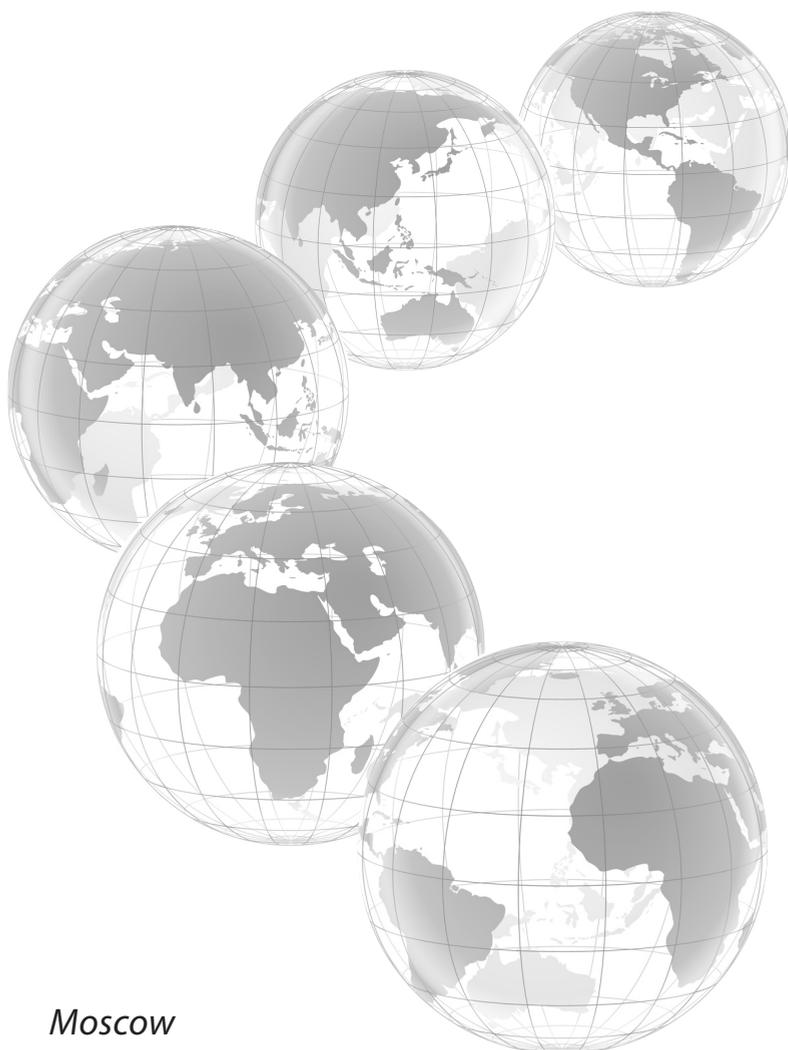


INTERNATIONAL SCIENTIFIC-PRACTICAL JOURNAL

PARTNERSHIP OF CIVILIZATIONS

N° 3/2012



Moscow

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Office 4, bld. 1, 6/1, Sretensky
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© P. Sorokin — N. Kondratieff
International Institute
T. 1, № 3(3)
Frequency of appearance —
4 times a year.
Number of copies 1,000
Free price

THE PUBLISHERS

- Pitirim Sorokin-Nikolai Kondratieff International Institute;
- Institute for Economic Strategies;
- MGIMO-University Center for Partnership of Civilizations;
- Center for Civilization Studies of the Institute of Europe RAS;
- International Futures Studies Academy;
- Lebanese-Russian House;
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Stability in Unstable Times

When they claim that the world has become complex, they are unconsciously cunning.

It has become harder to understand — it is true. It has become different — it is true. It has become more unpredictable — it is true.

The world certainly seemed simpler, until it was discovered radioactivity, the law of the strangeness, the genes or gluons. Until I. Prigogine has proved the need for several different languages and logics for the description of this world.

The world has become different not only because it became known the new secrets of its order, including that one that leaves us in a terribly pinned intellectually condition, after a couple of centuries of the triumph of science over religion and common sense. The mystery of “dark matter” the share of which indicates the insignificance of our self-wising ignorance. All that we, all humanity, all its Nobel Prize winners and genius know is close to 3–5%, and everyone understands that it is hardly that this percentage has been counted correctly by anyone. Metaphor.

The world has become unpredictable at least because the understanding of its nonlinearity has developed. Far from inhibiting

impulses to do something epochal because of the daring human nature that wants to “come to the core of the matter.” But at least now conservatism is more powerful than any revolutionism no matter how it is termed at the debates and rallies. It has become more caution in handling the complex technical and social systems too. Indeed, might it “go off with a bang” suddenly?

It is more accurate the assertion that in the social processes nonlinear interactions of different strength have come to replace the predominantly linear functional interactions, that attractors — strange, multiple, flickering have come to replace the relatively stable attractors of social action and which appear and disappear randomly and under the influence of small and often non-core factors for specific systems.

These entities also acted in the past, all history of the world is full with them. But it was the luxury of fairly long historical periods before. Today, we seem the witnesses of the incredible fireworks of new entities and new dynamics of their manifestation.

The almost universal desire for “sustainable development” expresses with each new decade this concept, more and more shades of meaning. For some, this is a philosophical gaze on the topic “forward, in spite of any obstacles.”

For others it is an orderly approach to the global new order.

For third it is a platform for consensus on the subjects of ecological collapse and unfairness of the current economic system.

In any case, this is one of the most powerful political-economic and social-environmental concepts of the modern

world: softly driven development without catastrophes.

Initially, this approach withstood the doctrines of social revolutions and developed the ideas of “Limits to Growth,” Meadows. To date, there is both inertia of conservative mindset and convergent, behind it.

But the two forces are undermining this approach, conceptually and demographically.

First, the development requires innovation. But innovations imply also unstable states bringing to the leading edge level. With risks. With shocks. With a clear interruption of gradualism and stability. With a fundamental unpredictability. With the “black swan” behind the figure of serious innovations. Moreover, future innovations will turn over the current framework of the global existence: how to use computers and the role of money in society. This subject, among other things, is dealt with by the famous Nobel laureate and a prototype one of the heroes of Hollywood’s “A Beautiful Mind” John Nash. Only this fact alone demonstrates the seriousness of the innovative prospects. But the main thing is that the flow of innovations, gaining speed and scope, will present surprises and provokes serious changes in coming years. In this sense, we must prepare for a stably growing unpredictability and instability of development by all the grounds and dislocations.

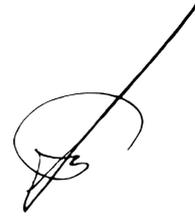
Second, the change of generations. The majority of adult Internet users cannot even see all its features. Young people almost from infancy master them easily. And one of the most fundamental and innovative changes in the human-hill is associated with the formation of “cloud” communities and sets of knowledge. They

are not restricted by national boundaries and are rapidly growing as the global population. Such technological platform and the environment of communication and designing emerging on its basis is becoming a powerful geological force, in full accordance with the foresight of V.I.Vernadsky. Its creativity potential is limitless, indeed. In the alliance with the “users”, “accounts” of individuals, business activity also begins to be built. It is exactly its latest trend — crowdsourcing, collective intelligence of development.

All these forces are essentially dynamic, like a tornado, a generator of which while understandable for a few professionals, is still out of control. And this social creative element of today, thanks to technological

advances has broken forth to absolutely real and not just virtual spaces.

The conclusion? It is time to change the concepts of development. Or at least, clarify and refine the interpretations.



A.I.Ageev, Editor-in-Chief For
“The Partnership of Civilizations”
Journal, Professor, RANS Academician

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*Message from Ms Irina Bokova,
Director-General of UNESCO*

***on the occasion of 5th Civilization
Forum «Long-term Strategy of Dialogue
and Partnership of Civilizations in
Science, Education and Culture»***

UNESCO, 12 April 2012

It is a pleasure to welcome all participants to the *5th International Forum of Civilizations*, gathered in Paris to discuss the report of the international team of scientists for the *United Nations Conference on Sustainable Development*— to be held in Rio this June.

At this time of rapid change, we need a new approach to sustainable development that is just and inclusive and that reaches all countries and societies. These issues are vitally important for overcoming the current global crises and for making the most of the great cultural diversity and intellectual potential of humanity. These are the stakes of Rio+20 and the objective of a new humanism for the century ahead.

UNESCO welcomes such initiatives of scientists and I wish to underline in this context the importance of the *International Scientific Journal, Partnership of Civilizations, the creation of the Open Internet University of Dialogue and Partnership of Civilizations*, as well as the development of the programme on “Arctic Energy.”

I wish all participants to the Forum fruitful discussions and productive work ahead.

Irina Bokova

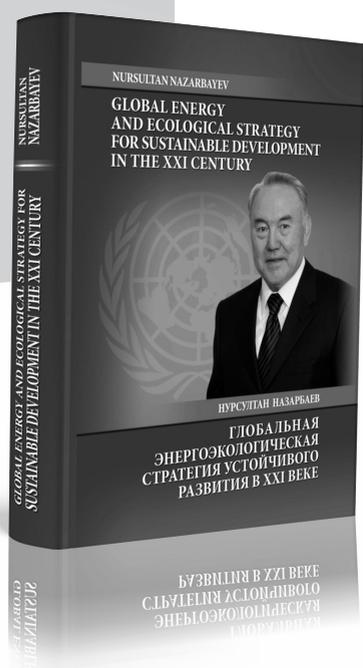


Issues of Sustainable
Development
and Partnership
of Civilizations



Nursultan Nazarbayev

Global Energy and Ecological Strategy for Sustainable Development in the XXI century



Nursultan A. Nazarbayev,
President of the Republic
of Kazakhstan

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Preface

In this book, the President of the Republic of Kazakhstan Nursultan Nazarbayev offers his readers an ecology-based energy strategy in the face of one of the most stringent problems of the modern world.

During a session of the United Nations General Assembly which took place on 25 September 2007, Mr. Nazarbayev first suggested the development of an ecological energy strategy. The issue is to be further discussed at the UN Conference on Sustainable Development in Rio de Janeiro, known as Rio+20, in 2012. In the process, scientists from the Russian Federation, Kazakhstan and other countries have conducted comprehensive studies and analyses of global trends and dynamics in energy consumption, and developed scientific foundations for an ecological energy strategy in the XXIst Century. Assessed and analyzed were methods of putting economic and technological constraints in balance with ecological and energy-related requirements.

Results of such scientific studies were discussed and adopted by the Civilization Forums in Moscow in 2007, in Astana in 2008, in Almaty in 2009, in Shanghai at the Expo-2010 and at the IIIrd Astana Economic Forum in 2010. Both at Rio+20 during a panel session on “The Formation of a Global Ecological Energy Strategy” and at the IVth Astana Economic Forum in 2011, President Nazarbayev presented his expertise and his view on the issue under the title “Global Ecological Energy for Sustainable Development in the XXIth Century” as a contribution to a collective strategy outline.

World-scale experience in addressing this problem as built up in Stockholm

(1972), Rio de Janeiro (1992), Johannesburg (2002), Copenhagen (2009) and Cancun (2010), has demonstrated its heavy intertwinement with the economy. Given this, it can be observed that addressing the problem through an ecological energy strategy can only be done effectively through the adoption of a new model of the world economy.

Recent crises including the latest global financial and economic crunch imposing longer-term consequences on economic development have come to many as a surprise. According to Paul Krugman, who received a Nobel Prize in economics in 2008, only a limited number of economists have been able to predict the current global economic setback's take-off in a timely manner. And even less people have had the insight to look at the fundamentals of the current global financial framework's deficiency. As things stand today, only a handful of experts have turned out to be able to give a clear assessment of the current state of affairs and suggest a clear-cut package of reforms within the world economic order to get out of the spiral.

The President of Kazakhstan has been the first statesman in the world to take the liberty to present a serene display to the world of the basic injustice incorporated in the global financial order. Moreover, he has stressed the need for "the audacity of responsibility" in persistent and consistent calls for fundamental reforms in the world's economic and financial conglomerate.

There can be no doubt that this initiative is poised to stand out in the history of world economic thought, since it makes one of the most stringent problems in modern civilization clear for all to see. It looks safe to assume that it already serves,

and is bound to serve further in time, as the basis for fundamental reforms in the world economic order that allow the development of a more humane and more democratic model for a fair division of wealth among the world population. Bearing this goal in mind, Mr. Nazarbayev has exposed the systematic discrepancy in the present world economic order. He concludes that in attempts to overcome the world crisis, people tend to turn to measures to fight the symptoms without looking into what caused the disease to begin with. Most of the views in vogue concerning the crisis tend to characterize various aspects of it without, however, touching upon the essentials of the basic economic mechanisms, the way they are upheld and ways in which they could be adjusted to modern-day economic demands and conditions.

Against the background of increasing interest in the topic of economic and financial reforms in the world, Mr. Nazarbayev formulates a number of fresh suggestions regarding such reforms. In his quality as President of the Republic of Kazakhstan at the summit of the Organization for Security and Cooperation in Europe (OSCE) held in Astana in December 2010, Mr. Nazarbayev outlined his thoughts on preliminary conditions for a systematic approach to the current social and economic problems in the world. In his words, "We have met here in Astana for the sake of triumph of common sense, to make our minds up to head for a joint campaign to secure a safe future for our nations. We chose this path three-and-a-half years back in time with the Helsinki resolution under the banner of a common European homeland stretching from the Atlantic to the Ural. With the establish-

ment of the OSCE, the area has been extended and now stretches from Vancouver to Vladivostok. In Astana, the formation of Euro-Atlantic and Eurasian unity under common conditions of safety and security has taken off. Given the variety of views on the collapse of the global financial framework, people in the world are now starting to grasp the notion of the need for immediate and timely measures to bring cardinal changes into the structure of the world economy in order to sustain the world community. Simultaneously, economic pragmatism should become a cornerstone of common security into the XXIst Century.

The Republic of Kazakhstan is in the process of proactive integration into the global economic and political conglomerate. In the course of this, it not only sets ambitious tasks for its national development but also takes efforts to offer the world keys to the crisis, thereby taking up responsibilities in regard to how the world will look within the next five, ten, twenty years to come. The overall political, intellectual and practical interest of this looks obvious. Mr. Nazarbayev's recent speeches at world forums and the core of his publications bear the character of a programme aimed at shaping a democratic future.

While speaking at the St-Petersburg Economic Forum on 18 June 2011, the President of Kazakhstan suggested the establishment of a World Energy Organization under the authority of the United Nations, in charge of the procurement and distribution of all kinds of energy provisions around the world, along with carrying out scientific research in this domain. Such an organization could monitor and regulate all aspects of energy security in the world, including nuclear energy.

Nursultan Nazarbayev has summarized the results of research carried out with the aim to form a scientific basis for the development of an ecological energy strategy for the period up to 2050 and beyond. In the analysis of the current situation and today's trends, the necessary parameters have been defined regarding the compatibility of economic development and energy sufficiency. This monograph indicates manners in which a coordinated use of conventional and renewable energy resources with the help of up-to-date technologies could be realized. This should allow ecologically safe energy supplies to satisfy mankind's social and economic needs, and thereby secure economic development around the world. In the scientific domain, this work presents a coherent scenario that takes ecological and social constraints into account and paves the way for a lasting approach to current ecological and economic problems, based on which an ecological energy strategy could be effectively implemented and maintained.

O.L. Kuznetsov — President of the Russian Academy of Natural Sciences

N.A. Abykayev — President of the Kazakhstan National Academy of Natural Sciences

A.T. Spitsyn — Director of the Institute for Strategic Studies of EurAsEC Integration Problems

Introduction

This book is dedicated to the global search for solutions of problems related to energy supplies within a context of ecological constraints, in an overall atmosphere of modern-time globalization.

The world is currently undergoing a transformation the complexity of which has only become clear of late. A post-industrial information community has appeared on the scene, the activity of which consists of knowledge and expertise. The notion that the availability of non-renewable energy resources is limited and its end is on the horizon has become generally accepted. The awareness of the need to address environmental and climatic changes on the planet and their impact on living conditions has become widespread alongside.

The conventional purely market-oriented approach to the process of globalization has made place for comprehension of its economic, social and communal impacts on the world [1-3]. In addition, a broader comprehension of the process has opened people's eyes in regard to the way it personally affects nations' and individuals' ways of life. To my conviction, the development of particular countries should be studied within the context of the development of mankind as a whole [11-3]. As said, events in the last couple of years have already corrected many people's "romantic" view in respect to markets. Today, the pendulum of public opinion is moving in the opposite direction of state planning and public-private partnership. Labour as a key market driving force will continue to dictate fundamentals on the market. Constraining expenses will continue to be the key to successful enterprise.

One can safely assume that any country that consists of an open society with free access to scientific and technical progress in the world has the capacity to transform itself in such a way that it can join the ranks of developed countries in the world

in a foreseeable future. For this reason, the UN has been able to adopt the development of the globalization model while taking the national interests of each of its member states into account to maximum extents. I have supported this approach for many years and in this book I would like to demonstrate how well it is poised to work out in practice.

At the same time, I am convinced that no global models can be imposed without national and/or regional initiatives. On condition of a proactive attitude and under the wings of a global overall strategy, each country has to be able to determine priorities regarding its development in a transparent and responsible manner in response to any eventual negative impact from globalization on its community. As commonly known, in the order of one-third of the world's population is faced with the threat of sheer starvation, while yet another half of it has trouble making ends meet. All these people, in a narrowing world, live virtually next door. This comes down to a situation in which 20 per cent of the people living on earth consume the resources of the remaining 80 per cent.

In my address to the St.-Petersburg International Economic Forum on June 18, 2011, I suggested the establishment of a World Energy Organization in charge of the procurement and distribution of all kinds of energy provisions around the world, along with carrying out scientific research in this domain. Such an organization could monitor and regulate all aspects of energy security in the world, including nuclear energy.

Today, the world is facing new challenges in terms of global energy security. Developed countries with a population

of one billion altogether consume almost twice the amount of energy used by the rest of the world. It can be expected that the struggle for mineral resources will aggravate in the near future, with all its negative consequences for the political situation in the world. The International Energy Agency secures the status quo in defense of the interests of those countries that depend on imports for their energy provisions at the expense of a redistribution of energy resources on a global level. On top of that, there is no coordination of research and expertise build-up in the domain of alternative energy resources. But only by adopting a joint approach resulting in a balanced and rational use of energy resources of all kinds, the world community can eventually create the necessary conditions for a safe environment.

This book is aimed at demonstrating that a new organization in charge of energy provisions under ecologically safe conditions could significantly correct existing disproportions within the tripod consisting of economic, energy-resource-related and ecological constraints. In addition, Kazakhstan and other EurAsEc countries could well take the lead in demonstrating the feasibility of such a scenario.

In my address to the UN General Assembly on 25 September 2007, I proposed the development and implementation of a global ecology-based energy strategy under the United Nations.

Such a strategy consists of a number of related measures to solve the most stringent momentary frictions of geo-economic and geopolitical character in the supplies of resources to countries and civilizations in the world, along with longer-term climatic sustainability around the globe.

In my previous book “Strategy for a radical innovation of the global community and partnership of civilizations”, I have given a number of concepts and suggestions on the elaboration of structural measures aimed at a drastic change in the innovation process within the global community in relation to the development of an ecological energy strategy.

In this work, the next step is taken by laying the scientific groundwork for a solid action programme to secure the world community with sustainable energy provisions into the XXIst Century. This step consists of the formulation of the main principles to start from and the main methodology to follow in the build-up of a balance between economic, energy-related and ecological imperatives. This “tripod” should be accompanied by a significant correction in the current inequality in terms of social and economic development between different countries in the form of a more coordinated and integrated global economic development.

The concept of such a roadmap has been made possible by the implementation of a programme, initiated by Kazakhstan, of combined studies by Kazakh and Russian scientists. These studies [4-7] have enabled them to comprehend the nature of Nikolay Kondratiev’s world economic cycles [8], to develop Nikita Moiseyev’s theory of ecological and economic manageability [9] by applying this theory to open socio-natural mechanisms. As a result, it has been possible to conceive action to be taken to respond to subsequent change in patterns of energy resources’ availability and their use in the course of times to come.

Over the last few years, significant progress has been made by leaders of the

world community to appreciate the need for integrated methods to respond to energy-related and other complicated problems mankind is being confronted with.

This book outlines the basics for a global ecological energy strategy aimed at sustainable development into the XXIst Century.

The first chapter consists of an analysis of the present-day energy-related and ecological conditions of the world. Based on that analysis, large-scale strategic tasks related to an ecological energy strategy are formulated and motivated, and actions to be taken by global institutions in the service of an ecological energy strategy are being proposed.

Chapter 2 is dedicated to principles and methods to be used in the implementation of the scenario for an ecology-based energy development. Basic targets of this implementation are being defined, taking differences in development between various countries and groups of countries in the world into account, as well as laying out time-spans for the various implementation stages and their economic feasibility.

Chapter 3 gives an overview of opportunities to implement an ecological energy strategy, taking Kazakhstan and other EurAsEc countries as an example. As it turns out, the EurAsEc domain could take up a pioneering role in the implementation of an ecological energy strategy in the world provided Kazakhstan and Russia live up to the international commitments as energy suppliers they have taken on.

In the conclusion, initiatives related to energy provisions and environmental conditions are being described and political ideologies concerning the initiation, conception and implementation of an ecological energy strategy are being addressed.

Key Aspects of Global Energy and Ecological Strategy for Sustainable Development in the XXI Century

As this book draws to a close, I would like to highlight the main points to be taken into account in turning this work into a major contribution to the development and implementation of a global ecological energy strategy in the longer run.

The global economic crisis is not only becoming more and more acute but in case current trends persist is bound to lead straight to a point of no return under a situation in which mankind will no longer be able to provide all the planet's inhabitants with a decent life support. This situation can only lead to serious aggravations including ferocious armed conflicts.

At an early stage, such conflicts are set to rise from shortages of energy resources — followed by other base resources and in the end shortfalls of overall resource bases to allow economies to function in a way that can provide communities with enough provisions to live on.

This is why numerous countries have already chosen energy security as their top priority.

The Kyoto Protocol and the Copenhagen accord, for all their value in terms of incentives to promote a worldwide reduction in greenhouse gas emissions, have failed to formulate accurate directives to make sure that the world has a future in terms of energy security under ecologically acceptable conditions. The assumption included in the Copenhagen agreement of a tolerable increase of 2 degrees Celsius in global temperatures has in fact flung the door wide open to further and increased exploitation of hydrocarbon-based energy

resources with no serious concern about ecological implications to speak of. This stands in sharp contrast to the fact that through the last century, during which global temperature has risen by 0.8 degrees, a rise of 0.6 degrees within that amount took place within the century's last 30 years, leading to increased numbers of natural disasters in the process.

The cause of an absence of national energy security policies taking ecological constraints into full account in many countries lies in the fact that those countries cannot afford to invest into the technologies that would permit them to fulfill such a task.

A new world population increase by 1.5 times through the current century on the planet is bound to lead to persistent growth in energy demand and consumption. Considering the intertwinement between energy consumption and overall economic development in most of the developing and underdeveloped countries, persistence of the current trends in relation to energy consumption will inevitably lead to climatic disaster.

Within the current trends, developed countries are steadily moving in the direction of knowledge- and intelligence-based communities.

This faces the world with a common challenge in terms of global food security, equal access to resources and development of human resources' potential for all, given the pace of the planet's human population growth.

In response to growing awareness of these challenges among world populations, and the need for worldwide sustainable development on the minds of a growing number of people, the most important instruments to respond to this awareness

in the form of tangible measures and policies are the following:

Global financial institutions should maintain programmes for the future development of the energy industry which include countries with lower levels of development;

A multi-scale and multi-resource availability of resources for energy supplies with the inclusion of renewable energy resources should be put at the world's disposition;

It should be taken into full account that subsoil reserves including the energy resources among them have a life-span of another 100 years at best;

There are unused manners in which overconsumption and inefficient use of conventional energy resources can be reduced to rational levels'

There are ecologically safe methods using which the use of carbon-based energy resources, including coal, can be made environment-friendly;

Using already available technology in power generation from renewable sources alone, supply capacity as of 2100 could meet demand by almost 3 times;

The amount of land that can be gradually recovered from losses suffered in the past is sufficient to grant the entire world food security and additional bio-energy supplies to meet demand from here to 2100;

Developing countries have sufficient energy provision capacity to make up for expected deficiencies in leading consumers in the world such as the USA, China, France and India. In 2009 alone, China more than doubled its wind power production capacity while worldwide that capacity increased by more than 30 per cent.

All this opens the perspective that provided all new resources and technical in-

novation opportunities are used at their full potential, the world can and will be provided with enough energy resources to grant its population the desired economic development.

By 2100, production of ecologically “clean” energy should be equal to 65 billion tonne in oil equivalent. Building up this provision base in the form of a synergized combination of conventional and renewable energy resources in the course of the century can ensure an undisrupted back-up of growing energy needs throughout its duration.

Basic conditions for an ecological energy policy to be successful in the course of the XXIst Century include:

- each and every country should have enough energy resources at its disposition needed for its national economic development;
- the balance between the shares of conventional and renewable energy resources on national levels should be kept intact;
- consumption patterns of energy should be kept under control with the aim to use available provisions as efficiently as possible;
- nations should assume joint responsibility regarding climate changes;
- energy resources for future generations should be secured;
- interstate cooperation in maintaining the balance between ecological constraints and energy needs should be enhanced.

The target is being imposed on countries and civilizations in the world consists of full cooperation and partnership in the domain of energy and other natural resources by the middle of the current century in order to satisfy demand

in coherence with constraints of varying character. Guaranteeing future generations full response to energy needs while cutting greenhouse gases’ emissions in half within the framework of an ecologically responsible energy production strategy is fully feasible. [32] Optimizing the consumption versus production ratio, cautious and rational use of reserves and resources, ecological conservation measures from the source to the end-user in energy exploitation and utility and the innovation of the overall energy industry including renewable energy resources to maximum proportions are the main tools to bring that goal within reach.

Regarding consumption patterns, standards should be set on international levels to which ratios end-users should live up in order to make production and use of energy resources as economical as possible. There is a need for globally accepted standards and parameters to determine the level up to which discrepancies between supply and consumption volumes remain acceptable.

Water supplies are bound to become an issue with a sharply increasing impact on life-supporting provision in the world in the immediate future. According to World Bank estimates, already half of the world population lives in areas where shortages of freshwater supplies are becoming a crucial item in populations’ struggle for survival.

In the case of Kazakhstan, the integration between renewable and conventional energy resources for the sake of the country’s national economic progress with a steadily growing importance of the former’s input was already included in its programme for innovative industrial development over the period of 2003 to 2015.

Within the scope of targets set for the sake of sustainable development in the world, the establishment of a global database on available and prospective reserves in various categories of natural resources is highly recommended — including mineral resources, forestry, water supplies, fishery and soil utility. In relation to this, an overall assessment of lack of efficiency in the production, processing and use of natural resources should be put in place and regularly updated. Industrial users could use such an information source to rationalize their energy consumption which brings industrial cost prices down and makes industries more competitive in the market place.

In the course of the 1970s it occurred that oil prices rose by 17 times through the decade, gas prices by 10 times and coal prices by 3.7 times. This in turn led to respective reductions in industrial energy intensity by 20 to 40 per cent region- and sector-wise. It proves that there is a feasible synergy between economic constraints on energy resource markets and incentives to constrain demand by more efficient use of energy resources.

To prevent such an upheaval from happening again, with possible consequences even more aggravating than those in the XXth Century, the following steps should be taken:

- a mid-term assessment of exploitation of conventional and non-conventional finite hydrocarbon reserves in the world;
- further development and application of technologies allowing development and

full-scale use of innovative and renewable energy resources;

- a global convention between countries on all continents for a joint energy resource preservation, exploitation and innovation policy in decades and centuries to come;

- a supranational strategy to rationalize the procurement and construction of facilities able to provide the necessary supplies of renewable energy resources' output.

It will be clear from the previous chapters of this book that a comprehensive concept with the inclusion of ecological safety, prospects of economic and industrial build-ups generating communal prosperity and rational use of a structurally changing range of available energy resources is the only way to ease the burden on both the global society and each and every national society caused by the ongoing economic setbacks at various levels all over the world. Only in this way it will be possible to proceed on constructive dialogue and joint decision making by the world's nations' representatives at Rio+12 and implement concrete and compulsory measures under the compliance of all national, supranational and communal authorities in the world to secure future generations with enough energy provisions to survive in a healthy social and natural climate, minimizing and possibly eliminating the chances of armed confrontations for the sake of prosperity resources and turn humanity into a global harmonious community for the first time in human civilization's history.



Yuri Yakovets, SKII President,
Doctor of Economic Sciences,
Professor, RANS Academician

The Long-term Strategy for Energy-Ecological Partnership of Civilizations

1. The Need for and Distinctness of a Long-term Global Energy-Ecological Strategy

The modern energy-ecological crisis is global. These highly dangerous trends can only be overcome by joint efforts of the entire global community of nations and civilizations and ensure the transition to the noosphere energy-ecological mode of production and consumption. *Global strategy* is vitally necessary. Its features are as follows.

First, this strategy should be *long term* — until the middle of the century. This is determined by the duration and depth of global transformations, the scale of the transition from industrial to an integral global civilization. However, the recommendations of “G-8”, “G-20” aimed at partial improving of the prevailing but obsolete old world order in the medium term do not provide guidance for overcoming the crisis phases of long-term and super-long cycles.

Second, the global strategy should be focused on an *innovation-breakthrough* scenario, the assimilation and distribution on a global scale of basic and epochal innovations that determine the content of the energy-ecological revolution of the 21st century. Half measures can only protract the crisis, prolong the agony of the industrial energy-ecological mode of production and consumption outlived its period.

Third, the strategy must be of *systematic nature*, to provide a balanced transformation of all aspects of society, all the components of the genotype of — energy-ecological, demographic and technological, economic, geopolitical and socio-cultural¹. Only such coordinated approach to the deep transformations gives the desired effect will allow implementing painful transformations in a shorter time and with less risks and losses.

Fourth, by the scale, action space the strategy is planetary, global. Pooling the efforts of all nations and civilizations in overcoming the global energy-ecological crisis and the formation of the noosphere energy-ecological mode of production and consumption, “green” economy.

Fifth, the most important long-term guide of the strategy should be a significant reduction in the growing gap in the level of energy-ecological, technological, economic and social development between rich and poor nations and civilizations, overcoming hunger and poverty on the planet.

Sixth, any strategy, and the more so long-term, global, can be successfully implemented only when there is an effective *management system* of its implementation. Now there is almost no such management system. The only global body that represents all civilizations and almost all the nations of the world — UN — has reduced its strategically innovative function, focusing on the implementation of decisions previously taken, although they largely do not reflect the realities and contradictions of the new historical epoch. The groupings of leading nations — “G-8” and “G-20” — are trying to partially improve the prevailing current system based on their own interests. Even more conser-

vative approach is of international economic organizations — the International Monetary Fund, World Bank, WTO, which basically represent and protect the interests of developed countries and multinational corporations. Science is minimally involved in the validation of strategic decisions.

In order to implement a long-term global strategy it will be needed to establish an effective, long-term management system, including institutions and organizations focused on the scientific basis for strategic decisions.

2. The Content and Structure of Energy-Ecological Strategy

The basic *content* of the management to implement the strategy is a system of long-term measures ensuring surmounting the global energy-ecological crisis, large-scale development of energy, environmentally friendly technologies of the sixth order and enhancement of energy efficiency, establishment of noosphere energy-ecological mode of production and consumption, and reducing the gap in per capita power consumption and energy supply of rich and poor on the basis of institutions and partnership mechanisms of nations and civilizations.

The content of the Strategy should be detailed when constructing the tree of objectives, providing stabilization of energy consumption level for a long term, increasing the share of alternative and renewable energy sources up to 30–35% reduction in greenhouse gas emissions in two and a half — two times by the mid-century, the reduction in 3-4 times a gap in power availability per worker and en-

ergy consumption between countries with high and low income.

The major direction of the Strategy is to move to *energy-saving type of consumption* — in manufacturing, housing and utilities and households, refusal from energy-wasteful technologies, especially in developed countries, stabilization, and then decrease in the total energy consumption on the planet (the reduction in population growth and development of energy-saving technologies will contribute to it). At the same time, for poor countries with low power consumption it remains the most important objective to increase it as a foundation for economic growth and overcoming poverty and backwardness.

Since fossil fuels will remain the dominant source of energy it is necessary to effect measures for its conservation with regard to the interests of future generations, increasing the degree of extraction of mineral resources from the subsurface and the depth of processing, development of new sources (hydrates, shale, etc.), environmentally friendly development of the Arctic energy resources.

The main direction of the Strategy is to expand the use of *renewable and alternative, clean energy sources*, especially in

science-intensive — hydrogen fuel cell energy, solar energy, biofuels of new generations, etc. Along with small independent energy generators, including small hydro power stations, wind stations, it is also possible the construction of large tidal stations along the shores of the Sea of Okhotsk.

The gradual reduction of greenhouse gases emissions into the atmosphere requires radical changes both in the structure of energy consumption and massive use of non-waste and low-waste technologies, as well as polishing up mechanisms of incentives to reduce emissions, the introduction of pollution charges as a tool for removal of ecological anti-rent and its use to finance the assimilation and diffusion of environmentally clean technologies, especially in developing countries. It will be needed to create a global system of eco-monitoring that measures the sources and amounts of pollutions.

Notes

1. Yakovets Yu.V. Global Economic Transformations of the 21st Century. M. Ekonomika, 2011 (www.library.newparadigm.ru)



To Sustainable Growth Through the Fair World Economic Order

Abstract

The study's authors proceed from a real need to stabilize the global economy. Futility and danger of conservation of the existing global imbalances and the accumulation of latent systemic risk requires a new approach to the formation of the system requirements for the restoration and maintenance of long-term dynamic equilibrium due to the use of potential cooperation within the G20 on the basis of system of transparent, fair and coherent principles. The necessary structural reforms should be based not on updated ideological fetishes of "Washington consensus", but on pragmatic interconnected rebalance of global foreign exchange, capital, technology, product, resource and other markets in which multiobjective optimization is achieved in the interests not of individual participants, but in order to ensure sustainability and the realizing the potential of the G20 and world as a whole. Based on this the requirements for issuers of the world's reserve currency and reforming the global financial architecture were formulated in the study. Among, the prerequisites of the transition to a single world currency were formulated, as well as proposals for implementing the pilot project to test the principles of its circulation in the Eurasian region, particularly in Kazakhstan.

Sergey Glazyev, RAS
Academician (Russia)

Sailau Baizakov, doctor
of economic sciences,
professor (Kazakhstan)

Mikhail Ershov, doctor of
economic sciences (Russia)

Dmitry Mityaev, candidate
of economic sciences (Russia)

Gleb Fetisov, RAS
Corresponding Member (Russia)

Proposals to reform the global monetary system linked to the tasks of economic restructuring on the basis of a new technological system, and the generation of the necessary long-term large-scale investments. There was shown the possibility of solution of current issues of food security and green growth as a necessary component of the global transition from the existing dangerous world order with more than 1 billion hungry and dirty environment growth for dynamic and equitable sustainable development.

The results obtained in the form proposed by the authors of comprehensive and balanced system of control measures of economic growth on the basis of transparent and fair rules of world order have practical significance for the development of a global “road map” for the future for all. Within the framework of initiatives of the V Astana Economic Forum it can play an important role in advancing towards a new, more equitable and sustainable world order.

The purpose of this study is to develop a system of measures and proposals to establish a fair and effective system of international financial and economic relations, providing the necessary conditions for sustainable economic growth, employment and welfare, reduction of environmental pollution. The implementation of this system of measures will bring the global financial and economic system of the crisis, move it out of the turbulent mode to sustainable development mode based on new technological structure in compliance with environmental constraints, ensure the stability, transparency and mutual benefit of the mechanisms of international financial and economic exchange and cooperation, including move-

ment of money, goods, technologies and information.

The proposed system of measures is based on understanding the laws of modern economic growth in all its complexity characterized by nonlinearity, disequilibrium and uncertainty of processes of economic development, regarding international economic relations - as contradictory to the interests of participants, competing and cooperating in terms of unequal economic exchange. It is designed to meet the systematic integrity of the world economy functioning and reproducing in the unity of scientific, technical, industrial and technological, economic, commercial, financial, investment and institutional aspects.

The ongoing global economic crisis is regarded as the result of a combination of monetary and fiscal imbalance, misalignment of financial markets and institutions, large-scale technological shifts, and structural imbalances. Accordingly, recovery from the crisis to a new wave of sustainable economic growth is possible while simultaneously carrying out the measures for financial stabilization; improve financial market regulation, banking, financial and investment institutions, promoting the growth of new technological structure and progressive structural changes, the formation of the new institutions. There must be eliminated the fundamental causes of the global crisis, including the most important as follows:

- absence of control of emission of the world reserve currency by some members of the international community, leading to abuse of issuers of monopoly power in their own interests at the cost of growing disparities and destructive tendencies in the global financial and economic system;

— failure of existing mechanisms of regulation of operations of banking and financial institutions to provide protection against excessive risk-taking and the emergence of financial bubbles;

— exhaustion of the limits to growth of the dominant technological system and the lack of conditions for the formation of new, including the lack of investment for large-scale clusters introduction of its constituent basic technologies.

This development was carried out by international (Russian-Kazakhstan) group of authors on the basis of their long-term studies of state and non-equilibrium dynamics of the global financial and economic system, taking into account the current context of international discussions on the prospects for global growth and on the basis of imperatives of equity, efficiency, sustainability and transparency of the proposed new rules.

To exit from a state of crisis turbulence to regime of sustained economic growth large-scale investment in new technological structure of production and modernization of the economy based on it are required. During the last decade, there had been formed a core of the technological structure consisting of clusters of paired of nano-, bio-, information and communication technologies, the amount of which increases with high and stable rate of around 35% per year. As the inflow of investments in their development, the weight of new technological structure in the economic structure increases, its effectiveness increases, new opportunities for growth are discovered. With the overflows of capital, remaining after the collapse of financial bubbles, in the development of new technological trajectories, a new wave of improving economic conditions

will form and turbulent regime will give way to sustained economic growth based on the rise of a new technological order. Depth of occurring at the same time technological, structural and of institutional changes requires the active participation of the state in stimulating innovation and investment activity, offsetting the adverse effects of impairment of financial and human capital in the old collapsing industries, regulation of financial flows and the price proportions in order to create mechanisms for the growth of new technological structure.

As history shows, a sharp increase in the role of the state, which in times of changing technological structures has to take the lead subject of development, can be both constructive as well as destructive forms. In previous crises such as this one, it was accompanied by a sharp increase in military spending, much of which was invested in the development of new technologies. Happening during this action escalation of military and political conflicts between the overtaking and the leading countries in the crisis the 30s led to the catastrophe of World War II and during the crisis of the 70-80s led to the deployment of an arms race in space, which undermined the economic potential of the Soviet Union.

The current global economic crisis is also accompanied by a worsening military and political tension, which results in a “color revolution” in the periphery of the competing countries. And though the last held disruption in armed conflicts by the presence of weapons of mass destruction, a traditional way for leading countries to stimulate the formation of new technological structure through the militarization of the economy poses serious threat to peace.

These threats are exacerbated by the tendency of the issuers of reserve currencies of the world to keep other countries from trying to change the existing system of international monetary relations, allowing the first to finance their balance of payments deficits and the state budget by the second and dominate the global capital market. Without removing this non-equivalence of the international monetary exchange issuer of world currency will emerge from the crisis by assigning resources and assets of other countries that will deepen the existing imbalances in the global economy and provoke an escalation of international conflicts.

The deepening of imbalances in the international foreign trade exchange will result in financial and economic war, during which the most powerful developing countries will be forced to close their economies from the raids of speculative capital, fueled by rampant emissions of world currencies in order to preserve its sovereignty. This, in turn, will cause a sharp increase in the imbalance between the increasing emission of world currencies and the limited demand for them, which will lead to the collapse of financial pyramids of debt of the leading countries of the world and uncontrolled disintegration of the existing global financial system. *There will be* destruction of the basic mechanisms of reproduction of the capital of the world's leading countries, which will breakdown the global economy in a systemic crisis, will complicate the growth of new technological structure and lead to many years of deep depression, with disastrous consequences for many countries.

The measures identified below are intended to prevent a catastrophic scenario for the global crisis by removing its

causes and creating a stable environment for the functioning of the global financial market and the movement of long-term investment, international monetary exchange on a mutually beneficial basis, the development of international production networks, global trade in goods and technologies. These conditions should enable national monetary authorities to arrange credit development of productions of new technological structure and modernization of the economy based on it, promoting innovation and business activity in the promising areas of economic growth. For this purpose issuers of the world's reserve currency should ensure their sustainability by observing certain restrictions on the size of public debt and deficit of payments and trade balances. In addition they must comply with the requirements set appropriately to ensure transparency in their use of mechanisms to ensure their emission rates, providing opportunities to freely exchange all traded assets in their territory, including new technologies and to provide national treatment to foreign non-state banks to refinance, comply with the criteria of reliability and transparency.

An important requirement for issuers of reserve currencies of the world must be compliance with the rules of fair competition and non-discriminatory access to their financial markets. Thus other countries, abided by similar restrictions, must be provided the possibility of using their national currency as a tool of foreign trade and monetary exchange, including their use as a backup in other partner countries. It is expedient to introduce a classification of the national currencies of competing for the role of global or regional reserve currencies, according to categories based

on their compliance by issuers of certain requirements.

Simultaneously with the introduction of the requirements for issuers of reserve currencies of the world the control over their movement should be tightened in order to prevent the concentration of capital for the purpose of speculative attacks that are destabilizing the global and national monetary and financial system. For this purpose it is necessary to impose a ban on transactions of their residents with offshore areas and avoid schemes to refinancing banks and corporations, established with the participation of resident offshore. It is also advisable to introduce restrictions on the use of currency in international transactions, which issuers do not comply with the minimum set of requirements.

In order to determine the requirements for issuers of reserve currencies of the world, monitoring their compliance with ratings by categories of global recognition, it is necessary to reform international financial institutions, including the IMF, World Bank and the Basel Committee to ensure equitable representation of member states on objective criterion of the feature set of the relative weight each of them in world production, trade, finance, natural potential and population. By the same criterion basket of currencies can be formed by forming the SDR, in relation to which rates may be determined by all national currencies, including the world's reserve. At the initial stage currencies of those "twenty" countries who agree to be bound to comply with the above requirements can enter the basket. As a pilot project, develop a mechanism of emission of a supranational world currency can be achieved the proposal of President of Ka-

zakhstan Nursultan Nazarbayev on the introduction of a currencies [1, 2] in the Eurasian economic space, which course can bind tightly to this basket.

Reforming the international financial institutions on the principles of fair representation and consensus decision-making involved in the implementation of various projects countries to change the global financial system will give these institutions a number of authority for the implementation of supra-national functions of the global regulator. The IMF could be endowed with the functions of monitoring compliance with the requirements for issuers of reserve currencies of the world and attributing them to one category or another, setting standards for assessing the financial risks and the activities of international rating agencies and audit companies. The World Bank could be vested with the functions of formation of the required reserves of the world reserve currency in proportion to the volume of emissions that would have significantly expanded its lending facilities of investment projects of global importance. The Basel Committee, along with the establishment of requirements for commercial banks could monitor their compliance with these requirements with certification that would allow banks to participate in the mechanisms of refinancing by issuers of the world's reserve currency.

The implementation of such large-scale reforms requires an appropriate legal and institutional support. This can be done by assigning decisions of G20 the status of the international obligations of interested countries in their implementation, as well as relying on the institutions authorized by the UN and international organizations. At the same time up new possibilities for

stabilizing the world financial system and global challenges will open. In particular, in order to reduce the turbulence in global financial markets it is expedient to introduce a tax on foreign exchange operations and financial speculation, the proceeds of which could be used under the supervision of the UN authorized international organizations to fight poverty and illiteracy, epidemics of socially dangerous diseases, overcoming the effects of natural and man-made disasters.

In terms of restructuring the world economy through a new technological structure creation of international educational network of the world's leading universities for training of nationals of developing countries is of particular importance for employment creation, as well as programs of retraining the unemployed in the developed countries of the new qualification requirements.

Empowerment and authority of international organizations achieved by the proposed measures to stabilize the world monetary system will create the institutional preconditions for the transition to sustainable development by stimulating the global widespread use of energy-saving technologies, solar energy, cellular technology in medicine, the advances of genetic engineering in pharmaceuticals and agriculture, as well as other revolutionary trends in the development of a new technological order.

On the one hand, the empowerment of long-term financing of investment projects, both global and regional importance, along with access to the technological achievements of the advanced countries, creates conditions for a successful catching-up development of backward countries.

On the other hand, the monopoly of a few transnational corporations on the use of technology requires an appropriate global importance of global governance. Particularly, this is for the seeds of transgenic plants, social information networks, global payment systems and other spheres of economic activity, developing on the basis of advances in new technological order.

In order to counter attempts to misuse of monopoly of transnational corporations in the production of socially important goods and services it is necessary to form a network of alternative suppliers, as necessary the existing building on the support of international and national institutions. In particular, in respect of food for this purpose allowable WTO borders of subsidies to production and marketing should be expanded, a network of food reserve funds should be created by authorized international organizations financed from the sources described above.

In order to stimulate the global spread of socially significant achievements of the new technological order to it is necessary to deploy an international system of strategic planning of global socio-economic development, including development of long-term forecasts of scientific and technological development, economic development prospects of the world, the regional economic communities and the major national economies, identifying opportunities to overcome existing disparities including breaks in the level of development of advanced and underdeveloped countries, as well as the choice of development priorities and indicative plans for the activities of international organizations.

For a broad distribution of such energy- and material-saving technologies of the new technological structure it is necessary to develop and implement global target programs co-financed by national and international development institutions.

The proposed system of measures to reform the global monetary system and international financial institutions in order to ensure stable, equitable and mutually beneficial conditions for the movement of money and technology is focused on the transfer of the global financial market from turbulence into the stable regime with the simultaneous deployment of mechanisms for long-term credit facilities of the new technological order, stimulate investment and innovation activities, strategic planning and financing programs to address global challenges. It is based on modeling of various scenarios for further deployment of the global economic crisis and the prediction of long-term trends in economic and technological development.

Its implementation will allow avoiding the catastrophic scenario of escalation of military-political tensions and uncontrolled destruction of the existing global financial system, creating the necessary conditions for the transition to sustainable economic growth through the development of new technological order. Objectively, these proposals may be contrary to the interests of the issuers of the current world reserve currency, but the rejection of their implementation will not allow them to retain their monopoly position, as well as the present unbalanced and unfair foreign trade system of unequal exchange. In the interest of self-countries “twenty” should take appropriate decisions, and came to the creation of effective mecha-

nisms for sustainable development, without waiting for a catastrophic collapse of the current global financial and economic system.

Recommendations on Reforming the World Financial and Economic System

1. Economic stabilization and structural reforms as a framework for economic growth and employment

A narrowly understood (as a purely financial) stabilization and frequently proposed technical reforms of the financial system are not able to provide long-term stability and consistency of global economic growth: focus should be on a number of interrelated changes in world order at the micro, macro and global levels. Based on conception described above following measures are suggested.

1.1. To ensure economic stability at the micro level it is necessary to change the paradigm of corporate governance, focusing managers to maximize profits in the long run, rather than maintaining the speculative a rise in prices of shares of companies they manage. In particular, the amount of fixed fee and a share of income (profits or dividends) of managed assets, which managers can distribute in their favor, should be limited. Moreover, its main part should be tied to future earnings over a long period. In addition, managers should bear financial responsibility for the damages received by the companies they headed for the mistakes made in the risk assessment, as well as breach of trust and violations of the law.

1.2. In order to ensure macroeconomic stability it is required at all levels to ban or to distinguish between overlapping ac-

tivities, generating an insoluble conflict of interest. This applies not only to the activities of economic actors, but also for the issuers of world trade and reserve currency, which can carry risks of their national currencies to the international level. It is required to formulate a set of requirements for issuers of convertible currency (FCC) that the international community is the right to put forward in the interests of global development and cooperation. It is helpful to introduce the category of foreign currency, depending on their compliance with the requirements established by the issuers.

In order to ensure macroeconomic stability it is necessary to develop a modern global system of standards for financial regulation, including foreign exchange markets, in order to control systemic risk.

1.3. The modern mode of sharing the results and factors of economic activities between developed and developing countries is inequitable and unjust (it was one of the main reasons for the failure of the Doha Round of WTO negotiations) receiving benefits (equal to trillions) from emissions of world currencies (thus, the ECB published for 3 months in the two rounds of LTRO more money than Russia proceeded for 10 years from oil exports), the leading Western countries restrict access to their markets, assets, technology and labor, by introducing new constraints. The right to emit global trade and reserve currencies with the obligations of the issuer should be linked (in frames of G20 or the UN) to ensure the openness of its market for goods, services, labor and capital, free mode of technology transfer and capital transfers. In this case, the long-term common interest of “producers” (issuers) of

global currency and suppliers of global resources (raw materials, cheap labor, etc.) will be a fair basis for long-term sustainable growth of the world.

In order to increase the responsibility of the issuers of reserve currencies it is necessary to provide the rest issuers of the G20 with the right to conduct foreign exchange swaps with them. This will allow issuers of other currencies to gain access to the necessary volume of his “cheap liquidity”, aligning cost of capital and eliminating the negative effects of credit dumping on the part of issuers that maintain negative real interest rates for a long time.

1.4. To carry out urgent reforms of WTO, IMF, ILO and other global organizations in terms of common rules in the global markets of goods, labor, capital, resources and technology, preventing the monopolization of both the markets and the procedures for developing and binding the rules (standards quality stock, insurance, auditing standards, the rules governing turnover of intellectual property, etc.).

1.5. Taking into account the global importance of the Internet and other communication means of ensuring the world order, necessary to bring matters of the administration from the national conduct and accept (as is the situation is in other important global issues - climate, navigation, etc.), international agreements and regulations that exclude discriminatory access to these the world’s infrastructures.

1.6. In order to reduce systematic distortions of assessment of the riskiness of the assets listed on the market in favor of a country it is necessary to develop international standards for defining ratings

and activity of rating agencies and to provide uniform international regulation of rating agencies. After conducting the IMF reform, necessary to ensure fair representation, it may be charged certification and licensing of rating agencies which assessment should be internationally recognized. The same applies to the “Big Four” accounting firms.

It is also advisable to introduce common rules for financial accounting (based on IFRS and Basel 3), and auditing for all economic actors, not just for banks for what make appropriate recommendations to the G20 for national regulators.

2. Strengthening the financial system and development of financial integration in order to promote economic growth.

The value of the global financial system in economic growth (and depression) can not be overestimated. The experience of the crisis in 2008 showed that the problems of individual major banks can almost instantly become the problems of entire countries and the world. Therefore, in all its meetings, the world’s leading clubs (first G8, then G20) demanded the reform and strengthening of the leading (in fact — control) level of world order.

However, if the first two years after the crisis voices for reform were heard, even among the leaders of the G8, then in the past year and a half there was some “back to normal,” complacency of the world’s political elite, as the main responsibility for stabilizing the global financial system actually took the central banks, issuers of foreign currency. In the interest of preserving its foundations, they went to the simplest ways to treat the problem of insolvency (accumulated public and private debts) pumping cash liquidity.

It must be admitted that occurred in the last 3 years the stabilization of the global financial system is not reached through its recovery, but mainly due to increased emissions of major world currencies: U.S. Dollar, Japanese Yen, and the single European currency. Thus, the balance of the U.S. Federal Reserve from 2008 (operations QE1, QE2, twist) almost tripled, the balance of the ECB (LTRO 1 and 2) increased by more than 2.5 times, the balance of the Bank of Japan has almost doubled in the last 2 years.

Almost entirely this unprecedented issue settles in reserves of the banking system, which are stored in the accounts in the same central banks, the credit multiplier is near zero or even negative (each new dollar of debt “produces” less GDP), employment practice is not growing. Due to the large-scale forced “pumping liquidity” exponential growth and the increasing monetization of public debt of G7 are actually concealed by masking their inability to solve the structural problems (including overdue technological restructuring of the economy).

Such policy has its “price”. Since two thirds of issued dollars turn outside the country of the issuer, serving the global trading and speculative turnover, the last 10 years the real exchange rate of U.S. dollar, playing the role of the world’s main trade and reserve currency, falls, providing their owners less and less purchasing power. Thus, export of inflation in the rest of the world (especially in the growing economies of Asia, BRICS) takes place, resulting in multiple price increases for energy, raw materials and foodstuffs, in maintaining and growing global imbalances of payments and trade balances.

Due to a policy of continuous postponement of reforming the global financial system and its infinite “restoration” by the old rules consistent increase in system-wide risk takes place, which can be measured in the ratio of off-balance sheet liabilities of the largest, first of all, U.S. banks to the size of their balance sheets, which in comparison with the beginning of the crisis has grown from 30 to 50 times.

So the strategic instability (latent system-wide risks) in the global financial system is so far only growing, number of leading public finance systems (U.S., Japan and countries in Europe PIIGS) operate largely through emissions (for example, for each Japanese yen, obtained in tax revenue, almost two yens, issued under the growth of debt, accounted, in the U.S. for every dollar of tax revenue — one more emitted by placement of treasury bonds and some European countries almost entirely depend on the inflow of funds from the ECB and foreign creditors). In fact, the world’s reserve currency issuers have entered the “pyramid” principle of increasing state debt, dooming the entire global financial system and national system of state finances, social, medical and pension benefits developed countries for self-destruction in the foreseeable future.

The true strength of the global financial system requires a number of systemic reforms, the outlines of which were identified in a number of international forums, including the G20. But while a consensus on the conduct of these (in some aspects — painful) changes is absent, the electoral cycle in the major Western countries is pushing politicians to short-term measures and shifting responsibility to the central banks and the IMF.

In order to prevent a catastrophic self-destruction of the global financial system, following measures are proposed to strengthen its real-world financial system in order to move to a fair world economic order as a basis for sustainable global development.

2.1. To develop and implement a flexible system of global and national standards of financial regulation that has countercyclical properties. When overheated markets and the formation of bubbles standards have to be tightened and promote their soft blowing. In a crisis, on the contrary, standards should be mitigated. For example, conditions of a credit boom of the loan guarantee provision should be increased to two or three times the value of debt to reduce the multiplication of debts. A key innovation in creating new financial architecture is limiting the value of “leverage”. In fact, at the macro level the ratio of the value of all liabilities of economic agents and their home equity debt is an indicator of the multiplier. The main reason for the increase of “leverage” is the creation of a two-sector financial and economic system in which only the banking sector is regulated by state and non-bank sector is not almost controlled. Non-bank financial and investment institutions and other entities may have “leverage”, amounting to several hundred (the problem of the “shadow financial system”). Thus there is a great multiplication of debt. “Leverage” for banks is limited to standards of prudential regulation and significantly less than that of investment banks, hedge funds, investment companies, and companies in the real sector. So, we are talking about the common rules of financial accounting (based on IFRS and Basel 3), and auditing for all economic actors, not just

for banks for what should make appropriate recommendations to the G20 for national regulators.

2.2. In order to reduce systematic distortions of assessment the riskiness of the assets listed on the market in favor of a country necessary to develop international standards for definitions and ratings activity of rating agencies and to provide uniform international regulation of rating agencies. After conducting the IMF reform, necessary to ensure fair representation, it can be assigned to certification and licensing of rating agencies assessment which should be internationally recognized. The same applies to the “Big Four” accounting firms.

2.3. To reduce speculative currency risks. By analogy with the banks all businesses should be obliged to open foreign exchange position and limit a percentage of the value of equity.

Through increasing the responsibility of issuing foreign currency (international trade and reserve currency of the 1st category) other states could also be provided the right to G20 currency swapping with the G7 central banks to ensure that “quality” of others (including regional) currencies moved up to the leaders. In this States of G20 will have access to the necessary volume of their “cheap liquidity”, aligning the cost of capital (essentially eliminating the “major dumping” on the part of those states that can afford to have negative long-term real interest rates).

2.4. Recommend a system of protective fuses (“inhibitors”) of financial transactions and capital flows to national monetary authorities, if needed to protect their currency and financial system from speculative attacks and suppression of turbulence associated with them. In particular,

such a “moderator” can be: a) the Institute of redundancy on currency transactions of capital and b) the tax on income from sale of assets by non-residents, the rate of which depends on the length of ownership of the asset, c) the Tobin tax (for operations with foreign currencies). For all three instruments rates (standards) in a favorable situation may be temporarily reduced to a minimum, while increasing financial turbulence can rise to slow the inflow (or outflow) of capital.

2.5. In order to reduce the dependence of the global financial and monetary system on the world’s reserve currency issuers it is expedient to encourage the transition to international accounting for trade and investment transactions in SDRs (liquidity for settlements between the member countries of the IMF). According to the definition of the SDR, the exchange rate of a national currency to the SDR is set as the average exchange rate against a basket of four SLE (dollar, euro, pound sterling, and Japanese yen). To use the SDR as a supranational currency in terms of current conditions currencies it is necessary to have a circle of currencies that make up the currency basket, which is calculated based on the rate of the SDR should be broadened. In the first stage it should include the G20 currencies with weights corresponding to the arithmetic mean of the country share in world capital of the banking system, GDP, population and territory. The transition from the current world of quasi-currency (the old SDR) as a relatively narrow and non-representative “basket of hard currency” to the wider, and determining the world development of “basket of G20» (new SDR) involves a comprehensive reform of the IMF on the basis of principles set out below.

Implementation of international payments in the single currency will dramatically reduce the currency risks of exporters and importers reduce extent of currency speculation and to limit exchange rate fluctuations. Moreover, all denominated in SDRs requirements for borrowers (including bonds that are placed on the international financial markets) should be considered in control systems with lower risk factors and belong to groups of assets with a high degree of reliability than assets denominated in foreign currencies.

The transition to calculations of the SDR involves the transformation of this instrument in full currency, for which to the creation of international system for regulating emissions of SDRs is needed. At the IMF issue, central banks of countries in the G20, could serve as a regional reserve banks in the corresponding opening correspondent accounts. In this case the refinancing of commercial banks may only be exercised within the quota of SDRs allocated by the IMF. But they may increase the balances of passive accounts in SDRs creating 100 per cent international reserves for these residues in the structure corresponding to the SDR basket.

The introduction of SDRs as a full exchange should take place on a voluntary basis and in accordance with the principles of equality of all states — members of the IMF and the full availability of liquid assets SDRs. Most interested in the transition are countries — oil exporters and other countries whose economies experienced enormous damage by “exchange rate swings”.

For practical testing of a new global model of financial integration and comprehensive cooperation a new expanded

use of SDRs (basket of G20) in the Eurasian economic space (in the broadest sense — including China and India) could be offered through a gradual expansion of the currency basket of national central banks of those countries, and through binding of the national currency of the state first-mover to a basket of-G20 (if such act of Kazakhstan — the tenge, which in this case can be considered as equivalent to SDR).

A fair mechanism of calculating the “expanded SDR” (basket of G20) is proposed, in first approximation, as follows.

3. Improving the international financial architecture in the context of globalization.

Based on the foregoing, the following measures to improve the international financial architecture are recommended.

3.1. Taking into account task to improve the quality of growth, maintaining its rates and market diversification expanding the functions of the central banks of the “Big Twenty” should be considered (for example a number of leading countries, where in addition to the exchange rate and prices for them are assigned the task of supporting the economic growth and employment). Thus, countries can use modern mechanisms of refinancing needs of growth of national economies, using inflation targeting not outdated models “currency board” (using the exchange rate as a “nominal anchor”), and the entire arsenal of the theory and practice of financial and economic management. It should be kept in mind that the objective of developing economies in the process of structural changes, the background level of inflation is somewhat higher than for post-industrial, and it is 5-7% (excluding inflation factor of exports through super soft monetary policy in the G7).

In general, the construction of long-term approaches to the development of national economic policies to G20 countries should focus not on the dynamics of changes in prices of goods and services arising in connection with the inflation but to strengthen the purchasing power of money and increase the real value of the national wealth of the country.

3.2. For the formation of new points of reference of the world economy and ensuring monetary and financial stability to work on building economic and legal conditions for the establishment of international financial centers in several large cities (Moscow, Astana, Shanghai, Mumbai, etc.) should be continued.

“Polycentric” architecture of the global financial system will remove unnecessary burden from the current two or three centers of circulation of global capital, will create a more competitive environment of market infrastructure institutions (exchanges, clearing houses, auditors and rating agencies, etc.). The creation of common infrastructure organizations such as EEC is actual - Development Bank (running for several years), the rating agency, the audit chamber (e.g., a single patent Chamber created) Insurance Union, etc. The cooperation of several centers will improve the reliability of the global architecture.

3.3. Further increase the transparency of “shadow capital markets” (offshore zones, OTC derivatives, etc..) is required, for what the expansion of the composition and powers of the Financial Stability Forum, financial intelligence community and other organizations — the regulators and “nurses” of financial markets are proposed. Reform of the IMF in this regard should be linked to systemic changes in

organizations such as WTO, the International Labor Organization, World Health Organization and other UN programs. And although the changes must be initiated within the framework of these organizations, G20 may act of initiate, as is in fact a “council of the major shareholders” of world order.

3.4. The foundation of a new global architecture should be recognized as fair order (strategic agreement) in the G20: «weight» of the IMF, the global financial system in general and in the future world currency (SDR as a basket of G20) should be distributed according to several criteria:

- the proportion of any country in the world GDP at purchasing power parity (PPP), taken as an average over a certain number of years;

- country’s share in world trade;

- share of the national territory (as a natural integral indicator, resources and climate of weight or capacity) to the global;

- proportion of the population of the country in the world population;

- weight of the country in the current global financial system, as measured by the parameters of reserves as the country itself, and the use of its currency in international settlements and reserves.

Today in the IMF basket (SDRs), only the last criterion is partly taken into account, which leads to injustice and inefficiency of the global financial system.

Identification of specific numerical parameters and algorithms for integration of these criteria in a single basket of G20 is a serious scientific and practical (bargaining) problem, which can be solved in the development of roadmap of transition to a single world currency.

4. Enhancing food security and address the volatility in commodity prices.

The implementation of the measures described above will provide reduction in the scope of financial speculation and the transition from turbulent functioning of financial markets to the stable that will contribute to reduce the volume of commodity futures speculation and, consequently, the volatility in commodity prices. Implementation of the proposals to introduce a global tax on currency and financial speculation will give funding opportunities offered by the following measures to ensure food security, by which we mean:

- prevention of spikes and drops in prices of food supply and significant deterioration in economic conditions of production and supply;

- overcoming the phenomena of mass starvation and systematic malnutrition in any of the regions of the world;

- avoidance of dangerous consumer products to health food.

The following is a list of measures for solving problems of food security and the problems of volatility in commodity prices.

4.1. To avoid spikes in food prices:

- deployment of a network of exchanges of food products, located in different regions of the world, and independent of each other;

- imposing restrictions on prison terms of futures contracts on foodstuffs;

- establishment of system of food supplies organized states and commercial organizations under the auspices of the International Food and Agriculture Organization of monitoring the state;

- establishment of global food reserves, administered by authorized international organizations.

4.2. In order to prevent a sharp drop in food supply:

- creation of a global system of monitoring threats of decline in production of agricultural commodities due to natural calamities, the spread of infections and pests with the introduction of the WTO mechanism for easing of restrictions on the provision of agricultural subsidies in the affected countries;

- establishing a global system to provide prompt assistance to countries in need to prevent and neutralize threats of the spread of infections and pests of plants and animals of the supply of vaccines, pesticides, machinery;

- formation of a system of international reserves of land that may be provided for temporary free use of agricultural organizations under the obligation of the cultivation of agricultural products;

4.3. In order to combat widespread hunger and malnutrition of the population:

- under UN auspices create a global procurement and supply of food compensation in the regions affected by natural disasters, technological disasters, armed conflicts;

- exclusion from the scope of international sanctions deliveries of food products.

4.4. In order to prevent mass consumption of food products hazardous to health in addition to existing methods of certification, sanitary, veterinary and phytosanitary control in connection with the emergence of fundamentally new foods made from genetically modified organisms, as well as the new technological possibilities of control, expanding with the development of a new technological system, it is necessary to develop and, with the assis-

tance of the World Bank to implement a global program of action, providing:

- the adoption of international standards for nano-, genetic engineering and cell technology;

- development and adoption of technical regulations of food production with the use of nanotechnology, genetically modified organisms and derived from these raw materials;

- metrological support of certification and quality control of food products for compliance with the above technical regulations and the development and production of equipment needed for its widespread use.

4.5. To ensure normal conditions for expanded reproduction of agricultural products with high technology of the new technological order the following limitations for the misuse of monopoly power must be installed by their respective owners:

- not defend intellectual property rights to the use of genetically modified organisms, or to limit the term of protection provided by three years;

- require manufacturers of genetically modified plant seeds to ensure customers long-term (at least a decade) the sale at fixed prices;

- prohibit the introduction of any restrictions on the sales of seed;

- introduce a mandatory requirement for manufacturers and sellers of seeds of genetically modified organisms on the publication of information about used in their production technologies.

5. Promoting sustainable development of green growth and climate change.

The formation of a new technological system and the modernization of the economy based on it can dramatically reduce

energy, material and resource intensity of production. In particular, the application of nanotechnology in the manufacture and coating of structural materials allows to increase their durability and extend service: to the solar energy — to reduce the capital intensity of the power unit to the level of thermal energy, the use of LEDs - to raise the efficiency of light sources twice, nano — improve fuel cell technologies in medicine — to abandon costly treatments. Modern technology greatly increases the efficiency of processing and recycling of waste, can close many of the production process, making them zero waste. The restructuring, modernization and economic development based on a new technological system can increase the production and consumption without increasing the consumption of natural resources while decreasing the levels of pollution.

To promote the sustainable development of green growth and climate change on this basis, is expedient to take the following measures:

5.1. In order to encourage dissemination of energy-saving technologies:

- compile a list of recommended for widespread use of energy-saving technologies, including their distribution in the task of UNCTAD;

- fundamentally expand the use of advanced energy-saving technologies, using the tools of the World Bank for lending to related investment projects recommended by the UNCTAD;

- develop model laws to encourage energy and resource to their adoption by national authorities and twenty other countries concerned;

5.2. Encourage countries of G20 to harmonize environmental legislation in an effort to unify payments for environ-

mental pollution and penalties for excessive emissions, mechanisms of financing environmental activities through proper use of the mentioned payments and fines. The National Academy of Sciences should develop appropriate recommendations based on economic estimates of the cost of cleaning the environment from pollution in excess of its carrying capacity.

5.3. From the list of prohibited WTO subsidies exclude government spending and tax exemptions to encourage environmental protection enterprises, including the disposal of the wastes, sewage treatment plants, and the introduction of energy-saving technologies.

5.4. In order to encourage greater use of solar and wind energy:

— Encourage national authorities to exempt objects of solar and wind energy from taxes on property and real estate, and sale of electricity generated by them exempt from indirect taxes;

— recommend that the WTO does not consider the above benefits and subsidies as prohibited.

5.5. In order to promote the electrification of road transport, encourage national authorities to release from taxation the sale of electric vehicles and consistently raise the excise tax on motor fuel. Similar measures are taken to stimulate demand for hydrogen-powered cars.

5.6. To ensure the monitoring of climate processes, objective analysis of the factors influencing them, predicting climate change processes and its modeling taking into account the impact of human activity it is necessary to stimulate the creation of a global research network with the use of GRID technologies and the involvement of international and national environmental funds.

5.7. In order to extend financial support to the spread of clean technologies and environmental costs and deterring military conflicts to recommend the imposition of global tax on military expenditures which charges should be sent for environmental needs under the supervision of authorized international organizations, UN. It is necessary to provide an opportunity of countries deviating to the introduction of an appropriate tax on the import of their products.

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Long-term Strategy
for Sustainable
Development Based
on Partnership
of Civilizations



New Approaches to the Global Strategy of Sustainable Development

Press Release to the 6th Civilization Forum within the UN Conference on Sustainable Development RIO+20

Two decades ago at the Summit in Rio de Janeiro it was proclaimed the global strategy of sustainable development. It was spelled out in the UN Millennium Goals in 2000 and at the Summit in Johannesburg in 2002.

However, it should be honestly admitted that the real course of events went the opposite direction. The situation in the world has become more unstable, threatening. The decuman wave of crises — energy-ecological, food, demographic, technological, finance-economic, geopolitical, and socio-cultural — came crashing down on the planet. Billions of people suffer from hunger, poverty, and unemployment. The new generation has found itself without future, is indignant and rebels. The world and national ruling elite and TNC leaders have found themselves at a loss without a scientifically validated strategy, make many mistakes deepening the crisis.

It is necessary fundamentally new approaches, long-term strategy for global sustainable development adequate to the realities of the 21st century. Such strategy is proposed by the International team of scientists in the report “Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations”. The report is based on the Global Outlook “Future

of Civilizations” for 2050 given at the UN (28.06.2011), at the 4th Forum of the UN Alliance of Civilizations (11.12.2011), and UNESCO (12.04.2012).

What is the essence of the new approach proposed by scientists?

1. Diagnostics of crises. A wave of global crises is naturally determined and inevitable, a change of civilizational cycles, decline of technogenic industrial civilization and formation of the integral world civilization underlies its. The wave of crises is a harbinger of the civilization revolution of the 21st century, a profound transformation of society.

2. The essence of strategy. To surmount crises is possible on the basis of the elaboration of a scientifically-validated long-term global strategy elaborated and being implemented based on dialogue and partnership among civilizations — major actors in the geopolitical arena of the 21st

century. All sound forces of humanity, all generations and social forces should unite in the face of the growing threats.

3. Noospheric approach. The harmonious co-evolution of society and nature substantiated by Vladimir Vernadsky and Nikita Moissejev, a rising role of science and turning it into a global transforming force should become the trunk line.

4. Rise and transformation of the UN. The UN is the only universal organization representing all nations, all states, and all civilizations. But it must transform itself, become the center for strategic planning and partnership, resting on science and bring into effect the new global strategy for sustainable development.

5. Programs and projects. The scientists offer not only the outlines of the new global strategy but also the ways to implement it on the basis of programs and projects of the partnership of civilizations: global



energy-ecological strategy. “Green Bridge” program, world scientific heritage; synthesis of scientific, educational and information revolutions; construction of Intercontinental Eurasia-America transport link via the Bering Strait, assimilation and diffusion of the sixth technological order; draft of the UNESCO Universal Declaration on the strategy and dialogue of civilization in science, education and culture.

The matter is whether the initiatives and recommendations of scientists will be sought-for in a timely manner and implemented in the interests of further development of humanity.

The Program of the 6th Civilization Forum “Long-term Strategy of Global Sustainable Development Based on Partnership of Civilizations: Concepts, Strategies, Programs, and Projects”

13 June 2012. Conference center T-8

Forum opening. Session 1. The Foundations of a Long-term Strategy for Sustainable Development Based on Partnership of Civilizations.

15 June 2012. Time and location to be determined.

Session 2. The Strategy of Energy-Ecological Partnership of Civilizations. Reports, programs, projects.

17 June 2012. Conference center, RZ-E.

Session 3. The Strategy of Dialogue and Partnership of Civilizations in Science, Education and Culture and Prospects of Indigenous Peoples of the North.

The Forum materials are published in the international scientific-practical journal “Partnership of Civilizations” and posted at: www.globstrategy.newparadigm.ru





DRAFT

A Long-term Strategy for Sustainable Development Based on Partnership of Civilizations

Draft recommendations of the 6th Civilization Forum within the UN Conference on Sustainable Development, Rio +20 (Brazil, Rio-de-Janeiro, 13–17.06.2012)

The 6th Civilization Forum “Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations: Concepts, Strategies, Programs, and Projects” was held within the UN Conference on Sustainable Development, Rio +20. Major Forum organizer — the Pitirim Sorokin — Nikolai Kondratieff International Institute, co-organizers — the Institute for Economic Strategies, RF Association of Indigenous Peoples of the North, Siberia and the Far East, Russian Academy of Natural Sciences, Kazakhstan National Academy of Natural Sciences, International Futures Research Academy, RF Chamber of Commerce and Industry, Organization for Promoting Global Civilization, Brazilian-Russian Chamber of Commerce, Industry and Tourism, under support of the RF Ministry of Foreign Affairs, UN Alliance of Civilizations, Gorchakov Public Diplomacy Foundation.

At the opening of the Forum there were announced greetings of Under-Secretary-General Sha Zukang, UN High Representative for the Alliance of Civilizations Jorge Sampaio. The Forum sessions discussed the report of the international team of scientists “The Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations”, issues of

the global energy-ecological strategy; the monograph of Nursultan Nazarbaev "The Global Strategy of Sustainable Energy-Ecological Development in the 21st Century", prospects for sustainable development of the indigenous peoples of the North and the Arctic civilization, construction projects of the intercontinental peace bridge and Eurasia-America transport link via Bering Strait, setting up an open internet University of dialogue and partnership of civilizations, arrangement of civilization research-educational cruise The Noah's Ark of Civilizations, development of the Arctic and civilization tourism.

As a result the discussion participants have come to the following conclusions and recommendations.

1. SCIENTIFIC FOUNDATIONS OF A LONG-TERM STRATEGY FOR GLOBAL SUSTAINABLE DEVELOPMENT BASED ON PARTNERSHIP OF CIVILIZATIONS

1.1. The international team of scientists on the basis of the Global Forecast "The Future of Civilizations" for 2050 made in 2007-2009 with recommendations to the strategy for partnership among civilizations, which was reported at the roundtable meeting of the 64th session of UN General Assembly on 27/10/2009 and the 4th Civilization Forum "Prospects for Development and Partnership Strategy of Civilizations" within EXPO-2010 in Shanghai on 12-14.11.2010, prepared a draft report "Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations."

The draft Report was discussed at the roundtable meeting within the 65th session of the UN General Assembly on 28/6/2011, at the 4th Forum of the UN Alliance of Civilizations in Qatar, on 11/12/2011, at the 5th Civil-

ization Forum in Paris on 12-13/04/2012, and submitted for discussion at the 4th Civilization Forum within the UN Conference on Sustainable Development, Rio +20.

The Forum participants endorse the work performed by the international team of scientists on the preparation of the Report and share the fundamental positions of its originators that:

- it is necessary to embark on preparations of the long-term strategy for global sustainable development based on the Report "Foundations of a Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations" submitted by the international team of scientists;

- the development of a long-term strategy should be based on the need for a balanced response to new challenges of the 21st century in all areas of development of global and national community — energy-ecological, demographic, technological, economic, geopolitical and socio-cultural, the need for a systematic approach to overcoming the clusters of global crises of the beginning of the 21st century;

- the long-term strategy can be successfully implemented only through the partnership of nations and civilizations, under the leading role of the United Nations and will require the enhancement of its role in the global strategic planning and regulation.

1.2. The Forum participants endorse the basic points of the Report "Foundations of a Long-term Strategy for Global Sustainable Development based on Partnership of Civilizations" and recommend to the UN Conference on Sustainable Development, UN Economic and Social Council to consider the proposals of the international team of scientists.

The Forum participants consider it necessary that the UN and its organizations in their activities rely to a greater extent on modern scientific thought, and recommend to establish the World Science Council under the UN Secretary-General, as well as scientific — expert councils within the UN organizations.

1.3. The World Summits in 1992 and 2002 and the Millennium Summit in 2000 laid the foundations for a global sustainable development strategy focused on the efficient use of world resources in the interests of the present and future generations, and determined the Millennium Goals that the global community intends to achieve by 2015. It has allowed reaching a certain success in focusing efforts and resources to achieve these goals.

However, the Forum participants note that the depth and duration of crises and transformations taking place in the world require the development and adoption of the scientifically validated long-term strategy of global sustainable development at the World Summit to be carried out based on the partnership of nations and civilizations in response to new challenges of the 21st century.

In these conditions many points of the global strategy for sustainable development adopted in the last century require a system update and new approaches to meet the realities and contradictions of the 21st century.

1.4. The Forum participants welcomed the initiative of President of Kazakhstan Nursultan Nazarbayev on the development of a long-term strategy of the future on J-Global principles in the context of interests of all nations and civilizations on the basis of constructive multipolarity, dialogue, consensus and tolerance.

2. THE MAIN OBJECTIVES AND FEATURES OF THE LONG-TERM STRATEGY

2.1. The main objective of the Strategy is to focus the efforts of the progressive forces of humanity on overcoming the crisis turmoil of the transitional epoch of the first quarter of the 21st century and establishment, in the second quarter of the century, of the foundations of an integral, humanistically noospheric world civilization ensuring the improving the level and quality of life, efficiency of reproduction in all parts of the world, eradicating poverty and hunger, the establishment of “green” economy and a more fair economic system.

2.2. This goal is realized through:

- the establishment of the noospheric energy-ecological mode of production and consumption, ensuring the restoration of the balance between society and nature, the improvement of ecological situation in the world, more efficient and economical use of mineral, water, land and other natural resources subject to the interests of future generations;

- differentiated demographic and migration policies aimed at overcoming the depopulation in some countries and overpopulation in the other, and at optimization of migration flows;

- assimilation of achievements of the technological revolution of the 21st century, the sixth technological order, increasing the growth rates of labor production, and the convergence of the level of technological development of countries and civilizations;

- accelerating the transition to integral economic system, socially, noospherically and innovation-oriented, ensuring overcoming of the gap between rich and poor

nations, civilizations and social strata, implementation of the principle of justice in wealth distribution;

- formation of the constructive multi-polar world order based on dialogue and partnership among nations and civilizations in response to the challenges of the new century, enhancement of the UN role in such process;

- the rise of science, education, high culture, the preservation and enrichment of the national and cultural heritage and diversity, strengthening of the moral foundations of family and society.

3. THE LONG-TERM STRATEGY FOR SUSTAINABLE ENERGY-ECOLOGICAL AND FOOD DEVELOPMENT

3.1. The beginning of the 21st century was marked by global energy-ecological and food crises. The Forum participants believe that the strategy for energy-ecological and food partnership of nations and civilizations should be directed at overcoming these crises, the ultimate goal of which is the establishment of the noospheric energy-ecological mode of production and consumption.

3.2. The basic lines for such strategies according to the Forum participants are:

- the establishment of “green” economy, surmounting energy-wastage in the developed countries, transition to energy efficiency in manufacturing, housing and public utility sector and household, while increasing the power availability per worker and energy consumption in poor countries.

- more economical use of non-renewable fossil fuel reserves based on new ecologically clean technologies;

- replacement of fossil fuel with renewable and alternative sources of energy;

- double reduction of the emissions of greenhouse gases into the atmosphere by the middle of the 21st century that would require a radical restructuring of the energy sector, significant reduction of other types of environmental pollution;

- reduction of the deforestation of tropical forests — the “green lungs” of the planet, reduction of losses from forest fires, and integrated management of forest resources.

- effective measures to overcome the shortage of fresh water, provision of water to all countries and regions, all the world’s population, development of water recycling and minimizing the discharge of untreated sewage.

- overcoming the food crisis on the basis of a more efficient use and increase of the fertility of cultivated land, a double increase in food production by 2050 to overcome hunger in the world.

- Integrated, environmentally safe processing of industrial and household waste, especially in metropolitan areas;

- preservation and transmission to the next generations of biodiversity of the planet.

3.3. The Forum participants believe that all of these pressing problems can be addressed effectively only on a global scale, based on global strategy for energy-ecological and food partnership of nations and civilizations. It is necessary to expand the competence and to increase the role of UNEP, FAO, and the Global Environment Facility in the implementation of the strategy for energy-ecological partnership of civilizations.

The Forum participants welcome the initiative of the President of the Republic of Kazakhstan Nursultan Nazarbayev to establish a specialized agency in the

global energy development, to implement the Green Bridge program and to hold the World Expo “Energy of the Future” in Astana in 2017, to develop the Global energy-ecological strategy, and recommend to UN Secretary General to establish a high-level Group and Scientific group to draft such a strategy in order to bring it up for discussion at the Global Energy-Ecological Summit in 2017.

3.4. The Forum participants attach great importance to the implementation of the construction project of the intercontinental Eurasia — America transport link via the Bering Strait, viewing it as a project of the century, carried out on the basis of public-private and inter-civilization partnership. The creation of this transport link will become an effective instrument for the efficient exploitation and transportation of the rich resources of the North-East of Russia and the Arctic zone in general, as well as the integrated development of the Arctic regions. The transport link will be the missing link in creating a global land transport system, the largest transit transport corridor, uniting two hemispheres of the earth. We call upon the governments of interested countries to show political will and, along with representatives from industry, transport, financial and business community to engage actively in the process of implementing the Project, setting up for this purpose a special international consortium. The Forum participants support the project, considering it a powerful tool and a critical factor in the future uniting of continents, civilizations, nations and major companies on the basis of partnership in order to develop the utmost rich resources of the Arctic and to improve the living conditions of the peoples of the North.

4. THE STRATEGY OF DIALOGUE AND PARTNERSHIP OF CIVILIZATIONS IN DEMOGRAPHY, MIGRATION AND PUBLIC HEALTH PROMOTION

4.1. The Forum participants state that since the end of the 20th century it is observed a reverse of demographic trends. The number of countries facing depopulation is increasing, while maintaining the over-population in some countries, an excess of workers. The aging of population, a growing share of the elderly and senior citizens becomes a long-term trend. In some civilizations, there is a high infant and maternal mortality, HIV/AIDS and other dangerous diseases. The level of expenses for public health differs in hundreds of times by countries of the world. It is increasing the flow of migrants from poor countries with excess labor to rich countries with a deficit of workers, creating inter-ethnic and inter-civilization conflicts.

4.2. The roundtable participants believe that all these problems can be solved on the basis of dialogue and partnership between nations and civilizations, development of a differentiated demographic policy by groups of countries with depopulation, high and normal population growth, a strategy of active longevity for the elderly, large-scale global program of public health development in poor countries with a considerable assistance from rich nations and civilizations, development of a global migration strategy that optimizes the flows of migrants, which creates conditions for employment and weakening the motivation for migration in poor countries, helping migrants adapt to new conditions.

5. THE STRATEGY OF INNOVATION AND TECHNOLOGY PARTNERSHIP OF NATIONS AND CIVILIZATIONS

5.1. The Forum participants recognizes the fact that the global technological revolution of the 21st century is unfolding, the main results of which is the establishment of the post-industrial technological mode of production, assimilation and diffusion of the sixth technological order, humanization and ecologization of technology. This will create preconditions for a faster economic growth and improvement of labor productivity. On the basis of the technological revolution it may be solved the problems of creating “green” economy, eradication of poverty on the planet. At the same time, the technological revolution will be accompanied by a deepening of the process of technological polarization as the lagging countries and civilizations do not have financial and human resources for the transition of economy to a new technological basis.

5.2. The Forum participants proceed from the fact that the strategy of innovation and technology partnership among nations and civilizations should be directed at:

- increase of innovation activity of population and enterprises, promoting the development, dissemination and transfer of technologies of the six order to improve the growth rates of labor productivity and saving of resources;
- priority development of socially and environmentally oriented technologies;
- Provision of a large-scale assistance on the part of the vanguard countries and civilizations in the technological modernization of economy of the lagging countries in order to reduce the technological polarization;

- creating favorable environment for the assimilation of scientific discoveries, major inventions and basic innovations, and intellectual property protection;

- enhancing the role of the UN and especially UNDP in assisting the progress of technology on the basis of partnership among nations and civilizations;

- formation of a global innovation system, which provides a continuous and balanced innovative upgrade of technologies in all countries and civilizations.

5.3. The Forum participants supports the proposal for determining within the UN system an organization responsible for promoting technological development and partnership, and setting up, under the aegis of such organization, of the Global Technology Facility to promote innovation and breakthrough projects and help to the lagging countries in the technical sense.

6. THE PARTNERSHIP STRATEGY FOR ECONOMIC DEVELOPMENT AND TRANSFORMATION OF GLOBALIZATION

6.1. The Forum participants have come to the conclusion that the global financial and economic crisis of 2008–2009 and its second wave in 2011–2012 showed that the industrial economic system prevailed during two centuries is undergoing a stage of decline. It is expressed in falling rates of economic growth, formation of the “bubble economy”, growing polarization of the level of economic development between rich and poor countries and civilizations, uncontrolled domination of TNCs in the world economy and globalization processes.

6.2. The Forum participants believe that the partnership of nations and civilizations in economy and globalization should be directed at:

- accelerating the economic growth rates based on the assimilation of achievements of the technological revolution of the 21st century, basic innovations of the sixth technological order;

- progressive changes in the structure of economy, faster development of the real sector of economy, consumer and innovation-investment reproduction sectors of economy while limiting the scope of extremely bloated market infrastructure, overcoming the bubble economy;

- reducing the gap between rich and poor countries and civilizations on the basis of large-scale assistance in modernizing the economy and training human resources for poor countries;

- developing an effective international financial credit and monetary system, the regulation of world prices, limiting abuses of transnational corporations using global anti-trust laws;

- humanistic-noospheric transformation of globalization under the supervision of the institutions of global civil society in the interests of a more equitable distribution of its results (including rental income) between countries and civilizations;

- enhancing the role and responsibility of the UN Economic and Social Council, WTO, UNESCO and other international economic organizations in the long-term forecasting, strategic planning for the world economy under strengthening of the scientific foundations and democratic principles in their activities, taking into account the interests of all countries and civilizations.

6.3. The Forum participants support the proposal to set up, within the UN structure, a permanent body vested with sufficient authority and resources to de-

velop and implement a global economic strategy that meets the interests of the majority of the population of the planet and allowing the pursuance of an effective global anti-crisis policy.

7. THE STRATEGY FOR THE ESTABLISHMENT OF THE MULTIPOLAR WORLD ORDER BASED ON DIALOGUE AND PARTNERSHIP AMONG NATIONS AND CIVILIZATIONS

7.1. The Forum participants state that the realignment of the geopolitical architecture at the end of the 20th — early 21st centuries, the depth of the crisis shocks of the first quarter of this century, aggravation of local conflicts between nations and civilizations, a danger of the spread of international terrorism dictate the need for a system of the world order based on dialogue and partnership of nations and civilizations, and ensuring peace and security in all corners of the planet, and the implementation of pressing democratic reforms.

7.2. The Forum participants uphold a principal stand that the main areas of this strategy are:

- development of the system of constructive multipolar world order, based on the recognition of equality and taking into account of the interests of the major centers of economic and geopolitical forces, civilizations and nations on the principles of their dialogue and partnership;

- the elevation of the UN's role as the world democratic body of dialogue and partnership among all nations and civilizations of the world, strengthening its peacekeeping role in solving rising conflicts, the transformation of the UN and its organizations;

- enhancing coordination of regional inter-governmental and inter-civilization-

al associations as local centers for dialogue and partnership among nations and civilizations in the local context;

- Shaping a system of global law for the regulation of critical areas of international activity, as well as dispute resolution bodies and support of the implementation of global norms of law;

- Establishment under the aegis of the UN the international forces to maintain peace, security and law and order on the planet;

- Renunciation of the use of wars to resolve conflicts between nations and civilizations, the implementation of the prohibition under international control of the spread and use of existing and creating new weapons of mass destruction.

The decisive role in the implementation of the geopolitical strategy of partnership is vested in the Security Council, General Assembly and the UN Secretary General, specialized agencies and regional associations of nations and civilizations.

8. THE STRATEGY OF DIALOGUE AND PARTNERSHIP IN SCIENCE, EDUCATION, CULTURE AND MORALITY

8.1. The Forum participants recognize that the end of the 20th — early 21st centuries are characterized by a global crisis of socio-cultural sphere, the fall of the creative and predictive power and prestige of science, extreme pragmatization of education and commercialization of culture, undermining the moral foundations of family and society, the growing threat to cultural and civilizational diversity.

8.2. The Forum participants endorse the recommendations of the 5th Civilization Forum in Paris “The Long-term Strategy for Dialogue and Partnership of Civilizations in Science, Education and Culture”

and iterate that to resist these dangerous trends, it is necessary to develop and implement a global strategy of dialogue and partnership among nations and civilizations in science, education, culture and morality, including the following areas:

- enhancing the role of science in a knowledge-based society, preservation, enrichment and transmission to future generations of the world scientific heritage, fostering the formation and spread of the post-industrial scientific paradigms and achievements of the scientific revolution of the 21st century, support of scientific discoveries and major inventions, the provision of large-scale assistance to the lagging countries in strengthening the scientific capacity;

- synthesis of the achievements of scientific, education and information revolutions to improve the fundamentality and creativity of education, continuing and distance education, transfer of accumulated and enriched knowledge and skills to future generations;

- revival of high culture, preservation, transmission to the next generations and enrichment of the world cultural heritage and cultural diversity, promotion of artistic creativity of children and youth of all nations and civilizations, preservation of linguistic diversity, multi-faceted cultural exchange, civilizational, cultural and historical tourism;

- uniting the efforts of representatives of religions, men of science, culture, educators and mass media in strengthening the moral foundations of family and society, in overcoming the trends to moral degradation, violence, drug addiction, alcoholism, education of the younger generation in the spirit of kindness, mutual respect, solidarity, tolerance, and high morals;

- development and implementation of the central role of UNESCO as the leading global organization of UN for cooperation in the sphere of spiritual reproduction, long-term strategy of dialogue and partnership of civilizations in the areas of science, education, culture and morality, development and adoption of the Universal UNESCO declaration on the strategy of dialogue and partnership among civilizations in science, education and culture, formation of the Global Education Facility under the aegis of UNESCO and the UN Alliance of Civilizations.

8.3. The meeting participants note the prime significance for the elaboration and implementation of the Global Strategy for Sustainable Development of the scientific heritage of V.I. Vernadsky and welcome the initiative of scientists from Russia, Ukraine, Kazakhstan and other countries in holding scientific conferences, symposia dedicated to his 150th birth anniversary, including the World Congress “Society and Nature: the Path to the Noospheric Civilization” (Saint Petersburg, September 2013).

9. THE STRATEGY OF DIALOGUE AND PARTNERSHIP AMONG NATIONS AND CIVILIZATIONS AND THEIR UNIONS

9.1. The global strategy of dialogue and partnership of civilizations determines general approaches and principles to be implemented by nations and civilizational unions subject to the conditions of their development, civilization distinctive features and traditions and relying on regional and national long-term strategies.

The Forum participants consider it necessary to develop a strategy for sustainable development of civilizations and nations subject to their specific features.

9.2 For the civilizations of Europe (Western European, Eastern European, Eurasian) the prime strategic objectives are to overcome the growing dangers of depopulation and aging of the population, to increase self-sufficiency in energy and other natural resources, balanced and environmentally sound energy resources development in the Arctic, modernization and raise competitive capacity of economy through the development and diffusion of the sixth technological order, improving the structure of economy subject to the principles of justice, the elimination of excessive gaps in the level of economic, technological and social development, strengthening of the mechanism of foreign policy coordination, ensuring security and peace within the framework of the OSCE, implementation of joint efforts to assimilate the achievements in science and education, conservation and enrichment of scientific and cultural heritage and its transmission to future generations.

9.3. For the civilizations of America, and Oceania (Northern American, Latin American, oceanic) and their unions (NAFTA, Organization of American States), the prime strategic objectives are the optimization of migration flows, technological modernization of the leaders (U.S., Canada, Australia, Brazil) and promoting rapid modernization of other countries, to overcome poverty and extreme poverty in lagging countries, strengthening the regulation of the economy and overcoming the abuses of TNCs and global financial centers, strengthening the struggle against terrorism and drugs, the development of achievements of the scientific and education revolutions, the preservation of cultural diversity, strengthening of the moral foundations of the family.

9.4. For the ancient civilizations of Asia and Africa remarkable for their diversity (Japanese, Chinese, Indian, Buddhist, Muslim and African) and their unions (ASEAN, the African Union, Organization of Islamic States, and others) the prime objectives are the regulation of demographic and migration processes, effective use of energy and other natural resources and solution of environmental issues with regard to the interests of future generations, to overcome the technological and economic backwardness and poverty in many countries, the development of scientific and educational potential, preservation of cultural heritage and diversity.

9.5. For the unions of civilizations of different groups (APEC, SCO, BRICS, and the OSCE) the prime objective is to develop mechanisms for inter-civilizational and inter-state partnership in the implementation of a long-term strategy for global sustainable development based on partnership of civilizations.

10. PROSPECTS FOR SUSTAINABLE DEVELOPMENT OF INDIGENOUS PEOPLES OF THE NORTH AND THE ARCTIC CIVILIZATION

10.1. Having discussed the problems and prospects for sustainable development of peoples of the North and Arctic civilization, the Forum participants note that an important condition for the preservation of civilization and cultural diversity is to create conditions for preservation and development of indigenous peoples of the North who are carriers of the value system of the Arctic (circumpolar) unique civilization — the interaction space of three local civilizations (Eurasian, Western European, and Northern American).

10.2. The Forum participants supports proposals of the Association of Indigenous Peoples of the North, Siberia and the Far East, the Government of the Yamal-Nenets Autonomous District and the Pitirim Sorokin-Nikolai Kondratieff International Institute on the need to develop a long-term strategy within the Arctic Council to address the pressing problems of preservation and revival of indigenous Peoples of the North and the Arctic civilization:

- Development of historic-archaeological research and predictive researches into the past, present and future of indigenous peoples and the Arctic civilization;

- the organization of large-scale works on research and forecasting of climate changes in the Arctic and their effects, preservation of fragile Arctic ecosystems;

- preservation and transmission to future generations of traditional household methods and way of life, cultural heritage and the noospheric ethics of the indigenous peoples of the North;

- Enhancement of government and international support for economic, social and cultural development of indigenous peoples of the North;

- Taking into account the interests of the indigenous peoples of the North, their rights to receive a share of the rents and profit, in the development of natural resources of the Arctic;

- participation of representative of indigenous peoples in the municipal, regional, public administration and government, in the activities of the Arctic Council, and its organizations;

10.3. The Forum participants support the proposal to establish the International Academy of Sciences of the Arctic civilization, the periodic holding of festivals of science and culture of the Arctic coun-

tries, on the construction of the Museum of the Arctic civilization and the ethnographic village of the peoples of the North in Salekhard.

10.4. The Forum participants support the construction project of the intercontinental Eurasia — America transport link via the Bering Strait, and consider it a major milestone in uniting on the basis of partnership, of civilizations, nations and major companies in the development of the Arctic resources and improvement of the living conditions of the peoples of the North.

10.5. The Forum participants supported the proposals of the Pitirim Sorokin — Nikolai Kondratieff International Institute to hold at the 5th Civilization Forum of the Alliance of Civilizations (Vienna, February 2013) session “The Revolution in Education As a Bridge to Sustainable Future of Civilizations” and the organization in July — August 2014 under the auspices of the UN Alliance of Civilizations and patronage of the Presidents of Russia and France a civilization cruise “Noah’s Ark of Civilizations” the route Marseille — Sochi — Marseille with tours to the most important historical centers of civilizations of the Mediterranean and Black Sea, training a new generation of leaders within the framework of the Open Internet University of dialogue and partnership among civilizations and the elaboration of a common platform on topical issues of surmounting the global civilizational crisis and the formation of humanistically-noospheric integral civilization.

10.6. The Forum participants consider it essential to preserving the unique Arc-

tic (circumpolar) civilization, traditional economy and way of life of indigenous peoples of the North and support the proposal to establish in Salekhard the real-virtual museum of Indigenous Peoples of the North, as well as a project under the aegis of UNESCO “The Circumpolar Civilization in the Museums of the World.”

11. CLOSING PROVISIONS

11.1. The Forum participants authorize the Forum Organizing Committee to notify these recommendations to the Preparatory Committee of the UN Conference on sustainable development, UN leaders, publish and post on the Internet.

11.2. Viewing the Civilization Forum as a fruitful form of exchange of opinions and development of recommendations on pressing issues, the Forum participants recommend to the P. Sorokin — N.Kondratieff International Institute to hold the 7th Civilization Forum at the World Congress “Society and Nature: the Path to the Noospheric Civilization” and dedicate it to the problems of the historic past and prospects for preservation of the Arctic civilization as a carrier of the system of noospheric values.

11.5. The Forum participants express their sincere gratitude to the organizers of the Forum for a great job of preparing and holding, publishing a special issue of the international scientific-practical journal “Partnership of Civilizations”, Gorchakov Public Diplomacy Foundation for supporting the Forum and the Brazilian partners for the warm welcome and hospitality



Green Bridge Partnership Programme

The Green Bridge Programme initiated by Kazakhstan to support green investments, green innovations and technologies. The Programme was adopted by the 95 countries of Asia and the Pacific region (Astana, 2010) and the Pan-European region (Astana, 2011). The Green Bridge Programme is open for any other interested countries, companies and organizations as a voluntary and multilateral practical mechanism for transferring to a green economy. For more detailed information please visit: www.greenbridgepartnership.net

1. Rationale

Bulat K. Yessekin, *Head of the Working Group on preparation of the Programme Deputy Chair of the Bureau of the UNECE Committee on Environmental Policy, Member of the National Sustainable Council of Kazakhstan*

Back in 1992, 1680 scientists from 70 countries among them 104 Noble Prize winners declared: “Human beings and the natural world are on a collision course. Its ability to provide for growing numbers of people is finite. And we are fast approaching many of the earth's limits”.

On the eve of the WSSD in Rio de Janeiro in 2012, the ministers of Asia and the Pacific region stress: “Natural resources are dwindling, and the demand for energy, water and other key natural resources is continuing to grow fast while the basic human needs of millions of people remain unmet. Current economic models heralding the reduction of a natural capital and ecosystem services shall not be further maintained”¹.

The UNEP report sees a Green Economy as not only relevant to more developed economies but as a key catalyst for growth and

poverty eradication in developing ones too, where in some cases close to 90 per cent of the GDP of the poor is linked to nature or natural capital such as forests and freshwaters².

In May 2001 the G8 Group pointed out: “We firmly believe that green growth is an essential element to ensuring sustainable global growth, notably to promote resource efficiency and sound water management, fight climate change and conserve biodiversity, and that it contributes to sustainable development”³. And UN: “We acknowledge that the response to the crisis presents an opportunity to promote green economy initiatives.”⁴

Today a fundamental transformation of the existing “brown” economy is far more urgent than in any time in the past. Investments and innovations into a natural capital, renewable energy and environmental efficiency give an opportunity to create the economy of the future that is a green economy providing for new and long-term employment and social development, open for everyone.

For the development of a world community, the transition to a green economy which is “*equitable and resilient, providing a better quality of life for all, within the ecological limits of one planet*”⁵ today is a number one priority.

At present, concepts of a green economy are widely discussed at all internation-

al forums including UN, G8, OECD, BRICS, APEC, and others.

It is obvious that the transition from the brown economy to green will demand a lot of changes and cooperation between the countries, as well as private sector and civil society. The goals of a green economy are consistent with strategic needs of Asia and the Pacific and European regions representing 95 countries and accounting for over 70% of the planet’s population and over 90% of all anthropogenic GHG emissions.

The Republic of Kazakhstan is located in the heart of Eurasia at the cross of economic, trade and cultural ties. It is the host country of Asian and the Pacific and Pan-European Ministerial Conferences on the Environment and Development. It initiated the networking of these two largest regions to shift towards greener, more competitive and more inclusive development.

This Initiative has been duly recognized by countries in those regions as they realized that:

- Joint efforts are crucial to protect globally important ecosystems in Asia, the Pacific and Pan-European region, and countries also confirmed that global economy needs fundamental changes which are beyond the capacity of individual countries;
- Long-term, stable and multilateral nature of the Green Bridge Programme should become the necessary prerequisite for long-term sustainable investments to

G20 Framework Agreement to secure sustainable and balanced economic growth (12 November 2010), in its article 68 declared: “We recognize that sustainable green growth, as it is inherently a part of sustainable development, is a strategy of quality development, enabling countries to leapfrog old technologies in many sectors, including through the use of energy efficiency and clean technology. To that end, we will take steps to create, as appropriate, the enabling environments that are conducive to the development and deployment of energy efficiency and clean energy technologies, including policies and practices in our countries and beyond, including technical transfer and capacity building”⁶

replace short-term and fragmentary approaches present in many current development efforts and policies;

- The Green Bridge will facilitate the regional energy and food security and promote the renewal of other green economy sectors given that a developing world rich in natural capital needs new generation of technologies while a vast majority of highly technological products is concentrated in northern countries;

- Cross-sectoral and multilateral in nature, the Green Bridge Programme, in the context of financial and other shortages, can make a substantial contribution increasing efficiency of existing programmes based on the information exchange, neutral, systemic and professional expertise and recommendations.

The countries of Asia, the Pacific and Europe support this Initiative as it creates new opportunities for cooperation and addresses urgent green development needs. Following the decisions adopted by MCED⁷, ESCAP⁸ and UNECE Committee on Environmental Policy⁹, the Government of Kazakhstan in cooperation with international partners have developed this Green Bridge Partnership Programme.

The Green Bridge Partnership Programme is also viewed as an interregional contribution to the World Summit on Sustainable Development to be held in June 2012 in Rio de Janeiro.

2. Goals and principles of the Programme

Green Bridge Partnership Programme's goal is to join efforts of the states, international organizations, public and business sectors from Europe, Asia and the Pacific for the transition to a green economy.

To achieve this goal, the Programme envisages a continuous implementation of consistent measures to green regional, national policies and key economic sectors and to facilitate the preparation and implementation of regional and national projects to support a green economy.

The Programme shall be built upon the following principles:

The leading role of states in creating enabling conditions for the transition to a green economy.

A long-term and multilateral approach to programmes and projects as the necessary prerequisite for fuelling innovations and investments into a green economy and ecosystem services.

The stakeholders' engagement. Industries, private sector, academia, non-governmental organizations and general public should be fully engaged in the Programme development and implementation.

Joint efforts and integration with existing processes. The Programme will provide for the maximum application of best practices from countries and organizations as well as currently implemented programmes and processes.

Good governance. Governance should be representative and multinational, professional and transparent, predictable and stable, reported and verified, result-oriented and focused on practical implementation.

3. Keys Areas of the Programme

Based on the MCED and ESCAP decisions, the Green Bridge Astana Initiative included 5 thematic areas.¹⁰ In consultations with the European partners, these areas were further specified and expanded in this Programme to cover the following:

3.1. NATIONAL AND INTERNATIONAL GOVERNANCE STRENGTHENING

The transition to a green economy requires the involvement of numerous stakeholders, but the key prerequisite is the leading role of national governments in creating management systems and conditions to facilitate innovative activities and a changing attitudes and behavior of business, organizations, households and individuals in favor of the sustainable development.

The governments have to:

- Create a legal framework to phase out inefficient production and consumption, and to promote eco-efficiency;
- Incorporate green procurement and prioritize the channeling of government investments and incentives to sectors that facilitating the greening of energy, industry and agriculture;
- Reduce support for spending in the areas that deplete natural capital;
- Improve the use of strategic and integrated environmental assessments at the level of national planning;
- Apply taxes and market instruments for encouraging a choice of green activities and facilitating green investments and innovations;
- Provide support for capacity building and green projects in priority sectors, such as: sustainable energy, agriculture, urban infrastructure and transport, and enhancement of ecosystem services and promotion of sustainable human settlements.

In addition, institutional and professional support is much required also *at a regional level*, in order to:

- Create long-term sustainable investments into green economy. They should be secured by the multilateral and long-term nature of the Programme preventing

sharp turns and steps back in policies and commitments in certain countries or organizations;

- Establish a governing body — International Steering Committee and an executive body of the Programme — International Secretariat, selected through the procedure adopted by the international organizations;
- Establish a transparent decision-making process, open for everyone providing a basis for trust and involvement of all potential stakeholders, and the civil society in particular.

3.2 INFORMATIONAL INFRASTRUCTURE OF PARTNERSHIP, AWARENESS RAISING AND EDUCATION

• The transition to green economy requires joint efforts of all parties. The development of a Programme's common information infrastructure for partnership on the basis of digital technologies, an easily accessible database, internet-TV and multilingual website 'Green Bridge', will make a significant contribution to support green economy initiatives in Europe and Asia and the Pacific.

• The Programme will be able to arrange internet-conferences with famous specialists, political and community leaders, and to engage leading experts in addressing practical tasks.

• The Programme will support development of information exchange, eco-labeling and sustainable green advertising as tools of the informed consumer society and transparent decision-making process.

• The transition to green economy will require new educational programmes, staff retraining in various sectors. The Green Bridge Programme will use best training and audio-visual materials de-

veloped in various countries available for wider use, and support a free access for all target groups, including distant learners.

3.3 PROMOTION OF GREEN BUSINESS AND GREEN TECHNOLOGIES

The Programme will be especially focused on the access, distribution and implementation of green technologies and innovations.

- The Program will support development of an enabling environment and relevant mechanisms to promote green technologies and investments in innovation at the national and international levels;

- On the basis of EU and other experience in best available techniques (BAT), the Programme will assist stakeholders in applying and implementing these approaches at national and international levels, including recommendations concerning BAT-based incentives, effective subsidizing and government procurement mechanisms;

- Current outdated environmental regulatory systems including those in Eastern Europe, Central Asia, and Caucasus can be also improved in relation to BAT;

- Promotion of eco-efficient innovation through public investment in research and development;

- Further develop and apply eco-efficiency indicators for policy formulation stimulating eco-efficient productivity;

Networking will be established with existing technology transfer and clean technologies centers such as the Asian and Pacific Center for Transfer of Technology and others, on the basis of which a mechanism of the free dissemination and transfer of green technologies will be established and made available to any of the stakeholders in the region.

3.4 FINANCIAL AND ECONOMIC MECHANISMS

Measures to prevent environmental degradation will provide for a significant reduction of economic losses, and in many cases will bring economic benefits.

The Green Bridge Programme will support independent and joint efforts of governments, business and civil society to:

- Use a huge potential of Asia, the Pacific and Europe to raise eco-efficiency, create new markets for environmental goods and services;

- Transferring tax burden from the traditional areas of taxation such as labor and capital taxes to unsustainable activities such as wastes generation and inefficient use of natural resources;

- Shift the subsidies away from environmentally hazardous activities to support new sectors and other areas of green economy; with government procurement, for instance in the fields of energy, education, health, transport and other sectors, making up to 20% GDP and representing a huge market. The Programme contains specific governments' actions to adopt certain eco-efficiency rules and criteria within government procurement of goods and services, strongly supporting the transition to a green economy;

- Make use of international trading system that can support the transfer of green technologies and investments and foster development of new markets for ecosystem goods and services. Countries and regions with water deficit can reduce a pressure on water ecosystems considerably by signing interregional agreements on the import of water-intensive products (for instance, rice and cotton) from other regions where significant water withdrawal from natural ecosystems is not re-

quired. Such win-win agreements («debt-for-nature swaps», «trade in virtual — water and energy») will require an inclusive and sustainable framework, which is to be addressed during implementation of the Green Bridge Programme.

3.5 IMPROVING STANDARDS FOR A GREEN ECONOMY

- The Programme will support reforms of standardization and hazardous activities regulation systems in order to reduce business risks and increase investors' confidence. Often the private sector prefers dealing with specific and real standards rather than working in conditions of uncertainty and unfair competition with those who do not meet the standards.

- The Green Bridge Programme in collaboration with partners will consolidate best experience and give governments practical recommendations on how to apply green economy standards in priority sectors, including energy production and consumption, water and mineral resources, emission standards, discharges and wastes, urban construction and transport et al. For many reasons, including low capacity, such actions are not always implementable at a level of an individual country. Besides, reforms of standards agreed at a regional, and sub-regional levels make trade and economic cooperation more effective.

3.6 SECTORS

3.6.1 *Conservation of water, mountain and other ecosystems*

- Legislation and management systems in many countries of Asia, the Pacific and Europe still undervalue ecosystem services, and this requires a fundamental and urgent change. The Green Bridge Initiative will support the elaboration of joint

decisions and practical steps for applying the available international experience to change planning, legislation, economic mechanisms and other instruments for the purpose of ecosystems and biodiversity conservation;

- Huge possibilities are offered by the emerging markets of ecosystem services (water supply, recreation, climate, biodiversity etc.) at the level of regional and sub-regional agreements and investments into ecosystem services. The Programme will support win-win mechanisms of regional cooperation and trade within the region and between regions in relation to ecosystem services, with a special attention given to water and water-related ecosystems, including glaciers, mountain and forest ecosystems;

- Application of payments for ecosystem services methods agreed by countries through demonstration projects will also help mitigate potential and existing conflicts in transboundary waters;

- Promotion of economic instruments for biodiversity protection, including sustainable fisheries, and for pollution prevention of land, water and ocean ecosystems, in particular in the context of small islands;

- Promotion of best practices for integrated ecosystem management and implementation of new models of ecosystem management and efficient use of natural resources;

- Development of a monitoring system for efficient use of natural resources, to be applied in international trade agreements;

- Development and implementation of sustainable management practices for nature reserves and parks of global environment significance, together with international organizations and other partners.

3.6.2 Sustainable energy, its availability and efficiency

The Programme's long-term goal is the comprehensive use of a huge, but not yet duly tapped potential of Asia, the Pacific and Europe in the field of energy efficiency and renewable energy. To address this, the Programme will help countries to use the available vast experience in:

- Designing comprehensive plans/road maps for the transition to low-carbon development and renewable energy, reduction of GHG emissions;
- Reducing considerable energy losses at production, transmission and consumption, including gas flaring and associated gas reduction;
- Low-carbon housing construction within the framework of state green procurement and international programmes;
- Implementing cost-efficient and adoptable technologies for sustainable energy supply to remote areas in order to reduce poverty;
- Labeling energy efficiency of technologies, equipment and materials, other measures.

3.6.3 Food security and sustainable agriculture

Countries of Eastern Europe, Central Asia, Caucasus, Asia and the Pacific have a huge potential for developing organic farming, saving water resources and sustainable land use.

The Programme will:

- Support transition of countries to organic and sustainable farming, through the exchange of best practices, mutually beneficial and implementation of demonstration projects;
- Support regional cooperation and trade by utilizing regional differences in

natural conditions to increase total land and water productivity, reduce degradation of lands, pastures, forests and other natural ecosystems;

- Distribution of inexpensive and cost-effective food production, transportation, and conservation technologies which is crucially important in light of climate change.

3.6.4 Sustainable urban infrastructure and transport and green construction

The Programme will assist stakeholders, municipalities and human communities to:

- Disseminate best practices of sustainable urban planning and architecture, technologies and materials, low-carbon construction, provide information, consulting and other support;
- Develop proposals to introduce new construction codes, standards for new structures and upgrade for old houses, including those in zones prone to natural disasters, earthquakes and consequences of climate change;
- Assist governments in their transition to state procurement based on sustainable urban planning, attracting green investments into the urban infrastructure;
- Support measures to increase a share of public and alternative transport and new technologies;
- Promotion of an eco-efficient water infrastructure and a "wastewater revolution";
- Study and promote best practices used in sustainable cities and settlements and concepts of 'smart cities';
- Facilitate the development of inter-regional transport corridors, including water transport corridors, to increase economic and environmental efficiency of transportations.

3.6.5 Adaptation to climate change and preparedness to natural disasters

The Programme will support the development of efficient and consistent measures at regional and sub-regional levels to adapt to climate change and their integration into development programmes. The Programme will support the promotion and dissemination of innovations helping mitigate damages caused by natural disasters, namely such innovations as:

- Energy efficient, mobile and floating houses for the countries and regions with permanent flood threats and other natural disasters;
- Construction of dams made of more advanced and cheap materials;
- Use of airships to extinguish hard-to-reach fires, evacuation of population and property, delivery of engineering equipment and machines into disaster areas;
- Development of eco-settlements with autonomous livelihood systems.

Eco-settlements in ecologically clean areas, using advanced technologies for energy generation, water supply and sewage, and also food products, can form a new industry to face growing threats of natural disasters and climate change. The Green Bridge Programme will support pilot projects on creation of eco-settlements and distribution of best practices.

4. Management of the Programme

Governance of the Partnership Programme should be structured to comply with the ideals of good governance for sustainable development. It should be participatory, consensus oriented, accountable, transparent, responsive, effective and efficient, equitable and inclusive and follow the rule of law.¹¹ It

has suggested that interim governing bodies be established during the initial consultation and planning stage of the Partnership Programme to ensure that the elements of good governance are embedded in the Programme in the long term. The following suggested governance structure includes a Governing Board and Secretariat. It is typical of many multi-lateral initiatives and is suitable for both interim and longer-term stages of the Programme. Other models could be followed, but any model that is adopted should be analyzed and considered carefully, with appropriate consultation, before being adopted.

4.1 GOVERNING BODIES

a) Operating entry — Governing Board

Composition: The Governing Board would be comprised of 12 members representing partners of the Green Bridge Programme, taking into account fair and balanced representation among stakeholders. Members would be nominated and elected by the partners of the Programme.

Chairmanship: The Governing Board would elect its own Chair and Vice-Chair with one being a representative of the UNECE and the other from ESCAP region, and the positions of Chair and Vice-Chair alternating annually between the UNECE and ESCAP. The Chair/Vice-Chair positions would be held for a term of two years, with the possibility of re-election for a subsequent two years.

Functions: The functions of the Governing Board might include the following and any others assigned to it by the partners to the Programme (during the initial consultation and planning phase):

- Review and approve strategy and annual work plan of the Partnership Programme and approval of secretariat's progress and annual report, budget and audits;

- Facilitate integration of the Green Bridge Partnership Programme with regional policies, strategies, plans and initiatives;

- Review and endorse regional projects and initiatives (against a set of principles devised by the Programme partners) for consideration by donors and investors;

- Establish an independent monitoring system for the Partnership Programme;

- Commission independent reviews of the Partnership Programme.

Decision-making authority: Decisions of the Governing Board should be taken by consensus; if all efforts at reaching a consensus have been exhausted, and no agreement has been reached, decisions would be taken by a two-thirds majority of the members present at the meeting on the basis of one member, one vote.

Meeting schedule: The Governing Board would convene its first meeting soon after the election of its members. Thereafter, the Governing Board would meet at least twice a year, retaining the flexibility to adjust the number of meetings to suit its needs, and meet in the country hosting the Secretariat except when meeting in conjunction with sessions of ESCAP or UNECE.

b) Administrative entity —

International Secretariat

Secretariat services should be provided to the Governing Board in order to support and facilitate its activities. The International Secretariat can be located at the heart of Eurasia in the capital of the Republic of Kazakhstan, Astana, and a dedicated team of officials should be identified to render these services to the Governing Board in a functionally independent and effective manner. The head of the International Secretariat responsible for rendering the services will be accountable to the Governing Board.

Functions of the International Secretariat

- The functions of the Secretariat might include the following and any other ones assigned to it by the Governing Board:

- Prepare a multi-year rolling strategy, annual work plans, progress reports, annual work and expenditure reports for the Partnership Programme;

- Review National Green Economy Strategies and assist in identifying possible regional and trans-boundary projects and investment opportunities; facilitate regional and trans-boundary collaboration where required;

- Provide support to countries in developing national project proposals and business and investment plans;

- Advise and provide technical support on possible sources of funding for Green Economy projects and investment opportunities;

- Administer regional/transnational projects and programmes as required;

- Organize regional workshops, e.g. on Green Economy awareness raising, writing of proposals and business-plans;

- Commission analysis and co-ordinate preparation of reports, including synthesis of policy lessons learned, case studies of successful Green Economy initiatives;

- Provide administrative and communications support to thematic advisory groups; and

- Establish a communications strategy (including website, newsletters, information materials, media relations, etc).

4.2 FINANCE MECHANISM

The Partnership Programme can add value by not only linking projects and businesses with potential sponsors, but also endorsing green economy initiatives against a set of principles developed in the 1st

consultative year by Programme partners. This would serve to focus the project developers and businesses seeking funding, while at the same time sharpening up the criteria and principles of the donors and investors seeking to fund green economy projects and business ventures.

The decision on finance mechanisms for the Programme should be made during the consultations and planning phase in Year 1 (see section on Road Map below). The decision should be based on robust economic analysis and broad consultation, including with representatives of the existing finance mechanisms, such as the World Bank, EBRD, the International Finance Corporation, the Asian Development Bank, the UN agencies, the Global Environment Facility, the Organization for Economic Cooperation and Development, the Organization for Security and Cooperation in Europe, private investors and other interested partners.

4.3 INTEGRATION WITH OTHER REGIONAL PROCESSES

The Green Bridge Partnership Programme will not duplicate or replace other on-going programmes, but it will help fill gaps by integrating them with emerging long-term sustainable economic programmes and green objectives. The Programme will provide all stakeholders with additional opportunities for cooperation, exchange of experience, synergy and practical implementation of recommendations and instruments developed earlier. The Programme supports the creation of an on-going database, monitoring and delivery of regular and systematic reviews on completed or current programmes and projects, and this will help avoid duplication and ensure a more efficient use of limited resources.

4.5 MONITORING AND REPORTING

The Partnership Programme will be monitored and reviewed by the Steering Committee, which will ensure that principles of open management in accordance with international reporting and transparency standards are met.

Indicators of the Partnership Programme will be elaborated to assess the progress in various areas and projects.

The Green Bridge Programme will also provide a support for countries and organizations of the regions in developing and applying agreed and indicators of a green economy which will be also harmonized with other systems enforced and applied at an international level.

5. Road Map for the Green Bridge Partnership Programme¹²

For the practical steps on implementation of the Partnership Programme it was proposed the Road Map for the period 2011-2020 with an inception period that focuses on studying good practice, networking, developing pilot projects, as well as developing the management and funding mechanisms.

Year 1 — funded consultation and planning phase

- Establish an interim steering committee (optimal size 12 individuals) with equitable representation of stakeholder groups across the region, and with neutral authoritative chairperson and vice-chairperson acceptable to all parties. The Committee would be responsible for overseeing the drafting the Green Bridge Partnership Programme implementation plan.

- Establish an interim secretariat to support the work of the interim steering

committee. Suggested a small team with a director who has broad-based Green Economy awareness and skills, and 2–3 technical support staff with economic and environmental backgrounds, and two administrative support staff.

- The interim steering committee should oversee Year 1 work, and provide guidance to the interim secretariat in:

- Carrying out a mapping exercise to identify existing Green Economy initiatives in the region, current needs and gaps. One practical outcome of the exercise should be to identify sub-regional hubs with common priorities and challenges;

- Conducting regional consultations to identify regional and subregional priorities for the Green Bridge Partnership Programme, collecting materials on the preferred mode of governance of the Programme, including institutional arrangements; modalities and procedures and ways of linking to other international, regional and national-level initiatives (see proposal for Years 2 – 5 below);

- Considering options for financing the initiative. Possible options include creation of a new financial mechanism or tapping into existing funding arrangements at national, regional and international levels;

- Preparing Green Bridge Partnership Programme implementation plan including monitoring, evaluation and reporting, for presentation at the 2012 WSSD (Rio+20);

- Developing a budget for years 2–5 (a new budget for years 6–10 will need to be prepared at the time of the mid-term review suggested below, when future directions for on-going Programme might be recommended).

Years 2 — 5 activities

- Establish legal form and status of the Partnership Programme (during Year 2) accompanied by requisite legal documentation.

- Establish permanent Governing Board (during Year 2) with equitable stakeholder representation across the Asia-Pacific and European regions. Agree, inter alia, functions of the board, procedures for election of members, terms of office, definition of authorities to make decisions, modes of decision-making (w.g. consensus or voting), frequency of meetings, and privileges and immunities of board members.

- Establish permanent International Secretariat. Agree, inter alia, functions of secretariat and his composition (e.g. permanent vs ad hoc), identifying sources of funding for secretariat activities. The Governing Board should take independent decisions on Secretariat modalities and required skills.

- Develop a multi-year rolling work plan to be reviewed by Partnership members on a regular basis. This might include, for example, review of principles, planned thematic meetings and capacity building workshops, review of National Green Economy Strategies, review of projects and initiatives, possible endorsement of initiatives by the Governing Board, implementation of research and synthesis of good practice, etc.

- Establishment of an appropriate monitoring, evaluation and reporting process, compatible with existing reporting procedures.

- Invite participating Asia-Pacific and European countries to assign national coordinators for Green Bridge Programme, which may be in-country offices, responsible for information dissemination, liaison

with national governments, provision of expert advice and support to Green Bridge initiatives, etc.

- Invite Programme partner countries to develop (where required) National Green Economy Strategies (International Secretariat to provide advice, help with awareness raising and information, etc.).

- Review and possible endorsement by the Governing Board of proposed Green Economy demonstration projects and initiatives, which should be embedded in national strategies. Establishment of linkages between projects/initiatives and potential donors/investors with a view to securing funding for Green Economy demonstration initiatives. Identification of possible trans-boundary and regional initiatives to be facilitated by the International Secretariat.

- Establishment of a database of case studies of good practice, challenges, lessons learned, and innovation in policy and practice; initiatives endorsed by the Programme should automatically make themselves open to review and inclusion in the database, which would be publicly available online.

Years 6 — 10 activities

- Mid-term conference to exchange good practice, lessons learned and case studies [Year 6]

- Development of further work plans and budgets

- Review of National Green Economy Strategies

- Review and assessment of contents of case-study database

- Ongoing policy development and support for innovation in business and planning

- Publication of think-pieces and analysis for public consumption.

6. Expected outcomes of the Programme¹³

Institutional and capacity building:

- Common information infrastructure to support green economy including awareness raising and education created;

- An international center and a regional network of industrial parks for unimpeded transfer of green technologies and innovations created. A portal with a free access to databases of green technologies, goods and innovations, created and actively visited;

- Exhibitions of advanced green technologies, equipment and experience with consultations of competent specialists are widely practiced, as well as a tested, approved by international specialists social advertising of best green economy practices;

- Norms and standards for a green economy including technologies, goods and services supported and implemented.

Environmental:

- Considerable GHG and pollutant emissions reduced;

- Saline and degraded lands, as well as pastures, polluted lands including tailing and ash dumps are reclaimed and brought back to the economic activity;

- Quality of surface waters is improved, industrial and agricultural discharges are reduced considerably;

- Degradation of mountain and forest ecosystems and glaciers slowed down, partially because of support of investments into ecosystem services;

- Significant (for the protection of hydrological regimes) water saving in agriculture, industry and communal sector, especially in irrigated farming.

Economic:

- New forms of employment on the basis of green jobs are created in new

perspective sectors of a green business: organic and non-exhaustive land use, sustainable energy, transport, sustainable use of bioresources etc.;

- Energy efficiency is increased considerably and renewable energy markets are expanded;

- International and long-term programmes on recruiting and maintaining populations of valuable commercial bioresources implemented;

- Sustainable tourism infrastructure expanded considerably.

Social:

- Access of a wider population to renewable energy and safe products is ensured. Prime cost of agricultural products reduced considerably through new technologies and new forms of management;

Country-wide development of sustainable settlements and autonomous livelihood systems adapted to a climate change, including those for poor and population in rural, mountain and remote areas;

- Uncontrolled migration of population decreased considerably through the creation of new green jobs and support of available green technologies.

In general, within the framework of the Programme:

- A wide international and cross-sectoral framework are created for win-win regional and inter-regional cooperation and collaboration among countries of Asia, the Pacific and Europe, international organizations, NGO and business for the transition to a green economy;

- New economic, financial and administrative mechanisms are implemented for sustainable use of natural resources, and ecosystems and biodiversity protection and rehabilitation;

- Conditions are created to strengthen capacities and transition of a country to new forms of management that move away from short-term and narrow approaches for the purpose of sustainable development, regional and global security.

Notes

1. Documents to the Conference on Environment and Development in Asia and the Pacific, Astana, 2010., http://www.unescap.org/esd/mced6/documents/Documents/MCED6_11E.pdf
2. <http://www.unep.org/Documents.Multilingual/Default.asp?DocumentID=659&ArticleID=6902&l=en>
3. Declaration G-8 (May 27, 2011).
4. <http://daccess-dds-ny.un.org/doc/UNDOC/GEN/N09/399/83/PDF/N0939983.pdf?OpenElement>
5. Green Economy Coalition: <http://www.greeneconomycoalition.org>
6. http://www.g20.org/Documents2010/11/seoulsummit_declaration.pdf
7. http://www.unescap.org/esd/mced6/documents/Documents/MCED6_13E.pdf
8. Resolution at the 67 Commission Session for Asia and the Pacific (2011)
9. <http://www.unece.org/env/documents/2011/ece/cep/ece.cep.s.2011.l.5.e.pdf>
10. http://www.unescap.org/esd/mced6/documents/Documents/MCED6_13E.pdf
11. <http://www.unescap.org/pdd/prs/ProjectActivities/Ongoing/gg/governance.asp>
12. Based on recommendations from the International Institute for Environment and Development (London)
13. Quantitative indicators will be defined at following stages



Yuri Yakovets,
*President of the Institute,
Professor, RANS Academician*

The Noah's Ark of Civilizations Project of the Scientific-Educational Civilizational Mediterranean and Black Sea Cruise

Marseille — Sochi — Marseille (July–August 2014)
The cruise motto «Partnership of Civilizations will Save Humanity»
The leading topic of the cruise: The World of Civilizations 2050.

THE PROJECT IS REPRESENTED BY:

Pitirim Sorokin — Nikolai Kondratieff International
Institute (President *Yu. V. Yakovets*)
Institute for Economic Strategies (General Director *A.I. Ageev*)
Center for Partnership of Civilizations MGIMO
(Director *V.V. Popov*)
Organization for Promoting Global
Civilization (Chairman *Zhang Shaohua*)
Travel company «Mir» (CEO *V.B. Friedman*)
International Center for Dialogue and
Partnership of Civilization under the Lebanese
University (President *Souheil Farah*)
Travel company IMEX (General Director *N.K. Gerasimova*)
Southern Federal University (Pro-Rector *I.M. Uznarodov*)
TV New Planet (Director *M.A. Karpinskaya*)

PURPOSE OF THE PROJECT

The aim of the project is to collect on the same ship for three weeks the leaders of a new generation to give them the opportunity to get acquainted jointly with representatives of other generations during the cruise and meetings on the shore with the theory and the history of civilizations, their experience of constructive dialogue and cooperation on the Mediterranean and Black Sea areas, clarify causes of modern civilization crisis and ways to over-

come it on the path of becoming an integrated humanistically noospheric integral civilization, to develop common positions and formulate them in the Declaration of Partnership of Civilizations, nations, social strata and generations, which will be submitted to the UN, UNESCO, the UN Alliance of Civilizations and other international organizations, published and posted in the Internet.

THE CONTENTS OF THE PROJECT

The cruise can be organized in July-August 2014 for three weeks on a comfortable middle-class ship with a capacity of 400–500 people (including the crew).

The cruisers, along with the organizers of the cruise, will include representatives of 13 modern civilizations — Europe (West European, East European, Eurasian), America and Oceania (North American, Latin American, Oceanic), Asia and Africa (Japanese, Chinese, Indian, Buddhist, Muslim, and African), as well as the Arctic civilization. For each civilization it will be allocated a country which forms on the principles of selection the team within the limits of the quota set by the cruise organizers and determine the sources of funding.

Teams of civilizations will consist mainly of civilization of a new generation (15–30 years) — 70–80%, as well as the older generations.

Pre-cruise itinerary: Marseille — Genoa — Naples — Crete — Athens — Istanbul — Odessa — Sevastopol — (Chersonese) — Yalta — Sochi — Troy — Millet — Tyr — Jerusalem — Alexandria — Tunis (Carthage) — Algeria — Seville — Marseille (route to be further determined).

The cruise program envisages:

— conducting classes onboard discipline «Dialogue and Partnership of Civilizations»

with the issuance of certificates who have passed the classes;

— holding discussions, competitions, festivals, interest clubs on board;

— organization of meetings with young people at the ports of call, visiting museums, historic sites, familiarization with a particular civilization, discussions with local political figures; and

— holding days of civilizations to be prepared and organized by the team of the relevant civilization.

It will be established interest clubs — young scientists, educators, political leaders, workers in culture, ecologists, historians, etc. including the club of culinary art, which, together with the chefs will prepare menus on the days of civilizations.

It will be established a powerful information center, Internet cafe, library, translation service and other services. A number of events 2050: is envisaged to hold in an online, posting on the Internet

There will be discussion of the draft Declaration on partnership of civilizations, nations, social strata and generations, and other documents of the mission statement, «World Civilizations: Vision of a New Generation.»

During the cruise there will be delivered discussions on the topical issues of the future of civilizations:

The World of the Civilizations of the 21st Century: Confrontation or Dialogue and Partnership?

Planet Earth — 21st century: Noosphere, or Eco-catastrophe?

The Future of the World's Population: Overpopulation, Depopulation, Or...?

The Technological Revolution of the 21st Century: Who will Get its Fruits?

Economy of the New Century: the TNC World or the World without TNC?

Capitalism is a Thing of the Past.
What's behind it?

Science and Education in the 21st Century:
the Fruits of Scientific, Educational and
Information Revolutions

UN-2050: World Confederation of Nations
and Civilizations, Or...?

Is Peace Achievable without War in the
21st Century?

ARRANGEMENT OF PREPARATIONS FOR AND HOLDING OF THE CRUISE

In 2012, the project originators determine the membership of the International Organizing Committee, which appoints the scientific supervisor and general director of the project (the captain of the cruise), examines a business plan and a program of the cruise, identifies the sources of funding.

The Organizing Committee will include representatives of civilizations: the Eurasian (Russia, Ukraine, Kazakhstan), West European (France, Spain, Italy, Greece, the UK, Israel, Germany), East European (Poland, Bulgaria), Muslim (Turkey, Lebanon, Egypt, Tunisia, Algeria, Indonesia), Chinese (PRC, Singapore), Indian (India), North American (USA), Latin American (Brazil, Cuba, Mexico), Buddhist (Republic of Korea, Vietnam, Thailand), African (South Africa), Arctic (Canada, Russia, Norway, Sweden).

To be determined the Board of Trustees of the project under the patronage of the Presidents of Russia and France, with the involvement of representatives from the UN, UNESCO, the UN Alliance of Civilizations, the European Union, UNEP, FAO, the OSCE, the Organization of Black Sea Economic Cooperation, Organization of the Mediterranean Cooperation, the World Bank and other international organizations.

It will be formed the Council of Generations of the 20s from the representatives of the countries, youth and student organizations.

A draft program of the cruise is to be discussed at the International scientific conference devoted to the 150th birth anniversary of V.I. Vernadsky (Paris, May 2013) and at the World Congress «Society and Nature: the Path to the Noospheric Civilization» (St. Petersburg — Salekhard, September 2013).

The project budget is formed by the countries participating in the cruise and organizing meetings on the shore, international and charity organizations, contributions from sponsors and patrons.

THE EFFECT OF THE PROJECT

The project is of a noncommercial nature. The effect of its implementation is multifaceted:

— it will be formed the team of leaders of a new generation, including representatives of all civilizations, their strategy is worked through, mechanisms and institutions to implement it on the basis of dialogue and partnership of civilizations;

— the leaders of a new generation will receive professional training on the issues of dialogue and partnership of civilizations;

— a number of outcome documents will be elaborated and submitted for discussion by international organizations and global civil society.

The progress and outcomes will be widely available on the Internet in an online mode, mass media, and movies. This will help the next generation to develop a common platform of behavior in the transitional period of transformations of the first half of the 21st century.



Strategy of Dialogue
and Partnership
of Civilizations
in Science, Education
and Culture



Science, Education, Culture: Keys to Sustainable Future of Civilizations

Yuri Yakovets, Dr.Sc.
*(Economics), President of the
Pitirim Sorokin — Nikolai
Kondratieff International
Institute, Professor,
RANS academician*

Academician Nikita Moiseyev (1917–2000) in one of his last works prophetically remarked: “New ideas and ability to initiate them are exactly this main product, which determines the position of the country in the world community on the global market, along with education of the people, for nowadays new ideas mean a lot more than mineral reserves.”

This becomes particularly evident at the beginning of the 21st century, when the ninth wave of global crises has descended on the community. The familiar world is crumbling; tested methods for recovery from crisis are failing. National and international leaders, captains of business and political leaders are at a loss, hundreds of millions of people, especially young people, are losing confidence in future, are, in the words of Alvin Toffler, future shocked.

Humanity is in acute need of new ideas and knowledge that will help understand the causes, prospects and consequences of radical transformations going in the world.

Only science can give these new ideas and knowledge. But it is not the dominant part of the scientists who preach the industrial paradigm exhausted its creative and prognostic potential. But new scientific schools which form a new picture of the world adequate to the conditions and realities of the 21st century. This is

the mission of the coming scientific revolution of the 21st century.

However, these ideas and knowledge will remain a sealed book if they do not determine the content of education, nor be a basis for strategic decisions and practical actions of the new generation. Therefore, revolutions in science and education are inextricably linked, and only together can give the desired effect for society.

In turn, the ability of the new generation to accept and effectively use new ideas and knowledge depend on the breadth and diversity of cultures. Transmission of diverse cultural heritage accumulated by tens of hundreds of generations.

Hence, the conclusion is that only the triad science-education-culture is able to give to the anxious and puzzled humanity reliable keys to overcome the avalanche of crises and enter the path of sustainable future of civilizations.

And another important conclusion. A long-term strategy elaborated on the basis of this triad can be successfully and effectively implemented through dialogue and partnership of civilizations only, an innovative partnership of science, education, governments and businesses, partnerships of social strata and generations in response to the challenges of the 21st century.

These premises were taken by representatives of the new Russian scientific schools, their associates from other countries, in validating the long-term strategy for global sustainable development based on partnership among civilizations and its essential part — long-term strategy of dialogue and partnership of civilizations in science, education and culture. These ideas and approaches of scientists were brought up for discussion at the roundta-

bles at the UN Headquarters in 2006, 2009, 2011, UNESCO Headquarters in 2007, 4th Alliance of Civilizations Forum in December 2011, the 5th Civilization in Paris on 12–13 April and will be submitted to the 6th Civilization Forum within the framework of the UN Conference on Sustainable Development, Rio +20 in Brazil in June 2012.

We offer not only a set of strategic ideas and system of strategic actions, but also specific programs and projects that can become the basis for the practical implementation of the strategy in different areas. It is the energy-ecological Program “Arctic Energy”, holding of the international exhibition “EXPO Arctic-2015” in Salekhard, construction of Eurasia — America transport link via the Bering Strait, creation of the open Internet-University of dialogue and partnership of civilizations, publication of the scientific-practical magazine “Partnership of Civilizations”.

Messages to participants of the 5th Civilization Forum were sent by Director-General of UNESCO Irina Bokova, Permanent Representative of Russia to UNESCO Eleonora Mitrofanova. The message was delivered by Permanent Representative of Kazakhstan to UNESCO Olzhas Suleimеноv. There were heard the reports of the President of the Pitirim Sorokin-Nikolai Kondratieff International Institute Yuri Yakovets, foreign member of the Academy of Sciences Maurice Aymard, Corresponding Member of RAS Timur Timofeev, foreign member of the RAE, Professor at the Lebanese University Souhail Farah, Professor Abdo Kahy (France), Professor Victoria Perskaya, Professor Mahmoud al Gabshi (Syria), head of Fondation Maison des sciences de l’homme Michel Wieviorka, Director of the Institute for Economic

Strategies Alexander Ageev. The Pitirim Sorokin golden medals were conferred on Irina Bokova, Michel Wieviorka, Alexander Ageev. There were made presentations of the book by Sergei Lavrov “Between the Past and the Future. Russian Diplomacy in the Changing World”, the textbook of Yuri Yakovets, Boris Kuzyk, and Souhail Farah “Dialogue and Partnership of Civilizations” and a series of monographs. There was delivered the presentation of the energy-ecological program “Arctic Energy,” International exhibition “Expo Arctic-2015” and construction model of the Arctic Expo Complex in Salekhard.

The recommendations of the Forum endorsed the report of an international team of scientists to the United Nations Conference on Sustainable Development, Rio +20, “Foundations of the Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations” and preliminary draft of the Universal UNESCO Declaration on the Strategy of Dialogue and Partnership of Civilizations in Science, Education and Culture elaborated by the Pitirim Sorokin-Nikolai Kondratieff International Institute. It is recommended to the Director-General of UNESCO to establish an expert group to finalize the draft declaration, then to bring it up for discussions at the General Conference of UNESCO.

The recommendations of the Forum support the establishment in Moscow

the UNESCO Institute on global forecasting and strategic planning; the formation of a multilingual Internet portal “World Scientific Heritage”, the development of the long-term program “Revolution in Education As a Bridge to Sustainable Future of Civilizations”, establishment of the “World Education Facility” under the auspices of UNESCO and the UN Alliance of Civilization to finance projects of this program; the transformation of the Russian TV channel “Culture” into the international TV channel; and economically safe development of the Arctic energy resources through the partnership of the Arctic countries and regions; on the development of civilizational tourism as a mass of dialogue between civilizations.

Although in the past decade, the attention of governments and international organizations to the recommendations of scientists has considerably diminished, it is possible to express confidence that the severity of the crisis contradictions and the dead-end of the new means to resolve them, make the ruling and the business community more open and receptive to new ideas, strategies, recommendations, proposed by scientists. Only on the basis of the amount of new scientific knowledge, their skillful use in the strategic decisions and practical actions can give a fitting response to the new and deadly challenges, which humanity encounters today.



A Long-term Strategy of Dialogue and Partnership of Civilizations in Science, Education and Culture

Recommendations of the 5th Civilization Forum
Paris, 12–13 April 2012

The 5th Civilization Forum organized by the Pitirim Sorokin — Nikolai Kondratieff International Institute (SKII) and other non-governmental organizations and supported by the RF Ministry of Foreign Affairs discussed the report of the international team of scientists to the UN Conference on sustainable development based on partnership of civilizations, draft UNESCO Universal declaration on the long-term strategy for dialogue and partnership of civilizations in science, culture and education, issues of synthesis of scientific, education and information revolutions, arranged the presentation of the International energy-ecological program “Arctic Energy”, monograph of S.V. Lavrov “Between the Past and the Future”. Russian Diplomacy in the Changing World”, project of the open Internet University of dialogue and partnership of civilizations, textbook “Dialogue and Partnership of Civilizations” and the monograph “Analysis of Factors of Scientific-Technological Development in the Context of Civilizational Cycles”.

Messages of Director-General of UNESCO Irina Bokova, Permanent Representative of Russia to UNESCO Eleonora Mitrofanova, Permanent Representative of Kazakhstan to UNESCO Olzhas Suleimenov, Director of the Russian Center for Science

and Culture in Paris Igor Shpynov were announced. There were heard the reports of Professors Yuri Yakovets, Maurice Aymard, Souhail Farah, Alexander Ageev, Abdo Kahy, Mahmoud al Gabshi (Syria), RAS corresponding member Timour Timofeev, Head of Fondation Maison des sciences de l'homme Michel Wieviorka, Professor Victoria Perskaya, post-graduate of the Russian Presidential Academy of National Economy and Public Administration Anastasia Lebedeva. The Pitirim Sorokin golden medals were conferred on Director-General of UNESCO Irina Bokova, Head of Fondation Maison des sciences de l'homme Michel Wieviorka, General Director of the Institute for Economic Strategies Alexander Ageev.

As a result of discussions, the Forum participants came to the following conclusions and recommendations.

1. The depth and duration of the global crises (energy-ecological, economic, technological, demographic, geopolitical, social and cultural) shaking the world at the beginning of the 21st century will require a long-term science-based global strategy for overcoming the crises and entering the path of global sustainable development. The Forum participants endorse the main points of the report of the International team of scientists, "Foundations of the Long-term Strategy for Global Sustainable Development Based on Partnership of Civilizations", recommend to convene the roundtable on this issue within the UN Conference on Sustainable Development, Rio +20 (Rio de Janeiro, June 2012 .)

2. Highly commending the activities of UNESCO as the leading UN organization in science, education and culture, the Forum participants support the idea of drafting the UNESCO Universal Declaration on the

long-term strategy for dialogue and partnership of civilizations in science, education and culture, largely approve the initial draft of this Declaration and recommend that the Director-General of UNESCO to establish an expert group to finalize the draft of the Declaration for its submission to the General Conference of UNESCO.

3 Noting the outstanding contribution of Vladimir Vernadsky to the formation of the doctrine of noosphere, the theory of dynamics of scientific knowledge and development of natural sciences, the Forum participants support the proposal to hold the World Congress "Society and Nature: the Path to the Noospheric Civilization" dedicated to the 150th birth anniversary of V.I. Vernadsky in St. Petersburg in September 2013.

4. Considering it necessary to strengthen the activities of the UN and UNESCO in the field of long-term forecasting and strategic planning, the Forum participants support the establishment of the UNESCO Institute for global forecasting and strategic planning, and recommend to the Director-General of UNESCO and the Government of Russia to conclude an agreement on the establishment of the Institute as a non-governmental non-profit organization with its basing in Moscow, to determine the main areas of the Institute's activities and terms of financing.

5. Supporting the decision of the 4th Forum of the UN Alliance of Civilizations on the crucial role of education in ensuring the future of civilizations, the Forum participants consider it expedient to form a long-term program "The Revolution in Education as the Key to Sustainable Future of Civilizations" and the establishment of the World Education Foundation to finance the program projects and recom-

ment to the leadership of the Alliance of Civilizations and UNESCO to take practical steps to implement these proposals, as well as support the proposal to hold the roundtable meeting on this issue within the 5th Forum of the Alliance of Civilizations (Vienna, February 2013)

6. The Forum participants believe that the global strategy of dialogue and partnership among civilizations should find expression in the implementation of specific programs and projects and support in this regard:

- the international energy-ecological program «Arctic Energy» aimed at environmentally sound development of the Arctic energy resources and improvement of living conditions of the people in the region and first of all the indigenous peoples of the North, the preservation of the unique Arctic civilization;

- the project of a multilingual Internet portal “World Scientific Heritage” under the aegis of UNESCO revealing the contribution of eminent scientists from different countries and civilizations to the world of science;

- establishment of the multilingual open Internet university of dialogue and partnership of civilizations;

- Publication and posting on the Internet of the international scientific practical magazine «Partnership of Civilizations» in several languages; and

- Development of civilizational tourism as a mass of form of dialogue among civilizations;

7. Considering the need to strengthen the role of TV in the dialogue of civilizations and cultures, the Forum participants recommend to the Government of Russia and UNESCO, to consider the possibility of transforming the Russian TV channel “Culture” into the international multilingual TV channel by providing educational programs and civilizational dialogue in it.

8. The Forum participants express their appreciation to the organizers, Permanent Representative of the Russian Federation to UNESCO, Fondation Maison des sciences de l’homme and the Russian Center for Science and Culture in Paris for the creation of an enabling environment for the Forum.



PRELIMINARY DRAFT

The UNESCO Universal Declaration on Strategy of Dialogue and Partnership among Civilizations in Science, Education and Culture

Preliminary discussed at the 5th Civilization
Forum (Paris, 12–13 April 2012)

The 5th Civilization Forum participants recommend to take as the basis in drafting the UNESCO Universal Declaration the following provisions elaborated by the Pitirim Sorokin — Nikolai Kondratieff International Institute

The General Conference,

being governed by the UN General Assembly resolution of November 9, 2001 “Global Agenda for Dialogue among Civilizations”, UNESCO’s Constitution and the UNESCO Universal Declaration on cultural diversity of 9 November 2001;

based on the fact that the sphere of spiritual reproduction — science, education, culture and ethics — is the greatest value of humanity and the foundation of its development and prosperity,

noting that since the end of the 20th century, science, education and culture is in a state of the global crisis, the recovery of which is possible only on the basis of a wave of epochal and basic innovations, which result will be the establishment of the post-industrial humanistically noospheric society and an integral socio-cultural system,

recognizing that the crisis surmounting and establishing an integral socio-cultural system requires the consolidation of all the

progressive forces on the basis of dialogue and partnership among civilizations,

commending the work of UNESCO and its Members to promote dialogue among civilizations and cultures, the preservation of world cultural and natural heritage, promotion of education, fostering a culture of peace and tolerance,

believes, however, that the embarking on a new historical era requires a new long-term strategy in science, education and culture on the principles of dialogue and partnership of civilizations to respond effectively to new challenges of the 21st century,

welcoming the initiative of scientists from Russia and other countries to develop a long-term global forecast of social and cultural future of civilizations and the development of scientific bases of the strategy of dialogue and partnership among civilizations in science, education, culture and ethics,

adopts the present Declaration.

ARTICLE 1. THE SPHERE OF SPIRITUAL REPRODUCTION AS THE COMMON HERITAGE OF HUMANITY AND THE MAIN VALUE

The basis of the progress of civilization, the movement from one historical epoch to another is the development of the spiritual sphere, its main elements — science, education, culture and ethics.

The sphere of spiritual reproduction is specific to each ethnicity, nation, civilization, reflecting the peculiarities of their existence and development, and ensuring their diversity as a condition of human activity.

At the same time, the spiritual sphere, system of values are the common heritage of all humanity, the foundation of all na-

tions and civilizations, and their dynamism and adaptation to changing conditions of existence and development.

Science, education and culture have achieved tremendous success in the industrial period, especially in the second half of the 20th century, in the relatively peaceful development, a lack of world wars.

But since the end of the 20th century, at the sunset of the industrial society, global civilization is hit by deep crises — energy-ecological, food, demographic, technological, economic, geopolitical, socio-cultural. Threats to the future of humanity, the fate of civilization are increasing. The sphere of spiritual reproduction plays a key role in overcoming the cluster of global crises and building a new, humanistically noospheric civilization on the principles of dialogue and partnership of states, civilizations, social strata, and generations of people.

This requires a long-term strategy of dialogue and partnership of civilizations in the sphere of spiritual reproduction and its consistent implementation under the coordinating role of UNESCO to ensure the synthesis of scientific, educational and information revolutions, preserve, enrich and transmit to the next generations the cultural and civilizational diversity.

ARTICLE 2. THE RISE OF SCIENCE AND EMBARKING ON A SCIENCE-BASED SOCIETY

Science gathering together knowledge accumulated by humanity over the millennia, is going through the state of crisis due to falling a creative and prognostic power of the industrial paradigm, largely exhausted its potential. Prestige of science is falling, the growth rates of investment

of the government and businesses in its development are reducing. Polarization in the distribution of a scientific potential between rich and poor countries and civilizations has increased. The losses of world scientific heritage are growing in the generational change.

However, the crisis of science is a prerequisite and the momentum for a new general scientific revolution, establishment and distribution of the post-industrial scientific paradigm that is adequate to the realities of the 21st century, formation of society based on scientific knowledge.

The strategy of dialogue and partnership among civilizations in science should be directed to:

- the rise of science in science, change of its role in the anticipation of the prospects for the development of society, the validation of the global and national strategies to overcome the crises and achieving the path of sustainable development;

- establishment of conditions for scientific creativity and the use of its results — scientific discoveries and inventions in the epochal, basic and improving innovations;

- demilitarization of science, concentration of its resources on addressing the issues of social, economic and environmental development of society;

- promoting the development and dissemination of the post-industrial scientific paradigm, free competition of scientific schools in search of truth;

- development of international scientific contacts and exchanges, overcoming the excessive polarization of the scientific potential on the basis of the comprehensive assistance of the vanguard countries and civilizations to the lagging on the principles of partnership;

- the use of Internet, television and other media to generalize, preservation and transmission of the world's scientific legacy to future generations.

ARTICLE 3. INCREASE OF CREATIVITY OF EDUCATION AND GIVING IT UNIVERSAL AND CONTINUOUS NATURE

The system of education — general, vocational and further is the main link for mastering of accumulated knowledge and skills by new generations, constant expansion, repletion and updating of knowledge and its application to the efficient operation in all spheres.

With all the achievements of education in the 20th century, millions of teenagers and young people in less developed countries do not receive formal education. In many countries, vocational education is overly specialized and pragmatized and does not provide sufficient fundamentality and breadth of knowledge, allowing timely adaptation to rapidly changing conditions of life, to successfully implement overdue innovations.

The main areas of dialogue and partnership of civilizations in education are:

- promoting the fundamentality of general, vocational and further education, development of a new scientific paradigm adequate to the conditions of the 21st century;

- dissemination of best practices in creative pedagogy and innovative teaching, fostering creative skills in students, ability to effectively implement innovations;

- a large-scale use in the educational process of modern information and communication technologies, creation of multilingual educational web portals and websites, TV programs and TV films, and the use of multimedia;

- development of a system of continuous (including distance and further vocational) education, the formation of multi-purpose educational centers of new generation to help solve the problem of innovation update of knowledge and skills of hundreds of millions of people across the globe;

- eliminating illiteracy and backwardness in education of less-developed countries, especially among the young people, providing them with a focused partnership assistance of more developed countries, the provision of a new generation in all corners of the globe with the opportunity to receive adequate modern education and skills as the main condition for improving labor productivity and overcoming poverty, hunger, epidemics across the globe.

- upbringing of the new generation in the spirit of solidarity and tolerance, respect to diversity of civilizational cultures, humanistically-noospheric morality.

ARTICLE 4. THE RENAISSANCE OF HIGH CULTURE, PRESERVATION AND ENRICHMENT OF CULTURAL HERITAGE AND DIVERSITY

Culture in all its diversity contributes to the diversification of human and society, the expression of creative abilities of individuals, formation of ideals and moral norms, and enriches the spiritual life of human and society. Culture expresses the peculiarity of the spiritual life of ethnic groups, nations and civilizations. Cultural diversity is the basis of wealth and vitality of humanity. The unity is in diversity and diversity is in the unity — the main principles for the preservation, enrichment and transfer of the world's cultural heritage from one generation to another.

Modern culture is in the state of crisis that finds its expression in a loss of a significant part of cultural heritage and diversity in the generational change, extreme commercialization of culture and spread of mass depersonalized culture and moral.

The major areas of the strategy of dialogue and partnership among civilizations in culture are:

- Overcoming the crisis of sensate culture and its effects, over-commercialization, subordination to the interests of TNCs and monopolies;

- supporting the revival trend of high culture, based on the preservation, enrichment and transfer to the next generation of national and world's cultural heritage, preservation of cultural diversity as a basis for the wealth of the spiritual life of peoples and humanity as a whole;

- humanization of Internet, mass media, dissemination of ideas of new humanism, revival of humanistically noospheric morality;

- development of a system of aesthetic education, especially for children and youth, based on the principles of the revival of high culture, preservation and enrichment of cultural diversity and dialogue among cultures;

- Increased cross-cultural exchange and dialogue, including with the use of modern information technology, Internet and television, cultural, historical and civilizational tourism - domestic and international;

- Support for and preservation of folk arts, particularly of small ethnic communities, as an important part of the world's cultural heritage and linguistic diversity, because the language is voice and carrier of the system of cultural and civilizational values.

ARTICLE 5. THE KEY ROLE OF UNESCO
IN BRINGING TOGETHER THE EFFORTS
OF INSTITUTIONS OF DIALOGUE AND
PARTNERSHIP OF CIVILIZATIONS IN
SCIENCE, EDUCATION AND CULTURE

A decisive role in countering threats of the global crisis of the spiritual sphere at the sunset of sensate socio-cultural system and spiritual rebirth of humanity is played by an intensification of joint efforts of states and international organizations, civil society institutes, religious unions, based on the principles of dialogue and partnership of civilizations, states, social forces, and generations.

There is a need in scientifically validated long-term strategy of UNESCO, focused on dialogue and partnership among civilizations, states, institutions of global civil society, cultures and religions to overcome the global crisis and revive the spiritual sphere, ensuring its leading role in transformations of society in the new historical era.

It will be required to step up the role of UNESCO in building a society based on scientific knowledge, transmitting to future generations of the world scientific heritage, support for the scientific revolution and the formation of the scientific basis for sustainable development and innovation-based modernization of society.

An important role in solving this problem should be played by the Alliance of Civilizations and other international organizations and the movements of humanitarian and ecological nature, world and traditional religions, non-governmental organizations and unions, the media, television, cinema, Internet, and entrepreneurs.

It is necessary to develop democratic principles in the UNESCO activities, expand its ties with non-governmental organizations and social movements, various age groups.

The driving force behind the revival of the spiritual sphere of reproduction is the purposeful activity of the leaders of generation of the 20s of the 21st century, in partnership with the progressive forces of previous generations on the rise of science, giving education a creative, innovative character, the revival of high culture and humanistically noospheric morality.

Concrete steps and measures to develop and implement a long-term strategy of dialogue and partnership of civilizations in science, education and culture are included in the attached Action Plan to implement the Universal Declaration on the strategy of dialogue and partnership of civilizations in science, education and culture.

Action Plan to Implement the UNESCO Universal Declaration on Strategy of Dialogue and Partnership among Civilizations in Science, Education and Culture

The General Conference recommends that the Executive Board and the Director-General of UNESCO, the governments — members-states of UNESCO, regional intergovernmental organizations, institutes of civil society, nongovernmental organizations, and unions to implement the following measures to implement the Strategy of dialogue and partnership of civilizations in science, education and culture.

1. The Development and Adoption of the Strategy

1.1. To the Director-General of UNESCO, to establish a group of experts to elaborate on the basis of the Declaration the draft strategy for dialogue and partnership of civilizations in science, education, culture for 2030 to be discussed at the UNESCO Executive Board in 2014.

1.2. Based on the Declaration and Action Plan, Governments of UNESCO member-states, intergovernmental regional organizations and unions to develop and adopt in 2014–2015. national and regional action plans to implement the Universal Declaration.

1.3. The UNESCO Director-General to report annually to the Executive Board and every two years — the General Conference of UNESCO reports on the implementation of the Declaration and Action Plan.

1.4 To the Director-General and Executive Board of the UNESCO to develop and submit to UN the proposals on holding in 2016 the World Summit or UN Conference on development of science, education, culture on the basis of dialogue and partnership of civilizations

2. Action Plan for Science

2.1. In order to bring together the efforts of scientists in determining the prospects for the global community and validation of a strategy for sustainable development of science based on partnership of civilizations the UNESCO Director-General to establish in 2012 the Institute of Global Forecasting and Strategic Planning and determine its action program.

2.2. The Executive Board of UNESCO to discuss the proposals on the organization of activities on the worldwide scientific heritage, creating an appropriate web portal, and to report on these issues to the 37th UNESCO General Conference in 2013.

2.3. In order to overcome the excessive polarization of the scientific potential the UNESCO Director-General to prepare and present the 37th General Conference in 2013, a report on measures to assist in training research human resources and development of scientific capacity in less developed countries based on partnership of civilizations and states.

2.4. To improve protection of intellectual property rights of scientists and intellectual property the Director General of UNESCO with the participation of the International Association of the Authors of Scientific Discoveries to explore the possibility of organizing the registration and legal protection for scientific discoveries and on the establishment of the World Bank of scientific discoveries and to report to the UNESCO Executive Board in 2013.

3. Action Plan for Education

3.1. The UNESCO Director-General jointly with the UN Alliance of Civilizations to consider the proposal of the 5th Civilization Forum for drawing up program “Revolution in Education as a Key to Sustainable Future of Civilizations” and establishment of the World Education Fund and report to the UNESCO Executive Board in 2013.

3.2. The UNESCO Director-General to support the initiative projects to create multi-lingual Internet portals in the main branches of knowledge and expansion of further vocational education on the basis of the Global Innovation Internet University, in partnership with leading universities in the countries concerned, to generalize the experience and submit a report to the UNESCO Executive Board in 2013.

3.3. Given the crucial role of teaching staff in developing and improving the quality of education, UNESCO Director-General with the assistance of interested countries and universities to develop and submit to the Executive Committee in 2012, proposals for a program of human resources training and further development and establishment of educational and counseling centers in less developed countries based on partnership with more developed countries.

3.4. Given the increasing role of information and communications technologies in the educational process, the UNESCO Director-General, in cooperation with interested countries and companies to pool the experience and submit to the UNESCO Executive Committee in 2013, proposals for the development of multilingual educational programs, websites and portals and TV programs and their use in the general, vocational education, distance and further education.

4. Action Plan for Culture

4.1. Given the importance of efforts for preservation of the World cultural heritage, the UNESCO Director-General and Executive Committee to prepare and submit to the General Conference in 2013, a report summarizing the work done and proposals for its development in the future and more active use in the educational process, the media and in the development of tourism.

4.2. To the Director-General to examine and report to the UNESCO Executive Committee the proposals for turning the channel “Culture” into an international multi-language TV channel under the auspices of UNESCO, as well as continue to work with interested countries, to expand a series of TV films on objects of the world cultural and natural heritage, the history of civilizations, about outstanding scientists and figures of culture.

4.3. Based on the fact that international tourism is an increasingly important as a mass form of dialogue among civilizations to the UNESCO Director-General to examine the proposals and experience of civilizational tourism development of the UNESCO Executive Board.

4.4. Given the importance of preservation and transmission to future generations of the cultural heritage of various civilizations and indigenous and small-numbered peoples, to the Director-General of UNESCO, in cooperation with associations of indigenous peoples to develop a proposal on the periodic holding of international festivals of culture of indigenous peoples.



The Growth of Cooperation

It is difficult to overestimate the successes in the fields of science, culture and education in achieving the overall progress in the field of dialogue among civilizations. A number of works of famous philosophers, sociologists, political scientists and experts in the field of pedagogical sciences is devoted to this issue.

However, it would be wrong to underestimate obstacles and contradictions encountering on this road. Let us just mention a few.

One of such contradictions is rooted in the gap between the super-optimistic declarations of some politicians (whose position is expressed often in the slogan: “A future perfect!”) and the apparent increase in pessimism of many people. After all, they increasingly feel the vulnerability of society to natural and other disasters. It is impossible not to see an unprecedented growth of nationalism in different parts of the world, with its negative consequences. There are observed new risks of instability in some regions of the globe.

What are the causes and conditions of such phenomena?

— Economic fluctuations and crises, reflecting the cyclical changes that as a result lead to serious contradictions - especially in the 21st century — between economic policy of liberalism and rise of state capitalism, with its stronger government regulation of economy. (See, for instance, in the famous book by Lord Robert

T. Timofeev,
*Corresponding Member of the
Russian Academy of Sciences*

Skidelsky “Keynes. The Return of the Master,” L., 2010). And that is why the heritage of Roosevelt’s “New Deal”, as well as the neo-Keynesian concepts are worthwhile to study in contemporary schools and universities.

— Political instability and conflicts, a new balance of forces between different local civilizations and geopolitical shifts and their impact on international relations.

— ecological challenges and their consequences. The gap between the objectives of sustainable development, on the one hand, and the real politics - on the other hand, requires, among other things, the new emphasis on improving of the education.

As we know, climate change and the general worsening of environmental problems have triggered very broad international and national debates. In the focus of attention now there are the issues of correlation between traditional and new, alternative types of energy, the prospects for building nuclear power plants, developing new energy sources. There is a growing concern everywhere about the environmental impact of using different types of energy.

In such circumstances, new efforts aimed at improving education have become even more urgent. Studies show that providing an appropriate level of awareness and education can reduce the vulnerability of population to disasters, catastrophes and improve its capabilities in the recovery efforts after the devastation. It is absolutely necessary to improve the quality of human capital (including through a radical improvement of the universal education.) This is extremely important in time of troubles, when there are disputes

about what should be an adequate policy of development. It is especially important now, in anticipation of the UN Conference on Sustainable Development, Rio +20¹.

* * *

Now about the consequences of demographic changes and growth of international migration.

On the one hand, many researchers into long-term processes in the socio-economic history recognize the natural character of the growth of waves of migration (among them - Professor Lucassen, Van der Linden and others from the Amsterdam Institute of Social History, American scientists Wallerstein, Arrigi and other supporters of the “world-system” theory, as well as a number of German and Russian demographers).

On the other hand, there are those who are very concerned about the quantitative and qualitative parameters of contemporary migration.

Let us remind that in the middle of the 20th century, say, 70 years ago there were virtually no Muslims in Western Europe, and by the beginning of the 21st century in Western Europe it was already about 17 million Muslims (including 5 million people living in France, 4 million — in Germany, more than 2 million — in Britain). Now the annual increase of migrants in Europe is around 1.7 million people.

Having arrived to Europe (with an obvious displeasure writes, for example, well-known English columnist Christopher Caldwell), the adherents of Islam, “broke a lot of European habits, ideas, and structures. Multiculturalism (with which the Europeans were trying to somehow cope with mass migration) requires from the Europeans to sacrifice their freedoms ...²”.

As we know, there are several different conceptual approaches, interpreting international migration and its consequences. This is primarily economic, sociological theories, and interdisciplinary concepts and approaches of macro-historians, political scientists, and social-psychological interpretation, etc.

It seems that it becomes a dangerous phenomenon an increasingly negative attitudes toward immigrants from certain parts of native population, which may serve as a breeding ground for the strengthening of xenophobia, chauvinism. Moreover, according to the same C. Caldwell (see p. 12), this dissatisfaction is due not only to the arrival of new citizens, but also “a protest against the bases of the “multicultural society “. The same author in this context raises the question (posed in the subtitle of his book): “Can Europe be the same with different people in it?”

As we know, in the UNESCO circles and outside this organization it is now widely discussed, for instance, such scientific problems as:

- the correlation of race, class and nation — today and tomorrow,
- the nationalism and inter-civilizational relations in a changing world;
- strategies of development and migration processes,
- values, morality and immigration,
- migration policy and the labor market (conventional views and new approaches),
- the living conditions of illegal migrants (comparative studies)
- migrants, the problems of citizenship and identity; systems of social security,
- ways to enhance the dialogue among cultures and civilizations,

— forms and methods to develop the civilizations’ partnership.

Preparing of new scientific papers and issuing of special systematic publications on the subject is gaining an increasing importance.

One of the recent initiatives in this area was the publication (early 2012) of a new international quarterly journal “The Partnership of Civilizations.” It has so far only Russian and English versions, but it is anticipated that the journal will also be published in Arabic, Chinese, and possibly other languages. The initiators of the publication and editorial board of the journal based on the fact that the new problems the humanity faces in the 21st century require new ideas and approaches, comparing of different positions and varied recommendations. According to the head of Russian diplomacy Sergei Lavrov, today the promotion of dialogue among civilizations and cultures is the imperative of our time, a prerequisite to find effective responses to the challenges the humanity faces in the 21st century, including the development of common value orientations, capable of preventing the emergence of new dividing lines on the world political map. (See “Partnership of Civilizations», Nr. 1/2012, p. 6).

Holding of a number of international forums with the participation of outstanding scientists of different specialties among other things promotes the implementation of these tasks.

Progress of Civioliography

The recent 5th Civilization Forum, which met in Paris coincided in time with the 100th birth anniversary in 2012 of the fa-

amous historian-civilizationalist Fernand Braudel who represented the well-known “Annales” school for many decades. Half a century ago, in 1962, he also became the official head of the Parisian “House of Human Sciences» (“Maison d’Sciences dell’Homme”). Fernand Braudel made a huge contribution to the comparative and interdisciplinary study of civilizations. He paid close attention to the problems of mutual influence and dialogue among civilizations.

As we know, on these issues, there are different views and ambiguous approaches. Hence, there are some differences at times in wording, definitions (which reflect to some extent, different shades in the understanding of certain aspects of these problematics).

For example, Arnold Toynbee, preferred to use the terms: “Encounters between civilizations”³ and “collisions between one civilization and another”⁴.

Both prominent historians — Arnold Toynbee and Fernand Braudel (despite the known differences between them, particularly in the areas of classification of civilizations and determination of their overall number) concurred in recognition of the important role played by non-Western civilizations. Both of them studied, for example, the role of Islam and the Muslim world — both in the era of its “Golden Age” (in the 7th–12th cc.), and a new period of revival of Islam — considering in this regard, the consequences of the collapse of colonialism and the rise of new nationalist movements .

Fernand Braudel (unlike a number of Western researchers into civilization processes) acknowledged the fact of development of an independent African civilization.

According to him, every civilization “depends on the economic, technological, biological, demographic and other factors. All this affects culture and social structure.” For the study of civilizations it requires the participation of all social sciences and humanities, including cultural, geographical, economic, psychological, sociological and other studies⁵.

Touching the different conceptual approaches to the analysis of interactions between civilizations, we can mention some interesting ideas and assessments, coming from eminent scientists of Japan, UK, USA, Russia, etc.

In the paper devoted to the dialogue of civilizations and cross-civilizational spheres, famous Japanese scientist S. Ito (Honorary President of the International Society for Comparative Study of Civilizations, the director of the Center for International Comparative Studies of Civilizations in Tokyo) points out that many theories of civilizations are much more talking about the traditions of the vertical consideration of a civilization. This author, seeking, above all, to analyze the «cross-civilizational spheres» stresses the importance of the global relationships in particular and interactions between civilizations. He develops the thesis of the five epochs of global transformations. S. Ito believes that humanity has experienced «5 great civilizational revolutions» in its history: “the Anthropic Revolution”, “the Agricultural Revolution”; “the Urban Revolution”, “the Axial (or Spiritual) Revolution”, and “the Scientific Revolution”. According to him, all cultural areas were to undergo these revolutions sooner or later.

Professor S. Ito believes that interaction of different cultures manifests itself during the civilizational transformations.

He traces the impact of cross-civilizational spheres (CCS) through the entire history of civilization. This affected, for example, the influence of Mesopotamian civilization on the Indus and Egyptian civilizations; the latter — on the Aegean islands, including Crete. Noting also the development of “Greco-Syrian CCS”, “Greco-Roman CCS”, “Greco-Persian CCS,” the author points out to the “Silk Road CCS”, in the Middle Ages (between the 2nd and 13th cc.) linked the Persian civilization with the Chinese, and then the Arab and European civilizations. He recalls other specific cross-civilizational relations: the Sino-Japanese, transatlantic, relations between the Arab world and black Africa, which resulted in the Islamization of the last, etc. Mutual cultural exchanges have contributed to the civilizational progress in general⁶.

We can learn more about positions of other scientists on these and related issues (besides those already mentioned above works of A. Toynbee, F. Braudel) from the new papers by N. Ferguson and a number of national civiliographers⁷.

While discussing the possibilities and urgent problems of the civilizations partnership — in the context of global civilizational shifts — we cannot but also take into account the geopolitical changes that affect the correlation of influence between old and new «power centers» in the world economy and politics. It should be taken account of obvious rearrangements, with the processes that lead to the formation of new coalitions.

We keep in mind broader capabilities of a «new synthesis» (and the development of so-called «convergent» approach) in the relationship between government and market regulation in the socio-economic

sphere, including their impact on innovations, the processes of post-crisis governance (at the global, regional and national level).

In this connection we see the new possibilities of the «crystallization — in the words of the famous Professor civiliographer. S. Eisenstadt — new civilizational formations⁸.»

Characteristically, many contemporary historians and political scientists assert that we live now in the «epoch of new coalitions.» According to them, in the new global crisis on the one hand, it emerges more clearly, «a return to statism,» and on the other — there appear certain transformations somewhat limiting national sovereignty of states. In the coming decades, they believe, the world community in its composition, from all appearances will be more complicated because of the emergence of some supra-national unions, formal or informal unions of state leaders, temporary or permanent coalitions. This is hardly to be linear, unidirectional process: it is hard to deny that nation-states will still long remain the leading players in the world arena, and that their sovereignty may even increase in a number of aspects. In the near future, it is possible strengthening the role of states; where a return to statism may be both quite lengthy process, and very useful (although such a process is unlikely to be implemented on the same basis). Of course, the forms, purpose and areas of activity of new coalitions depend on various factors. But it is possible that some of the new unions and associations may, ultimately, from temporary turn into permanent⁹.

We are sure that now, during the adoption of new and important decisions, the formation of institutions, coalitions,

of course, need further international debate. They may focus on such, for example, issues as: the global challenges of the 21st century and the prospects of broader coalitions; renewal of models of economic and social development; the evolution of centrist and left concepts, the idea of a “new synthesis” and the real politics, etc.

In this framework, it would be worthwhile, in our view, a closer look at the most promising trends and forms of partnership between civilizations, and their collaborative future.

Notes

1. One cannot but agree in this respect with the conclusions that were made by representatives of UNESCO, I.I.S.R., SKII and other organizations. See, for instance, in the publications of Prof. Wolfgang Lutz in magazines: “Options” (Winter 2011/2012, p. 14-15) and “Science” (Nr. 333, p. 587–592); in the report of SKII President Prof. Yu. Yakovets “The Long-term Strategy for Energy-Ecological Partnership of Civilizations (M.2011), in the new book: Jeremy Rifkin “The Third Industrial Revolution: How Lateral Power is Transforming Energy, the Economy, and the World”. N.Y., 2011. See also in the works of P. Kanygin, Ye. Shuvalova, other authors, in series “Reports of the Institute of Europe”, N.rNr. 268-269. M. 2011. Editor-in-Chief T. Timofeev.
2. *Caldwell Christopher*. “Reflections on the Revolution in Europe: Immigration, Islam and the West”. London, 2010, p.10, 11.
3. See *Arnold Toynbee*. “Civilization on Trial”. Chapter 11, p.p. 188-197
4. *Idem*. “The World and the West”, (5. The Psychology of Encounters, p. 277).
5. *Braudel Fernand*. “A History of Civilizations”. Penguin Books, 1995, p.p. 7–22. (French original ed.: “Grammaire de Civilizations” P., 1987).
6. See: Dr. *Shuntaro Ito*. “Dialogue of Civilizations and Cross-Civilizational Spheres”.
7. Among the latter, it comes under notice integrated researches, team works of INES scientists, Institute of Europe and Institute of Africa RAS, etc. See, for instance: *B. Kuzyk, Yu. Yakovets* “Civilizations: Theory, History, Dialogue, and the Future”. M., INES, 2006; “Russia in the Diversity of Civilizations”. Under the editorship of *N. Shmelev, T. Timofeev, V. Fedorov*. M. IE — Ves Mir, 2011: *I. Sledzевsky* (Editor in chief) “Dialogue in the Polycentric World”. M., 2010; *A. Guseinov, V. Stepin* “Dialogue of Cultures in the Globalizing World”. I.F. RAS, M. Nauka, 2005; *V. Stepin* “Civilizations and Culture”, SPb, 2011.
8. *Shmuel N. Eisenstadt*. “Contemporary Globalization and New Civilizational Formations”. // “Journal of Globalization Studies”. Vol. I, № 2, 2010, p.3.
9. This idea is expounded in more details specifically in the publication: *L. Grinin and A. Korotayev* “Will the Global Crisis Lead to Global Transformations?” — II. “The Coming Epoch of New Coalitions” // “Journal of Globalization Studies”. Vol. I. № 2, 2010, p.p. 166-183.



Russian Civilization: Identity and Destiny

The Charm of any civilization is in its uniqueness: unusual geographic situation, specific ethnical composition of population and original culture. The one who communicates with any civilization not through a reason but through his heart, would open many of its beautiful things. The one who is contacting Russia by reading its books, perusing the newspapers and journals and admiring its art and getting acquainted with its audiovisual culture, would find that his own reason is full of emotion, the same measure, as his heart is full of admiration. Reason expands its capabilities for contemplation, assessment and deduction by observing things, which are of permanent or changeable nature, of high or funny character, which can bring success or can be doomed to failure in spheres of action and ethics. The heart is plunging into the sea of feelings, beauty and spirituality. Enjoying its gifts, one discovers the mysteries of the enigmatic Russian spirit.

What is confusing reason and imagination in Russia and what is arising anxiety about its future? Why are there some people attracted to it as if to the loved one, while others are turned away from it? Let us look for the answers to these questions among the factors of historical, social and philosophical matters.

Russia is a boundless land, one of the largest on our planet. Here are vast forests and plains as well as many rivers and lakes.

*Suheil Farah, Professor of
Philosophy and Civilizations
at the Lebanese University,
member of the Russian
Academy of Education*

Its cities and towns are spread in the Earth space like stars in the sky. This is Russia. It is all white, covered with snow for several months every year. It is a pilgrim in search for a Holly City.

As far as it is large, so much its every word is clear, being turned into sprays of sparks in the lines of poetry and into strictly engraved lines of prose. And so much the brush of its artists is brave and eurhythmics of its choreography and is inimitable. And so much dispersion of its ideological impulses and political strivings is great in the Russian soul's spiritual spaces.

Thanks to the fact of being spread over the expanses of Europe and Asia, Russia has special shades of its culture and spirit. It is here that the crossroad of influences are coming from the West and from the East. Just here Christianity, Islam and Buddhism coexist. There was no thinker who had not been speaking of its original model of civilization, irrespective of his own ideological choice.

Lands and people, thought and image, all have united to create such an example of civilization, which has no other equal on the planet. In the Russian way of thinking there are features of the Eastern mystery and the Western rationalism, of divine illumination and Cartesian logic. There are plenty of forms in the Russian way of doing things, in every day troubles of people. And in every of their deeds, there is a welcome of Europe and Asia. Reason is the creator of science, but the heart — lord of emotions — is feeling free in the spheres of reason. Many researchers were amazed by the combination of reason and heart in the Russian creative spirit. A Russian man is conscious and contemplative by nature. Filled with living forces, the Russian soul,

being captivated by beautiful things, is searching for everything good and warm. It is a turbulent fountain of emotions ruling relationships and deeds of the people. Love and faith, fantasy and business like attitude, are characteristics distinguishing the Russian nature. It is not the East where scientific reason retreats often under the pressure of impetuous feelings. The power of scientific reason is strong in the Russian mind. The Russian thought has attained great heights in the humanitarian and exact sciences and its achievements are really bright. Yet, the heart remains the mine of human energy. By addressing the heart, one can find many mysteries of Russia. The Russian singularity lies in the beauty of its heart, and the richness of its culture is in the highest forms of spirituality. The Russian man throughout the entire history has given preference to the richness of spirit over material wealth both in himself and in the others. Accumulation of richness of spirit was traditionally regarded here to be higher than that of material welfare.

During tsarist time the Russian Orthodox Church was the source of spiritual nourishment of the nation. In the Soviet period the care for strengthening a spiritual source has taken the form of encouragement of an interest in arts, literature and philosophy, although of a single direction. Today, many Russians also think of spiritual nourishment and reject the values of mass consumption civilization.

Spiritual dimension in the Russian soul has many facets. Religion and esthetics, ethics and cosmic views and certainly Messianism are among its sources. Yet, it is the Orthodox spirit that lies at the foundation of Russian culture. The spiritual memory of the people, filled with high aspirations,

was realized in the construction of church temples — an oasis of paradise on the eternal land of Russia. Russian icons have bright colors for sacral symbols of Christianity, thus providing them with esthetic and spiritual value that feasts eyes of the genuine beauty's admirer upon quiet delight. The one, who has opened for himself the believer Russia by guessing the sense of the sacral symbols of its religious and national history, would understand that the Russian great saints were the Orthodox inspiration for the people.

The Orthodox spirit has united the Slavic ethnic groups composing a majority of the Russian population. During difficult periods in its history the Orthodox Church found ways to the hearts of the Russian people. It was first to defend the purity of the faith and originality of the culture. The local Westerners and foreign specialists in Russian philology consider the Orthodox Church as playing a conservative role. But as the Orthodox Hierarchs guess, the faith remains one of the most important means to preserve national identity of Russia under ideological vacuum because of the Soviet Union disintegration. Would it be so that now the formula of the Eastern sage is being applied? Answering the question how to retain identity while remaining open to the outside world, he said, "I would open the windows to let the fresh air come in, but in such a way that the draught could not scatter my own papers."

When speaking of the Orthodox spirit, we certainly don't forget the spiritual beginnings of Islam and Buddhism as well as of other religions and denominations. It was namely Orthodoxy that constituted one of foundation stones of the Russian idea, over which many Russian philoso-

phers and thinkers had intensively worked. Urgent necessity for such a philosophy or such an idea stemming from the depth of the Russian cultural consciousness has been acutely felt in Russia.

The scientific thought of Russia helped to make the breakthrough into the mysteries of the Earth, the Sea and Cosmos. The Russian man looks with pride at the skies and penetrates with his mental glance into the depth of the planet. It is not only the Russian spirit and the Russian metaphysics that are of cosmic nature but also Russian science is cosmic as well. Russian cosmic consciousness is actively displaying itself in the elements of space and time.

And yet, Russia's problems and difficulties are as great as its vast expanses, as innumerable as its resources and as boundless as its hopes for the future. Russia is situated in a very unfavorable geographic belt. In some places it is cold during eight months a year. Frost is a bad mate for good work. The people have to spend too much time struggling with nature.

To the surprise of many, the political forces now in opposition were not successful in managing the Russian expanses. But Russia, taking into account its natural resources and intellectual potential, would occupy the leading positions in the world development if it had its triad forming its consciousness and creative action united — by which I mean the authorities, the intellectuals and the commons. Unfortunately, there were only a few moments of accord between these parts of the triad. The exclusions were the periods of struggle against external aggression. The sides of this triangle joined each other then. They were cemented with the great spiritual and patriotic ideas and accomplish-

ments of the Russian culture, its public and scientific thoughts.

It is tragic that every new Russian authority was striving to destroy even those positive things that had been created by its predecessors. Many serious “surgeon operations” were undertaken on the body of the Russian nation during the Middle Ages, the new and modern history. As a result, the strength of the people was exhausting. Various layers of the Russian population were closer to poverty than to welfare practically at all times. The traditional forms of economy and management were being ruined at every turn of its history.

Indeed, the breaking of the mental as well as the psychological and behavioral features of people is proceeding in a society in the periods of its social reconstruction. The intellectuals are usually influenced by the non-Russian and are not inspired by the national spirit intellectual circles, and are losing their previous role in the society. The position of the common people is no better. Reason and conscious are no longer controlling an action. Immoral and antisocial instincts prevail. It’s just enough to look at the behavior of the large groups of youth in the big cities of Russia to become convinced that everything high and valuable in the bright Russian civilization is being removed from their minds. The cultural scum covers not only mass consciousness but also the consciousness of the “selected ones.” There appear bad literature, cheap art and banal music. There is craving for everything that is worst. Poisonous flowers of the global, especially Americanized culture are fully blossoming.

During such periods the weak sides of the Russian character appear. But at the

same time there are also coming out the appearance of its strength. And there is developing a struggle against the occurrences of anti-culture and shadow economy, heretical theories, encroachments on the values of hard working and morality.

One more feature of the national character worries both the sensible part of intellectuals and the friends of Russia abroad. It is the true Russian passion for the extreme. Patience and restraint are not among the Russian virtues. The positive and negative emotions are exploding with force there. These people are living through the defeat as deeply as through the time of a triumph. Not many of them have a sense of measure. Mania for extreme is being displayed in their everyday life, and resulting in the turn from the situations of anarchy and stagnation to such of euphoria and decay. The display of such a feature of the national character in the field of political activity embarrasses the Russians themselves as well as the numerous friends of Russia abroad.

The contemporary Russian culture is the complex mosaic of ideas and conceptions, troubles, aspirations and interests. Yet, despite its awkwardness and imperfections it is a dynamically developing structure. The modern Russia is returning to its proper sources, strengthening its positions in the changing world. The conflicts and controversies between different forces inside the country are acquiring new rhymes and new dimensions. While taking into consideration all the remarks of the patriotic and leftist opposition and other opposition forces addressed to present political course of the country, it should be recognized that some processes are going in the country’s life– the pro-

cesses which deserve encouragement and support. They imply, in particular, the establishment of principles of rationalism and realism, of democracy and freedom in the intellectual and practical life of the society. Such is aspiring to emancipate personality returning to the national roots and opened to learn the creative achievements of the modern global culture. It is striving inherently practically to all of the intellectual forces in Russia irrespective of their ideological and other differences.

An acute struggle is going now between forces of the Western, Orthodox Slavic, Leftist and Eurasian orientations. In its center there is a question, what Russia should be on the inside, and in what way it should be presented to Europe and the world. The Logic of this struggle is that any of these movements are able to use extremist slogans and fanatically adhere to its position. One or another group could pretend to be exclusively right and blame its opponents of errors. Their mutual enmity could bring direct conflicts. But the genuine expert on the Russian history would know that there is a way out of the situation of acute rivalry. At steep turns of history, the Russian conscience and wise approach of their rulers invariably found decisions in which the principle of personal salvation had been replaced by an idea of collective salvation. Such is one of the great mysteries of Russia.

In conclusion, I would like to say a few words of the Russian future.

Does Russia have a special universal cosmic recognition or not, with its beautiful landscapes and charming people, glorious for achievements of its gifted sons and moved by uncertain impulses? Some hints, thoughts and expectations suggesting positive answer to this question are scattered between the lines of this article. Material and spiritual elements of the Western and Eastern civilizations had been melting and formed, as in a giant cauldron, within bounds of Russia for thousands of years. The Russian cultural energy and the Russian national spirit — gifts of the history of East and West — predetermined might and specific nature of Russia. Every time entering the world, Russia was full of strength to serve both peaceful and non-peaceful aims. Yet, there is no doubt that strong, reasonable and humanistic Russia would correspond to the interests of the whole world.

The charms of Russia will remain in eternity not as a country in the sense of its geographical space but as fairy Russia without an epithet pro-Western, Slavic, tsarist or socialist one.

Bearer of its mighty language, filled with the sense of kindness and grandeur, expressing itself creatively in science and culture and penetrating into mysteries of the Earth and Cosmos, such is the eternal Russia.



***Speech made by Michel Wieviorka
on the Occasion of the Pitirim
Sorokin Gold Medal Award Ceremony
in Paris on 12 April 2012***

It is obviously an honour for a French sociologist to receive a medal named after Pitirim Sorokin.

Pitirim Sorokin is almost completely unknown to French sociologists. The loss is theirs. He is not on the list of American schools of sociology which command respect in France, a renown characterized by a few somewhat abstract references to the Chicago School, functionalism or to some names. Nor does Pitirim Sorokin belong to the Russian schools of sociology commended in France, quite simply because this reference is non-existent: French sociologists are too frequently rather provincial in attitude and in the main are totally ignorant of the contribution of Russia to their discipline. They are, moreover, equally ignorant of many other intellectual traditions. Not many of Sorokin's texts have been translated into French, nor are there many texts devoted to him. Therefore, on this rather special occasion, I would like to say why I feel personally intellectually honoured by this award why it is meaningful.

In France, as from the 1970s, as moreover in other societies, sociology began to distance itself from grand theoretical systems. Researchers increasingly retreated into narrow issues, highly specific concerns, strictly limited orientations, and no longer partici-

pated in major discussions or even display any desire to do so. Given their dread of ideology they also distanced themselves from politics and geopolitics, excepting those for whom it was a specialty and their relationship with history, apart obviously from the historians, was also strained. If I have something in common with Sorokin it is that, like him, and contrary to the predominant developments gradually taking shape as from the 1970s, I have always liked to move between different major problems — for Sorokin, for example, it was the Revolution, social mobility, time, the town-country relationship, etc. For me, it has been terrorism, social movements, and the sphere of racism, violence and anti-Semitism. I avoid being confined to my own subject; Sorokin also was interested in philosophy, history and psychology in particular and at a very high level.

I also undoubtedly share with him the idea that the meaning of the action must be central to any sociological analysis. And I also share his conviction that the sociologist can be concerned or have a moral point of view. Obviously this does not mean that I share his own positions in this respect; I even consider that at the end of his life, he expressed very conservative points of view, for example as regards cultural change in American society, particularly in sexual matters.

A few months ago, when I had to write an article on the questions raised by the widespread practice of evaluation in the social sciences and the humanities, I recalled his virulent and well-founded criti-

cisms aimed at, what in the evolution of American social sciences of the 1950s and 1960s, resulted in the primacy of quantification and of the use of tests. He exposed the mania for tests, numerology (this superstitious obsession with mathematics and data backed up by figures) and quantophobia — a word which I borrowed from him — quoting my sources, obviously.

While I personally am receiving this award, it is also — and perhaps primarily — for institutional reasons. Like Pitirim Sorokin, I have been President of the International Sociological Association. Above all, I am the President of the *Maison des Sciences de l'Homme* Foundation. This institution played an outstanding role during the Cold War in maintaining contacts between the East and the West and by enabling us to ensure the vitality of the scientific links between Western researchers and their counterparts in what was still the Soviet Empire. The Foundation has always acted in a demanding and rigorous manner, focusing on international cooperation, the exchange and circulation of ideas and of persons and has always focused on plurality of disciplines. Although I, as an individual, am receiving this award it is the Foundation (FMSH) which is being honored, as was the case a few years ago with my predecessor, Maurice Aymard. The fact that the ceremony is taking place in the *Maison Suger*, which is one of the jewels of our institution, and in the presence of its director, Jean-Luc Lory, can only add to my happiness and to my gratitude.



Civilization tourism as an effective tool for the dialogue of cultures and civilizations

The international tourism has turned over the past few decades in the global mass movement of people under the planetary scale and is able to perform an important role in the interaction, mutual understanding and mutual enrichment of peoples, cultures and civilizations in the modern world.

By its genetic nature tourism is a transnational and cross-cultural phenomenon. The character of modern tourism varies considerably because of the acceleration of globalization processes. Tourism is a global model of recreation and leisure, social and cultural practice, the growing area of professional activity, dynamically developing industry, as well as common and more affordable way of cognition and development of the surrounding world, to “own” and “other” cultures by means of intercultural communication. Such effects of globalization as the formation of the global tourist market, informatization and virtualization of tourist area and many others, lead to radical changes in the content and nature of modern tourism. Speaking as a powerful factor of globalization, tourism itself is experiencing its transformative effect, manifested in the formation of a new context and environment of its development.

Modern tendencies of formation and development of the uniform tourist space with unprecedented in scope, directions

Oksana Kostryukova, *Cand., associate Professor, head of chair ENGECON, full member of the MTA.*

Valery Friedman, *doctor of economic Sciences., head of the travel Agency “Mir”, full member of the MTA*

Yuri Yakovets, *doctor of economic Sciences., Professor, academician of the Russian Academy of natural Sciences, SKII President.*

and objectives of the tourist migration, cross-border and cross-cultural nature of the tourism business, production and services, as well as the transformation of the international tourism in the global system of diverse and different levels of communications, make the problem of establishing an efficient dialogue between cultures and civilizations through tourism extremely important. Tourism has gained recognition at the highest level as the most popular and effective form of personal participation of millions of citizens in the dialogue of cultures and civilizations by engaging in the tourist exchange and tourism professional activities new participants and determined, on the one hand, as the global socio-cultural phenomenon, and on the other, as a way of development of the surrounding world.

According to the world tourism organization (UNWTO), the share of tourism and related industries account for 6–7% of the jobs in the world, and 9.3% of international investments and 30% of exports of commercial services, 6% of the total exports of goods and services, about 5% of the world's gross domestic product. In 2010, the global income from tourism, including passenger transportation exceeded us \$ 1 trillion. US dollars, that is about \$ 3 billion a day. On a global scale, as the export sector of world trade, tourism ranks fourth after the export of oil, chemical products and vehicles.

Over the past six decades, the volume of international tourism increased from 25.3 million in 1950 to 940 million in 2010 (table 1). During the last two decades, the number of international tourist arrivals increased by an average of 4–5% per year (except for the crisis period 2008–2009), when the decline in the volume of world tourism amounted to almost 15%. Thus, in

2011, the number of tourist arrivals, despite the difficult situation in the world, due to the stagnation of the rates of post-crisis recovery of the world economy, the indigenous political changes in the middle East and North Africa, as well as natural disasters of different scale, increased by 4.4% compared to the year 2010, and was in General 980 million. In the future, according to estimates of the UNWTO, the growth of international tourism will continue, albeit at a slower pace. It is expected that the number of arrivals in 2012 will increase by 3–4% and will pass to the end of the year historical mark of one billion, and by 2030 the number of international tourists in the world will reach 1.8 billion people. This means that after two decades of 5 million people every day will cross an international border for the purposes of tourism.

The dynamics of international tourism shows a considerable growth of interest to the main civilizations, first of all, to their modern cultural foundations. Such civilizations as the African, Latin American, Indian, Chinese, Muslim are gaining the weight rapidly, that in a certain context confirms the prediction of Pitirim Sorokin and Arnold Toynbee of the growing role and influence of non-Western civilizations. Growing civilizational diversity also generates and enhances the tourism. According to the forecasts of the UNWTO it is expected that the number of international arrivals in tourist areas of developing countries (+4.4% per year) will continue to grow two times faster than the number of international arrivals in the developed economies (+2.2% per year) and by 2030, their share will reach 58%. The growing economies of Asia, Latin America, Central and Eastern Europe, the Eastern Mediterranean Europe, Middle East and Africa

will account for an average of 30 million arrivals per year, compared to 14 million in traditional directions of the developed economies of North America, Europe and the Asian-Pacific of the region. In the world market will increase the share of the Asian-Pacific region (from 22% in 2010, to 30% in 2030 year.) and Africa (from 5% to 7%) and there will be a further reduction in the proportion of Europe (from 51% to 41%) and the American region (from 16% to 14%). By the year 2030 the North-Eastern Asia will have become the most visited sub-region of the world with the index of 16% of the total number of all arrivals, exceeding the share of Southern and Mediterranean Europe, having 15% in 2010¹. Increasing tourism appeal

of the countries which have different cultural and civilizational bases, taken with expected growth of international tourist exchanges enable us to acknowledge not only the potential of tourism leadership in economic and social growth along with reaching ecological stability, but also improving of cross-cultural understanding and peace building. The Secretary-General of UNWTO Mr Taleb Rifai said: «The tourism sector offers a natural path to build bridges and bring cultures together on the road to understand and peace and should thus put higher on the international and national peace building agenda»².

The culture-historical heritage of people plays an important role in cultural and civilizational interaction in the tour-

Table 1. *The dynamics of international tourism*

Key metrics	International tourist arrivals									The average annual growth, % 2000–2010
	million people							Change, %		
	1990	1995	2000	2005	2008	2009	2010	2009 to 2008, %	2010 to 2009, %	
The whole world	435	328	675	798	917	882	940	-3.8	6.6	3.4
Developed countries	296	334	417	453	495	474	498	-4.3	5.1	1.8
USA	39.4	43.8	51.2	49.2	57.9	55.0	59.7	-5.1	8.7	1.7
Western Europe	108.6	112.2	139.7	141.7	153.2	148.6	153.7	-3.0	3.4	1.0
Developing countries	139	193	257	345	421	408	442	-3.2	8.3	5.6
Russia	3.0	11.6	19.2	19.9	21.6	19.4	20.2	-10.0	4.4	0.6
China	10.5	17.0	31.2	46.8	53.0	50.9	55.7	-4.1	9.4	6.7
India	1.7	2.0	2.6	3.9	5.3	5.1	5.6	-2.2	8.1	9.2
Latin America	33.0	39.4	51.1	71.7	72.9	70.1	74.0	-3.8	5.6	4.4
Middle East and North Africa	18.0	21.0	34.3	50.2	72.3	70.5	79.0	-2.5	12.0	7.9
Africa South of the Sahara	6.4	11.6	16.2	21.5	27.2	28.4	30.7	4.4	8.0	6.6

Source: Highlights. 2011 Edition, UNWTO Tourism Barometer 2010, 2005

ism sphere. The heritage is considered not only as a resource potential but also as a humane imperative of development. Thereupon the major role belongs to the initiatives in the sphere of cultural or civilizational tourism which share is growing and now is making up not less than 37%.

Recommendations for cultural and historical tourism assistance were introduced in the key international documents, such as Programme of UN General Assembly resolutions “Global agenda of Intercultural Dialogue” (2011), World Declaration of UNESCO on cultural diversity (2001), Global tourism ethical code (2001), Declaration on sustainable development (Johannesburg, 2002), convention on non-material cultural heritage protection (2003), solutions and materials of the major international symposia, conferences, organized under the auspices of UNWTO, UNESCO, world non-government forum «Intercultural dialogue», UN Alliance of Civilizations, V Civilizational forum (Shanghai, 2010) as well as in frames of the regular «Likhachev’s reading sessions» organized in Saint-Petersburg, conferences etc.

As a result a cluster of positive initiatives are growing. They contribute to the tourism assistance in cultural and civilizational interaction, establishing of intercultural dialogue and protection of cultural diversity.

An important step in this trend is the establishing of the Annual International Award for Intercultural Innovation founded by the Alliance of Civilizations, under the auspices of the United Nations together with the BMW Group. The first winner was the MEJDI Tours company, founded by Marc Gopin, the professor of George Mason University, who studies the role of religions in solution to conflicts and peace building.

Another important trend in promotion of intercultural dialogue is revival and promotion of civilizational tours which mean international and interregional tourist programmes of cross-border routes which represent prospective model of intercultural dialogue involving such state participants as government and intergovernmental organizations, non-government organizations, cultural, religious, volunteer organizations, mass-media. These routes had been forming for a thousand years, they existed as various forms of mutually beneficial exchange of ideas, technologies, goods. Such «trunks» of intercultural dialogue and civilizational exchange as the Great Volzhsky Route, the Silk and Tea routes (which were passing through the territory of modern Kazakhstan), the Northern part of the Black Sea region, the route from the Varangians to Greeks, the Northern Sea route etc. These trade routes were protected by the government, dozens of cities were founded along them. The development of civilizational routes enables to single out the civilizational tourism as a special innovative, science intensive type of tourism, synthesizing such specialized types as historical, cultural, ethnographical, ecological, religious tourism and others. The object of the civilizational tourism is familiarization with peculiarities, history, culture, system of values, natural resources, religious believes of any local civilization. The suggestion about the civilizational tourism was introduced at the meeting of the panel discussion in frames of the St.-Petersburg’s Economic Forum by the International Institute of Peterem Sorokin — Nikolay Kondratiev in 2000, just before the Year of the Intercultural Dialogue, and was supported in the documents.

In its essence the civilizational tourism is a special multifunctional and multipurpose type of tourism, based on the usage of a wide spectrum of resources, mainly cultural; science intensive approach, based on convergence of knowledge on archaeology, ethnography, history, cultural geography, economics and other sciences, highly-developed infrastructure including social, informational, communicative, cultural; professional hospitality including those, based on the methods of partnership cooperation.

It includes such functions as communicative, educational, aesthetic, that can be differentiated according to the target predestination implemented in frames of its programmes and activities. The following types of tourism can be assigned in the civilizational aspect:

— Cultural tourism, familiarization and educational purposes, focused on the knowledge and interpretation of cultural heritage characterized by the interest and perception to the cultural and civilizational knowledge and urge towards its understanding and acceptance;

— Intercultural tourism, focused on research of interaction, cooperation of cultures and civilizations targeted to knowledge, understanding and mutual enrichment in the process of cultural exchange between «guests» and «hosts».

— Communicative tourism which main feature is a focus on different types, forms and spheres of communication, different types of discourse with the representatives of the lingo and sociocultural receiving communities;

— Identifying tourism, motivated by the searching and knowledge of the origins and roots of national, ethnic, cultural identity through familiarization with historical territories, sightseeings, recon-

structed identity, consolidation/dethronement of national cultural stereotypes; familiarization with reconstructed or live traditions and languages, and facilitating to rehabilitation of ethnic groups and communities, avoidance of international and interethnic conflicts;

— Ecological tourism represent types of tours which target is familiarization with the variety of nature and traditional historical monuments of countries and civilizations;

— Life-seeing tourism which aim is to plunge into live culture of a visited destination, familiarization with culture from within, through everyday sociocultural practice in all existing forms and types of its demonstration, living of «hosts» and «guests» together in a guest's alien culture during a fragment of their life;

— Conciliative tourism, generated by political, historical, social and cultural causes, which give reasons for travellers to participate in tourism programs in form of intercultural dialogues, and promoting the value of good neighbourliness, peace, understanding under the conditions of divided community, getting the autonomy of the certain territories, political confrontation.

All these varieties to different extend reflect the willingness of different nations and cultures to know each other better and to make a dialogue, as both an individual and society have an easy and intrinsic willingness to smooth the disagreements and prevent conflicts, seek to harmony, solidarity and understanding, to live in peace, compliance and security, to develop the culture of the world.

The programs of civilizational tours “Saint Petersburg is a city of dialogues between civilizations”, “North-West Rus’: the origins and heights of Russian civilization”⁴,

“The Silk Road” were created by the scientists of International Institute of Pitrim Sorokin — Nikolay Kondratyev together with tour company “Mir” for the purpose of realizing the initiative of civilizational tourism. International Academic conference “Saint Petersburg in the conversation of East and West cultures” and civilizational tour “North-West Rus’: the origins and heights of Russian civilization” were arranged and held with the participation of International society which deals with the survey of civilizations in 2003. The participants of civilizational tours visited Saint Petersburg, Staraya Ladoga, Velikiy Novgorod, Pskov, Izborsk. Holding of academic conventions and civilizational tour was realized with the participation and support of local authorities of Saint Petersburg, tour companies and museums (Staraya Ladoga, Velikiy Novgorod, Pskov, Saint Petersburg) and included meetings with scientists and staff of academic institutions and museums, reports, speeches, presentations of scientific efforts and round-table conference “The Great Volgian Way”, “The arterial road of the communication between civilizations”.

The first civilizational tour in the history of voyages was realized in 2010 by vessel “Mr Velikiy Novgorod” along the river Sedoy Volkhov from Saint Petersburg to Velikiy Novgorod. This was the logical follow-up of civilizational tour. The participants of this 5-day cruise got over the part of ancient way “From the Varagians to the Greeks”, saw ancient Russian towns — Staraya Ladoga and Velikiy Novgorod, where the Russian civilization began, visited hydro-electric power station of Volkhov, which was the first step in the electrification of Russia, took part in the excursions around Saint Petersburg, — city, which has become the top of national civilization.

Such attempts of civilizational tourism, which extend the boundaries of intercultural cooperation and comprehension through the travelling, may become an inspire example for the modern politicians, public and religious people. The development and expansion of such tours may assist both the extension of intercultural and intercivilizational cooperation and the realizing of strategic functions of tour industry in Russia, making it a part of the world tourism area. However, it can be possible only under the circumstances of national support at the governmental and regional levels.

In other words it is essential:

- to improve the general responsibility and function of coordination while planning and promoting the routes of civilizational tourism;

- to stimulate the scientific rationale and development of special-purpose products of civilizational tourism or modernization of those, which have already exist, in order to create the best conditions for them to be used by tourists;

- to realize the complex approach, which provides the necessity of governmental investments into the development of transport (including transit) and tourist infrastructure of civilizational tourism; to intensify the participation of state-private partnerships; to support the measures and to provide tourism with necessary information in time;

- to develop the educational tourism on a first-priority basis; to include the civilizational tours into the learning course of school children and students as well as advanced training of teachers;

- to use modern information and communication technologies, especially Internet and television in order to discover new territories for tourism and its new varieties.

Partnership is essential from the side of tourism organizations. Moreover, it is necessary to correspond with the universities, museums, local authorities and to suggest large-scale routes, i.e. programs of civilizational tours instead of established ones. The complex approach, which includes cognitive, entertaining and knowledge-based aspects, may consolidate the efforts of scientists, workers of culture and reps of tour business at the new stage of development of civilizational tourism as more complicated form of tourism, which gives the whole idea about every civilization and functional international cooperation.

The development of new routes for civilizational tours is essential. One of the most promising direction is the development of arctic civilizational tourism, which can be provided with the program “The energy of Arctic”, made by the International Institute of Pitrim Sorokin – Nikolay Kondratyev. Its goal may include the comprehensive studying of unique Arctic civilization, which introduces the northern parts of three local civilizations: Eurasian, West-European and North American. The program of these tours may include familiarization with the reclaiming of North and its connection with other civilizations. These questions are planned to be discussed at the International conference, dedicated to the problems of Arctic civilizational tourism within the framework of World Congress “Society and nature: way to the noospheric civilization”, which is created in honor of V.I.Vernadskiy’s 150th birthday anniversary.

The development of routes under the project “The Silk Road: Central Asian and Russian arterials” may be the other promising directions in the extension of civiliza-

tional tourism. It will help to analyze many thousand year experience of fruitful communication between civilizations. Such project correspond the goals which have been set by Russian Government. These goals are to develop the tourist cluster on the North Caucasus on a first-priority basis, because there is a huge and still low-used tourist potential. Such project might be created by scientists together with staff of museums and tourist organizations of Russia, Kazakhstan, Kirgizstan and Turkmenia.

The International Institute of Pitrim Sorokin — Nikolay Kondratyev may be a coordinator of these projects, as this Institute has been investigating the problems of civilizational tourism for more 10 years.

Notes

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Presentation of Monographs



Analysis of Factors of Scientific and Technological Development in the Context of Civilizational Cycles

Under the editorship Dr.Sc. (Economics), Professor,
RANS Academician Yu.V. Yakovets
Dr.Sc. (Economics), Professor V.L. Abramov



A cluster of global crises that hit the planet since the beginning of the 21st century can be overcome only through the wave of epochal and basic innovations defining the content of the civilizational revolution of the 2nd quarter of the 21st century. Its core is the scientific and technological revolution. There is a desperate need in a scientific understanding of deep transformations going in the world and formulation of a long-term strategy for an innovative breakthrough.

This problem is particularly relevant for Russia which from the end of the 20th century is in a deep civilizational crisis, technological degradation of economy and a loss of its competitiveness.

The research works performed in 2011-2013 by the Pitirim Sorokin — Nikolai Kondratieff International Institute under the government contract with the Russian Ministry of Education were devoted to the research into these problems.

This monograph covers the research results of the first two stages completed in 2011. It discloses the contents of a unique

methodology for integral macro-forecasting developed by Russian scientists and modified with respect to the subject of the research. On the basis of a situation analysis and forecast critical situations have been identified in the dynamics of natural and ecological, economic, technological, demographic, socio-political and socio-cultural factors in the era of civilizational cycles change. Scenarios are considered to address these situations in the world and Russia. The conclusions of the key areas of the long-term strategy for an innovative breakthrough resting on the effective use of the prime factors of scientific and technological development in the rhythm of civilization cycles are formulated.

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Resume

Resume. Key Outputs

As a result of the two stages of works completed the following major outputs have been received in the year 2011.

1. *It is designed a unique methodology for analysis and long-term forecasting of the system of the factors of scientific and technological development in the rhythm of civilizational cycles* that makes it possible to identify regularities and trends in the dynamics of civilizations at the level of mega-systems — local and global civilizations. So Nikolai Kondratieff's theory of foresight, and the modern prognostic schools have received a significant addition that meets the current level of globalization and integration of national economies and technological systems, and the UN and other international organizations — a more reliable science-based foresight mechanism based on the post-industrial scientific paradigm.

2. *A classification of civilizational cycles* in the dynamics of both local and world and global civilizations is made, their

structure is disclosed in the form of cyclical dynamics of the components making the genotype of civilizations — natural-ecological, demographic, technological, economic, socio-political and socio-cultural. This has made it possible to evaluate the modern era as a transitional period, the content of which is in the change of the super-long civilizational cycles — the decline of a two hundred industrial world civilization, the establishment of an integral, humanistically noospheric civilization; a more differentiated fifth generation of local civilizations; transition to the third historical super-cycle in the dynamics of the global civilization. The planet is hit by a long civilizational crisis — a forerunner and the beginning of the civilizational revolution of the 21st century. It is a determining factor to understanding the key role of the scientific and technological revolution to overcome a cluster of the global crises and to achieve the path of sustainable development.

Russia is at the epicenter of such civilizational transformations as a result of the disintegration of a 500 years Eurasian civilization, technological, economic and socio-cultural degradation of the end of the 20th century.

Thus, a relatively young branch of the social sciences — civiliography (the science of civilizations) where the Russian civilizational school is leading in its formation has been further developed.

3. It is made a super-long retrospective analysis of the dynamics of the global, international and local civilizations for the period from 1500 to 2001 basing on the data of Maddison's monograph on historical statistics.

This helped to specify the evaluation of the change rhythm of civilizational cycles

subject to the law of compression of historical time determined by the vanguard civilizations. The period of the 16th — second third of the 18th centuries is characterized as a cycle of the early industrial civilization, when the leadership passed from the Chinese and Indian civilizations to Western European. The end of the 18th century — beginning of the 21st century is the period of the dominance of the industrial world civilization which in the last quarter of the 20th century entered a phase of decline and in the 2nd quarter of the 21st century will be replaced by the emerging integral, humanistically noospheric civilization. The United Kingdom was first the leader — the birthplace of the Industrial Revolution in the late 19th century, it ceded leadership to the United States. Since the mid-20th century they shared the lead with Japan and the USSR, and since the beginning of the 21st century gave way to the leadership of the Chinese civilization.

The Eurasian civilization lagged behind in the industrial revolution, but since the mid-20th century, basing on the achievements in the development of a scientific-technological revolution and assimilation of the fourth technological order, entered the ranks of the world leaders, reached the military-technical parity with the Western civilization.

However, in the 70-80s the Eurasian civilization found itself in the state of stagnation, and in the 90s — in the state of the profound civilizational crisis and disintegration, technological, economic and socio-cultural degradation. Early 21st century, the phase of recovery began, but the opportunities of innovative modernization were lost, the technological gap from the vanguard countries was growing, the

competitiveness of economy was falling. As a result, from the end of the year 2008 Russia and other countries of the Eurasian civilization found themselves again in the grip of global and national crises.

4. The researches have shown that *surmounting the cluster of global and national crises is possible based on a civilizational revolution of the 21st century, a wave of epochal and basic innovations*, radical transformations of economy and society. From the beginning of the 21st century prerequisites for such revolution are most clearly manifested in the Chinese and Indian civilizations. From the second quarter of the 21st century, it will involve the vanguard civilizations, from the 3rd quarter of a century it will spread across the planet. A key factor of global transformations will be a scientific and technological revolution of the 2nd quarter of the 21st century. Since 2011, the signs of a global revolutionary situation became increasingly apparent. In these circumstances, it becomes timely to develop a new strategy for global sustainable development based on partnership of civilizations. The main outlines of such strategy are developed by an international team of scientists led by the P. Sorokin — N. Kondratieff International Institute, were reported and received support at the roundtable meeting as a part of the 65th session of the UN General Assembly (New York, UN Headquarters, 28.06. 2011) and the 4th Forum of the UN Alliance of Civilizations (Doha, Qatar, 12.11.2011).

Thus, Russian scientists are leading in a global long-term forecasting, and in validating the contours of the long-term strategy for global sustainable development based on partnership of civilizations.

5. *As a result of the research it is developed a theory of scientific and technologi-*

cal development, a change of technological cycles, epochal and basic innovations. It is shown that an integral part of change in the civilizational cycles is a change in technological modes of production, which stages of development act as a change of technological orders.

Since the beginning of the 21st century the 5th technological order (the final stage of the industrial technological mode of production) entered into the down stage, the basics of the sixth technological order are emerging (the first stage of the post-industrial technological mode of production), which will become prevailing in the vanguard countries from the 20s of the 21st century, determining the competitiveness of goods and services in world markets.

The USSR was one of the leaders in the development and diffusion of the 4th technological order, but in the 70-80s it fell behind in the assimilation of the 5th order. As a result of the technological degradation of the 90s of the 20th century Russia is thrown back to the periphery of the world's technological progress, lagging behind the vanguard of countries increases. A strategy of innovative breakthrough developed by the Russian scientists has not yet accepted by the ruling and business elites, scientific and technological potential is undermined, the government support for science and basic innovations is extremely weakened.

These critical situations can be overcome only through the development and consistent implementation of a long-term strategy of an innovative breakthrough basing on the analysis and efficient use of the prime factors in the scientific and technological development in the context of civilizational cycles.

The situation analysis and forecast of the dynamics of these factors in the world and in Russia are given in the report on the second stage of the theme.

6. The *demographic factor* has a significant impact on scientific-technological and economic development, depending on the growth and age structure of population, a share of population in the innovation active age, educational level of working.

The analysis has showed that in the 50-60s there were achieved record growth rates of the world population, their average age was decreasing, a share of innovation active population was growing, persons with the secondary or higher education, the number of people employed in science, science-intensive sectors was rapidly increasing. This established favorable conditions for the assimilation of the achievements of the scientific and technological revolution, the fourth technological order, record GDP growth rates in the 3rd quarter of the 20th century.

However, in the last quarter of the 20th century, and especially at the beginning of the 21st century a reverse of the tendency occurred, the signs of a demographic crisis were growing. The population growth rates are decreasing each five years, there is an increasing number of countries (first of all Eastern European and Eurasian civilizations) hit by depopulation, the average age is growing the signs of aging populations are observed, a share of the population in the innovative active age is decreasing. A growth of professional incompetence is added to it due to drastic changes in the working and living conditions, the rapid aging of knowledge and professional skills received. As a result, the demographic factor of the active engine of scientific and

technological progress has become more and more frequently exhibiting an inhibitory effect, especially in countries with depopulation.

These trends are most clearly manifested themselves in Russia, thus formed a critical situation in its development.

Since 1993, the number of population was decreasing in Russia, since 2006 — the working-age population. In the long term the shortage of labor will be increasing. It is partly covered by the immigration of low-skilled workers, while a significant share of the skilled young people emigrates. The quality and structure of vocational education has deteriorated. As a result, there are no human resources for the implementation of basic and improving innovations. In the coming decades, the demographic factor is the main obstacle to scientific, technological and economic development, a barrier to an innovative breakthrough. This critical situation can be if not overcome, then be mitigated on the basis of active and strong demographic and educational strategy.

7. The *natural-ecological factor* is also changing its vector in the global scale. Each technological revolution in the past was characterized by the development of new types of natural productive forces — steam power, electricity, liquid and gaseous fuels and nuclear energy. The flow of cheap energy is a base for a technological breakthrough. However, since the beginning of the 21st century a global energy-ecological crisis has changed the trend. The sources of fossil fuels that are 81% in the balance of energy consumption are being exhausted and quickly rising in price, the scale of pollution and environmental costs are growing. There is a growing shortage of fresh water; tropical

forests are being cut down, arable lands are decreasing. As a result the natural environmental factor is becoming a big constraint on a scientific and technological progress. At the same time there is a growing demand for renewable energy and clean technology.

In Russia which has significant reserves of natural resources the natural factor is so far an important source of economic development, a source of rent income. However, these revenues are used to a small degree for innovative modernization of economy and energy-raw materials sector. As a result, natural resources are spent ineffectively, the level of emissions to the environment are substantially higher than the average. To overcome this critical situation is necessary to develop and implement a long-term energy-ecological strategy focused on the evolving noospheric energy-ecological mode of production and consumption, conservation of natural resources in the interests of future generations and their general replacement with reproducible energy sources and materials.

8. The *technological factor* has a more tangible impact on the scientific and technological development. This finds its embodiment in the technological level of production, its susceptibility to scientific and technological achievements and inventions, technological structure of economy, composition and degree of wear and tear of fixed capital, scale and efficiency of the use of the innovative-technological potential.

In the post-war 50-60s it was going a large scale renewal of fixed capital in the leading countries and civilizations that created a high demand for scientific and technological achievements, a record growth

rate of labor productivity. However, in the subsequent decades the susceptibility of the fixed capital base to innovations significantly decreased; the growth rates of productivity were decreasing. At the beginning of the 21st century the signs of a global technological crisis have become obvious that is the material basis for the frequent and increasingly deep economic crises.

Overcoming this critical situation is possible on the basis of the global technological revolution of the 21st century, large-scale development of the sixth technological order — first, in the vanguard countries and civilizations, and then across the globe.

In the postwar period the Soviet Union carried out a large-scale renewal of fixed capital largely destroyed and lost during the Great Patriotic War based on technologies of the fourth order that determined the higher growth rates of labor productivity. However, in the 70-80s it was taking shape a lag in the assimilation of the fifth technological order, decline in the innovative activity and growth rates of labor productivity, a lagging behind from the vanguard countries in civil industries was growing.

In the 90s as a result of the neo-liberal market reforms, the destruction of the military-industrial complex and the sharp decline in the government support to science and innovations the tendency of technological degradation of economy prevailed. In 1991–1995 the share of the fifth technological order reduced three times, the share of the fourth order slightly decreased with an increase in the share of the third and relict orders that led to a drop in the competitiveness and ousting of domestic products from

the world and domestic markets. There were virtually liquidated applied science and engineering base, high-tech defense industries, the government support to innovations and training human resources for them was curbed, the amount of investments in fixed capital reduced five times for the decade, the renewal of fixed capital almost stopped. The country by the technological level was thrown back for 15–20 years.

At the beginning of the 21st century technological degradation mainly stopped, investments in fixed capital grew at a faster pace, but support to science and innovations is almost not increased, the technological lagging from the vanguard countries was growing.

Overcoming this critical situation is only possible provided that a long-term governmental science and technology and innovation policy be developed and coherently implemented, focused on an innovative breakthrough strategy, accelerated assimilation of the sixth order technologies based primarily on domestic inventions and efforts, the restoration of the sectoral science and engineering base, revival of the domestic mechanical engineering virtually destroyed while directing a growing share of rent income and federal budget to this end.

8. The *economic factor* renders approximately the same strong impact on scientific and technological development as the technological factor. This finds its expression in three areas: a growth or fall of the share of the innovative-investment sector (science, mechanical engineering, chemical industry, construction) in the reproductive structure of economy; an increase or decrease of governmental support to basic innovations, the availability

or absence of a government science and technology and innovation strategy; the degree of interest of production in scientific achievements and basic innovations, the availability of the market innovative competitive mechanism.

In the postwar decades, all three of these areas were active that contributed to record high rates of science and technology progress and labor productivity. However, in the 80-90s in the leading countries and international organizations the neo-liberal trend overruled (Reaganomics in the U. S., «Washington Consensus» of the International Monetary Fund, Thatcherism in Britain, Kudronomics in Russia), government support to science and innovation sharply decreased, a space was opened for the race for the excess profits by multinationals taking advantage of globalization. A «bubble economy» took shape, the gap between real and virtual economies increased; the growing share of capital was diverted from the technological progress for speculative plays on the stock markets. All this became the most powerful brake on the scientific and technological development and turned into a series of economic crises of 2001–2002, 2008–2009, and 2011–2012.

It is becoming increasingly clear that the late-industrial economic system outlived its time; it becomes a brake on economic, social, scientific and technological progress and is subject to replacement with integral, socially, noospheric and innovation-oriented system, the model of globalization adequate to it, under the increasing role of the government, socially and environmentally responsible business. Only on this basis the vector of the economic factor of scientific and technological development may be changed.

It is particularly evident the change in the vector of the economic factor in the Soviet Union and Russia. While in the 50s and to a lesser extent in the 60s the economy was focused on a scientific and technological breakthrough, and it actively carried it out, then in the 70-80s, this function of economy began to weaken, and in the 90s the neo-liberal reforms became a destroyer of the scientific and technological potential of the country, the main brake on the innovative development. The share of the innovation and investment reproductive sector drastically dropped; high-tech industries were privatized and wound up; profitable industries were farmed out to the oligarchs and the compradors that exported capital abroad or directed it to the parasitic consumption. Equalization tax system contributed to this, government support to innovation was minimized.

Huge flows of rent income in 2000–2008 were not directed to innovative modernization of economy. Despite the announced measures, economy remained largely anti-innovative.

Overcoming this critical situation requires radical changes in the prevailing current economic model, the orientation to the transition to the integral economic system adequate to humanistically noospheric integral civilization.

It is considered the influence of external conditions and impacts on the dynamics of the economic factor in Russia.

In 1960–1970s, when economy was based on the planning principles and was closed for foreign capital, the external economic factor did not play a significant role in its development; the share of exports and imports was negligible.

Neoliberal reforms in the 1990s gave much greater weight to the external eco-

nomical factor in the Russian economy, became the reason of the priority growth of export quotas, and allowed the country to be actively involved in the processes of globalization. The results turned out contradictory. On the one hand, a significant increase in export volumes of fuel and metal products opened up additional markets for these industries and helped them to survive in a sharp decline in domestic demand for their products, and at the beginning of the 21st century became — in conditions of a multiple increase in world fuel prices — the main factor in the GDP growth. On the other hand, by the reason that the volume of imports (especially foodstuff, manufactured goods, high-tech products and investment equipment) extravagantly increased, the domestic finished products did not enter the external but were also ousted from the domestic market.

At present, the external economic factor is the main accelerator (and in the conditions of crisis — an inhibitor) of the economic growth and technological development. However, in the long run, if the existing proportions do not change, it may begin to slow down this growth. The situation will be particularly acute in the 2020s, when the reserves of mineral fuels and raw materials will decrease, and their world prices stabilize or even decline as a result of the development of replacement productions. In addition, the competitiveness of domestic finished products and technologies remains low and continues to fall.

Changes in conditions of world trade and prices will continue to exert a strong influence on the foreign trade indicators in current prices.

Before the year 2008 the Russian economic growth rates exceeded the world

average, but in the future under the influence of unfavorable demographic and technological factors, the GDP growth will decrease considerably, particularly in the periods of world crises, and Russia's share in world GDP will fall to the level of 2004 (1.4%) under the inertia-based scenario, or slightly exceed it under the innovation-breakthrough one (1.6%). While the level of pre-crisis 1990 (2.45%) will remain unattainable — the structural degradation of economy in the 1990s turned out too deep. A lagging behind from the world level of per capita income will reduce because of depopulation.

It is performed the assessment of the influence of cyclical fluctuations on the development of world and Russian economies.

In the long term, the rhythm of cyclical fluctuations will continue in the global economy that manifested itself most apparently in the last three decades. In the 1970s the world economy experienced a deep crisis caused by the transition from the fourth to the fifth Kondratieff cycle and the change of technological orders. In the early 1980-1990s as well as in 2001–2002 there were observed the crisis phases of the medium-term cycles, and the crisis of 2001–2002 marked the transition from up to down wave of the fifth Kondratieff cycle. This rhythm clearly manifested itself in the development of economy of the rich countries, where it is more and more synchronized in the context of globalization. In Russia, the cyclical rhythm has its own specifics due to the transformational processes. In the early years of the new century, the Russian economy found itself like in the opposite phase to world: it progressed rapidly, whereas in rich countries, the economic growth rates slowed down.

However, in the future it can be expected that cyclical fluctuations in the world economy will increasingly and more synchronically affect the development of the Russian economy. So there is every reason to expect that in the 2010s its growth rates will slow down, especially as the global multinationals which seek to take the Russian economy under complete control, try to transfer to it the burden of the global crisis. This will tell adversely on the scientific and technological development of Russia. A growing outflow of capital abroad renders an adverse influence.

9. The *socio-political factor* less influences the scientific and technological development than technological or economic. However, its impact is felt. It manifests itself, *first*, through the formation of the legal regulatory framework for scientific- technological and innovative development by the government, more or less favorable climate for innovations, tax system, favoring or hindering risky innovation business. *Second*, in the amount and percentage of government spending in GDP for fundamental and applied science and professional education, support of basic innovations, as well as social, economic and military-technical innovations. *Third*, the social situation affects the development of science and technology, as well as the level of social tension, confrontation or partnership of social forces, to a greater or lesser extent interested in the development of science and innovations. *Fourth*, the degree of militarization of economy and society affects the scientific and technological development. On the one hand, it increases the volume of government orders for military-technological research and innovations that can then be used in the civilian branches. On the other

hand, the best labor and material resources are diverted from meeting the growing needs of the population and society, and are thrown into the insatiable furnace of military Moloch, and civil, interstate and even more world wars cause an irreparable damage to the scientific and technological progress, destroying its carriers and material productive forces.

After the Second World War that caused enormous damage to economy and the human potential of states and civilizations in Europe, Asia and Africa, it was observed a period of comparatively peaceful development, socio-economic rise in many newly independent countries liberated from the colonial dominance. Favorable socio-political conditions were a factor in the scientific and technological revolution, assimilation and diffusion of the fourth order, the record pace of development of science and inventive activity under a growing support of the states, and radical social transformations also contributed to the scientific search and diffusion of innovations.

However, in the last quarter of the 20th century, and especially at the beginning of the 21st century the global trends changed for the worse. The scope of government injections in the science and innovation slowed down noticeably. The spread of neo-liberal ideas led to the limitation of government support to scientific and technological development. This was not also favored by the aggravation of social contradictions, increasing the gap between wealth and poverty in the national and global scale, terrorist attacks.

All this became one of the factors of the geopolitical crisis of the late 20th — early 21st century, which, in turn, adversely affected the scientific and technological

development. It manifested especially clearly in the period of the global crisis of 2008–2009 and its second wave in 2011 that hit the planet and led to social and political instability, which is an unfavorable background for the development of science and technology.

Surmounting this critical situation is possible on the basis of unavoidable radical transformations of the socio-political system at both national and global levels, the evolvement of the integral socio-political system adequate to the integral, humanistically noospheric civilization of the 21st-22nd centuries. Pitirim Sorokin's prediction is coming true, that «the dominant type of the emerging society and culture would not be likely either capitalist or communist, but the type of *sui generis*, which we term the integral type. This type will be intermediate between the capitalist and communist orders and ways of life. It should include most of the positive values and be free of serious defects of each type. Moreover, the emerging integral system in its full development is not likely a simple eclectic mix of specific features of both types, but the combined system of integral cultural values, social institutions and integral type of personality essentially different from the capitalist and communist models.¹»

This is not a speculative conclusion on a desired, ideal society, but the generalization of the real trends of the contemporary socio-political order. They are becoming more clearly manifested themselves both in the East (China) and the West (Sweden and other Scandinavian countries). In the coming decades, these features will manifest themselves in the emerging integral socio-political system in a growing number of countries and the new model of the

world order based on dialogue and partnership of civilizations. This will create favorable conditions for the development and dissemination of achievements of the scientific and technological revolution of the 21st century.

The influence of the socio-political factor on the scientific and technological development is clearly visible in the development of the Soviet Union and Russia in the second half of the 20th — early 21st centuries. In the postwar decades, despite the huge damage caused to the scientific and technological potential in the war, when under the strategic government support and the increased social activity there were achieved the all-time high rates of development of science and innovations that brought the Soviet Union to the world's scientific and technological leaders, primarily in the military-technical sphere. However, in the 70-80s, this innovative heat began to drop, and in the 90s, in the atmosphere of the civilizational crisis, the active destruction of the military-industrial complex and setback of the government support to science and innovation, the scientific and technological potential was undermined, the country was thrown back to the decades ago, the competitiveness of products dropped substantially, the socio-political factor began to play a negative role in the scientific and technological development. Despite the proclaimed intentions and individual efforts, these trends have been failed to be overcome at the beginning of the 21st century, the crisis of the end of the first decade has strengthened it again.

Overcoming this dangerous critical situation threatening to the future of the country is possible only on the path of a

scientifically grounded, measured long-term strategy of innovation breakthrough actively pursued by the government, business, science, education and society as a whole, and major social forces. It's time to get rid of the neoliberal illusions that inflicted great damage to the country and destroyed a great civilization, listen to the voices of scientists who have proposed and fully grounded the long-term strategy of an innovative breakthrough.²

Renovating the strategic course, improving the social and political responsibility as a result of the elections in December 2011 and March 2012 will create a favorable environment for this. If this is not done, the point of no return will be passed in the coming years; and Russia for decades, if not forever, will be thrown to the periphery of the world scientific and technological development.

10. The *socio-cultural factor*, including the spiritual sphere of reproduction (science, education, culture, morality and ideology), has a stronger impact on the scientific and technological development than the demographic or socio-cultural factors. The starting point and primary source of the scientific and technological development are the scientific discoveries and inventions, the dynamics of which are cyclic-waves. They are picked up and put into life by new generations who receive knowledge and skills through the system of education. The predominant type of moral relations, ideological and religious aspirations to a greater or lesser extent, contribute to, and sometimes impede the innovation and scientific breakthrough.

In the third quarter of the 20th century, science and education developed at record high rates in the world, served the

first priority for the states and the postwar generation that was much contributed by the information revolution unfolded.

However, in the last quarter of the 20th century, this impulse began to fade — along with the growing signs of rotting and decay of the industrial (sensate, according to Pitirim Sorokin), socio-cultural system. The growth rates of science and education slowed, they were more and more commercialized and pragmatized. The industrial scientific paradigm has largely exhausted its creative and prognostic potential. It is observed a loss of high culture, cultural heritage and diversity under the onslaught of impersonal, extremely commercialized mass culture that reflects the interests of information monopolies and multinationals. It is observed a loss of humanistic principles, undermining the moral foundations of family and society. The ideology has lost its former high ideals. Radical religious movements and sects have become more active.

All are the signs of deep crisis hitting the socio-cultural system, can be overcome only through the emerging and spread of the integral socio-cultural system, the main features of which are discussed in the writings of Pitirim Sorokin, modern Russian civilization school³.

The main content of this process will be:

- a scientific revolution of the 2nd quarter of the 21st century, culminating in the emergence of a new worldview, post-industrial scientific paradigm the cornerstones of which were laid in the 20th century;
- the latest revolution in education, its synthesis with the scientific and information revolution, increasing creativity of continuing education that will equip new generations with knowledge about the

transformations taking place in the world and innovative skills;

- a revival of high culture, its preservation and transmitting to a new generation of rich cultural heritage and diversity, overcoming the rule of impersonal and commercialized mass culture;
- the establishment of humanistically noospheric morality;
- return of the high ideals to the society, so much-needed for the younger generation, humanization of religions and their partnership in the rooting of moral foundations of family and society.

All of these changes, which will require to join efforts of several generations and will require a considerable number of decades, will create favorable conditions for a new rise of the scientific and technological progress, will be an important factor in the acceleration of innovation and technological development, so essential in the critical transition period.

Civilizational diversity the importance of which was emphasized by Nikita Moiseyev will continue and intensify: “A diversity of civilizations is a great benefit to humanity. This is a manifestation of the great principle of divergence in the evolution... Diversity of civilizations dramatically increases the ability of humanity as the biological species to adapt to the changing conditions of existence.”⁴

In the Soviet Union in the postwar quarter century, despite the ideological constraints, the conditions for socio-cultural, scientific and technological breakthroughs the highest level of education and culture, strengthening the humanistic morality formed. However, in the 70-80s the signs of depression and stagnation increased, culminating in the collapse of the ideational, socio-cultural system and

embracing a sensate, socio-cultural system at the stage of decline, from the West. The rejection of its own system of civilizational values and embracement of western became the policy of the new ruling elite. This could not lead to anything good. The socio-cultural sphere found itself in a deep crisis and breakup. The government and business investments in science fell sharply, commercialization, a fall of fundamentality and creativity education, replacement of high and diverse national culture with impersonal mass culture unfolded. A wave of dehumanization of morality, criminalization hit society, high ideals were lost.

However, at the beginning of the 21st century it began to manifest itself the signs of change of the adverse moral polarization with positive, forming the foundations of a new scientific paradigm, enhancing the creativity of education, the revival of high culture, humanistically noospheric morality. These signs are weak so far, but the future is with them. These trends will transform the socio-cultural factor into the powerful engine of scientific and technological development, innovation breakthrough.

11. Interaction of Factors of Scientific and Technological Development

The above six most important factors do not operate each individually, they interact at different phases of the scientific-technological and civilizational cycles, forming a positive or negative synergistic effect, determining the trajectory of scientific-technological and socio-economic development in the world and in Russia.

In the phase of the crisis of civilization, all six factors are in a crisis situation that has a cumulative negative effect. This trend was observed in the Eurasian and

Eastern civilizations in the 90s. It occurs in almost all civilizations in time of global crises of the beginning of the 21st century. However, the extent of their impact on different civilizations is not the same. For example, in the period of a civilizational crisis and technological degradation of the Eurasian and Eastern civilizations in the 90s, Chinese, Indian and partially Latin American civilizations were on the rise. The waves of crises of the end of the first — beginning of the second decade of the 21st century hit the North American, Western European, Eastern European, Japanese, Eurasian, Buddhist, and Muslim civilizations, but to a lesser extent affected the Chinese, Indian, and Latin American civilizations. This interaction has an impact on the trajectory of scientific and technological development.

At the same time some *new trends* are observed in the long-term dynamics of the factors of scientific and technological development.

First, the down wave of the general trajectory in the last quarter of the 20th — the first quarter of the 21st century with its underlying cause a change of civilizational cycles and can be overcome in the second quarter of the century based on epochal innovations, scientific and technological revolutions, emerging of the sixth Kondratieff cycle and technological order adequate to it.

Second, the change of the vector of the demographic and natural-ecological factors: from the engines of scientific-technological and economic development, they are acquiring the features of its restraints with a fall in population growth, its aging and decline in the share of the innovation-active population and as a result a depletion and price-rising for a number of non-

renewable natural resources and increase in the share of environmental costs.

Third, technological and economic factors are undergoing a period of global transformation, degradation, decline of creative activity. But at the next phase of the civilizational cycles, they will regain their strength, become active engines for the innovative-technological breakthrough.

Fourth, at the end of the 20th — beginning of the 21st centuries the socio-political and socio-cultural factors are in crisis, and often have an inhibitory influence on the scientific-technological progress. However, one should expect a change of their vector, the positive impact on the unfolding scientific and technological revolutions.

12. The *scientific-technological and innovative policy* in Russia, being at the cutting edge of crises and deep transformations, should focus on a long-term strategy of innovative breakthrough that could overcome the negative trends and critical situations in the dynamics and the interaction of the prime factors of scientific and technological development in the changing cycles of civilizations, based on targeted, active support of positive trends by the government and business in order to halt and reverse the trends of scientific and technological degradation, to identify the priority areas and to develop the innovative niches in the global scientific-technological movement and innovative breakthrough and come closer to the level of the vanguard countries, and in the long

run, to take its place among the vanguard countries and civilizations. Such scenario is far from being guaranteed, but not yet eliminated.

Notes

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4. Moissejev N.N. The Barrier to the Middle Ages. M.: Taldex Co.. 1993, P. 132