Analysis of national strategies for sustainable development with regard to fundamental conceptual premise

T Gubaidullina, N Ivanova, S Absalyamova and T Yerina
Kazan Federal (Volga region) University, Institute of Management, Economics and Finance, 18 Kremlyovskaya street, Kazan 420008 Russia

E-mail: s.absalyamova@yandex.ru

Abstract. The problem of interaction between the economy and the environment gains special significance every year. At present, anthropogenic impact of industrial production on the environment has exceeded the sustainability limits of natural systems. Further conventional development of the economy is confronted with the limitations of the self-restoration potential of ecosystems: the non-renewable character of productive resources and the limited character of the environment to take production waste.

The purpose of the paper is to identify the main directions for the implementation of national policies of sustainable development with account of the fundamental conceptual premise. The paper outlines the main principles, policies and scenarios for sustainable development and presents new components of environmental policy. The authors consider national strategies for sustainable development of the United States, China, Russia, the EU countries and pay special attention to the strategy adopted in the Netherlands. The paper determines the specific strategies features reflecting the interests of these countries’ population and the role of national economies in world economic relations.

The paper explores the possibilities of the SDG Index for the identification, assessment and comparative analysis of countries' actions to achieve the goals of sustainable development. Based on the results of the Sustainable Development Index for 2017, the authors carry out a cross-country analysis of the sustainability strategies of countries from the perspective of achieving sustainable development goals (SDG). It helps to identify the problems of using the index to track progress towards the SDG. Moreover, the article underlines the strengths and weaknesses of national sustainable development strategies of different countries, including Russia.

It is shown that Russia has achieved high positions in eradicating poverty, with a significant lag behind other goals of sustainable development, especially such as the elimination of inequality, the provision of a healthy lifestyle, access to justice and the creation of effective institutions. Finally, the paper indicates the main directions of sustainable development in Russia.

Keywords: sustainable development, national strategies, environmental policy, recycling, environmental space.

1. Introduction
The United Nations Conference on Environment and Development (UNCED) in Rio de Janeiro (June 1992) clarified that the Sustainable Development Concept was the only that could unite all the

To whom any correspondence should be addressed
UNCED member countries. This concept was accepted as the basis of Agenda 21, the main document of the Conference [1].

Chapter 8 of Agenda 21 states: “Each country ... should adopt a national strategy for sustainable development based, inter alia, on the implementation of the decisions of the United Nations Conference on Environment and Development (UNCED), especially on the provisions of Agenda 21.

This strategy is recommended to be built on the basis of various sectoral types of policies implemented in the country - in the economy, social sphere and the environment - and to harmonize them”.

The goal of the national strategies should be socially responsible economic development with an indispensable protection of the resource base and the environment taking into account the interests and well-being of future generations.

Strategies should be worked out with the broad involvement of various segments of the population, including government authorities, the business and the public [2]. They should be based on the assessment of the current situation and existing initiatives. At the same time, the data of the ministries for finance, ecology, health, transport, energy, etc. should be addressed and consolidated [3].

More than 100 countries have adopted sustainable development programs. Many countries established their national Committees (or Commissions) on sustainable development: the USA, France, Norway, Sweden, CIS countries - Ukraine, Belarus, and Georgia. They perform various functions - from elaborating a sustainable development policy and monitoring its implementation to performing the consulting role: the collection and dissemination of information, organization of forums, public discussions and round tables, and the preparation of reports to the Government.

2. The main part
In 2017, the UN Sustainable Development Solutions Network (SDSN) and Bertelsmann Stiftung published a report containing information on 157 countries around the world on global progress in sustainable development - SDG Index and Dashboards Report 2017 [4].

The SDG Index is an unofficial indicator for assessing the actions of countries to achieve the Sustainable Development Goals (SDGs) adopted in 2015 by UN member countries within the framework of the Sustainable Development Agenda until 2030. The use of the index makes it possible to compare the efforts of countries in the area of progress in achieving the SDGs, identify priorities and identify the main problems of each country on the path to sustainable development.

The 2017 index includes 99 indicators (economic, social, environmental and other indicators) grouped by SDGs. Key indicators include: number of poor, death rate, life expectancy at birth, grain yield, indicator of well-being, literacy level and many others.

The values of the indicators are calculated from the worst to the best on an average of 17 goals and are added to the final score of 1 to 100 points. The general calculation of the index is made by the following formula:

\[
I_i (N_i,N_{ij},I_{ijk}) = \sum_{j=1}^{N_i} \sum_{k=1}^{N_{ij}} \frac{1}{N_i} \frac{1}{N_{ij}} I_{ijk} \tag{1}
\]

Where \(I_i\) is the index score for country \(i\), \(N_i\) the number of SDGs for which the country has data, \(N_{ij}\) the number of indicators for SDG \(j\) for which country \(i\) has data, and \(I_{ijk}\) denotes the score of indicator \(k\) under SDG \(j\) for country \(i\).

In 2017, the top ten leaders included countries such as Sweden, Denmark, Finland, with index values ranging from 80 to 85 points out of 100 (Table 1). Russia is in the middle of the ranking, taking 62nd place, which corresponds to 68.9 percent of the SDGs achievement.
Table 1. Leader countries in SDG Index 2017 [4].

| Rank | Country          | SDG Index |
|------|------------------|-----------|
| 1    | Sweden           | 85.6      |
| 2    | Denmark          | 84.2      |
| 3    | Finland          | 84.0      |
| 4    | Norway           | 83.9      |
| 5    | Czech Republic   | 81.9      |
| 6    | Germany          | 81.7      |
| 7    | Austria          | 81.4      |
| 8    | Switzerland      | 81.2      |
| 9    | Slovenia         | 80.5      |
| 10   | France           | 80.3      |

The US is 42nd, China at 71, and at the end of the ranking at 156 and 157 places are Chad and the Central African Republic (Figure 1).

Figure 1. SDG Index of selected countries 2017

The first report on the SDG Index was published in 2016, where Russia ranked 47 out of 149 countries. However, the authors noted that the new rating is not comparable with the rating of 2016. In the rating of 2017, the number of indicators increased from 77 to 99, and the methodology was
improved. In particular, an attempt was made to measure and take into account the international effects of spillovers. The report considers three types of such effects: environmental spillovers; related to economics, finances, public administration; related to safety. The effects of spillovers have mainly influenced the ratings of rich countries, as they tend to generate side effects, compared with lower income countries.

In addition to the index values, the report includes country progress tables for each SDG. The level of progress for each goal in the report differs by four colors - green (the goal is achieved), yellow, orange and red. The closer to red - the more to be done to achieve the goal. The use of color indicators makes it possible to clearly present the priorities of the SDGs for each of the countries.

Russia experiences the most difficulties (red color) in achieving SDG3 (good health and well-being), SDG10 (elimination of inequality) and SDG16 (peace, justice and effective institutions).

The most sustainable is the development of Sweden, whose indicators for the seven SDGs are in the green area. However, Sweden also faces difficulties in reaching several SDGs, the largest of them being responsible consumption and production (SDG12), climate change (SDG 13) and conservation of ecosystems (SDG 15).

The United States has not achieved any of the 17 goals. There are difficulties in achieving SDG 12, 13, 15, SDG 17 (partnership for sustainable development), SDG5 (gender inequality), SDG 10 (income inequality) and SDG 16 (world and effective institutions).

Note that there are difficulties in the comparability of SDG Index, since the methodology of its calculation has not yet been worked through to the end, there remain significant gaps in the data. Thus, for some countries there is no information, the composition of indicators has not yet been approved. Nevertheless, the work to improve the index should continue, as it can become one of the main tools for measuring the results of sustainable development.

Towards a sustainable development of the planet it is obligatory for all to observe several general principles:
- stabilization of population growth;
- guaranteed provision of the population with food;
- preservation of diversity of species;
- guaranteed energy supply.

To implement these basic principles, the United Nations proposes three fundamental strategies for sustainable development: a strategy of modesty and unpretentiousness, a strategy of efficiency and effectiveness, a strategy of consistency and coherence [4].

The strategy of modesty and unpretentiousness requires a revision of the notion of welfare that is not measured by income and expenditure, but by qualitative characteristics such as self-sufficiency, solidarity, collectivity, and thus leads to self-restraint and to renunciation of material wealth and welfare.

The strategy of efficiency and effectiveness focuses on increasing the ratio between input and output, that is, to improve the efficiency of resource use. With the help of new technologies and equipment, the solution of the tasks is becoming more effective, which affects the saving of natural resources and the preservation of the environment.

The strategy of consistency and coherence recommends introducing closed cycles of economic activity with the recycling of waste generated on the analogy with processes occurring in nature. All material flows must be closed into production systems, isolated from the biosphere, circulating systems and only in small volumes be thrown out into the global flows of the natural cycle, without causing any negative impacts on them.

There are three options for sustainable development:
1) inertial, or developing “as usual” when the destruction of the environment continues, albeit slowly;
2) ultra-totalitarian which is fraught with a continuous struggle for resources, wars and tough policies with respect to both own population and the “third world”;
3) transformational that provides for a breakthrough to a new worldview and a new value
paradigm based on global collective action. An education strategy for sustainable development has been launched. It involves the transition to a learning model founding on broad interdisciplinary knowledge that stands on an integrated approach to the development of society, the economy and the environment [5].

In reality, there are two fundamentally different scenarios for sustainable development: the EU-US doctrine of sustainable development presupposes the realization of the idea of a monopolar world, with a clear ranking of each country’s role. At the same time, humanity is divided into developed high-tech countries of the “golden billion” (which are in the minority), and all other lagging countries (including Russia) that are feeding and enriching this “golden billion”. The countries of the “golden billion” support and assist other countries for the sustainable development of the Planet.

National strategies for sustainable development have different emphases.

In the UK it is the preservation of the natural environment. In Canada - the basic human needs. In France - a list of different priority topics (for example, in 1995 it was the development of indicators for sustainable cities and environmental problems of cities).

New approaches in environmental policy assume the following components:
- strategic assessment of the environment (where the main emphasis made on identifying the cumulative effects of economic activity and the environmental impact of government plans and decisions in various areas of socio-economic development);
- indicators of sustainable development;
- ecologically oriented management systems for enterprises and companies (for example, the International Organization for Standardization has completed the series of such standards - ISO 14000);
- integrated control by enterprises for pollution of the environment (including the working out of relevant legislation) and for output throughout the production cycle to the stage of waste;
- development of pollutant release and transfer registry;
- extension of “trade” with permits for unproduced emissions into the atmosphere and water;
- issue of securities related to environmentally acceptable activities;
- conclusion of voluntary agreements between industrial companies or associations and the government on the assumption of voluntary environmental obligations, without waiting for the adoption of decisions or legislative acts; - joint execution of environmental events by countries at different level of development (for example, through investments from “financial donor” countries);
- introduction of integrated environmental and economic accounting based on the system of national accounts approved by the UN, etc. [5].

National strategies for sustainable development have specific features that reflect the interests and needs of these countries’ population as well as the role of national economies in world economic relations.

In particular, the sustainable development strategy adopted in the United States identifies such areas as health and environment, economic prosperity, social justice, conservation of nature, sustainable management, sustainable social environment, civic engagement, population, international responsibility, education. [6]

At the heart of the US sustainable development strategy is the close relationship between environmental, economic and social equity issues, the understanding that some indicators such as employment, productivity, wages, capital and savings, profits, information, knowledge and education should grow, while pollution, waste and poverty should decline.

Among the priorities for the US Sustainable Development Council, eight topics were chosen including eco-efficiency of business, sustainable agriculture, energy, transport.

Sustainable development in the United States is considered as consisting of 3 specific components:
- ecological integrity,
- eco-efficiency of economic activity
- the fairness of the three institutional components - the state, business and society.
Priorities of the US strategy include:

First, ensuring economic growth as the basis for the prosperity of the American nation and maintaining economic, social and environmental conditions for improving the quality of life for Americans

Secondly, strengthening the US position in the world economy and increasing the competitiveness of American goods and services

Third, retaining the leading positions in managing the processes, elaboration and implementation of sustainable development policies, standards of behavior, trade and foreign policy, state responsibility to the world community

Fourth, the rationale for using the double standard in the international relations associated with the transition to sustainable development [7].

The American strategy of sustainable development, in our opinion, has a number of contradictions. The fact is that economic growth is associated with the consumption of resource and environmental capital. And the US and other industrialized countries have gone beyond the limits of their resources and consume global economic capacity. Mankind has exhausted this capacity and faces the ecological catastrophe, which can only be prevented if it returns to the level of permissible anthropogenic loads on the biosphere. The United States hopes to shift the burden of reducing this load to developing countries. The concept does not contain any US commitments to the world community, but there are indications of other countries’ obligations to control demographic processes, the level of environment pollution and the adoption of measures to conserve the global natural environment.

The USA is the biggest polluter of nature on Earth (25-27%), but they do not want to reduce the anthropogenic load to the average level of countries and pay to the underdeveloped countries for environment pollution.

The positive stand of the US for their own nation is in isolation from the international situation, in defending their interests, mobilizing human capital and natural resources of developing countries to ensure the sustainable development of American society [15]. This is evidenced by the key thesis of the US sustainable development concept: “A country that protects its ecosystems and intelligently manages its natural resources, lays a more solid foundation for future prosperity than the one that carelessly squanders “its heritage and destroys natural capital”.

European countries occupy high positions in the world on consumption of global resources and pollution of the environment.

However, there are significant differences among the EU countries. Concerning the level of environmental pollution, European countries are divided as follows. A high level of pollution is typical for countries such as Denmark, Estonia, Ireland, Greece, Spain, the Czech Republic. Lithuania, Slovenia, Romania, Latvia and Bulgaria have a low level. [8]

The main provisions of a common European policy in the field of sustainable development were elaborated in the 1970s, and were further developed, in particular in the EU Treaty (2007), in the EU Environmental Program “Strategy for Sustainability”.

The EU Treaty (2007) states: “The European Union creates an internal market. It tries to ensure the sustainable development of Europe on the basis of balanced economic growth and price stability, the existence of a highly competitive social market economy striving for full employment and social progress as well as a high level of protection and improvement of the quality of the environment. It promotes scientific and technical progress”. [9]

The objectives of sustainable development in the EU include:

1. Climate change and introduction of clean energy sources (reduction of greenhouse gas emissions, energy saving, increase in the share of renewable energy sources).

2. Sustainable transport system (creation of economical vehicles with low CO2 emissions, reducing the load on the environment).

3. Sustainable consumption and production (the unity of environmental standards across all EU countries, the creation of environmentally friendly products and services, the support of environmental
innovation).

4. Protection of natural resources (integrated protection of the environment).
5. Public health (improvement of living conditions of the population, clean air, food, water).
6. International cooperation and development (support of the developing countries in their efforts for sustainable development).
7. Social integration, demography and migration (improving the quality of life of all segments of the population). [10]

The sustainable development strategy adopted by the EU countries is the basis for the elaboration of national sustainability strategies in each EU country.

The overall EU sustainability strategy has more advisory character for countries than binding one.

Each EU country has its own national strategies, its programs. Of particular interest, in our opinion, is the Netherlands Sustainable Development Strategy, adopted in 1992 under the name “Action Plan for Sustainable Netherlands”.

The concept is based on the assertion that global sustainable development is achievable only if all countries use proportional quantities of natural resources, which should lead to a very significant reduction in the consumption of natural resources by rich countries.

Here, the principle of equality of environmental space is used (“Environmental space” means the establishment of the maximum norms of global pollution, the consumption of world reserves of non-renewable resources, the world’s agricultural lands and forests). This establishes a “forbidden line” which the living generation does not have the right to cross under any circumstances.

To do this, it is necessary to determine the permissible consumption rates and depending on it to outline the strategy of economic development for each state of the planet. A planetary standard determines that starting from a certain year each state should build its economy and way of life in such a way as to fit into the corresponding quotas common to the whole planet.

For the whole main list of natural resources and pollution of the environment, the amount of per capita resource that the country has the right to spend for the first time is determined.

If this standard is exceeded, the technology of resource consumption or waste disposal should be changed. And if the country is not able to create or use the necessary technology, it will have to reduce consumption volumes [11].

China’s sustainable development strategy also has its own specifics. In July 2003, Program of Action for Sustainable Development in China in the Early 21st Century was launched, in line with the spirit of the World Summit on Sustainable Development in Johannesburg (2002).

The main goals of sustainable development in China are economic restructuring, effective control over the demographic situation and improvement of the environment.

At the 18th All-China Congress of the CPC (November 8, 2012), the integrated task to build an “ecological civilization” and “beautiful China” was formulated as an integral part of the further economic, cultural and social sustainable development of the Chinese nation.

The section “Green Development” in the 12th Five-Year Plan of China (2011-2015) demonstrates the country’s desire to move towards a greener economy and defines strategic directions:
- changing of the climate,
- saving resources and managing them,
- circulation in the economy,
- environmental protection and restoration of ecosystems,
- protection of water resources,
- prevention of natural disasters.

In recent decades, China demonstrates such a strong commitment to sustainable development principles and their implementation in practice that many experts speak about the “green revolution in this country” and the transformation of the PRC into a global “green” leader.

Presidential Decree No. 440 of April 1, 1996 approved the Concept of the Russian Federation’s Transition to Sustainable Development.
The State Duma organized the Commission on Sustainable Development and elaborated recommendations “On the Formation of a Strategy for Sustainable Development of Russia”.

The main tasks are:
- to ensure the stabilization of the environmental situation during the country’s exit from the current crisis;
- to achieve a radical improvement of the environment through the ecologization of economic activity within the framework of institutional and structural reforms that allow to establish a new management model and the widespread use of environmentally oriented management methods;
- to introduce economic activity within the limits of ecosystem capacity based on mass introduction of energy and resource-saving technologies, targeted changes in the structure of the economy, the structure of personal and public consumption [12].

Among the directions to implement the Russian strategy for sustainable development, it is worth mentioning [13]: creating a legal framework for the transition to sustainable development, including the improvement of existing legislation that determines, in particular, economic mechanisms that regulate the use of natural resources and protect the environment; the development of a system to stimulate economic activity and establish limits of responsibility for its environmental results in which the biosphere is perceived not only as a provider of resources but as the foundation of life whose preservation must be an indispensable condition for the functioning of the socio-economic system and its individual elements; assessment of the economic capacity of local and regional ecosystems of the country, the definition of permissible anthropogenic impact on them; the formation of an effective system to promote the ideas of sustainable development and the creation of an appropriate system of education and training.

Conclusion.

Based on the results of the Sustainable Development Index for 2017, it is shown that each country faces difficulties in achieving certain SDGs. For example, Russia and China have difficulties in maintaining health and well-being, lagging behind in providing access to basic infrastructure and effective institutions, in the development of renewable energy, responsible consumption and production, have difficulties in achieving other goals. These areas should first of all be taken into account when developing national strategies for sustainable development.

Strategies for SDGs of developed countries are built taking into account more specific problems, such as mitigating the effects of climate change, inequality, supporting global partnership. Since the actions of rich countries can have a significant impact on the ability of other countries to reach the SDGs, they must include plans in their sustainable development strategies to combat negative side effects. Each country should be aware of the importance of global responsibility in achieving the SDGs.

Fundamental strategies that define the conceptual basis for sustainable development are the strategies of modesty and unpretentiousness; efficiency and effectiveness; consistency and coherence.

Adopting a strategy of modesty and unpretentiousness requires revising the notion of wealth, shifting emphasis from quantitative characteristics of income and expenditure towards qualitative ones, such as self-sufficiency, solidarity and collectivity.

The implementation of the remaining strategies will allow to increase the efficiency of the use of natural resources through the new technologies and equipment, to improve the environmental performance of economic activities by reducing the volume of generated waste and emissions of harmful substances, and the environmentally sound management of residual waste.

We have identified several options for the concept of sustainable development, but it is shown that two are realized in practice. One of them, based on the idea of a monopolar of the world, is the most unfavorable for Russia, since there it plays the role of a country that serves the highly developed countries of the “golden billion”. The most favorable option for sustainable development is the transformation scenario which provides for a transition to a new value paradigm based on global collective action.
Our analysis of the national sustainable development strategies of different countries has made it possible to identify their specific features and contradictions. It is shown that the US, as the main pollutant of nature on the planet, strives to shift the burden of costs associated with environmental pollution to the shoulders of underdeveloped countries.

In this regard, the Netherlands’ sustainable development strategy that is based on the provision on the attainability of global sustainable development, is particularly important only if all countries use a proportionate amount of natural resources. We believe that the principle of equality of the environmental space applied here should be adopted by all countries implementing the concept of sustainable development.

The foreign experience of formation of sustainable development strategies examined in the paper enabled to identify the main directions for the implementation of the Russian strategy. Among them, the most important are improving the mechanisms of environmental and economic incentives for economic entities, establishing limits of responsibility for the environmental performance of economic activities.

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