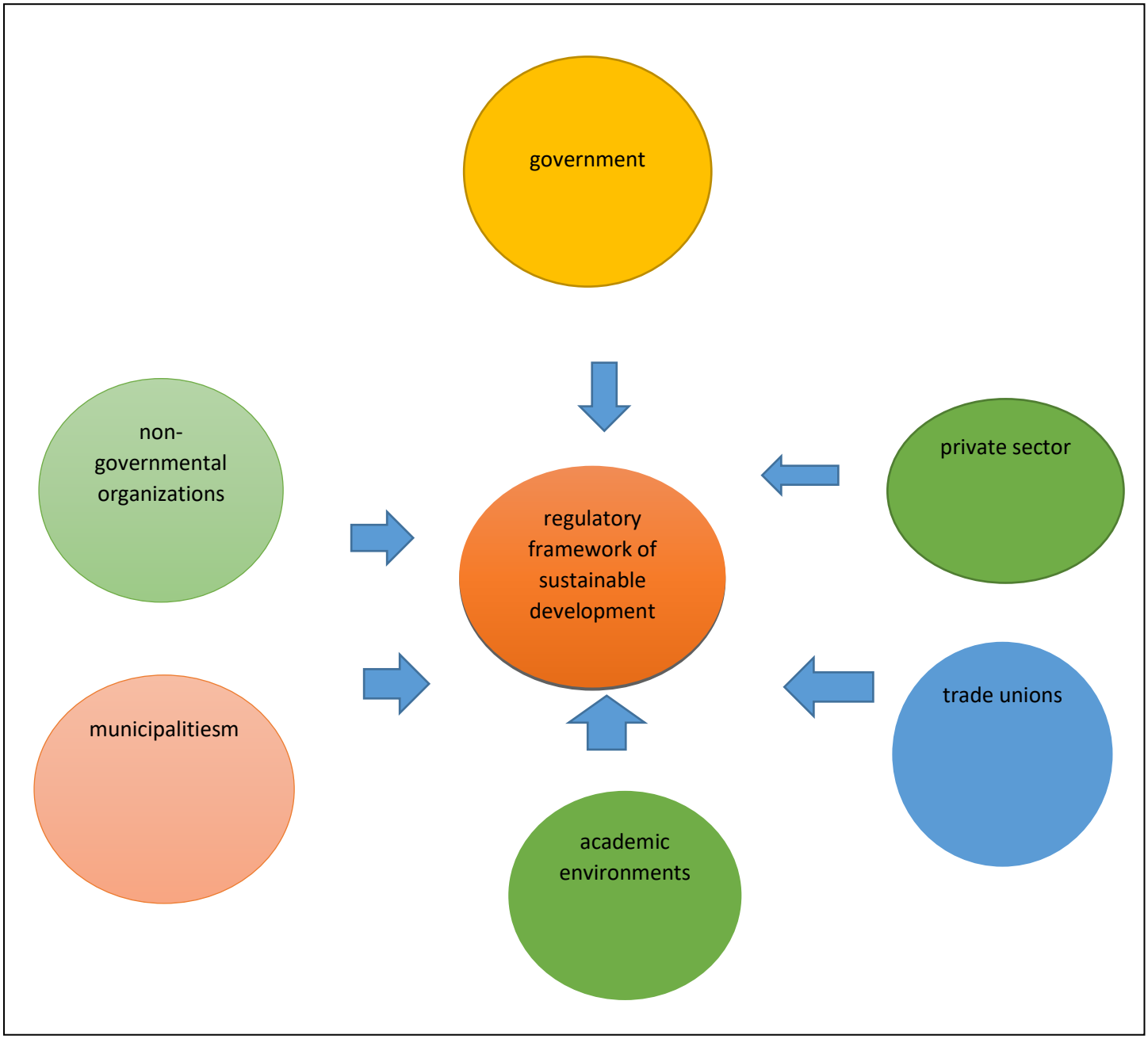
5. Updated National Strategy for Demographic Development of the Population in the Republic of Bulgaria - 2012 - 2030.

6. Integrated national plan for energy and climate until 2030.

7. National strategy for disaster risk reduction - 2017 - 2030.

The normative framework of sustainable development in Bulgaria (Fig. 3) includes, in addition to the mentioned government documents, the strategies

developed by individual municipalities for their sustainable development, the non-governmental sector, the private sector, academia and trade unions



The national normative framework of sustainable development finds its overall presentation in the National Recovery and Sustainability Plan (NRSP) (https://nextgeneration.bg/14). It is based on four main pillars:

- ❖ Innovative Bulgaria aims to build an economy based on knowledge and smart growth through the implementation of reforms and measures in education, digital competences, science, innovation and technology.
- ❖ Green Bulgaria is related to ensuring environmental sustainability and sustainable management of natural resources
- ❖ Connected Bulgaria focuses on increasing the competitiveness of the country's regions, improving various types of connectivity - digital, transport, etc., as well as the fuller use of local potential.
- ❖ A fair Bulgaria is the main object of disadvantaged people. It is based on shared prosperity, responsible public institutions and meeting the needs of citizens.

The national development program "Bulgaria 2030" (Portal for public consultations (strategy.bg)) stands at the top of the hierarchy of strategic framework documents regarding sustainable development in our country. It sets the main priorities, goals and limits of the development policies of the individual sectors of the state administration and of the various regional and territorial dimensions. The program specifies the areas of impact that are prioritized for impact, formulates the main indicators for evaluating the performance, as well as the sources of funding. The main impact priorities are as follows:

P1 – Education and skills;

P2 – Science and scientific infrastructure;

P3 – Smart Industry;

P5 – Clean air and biodiversity;

P6 – Sustainable agriculture;

P7 – Transport connectivity;

P8 – Digital connectivity;

P9 – Local development;

P10 – Institutional framework;

P11 – Social inclusion;

P12 – Health and sports;

P13 – Culture, heritage, tourism.

In paragraph 2.2. the main directions of sustainable development are defined. For the purpose of the study, they are specified in three directions:

- Smart industry - The policy in the field of smart industry will aim to stimulate the digitalization process of the real economy. Prerequisites will be created for modernization and automation of Bulgarian enterprises. The directions in which efforts will be directed are: strengthening the relationship between science and industry in the country for the development of Industry 4.0 through the creation of a fund for financing Bulgarian projects in the field of Industry 4.0. A special focus of the interventions will be the development and introduction of innovative products, processes and business models aimed at increasing the resource efficiency of the economy, as well as the support and implementation of innovations addressing the still high carbon intensity of the economy.

- **Green and sustainable Bulgaria - within this axis, the government defines three national priorities**

    - Circular and low-carbon economy – the emphasis is placed on increasing resource and especially energy productivity in accordance with the principles of the circular economy

- Clean air and biodiversity - aims to improve the quality of atmospheric air, protect biological biodiversity and our rich landscape structure.
- Sustainable agriculture - the main actions are aimed at increasing the competitiveness of the sector, including at the expense of more scientific research, new technologies and, above all, the development and deployment of the value creation chain

➢ **Connected and integrated Bulgaria - Within this axis, the government defines three national priorities**

- transport connectivity – significant attention is paid to the modernization of the transport infrastructure, for which purpose significant additional investments are planned to improve the technical condition of the infrastructure and to build a Trans-European railway network on the territory of our country.
- Digital connectivity – efforts are aimed at carrying out a comprehensive digitization of the economy
- Local development - the main distinguishing feature is supporting employment and growth in individual regions, creating attractive employment opportunities, providing conditions for the acquisition of basic professional skills.

A specific emphasis is placed on the methodological approach for evaluating sustainable development in paragraph 2.3. A methodical approach to assessing sustainable development. Here we start by defining the concept of "sustainable development" from the point of view of the applied approaches.

➢ Conservative approach - progressive qualitative change in the activity of the organization

➢ System approach - removing the ability of the system of economic activity of the enterprise to meet the requirements of society for a long period of time in order to facilitate its economic efficiency

- Evolutionary approach - development of all subsystems of the enterprise under internal and external factors, when the wealth of the owners in real terms does not change or deteriorates in the long term (Shestakov, 2009, p.9).

After everything written up to this point, we should note that the development of strategies for control and management of global processes plays the biggest role in making the transition to sustainable development. This is the final stage, having the greatest result significance in modern practical geoglobalism, and is closely interconnected with the preceding stages - global monitoring and global modelling. In fact, in a general methodological sense, the development of strategies for sustainable development includes monitoring and modeling, as necessary basic stages, without which the optimal definition of problems, goals, tasks, criteria, indicators and mechanisms of expected change is impossible.

In addition to general methodological problems, science should participate more actively in modifying already established indicators to specific national conditions. For example, the principles of "social justice" are the same, but the specific indicators may not differ due to disparities in the level of development of individual countries or groups of countries. The indicator of "social justice" has a relative character. What is "socially just" in one country may be "unjust" in another. Let us note that one of the main pillars of the concept of sustainable development is the unity of three components: economic, social and environmental. And it is necessary to keep in mind that only the ecological priorities of development and the conformity of economic goals with social and ecological interests make it possible to achieve stability. One of the main problems in applying the concept of sustainable development is the lack of accurate indicators for evaluating what has been achieved. On the other hand, the available indicators are not in line with the very concept of sustainable development, because sustainable development is seen as an approach and as a mindset. However, modern enterprises use sustainability as a measure of performance directly dependent on both external and internal causes. Sustainability is often perceived as a major driver of performance evaluation in industrial enterprises.

Paragraph 4 presents the Methodology for assessing the level of sustainable development of industrial enterprises. It was developed on the basis of numerous scientific publications in this field (Atanasov, T., 2009., Gechev, R., 2005., Rodionova, L. N., L. R. Abdullina. 2007., Bell, S., M. Stephen. 2013., Indicators of Sustainable Development: Framework and Methodology. New York: United Nations, 1996., Kaplan, R. S., D. P. Norton. 1994., Pires, S. M., T. Fidélis, T. B. Ramos. 2014.) and is presented in fig. 4.

The theoretical-methodological and methodical basis of the research is formed by analyzing studies done on sustainable development and safety. An information base was created, allowing the identification of gaps related to the fragmented approaches to determining the level of sustainable growth of industrial enterprises and its impact on the level of sustainable development of the enterprise.

Within the framework of the research carried out in the dissertation, certain limitations have been accepted. Some of the information is of a sample nature, due to the requirement of confidentiality. The data presented in the dissertation are reliable and have been provided by companies producing sunflower oil. The collected and analyzed information provides sufficient data for the purposes of the study and is used correctly.

The comprehensiveness and complexity of the concept of sustainable development was a reason for refusing a full study of the situation in Bulgaria, which, given the existing resource limitations, would mean a superficial examination of the problems, without going into their depth. A "sampling" approach based on a more in-depth analysis of an individual sector is therefore preferred.

The defined working hypotheses, checked during the research, are the following:

1. There is a positive attitude towards the concept of sustainable development.

2. Enterprises need new knowledge and skills regarding sustainable development, providing them with competitive advantages.

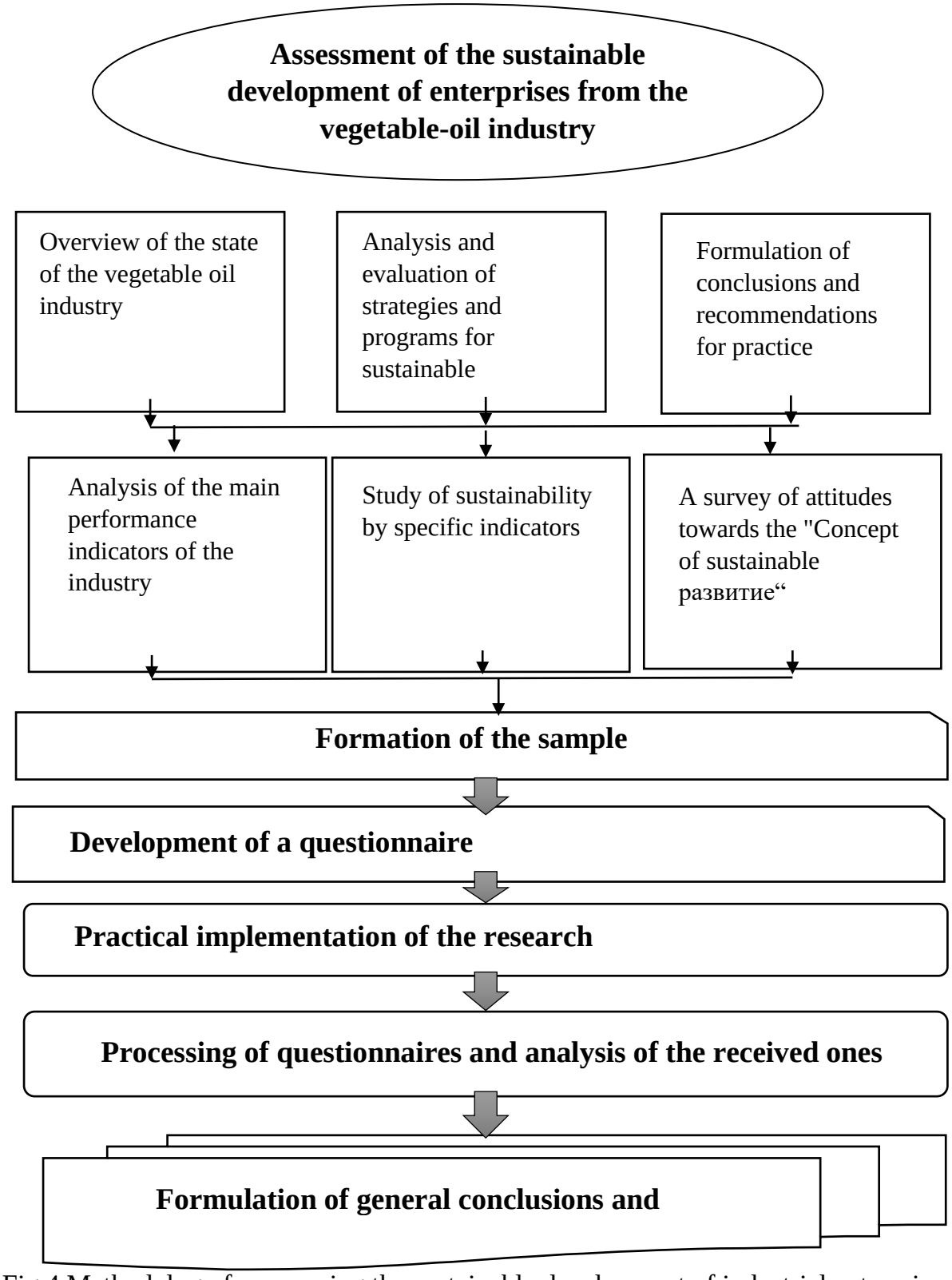


Fig.4 Methodology for assessing the sustainable development of industrial enterprises

Concept of the study: For the verification of the working hypotheses and realization of the research objectives, a survey card was developed, containing 37 questions, formulated as statements, on which the researched persons could express their own attitude. Completing the survey card guarantees participants discretion and confidentiality. The possible answers to the questions are 1-Yes, 2-No and open questions to answer according to their own practice.

The questions are aimed at the factories in order to establish their attitudes, awareness, recommendations on problems related to the limitation of resources, problems with investments, problems with the sustainability of their business, preliminary expectations and attitudes of the heads of institutions about the process of growth and development.

Several significant elements can be distinguished regarding their preconceptions:

• **The first element** is related to how they evaluate their own business and their own competence - questions 5-22.

• **The second element** of the participants' attitudes, to which we devote a special place in the survey /questions 23 - 30/, is related to their knowledge and attitude regarding sustainable business development

- **The third element** - state support for sustainable development - questions 31-34.

• **The fourth stage** is related to the barriers to the sustainable development of industrial enterprises - questions 35-37.

Part of the data for conducting the research on the sustainability of enterprises from the vegetable-oil industry was also obtained by conducting a semi-structured interview. The semi-structured interview, consisting of questions prepared in the context of sustainability and communication, was conducted with managers of companies in the vegetable oil industry that see a sustainability approach as their vision.

The companies participating in the research are the following:

"Papas Olio" AD was established in 1994, it was renovated before 2013. Papas is one of the largest and leading companies in the processing of oilseeds in Bulgaria.

The company's processing capacity is 600 tons per day. The company is one of the largest grain and oilseed traders in the Black Sea region. And Papas also trade in wheat, corn, barley, rapeseed, sunflower, etc.

"Fulmax" Ltd. was founded in 1997 with the business of refining and bottling sunflower oil under the trademarks "Diamant", "Dar" and "Hit". The company has a workshop for refining vegetable oils, a bottling workshop, a boiler room, a compressor room, and a warehouse.

"Oliva" AD is a joint-stock company, the majority owner of which is Buildcom EOOD. Oliva started its activity back in 1941, when the "Perla" oil factory was established in the town of Knezha. This same company was renamed Oliva AD.

"Biser Oliva" AD was established before 1947 as a factory for the production of refined sunflower oil and meal. The company has a production base in which there are warehouses for storing sunflower seeds, a press workshop, a steam boiler, and a bottling workshop.

"Geostroy Inzhenering" EOOD - Bonoil - the company was established in 1991 and Bon oil in 2007. The company's activities are the purchase and storage of oil-bearing crops (sunflower) with licensed companies for the trade in grain, sunflower, production and trade of: bulk crude and refined oils / oil /, sunflower meal (meal), bottling and transportation of vegetable oil.

"Pliska Oil" – The company was founded in 1927, in 2007 it expanded its activities by purchasing and installing new machines.

"GAITEK OLIVA" OOD - the company was established in 1994. The company produces vegetable oils by processing oil-bearing crops. In 1995, the plant for the production and refining of vegetable oils began operating in the town of Nova Zagora. The company has a press line, a modernized warehouse.

"Slancho 99 EOOD" - founded in 1999, one of the main producers of quality refined sunflower oil on the European market. "Slancho 99" EOOD owns its own production complex - bottling workshops, a workshop for the production of PET preforms, a workshop for the production of PET bottles and a newly-built refinery in the process of testing.

"Gold OIL OOD" - Gold Oil OOD was established in 1995 with a capital of BGN 5,000 for sunflower trading. In 2008, Redzep Bolaja and Arif Bolaja bought out their shares from the other partners. There is no change in the capital structure of the company. The company operates in Bulgaria.

"Karina Oil" - Pazardzhik.

Chapter Three. ASSESSMENT OF THE ECONOMIC SUSTAINABILITY OF ENTERPRISES FROM THE VEGETABLE OIL INDUSTRY

The third chapter has an analytical character. In paragraph 3.1. an analysis of the sustainability of the vegetable-oil industry is made. An overview of the enterprises from the vegetable-oil industry over the years, the state of the areas sown with oil crops was made. The main oilseed crops grown in Bulgaria are sunflower, rapeseed, peanuts and soybeans. The largest area and importance of the oil-bearing crops in our country is the sunflower - a strategic crop for Bulgaria. In the last twenty years, there has been a permanent trend towards an increase in the areas sown with sunflower and they reach more than 25% of the total cultivated area in the country. Bulgaria ranks one of the top places, after Romania and Spain, in terms of sunflower production. In 2017-18, our country ranked third in Europe and sixth in the world in sunflower seed production.

Sunflower production is concentrated in the North-West, North-Central and North-East regions. All the large structure-determining enterprises of the vegetable-oil industry are also located in these areas. Here we should note that Bulgaria has good export opportunities in the vegetable-oil industry (Fig. 5). They are used successfully both 20 years ago and now. For comparison, in 1989, 7,605 tons of vegetable oils were exported, and these quantities increased many times over the years, and in 2015, Bulgaria was in fifth place among the world oil exporters.

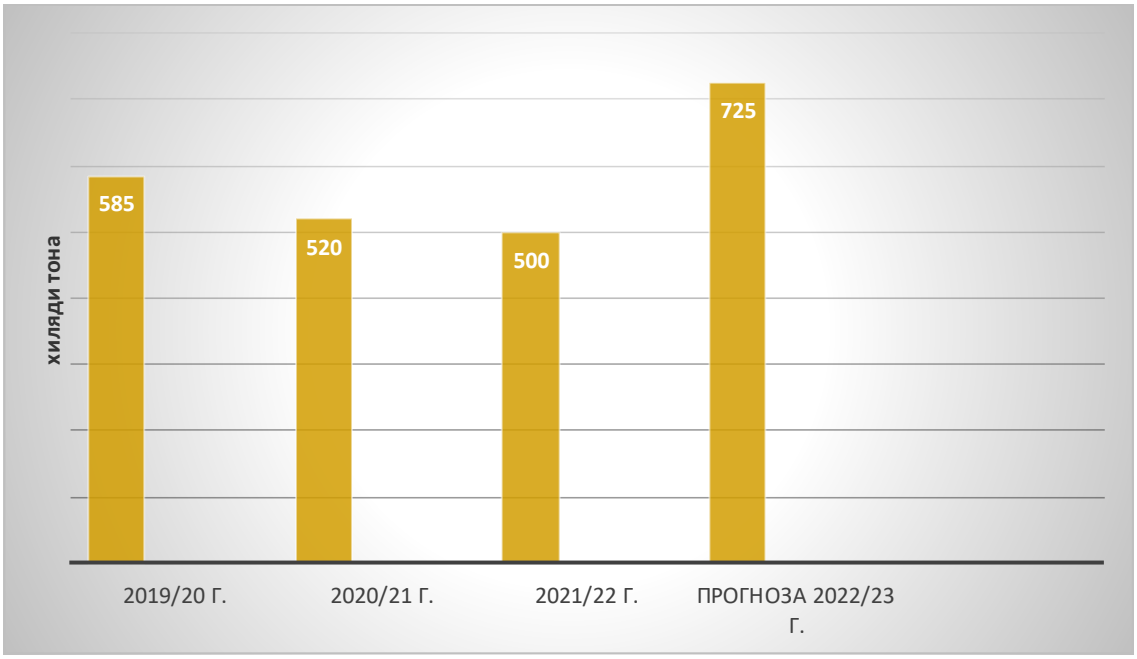


Fig. 5. Export of sunflower oil for the period 2019-2022.

Source: Compiled based on data from the Ministry of Health

In the domestic market, the vegetable oil industry meets the country's vegetable oil needs, both on an individual and industrial level. This trend has been maintained for decades. Sunflower oil is a traditional fat for the Bulgarian people.

The data in Fig. 7 are eloquent proof of the sustainable development of vegetable oil production in our country. There are no significant fluctuations in the amount of production, although consumption is increasing with each passing year.

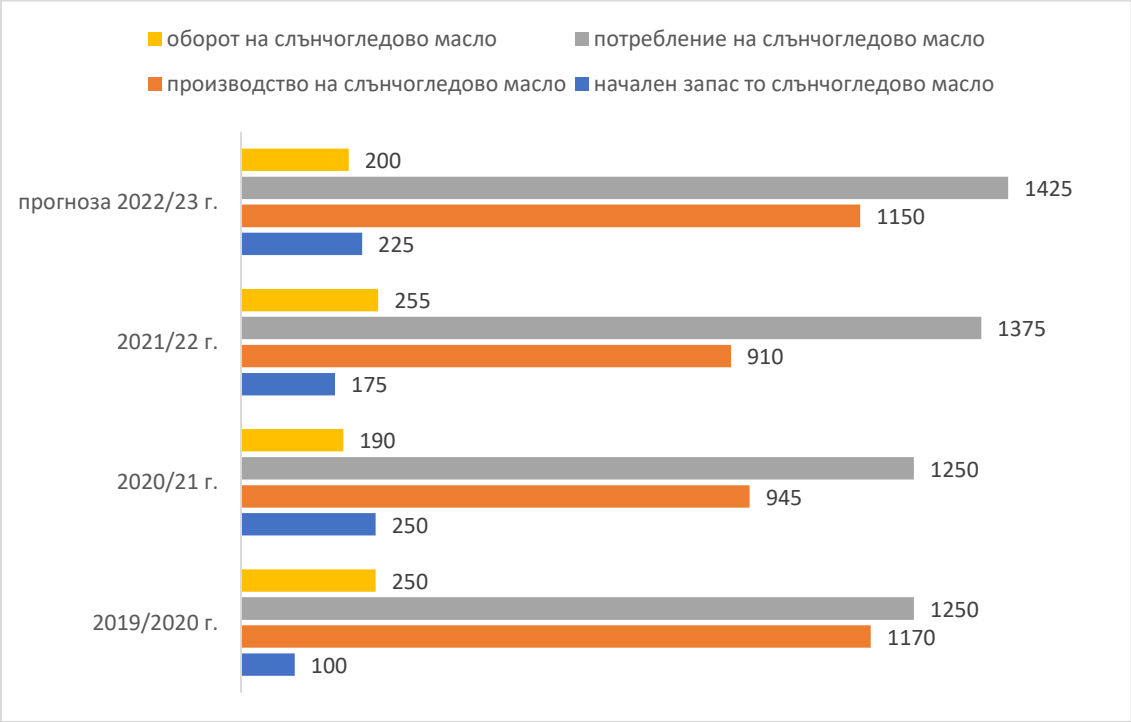


Fig. 7. Production of vegetable oil in Bulgaria (thousand tons)

Source: Compiled based on data from the Ministry of Health

The following can be distinguished from the SWOT analysis of the state of the vegetable oil industry:

Strengths

 High standards of food safety and quality.

 Availability of high added value productions.

 Availability of units with high export potential.

 High labor cost productivity.

 Relatively high (above EU 27 average) production efficiency and profitabi

 Access to EU markets, traditional market presence in Russia, CIS and the Middle East.

 Rich traditions in food and beverage production.

 Natural and climatic conditions, ensuring very good taste qualities of the products.

 Specific technologies ensuring maximum preservation of the natural qualities of the products.

 Environmentally friendly products.

 Strong traditions in food research: highly qualified researchers, opportunity for researchers to participate in international projects and programs.

Weaknesses

 Low investment efficiency.

 Low level of research and development activity in enterprises.

 Availability of outdated energy-intensive and resource-intensive equipment and technologies.

 Weak supply chain integration and collaboration.

 Weak cooperation between research institutions and universities, on the one hand, and industry - on the other; lack of a system for effective information exchange.

 Production and supply of imitation products displacing traditional ones.

 Lack of exclusive production and "brand".

Opportunities

 Opportunities to access the EU market and traditional markets.

 Growth in consumer demand and the purchasing power of the population.

 Growing demand for organic, organic, ecological, healthy foods, vegetarian foods.

 Emergence and deployment of new market niches related to quality of life and climate change, and growing demand for products with high added value in the EU and Bulgaria - ready and semi-ready foods

 Developed retail market and demand for standardized local supplies.

 Investments in the production of raw materials and for the modernization of processing enterprises through EU funds.

 Expansion and modernization of production facilities in line with European funds and improvement of productivity, quality and energy efficiency.

 Potential increase in global food demand and with a looming deficit - maintaining high price levels.

 Introducing better legislation.

Threats

 Last place in labor productivity in the EU 27.

 Low quality and shortage of raw materials.

 Strong dependence on the import of raw materials and semi-finished products, and under the conditions of rising prices on a global scale, are at increased risk.

 Strengthening competitive pressure and unfair competition from imports in the national market.

 High relative share of unqualified personnel.

 Rising costs to adapt to ever-increasing food quality, safety standards.

 Unfair trade practices

An important external factor adversely affecting the state and development of the vegetable oil industry in the last two years is the COVID-19 pandemic. As a result of its impact, sunflower production decreased globally by 7.8%. Its impact

on the global oilseed trade will continue at least until disease incidence begins to decline.

COVID-19 also has a negative impact on the sale of sunflower processing products by blocking and hampering the movement of land transport, closing and restricting hotels, restaurants and travel, which significantly affects consumer behavior and changes their eating habits.

From the point of view of food security, the pandemic has forced many countries to change their strategy for supplying grain (including oilseeds), and food "just in time" and "just in case".

As a result of the COVID-19 crisis and Russia's invasion of Ukraine, global grain and vegetable oil prices have reached record highs. The continued uncertainty caused by the war is keeping prices high and causing serious concern about food security around the world. Big increases in cooking oil prices in 2021 have forced EU countries to cut import taxes, impose stock restrictions and suspend futures trading in edible oils and oilseeds to reduce domestic. This sent palm oil prices on the world market to record highs, making what was once the cheapest vegetable oil the most expensive. We should note the fact that the prices of all types of vegetable oils are highly correlated worldwide. An increase in one invariably leads to an increase in the prices of all types of vegetable oils. More expensive vegetable oils and dairy products have been identified by the Food and Agriculture Organization of the United Nations (FAO) as the main drivers of global food prices jumping to new records, with vegetable oils reaching an all-time high in 2021, increasing by more than 70% compared to the previous 5 years.

What has happened in Bulgaria?

The outlook for Bulgarian oilseeds for 2020/21 remained unclear. In the 2019/20 marketing year, the total oilseed harvest in Bulgaria was six percent below 2018/19, following a decline in harvested area and lower average yields. Reduced stocks and increased demand from mills for refined sunflower oil and sunflower

reduced overall oilseed exports, while increasing exports of processed oil products, particularly sunflower meal and oil.

The increased demand also led to record imports of sunflower seeds and as of April 2020, Bulgaria became the largest importer in the European Union (EU), if we have to say things from an accounting point of view - 41% of the total imports of sunflower seeds in the EU. Bulgaria was also the EU leader in sunflower oil exporter, with 36% of the total EU sunflower oil exports.

In paragraph 3.2. an analysis and assessment of the sustainable development of enterprises from the vegetable-oil industry was carried out

The survey among companies from the plant-oil industry in Bulgaria was conducted in the period July - August 2021. It was implemented through the creation of an electronic questionnaire consisting of 37 questions. This study aims to gather information about the sustainable development of industrial enterprises and the extent to which developed strategies are applied, the effect of regulations on revenues, costs and international competitiveness of companies from the sector for processing and extracting refined sunflower oil in Bulgaria. In an attempt to obtain representative information, in addition to the survey, a conversation/discussion was held with two more factories for the production of vegetable oils in Haskovo region. Of the sustainability topics that were discussed, it was found that the proportional work done by the company was directly monitored, in particular in terms of product safety, occupational health and safety, energy efficiency-eco-efficiency, biodiversity-ecosystem, supply chain and customer satisfaction, waste and resource management, climate change and emissions. Managers stated that their problems were compatible with the sustainability vision. Which practically proves the first hypothesis of the present study, namely that there is a positive attitude towards the problems of sustainable development.

In some enterprises, managers do not pay attention to any components of sustainable development. The main efforts in these factories are focused on the development of plans and strategies reflecting national policies without paying due attention to the place, role and tasks of the individual industrial enterprise.

According to some managers, sustainable development is generally understood as the ability to withstand negative influences, mainly natural forces, the ability to prevent or mitigate declines in production. Sustainable production can only be recognized as such when it meets a certain set of specific needs at minimum costs and in the shortest possible time, based on available resources and real opportunities for efficient use of the raw material base. According to others, sustainable development involves the transition from the current use of resources to the economy of their system of increasing finished products. The core of sustainable development is the subsystem of reproduction of quality resources, the main one of which is human potential. From a general point of view, sustainable development should be understood as development that takes into account the balance of interests of present and future generations. Thus, the basis for forming the concept of sustainable development should be the idea of a dynamically balanced interaction of the economic, social and ecological spheres of social development.

Therefore, the first step that companies should take is to understand the main benefits that can be obtained by implementing these specific sustainable practices. This actually proves the second hypothesis, namely the need for new knowledge and skills regarding sustainable development, providing competitive advantages to enterprises.

From the survey conducted and the semi-structured interviews conducted, it is clear that in order for oil companies to move strategically towards sustainability, a better understanding of sustainability as a concept and knowledge of the organizational factors that can hinder or facilitate this organizational change is needed. The results reflect the lack of standardized indicators or performance benchmarks, as well as the lack of concrete ideas of what to do and when to do it essentially tied as the top-ranked factors preventing companies from moving forward in the direction of sustainability. To overcome these most significant barriers, some tools such as eco-efficiency indicators can be used to measure the benefits achieved through the implementation of sustainability. This would allow

obtaining information about the environment and the performance of the enterprise in terms of its financial results.

From the responses received, it is clear that no particularly strong barriers to sustainability have been identified. The lack of demand from users, customers, senior executives, suppliers and the community for new technology solutions does not seem to be a strong barrier preventing companies from moving towards sustainability. Sooner lack of awareness and understanding should be considered a key factor that can be changed from within organizations, as well as a key element for developing sustainable practices.

The main recommendations regarding the establishment of a mechanism for the sustainable development of enterprises from the vegetable-oil industry are summarized in paragraph 3.3. They are divided into several directions:

1.Regarding the understanding of the essence and advantages of sustainable development - the general visions and problems related to sustainability are not yet fully completed, realized and implemented in most companies. Industrial companies in this sector largely do not consider sustainable development to provide their companies with new and additional business opportunities. This could possibly be due to a lack of knowledge about the benefits that would be realized if organizations implemented and/or improved their sustainable practices. Survey respondents acknowledge that they do not provide or review information that is used to develop the company's sustainability strategies and metrics. For these reasons, companies must make changes and improvements in all general levels related to sustainability.

2. **Regarding practices related to sustainable business development** - in general, organizations have practices related to social issues and in particular to the workforce. The most widespread practices include ensuring accountability for ethics at all levels, ensuring employee health and safety, and involving employees in decisions that affect them. In fact, employee well-being is one of the most important issues addressed by companies.

According to the results, companies prioritize practices related to social issues over environmental issues. The most highly rated environmental practice was improving energy efficiency, although it was moderately implemented. Too little attention is paid to the problems associated with the implementation of renewable energy sources. The importance given to renewable energy sources in the world is increasing day by day. Renewable energy is the public sector solution to the problems arising from traditional energy.

2. **Regarding indicators for measuring sustainability in enterprises** - specifically, the study showed that companies establish indicators to determine whether the organization meets sustainability goals to a low degree. Accurate measurement of sustainability initiatives will allow managers or decision makers to identify the pros and cons of the current process. This requires new approaches in performance monitoring, financial evaluation and costing systems.

One way to measure sustainable performance is by selecting a set of appropriate sustainability metrics and indicators. Sustainability indicators help assess the progress a company has made in promoting sustainable development and are usually expressed as ratios - the numerator includes ongoing impacts such as resource consumption, pollution impacts and land use.

The denominator contains measures of desired outcomes, such as manufacturing output and economic/social value added. Thus, the metrics follow a simple rule: the smaller the metric, the better the result.

4. Regarding the developed strategies for sustainable development - there are three qualities that are most important for the successful implementation of a strategy for sustainability:

1. Deeply held corporate values compatible with sustainability

2. Top management's visible support for sustainable development

3. Placing sustainability at the center of the overall corporate strategy

There are significant gaps between the perceived importance of these qualities and the degree to which an individual organization possesses them. These gaps may narrow over time as more companies embrace sustainability qualities to a greater degree. It is especially important when developing a strategy for sustainable development that it covers all stages of the life cycle of the manufactured products - starting with the supply of the necessary raw materials and ending with the control of the quality of the production. Ensuring the sustainability of the supply chain is necessary, and it covers all activities related to the flow and transformation of goods from the stage of raw materials to the end user, as well as the related information flows.

Summaries and conclusions

1. This study focuses on sustainable development and presents the views of a section of oil mills. The surveyed companies were informed of the final results.

2. The objectives pursued by sustainable development at the corporate level can be summarized around three key issues: society, the environment and their financial impact. Achieving these goals offers clear business benefits and a positive contribution to the well-being of society.

   The benefits range from the creation of a significant competitive advantage for organizations to the generation of a positive perception of the company among customers and society.

3. The achievement of these objectives and benefits can only be realized by fulfilling certain requirements. They can also be requirements at the corporate level, divided into the same three key issues: social, environmental and economic sustainability.

4. In fact, employee well-being is one of the most important issues addressed by companies. Specifically, the most widely adopted practices include ensuring ethics accountability at all levels, ensuring employee health and safety, and involving employees in decisions that affect them. In addition, sustainability

issues such as safe and healthy work environments, worker workplace security, human rights and all accessible quality health care are considered very important.

5. Since the surveyed companies ranked environmental issues as important, but not very important, it should come as no surprise that environmental practices are not fully implemented.
6. Companies identify embedding sustainability values deep into their entire strategy as key factors for sustainable development.
7. The lack of standardized indicators or performance indicators is considered to be the most impeding barrier towards sustainability. In fact, companies find measuring the sustainability of operations problematic. Sustainability performance indicators are not deeply rooted in their organizational missions.
8. The companies recognized that the sustainable strategy is not yet fully completed and implemented in their policy. In fact, the reason for this may be the fact that they do not see significant measurable results from sustainability initiatives.
9. Micro, small and medium-sized enterprises are characterized by a low degree of innovation activity. It turns out that the surveyed enterprises do not have separate departments for sustainable development, which are open to new technologies in order to save on their core activity costs, to work on Euro projects for the implementation of new technologies, but also to increase their competitiveness.
10. New strategies and technologies are developed to implement new products, but this is not sustainable development. They are using the resources they have, they are trying to maintain their market share, but it is not very successful. Yes 25% of surveyed businesses are the best in their industry, but perhaps more steps need to be taken in terms of ensuring sustainability.

Practically speaking, if we have to summarize the prospects for sustainable development of industrial enterprises, we could ask ourselves a painful and extremely

relevant question - where is the state as a regulator? Here's an example - the price of refined oil and sunflowers moves up and down. Factors that have an impact - the market, Ukraine, instability, fear, panic……. Ukraine imports sunflower at a very low price compared to the price at which the farmer sells it in Bulgaria, where is the state....The price of oil reaches 6 BGN per bottle - where is the regulator, yes free market, market economy, but there must be a regulator in order to maintain sustainable development or at least to ensure normal rates of sustainable development of industries in Bulgaria.

CONCLUSION

Today, the global economy seeks to recreate a sustainable economy and life against the risk of global warming and climate change, which arise as a natural result of environmental destruction. In this context, "sustainable development" as a concept of meeting the needs of present generations without moving away from the focus of meeting the needs of future generations entered the world agenda towards the end of the 20th century and became a global implementation plan with the international agreements signed in the 1990s.

IV. REFERENCE ON THE SCIENTIFIC AND SCIENTIFIC-APPLIED CONTRIBUTIONS IN THE DISSERTATION

On the basis of the results achieved within the framework of the conducted research, four main contributing moments can be formulated:

1. As a result of an in-depth study of literary sources, the birth and institutionalization of the idea of sustainable development has been traced. The relationship between sustainable development and industrial enterprises is presented in detail**.**
2. A methodology for assessing the level of sustainability of industrial enterprises has been adapted
3. An own empirical study of the level of sustainability of enterprises from the vegetable-oil industry was carried out.
4. Conclusions and recommendations regarding improving the level of sustainability of enterprises from the vegetable-oil industry have been formulated. Guidelines for optimizing programs and initiatives for the sustainability of industrial enterprises are outlined

V . LIST OF PUBLICATIONS OF THE DOCTORAL STUDENT

A study

Panteleeva, Iskra, etc. Study of the attitude towards entrepreneurship and the attitude towards starting one's own business of the students of the "D. A. Tsenov" – Svishtov, UNSS – Sofia and IU – Varna / Iskra Panteleeva, Lyubcho Varamezov, Sergey Naydenov, Yordan Ivanov, Emil Nikolov, Yavor Stanev, Ivaylo Ivanov, Petya Biolcheva, Stefan Kalpachev, Ivaylo Kostov, Borislav Boev, **Ayten Sabri** , Carmen Vranchev, Boyan Vranchev, Denitsa Nikolova // Scientific research almanac. SA DA Tsenov - Svishtov, 2021, 29, pp. 48-81, ISSN: 1312-3815

An article

Sabri, Ayten. Indicators for measuring the sustainable development of industrial enterprises / Ayten Sabri /. Doctoral Research Annual Almanac. SA "D. A. Tsenov". Svishtov: AI Tsenov, item XIII, book. 16, pp. 488-497. ISSN 1313-654

Science reports

Sabri, Ayten. Models and indicators for economic sustainability / Ayten Sabri // Opportunities for business development - economic, managerial and social dimensions: International scientific and practical conference. Collection of reports - Svishtov, November 30, 2018. AI Tsenov, 2018, pp. 136-140, ISBN: 978-954-23-1734-0

Sabri, Ayten. Sustainable development of the Bulgarian industry / Ayten Sabri // The Economy of Bulgaria - 30 years after the beginning of the changes: Scientific and practical conference. Collection of reports - Svishtov, November 22, 2019. Svishtov, Tsenov Academic Publishing House, 2020, pp. 706-713, ISBN: 978-954-23-1815-6

Sabri, Ayten. (2021). Challenges to the sustainable development of industrial enterprises under the Cohesion Policy of the 21st century / Ayten Sabri // Sustainable development and socio-economic cohesion in the 21st century - trends and challenges: International scientific and practical conference. Collection of reports - Svishtov, November 8-9, 2021, Svishtov: AI Tsenov, vol. II, pp. 733-739, ISBN: 978-954-23-2069-2 (print), ISBN: 978-954- 23-2070-8 (online).

VI. REFERENCE FOR COMPLIANCE WITH THE NATIONAL REQUIREMENTS UNDER THE RULES FOR THE IMPLEMENTATION OF THE LAW ON THE DEVELOPMENT OF THE ACADEMIC STAFF IN THE REPUBLIC OF BULGARIA

National requirement in number of points: 30.00

Number of **studies** published in non-refereed peer-reviewed journals or published in edited collective volumes: **1 number**.

Number of points for the author: **15.00**

Number of **articles** published in non-refereed peer-reviewed journals or published in edited collective volumes: **1 number**.

Number of points for the author: **10.00**

Number of **reports**, published in non-refereed peer-reviewed journals or published in edited collective volumes: **3 number**.

Number of points for the author: **30.00**

Total points: 55.00 > 30.00

VII. DECLARATION OF ORIGINALITY AND AUTHENTICITY

by Ayten Bayram Sabri

In connection with the procedure for obtaining the educational and scientific degree "doctor" in the doctoral program "Economics and management (industry)", I declare that:

1. The results and contributions in the dissertation work on the topic "Sustainable development of industrial enterprises" are original and are not borrowed from research and publications in which the author is involved.
2. The information presented by the author in the form of copies of documents and publications, personally compiled references, etc. corresponds to objective truth.
3. The results obtained, described and/or published by other authors are properly and in detail described and cited in the bibliography.

Svishto Declarant: ……...

/Ayten Sabri/