The impact of Erasmus+ programmes on the higher education system in the Kyrgyz Republic in 2014 – 2018

Prepared by the expert team on higher education reform in the Kyrgyz Republic

National Erasmus+ office in Kyrgyzstan

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Introduction

In September 2019, the National Erasmus+ Office in the Kyrgyz Republic initiated an interim study to identify the effectiveness of the first phase of the Erasmus+ programme in the Kyrgyz Republic among 16 higher education institutions in the period from 2014 to 2019.

The study was conducted by a team of national experts on higher education reform:

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The National Erasmus+ Office in the Kyrgyz Republic extends its gratitude to all students, employees of higher education institutions of the Kyrgyz Republic who participated in the survey, and especially - the staff of international departments of higher education institutions of the Kyrgyz Republic for their constant support and cooperation.

Overview of Erasmus+ activities in the Kyrgyz Republic

Erasmus+ is a European Union (EU) programme that supports projects, partnerships, activities and mobility in the fields of education, training, youth and sport. The programme, which runs from 2014 to 2020, provides funding for the development of cooperation in all these areas, both between European countries and between European countries and partner-countries around the world.

Erasmus+ recognizes the importance of broad international cooperation (not confined to EU member-states) in all these areas, especially in higher education. The programme builds on the experience and success of past EU higher education programmes (Alfa, Edulink, Erasmus Mundus and Tempus) and supports international exchange of students, academics and teaching staff, as well as international exchange of ideas and best practices among universities.

In the period from 2015 to 2019, under the **Capacity Building in Higher Education** component 142 project applications were submitted with the participation of 21 higher education institutions of the Kyrgyz Republic, among them 18 projects were selected for funding:

- **In 2015**, 25 project proposals with the participation of universities from Kyrgyzstan were submitted. Six projects were funded: 1 national project and 5 multi-country projects involving 16 HEIs and 10 non-academic partners.

- **In 2016**, 32 project proposals with the participation of Kyrgyz HEIs were submitted. Five multi-country projects were funded, involving 10 HEIs and 8 non-academic partners from Kyrgyzstan.

- **In 2017**, 28 project proposals with participation of Kyrgyz HEIs were submitted. Funding was provided to 2 multi-country projects involving 4 Kyrgyz HEI partners.

- **In 2018**, 24 project proposals with participation of universities from Kyrgyzstan were submitted. Three projects were selected for funding with 5 HEIs and 1 non-academic partner from Kyrgyzstan.

- **In 2019**, 33 project proposals with the participation of Kyrgyz HEIs were submitted. Funding was provided to 2 projects, in which 7 Kyrgyz HEIs participate. It is noteworthy that one project is a national one, where the Kyrgyz HEI acts as a grant holder.

For the Academic Exchange Component (Credit Mobility) in the period from 2015 to 2019, 348 applications were submitted with the participation of higher education institutions of the Kyrgyz Republic, and 195 projects were funded. The total number of participants who received grants for academic exchange is 912 (651 students and teachers went/will go to the EU and 261 came/will come back from the EU to the Kyrgyz Republic).

Under the Joint Master's Degree component in 2015, 120 applications were submitted by Kyrgyz students, among which 17 students were selected. In 2016, 73 applications were submitted and 18 students were selected. In 2017, 143 applications were submitted by students of the Kyrgyz Republic, 11 students received scholarship support for full Master's course in Europe, and in 2019, 116 applications were submitted by students of the Kyrgyz Republic, 17 students received scholarship support for full Master's course in Europe.

Chapter 1: Impact of the Erasmus+ programme on the reformation of higher education system in the Kyrgyz Republic

Cooperation in the field of education is one of the key components of multilateral cooperation between the European Union and the Kyrgyz Republic. Sustainable relations between the European Union and Kyrgyzstan were demonstrated by the signing of a new Enhanced Partnership and Cooperation Agreement in July 2019. The main tool to support the development of higher education, training, youth and sport, including in Kyrgyzstan, is the Erasmus+ programme, which is being implemented in 2014-2020.

It is noteworthy that over the past 15 years, systemic reforms have been implemented in higher education in the Kyrgyz Republic, and a significant share of these reforms was initiated and tested within the framework of the previous TEMPUS programme (1994-2013):

- Transition to a two-tier structure of higher education (bachelor's and master's degree);
- Introduction of the European Credit Transfer and Accumulation System;
- Establishment and development of a quality assurance system with a brand new foundation;
- Foundation of accreditation agencies;
- Design of educational programs based on competence-based approach using TUNING methodology;
- Improvement of training and assessment methods, including e-learning;
- Building close ties between business and universities to improve the quality of education and research;
- Changes in approaches to the organization of student support services - development of academic advisors' services, international departments, Career Centers;
- Improving the structure of universities and approaches to their management.

Under the Erasmus+ programme, *Capacity building in the field of higher education - Key action 2 component* is of particular importance for the continuation of systemic reforms in higher education. This component is implemented through multilateral partnership projects aimed at developing and modernizing curricula and programmes, up-to-date teaching methods, updating teaching and learning materials, improving university management and administration, and strengthening the link between higher education institutions and industries.

Moreover, support to projects aimed at strengthening the impact on the higher education system at the national level through the involvement of the Ministry of Education and Science of the Kyrgyz Republic and other national authorities, along with universities, plays a central role.

1. A number of Erasmus+ projects aims **to develop human capital capable of implementing innovations in economically and socially significant sectors:**

- Advancing University Education in Biomedical Engineering and Health Management in Kyrgyzstan (KyrMedu);
- Strengthening the network on education, research and innovation in the field of environmental hygiene in Asia (TUTORIAL);
- European Dimension in Qualifications for the Tourist Sector (EurDIQ);
- Professional Bachelor and Master programs in Open and Distance Learning for Sustainable Tourism Development in China, Vietnam and Kyrgyzstan (LMPT)
- Regional Objectives of Administrative Development (ROAD).

In the context of these projects, a survey and detailed analysis of industries are undertaken to involve different types of enterprises in the development of new educational programs. These measures are taken in order to ensure that the components of the educational programme increasingly feed into formation of intended competencies of graduates. It is important to note that under several projects sectoral requirements have been developed at regional level: for example, the European Dimension in Qualifications for the Tourist Sector (EurDIQ) project helped investigate the needs of the tourism sector of the Russian Federation and Kyrgyzstan in order to build a network master's program.

Furthermore, the consortia are creating sustainable Centers that facilitate bringing into action the links between universities and industries beyond the project lifecycle, ensuring continuity and dissemination of results.

2. Erasmus+ projects continue to improve approaches to **curriculum development based on learning outcomes and competence development**. The link between the new projects and the emerging **National Qualification System** and its main elements - the **National Qualification Framework** and professional standards - is particularly significant.

For example, within the framework of the *European Dimension in Qualifications for the Tourist Sector (EurDIQ)* and *the Professional Bachelor and Master programs in Open and Distance Learning for*

Sustainable Tourism Development in China, Vietnam and Kyrgyzstan (LMPT) projects tools have been developed to design professional standards and to formulate learning outcomes comparable to the indicators of levels within the National Qualification Framework and the European Qualification Framework. The methodologies that have been tested are currently being used by working groups to develop a National methodology for building sectoral qualification frameworks and professional standards.

3. **The development of teachers' capacities as well as the introduction of up-to-date teaching methods** is an important component of almost every Erasmus+ project. The **development of e-learning** has become the most relevant topic in recent years, including its use for the implementation of joint network programmes and research projects.

- Strengthening the network on education, research and innovation in the field of environmental hygiene in Asia (TUTORIAL);
- European Dimension in Qualifications for the Tourist Sector (EurDIQ);
- Professional Bachelor and Master programs in Open and Distance Learning for Sustainable Tourism Development in China, Vietnam and Kyrgyzstan (LMPT);
- Environmental Protection in Central Asia: Disaster Risk Management with Spatial Methods (EPCA)
- Modernization of higher education in Central Asia through new technologies (HiEdTech).

The Ministry of Education and Science of the Kyrgyz Republic intends to use the results of these projects to develop a legal framework and methodological toolset for e-learning.

4. Changing the format of interaction between universities drives the **development of legal framework and methodological toolset for higher education** in the Kyrgyz Republic and paves the way for further **internationalization**.

The development of **dual degree programs and network format** of interaction demands the production of new state documents to regulate the licensing process, organization of the educational process and accreditation of such programs.

5. In some cases, the results of the consortium's work **lay the foundation for the preparation of interstate agreements**. For example, under the project on *Professional Bachelor and Master programs in Open and Distance Learning for Sustainable Tourism Development in China, Vietnam and Kyrgyzstan (LMPT)* a meeting of the Ministers of Education of Bulgaria and Sofia was held to work out agreements on the recognition of qualifications of the two countries.

Chapter 2: Impact of the Erasmus+ programme at the institutional level in the Kyrgyz Republic

The following 16 higher education institutions of the Kyrgyz Republic took part in the study:

- International University of Jalalabad named after K.S.Toktomamatov (IUJ)
- International School of Medicine (ISM)
- Ala-Too International University (AIU)
- Kyrgyz State University named after I. Arabayev (KSU)
- Kyrgyz State University of Construction, Transport and Architecture. N. Isanov (KSUCTA)
- Kyrgyz State Technical University named after M.V. Lomonosov named after I. Razzakov (KSTU)
- Talas State University (TalSU)
- Osh State University (OshSU)
- Kyrgyz National Agrarian University named after K.I.Skryabin (KNAU)
- International University of Kyrgyzstan (IUK)
- Naryn State University named after S. Naamatov (NSU)
- Kyrgyz National University named after J. Balasagyn (KNU)
- Kyrgyz-Russian Slavic University named after B.Yeltsin (KRSU)
- Kyrgyz Economic University named after M. Ryskulbekov (KEU)
- Osh Technical University (OshTU)
- Issyk-Kul State University named after K. Tynystanov (IGU)

Figure 1: Distribution of universities participating in the Erasmus+ programme across the Kyrgyz Republic.

As the Figure 1 demonstrates, the majority of Erasmus+ projects are implemented in Bishkek, as most of the universities are located in the capital. Nevertheless, the involvement of regional universities is quite high. Active participation in Erasmus+ projects contributes to the development of human capacity and infrastructure of regional universities.
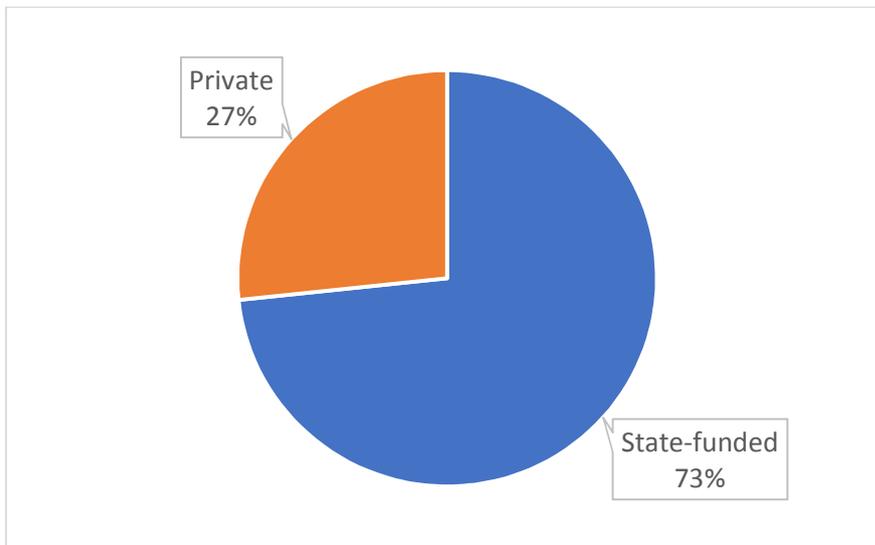

Figure 2: Structure of universities participating in the Erasmus+ programme by type of ownership.
In Kyrgyzstan, there are mainly two types of ownership of universities: 73% of universities participating in Erasmus+ projects are state-owned and 27% are privately owned.

Curriculum development

Within the framework of the study, 22 questionnaires were processed, which included 11 projects, such as:

Central Asian Center for Teaching, Learning and Entrepreneurship (**CACTLE**).
Professional Bachelor and Master programs in Open and Distance Learning for Sustainable Tourism Development in China, Vietnam and Kyrgyzstan (**LMPT**) 573897-EPP-1-2016-1-BG-EPPKA2-CBHE-JP

1. Investment in Entrepreneurial Universities in Caucasus and Central Asia (**EUCA-INVEST**) 561724-EPP-1-2015-1-DE-EPPKA2-CBHE-JP

2. European Dimension in Qualifications for the Tourist Sector (**EurDIQ**) 561832-EPP-1-2015-1-LV-EPPKA2-CBHE-SP

3. Advancing University Education in Biomedical Engineering and Health Management in Kyrgyzstan (**KyrMedu**) 561894-EPP-1-2015-1-DE-EPPKA2-CBHE-JP

4. Regional Objectives of Administrative Development (**ROAD**) 574243-EPP-1-2016-1-PT-EPPKA2-CBHE-JP

5. Strengthening the network on education, research and innovation in the field of environmental hygiene in Asia **(Tutorial)** CBHE Project 573640-EPP-1-2016-1-IT-EPPKA2-CBHE-JP

6. Environmental Protection in Central Asia: Disaster Risk Management with Spatial Methods (**EPCA**) 585382-EPP-1-2017-1-SE-EPPKA2-CBHE-JP

7. Modernization of higher education in Central Asia through new technologies (**HiEdTec**) 598092-EPP-1-2018-1-BG-EPPKA2-CBHE-SP

8. Development of a Bologna-based Master Curriculum in Resource Efficient Production (**PRODLOG**) 585967-EPP-1-2017-1-DE-EPPKA-CBHE-JP-

9. International University Cooperation on Land Protection in European-Asiatic Countries (**IUCLAND**) 561841-EPP-1-IT-EPPKA2-CBHE-JP

These projects cover the following sectors of economic activity (Figures 3 and 4):

Figure 4: Statistics on Erasmus+ projects (2014-2019) by areas.

Projects by areas

IT; 9%

Entrepreneurship; 18%

Manufacturing logistics; 9%

Administrative development; 9%

Tourism; 18%

Biomedical engineering, environmental protection & hygiene, land protection; 36%
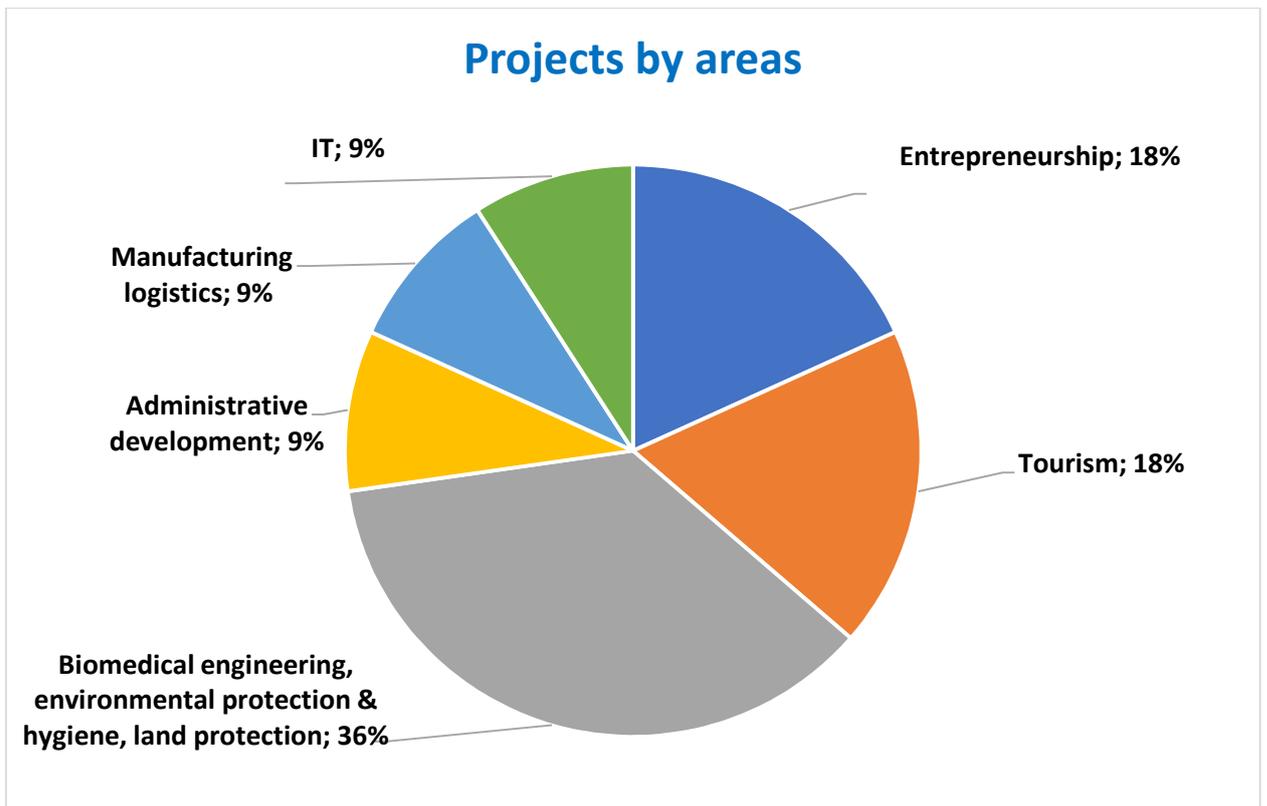
Figure 4: Structure of Erasmus+ projects (2014-2019) by areas.

The development and implementation of curricula in the universities of the Kyrgyz Republic consists of the following stages:

- Development of new curricula and/or modernization of existing curricula;
- Development of training materials based on the curricula;
- Obtaining a license for the curriculum;
- Recruitment of students;
- Organization of the learning process based on the curriculum;
- Assessment of the quality of the curriculum.

The range of curricula developed in the framework of these projects covered all levels of higher and postgraduate education: Bachelor's degree - 10 curricula, Master's degree - 4 curricula, Doctor of Philosophy degree, PhD - 1 curricula.

For the bachelor's degree, the following curricula were developed: "Entrepreneurship and Business Development", "Sustainable Development of Tourism", "Medical IT", "Biomedical Engineering", etc.

For the Master's level the following curricula were developed: "Management in Healthcare", "Public Healthcare", "Sustainable Tourism Development", "Logistics in Agricultural Production and Processing".

Within the framework of Erasmus+ projects, one doctoral program on Public Health was developed. The curricula that were developed aim to improve students' professional competencies to meet the requirements of employers.

In order to introduce new curricula developed within the framework of the projects, licenses were obtained from the Ministry of Education and Science of the Kyrgyz Republic. Several curricula have been aligned with and approved by the relevant ministries; for example, curricula: "Medical IT", "Biomedical Engineering" have been coordinated with the Ministry of Health of the Kyrgyz Republic. In addition, training materials have been developed, including online courses and joint training modules.

In order to ensure the quality of the curricula, different methods were introduced in the instruction process: e-learning (including MOODLE) and blended learning: moreover, teachers were also trained. To this end, didactic cyberspaces and open electronic resources were created. Programs for teachers on didactics of teaching and learning were developed.

It is noteworthy that the Sectoral Qualification Framework was developed in consultation with the Ministry of Health of the Kyrgyz Republic on Medical IT and Biomedical Engineering.

In addition, a quality assessment system for educational programs was created in accordance with the Bologna Process principles and the strategic development plan of the European Union until 2020.

One of the results of the projects' implementation at the institutional level was the creation of various structures in universities, namely: centers of training / retraining / professional development of teaching staff; centers of excellence; creative laboratory; teaching and learning rooms; distance learning center for IT; training and consulting center; resource class for sustainable development of tourism, teaching and learning room for tourism; Smart Laboratory for students; HUB for training and consulting of state and municipal workers.

The projects have contributed to improving the quality of education, enhancing the image and role of universities in the regions and in the country through the improvement of curricula, teaching methods and materials, as well as through the following:

- strengthening international, regional and national cooperation between universities,

- strengthening cooperation between universities and enterprises.

International cooperation among universities also aimed at establishing an international network for long-term quality assurance and strengthening research capacity in partner countries.

The projects had an impact on human development (Figure 5):
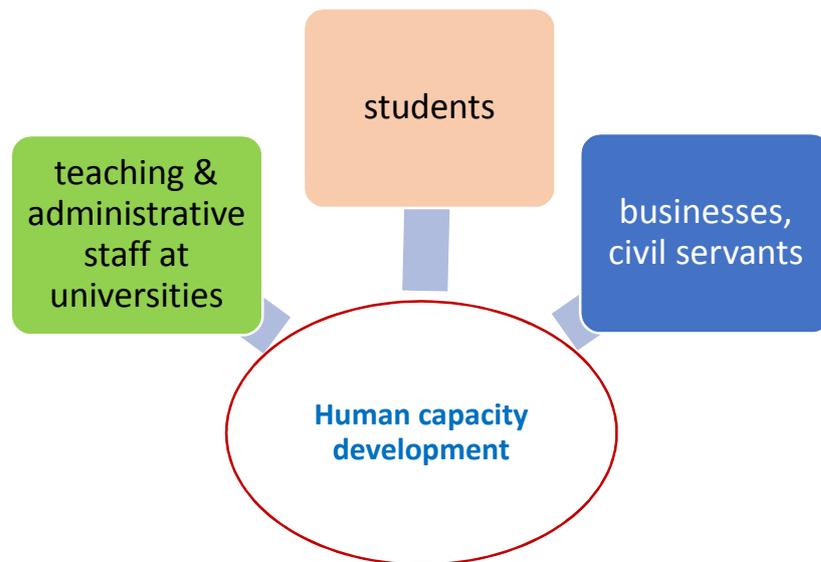
Figure 5. Human capital development through Erasmus+ projects.

Thus, professors and university staff have strengthened their capacity through professional training aimed at developing teaching and entrepreneurial competences. This was achieved through working and study visits to EU universities, online trainings, guest lectures by European experts, and trainings for teachers on digital skills acquisition. Other measures include joint participation with employers in business forums, joint conferences, development and implementation of three joint courses between partner universities; publication of papers and launch of language courses.

Graduates' competitiveness is strengthened through development of professional competencies, encouragement of entrepreneurial ideas among students, creation of a system of identification and support of talented students, improvement of employment opportunities, short-term internships and academic mobility of students, joint work of graduate students with university professors of partner countries, as well as participation in summer schools and workshops.

Capacity of business sector employees was enhanced through their training, visits to European universities and business companies, participation in roundtables and business forums, consulting of state and municipal employees.

Various kinds of research were also carried out as part of the projects. Thus, the following studies were conducted:

- research of the tourist segment in Kyrgyzstan;
- analysis of the current socio-economic situation in Kyrgyzstan;
- analysis of entrepreneurship education in higher education institutions of the Kyrgyz Republic;

- survey among employers and tourist organizations;
- analysis of the status of the health sector of the Kyrgyz Republic through surveys of medical institutions of the Kyrgyz Republic;
- survey and analysis of municipal and civil servants;
- analysis of existing modules in partner universities;
- baseline study on land degradation in the participating countries; and
- study of educational programs on the project topics in the universities participating in the project.

In addition, Erasmus+ projects have improved facilities and resources of universities through the purchase of equipment and literature.

One of the results of the projects was the development of National strategic action plans, Double diploma programmes and the development and maintenance of websites.

Best practice case

The project that covers the above results to the fullest degree is Advancing University Education in Biomedical Engineering and Health Management in Kyrgyzstan (**KyrMedu**) 561894-EPP-1-2015-1-DE-EPPKA2-CBHE-JP.

The project aimed to improve the quality and strengthen the role of higher education institutions in Kyrgyzstan's social arena by developing new and innovative areas in the field of health care (IT in medicine/economics and biomedical engineering) in order to identify labour market needs, improve public services, enhance the capacity of medical doctors and technical staff to effectively use existing equipment in health care, and strengthen national and international cooperation.

Achievements:

- Situation analysis of the health care sector of the Kyrgyz Republic carried out through surveys of health care institutions.
- Trainings (with the professors from European partner universities) were conducted for teaching staff (50 participants) of higher education institutions of the Kyrgyz Republic on the following topics: "Approaches and methodologies for the formation of a sectoral qualification framework based on the European qualification structure, professional and qualification standards" (January 2017), "Study of the Moodle management system " (August 2017), on didactics (August 2018).
- Training for the teaching staff in the framework of the project: trainings on development of courses using Moodle in April 2018, trainings in Romania, Croatia and Germany.

- After the internship in Europe, the trainers conducted trainings for teachers of medical and pedagogical educational institutions and employees of a number of hospitals (medical and technical personnel, IT specialists, doctors).

- Sectoral qualification frameworks have been developed and agreed with the Ministry of Health of the Kyrgyz Republic in the following areas: IT in health care and biomedical engineering.

- "Individual working curriculum on "IT in health care and biomedical engineering" was developed, coordinated with the Ministry of Health of the Kyrgyz Republic and approved in the Ministry of Education and Science of the Kyrgyz Republic

- Licenses have been obtained for the right to conduct educational activities to provide training for bachelor's degree in "IT in Healthcare".

- A distance learning IT centre was established.

- Measures are being taken to raise awareness and attract students in the field of IT in health care.

- Training materials have been developed (work programs, materials for online training), and students have been enrolled to study "IT in Health Care and Biomedical Engineering".

- Cooperation between medical organizations and IT-companies through trainings continues.

Improvement of technological infrastructure of universities through Erasmus+ programmes

Erasmus+ projects improve the technical equipment of universities. Equipment for infrastructure development is provided to effectively implement the main goals and objectives of the projects. The projects mainly finance the purchase of computer, server and office equipment, equipment for lecture halls and telecommunication equipment for video conferences. Video-conferencing equipment allows organizing online lectures and seminars, student scientific conferences, holding coordination meetings, etc.

A number of projects aim to establish laboratories to facilitate innovative activity of students. For example, the EUCAINVEST project has created a network of CreaLABs laboratories that support students and researchers in generating, developing, implementing and commercializing their own innovative ideas through entrepreneurship and open innovation.

It is worth mentioning the results of the KyrMedu project that aimed to develop higher education in the field of medical IT and biomedical engineering. The project provided physical infrastructure for training personnel in these areas. Such an infrastructure allowed partner universities and medical institutions to combine the Moodle platform into a single LMS information system, the Cloud Lab, the PACS medical data server, and the medical equipment of the training laboratories (Figure 6).
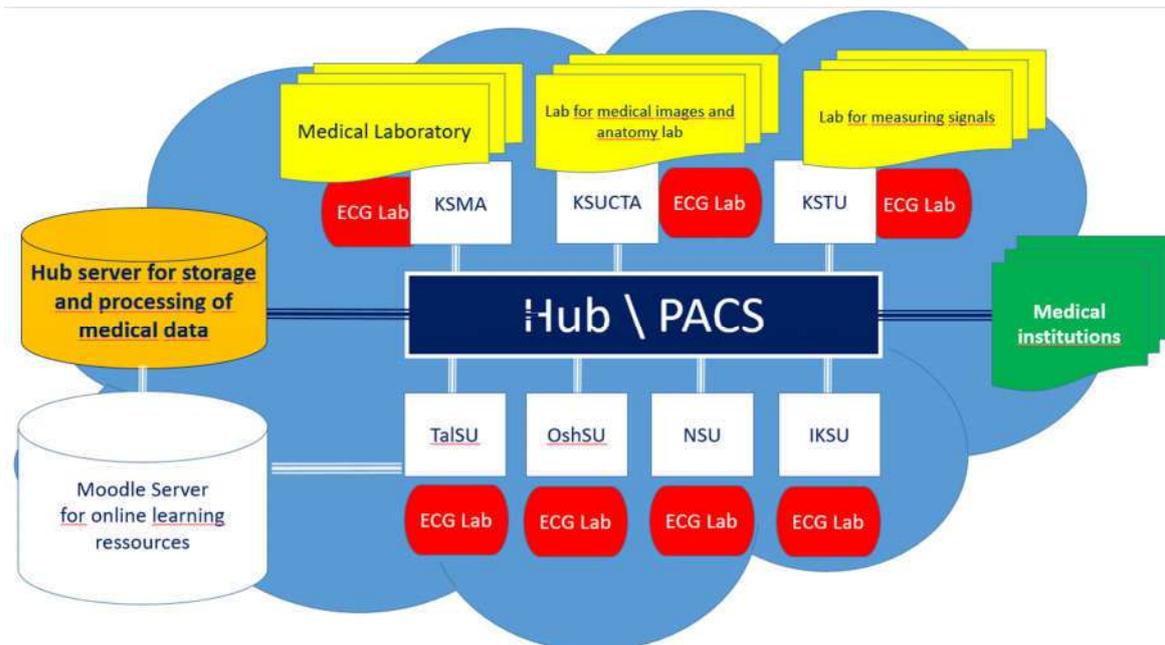
Figure 6: Integrated inter-university infrastructure of the KyrMedu project.

Under the HiEdtec project, the IT infrastructure of partner universities is being improved by upgrading the presentation equipment in lecture rooms, tools for teachers for creating interactive multimedia teaching materials, as well as through specialized software that helps organize educational process through virtual classrooms.

Owing to the EPCA project, a web-based information management system for environmental protection and disaster risk management was developed. This system allows collecting and storing spatial data that are necessary for reliable planning and decision-making on environmental protection and disaster risk management. Such a system will not only help stakeholders to organize and manage the spatial data they need, but will also provide a seamless introduction to the use of GIS for daily operations, training, planning and decision-making.

Within the framework of the HECAFS project, a microbiological laboratory with a sample preparation room was set up and supplied with modern equipment and devices, in order to ensure the quality of the educational process in the relevant disciplines of technology and food safety. In this laboratory, classes are held for bachelor's and master's students studying food technologies, such as food microbiology, food epidemiology, food raw materials and food safety, analysis and quality control, food safety, etc. These courses aim to ensure students acquire knowledge and skills to provide and control safety throughout the entire life cycle of products, especially microbiological indicators, sanitation and food hygiene.

The ProdLog project creates a digital infrastructure to train students using innovative teaching methods. In particular, a virtual laboratory for simulation of resource-efficient production logistics based on virtual reality technology is extremely valuable for students.

Impact of the Erasmus+ programme on the improvement of relations between universities and employers

ProdLog project promotes the development of communication between universities and employers in logistics. Chui Oblast's logistic centres Agroproduct and Kyrgyzcenterproduct accepted students for manufacturing internship. Furthermore, the "Association of Logistics Manufacturers", "Association of Carriers", "Maximum Logistics", USB Transit companies, and ARIS accept students for internship, key specialists of these enterprises give lectures, conduct master classes and workshops.

The KyrMedu project has laid the foundation for the development of educational programs in "IT in Health Care" and "Biomedical Engineering". At the stage of curricula design, the needs of the health sector of the Kyrgyz Republic, both public and private medical institutions, were extensively explored. A number of cooperation agreements have been concluded between partner universities and medical institutions, stipulating student internships, on-the-job trainings for teaching staff, as well as advanced training of medical staff at universities. Since the scope of the project included almost all regions of the Kyrgyz Republic, many regional medical institutions were involved in the project. This, in turn, had a positive impact on the sustainable development of the Kyrgyz regions.

One of the partners of the HECAFS project is the Association of Fruit and Vegetable Enterprises of Kyrgyzstan, the initiators of modernization of the higher education system in order to introduce and implement international systems and standards in the food industry, contributing to the production of safe food products. Along with representatives of production facilities, employers and other stakeholders, learning outcomes for 10 training modules were developed through a series of events (industry workshops, round tables, questionnaires). These include the competence to implement and properly comply with GlobalGap and HACCP standards, as well as practical skills to establish modern food safety management systems at the enterprise.

In general, the implementation of Erasmus+ projects strengthens the ties between universities and employers through internships, trainings, surveys and joint discussions on the content of educational programmes.

Impact of the Erasmus+ programme on the implementation of Innovations in higher education institutions of the Kyrgyz Republic

Among innovative solutions developed during the projects' implementation, representatives of universities noted the following:

- Introduction of mixed training;

- Development of an electronic training manual in cooperation with the CBC Group;

- Preparation of 3 e-textbooks;

- LDL (Distance Learning) method helps students to study remotely if they cannot attend classes. This method can also be used to conduct trainings for teaching staff;

- The concept of forming the Cloud Lab for data exchange between medical equipment tools located in partner universities of the Kyrgyz Republic by means of cloud technology based on DICOM PACS protocol;

- Modernization of curricula, creation of online courses, academic mobility of students and teachers;

- ProdLog curriculum modules combine modern practical knowledge and methods in resource-efficient production logistics;

- New innovative AnyLogic disciplines in logistics and simulation of logistics processes were introduced;

- Development of training materials;

- KSTU together with professors of the Latvian Agricultural University have developed technologies for the preparation of candied fruit from rhubarb growing in the mountains of Kyrgyzstan;

- For the first time the training module based on the international GLOBAL CAP system was developed for students of "Technology of processing and production of plant raw materials" and for the "Standardization and certification of food products" profile;

- The methodology of cooperation in "Science and business" was explored;

- New methods of food microbiology were studied;

- A new bachelor's degree course was launched and all partner universities and healthcare organizations of the Kyrgyz Republic were united into one portal;

- The smart-house project is being partially implemented, and energy-saving Esprit packages are also sold;

- Arduino-platforms and Raspberry Pi are used in practice, and students have demonstrated interest in their application;

- The projects have strengthened partnerships between universities and employers.

In general, the development of a new e-learning module and the study of new methods were innovative for participating universities in Kyrgyzstan.

Impact of the Erasmus+ program on HEIs management

With regard to the management of higher education institutions, some of the participating universities noted that the university management system is being improved in the course of the implementation of the projects, the management of the educational process and scientific research work is being optimized. At the same time, the projects do not aim to change the management of universities, so all the observed changes are positive consequences of the chain reaction from the implementation of projects.

Chapter 3: Impact of the Erasmus+ programme on faculty and students

The survey was conducted as part of the monitoring of the level of satisfaction of all stakeholders (in this case - the faculty and students) with the quality of educational activities in the framework of Erasmus+ projects and the impact of these projects on the development of educational institutions. The questionnaire included a number of questions concerning the degree of satisfaction with participation in the projects, the impact of the projects on professional activity, shortcomings and strengths of the projects in which the faculty and students participated. It was also important to determine how project participants assessed their performance.

Nine Universities of the Kyrgyz Republic took part in the survey. Universities such as Diplomatic Academy of MFA KR, ADAM University, OshTU, KRSU, KNU, TalSU, Academy of Management of the KR, KNAU. A total of 35 people were interviewed, including faculty and students (Figure 1).
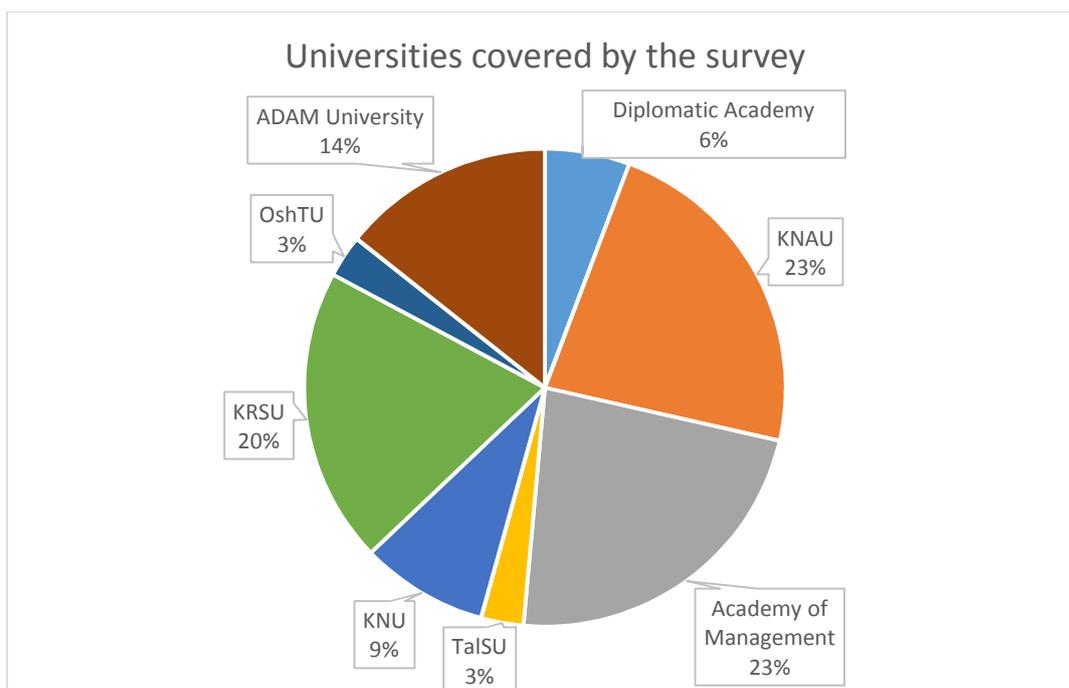

Figure 7: Universities that participated in the survey.

It was also important to learn which projects the faculty and students most often participate in in order to understand the degree of project satisfaction, shortcomings and strengths of the projects. As can be seen from the pie chart, the faculty actively participate in professional development workshops (23%) and exchange projects (26%) (Figure 2). Among the students, the exchange programme is of great interest, as can be seen from the chart. Among the different categories of projects, Student exchange is among the three most frequently selected Erasmus+ projects. Among the students, almost 90% were participants in

the Student Exchange program, there was also one Full degree participant, the remaining 9% indicated trainings and other forms of activity within the Erasmus+ program.
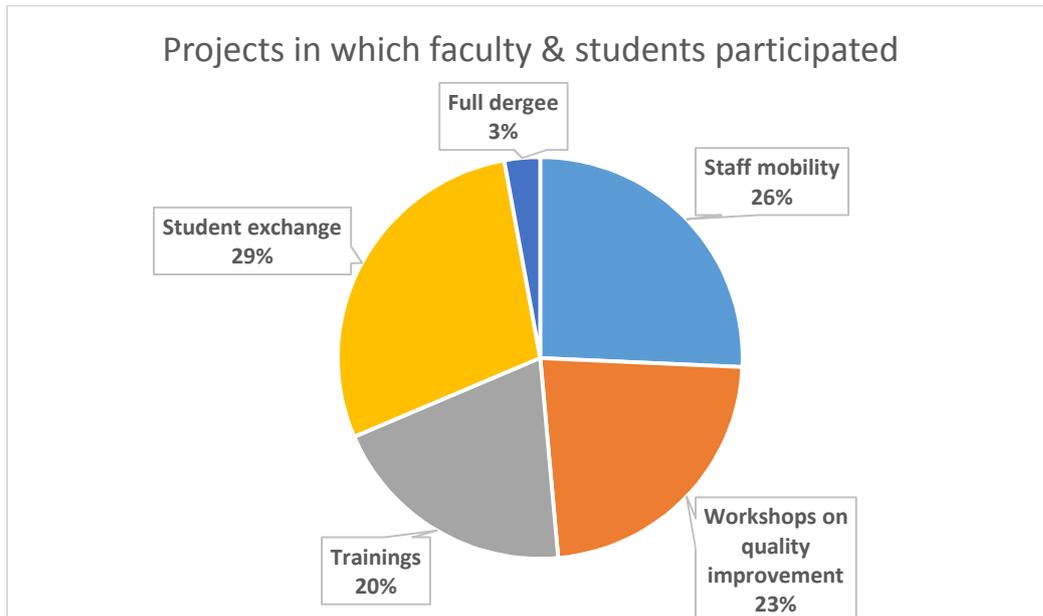
Figure 8. Projects in which faculty and students participated.

It was important for Erasmus+ to find out the opinion of the faculty and students and their satisfaction with the Erasmus+ projects. As can be seen from Figure 3, more than 70% of the respondents highly appreciated the organisational side of the projects, the quality of the projects and their usefulness, and only a small percentage of participants gave a relatively unsatisfied assessment. This demonstrates the prevailing positive attitude of participants towards Erasmus+ programme activities.
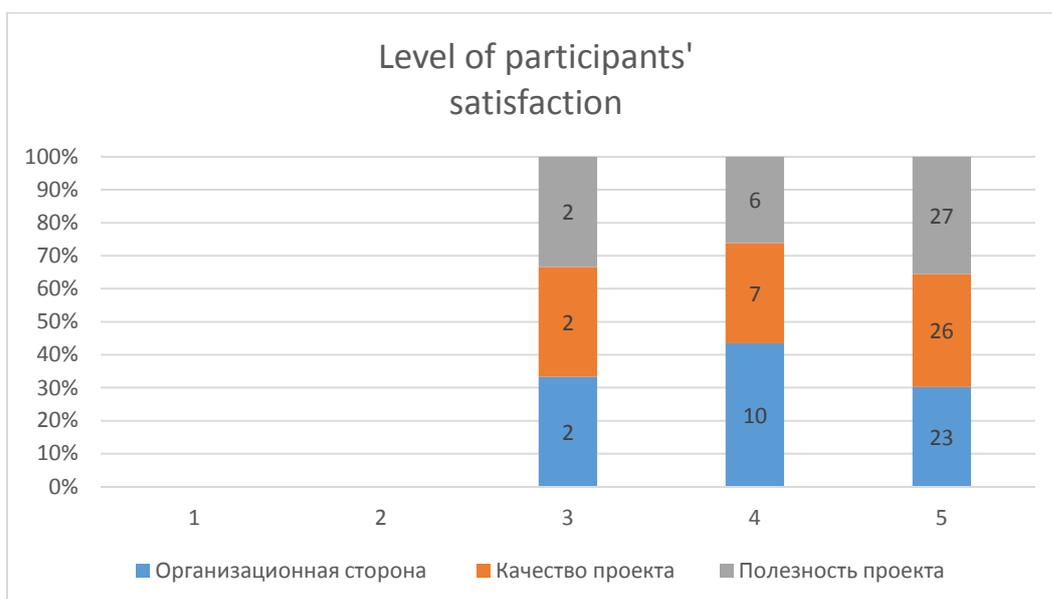
Figure 9. Degree of participants' satisfaction.

In terms of the impact of projects on professional performance, respondents noted that owing to their participation in the projects they were able to acquire new professional skills (30%), the quality of their work also improved (25%), 11% indicated career advancement. About 6% noted deepening institutional ties between Kyrgyz and European universities, and establishing new contacts for further cooperation (Figure 4).
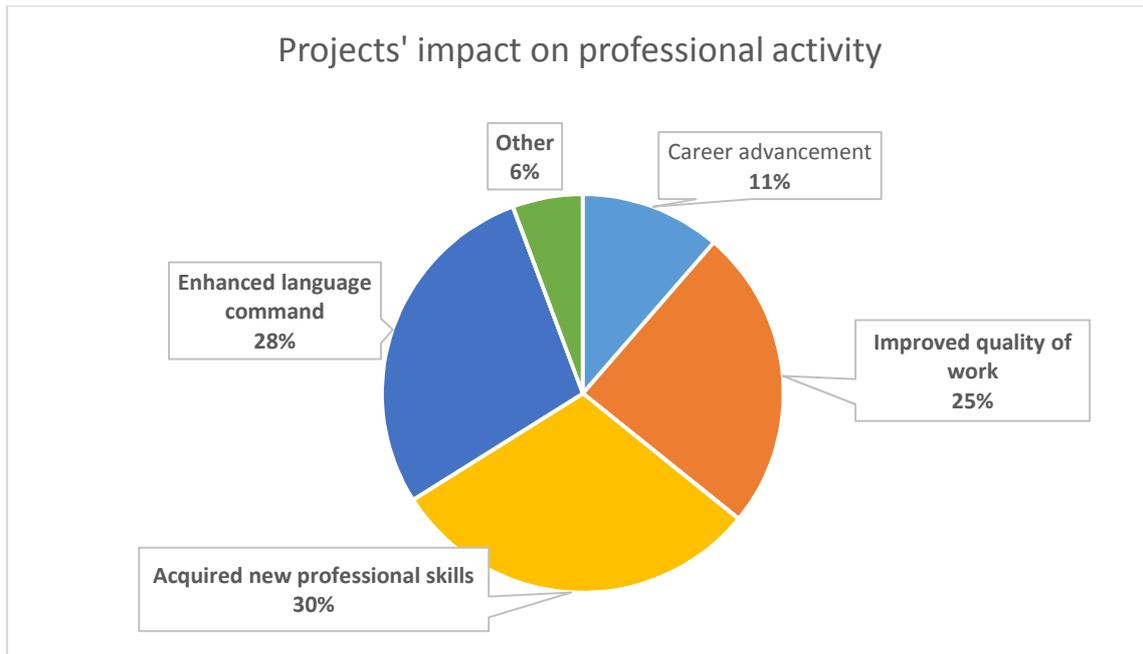
Figure 10. Impact of projects on professional activity.

Shortcomings in project implementation included such aspects as:

- Large amount of information for two days of training, a short period of time to assimilate and consolidate the knowledge gained;

- Low awareness of Erasmus+ programmes among many teachers and students;

- Student exchange participants noted that there were some difficulties in the recognition of credits at the sending institution, organizational issues at the host institution, and problems with finding housing;

- delayed financing.

At the same time, the majority of participants noted that in general their participation in Erasmus+ programmes was a positive experience.

Such strengths of the Erasmus+ programme were noted:

- Exchange of experience between project participants;

- Improvement of lecture materials;

- Exchange of teaching systems and methods;

- Improving language skills;

- Cultural exchange;

- Transparency in the selection of participants.

The participants of the study indicated that most often, they use social media to disseminate the project results, and they conduct trainings for their colleagues in order to share their knowledge and experience. In general, all participants assessed their participation in Erasmus+ projects as quite positive. Many noted that participation in the projects contributed to the writing and publication of articles, research papers, as well as helped in writing dissertations and improving the quality of teaching. Students noted that thanks to exchange projects they were able to improve their communication skills, make new friends and learn about other cultures.

Annex 1. Questionnaires.

Анкета №1 Опрос студентов и сотрудников Высших Учебных Заведений

Содержания опросника

Цели и задачи проведения исследования:

Предлагаем принять участие Вашему университету в проводимом исследовании о влиянии проектов программы Эразмус + на развитие высших учебных заведений в Кыргызской Республике.

1. Наименование университета
   - Правовая форма_____
   - Местоположение_____
   - ФИО заполняющего анкету и его контактные данные_____

2. В каких проектах Эразмус+ Вы участвовали:
   a) Мобильность персонала (академическая / административная)
   b) Семинары по повышению квалификации
   c) Тренинги
   d) Студенческий обмен
   e) Полная степень

3. Пожалуйста, оцените свою степень удовлетворенности участия в проектах Эразмус+ (1- абсолютно не удовлетворён, 5 – полностью удовлетворен)

	1	2	3	4	5
Организационная сторона					
Качество проекта					
Полезность проекта					

4. Как повлиял проект, в котором Вы участвовали, на вашу профессиональную деятельность?
   a) Карьерный рост
   b) Улучшилось качество работы
   c) Все осталось по-прежнему
   d) получил(а) новые профессиональные навыки
   e) усовершенствовал(а) языковые навыки
   f) Другое _____

5. Перечислите, пожалуйста, слабые стороны проекта, в котором Вы участвовали
_____
_____
_____

6. Перечислите, пожалуйста, сильные стороны проекта, в котором Вы участвовали
_____
_____
_____

7. Поделитесь, пожалуйста, вашими впечатлениями, результатами от проектов Эразмус +
_____
_____
_____
_____

8. Как Вы планируете распространять полученный опыт участия в программе Эразмус+?

_____

_____

_____

Анкета №2 Оценка воздействия проектов Erasmus+ в Кыргызстане (2014-2019)

Цели и задачи проведения исследования:

Предлагаем принять участие Вашему университету в проводимом исследовании о влиянии проектов программы Erasmus+ на развитие высших учебных заведений в Кыргызской Республике.

1. Название университета: _____
   - Правовая форма: _____
   - Местоположение: _____

2. Название реализованных и текущих проектов Erasmus+ в вашем университете

№	Название проекта	Номер	Краткое описание проекта	Достигнутые и ожидаемые результаты
1				
2				
3				
...				

3. Вклад проекта Erasmus+ на индивидуальном уровне:

Повышение квалификации ППС (общая статистика): _____
_____

Отличившиеся преподаватели: _____
_____

Развитие обмена ППС между университетами (укажите общее количество и университеты-партнеры): _____
_____

4.Вклад проекта Erasmus+ на институциональном уровне (ВУЗ):

Приведите примеры успешного влияния проектов Erasmus+ на развитие университета:
_____
_____

Приведите примеры разработки и внедрения новых учебных планов/образовательных программ: _____
_____

Какие виды оборудования приобретены за счет проектов Erasmus+
   ◆ Компьютерное оборудование: _____
   _____
   ◆ Телекоммуникационное оборудование: _____
   _____
   ◆ Специализированные лаборатории: _____
   _____
   ◆ Литература: _____
   _____

◆ Другие (укажите): _____

_____

Приведите успешные примеры развития связи между Вашим университетом и работодателями: _____

_____

Приведите примеры инновационных решений выработанных в ходе реализации проектов: _____

_____

Изменилась ли система управления университетом в ходе реализации проекта: __ _____

5. Повлияло ли участие в проектах Erasmus+ на внедрение принципов Болонского процесса в Вашем университете?

да (то конкретно на что именно): _____

_____

на введение 3-х циклов обучения: _____

_____

на внедрение ECTS / DS: _____

_____

на мобильность: _____

_____

на повышение качества: _____

_____

прочее_____

не знаю: _____

затрудняюсь ответить: _____

6. На какие из нижеперечисленных аспектов повлияли проекты Erasmus+?

на разработку модулей дисциплин;

на разработку УМК;

на разработку образовательной программы;

на разработку ГОС;

на разработку макета ГОС;

на аккредитационные критерии по обеспечению качества;

на разработку проекта национальной рамки квалификаций;

другое_____

7. Согласны ли Вы, что реализация проектов Erasmus+ в Вашем университете повлияло на изменение подходов:

к обучению студентов;

к изучению дисциплины студентами;

к оцениванию результатов обучения в целом по программе и по дисциплине;

адаптации ECTS в КР

другое_____

8. Как повлияли проекты Erasmus+ на повышение качества образования в Вашем университете?_____

_____

9. Повлияли ли проекты Erasmus+ на интернационализацию высшего образования на примере Вашего университета?

    Да, то каким образом?_____

    Нет

    Затрудняюсь ответить

10. Укажите, на какие конкретные аспекты интернационализации повлияли проекты Erasmus+.

    на разработку стратегического плана университета по интернационализации;

    академическая мобильность студентов;

    академическая мобильность ППС;

    разработка программ на английском языке;

    внедрение языковых курсов для студентов и ППС;

    продвижение имиджа и рейтинга университета в стране и в регионе;

    международная аккредитация;

    международные проекты;

    международные договора по сотрудничеству в области науки, образования и бизнеса (научные журналы, конференции, конкурсы и т.д.);

    членство в международных ассоциациях и международных организациях

    другое_____

11. Вклад проекта Erasmus + на национальном уровне:

    Как на Ваш взгляд меняют систему высшего образования проекты Erasmus+ в Кыргызской Республике?_____

    _____

12. Какие трудности возникли во время реализации проектов Erasmus+?

    в организационном плане

    в информационном плане

    в ресурсном плане

    в нормативном (законодательном) плане

    в языковом плане

    в содержательном плане

    прочее

13. Ваши рекомендации по более эффективной реализации проектов Erasmus+: _____ _____

14. ФИО заполнившего анкету и его контактные данные: _____ _____

Annex 2. List of Erasmus+ projects in Kyrgyzstan.

1. 561894-EPP-1-2015-1-DE-EPPKA2-CBHE-JP «Advancing University Education in Biomedical Engineering and Health Management in Kyrgyzstan» (KyrMEDU)

   www.kyrmedu.org

2. 561832-EPP-1-2015-1-LV-EPPKA2-CBHE-SP «European Dimension in Qualifications for the Tourist Sector» (EurDiQ)

   www.eurdiq.eu

3. 561724-EPP-1-2015-1-DE-EPPKA2-CBHE-JP «Investing in Entrepreneurial universities in Caucasus and Central Asia» (EUCA-INVEST)

   www.euca-invest.eu

4. 561539-EPP-1-2015-1-ES-EPPKA2-CBHE-JP «Management - Innovation – Development» (MIND)

   www.mind.ulpgc.es

5. 561495-EPP-1-2015-1-AT-EPPKA2-CBHE-JP «Central Asian Center for Teaching, Learning and Entrepreneurship» (CACTLE)

   www.cactle.eu

6. 561841-EPP-1-2015-1-IT-EPPKA2-CBHE-JP «International University Cooperation on Land Protection in European-Asiatic Countries» (IUCLAND)

   www.iucland.eu

7. 573640-EPP-1-2016-1-IT-EPPKA2-CBHE-JP «STrengthening Network EdUcaTiOn,Research and Innovation in Environmental HeALth in Asia» (TUTORIAL)

   www.tutorial.ut.ee

8. 573897-EPP-1-2016-1-BG-EPPKA2-CBHE-JP «Professional Bachelor and Master Degrees in open and distance learning for sustainable tourism development in China, Vietnam and Kyrgyzstan» (LMPT) www.lmpt.eu

9. 574005-EPP-1-2016-1-LV-EPPKA2-CBHE-JP «Higher Education for Central Asia Food Systems and Standards» (HECAFS)

   www.namsb.tj/hecafs

10. 574099-EPP-1-2016-1-IT-EPPKA2-CBHE-SP «Paving the way to interregional mobility and ensuring relevance, quality and equity of access» (PAWER)

    www.pawer.univaq.it

11. 574243-EPP-1-2016-1-PT-EPPKA2-CBHE-JP «Regional Objectives of Administrative Development» (ROAD) www.roadproject.tecnico.ulisboa.pt

12. 585382-EPP-1-2017-1-SE-EPPKA2-CBHE-JP «Environmental Protection in Central Asia: Disaster Risk Management with Spatial Methods» (EPCA)

    www.eu-epca.eu

13. 585967-EPP-1-2017-1-DE-EPPKA2-CBHE-JP «Development of a Bologna-based Master Curriculum in Resource Efficient Production Logistics» (ProdLog)
    www.ilm.ovgu.de/ProdLog.html

14. 598092-EPP-1-2018-1-BG-EPPKA2-CBHE-SP «Modernization of Higher education in Central Asia through new technologies» (HiEdTec)
    www.hiedtec.ecs.uni-ruse.bg/?cmd=gsIndex

15. 598690-EPP-1- 2018-1-BE-EPPKA2- CBHE-JP «Establishing Master programmes in HRM and talent Development in Central Asia» (TALENT)

16. 598470-EPP-1- 2018-1-DE-EPPKA2- CBHE-JP «Enhancing Green economy in 3 countries of Asia» (EGEA) www.egea.education

17. 609918-EPP-1-2019-1-KGEPPKA2-CBHE-JP «The Development of Doctoral Education and Research Capacities of Kyrgyzstan Academia» (DERECA)

18. 610170-EPP-1-2019-1-ESEPPKA2-CBHE-JP «Establishment of training and research centers and Courses development on Intelligent Big Data Analysis in CA» (ELBA)

Annex 3. List of higher education institutions in Kyrgyzstan.

Annex 3. List of higher education institutions in Kyrgyzstan.

	State Universitites	
№	Name	web-site
1	Academy of Management under the President of the Kyrgyz Republic	www.apap.kg
2	Academy of the Ministry of Interior of the Kyrgyz Republic	www.academy-mvd.kg
3	Batken State University	www.batmu.kg
4	Bishkek Humanities University	www.bhu.kg
5	Diplomatic academy of the Ministry of foreign affairs of the Kyrgyz Republic	www.dipacademy.kg
6	Institute of Social Development and and Enterpreneurship	www.isrip.kg
7	International University of Kyrgyzstan	www.iuk.kg
8	Issyk-Kul State University n.a. K.Tynystanov	www.iksu.kg
9	Jalal-Abad State university	www.jagu.kg
10	Kyrgyz -Uzbek University	www.oshgsu-kuu.com
11	Kyrgyz Aviation Institute	www.kai.kg
12	Kyrgyz Economic University	www.keu.kg
13	Kyrgyz National Agrarian University n.a. K.I.Skryabin	www.knau.kg
14	Kyrgyz National Conservatory	www.conservatoria.com.kg
15	Kyrgyz National University n.a. J.Balasagyn	www.university.kg
16	Kyrgyz State Academy of Physical Training and Sport	www.ksapcs.kg
17	Kyrgyz State Institute of Arts named after B.Beishenalieva	www.kguki.kg
18	Kyrgyz State Law Academy	www.ksla.kg
19	Kyrgyz State Medical Academy n.a. I.K. Akhunbaev	www.kgma.kg
20	Kyrgyz State Technical University n.a. I.Razzakov	www.kstu.kg
21	Kyrgyz State University n.a. I.Arabaev	www.arabaev.kg
22	Kyrgyz State University of Construction, Transport and Architecture	www.ksucta.kg
23	Kyrgyz-Russian Slavonic University named after B.N. Yeltsin	www.krsu.edu.kg
24	Kyrgyz-Turkish Manas University	www.manas.edu.kg
25	Military Institute of the Armed Forces of the Kyrgyz Republic	www.miafkr.edu.kg
26	Naryn State University n.a. S. Naamatov	www.nsu.kg
27	National Academy of Arts of the Kyrgyz Republic	www.academyart.kg
28	Osh Humanity-Pedogogical Institute	www.ogpi.kg
29	Osh State Juridical Institute	www.oshgui.kg
30	Osh State University	www.oshsu.kg
31	Osh Technological University n.a M.Adyshev	www.oshtu.kg
32	Talas State University	www.talsu.kg

№	Private Universities	
	Name	**web-site**
1	Academy of Tourism	www.at.edu.kg
2	ADAM University (ex BAFE)	www.bafe.edu.kg
3	International Kuwait University	www.chygysh.kg
4	International Academy of Management, Law, Finance and Business	www.maupfib.kg
5	Kyrgyz Russian Academy of Education	www.krao.kg
6	American University of Central Asia	www.auca.kg
7	International University of Kyrgyzstan Academic Consortium	www.muk.iuk.kg
8	International School of Medicine	www.ism.edu.kg
9	International Alatoo University	www.iaau.edu.kg
10	International University in Jalal-Abad (ex UEP)	www.mnu.kg
11	Kyrgyz-Kazakh University	www.kku.edu.kg
12	Institute of Strategical Informational Technologies in Education	www.isito.kg
13	International University of Central Asia (IUCA)	www.iuca.kg
14	Eurasian University	
15	International University of Innovation Technologies	www.intuit.kg
16	Asian Medical Institute (AzMI)	www.asmi.kg
17	OSCE Academy	www.osce-academy.net
18	Academy of Law, Business and Education	www.apbio.kg
19	International University of Science and Business	
20	Institute of Economics and Finance	www.ief.kg
21	Issyk-Kul Institute of Innovation Technologies	
22	International Medical University	www.imu.edu.kg
23	Academy of Labor and Social Relations	www.tradeunion-ed.kg
24	KEIIN International Institute	www.keiin.kg
25	Academy of Innovation n.a. Sh.Musakozhoeva	www.ai.edu.kg
26	University of Central Asia	www.ucentralasia.org
27	Korean Institute of Central Asia	www.kica.kg
28	Regional Institute of Education	
29	Scientific Research Medical Social Institute	www.nimsi.gnomio.com
30	Islamic University of Kyrgyzstan	www.kiu.kg
31	Kyrgyz Institute of Languages and Culture	
32	Kyrgyz-German Institute of Applied Informatics	www.inai.kg

National Erasmus+ Office in Kyrgyzstan

19, Razzakov Street,
3rd floor, off.305, "RUSSIA" Business Centre
Bishkek, 720040 Kyrgyz Republic

Universities
Total: 64
Public: 32
Private: 32

Students
Total: 164 585
Public: 141 223
Private: 23 362

www.erasmusplus.kg ~ 1500 visitors/month
facebook.com/erasmuspluskg - 2229 followers
National Erasmus+ Office in Kyrgyzstan - 1085 views

erasmusplus.kg 2096 followers
on-line chat 138 consultations
face to face 844 consultations

Publications

ICM

Application
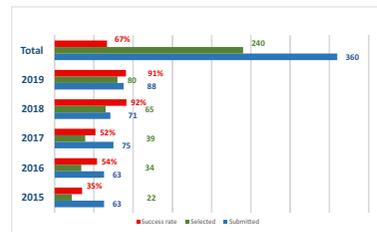
Cooperation with EU Countries
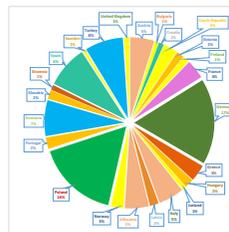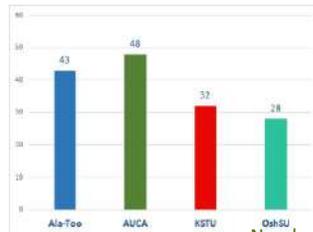
Number of projects in KG HEIs (top)

CBHE

Application

Number of projects in KG HEIs (top)

KSTU 7, IKSU 7, OshSU 5, KEU 5

Cooperation with EU HEIs

HEIs / Projects — DE 8/7, IT 8/6, LV 4, PT 6/6, ES 7/4, BG 4/4
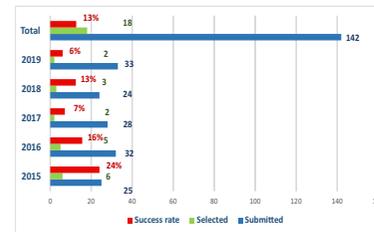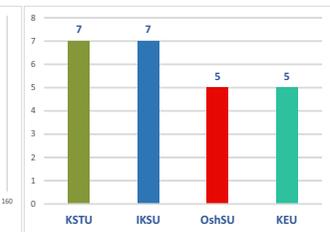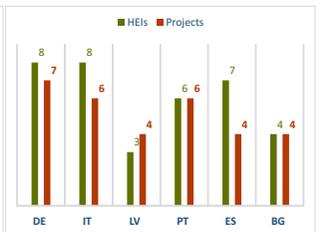
Achievements

Project	Curricula	Equipment	Students	Staff
KyrMEDU	BA in Informatics was developed	1.Biomedical lab 2.video-conference audiorium	112	156
EurDIQ	12 modules were developed	Educational and methodical center on tourism	25	40
EUCA Invest	17 programs renovated, 2 programs were developed	Innovation laboratory CreaLAB	184	58
MIND	2 electronic books were developed, web platform was launched	Youth centers	60	35
CACTLE	Development of "Enterpreneurshi and Business" course	CACTLE centre	150	102
IUCLAND	6 summer and 1 winter schools were implemented, 2 modules were developed	Laboratory on Land resources	200	65
TUTORIAL	2 New master's program in public health and epidemiology launched	Electronic resource laboratories	30	71
LMPT	BA and MA on sustainable Tourism were developed	Center of Excellence and Resources	219	100
HECAFS	10 syllabuses were updared, 12 disciplines were improved,5 new modules were introduced	Food safety and microbiology laborotories	120	50
PAWER	Comparative scheme of credits in the 5 degree courses were finalised; Manual for the correct transfer of grades & credits was developed	Software DEMO for credit recognition is created	N/A	48
ROAD	18 short -term courses were developed	ROAD Center for trainings	835 participants	44

Impact

Impact on staff level

✓ Introduced new knowledge, skills

✓ Obtained intercultural development and communications

✓ Introduced in practice innovative ideas

✓ Improved skills to design curricula using competence based approach and LO

✓ Mobility development

Impact on institution level

✓ Improved management and governance

✓ Enhanced cooperation and internationalization

✓ Improvement in the quality of educational programmesImproved the information technology infrastructure

✓ Quality assurance improved - rating of HEIs improved

✓ More partnerships

Impact on HE system level

✓ Internationalization of system

✓ Changes in HE legislation

✓ Capacity building of number of policy makers on HE

✓ Strengthening of KG human capital base in Entrepreneurship and Innovation

Success stories

2 Vice-minister of Education

5 Rector

1 Erasmus+ Marriage

Challenges

Limited funding

Weak quality of CBHE proposals

Poor English language

Wishes

More National projects

More funding for CBHE projects