



Institutional setting, policy instruments and organisation of research funding for Social Sciences and Humanities (SSH) in Ukraina

GlobalSSH project background report

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Introduction

The national scientific system of Ukraine was formed for the most part back in the Soviet Union times. The scientific and engineering complex can be considered as its core encompassing numerous research institutes, higher educational establishments, design bureaus, scientific and engineering departments of enterprises, association of inventors and innovators and so forth. On the whole according to different estimations, Ukraine encompassed nearly 13-15% of scientific and engineering potential of the Soviet Union, but the research centres of the republic had one important feature: Ukraine accommodated nearly 20% of experimental research equipment of the USSR [1]. In some areas of science and technology Ukrainian research organisations had strong positions. This is particularly true for electric welding, new materials, transport aviation, development of the specialized software, etc. It was not by accident that the Academy of Sciences of Ukrainian SSR was selected as the leading organisation responsible for the new materials development within the scope of the Complex Programme of Scientific and Engineering Development of Mutual Economic Assistance Council member states in 1985. The majority of Ukrainian research organisations, including the leading institutes of the Academy of Sciences, had clear technological orientation [2].

However, it is necessary to note that Ukrainian specialists, like the majority of specialists in the Soviet Union, did not maintain active cooperation with colleagues from the most developed foreign countries for the well-known reasons, which resulted in overestimations of results of their own research and development. For instance, the poll of leading scientists about the R&D performance in Ukraine in early 1990s, revealed that the majority of them (more than 90%) believed that those exceeded or matched the world level. Regrettably, evidences did not endorse those estimations. Let alone the average technology level of developments, it can be noted that only one of ten Ukrainian scientists (with the degree of doctor or candidate of science) had works published abroad in early 1990s; only three Ukrainian scientists were in the list of one hundred Soviet authors most frequently quoted in the internationally acknowledged journals [3]. Such seclusion of Ukrainian scientific community can be also accounted for that the majority of research and development was aimed at creating powerful military potential. According to the data of former member of the Ukrainian Parliament Academician P. Kysly, even in the Academy of Sciences more than half of all R&D were ordered by the Soviet military in late 1980s [4]. Concerning the so-called branch institutes that the lion's share of funding and material resources was allocated to, a picture was yet more remarkable there: developments of whole industries were classified in different ways and were subject to restricted access.

Over the Soviet Union period, Ukrainian social and humanitarian sciences have been developed under the supervision and sometimes complete control from the side of the Communist Party and the Soviet security services.

Independence proclaimed in August, 1991 sparked hope in Ukrainian elite that liberated from supervision of the Soviet control bodies the rates of socio-economic and scientific and engineering growth of a new independent state will soar [5]. Alas, it never happened. Actual results of the first fifteen years of independence turned out very distant from those anticipated. The years of establishing market economy in Ukraine demonstrated that the state does not have sufficient material resources to preserve science in such condition that it was in over the years of Soviet regime. Calamitous reduction of funding for scientific research occurred during the period of market transformations. There are no long-term orders placed for fundamental research; science was deprived of prestige and status of scientists eroded. These changes resulted in gradual reduction in the number of research establishments and collapse of many state research institutes. Big research groups breaking up into small ones became a reality. Small research teams fully or partly funded by overseas sponsors mushroomed; scientists became primarily

oriented on the interests of foreign customers, their activities were brought down exceptionally to the search for grants and other opportunities to participate in western research projects. Many scientists of middle age left their academic establishments and industry institutes and swapped their activities for more profitable ones, many of them immigrated. This caused deepening an age gap between different groups of scientists, which was accompanied by the considerable shortage of 30-40 years old specialists - the most active part in terms of creative capacities [6]. Ukraine is gradually acquiring a system which is basically oriented to the import of scientific and engineering results instead of making its own science and technology products. Negative changes that happened in the country's economy in 1990s facilitate the process.

Ukrainian economy suffered deep crisis in 1990-s. According to the World Bank data, Ukraine was the only one post-Soviet state whose economy 1990-1999 was not growing in a single of year of the decade. Official GDP for this period decreased by more than 60%, whole industries (for example, electronics) virtually vanished. The value of domestic demand for numerous products, and especially high-tech ones, fell down dramatically [7]. Only Yugoslavia that was in severe international blockade had even worse indexes of economic dynamics.

In 2000s the situation has started to change. Ukrainian economy succeeded in attaining level of 80% of GDP from the level of 1989 but that process was not accompanied by fundamental structural changes. Prevailing of mining sector and industries related to the primary processing of mineral products persisted to be its intrinsic feature. Domestic market does not create demand high enough for the products of domestic make, especially in machine building, pharmaceutical industry and high-tech services, let alone electronics. Modular assembly of cars or computers of imported components to satisfy domestic needs should not deceive: according to the current international classifications, such activities are attributed to the low-tech production that does not require high qualifications and R&D involved.

For Ukrainian science, the changes in overall economic situation brought about certain stabilization in terms of both the number of researchers, and the amounts of R&D funding. Yet, it does not allow speaking about overcoming crisis in Ukrainian science. The scientific system remains unreformed, whilst dynamics of its numerous characteristic features - negative. The key result for SSH in Ukraine was the shift from mainly theoretical work to the practical services in the interests of different political forces. This process has been accompanied by creation of numerous new organizations that are working in the areas of consultancy and of conducting surveys on orders of political parties and companies. It is interesting that the State Committee of Statistics does not consider such organizations as 'scientific' ones. In many cases they have no scientific projects, 'registered' by the State Institute of Scientific Information that is an important precondition for being considered as a scientific institution.

It is well-known that social sciences in national republics of the Soviet Union were under 'double pressure' – from the side of local authorities and from the side of Moscow ideologists, who tried to rid out all signs of so-called 'bourgeoisie nationalism'.

This resulted in practice, when usually directors of almost all research institutes could be nominated on their positions only after their work in the science or ideological departments of the republican Communist Party. All promotions to the members of the Academy of Sciences in social sciences were under strict control from the side of Communist ideologists. Best specialists (such, for instance, as famous economists Nikolai Fedorenko and Sergei Glaziev) have preferred to work in Moscow, not in Ukraine, where ideological pressure was not so strong, and the room for creativity in research institutes was wider. This has formed a situation, when the highest elite of Ukrainian social sciences has been composed mainly from *apparatchiks* and their 'clones', not from the best scholars. This does not mean that the country had no distinct specialists in the

social sciences but their number was limited. The tendency was the following: the closer the discipline to the ideology, the smaller number of really creative and honest specialists it had. That is why Ukrainian scholars in such disciplines, as archeology, linguistics and philology have received higher recognition than philosophers or economists.

As some researchers pointed out [8] important changes occurred in the Soviet scientific community during last decades of the Soviet Union. Such qualities as commitment to the Communist ideology, obedience and skill in 'bubbling presentation' of results became very important, and sometimes dominant, factors in promotion to the officially recognised scientific elite of the USSR.

Forced cultivation of the Communist ideology and the fear to leave their positions after the gaining the independence, have led many scholars to shift of their political positions. They have started to serve the new regime. The problem was that in 1990s, new Ukrainian authorities had no particular ideology, but, as the President Yeltsin in Russia, were mainly interested in keeping their power and in justifying their actions as the new legitimate rulers. In the case of social sciences, new authorities could find firm support from the former 'servants of ideological front' of the Communist Party.

On the other hand, thanks to the political changes, the ideological function of science has been seriously weakened. In a rapidly changing socio-political environment the role of really well-grounded social research is growing.

Scientific organisations of Ukraine¹

There is ramified network of research organisations of different types in Ukraine, which in the aggregate are intended to ensure the adequate level of science and technology of the whole state and every single industry of national economy. Basic types of the organisations are as follows:

- Design bureaux
- Development organisations.
- Higher educational establishments.
- Research and development and design departments at industrial enterprises.

Since 1991, the organisational component of scientific potential of Ukraine is undergoing changes that became especially noticeable in recent years.

Firstly, the overall number of research organisations in Ukraine was gradually increasing until 1999, and then decreased to some extent, and in 2005 there were 1456 of them (see Databook data on Ukraine). In comparison with 1991, (1344 research organisations and institutes). It can be accounted for by the fact that performance of some 'old' research establishments in the new environment is not good enough, therefore new and more market-oriented spin-offs were organised.

Secondly, structural changes in specialization of Ukrainian research organisations are underway. For example, there were only 43 design and development organisations in 2005, whilst in 1991 there were 88 of those. The share of SSH institutions is going up (see Databook, data on Ukraine).

In terms of the number of organisations, the academic sector of Ukrainian science (more than 300 organisations) takes the second place, just after the sector of branch (mainly technologically-oriented) institutes. In 2005 this sector's share grew by more than 1%. This trend is robust

¹ Based on official statistical data – Statistical Yearbooks for 1995-2006, various issues

enough - in 2000-2005, the share of the academic sector grew by 1-2% per year. Academic sector encompasses the National Academy of Sciences of Ukraine (NAS) and academies of sciences of a particular sectors or disciplines — the Academy of Agrarian Sciences of Ukraine (AAS), Academy of Medical Sciences of Ukraine (AMS), the Academy of Pedagogical Sciences of Ukraine, (APN), the Academy of Legal Sciences of Ukraine, the Academy of Arts of Ukraine (AMOU), all of which are public research organisations.

In early 1990s a number of very important think-tanks were created, such as the Institute for Strategic Studies, the Centre for Economic Reforms Studies, the Institute for Conversion Studies and so on. Some of them are undertaking projects for different ministries and state agencies, others are operating as independent or semi-independent organizations, but usually with strong financial support from various entrepreneurial organisations, powerful financial and economic groups or foreign foundations. They have become an essential supplement to the system of state-sponsored social science institutions, which sometimes helps to make important corrections to the decision -making process at the highest level of the state governance.

But at the same time, almost all the social sciences institutes, which were responsible for the development of 'Marxist- Leninist' theory and supplied Communist leaders with 'scientific arguments' for their political activities in the Soviet period, have been preserved. It is evident that most of them need a lot of basic transformations to meet the needs of today's Ukraine. Surprisingly, the most ideologically -oriented institutes have demonstrated the best adaptive qualities, because they needed to act more decisively to persuade people to forget their notorious practice in the past. Thus, the Higher Communist Party School, which was created specially to train the Soviet Ukrainian nomenklatura, has been renamed to the National Academy of Management and become a pioneer in introduction of the paid system of education among the Universities and other learning institutes. Former Communist party apparatchiks have even started to name their University 'Ukrainian Harvard'.

A similar situation exists on the 'micro' level, with departments of Communist Party History and of Marxist-Leninist Political Economy being renamed Political History and Economics and Management Departments respectively.

On the other hand, some representatives of nationalistic political forces have shared the power with old scientific 'nomenklatura'. Not surprisingly that both groups have focused their activities to justify newly-emerged regime. This was especially important in conditions of shrinking financial support for research in Ukraine. So, in early 1990s both groups have started to argue that Ukraine had the best positions among all post-Soviet states for economic development, bearing in mind the volume of per head production of steel, wheat and some other products. The second argument was that Ukraine has scored the highest points from the group of German experts from Deutsche bank among the all post-Soviet states. In fact, this conclusion of German experts was based on poor-grounded estimates made by politically-oriented Ukrainian scholars [9]. Information about Ukrainian advantages has been disseminated by media and it has not been challenged by the opponents within the country. At the same time, serious Western analytics argued that these judgements had almost nothing with reality. So, in August 1991, The Economist² has published an article that showed unwillingness of the Ukrainian's economy to potential quick liberalization and break -up with Russia.

Articles about 'colonial policy' of Russia with completely falsified data have emerged in Ukrainian scholar journals. Usually, these articles had had strong support from the side of influential nationalistically-oriented politicians and even top managers within the scientific

² The Economist, August 13-21, 1991

system. Examples are numerous but we could focus on some vivid ones. In 1995 -1996 the leading journal of the Academy of Sciences of Ukraine, *Visnyk of the National Academy of Sciences of Ukraine* has published a book of Professor Yuri Kanygin 'Put Ariev' (The Way of Arias)³ [10].

For many years Professor Kanygin wrote books and articles (including articles in the Communist Party leading newspaper 'Pravda') on the need to strengthen the 'party leadership' in cybernetics and on the problems of informatics in the period of the building-up of the Communist Society. This book was completely different. The author has tried to prove a number of 'newly-opened' facts, such as the emergence of the Ukrainian nation from legendary Indian Arias, close relations between Ukrainian and Jewish peoples in Ancient times, their joint struggle against Egyptian monarchs and even about family relations between the founder of the Ukrainian capital Kiev (legendary knyaz Kiy) and Attila, who fought the Rome Empire in the fifth century. On the other hand, Mr. Kanygin stresses that the Russian and Ukrainian peoples have completely different origins, as the Russians are the products of the some Caucasian tribes and the Egyptian army, which disappeared more than two thousand years ago in its raid to the north. Russians were showed as a second –class but cruel people, who treated Ukrainians as slaves. All these things could be considered as a bad joke but the problem is that this 'scholar' after the publication in the academic journal has published his book three (!) times in Ukraine with financial support from some politicians and academic circles. He also had the opportunity to share his views on the first channel of the Ukrainian national radio. Only after the article of the famous Ukrainian archaeologist Academician Petro Tolochko Academy of Sciences has stopped its support to Kanygin. But Kanygin is not the only scholar, who tried to disseminate absolutely ungrounded and falsified information and thus to stimulate negative effects in the multi-national Ukrainian society. In the first half of 1990s, some Ukrainian scholar journals were full of articles that blamed Russians (not Bolshevik (or Communist) regime!) for supposed ethnic cleansing and the hatred to Ukrainian people. They pay no attention to the fact that at least 3 million Ukrainian citizens were members of the Communist Party in 1985, and native Ukrainians were represented well among the highest Soviet leadership. Objective consideration of the real events has been replaced by politically-oriented studies that served to specific political forces. Some scholars have their views or modified them slightly to reach the 'objectivity'. But this also had nothing with the real studies of the complex phenomena of modern history and contemporary life in Ukraine. So, in a number of publications inhabitants of Eastern Ukraine are described as carriers of predominantly negative features, while representatives of the Western part of the country – in contrary – as highly moral defenders of democracy and European values [see, for instance, 11,12].

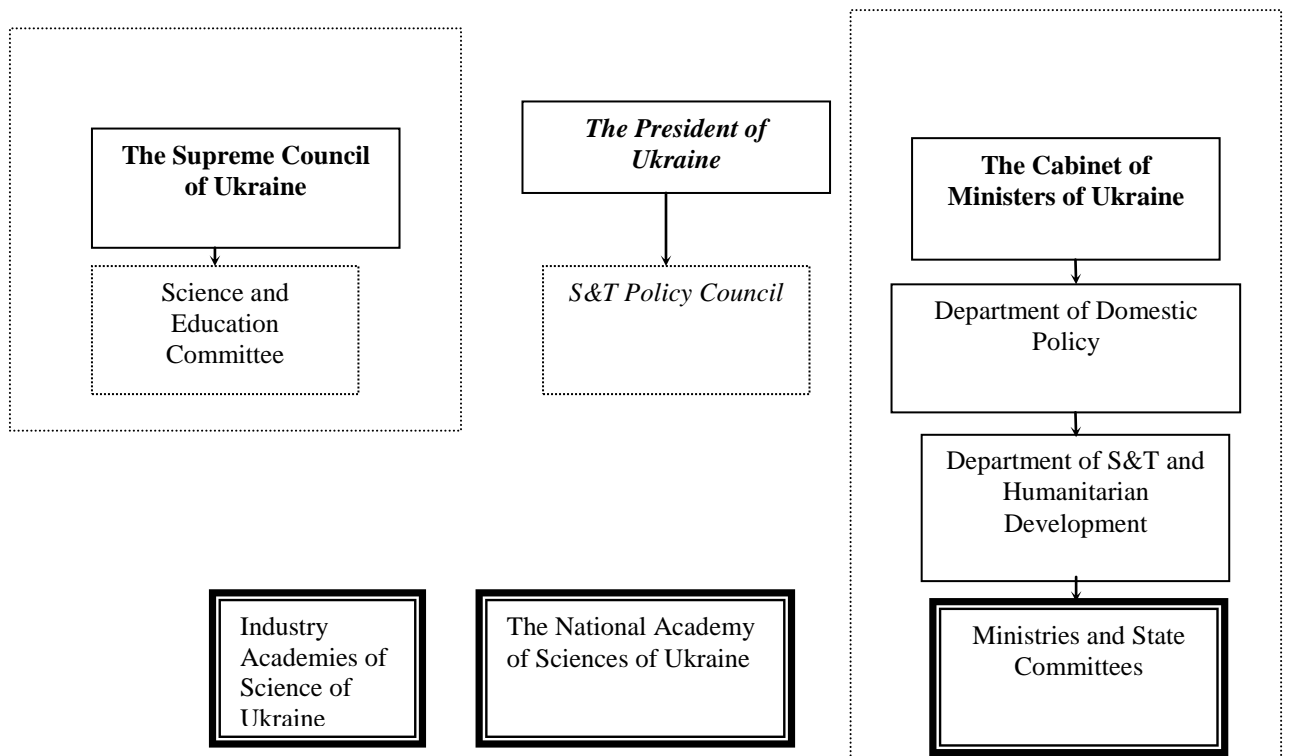
Another important factor that has an important impact on Ukrainian social sciences and humanities is influence of Ukrainian Diaspora and American-based research centres (influence of European research centres is visible but it is not so strong). American programs for scholar exchange (Fulbright, IREX, JFDP and others) have growing impact on Ukrainian scientific community, as more and more specialists receive the opportunity to visit leading research centres in the USA.

It is also worth to mention that some sociologists could try to study processes in the Ukrainian society from realistic positions. A number of centres, which used proven methods of Western sociology and economic analysis have emerged in Ukraine. But these centres are serving to political processes by doing predominantly applying research.

³ The book was published in Russian language - the only exception I could remember in this journal.

SSH Policy frameworks⁴

Representing scientific policy as an arrangement of actions to control process of formation and operation of research potential, one can assert that there are numerous "players" with different powers and capacities to influence decision-making process as to further development of scientific potential in Ukraine. In general, terms the system of state administration is intended to make and pursue public science and technology policy (see picture 1).



Picture 1. S&T administration system

The Supreme Council of Ukraine (*Verkhovna Rada*) as the legislative branch of power implements public administration in the science and technology field; forms and approves the regulative framework wherein the science and technology system operates; defines basic principles and directions of public policy in the field of science and technology activity; approves priority directions of development of science and technologies as well as national programmes of science and technology development of Ukraine; executes other powers which according to Constitution of Ukraine are assigned to its jurisdiction. One of committees of Supreme Council is the Designated Committee of the Supreme Council responsible for education, science and innovations. Regardless constant changes in its personnel, the Committee prepares the projects of the relevant drafts and tend to protect interests of scientific community in the Parliament. Unfortunately, in many cases actual capacities of the Committee and the Supreme Council prove to be rather dwarfed. The executive power authorities hinder implementation of pertaining decisions by referring to objective difficulties. Some documents adopted by the Parliament are not implemented.

Parliament establishes priorities in S&T every five years.

⁴ This section partially based on our earlier publication Science Profile of Ukraine – British Council in Ukraine, 2004, Kiev, Ukraine, 65 p.

Among priorities of S&T development (for the period till the end of 2006) along which the state S&T programs are implemented are as follows:

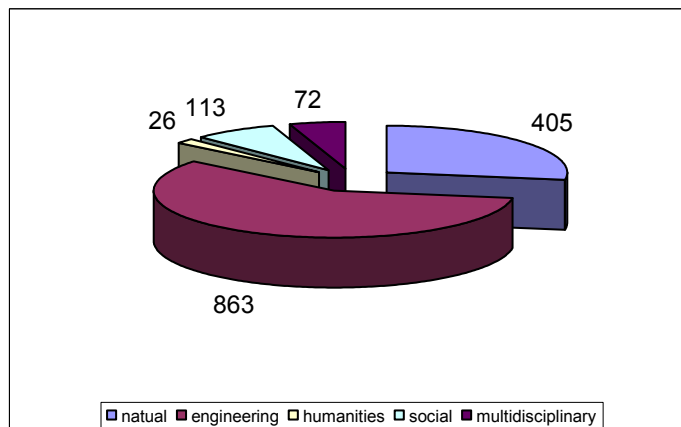
- Fundamental studies on most urgent issues of natural, social sciences and humanities;
- Issues of demography policy, human potential development, formation of civil society;
- Environment preservation and sustainable development;
- Innovation biotechnologies, diagnosis and treatment techniques for widespread diseases;
- New information technologies and computer facilities;
- New technologies and alternative technologies in power engineering, industry and agriculture;
- New materials and substances

It is evident that SSH have direct relation to at least 3 priorities from this list.

The *President of Ukraine* determines the system of executive power authorities performing administration in the science and technology area in Ukraine; ensures control over establishment and operation of public administration system in science and technology area; executing his powers in science and technology area, establishes the advisory council responsible for science and technology policy, that facilitates public policy making as regards development of science, determines priorities in science and technology area, develops strategies of science, technology and innovation development, considers suggestions as regards the effective use of funds of the State budget of Ukraine intended for development of science, technologies and innovations, as regards the improvement of structure of science administration, training and certification system. The S&T Policy Council has status of advisory authority for the President of Ukraine. However, the Council is performing extremely poorly. Last meeting of the board was held several years ago.

The Cabinet of Ministers of Ukraine as a higher executive authority makes science and technology policy; gives to the Supreme Council of Ukraine proposals on priorities of science and engineering development and its logistical support; implements national science and technology programmes; approves the government (interdepartmental) science and technology programmes according to the priorities of S&T development adopted by the Supreme Council of Ukraine. After the Constitutional reform in 2004, Prime-Minister has received part of presidential functions and responsibilities in the area of S&T.

In addition, every executive authority has a department responsible for administration of science and technology within its jurisdiction. Such departments are responsible for administering scientific and innovative activities and for the level of science and technology development of the pertaining industries. They determine directions S&T potential development, supervise and control activity of subordinate research organisations; take part in forming priorities of S&T development in Ukraine, state science and technology programmes and concluding government contracts; establish the programmes of science and technology development of the industries and organise their implementation; arrange development and production of competitive products based on the innovative technologies, equipment, materials, information provision; prepare proposals as regards improvement of economic mechanisms fostering S&T development in the industries; execute other powers according to the laws of Ukraine. Priority directions of S&T development and mechanisms of their implementation like state science and technology programmes that assume a central place, are considered below.



Picture 2
Distribution of R&D organizations by research conducted in 2004

Distribution of science and technology organisations according to their basic activities is shown in picture 2. It illustrates only those types of S&T activities into which relatively large number of organisations were involved. It should be noted that this diagram the pool of engineering science organisations includes organisations that do research in transportation and construction industries but does not include organisations engaged in architecture and special sciences. As it is seen, engineering sciences distinctly prevail in an organisational component of scientific potential of Ukraine.

State Foundation for Fundamental Research is becoming increasingly important as an alternative source of funding. The Foundation supports individual and collective research efforts of Ukrainian researchers. Overall expenditures of the Foundation exceeded 9-20 mln. Ukrainian Hryvnias per year in 2000s. In recent years the Foundation focused its attention on funding the projects, in which specialists from different science sectors take part. It is supposed to result in higher degree of integration of scientific institutions from different sectors. Yet it is necessary to note that such funding is insufficient. Funds allocated to the Foundation are insignificant in comparison with the state R&D funding.

System of legislative acts and instructions regulating various social relations makes up the legal framework for science and technology activities in Ukraine. Political and legal aspects encouraging scientific activities and innovations are stated in the State Sovereignty Declaration of Ukraine of July 16, 1990. Pursuant to the Declaration, the entire economic and science and technology potential created in the territory of Ukraine constitutes the material basis of the state and is intended to satisfy material and spiritual needs of citizens.

Ukraine independently implements financial, budgetary, fiscal, price, investment, science and technology as well as external economic policies, which is regulated by the Law of economic independence of August 3, 1992.

The Constitution of Ukraine, the law "On the foundations of public policy in the sphere of science and technology activities" of December 13, 1991, the law "On innovation activities", July 2002, the law "On science and technology activities", 1998 play central role in legal framework for the scientific activities. They define basic principles, pertaining to the forms and

techniques of regulating S&T development, use of science and technology outcomes to modernize production and satisfy needs of people, primary objectives, directions and principles of public science and technology policy, determines powers of public authorities, economic and legal guarantees of S&T potential development in Ukraine.

To execute provisions of the Law of Ukraine "On public policy in the field of science and technology activity" the Cabinet of Ministers of Ukraine establishes science and technology programmes of various levels: national, state, international, industry or interdisciplinary, regional. The Cabinet also defines science and technology components of national, investment, social and other programmes, the order of forming, funding and implementation of which is established by certain arrangements.

According to the Law, organising R&D is aimed at concentration of efforts on priority directions of science and technology progress and solving acute socio-economic, scientific, engineering, environmental problems of development of Ukrainian industry on the basis of innovative technologies and materials with effective assistance rendered by the state to this process. Preparation and implementation of the state science and technology programmes constitutes important form of public S&T policy implementation.

State science and technology programmes are to make up the system of co-ordinated innovation projects. Those need to commence with scientific research, be subsequently estimated and pass on to implementation and production. Appropriate tax and other benefits are legally ensured. In reality, the programme objectives remain declaratory - to attain those limited funds are allocated. Legal status of the state science and technology programmes can be assigned to science and technology programmes that are implemented at the expense of legal entities after appropriate S&T evaluation.

In general, legal framework for S&T activities has several important features.

- Firstly, the legislation in science and technology area is quite developed. In terms of number of laws, Ukraine goes abreast with its neighbouring countries.
- Secondly, not all of these laws are the direct action laws, which bring about the necessity to adopt numerous regulatory bylaws, which do not always comply with the idea of legitimacy and establish regulatory environment favourable for bureaucracy.
- Thirdly, implementation of laws is not always an easy process. After all, there is a lot of powers that would try to use privileges intended for scientific organisations for their benefit.
- Fourthly, in spite of certain legal procedures, the laws are adopted in rather disorganized manner, every now and then they address somewhat narrow issues. It proves not only insufficient qualification of people's deputies, but this, in our view, provides evidence on the efforts to lobby specific interests of particular groups, companies and regions. For example, it is the case with laws on special economic zones, amendments to the law on technoparks and suchlike.

Ukraine co-operates actively in the S&T area with numerous countries such as USA, Canada, Germany, Russia, other countries and international organisations like UN, UNIDO, NATO and the like. However, the key priority is given to co-operation with EU member-states with perspective to the Euro-integration processes in Ukraine.

Multiple and vigorous partnership relations that Ukraine established with a number of EU member-states differ in their scope and nature. For instance, the partnership with Germany covers the whole range of S&T and innovation cooperation, such as: information exchange, information support for international S&T activities, rendering conferences, workshops, fairs,

training sessions, exchange programs, S&T consultancies, and joint projects in the fields of fundamental and applied research. Joint efforts of Ukrainian and German institutions are put forth, in particular, within the framework of the programme "Co-operation with Central and East European countries" (sponsored by the Volkswagen Foundation), programmes of co-operation between the German Federal Ministry of Education and Research on the one part, and the Ukrainian Ministry of Education and Science, on the other.

Essential role in the international integrative process for Ukraine is assigned to co-operation with the USA via relevant international foundations and programs. CRDF and STCU foundations play a special part in developing S&T relations between Ukraine and USA. Programs of the funds are intended for Ukrainian researchers to participate in joint R&D projects including those aimed at implementing research findings, exchange programs and holding scientific conventions. Traditionally, an important place in the international co-operation is assigned to Russia and other CIS countries but, first of all, in technical and natural sciences.

Recent positive trends in the international co-operation development as a whole combined with the rising confidence inside Ukrainian scientific community are able to encourage investments into national science development, innovation growth, S&T potential preservation and growth, provided Ukraine complies with agreements and contracts concluded, and observes its liabilities, such as to pay fees (or its share) in the international organisations.

Nowadays Ukraine trails only Russia in terms of co-operation within the scope of NATO research programmes. With regard to the priority directions of home S&T developments, Ukrainian researchers participated in 16 projects of the Research programme, 8 of those within the framework of the sub-programme Science for Peace, were intended to support the implementation of scientific developments consistent with economic growth and market environment. The projects encompassed the areas of nanotechnologies, purification of waste waters, environmental monitoring, new materials and energy sources, i.e. the areas most topical for the worldwide context. There was established a think-tank to coordinate joint Ukraine-NATO efforts within the Science Programme of NATO and CCMS concerned with the issues of science and environment protection.

To enhance the effectiveness of project proposals and encourage participation in the Science Programme of NATO, Ukraine supports particular research projects on the preparatory stage. It is primarily the point with projects on computer networks and environment protection. Today, Ukraine is more concerned with the grants quality rather than the number of those. In order to make an effective use of NATO grants and enhance co-operation in the future, Ukrainian party is currently involved to process national applications at early stages. The country also aspires to become better represented in international Advisory Boards.

The framework programmes that unite EU member-states, are one of forms of co-operation that became available for Ukraine starting 1994, during Third framework programme (FP 3), when Ukraine signed Agreement about Partnership and Collaboration with EU.

Participation of the Ukrainian researchers in projects, initiatives and numerous measures related to implementation of the noted programmes is regulated by the intergovernmental and intergovernmental agreements. Partnership and Collaboration Agreement between European Union and its member-states, on one side, and Ukraine – on the other entered into force on March 1, 1998 after ratification by the Supreme Council of Ukraine. This document legally substantiates expansion of co-operation in trade, industrial, scientific and administrative areas. In particular, article 58 of the Agreement provides for collaboration in the area of science and technology. It is stated thereby that such collaboration includes “exchange of science and

technology information, joint activity at industry of scientific research and technical developments (RTD), activity from professional training and programmes for researcher's mobility, researchers and engineering personnel involved in RTD on either side".

In 2002-2006 Sixth Framework programme (FP6) - basic mechanism of co-ordination and funding of the European S&T programmes was in operation in Europe. Special programme FP6-2002-INCO-Russia+NIS/SSA-4 has been used to facilitate collaboration between the Europe, Ukraine and Russia and other countries of former Soviet Union in different areas of science and exchange of knowledge. It is not a single indicator that Europe understands the necessity of deeper co-operation with the scientists of NIS in order to win competition with Japan and the US in science-intensive technologies areas.

Sub-programmes INCO stipulated funding of projects for Ukraine. Thus, the competition COPERNICUS 2 was included into the sub-programmes INCO II. Funding has been also granted for internships of young researchers within the scope of stipend competitions provided the candidate takes part in a project performed by a research group of a European Union member state.

The Ministry of Education and Science of Ukraine and its educational establishments co-operate with European Union within the framework of the Programme of Trans-European Co-operation in Higher Education - Tempus (TACIS), and with the EU member-states on a bilateral basis (specifically with their Central state authorities responsible for education and educational establishments) in particular, according to the Agreement on Partnership and Co-operation between Ukraine and European Union signed on June, 16, 1994.

Major priorities that implemented within projects are directly related to SSH: introduction of state-of-the-art educational technologies, development and application of the advanced methods of educational process management, restitution of close co-operation between universities and industries, which provides for stimulation of innovation activity.

It is important to note that almost all priorities The Ministry of Education and Science of Ukraine proposes such priorities within the scope of the 2004 - 2005 TEMPUS programme for Ukraine:

1. Management of Ukrainian higher educational establishments.

Academic priorities.

- International relations and European studies.
- Law, including the European Law.
- Economics and Banking.
- Introduction of resource - and power effective technologies in higher educational establishments of Ukraine.

2. Human Resource Management (culture, art, education, training, business and public administration, agriculture, tourism, environmental studies, journalism).

Joint European projects on curriculum development will facilitate the development of:

- distance learning and new technologies of teaching;
- modern European languages;
- professional development of administrators and teachers;
- information technologies in education and library management.

3. Institutional changes:

- Professional development of pedagogical and scientific - pedagogical personnel as well as representatives of professional associations at local, regional and national levels;

- Civil education;
- Social work with the purpose of prophylaxis of drug addiction, HIV/AIDS among student youth.

4. Establishment of networks:

Establishment of the National Education Centres:

- inclusion into world network of national informative centres on recognition of education credentials ENIC/NARIC;
- economics of education;
- organisation of employment of graduating students of higher educational establishments.
- generalization, analysis, systematization and development of databank of curricula, educational courses, practical exercises, innovative training methods developed in Ukrainian higher educational establishments during implementation of the project will promote reforms in Ukrainian higher education.

At the same time, considerable erosion of personnel potential of Ukrainian science occurred in 1990-s. Overall employment in R&D reduced almost by 60%, and taking into account intense growth of fictitious employment and impossibility to conduct R&D because of lack of money for equipment and materials, actual cutback of labour spending in science, the figure was even bigger. Note that expectations of vigorous expansion of graduate studies programmes involving youth into scientific area were not justified. Increase of the number of defended dissertations is clearly inconsistent with the growth of the number of graduate students. In addition, many young scientists after defending dissertations choose careers outside research or immigrate.

There is a trend in Ukraine towards reduction of general employment in science and technology. In particular, it is worth to mention that major reduction of employment decline was observed at the first half of 1990-s, however trends in the R&D employment remain negative even in conditions of the economic growth over 1999 – 2005.

Intricate socio-economic situation of specialists in Ukrainian science largely determines a fashion whereby main (or academic) responsibilities are combined with other activities that, unfortunately, are not research or training activities. A number of scientists combining their jobs doubled in 2004 in comparison with 1991 and amounted to more than 65 thousand specialists. In our view, it reflects the crisis in existing institutional structures of Ukrainian science, within which one fails to organise comprehensive research process and to provide decent remuneration for research fellows.

Concerning distribution of scientists by different specialities, the representatives of engineering sciences maintain their dominance in Ukraine: 60% of overall R&D employment. The situation still remains almost the same compared with 1991 when such specialists made up nearly 74%. However, the changes are obvious and most likely, the percentage of representatives of engineering sciences will keep falling down.

In 1999 for the first time during the years of independence the number of doctors of science who carried out R&D in science and technology organisations of Ukraine reduced by almost 8.4 % as against 1998. It is related primarily to the new standards for retirement plans adopted for research fellows, which allows a research fellow to retire saving approximately 80% of his or her wages. Nonetheless, middle age of doctors of science employed in R&D grew in 90-s years by one year on average every 2-3 years and in 2004, it was 61 years, i.e. "retirement ceiling". Obviously, subsequent aging of doctors of science will inevitable bring about a decline of creative potential of such category of scientists. Similar trend can be also seen in the dynamics of

age parameters of candidates of science.

Apparently, the situations with the personnel in science area are alike in different regions of Ukraine. Comprehensive data analysis about the age structure of academic institutes of Kharkiv region reveals that it is very close to the average national structure: 61% of research fellows are over 50. A part of specialists under 40 makes up less than 23%. Candidates of science under age of 40 amount to meagre 8.1% of the total number of candidates of science, and doctors of science under age of 50 - 2.14% of the overall number of the doctors.

Age crisis in science will be hanging over Ukraine in the years to come. It is practically impossible to solve it, yet the consequences can be somewhat alleviated. The point is that there is a "big gap" in the group of specialists (candidates of science) in age 30-50 years. These are the people who were the most active over the last decade in 'defecting' from science. Alongside with senior generations leaving active involvement with science, the shortage of skilled specialists in science will be more vivid. The processes of age unbalance of personnel structure can be halted by implementing urgent measures, however the problem is complicated by the fact that it is very difficult to resume to research activities after several years of break because of the very specificity of this activity.

In particular, measures undertaken by the government to increase payments to research fellows are incapable to change the situation radically, although the crisis will be less acute.

SSH Funding

In accordance to the Law on scientific activities, science and technology expenditures are secured expenditure items of the State Budget of Ukraine. Scientific studies are funded from the budget pursuant to the basic and programme-oriented procedures. Basic funding is made available to carry out:

- fundamental scientific research ;
- research in the most essential for the state directions, including national security and defence R&D;
- development of S&T infrastructure;
- preservation of scientific objects of national property;
- research personnel training.

The list of scientific institutions and higher educational establishments to which the budgetary funding is made available to carry out S&T activities is approved by the Cabinet of Ministers of Ukraine.

Budgetary expenditures on R&D dropped down lately both because of a gap between the rates of growth of expenditures by such budget items and nominal rates of GDP growth and due to the deficient implementation of government obligations before science and technology area as well. Thus, in 1998 the government defrayed R&D and innovation expenditures only to the amount of 50% from the planned level and 77% in 1999. Even in some years of rapid economic growth (2000-2003) the level of R&D allocations from the state budget was below projected 100%. Only in 2004 state expenditures on R&D reached their planned level.

By the funding sources the "clients of Ukraine" held first place in 2001-2005. Usually, publicly or privately owned industrial companies are named so. The Budget continues to play essential part. At the same time, it can be noted that for publicly-owned enterprises the funds of "clients of Ukraine" and funds from the state budget can partly overlap, which results in double calculations.

As to the structure of R&D funding in Ukraine, the parts of public and private sectors virtually

did not change over 1996-2004: private sector's share grew by 2%. R&D area remains mainly in the state's responsibility. Ukrainian entrepreneurs are not yet interested in forming their own scientific base (that is scientific departments of private firms), preferring to use services of state organisations (mainly former branch sector), thus a share of such orders is growing steadily. The academic sector and higher education sector are funded from the state budget mainly, whereas R&D organisations that associated with industry sectors (the bulk of them are formally subordinated to the different ministries and state agencies) are funded subject to the agreements with the customers.

In 2005 the general amount of research funding for *humanities* made up less than 1% of all funds allocated to R&D in Ukraine.

The funds on research in *social sciences* in 2005 reached 4% of general amount of funding of R&D nationwide.

On the whole, it should be noted that relatively high wages in social sciences of Ukraine indicate the need of society in these studies whereas limited number of organisations and researchers employed this sphere proves that public demand is not yet satisfied. As we mentioned above, in recent years non-governmental research organizations in social sciences have emerged in Ukraine. They have alternative views on many solving important social problems. At the same time, it is worth to mention that the sphere of their interests is rather limited. They comprise some problems of current political life, sociology, and economics (to some extent). A number of other disciplines, such as linguistics or archeology are out of their interests.

Foreign funds usually provide money for politically sound projects or to specific programs. For instance, at the moment, the biggest Vidrodzhennya Foundation supports women studies, Roma and Tartar studies, research in journalism only. Along with tendency to shrinking support of social sciences and humanities from the side of the EU and the USA, this creates situation of highly politicized social sciences, with very few really well-grounded long-term projects.

National Approaches to the evaluation of scientific capabilities.

There are standard procedures of evaluation of scientific activities, established in Ukraine. The general estimates of the institutes are made on the base of the reviews, made by panels (commissions), consisted from the leading scholars in corresponding areas. These evaluations are regular (once in five years), and usually are positive for their participants. At least, there is no information about the closure of research institutes, which received low marks.

Individual researchers are assessed by the special commissions of key specialists within their research institutes on the base of individual reports once in four-five years. This procedure is rather bureaucratic, and it is rarely based on quantitative indicators. High quality research results are not critically important for the evaluation of University professors, as they involved heavily into learning process. This reduces intention to publish in prestigious journals and to receive an international recognition.

Number of publications in prestigious international journals is not used widely as the main indicator of scientific productivity.

According to data from the State Committee of Statistics, total number of scientific publications in Ukraine in 1991-2005 had an unwavering upward trend regardless substantial cutback of R&D employment. An increase in printed output was remarkably considerable in 2000-2005 (average

growth rate – more than 10%).

In addition, aggregate amount of scientific publications growing rapidly, number of publications increasing on specific subjects in some regions of Ukraine, are noteworthy. So, in 2000-2002 the number of papers on philology and linguistics jumped by 3 (!) times, despite decrease in the number of researchers in these areas. There is no reasonable explanation for this phenomenon. Thus, it is essential to note that this process occurred against the background of continuous underfunding of research activity: in recent years, a lion's share of R&D allocations was spent not on scientific experiments but on personnel remuneration and payment of public utility costs. One of the most important reasons for such state of affairs is virtually nonexistent control over the results of statistical information processing as regards publication activity. Total number of publications of Ukrainian authors, mentioned in the international databases, remains stable during the recent years. This is an alarming signal, as the total number of world publications has tendency to robust growth. The publications of Ukrainian authors on social sciences and humanities in referred journals have become 'statistically visible' in recent years only.

To some extent, stable number of publications in leading journals could be explained by the exclusion of several Ukrainian journals from the corresponding databases in 1990s-2000s. This happened not because of somebody's wicked intention, but owing to transparent criteria applied, among which the level of quotation of scientific journals is the top priority. It should be noted here that the interest of foreign colleagues in Ukrainian journals was waning against the background of increasing number of scientific publications. For instance, 71 scientific journals were published in Ukraine in 1991, whereas number of journals and other periodic publications (periodic collections of works or conference proceedings) exceeded 1000 in the first half of 2000s. This number actually includes various collections of scientific papers and abstracts that were turned into periodicals. Most of these journals and collections of articles are published by the local universities and they have very limited distribution among scholars.

Meritocracy dominates Ukrainian scientific landscape. A number of key positions in the social sciences and humanities institutes are still in the hands of the old-style nomenklatura, which uses privileges, obtained in the Soviet times, only to redistribute budget money in their interests. Very few such 'scholars' have publications in the West, knowledge of foreign languages remains poor in these institutes, especially among the older generations of researchers. Directors of the state institutes and research centres do not even consider the possibility to include foreign specialists into commissions, which evaluate the quality of scientific work of their organizations. At the same time, growing number of 'alternative' (non-state) research centres reflect the tendency to creation of new, mobile and Western-oriented organizations, which are becoming more and more influential in the Ukrainian scientific community. Very often these research institutes and think-tanks receive the support from different Western funds.

Challenges and prospects for the support of SSH in Ukraine.

The problems confronting the social sciences and humanities in Ukraine can be divided into four broad categories: structural, intellectual, personal, political and ethical.

These categories are linked, but are also distinct. Each must be considered in turn before we proceed to consider existing models and a new strategy.

Structural Problems

Here, the problem is quite clear: the Soviet-type institutional infrastructure for supporting scholarship in the social sciences and the humanities has largely collapsed. While it is true that there are islands of success and of excellence, the overall picture is mixed.

The general economic degradation in Ukraine in 1990s has eroded salaries, often impoverishing scholars and institutions. Some individuals and institutions have found non-academic means of support. The "internal brain drain" in many of these research institutes away from academic life, broadly defined, is often greater than the "external brain drain" abroad.

Economic decline has also eroded investment in the institutional infrastructure for social science and humanities research. Libraries and archival repositories find themselves in especially difficult positions. Libraries in Ukraine are faced with small budgets, lack of funds for international journal subscriptions, and delays in inter-library loan exchanges force them into ad hoc short-term arrangements. Libraries continue to be confronted with the almost insoluble problem of book preservation at the same time that they struggle to catch up to advances made in digital equipment and databases.

Of equal importance, the ability of scholars and institutions to remain in contact with one another has declined as transportation and communication costs have risen. The Internet has provided something of a counterweight to the overall decline in scholarly infrastructure, although access to the broadband internet is far from universal, especially in the small regional universities and colleges.

Administrative and bureaucratic expectations often remain strikingly inflexible, old style managers prove increasingly ineffectual in a changing environment, and corruption degrades many otherwise worthy endeavors. In addition, the process of accreditation for new programs, institutions, and degrees is difficult. Barriers to the interconnection of research and teaching remain high in many institutions. As we mentioned above, scholars also complain of restrictive teaching loads, which relegate professional development to a very low priority. Some of the worst inefficiencies of the old system remain while new systems are slow to evolve. The simultaneous devaluation of old fields and assertion of new disciplines, research strategies, and methods creates a number of additional vexing organizational and institutional issues that simply cannot be managed effectively. While these shifts in disciplinary focus and methodology are inevitable, they only exacerbate the structural constraints hindering the development of the social sciences and humanities in the country.

Intellectual Challenges

There are, of course, many positive aspects of the changes in Ukraine over the past decade and a half for the social sciences and humanities. For example, the country's academic community is more open to the broader international community than ever before. Moreover, a number of private research and training institutions have broken the monopoly of the Soviet state over the social science and humanities.

Most important, and far too rarely mentioned, the research agenda generated by the post-Soviet transition offers an opportunity to study some of the most fundamental issues of many social science and humanities disciplines. Some subfields, such as opinion polling, have taken on new life.

Another aspect of the problem is related to conformism in consideration of important political problems of the country. So, in 2003-2004, leading Ukrainian legal scholars from the Law Academy supported 'constitutional reform', proposed by the former President Leonid Kuchma,

but have changed their mind two days later, when President Kuchma has decided to postpone this reform.

Recently another vivid example of conformism has taken place. President Victor Yushchenko is a great supporter of idea on rehabilitation of the nationalistic guerillas (UPA) that has been formed by the Organization of Ukrainian Nationalists in the Second World War. This problem is not new for the country. In early 1990s, special commission, consisted from parliamentary members and scholars worked on this problem but its members could not find evidences that nationalists regularly fought Nazis in Ukraine in 1941-1945, despite some episodes of clashes between small groups of UPA and the Nazi troops took place in some (remote) parts of the country. These episodes are related to initiatives of the local commanders, and were not results of coordinated efforts of UPA leaders. On the contrary, UPA took an active part in fighting the Soviet Army and Polish guerillas during and after the Second World War, that was the reason to consider it as Nazi collaborators. UPA is also responsible for ethnic cleansing of Polish population in Western Ukraine and Eastern Poland, when hundreds of thousands of civilians were killed or forced to move from their homes in 1940s.

After the change of political power in late 2004, commission of 'respected scholars', most of whom received their academic degrees by serving Communist ideology, has decided to support the proposition of President Yushchenko to consider UPA as a fighting side, and it has recommended to prepare a special law on this issue. Parliament has not supported this recommendation and after another change of 'political weather' it is possible to expect the changes in evaluation of UPA's role in Ukrainian history.

Recent gains in archival access, international contacts, and free publication are themselves threatened by the structural impediments mentioned above. As a result, an often private struggle for survival inhibits the capacity of scholars and institutions to respond to the intellectual agenda of a lifetime.

Personal Barriers

This is the point at which personal considerations similarly impinge on intellectual endeavor.

On a more personal level, previous belief systems have collapsed, early optimism has turned to disillusionment, and wrenching social change undermines life and career strategies. In many cases professional interaction has diminished, contributing to a lack of a sense of belonging to a group. In some areas, younger scholars are left without mentors as senior scholars have left academia or are virtually unavailable as they pursue other endeavors. This leaves even dedicated younger intellectuals without critical support and guidance. As the status of intellectuals declines, there is a corresponding diminished sense of mission for those engaged in intellectual pursuits. But the level of freedom in research is definitely higher than it was decade and a half ago. But, as we mentioned above, views, expressed by the representatives of meritocracy are not challenged at all in many traditional research institutions.

We even can see how academics formerly punished by the Communist regime are trying to re-write the history and to express ideas that have nothing with scientific approach. So, famous Ukrainian philologist Academician Ivan Dzuba writes books on Russian and Soviet history. The quality of the studies is relatively poor but the position of former dissident, the Hero of Ukraine and 'guru' in social sciences gives him a power to publish these works without any criticism from the side of professionals. For instance, in one recent book Mr. Dzuba on the base of memories of very few Stalin's opponents is trying to prove that Georgian-born Stalin

(Dzhughashvili) was Russian in his mentality [13]. We do not know any Ukrainian historian, who challenged such opinion, despite Dzuba's conclusions look at least poorly proved, as they are based on 2-3 sources only. In addition, all these sources are memories of Stalin's opponents. Now, to blame 'others' for all Ukrainian problems Academician Ivan Dzuba could prove that all other prominent Bolsheviks were of Russian origin or they had 'Russian mentality'. He could expect no negative reaction on his writings from his Ukrainian fellow scholars.

It is not even worth to mention that ideologically motivated struggle of Bolsheviks against peasantry in the period of so-called 'collectivization' is considered as 'ethnocide' from the side of Russian and Jewish people by the part of politically –oriented Ukrainian scholars [14]. Some 'scholars' are going even further. So, in early 2005, MAUP, one of the biggest private Ukrainian University, organized 'Anti-Zionist Congress' in Kiev, which was attended by some members of the Ukrainian Parliament.

Such negative attitude to other nations, expressed by representatives of the official science, leads to dissemination of hostility among ordinary people within the country and to neighbouring states. Specialists from NGO 'Razumkov Centre' admit that the attitude to other nations in Ukrainian society is worsening in recent years, despite even some improvements in economic performance in early 2000s.

Political and Ethical Obstacles

Domestic and international politics in the Ukraine also pose obstacles that can threaten intellectual pursuits and Western efforts to provide support. The challenges posed by international relations are significant. Growing anti-Western sentiment in some Eastern and Southern regions of the country creates new obstacles for Western agencies attempting to implement their research programs. On another front, the continued functioning of a Soviet-style academic bureaucracy in many places makes engagement with institutional structures problematic at best.

Lack of political culture and the habit to meet propositions of political sponsors have led to numerous quasi-scientific mystifications and even to the sharpening of latent conflicts in Ukrainian society. Recent events are related to evaluation of 'golodomor' of early 1930s and Pereyaslavskaya Rada of 1654, when scholars tried to 'satisfy' both former President Kuchma and the opposition forces at the same time. Emotional estimates, not research results dominated discussions in scientific literature.

Dependence from the state authorities and intention to preserve their positions force social scientists to violate moral principles in selection of members of scientific elite. Almost 80% members of the Ukrainian Parliament have received scientific degrees in social sciences, most of them after elections to the Parliament. Skepticism is widespread among 'ordinary' scientists, when they see, how high-ranking politicians receive places in the National Academy of Sciences without any real scientific achievement. 'Selling' of scientific degrees and professorships in exchange of political dividends and extra money from the state budget has become a usual practice in the Ukrainian scientific community.

Ukrainian society is losing trust in objectivity of the research results in social sciences and humanities, and it could not find answers (or advices) to the key questions of its development. Such situation does not contribute to the solving of internal conflicts of the country.

Conclusions and Recommendations

It is evident that the situation has to be changed.

First of all, competitive principles of domestic funds distribution have to be implemented. Now, this procedure is very limited and it is under control of the directors of the research institutes and University rectors. Foreign specialists have to be participants of the grant committees.

The second step could be connected with development of special partnership programs between Ukrainian and Western scholars, as it was with numerous programs between CEE and EU countries in 1990s.

The third, Western scholars have to stop support of researchers on the purely political basis. There a number of cases when directors of Ukrainian institutes with poor scientific reputation have been invited to international scientific forums or even elected to the scientific academies abroad. Ukrainian Diasporas in the EU countries and especially in the USA have to have less influence on selection of research projects and programs of support. (For instance, as a result of pressure from Diaspora, the American state agencies discriminatively support book publications in social science in Ukrainian language only, despite Russian language is also a common language of scientific communication in the country, especially in Eastern and Southern regions of Ukraine).

But, of course, the key for healthy development of social sciences and their growing contribution to the resolution of social problems will be the understanding of the need for more independence from the state authorities and improving ethic standards within Ukrainian scientific community. Falsifications of data and plagiarism have to receive corresponding reaction from the side of scientific community, despite possible 'repressions' from the side of authorities or 'psychological pressure from the influential opposition leaders.

Unfortunately, in Ukraine, it seems that both existing authorities and the opposition consider social scientists as their servants, not partners in solving complex social and economic problems the country faces.

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