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## **Development of Information and Communication Technologies in the system of the National Statistical Committee of the Kyrgyz Republic**

In recent years the Kyrgyz Republic has achieved significant progress in the development of information infrastructure, informatization of public organizations and private companies. Appropriate legislative basis is being developed. State computer network was created. State and non-government organizations, businesses and private persons are designing own web sites.

The current level of development of ICT in the Kyrgyz Republic builds ground for development of overall strategy for entering the world information community. Given the current technological capacities we could focus our policy on creation of single information environment of the republic, development of information resources, databases and knowledge of information infrastructure that could be utilized by public and private sector, and the population as a whole. It, naturally, requires improvement of information law, technological base and organizational support.

The system of the Kyrgyz statistics as part of information environment of the country should be modified as well. Modern information technologies are one of the most important tools and conditions that would support effectiveness of the statistical system.

Development of ICT in the system of the NatStatCom of the Kyrgyz Republic is implemented in the context of modern international trends in ICT, needs and capacities of all state statistical bodies of the Kyrgyz Republic.

This process involves using of modern information technologies for data collection, processing and storing, as well as transmission of data with modern computer equipment. The experience gained in recent years has shown that there is no point in introducing new statistical system and using modern computer equipment without modification of all information technologies at all level and especially regional level. Territorial statistical offices play a key role in information system since it is a link between respondents and the central office on the one hand, on the other hand, territorial statistical offices produce statistics for local authorities and other users.

The National Statistical Committee of the Kyrgyz Republic, its territorial offices, subordinate units, establishments and organizations constitute a single state information and statistical system and consist of central office, territorial offices on statistics, the Main Computing Center, the Institute of Statistical Researches and Training Center.

Management structure of the National Statistical Committee of the Kyrgyz Republic is a three-level system: central office, regional offices (7 oblast and 2 urban) and 49 local (district/urban) statistical offices that are mainly funded from the national budget. Data collection is mainly carried out at local level. Regional statistical offices are responsible for data collection, design of databases and transmission of data to the central office via e-mail or

on diskettes. The central office produces aggregates, analyzes and disseminates statistical data.

The Main Computing Center (MCC) of the NatStatCom collects, stores, processes, transmits and disseminates statistical data, designs software for automation of data processing, carries out activities on development of NatStatCom's network, studies demand in statistics, runs marketing.

The Institute of Statistical Researches and Training Center function within the system of NatStatCom.

Main areas of activities of the Institute are researches in different areas of statistics, development of methodological recommendations in statistics in transition period, analyses of economic reforms, introduction of economic, mathematical and econometric methods in statistical practice.

The Training Center is involved in raising knowledge and skills of the statistical staff of all levels in accordance with training programme.

Information technologies in the system of the National Statistical Committee of the Kyrgyz Republic cover the whole process: from collection of data from respondents to dissemination of statistics.

Under the conditions of transition period and development of new forms of relations between enterprises of the Kyrgyz Republic it is becoming necessary to set up the system of statistics to produce reliable and quality data to all kinds of users. The focus is made on further development of information and communication technologies in statistics.

The main objective of technical and technological development of the system of NatStatCom is a complete provision of modern hardware and software to satisfy needs of different users; creation of a single information and statistical environment of the country.

The main priorities in this area: transition to unified electronic system of data collection and processing; transition to paperless technology of data collection; transition to structured electronic documentation system; automation of all stages of data processing; development of methodological provisions on design of integrate statistical database.

There are several problems that need to be addressed in the process of creation of effective statistical system comparable with international standards.

To develop interdepartmental relations it is necessary to set the procedure of electronic data exchange with other data producers. The ministries and agencies should produce statistical information using single methodology, state classifications and registers. It will extend the potential of the NatStatCom and other state authorities in using administrative data, ensure effectiveness of data exchange. Moreover, unification of methodologies will allow us to reduce burden on respondents.

Development of ICT is not possible without provision of adequate technical base, modern computer equipment. Heterogeneity of stock of computers raises difficulties in introduction of new software products. Thus, at

present provision of the system of the NatStatCom with computers is valued at 75%, and provision with Pentium 3 and 4 computers is at 58%. This means that nearly half of computers are out-of-date.

Another important challenge is to provide reliable and fast connection between the central, regional and district statistical offices. The National Statistical Committee of the Kyrgyz Republic is among the ministries that are connected to information system of public administration which allows to send e-mails to main users and producers of statistical information - regional statistical offices can send data to the President Administration of the Kyrgyz Republic, apparatus of the Prime-minister, ministries, agencies via leased lines.

Structural subdivisions of state statistics have an opportunity to send and receive information via dial-up lines of communication. There is also another leased line (direct line via Bishkek city telephone communication) which connects the Main Computing Center of the NatStatCom with Chui regional statistical office. Other territorial subdivisions of state statistics send data via e-mail through dial-up lines and the speed of this connection is rather limited.

As communication services of internet providers develop we plan to introduce ADSL modems which will allow to ensure reliability and high speed of information transfer. We also plan to provide regular access of territorial offices of the NatStatCom to local network of the central office of the NatStatCom by setting up a safe network based on VPN (virtual part of network). Success of this challenge at local levels depends on the level of development of state telecommunication system, which does not always meet technical requirements.

To use capacities of new technology to the full extent it is necessary to introduce modern software urgently, train staff, create the system of databases of statistical data that meet international standards. At present, the central office, regional statistical offices, district and urban statistical offices apply software products designed by IT specialists of the central office. However, these designs are out-of-date. That is why we have started to introduce new "client-server" technologies applying databases Microsoft SQL2000 Server and software products Delphi, C++. SQL 2000 databases were applied in the conduct of the 1999 first National Population Census, the 2002 and the 2003 first and second stages of the first Agricultural Census, integrate sampling survey of household budgets. These databases proved to be reliable and high productive.

The National Statistical Committee of the Kyrgyz Republic has its own web site, which gives users an access to statistics on internet. The challenge is to make the web site more dynamic, improve its design and apply new techniques of information provision.

Another priority area in development of ICT is introduction of Geo-Information System (GIS) in statistical practice of the Kyrgyz Republic.

Introduction of GIS offers a unique opportunity to apply it widely. It would allow analyzing and forecasting events taking place in the country at

territorial levels highlighting the main factors, causes and its possible consequences. GIS would give an opportunity to plan strategic decisions. However, relatively high costs of equipment, software and staff training are one of serious obstacle in development of GIS in the system of the NatStatCom.

A set of issues related to use of new ICT needs to be addressed in relation to the conduct of the 2009 National Population and Housing Census. It is the most important statistical activity that the NatStatCom will carry out together with other appropriate ministries and agencies. Population Census is the only source of data on population that covers the whole country and provides information on the number of population, its characteristics and living conditions by each household.

The challenges of the NatStatCom for the near future are the following: design a special plan on ICT issues, procurement of hardware and software, organization of census data processing, storing and dissemination.

To ensure high professionalism, effective use of computer equipment, introduction of new technologies of statistical data processing the NatStatCom should train its staff on a regular basis. Information technologies are used almost by all the staff and that is why statisticians should use them appropriately.

On-the-job-training of statisticians should ensure that skills meet increasing requirements of official statistics, allow us to address organizational, technical and technological issues.

In the process of training specialists of statistical offices should learn the basics of design, storing and management of databases and be able to work with data. Specialist should also get to know the main functions of database administration and acquire necessary knowledge and skills in designing databases. Moreover, specialists should gain skills needed for backup copying and redesigning of databases and its protection from failures.

The main problem is that the skills of specialists at local levels are worse than that of the central office. There is turnover of staff among junior specialists in regional offices because of low salaries. The NatStatCom should address a set of issues related to organization of on-the-job-training for IT specialists.

The statistical offices of the NatStatCom of the Kyrgyz Republic should take into account the current changes and increase the number of IT specialists while reducing the number of specialists involved in preliminary data processing.

ICT develops so quickly and software products, which were procured recently should be updated on a regular basis. Specialists involved in ICT should also be trained frequently to catch up with these changes. These trainings require funds and need to be carried out regularly.

Due to high demand in IT specialists in labor market salaries of these specialists have increased in private sector. Statistical offices should take into

account these changes in their staff strategy. At the same time, under the conditions of funding from the national budget it is rather difficult to set up the system of proper labour remuneration and satisfy special needs of IT specialists.

Despite the current difficulties the NatStatCom of the Kyrgyz Republic makes an effort to move towards the international standards of data processing and production. International organizations and statistical offices of other countries render invaluable assistance.

I would like to express my sincere gratitude to the organizers of the workshop for the opportunity to learn international experience of ICT development, discuss problems and solutions to these problems.