

**Impact of the Erasmus+ CBHE projects on
development and modernisation of higher
education in the Republic of Uzbekistan**

INTERMEDIATE NATIONAL IMPACT STUDY

Tashkent 2021



With the support of the
Erasmus+ Programme
of the European Union



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¹ Erasmus+ Capacity Building in Higher Education projects (CBHE)

² International Credit Mobility (ICM)

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Introduction

For the higher education system of Uzbekistan, 2017-2020 has become a period of radical transformations and important decisions aiming to improve the quality of higher education. It has greatly increased the relevance and importance of rapidly developing international cooperation. One of the important areas of this cooperation is the Erasmus+ programme, involving a total of 65 universities from all regions of the country. Erasmus+ programme is one of key directions of cooperation not just with the European universities, but also with universities in Central Asia, CIS member states and other regions of the world.

It is important to note that from the very beginning of the Erasmus+ programme in 2014, higher educational institutions (HEIs) of Uzbekistan have been actively participating in the programme, which has become a worthy continuation of the successful Tempus programme with an even wider range of opportunities for cooperation in the field of higher education. Due to this, the higher educational institutions of Uzbekistan could greatly enrich their experience of cooperation with universities in the European Union and in the neighbouring countries, develop a number of joint master's programmes, create joint departments and unique scientific laboratories, which had a significant impact on improving their international recognition and ranking.

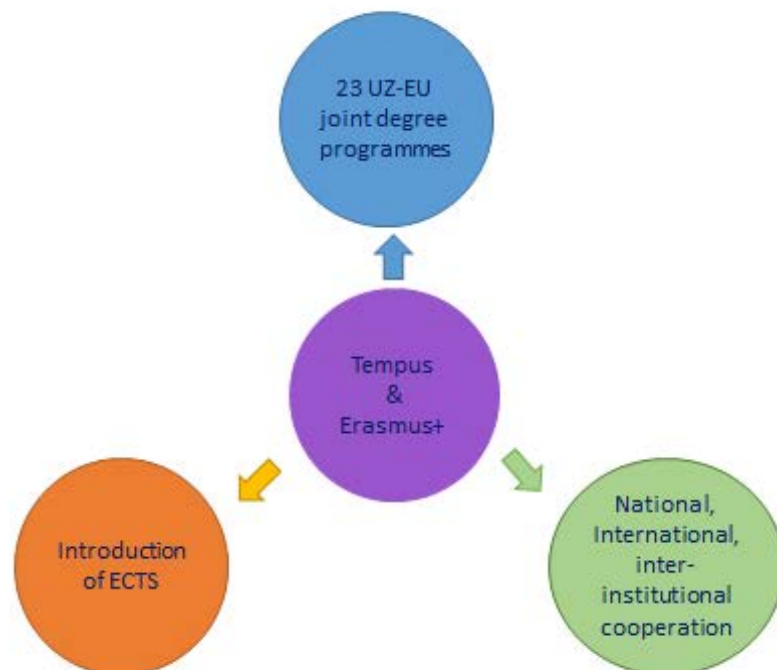
The relevance of the Erasmus+ programme, its wide range of activities and opportunities for long-term cooperation are aligned with the goals outlined in the Concept for the Development of Higher Education of the Republic of Uzbekistan until 2030, as well as the recently adopted Law on Education and the Law on Science and support their implementation. The advanced teaching technologies introduced within the framework of joint projects, educational platforms established, and access provided to the educational resources of European universities greatly supported the transition of the entire education system to the online format in in the context of the pandemic in 2020 and the current year. Virtual mobility and combined mobility allowed for the personal development of teachers, participation in joint publications and continued joint research studies for the researchers at the universities in the country.

Given the strategic goals of the development of the national higher education system, it is necessary to use the capabilities of the Erasmus+ programme to improve the quality of training to produce highly qualified personnel able to think creatively and systemically, to enhance the investment attractiveness of the higher education system, and to support implementation of the University 3.0 concept which envisages a close connection between education, science, and innovation.

During 2020, activities continued to expand the enrollment of youth in higher education by dramatically increasing the number of new higher educational institutions (HEIs) and opening branches of prestigious international universities in the country. The total number of HEIs has reached 129 by the end of 2020 year. For the period of 2017-2020 52 new HEIs have been established in the country, including 25 branches of foreign universities, and 9 non-state owned universities. Universities from many countries of the world are showing interest in opening their branches, not just in Tashkent, but also in the provinces. The number of defended theses and the publication-related activity of HEI professors and researchers have significantly increased.

Stable partnerships and linkages established under the programmes of the European Union are of great help in solving problems related to opening branches of recognised international universities, creating joint departments and programmes, and teaching subject matter in English. Obviously, the three-year collaboration under the Erasmus+ CBHE project and the exchange of students and faculty ensure mutual understanding, as well as the opportunity to compare and develop joint curricula, textbooks and teaching and learning materials. Erasmus+ projects and the overall experience of European countries in the implementation of European Credit Transfer and Accumulation System (ECTS) and a gradual transition to a credit and module based educational process (see Figure 1) have a particularly significant impact.

Figure1. Impact of Tempus and Erasmus+ projects on modernisation of higher education in Uzbekistan



In this regard, the projects also made a certain contribution to the development of the Resolution of the Cabinet of Ministers No 824 “On Measures to Improve the System of Organization of the Educational Process in Higher Educational Institutions” dated December 31, 2020

According to the decree, the educational process in higher educational institutions should gradually transform into the credit and module based system starting from the 2020/2021 academic year. This act approves the Regulation on the introduction of the credit and module system into the educational processes of HEIs, based on the European Credit Transfer and Accumulation System (ECTS).

Given the continued growth in the number of higher educational institutions in the country, new Erasmus projects should also cover those for which this will be the first opportunity to establish long-term contacts and sustainable cooperation, not just with the European universities, but also with universities in Central Asia, CIS member states and other regions of the world.

The Ministry of Higher and Secondary Specialised Education (MHSSE) of the Republic of Uzbekistan supports the activities of the Erasmus+ programme and highly appreciates its significant impact, flexibility and timely and efficient response to all public decisions aimed at further improvement of the national higher education system.

In 2020, just like in all other countries of the world, the higher education system of Uzbekistan is going through serious challenges due to the COVID 19 pandemic. Despite the difficulties, our universities continue teaching, research, and international cooperation, through active use of advanced information and communication technologies. All areas of cooperation under the Erasmus+ programme and especially international credit mobility (ICM) projects faced serious challenges due to the Covid-19 pandemic. We must give credit to the coordinators and project participants from both the European and Uzbek sides, who found ways to maintain cooperation despite the challenges they faced, and also provided the necessary assistance to all mobility participants who were forced to extend their stay in another country as it was impossible to return home due to quarantine restrictions. All necessary changes, including the extension of the relevant visas and possible ways to continue studies and practice, were agreed in a timely manner between the partners.

Within the framework of the Erasmus + programme, in addition to financing joint projects for higher education institutions, support was provided for the National Teams of Experts in Higher Education (Higher Education Reform Experts-HEREs).

The National Teams operating since February 2008 in all partner countries help strengthening cooperation on general issues related to the higher education

reform, including quality assurance, innovation and meeting the labour market needs.

The main task of the National Team of Experts in the Field of Higher Education is to disseminate information about the development of the national higher education system as well as about transformation in the common European Higher Education Area covering 49 countries participating in the Bologna process.

Activities of the National Teams in partner countries which are not involved in the Bologna process are aimed at promoting the modernization of higher education in accordance with the national strategies and reform policies in this area.

The impact of all project teams, as well as the National Expert Team, on the modernization of higher education at their institutions and at the national level is widely recognized.

A particular progress is observed with regards to the introduction of the ECTS (European Credit Transfer and Accumulation System) in HEIs, which will increase the efficiency of the teaching and learning process and international integration. The traditional training workshops, teleconferences, consultations and meetings held in recent years by the MHSSE jointly with the Erasmus+ National Office and a team of experts were very important and have had a certain impact on the development of the higher education development strategy.

The collection of scientific and methodological publications by the team of higher education experts entitled "Perspectives of Higher Education Development", that was launched in 2011 under the Tempus programme, in 2020 acquired a new status of an official scientific and methodological journal as it had been successfully registered under the framework of the Erasmus+ programme. The eighth issue of the collection was presented at the team's annual closing seminar held online on December 15, 2020, and then published on the website www.erasmusplus.uz to be accessed by the general public. The MHSSE of the Republic of Uzbekistan is ready to support this publication in every way possible, as the purpose of the publication is to familiarize HEI staff members and students with the latest developments and best practice in higher education, both international and local ones.

One of the many tasks of the team is the implementation of the so-called Technical Assistance Mission (TAM), aimed at holding targeted seminars with the participation of European professors on topics previously proposed and agreed upon with the MHSSE. During 2017-2020, 14 TAM seminars have been held on the credit and module system, methods of teaching English for non-linguistic specialisations, doctoral studies, quality of education, learning outcomes, qualifications frameworks, and employment of graduates.

Members of the National Team of the Republic of Uzbekistan actively participated in the discussion and review of issues related to quality assurance, development and implementation of ECTS, internationalization and autonomy of universities. Moreover, many experts worked directly in the State Inspectorate for Supervision of Quality in Education (SISQE) or MHSSE, and worked as heads of HEIs and members of state committees.

The experts held the 4th National Scientific and Practical Conference on "Erasmus+ credit mobility: role in improving the quality of higher education" in the online format, which has become an annual event for the team, on December 16, 2020. The goal of the conference was to increase efficiency of the educational process and research of Uzbek specialists through the exchange of knowledge, experience gained during the mobility periods and the implementation of outcomes and research findings. The conference serves as a response to the recommendation of the MHSSE to disseminate the results of cooperation under Erasmus+ projects in order to promote best practices and attract new teams and participants throughout the country. The proceedings of the conference reflect the current situation during this difficult year and clearly show the commitment to continued cooperation and mutually beneficial academic exchange of students and teachers. The circle of authors keeps expanding and includes European partners as well.

Summary

The Tempus and Erasmus+ programme, according to a study based on online survey, in-depth expert interviews and focus groups discussions conducted in November through December 2020, as well as on the analysis of field monitoring visits and institutional monitoring by the National Erasmus+ Office (NEO) is the only one and the largest cooperation programme with the European universities that has had a systemic impact on the development and modernization of higher education in the Republic of Uzbekistan. This conclusion was also reflected in the report of the on-line regional cluster meeting on the study of the impact of Erasmus+ CBHE projects held on November 19-20, 2020. The significant impact of the programme on the implementation of higher education reforms and timely response to government decisions to modernize the system is confirmed in the Regional report on Central Asia³ prepared by EACEA based on the analysis of the final reports of the first generation of 2015 CBHE projects. Moreover, Tempus and Erasmus+ programmes were highly appreciated both by the Ministry of Higher and Secondary Specialised Education of the Republic of Uzbekistan and by other sectoral ministries and departments such as the Ministry of Health, Ministry of

³ Regional report on Central Asia prepared by EACEA <https://op.europa.eu/en/publication-detail/-/publication/39eb35f5-40e0-11eb-b27b-01aa75ed71a1/language-en>

Agriculture, Ministry of Foreign Affairs, Ministry of Innovation Development and others.

However, during the period covered by the study, a number of challenges and difficulties were identified that were faced by the project teams when implementing Erasmus+ projects. Difficulties and challenges were of both systemic and ad hoc nature, as the study participants noted in their presentations and questionnaires they filled.

All experts and respondents who participated in the study noted that without the impact of the Tempus and Erasmus+ projects it would hardly had been possible to achieve such a rapid modernization of higher education in Uzbekistan in 2017-2020, especially with regards to the new and often innovative areas of education.

In general, opinion leaders have a unanimous “red line” with regards to the implementation of the Tempus and Erasmus+ projects. This line leads clearly from the impact of projects on the reform and modernization of the higher education system and capacity building within the Tempus programme since 1994. As from 2015 it further continues through introducing and disseminating the results of these changes in the higher education system thanks to the Erasmus+ programme. And then it comes to the point where the impact of projects is expected to increase the innovation rates and competitiveness of the national higher education system with the assistance of the future Erasmus+ programme for 2021-2027.

Moreover, the drastic increase in the number of HEIs in Uzbekistan in 2017-2020, including branches of international universities, and the emergence of a large number of non-state, private universities, also happened due to the trained personnel who took part in Tempus and Erasmus+ projects. However, experts also noted a certain cautiousness of European partners with regards to creating joint universities or branches in Uzbekistan, in contrast to partners from South Korea and the Russian Federation. But in general, the European colleagues are interested in establishment of joint master degree programmes and departments, and this interest even has a tendency to grow.

In the course of the National Impact Study⁴ of Tempus and Erasmus+ programmes, many of the study participants gave a large number of comments and recommendations on preventing difficulties and challenges of participation in the programme, but all the problems observed were mitigated by the results and the impact of the programme on their individual professional development, building the capacity of departments and universities, as well as providing systemic impact at the regional and national levels.

⁴ National Impact Study - NIS

Also, HEREs prepared 6 analytical notes, and their findings are presented in the Annex to the present report. The following relevant topics were discussed to support making decisions on future national and regional priorities, as well as describing development trends in the Republic of Uzbekistan until 2030: the focus was on the following reforms implemented in Uzbekistan in the period from 2017 to 2020: structural reforms in the public governance and economics; in higher education; in the field of science and innovation; in agriculture and health care.

In the context of each analytical note, brief descriptions of CBHE Erasmus+ projects were presented, with links to the official project websites, as well as the main project outcomes.

The authors of the study also noted certain aspects of the implementation of Erasmus+ projects in Uzbekistan during the COVID-19 pandemic. An online survey was conducted and a number of relevant questions regarding this issue were also asked during expert interviews and focus groups discussions. The general conclusion of this study was that the quarantine measures taken by the states had a serious impact on Erasmus+ projects, especially on the tasks and activities related to mobility. Nevertheless, cooperation and implementation of projects continued, and only in isolated cases the activities of the projects were completely stopped. It was especially important to learn that the comprehensive support of all stakeholders within the Erasmus+ programme, including European partners, MHSSE and the NEO, was felt and highly appreciated by the respondents.

The format of this study does not allow for including the full range spectrum of the results of the analysis. However, the most outstanding points - challenges and recommendations - were included.

1. Goals and objectives of the Impact Study

The National impact study of CBHE projects on the development of regions, countries, organizations, and individual higher education professionals, including students was initiated by EACEA in 2020.

The National Erasmus+ Offices are the implementing bodies of the impact studies of CBHE projects and partially ICM projects jointly with members of the National Teams of Higher Education Reform Experts of the respective countries where the NEOs operate. The National Erasmus+ Office in Uzbekistan and the National Team of HEREs designed this study.

Goal of the study: arrange and conduct an interim impact assessment of the Erasmus+ CBHE and ICM projects in the Republic of Uzbekistan at the national, institutional and individual levels. In this study, impact is defined as follows:

Capacity-building projects are expected to have a long-term structural impact on the systems, organisations/institutions and individuals in Uzbekistan.

Study objectives: 1. To assess the impact of CBHE and ICM projects for 2015-2017 by analyzing monitoring reports and self-reports on the ground; 2. Evaluate the sustainability of the results achieved over the study period, through an independent online survey of project participants; 3. To identify the indirect and long-term impact of projects on the development of project participants, organisations and the region through focus group discussions; 4. To highlight the main problems, challenges and recommendations to be considered for the next period of 2021-2027, taking into account the forecast of development trends in the Republic of Uzbekistan.

Period covered by the impact study: November-December 2020.

1.1 Methodology

The research methodology is based on the methods of sociological analysis of documents and surveying of target audience. The documents used for research included field monitoring reports, self-reports of project teams from Uzbek HEIs. In order to strengthen the evidence of the study, surveys were held through online questionnaires, as well as focus groups discussions and structured in-depth interviews with experts.

1.2. Desk Research

A desk study or document analysis method is a systematic study of existing documents on monitoring CBHE and ICM projects at the NEO in Uzbekistan, in order to obtain information relevant for the research. For the purpose of this study, a document is a material or virtual (computer file) object (monitoring report) specially created by the monitoring expert and project manager of NEO Erasmus+ in Uzbekistan, intended for documenting, transferring and storing information within the framework of their activities.

The authors of the study took into account the fact that these documents at the same time contained two types of information: 1) information about facts, events, results of activities on the implementation of the CBHE and ICM projects; 2) the author's position (report on the self-assessment of the project by HEIs), the assessment of these facts, presented in the content of the document, as well as in its structure, style, and means of expression.

The main purpose of the method is to extract the information about the impact of the CBHE and ICM project and its sustainability after completion, contained in the document, document it in the form of characteristics (analysis categories), determine its reliability, accuracy, importance for research purposes, to develop objective and subjective estimated characteristics and indicators of the process

being studied. These tasks which are addressed during the document analysis also give an idea of the stages of its application.

In this regard, the authors of the impact study in the course of the work separated facts from assessments in the document; besides, they checked the reliability of the sources and accuracy of information through additional research methods.

As part of desk analysis, the authors also used the results of the Erasmus+ Regional Cluster Meeting held in Central Asia on November 19-20, 2020. Special attention was paid to the results and conclusions of the working group discussions, as well as the analysis of the discussions at the plenary sessions.

1.3. Online survey of project coordinators and participants

Online survey method was used to conduct an online survey of project coordinators and participants, including the administrative staff and students. The links to the online survey were disseminated through the HEIs' departments of international relations, as well as through project coordinators.

The online questionnaire was focused on assessing the impact of the project, which involved HEI representatives and other stakeholders. The authors of the study, in addition to assessing the impact of the project, were interested in the sustainability of the outcomes, as well as the overall assessment of the Erasmus+ programme.

The authors of the study planned to collect answers from at least 100 respondents who had participated or were participating at the time of the study in the projects of the Erasmus+ programme from December 05-11, 2020. The questionnaire consisted of 3 blocks and 40 questions. In total, 118 people responded during the indicated period, which provided a sound basis for the analysis.

1.4. Holding a structured survey in focus group format

The focus group method for collecting qualitative information was chosen to verify the results of statistical analysis of information received from the online survey. In addition, a structured group discussion allowed to assess in greater detail the achievements of the project in terms of its long-term impact and achieving the planned goals, and, importantly, the challenges and difficulties that were most often encountered during the implementation of the project.

All members of these focus groups had similar social and demographic characteristics, attitudes or behaviour patterns. The following four groups were selected for the discussion: 1. Representatives of CBHE structural projects; 2. Representatives of Engineering and ICT projects; 3. Representatives of healthcare projects; 4. Students who participated in the ICM and CBHE projects.

1.5. Structured in-depth interviews

In order to strengthen the substantiation of the impact study, structured in-depth interviews (so-called expert surveys) with experts and stakeholders were conducted. In this study, two types of experts acted as respondents – 1) representatives of stakeholders and focal points from the ministries and agencies of the Republic of Uzbekistan involved in or influencing the implementation of CBHE projects; and 2) national coordinators of CBHE projects with many years of experience and a certain number and proven quality of implemented Tempus and Erasmus+ CBHE projects.

To assess the degree of significance of an expert for this study, a “significance questionnaire” was developed, which allowed to rank expert opinions and, accordingly, improve the substantiation of the study.

The main purpose of the expert survey method is to identify the most significant aspects of the researched issue, namely the impact of Erasmus+ CBHE projects at three levels, with a focus on the national and regional level, as well as to increase the reliability, accuracy and validity of information through the use of expert knowledge and experience.

A quantitative analysis of the implementation of the Tempus and Erasmus+ CBHE projects in the universities of the Republic of Uzbekistan was carried out to select experts. It helped identify the leaders and the universities with whom and where interviews were conducted from December 7-11, 2020.

To select the most authoritative opinion leaders, a subjective and objective assessment of the “expert weight” denominated in points from 0 to 3.8 was carried out. Moreover, for the study, the minimum entry threshold for the expert pool was 3.0 points. For completeness of the expert question, it was planned to have 10 participants with scores of at least 3.0, and the average score for the entire group of experts was 3.5 points. The group of experts included representatives of various ministries and agencies, as well as rectors, deputy rectors, professors, and PhD students.

2. Impact and sustainability of CBHE projects in Uzbekistan

2.1. Short description of achievements and sustainability of Tempus projects in Uzbekistan

The Tempus programme began its activities in Uzbekistan in 1994, and more than 80 inter-university cooperation projects had been funded over 20 years with a

total amount of over €34 million. In total, over 55 Uzbek HEIs and over 150 universities from 22 countries of the European Union and 10 partner countries took part in these projects (see Fig. 2). In this regard, the Tempus programme has had a significant impact on the overall process of internationalisation of higher education in Uzbekistan, as it was the only programme that provided the basis for intensive cooperation with the universities of European Union and partner countries.

The Tempus programme has been a powerful and efficient tool to support educational reforms in the country, especially since 1997, when the new Education Law and the National Programme for Personnel Training (NPPT) were adopted. The programme has become even more relevant in the recent years, as Tempus projects contributed to the implementation of government decisions on the modernization of the higher education system in Uzbekistan adopted in 2011-2012.

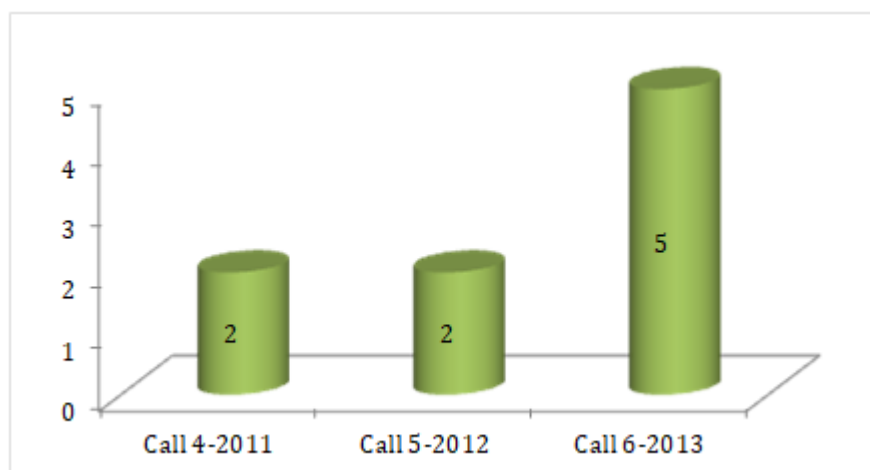
Figure 2. Tempus project statistics for 1994-2013



Curriculum development projects were particularly important due to the direct connection with the implementation of the National Programme for Personnel Training and the introduction of a two-tier higher education system. Over the years, many Tempus projects have focused on curriculum development with the introduction of new specialties, mainly at the master's level, in engineering, applied sciences, teacher training, social sciences, management and business. Moreover, since 2011 representatives of the MHSSE of the Republic of Uzbekistan have actively participated in Tempus projects (Diagram No 1) and acted as full-fledged partners in the implementation of nine Tempus projects.

The new programmes were aligned with the needs of the local labour market through the direct participation of local enterprises operating in the energy, aviation, automotive, food, textile and chemical sectors, as well as various line ministries, the Chamber of Commerce and other non-academic organizations representing key sectors of the national economy.

Diagram 1. Involvement of the MHSSE in Tempus IV Projects



Several ministries, enterprises and various public and private entities and organizations have expressed interest in employing graduates trained under Tempus projects, and this led to increased demand for students who have completed training in new master programmes on food safety, water and land management, ICT, etc. increased. The numerous training laboratories created under the Tempus projects also contributed to the improvement of professional skills of specialists from enterprises that were part of project partners consortia in Uzbekistan.

The Ministry of Higher and Secondary Specialised Education noted the significant impact of the Tempus programme at the national level due to the long-term activity (since 1994) and wide participation of a large number of HEIs (over 55 HEIs from all regions of the country) out of total of 64 HEIs operating at that time, which means that coverage of the Tempus programme in Uzbekistan was about 86%

Tempus projects have been of great benefit to HEIs from various regions of the country, as due to them HEIs strengthened interaction with other domestic HEIs throughout the country, in addition to establishing long-term partnerships with many European universities.

The programme assisted in the development of quality assurance systems, introduction of Bologna Process principles and procedures into the curricula and their use for the development of new initiatives and improvement of HEI governance.

Thanks to the active engagement of the Uzbek partners who improved their project management skills, spin-off effects which were not envisaged by the initial plans were achieved under many of the projects. For example, due to the re-training courses for management staff of HEIs, a new master degree programme in

educational management was introduced at the Tashkent State Pedagogical University, as well as respective optional courses at all departments.

Four Tempus projects, namely EU-TraCeFer, UnIvEnt, PROMENG and ITEDU, have contributed to the strengthening of links between different levels of education, in particular, between higher and secondary specialised vocational education. As a result of the implementation of one of them (EU-TraCeFer, project for establishment of European-Uzbek Training Center for Vocational Education Teachers in Ferghana), training centres in Tashkent and Fergana started offering re-training courses for teachers of professional colleges and academic lyceums, providing them with certificates recognised by the MHSSE.

As a programme supporting equal and mutually beneficial cooperation, Tempus has been a vehicle for building strong international partnerships. It is important to note that after closing of the funding partnerships between HEIs from Uzbekistan and the EU were maintained through academic exchanges, joint publications and joint research or other academic projects.

Eleven projects were funded under the last 6th Tempus IV Call in 2014, due to the European Commission's decision to provide additional funding for Uzbekistan in the amount of €5 million, taking into account programme effectiveness in the country. Higher education institutions of Uzbekistan were also active participants of Erasmus Mundus, the programme complementary to Tempus which was aimed at supporting the academic mobility of students and professors, as well as strengthening interuniversity cooperation. In 2013, opportunities for learning mobility were expanded within thanks to bilateral allocation of €3 million to Uzbekistan on the top of regional budget for Central Asia.

Tempus programme in Uzbekistan provided much needed expertise in support of the three-cycle system, which replaced the previous two-stage postgraduate education system. Tempus projects and their participants provided certain support to making this decision, which demonstrated a move towards the Bologna Process. In addition, two workshops on EU experience in developing doctoral programmes were held in Tashkent in August 2013.

Tempus projects have contributed to strengthening of cooperation not just between Central Asian countries, but also between Uzbekistan and CIS partner countries. Since 2008, Uzbekistan has been involved in more projects with the participation of several countries: for example, 20 out of 30 projects under Tempus IV programme are multi-country with the participation of 46 Uzbek higher educational institutions and more than 150 universities from 10 partner countries and 22 EU member states.

Moreover, the experience that Uzbek HEIs obtained under Tempus projects became a success factor for the start of the Erasmus+ programme in the country

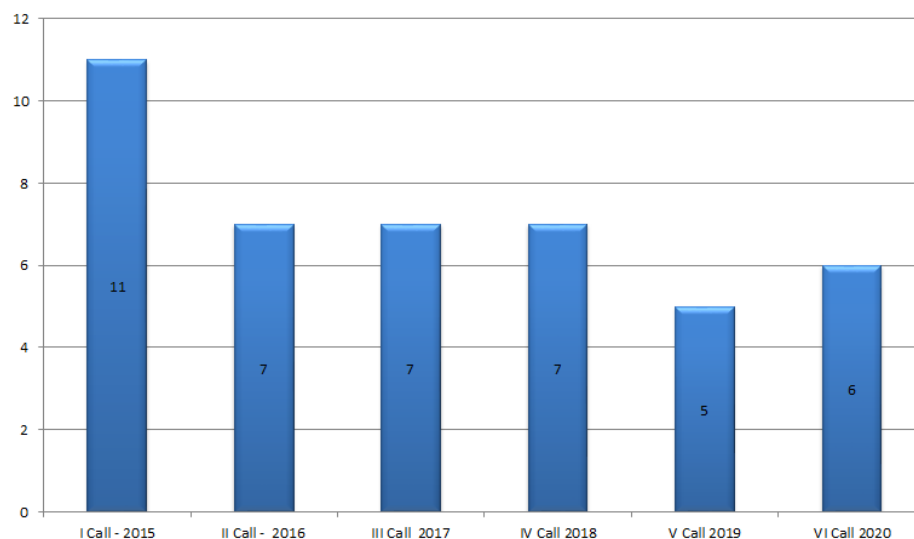
and served as a foundation for the launch of ICM projects and bilateral cooperation with EU universities.

In November 2019, in honour of the 25th anniversary of Uzbekistan and EU cooperation in higher education, the National Erasmus+ Office in Uzbekistan presented a poster with information on achievements of the Tempus and Erasmus+ programmes and their impact on the development of higher education system. The poster shows all activity areas in the past and in the present, as well as further prospects in a view of the implementation of the Concept for the Development of Higher Education until 2030, using infographics. A banner with a link to the poster was posted on the website of the MHSSE.

2.2. Quantitative analysis of CBHE projects in Uzbekistan

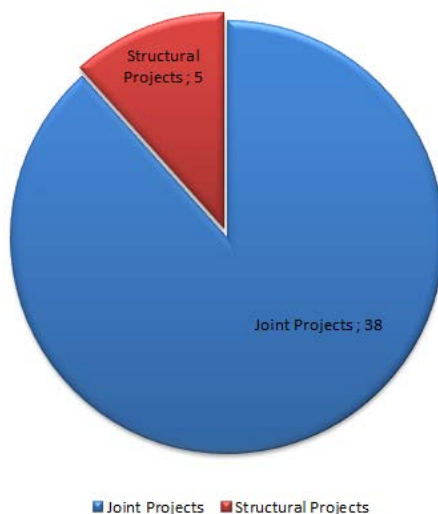
As of December 2020, a total of 37 projects with the participation of Uzbek universities were financed, including 18 completed projects (11 projects of the 1st Call-2015 and 7 projects of the 2nd Call-2016) and 19 ongoing projects (7 projects of the 3rd Call-2017, 7 projects of the 4th Call-2018 and 5 projects of the 5th Call-2019). In January 2021, implementation of 6 new projects of the 6th Call-2020 will begin (see Diagram 2), so that the total number of projects will amount to 43.

Diagram 2. Number of projects funded for Uzbekistan 2015-2020



The largest number of projects with the participation of Uzbek HEIs was selected for funding in 2015. This is due to the fact within the 2015 Call due to the transition period between Tempus and Erasmus+ programmes some budget reallocation between regions had occurred.

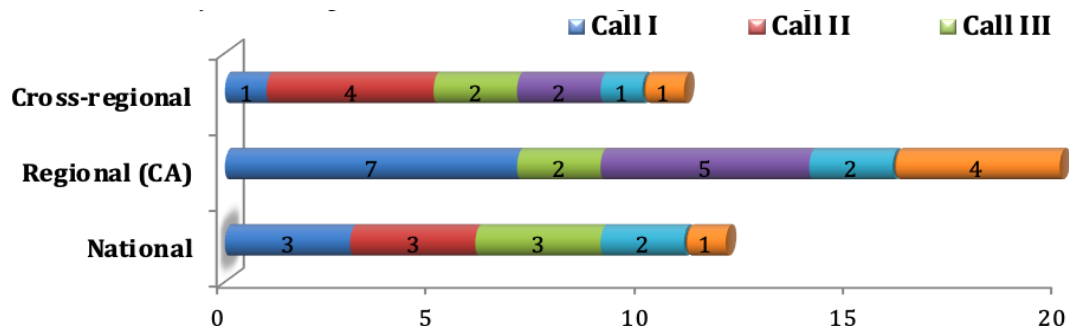
Diagram 3. Erasmus+ CBHE projects broken down by types (I-VI Calls)



Out of the 43 projects funded, the majority are Joint projects, and only 5 are Structural projects. Nevertheless, the MHSSE of the Republic of Uzbekistan is involved in 13 of them, which indicates a great commitment and wide involvement of employees of various departments of the MHSSE in project activities. Moreover, the State Inspectorate for Supervision of the Quality of Education under the Cabinet of Ministers of the Republic of Uzbekistan is involved in one of the projects as a partner.

Interesting data was obtained from the analysis of the Erasmus+ projects consortium of all 6 Calls. Thus, there were 12 national projects, involving European and Uzbek universities, 11 cross-regional projects, and 20 regional projects with the participation of HEIs both from Uzbekistan and a number of other Central Asian countries (Diagram 4).

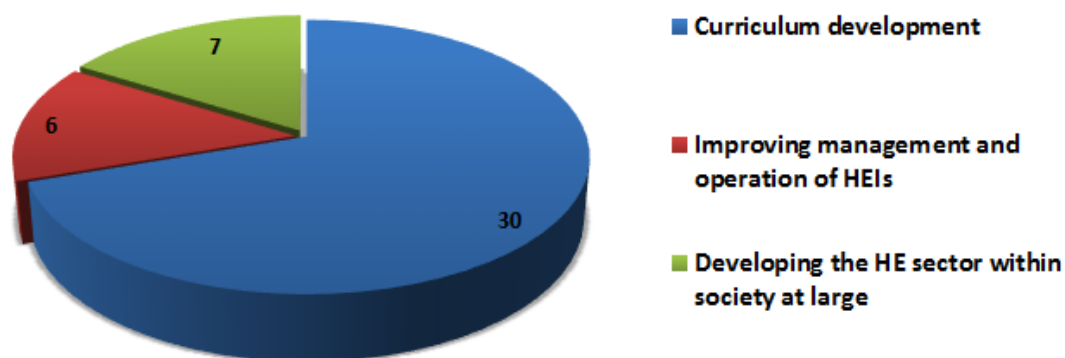
Diagram 4. Erasmus+ CBHE projects broken down by consortia composition in Uzbekistan (I-VI calls)



As we can see from Diagram 4, there are roughly equal numbers of national and cross-regional projects, whereas regional projects outnumber the former two types by almost two times.

The data on the types of activities of the projects are very indicative. They are divided into the following types: 1) curricula development; 2) improving the governance, management and operation of HEIs; 3) strengthening the links between HEIs and the economic and social environment.

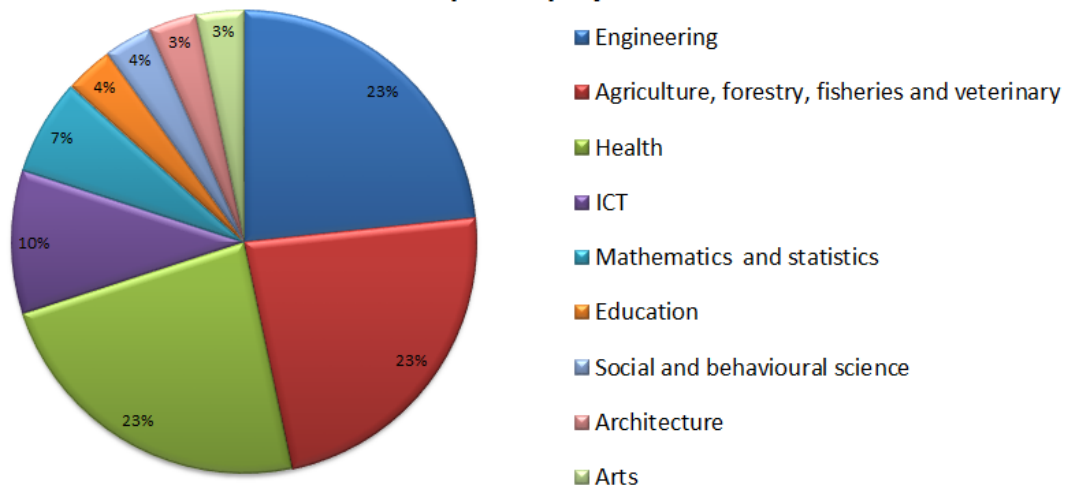
Diagram 5. Types of project activities



According to Diagram 5, Curriculum Development was the absolute leader as it was selected for funding 30 times, and the other two types of projects, according to the types of activities, constituted a significantly smaller number of projects. Seven projects were on strengthening the links of universities with the economic and social environment, and six projects on improving governance, management and operation of higher education institutions.

The 30 curriculum development projects have diverse topics. This wide variety is shown on Diagram 6: other themes are represented more modestly.

Diagram 6. Curriculum development projects: themes



As Diagram 6 shows, three topics were equally represented, while the rest of the topics had a smaller representation. This distribution generally corresponds with the current development needs of Uzbek economy. These are engineering, agriculture, forestry, fisheries and veterinary medicine, as well as healthcare: 23% percent of projects in each of these areas.

Diagram 7. CBHE projects on HEI governance, management and operation, development of links between universities, economy and society at large (HES)

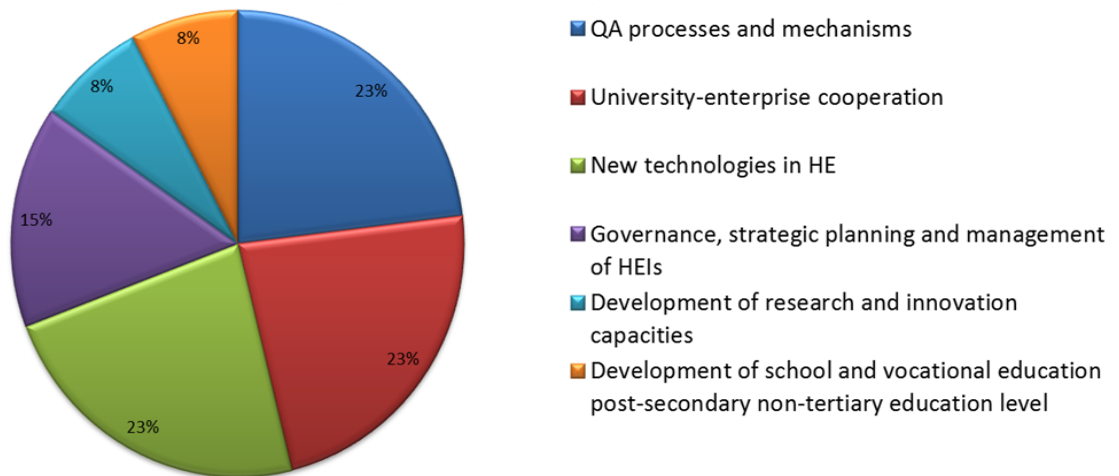


Diagram 7 shows the areas covered by CBHE projects on HEI governance, management and operation, development of links between universities, economy and society at large (HES) that constituted less than one third of the total number of CBHE projects (13 out of 43 projects financed). Nevertheless, majority of these projects made a systemic impact, and their results were institutionalised and integrated. The projects on quality assurance processes and mechanisms (IMEP, IQAT, PAWER), on university-enterprise cooperation (CACTLE, TRIGGER, REILEAP) and the projects on new technologies in higher education (MIND, NURSLIN, HIEDTEC) are equally distributed as evident from the diagram.

Diagram 8 shows the total project budget allocated for 43 Erasmus + CBHE projects from all six Calls. As can be seen from the Diagram, about €1.5 million were allocated for HEIs in Uzbekistan out of €36.6 million of total projects' budget.

Diagram 8. Total budget of 43 projects with involvement of Uzbekistan (€36.6 million), including allocation for Uzbekistan HEIs (€1.5 million) for 2015-2020

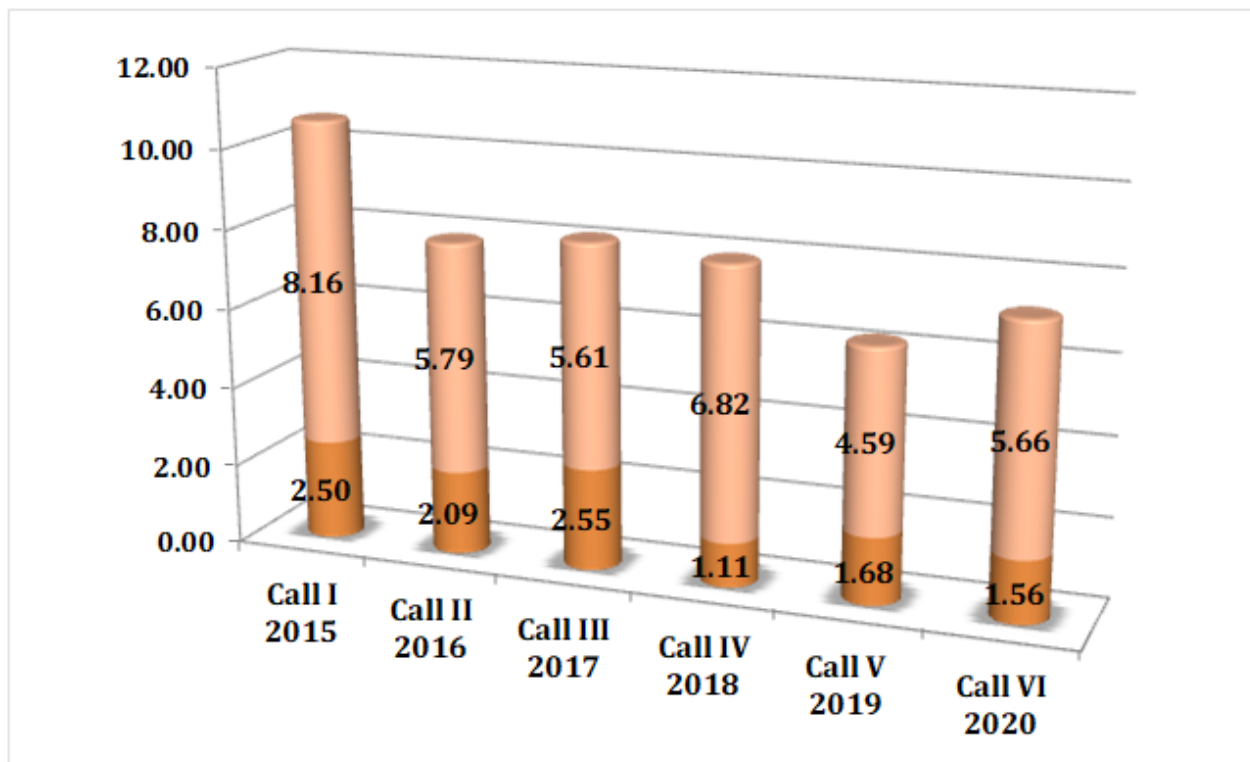
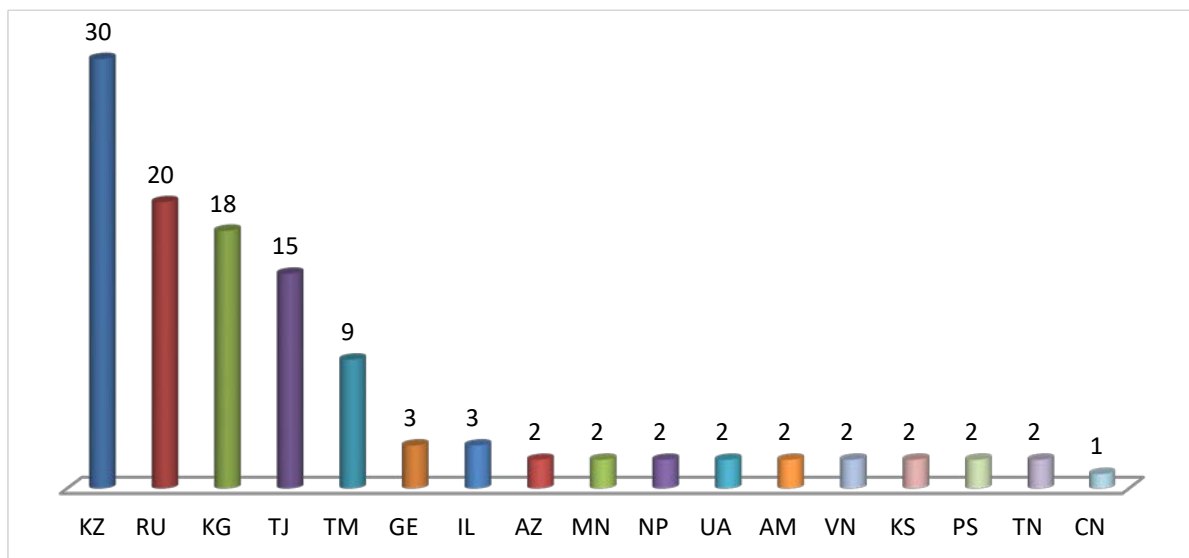


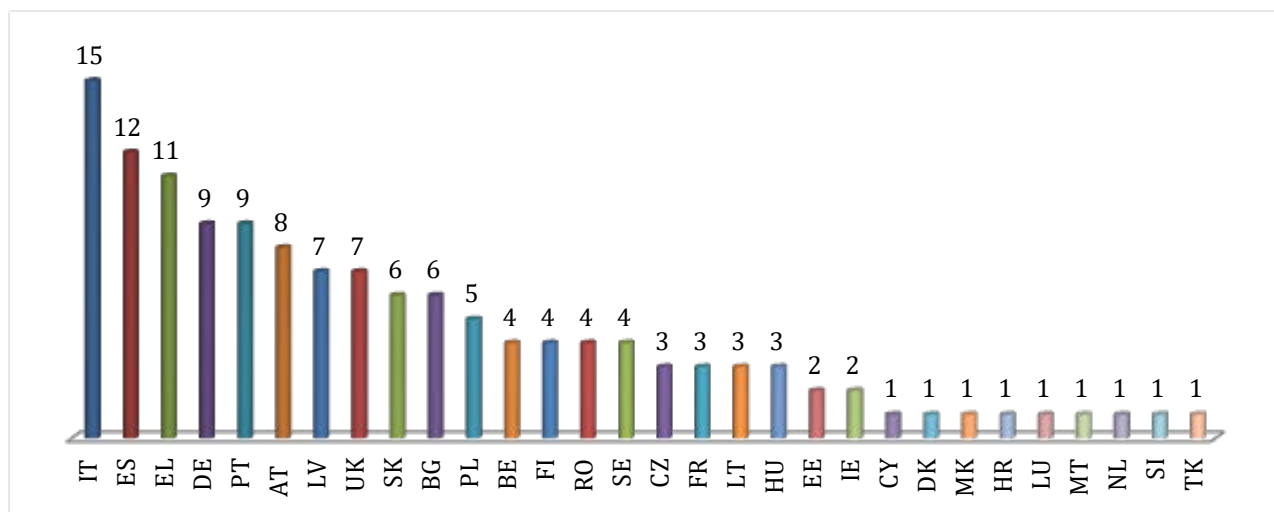
Diagram 9 shows the statistics of the partnership with universities of different regions of the world in Erasmus+ projects for the entire duration of the programme. As can be seen from the diagram, the leaders are the countries neighbouring with the Republic of Uzbekistan, as well as HEIs of the Russian Federation.

Diagram 9. Partner country HEIs (including Central Asia) in CBHE projects in Uzbekistan (2015-2020)



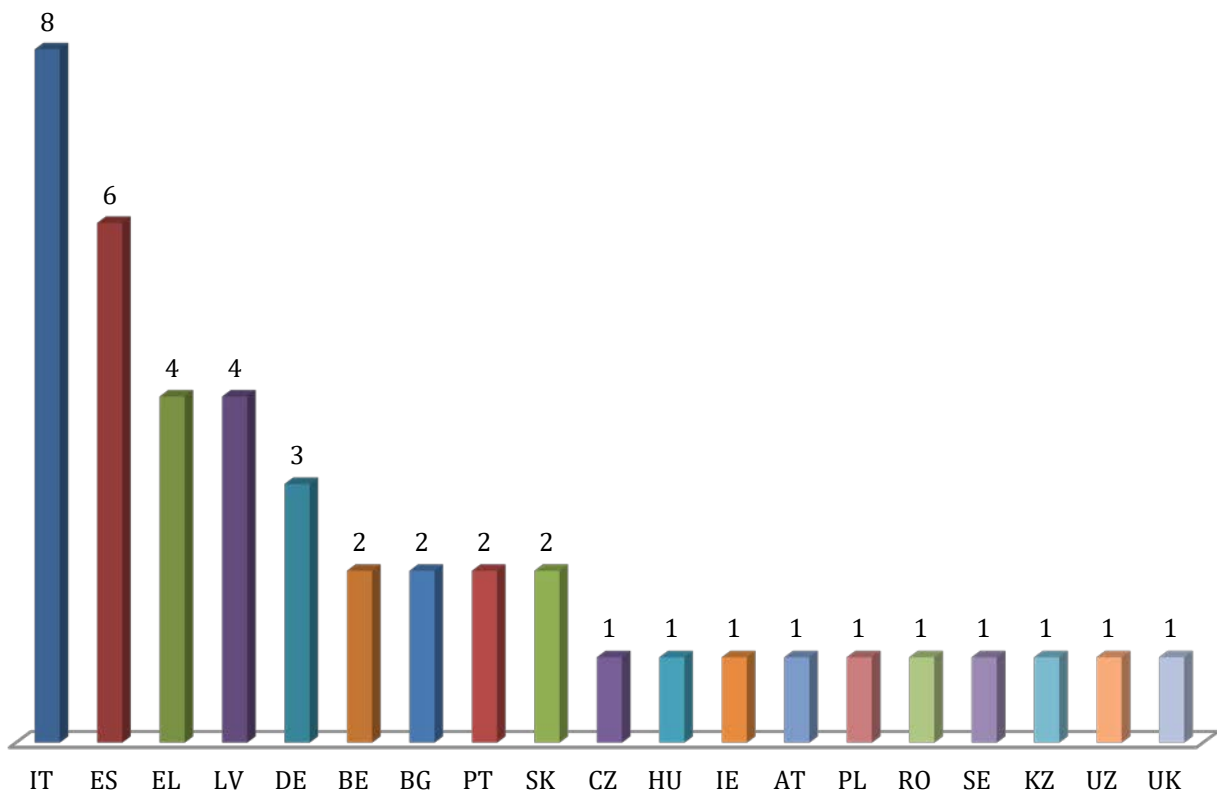
The largest numbers of partner HEIs from programme countries are the universities of Italy, Spain and Greece (see Diagram 10).

Diagram 10. European universities (27 EU member states, North Macedonia, Turkey and UK) in CBHE projects in Uzbekistan (2015-2020)



The statistics of the leading HEIs acting as grantholders/coordinators of CBHE projects with the participation of Uzbek HEIs, in general, correlates with the distribution of partner countries. Diagram 11 shows that the largest number of coordinator universities was from Italy and Spain. Kazakhstan and Uzbekistan are represented as coordinators as well.

Diagram 11. University coordinators of CBHE Projects in Uzbekistan (2015-2020)



Visual identities of 19 on-going Erasmus+ CBHE projects in Uzbekistan⁵



⁵ In total 19 on-going CBHE projects as a year-end 2020



IHOD Improving Healthcare Outcomes in Chronic Disease –
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Visual identities of 18 completed Erasmus+ CBHE projects in Uzbekistan⁶



⁶ In total 18 completed CBHE projects as a year-end 2020



2.3. Results of Impact Monitoring Analysis of CBHE projects in Uzbekistan

Since 2015 more than 50 field monitoring visits have been carried out by the NEO Uzbekistan team. The Tempus projects created pavement for the Erasmus+ projects' generation. Majority of Erasmus+ CBHE projects were developed as a follow-up of Tempus projects directly and indirectly. Management of projects at the local level is well evolving. There are already more than 15 teams at different HEIs with significant potential in management of EU funded projects obtained while implementing several Tempus, Erasmus Mundus External Cooperation Window, Erasmus+ projects. Some consortium kept their core member universities

and research topics for more than 14 years (Tempus LAREMA 2004-2009, GE-UZ 2012-2015, Erasmus+ DSinGIS 2017-2020). For instance, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers under coordination of Obuda University, Hungary team together with the other EU and local partners have consecutively implemented two Tempus and one Erasmus+ CBHE projects contributed to development of new Master and Doctoral programmes in Geoinformation systems and related fields. It should be noted that higher education institutions from all 12 country regions and Karakalpakstan are involved in Erasmus+ CBHE projects, clearly understanding the main programme objectives and features. There are experienced local teams at regional universities, which are leading with a number of Erasmus+ CBHE projects.

Starting from 2017 a number of positive changes facilitating implementation of Erasmus projects were introduced in the country. During the monitoring it was found out that newly developed Master programmes within Erasmus+ CBHE projects are continuously accredited by the MHSSE. For example at the beginning 2019/2020 academic 5 Master programmes developed by CBHE projects were recognised and student quotas allocated. Among them the 2nd Call project – ECCUM team of the Urgench State University got approval of quotas for a new Master programme in Mathematical Engineering, which has been also included in Higher Education Classifier. With the support of two national banks responsible for grants and in cooperation with MHSSE the complete switch to the use of university bank accounts for Erasmus+ grant was ensured and thus the local project ownership was enhanced. Thanks to this positive development the Tashkent University of Information Technologies has become the first-ever grantholder of Erasmus+ CBHE project from Uzbekistan (SpaceCO project-2019).

2.3.1. Impact of projects at national/regional levels

A series of field monitoring (FM) visits have shown that the national CBHE projects have constructive project results, which provide essential innovations and considerable results with significant impact on the higher education system. As an example, in the framework of the NURSLIN project aimed at the development of the guidelines for the elaboration and recognition of Qualifications and the National Qualification Framework (NQF) the consortium has undertaken deep comparative analysis of NQFs of local and the EU countries. The project submitted valuable recommendations to the Ministry of Higher and Secondary Specialised Education for development of the NQF considering the Bologna process principles. The first NQF of Uzbekistan was introduced on 18 May 2020.

Structural projects also have high potential in the view of the national impact. The project “Internationalisation and Modernisation of Education and Processes in the Higher Education of Uzbekistan” (IMEP) was coordinated by the MHSSE. The

consortium developed Continuing Professional Development (CPD) training modules for teachers based on the EU best practices. Nowadays the modules are used at teacher retraining centres in all regions of Uzbekistan.

2.3.2. Impact of projects at the institutional level

Field monitoring of the curricula development projects presented the evidence of considerable impact at the institutional level. Focusing mainly on teachers' capacity building and study materials' development all institutions involved in curricula development projects had an impact at the faculty and institutional level. For instance, the national project "Development of Master Programme in Renewable Energy Sources and Sustainable Environment" (RENES) consolidated and upgraded capacities of academic staff of six local HEIs for development of 12 new courses in the field of Renewable energy sources and Sustainable Environment. Six local HEIs have also benefited of new training laboratories equipped by modern photovoltaic equipment and photo thermal installations.

Another valuable factor of the institutional impact is the number of projects per university. The Tashkent University of Information Technologies (TUIT) in addition to previously completed 4 Tempus projects also benefited of 12 CBHE projects, including one on-going project in a capacity of grantholder. Tempus and Erasmus+ projects were considered as an asset of TUIT capacity to introduce ECTS starting from 2018-2019 academic year according to the Resolution No. 569 of the Cabinet of Ministers of the Republic of Uzbekistan from 24 July 2018.

2.3.3. Impact of projects at the individual level

2.3.3.1. Impact on the academic and administrative staff of universities

Every single CBHE project has an impact on teaching, managerial, and administrative staff. The impact has been already identified even before the project's kick-off. First of all national and local coordinators actively communicate the NEO with organisational issues like PIC number⁷ and local teams' establishment. At this stage usually the institution's administration gets involved, as the NEO jointly with MHSSE communicates the university administration with a specific letter presenting the important steps for launching a new project, including the need to establish a project team according to the project objectives and to present the new project to the wider university community. Usually it ensures a good level of project ownership and proactive role of the local team members. In order to enhance the quality of the project implementation the main stakeholders (MHSSE, other related non-academic organisations and administration of the HEIs) have been continuously provided with EACEA feedback on the field monitoring

⁷ PIC – Participant Identification Code

translated into Uzbek. Moreover, their reaction to FM recommendations has been observed through meeting minutes with specific actions to be undertaken by the team and university administration.

2.3.3.2. Impact on students

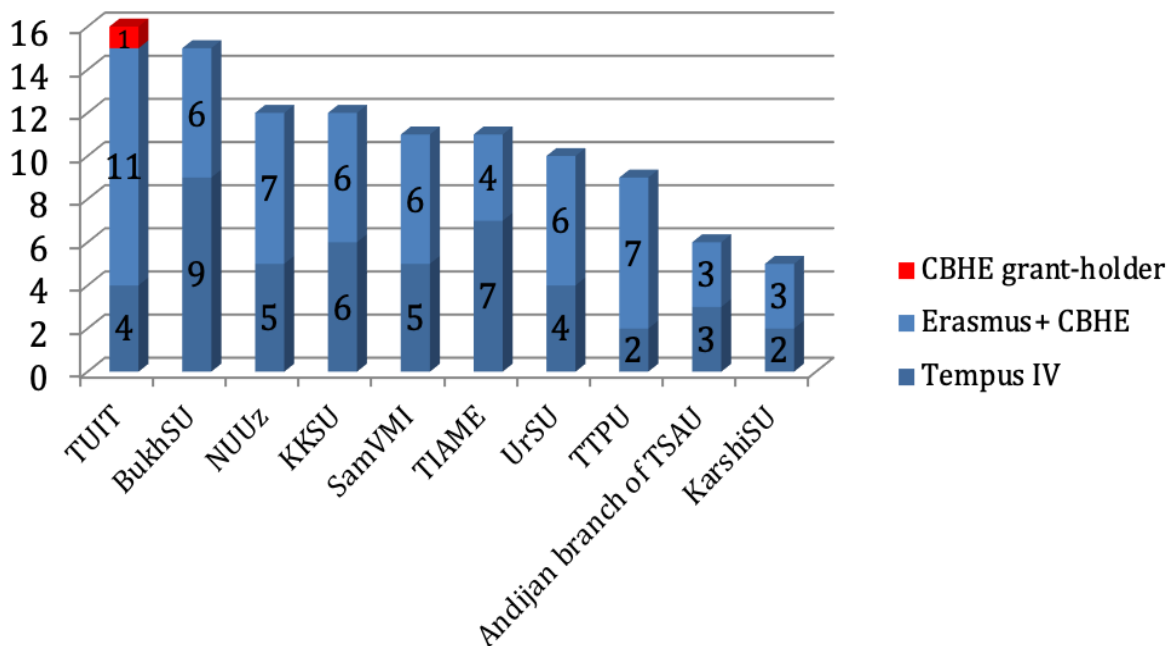
Several meetings with the local team during the monitoring visits showed that considerable impact at students can be seen in the CBHE projects, where EU and local partners have long and trust based partnership in a specific field. For instance the Samarkand Institute of Veterinary Medicine has close cooperation with German and Italian universities. In the framework of CBHE projects the local students visit the EU universities; even they do their internships at EU located farms. The similar case can be seen with the Tashkent Pediatric Medical Institute. In the framework of project “Technology in Rehabilitation” (TechReh) the students benefited from short term study visits in EU universities. Furthermore, they have used ICM opportunities as a follow-up of the CBHE project.

It should be highlighted that the Erasmus+ programme projects are well known among students with disabilities, as the programme encourages their participation in projects. The regional CBHE project: “Developing services for Individuals with Disabilities-DECIDE” gathered all students with disabilities from the partner institutions. During the monitoring visits, it was noted that the students were inspired to learn foreign languages and actively participate in project activities.

2.4. Results of the institutional monitoring analysis with engagement of an external expert

The Institutional Monitoring (IM) was planned by the NEO also in view of the National Impact Study in order to obtain the contribution of the external expert, who undertook on-line IM meetings of 2 days each of two leading universities of Uzbekistan with the highest number of Tempus/Erasmus+ projects. Two universities were selected for the IM according to the degree of their involvement in Tempus and Erasmus+ project activities, based on the number of implemented Tempus and Erasmus+ CBHE projects (see Diagram 12).

Diagram 12. 10 leading Uzbek HEIs in the Tempus IV and Erasmus+ CBHE projects (I-VI calls)



According to Diagram 12, the first three places are occupied by the Tashkent University of Information Technologies (TUIT), Bukhara State University and the National University of Uzbekistan (NUUZ). For the first time in the history of Tempus and Erasmus+ CBHE projects, TUIT became the grantholder of the project, which demonstrates the capacity of the project teams in Uzbekistan, the high quality of applications with the participation of Uzbek HEIs and a certain level of trust of EACEA with regards to the HEIs of Uzbekistan.

For comparison, shown below is the national ranking of HEIs, where the same leading facilities are also ranked among the first: National University of Uzbekistan, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers (TIAME), Samarkand State University, Tashkent University of Information Technologies and Tashkent State Agrarian University. Besides, the global analytical agency in the field of higher education that maintains a the popular ranking of the best universities in the world has published the annual list of the best universities in developing countries of Europe and Central Asia in 2021 called QS Emerging Europe and Central Asia University Rankings 2021. It includes 400 best universities in the region, including four HEIs from Uzbekistan, two of which, namely NUUZ and TIAME, are also on the list of leaders in Diagram 12.

In 2018-2020 four Institutional Monitoring visits were carried out – to Samarkand Institute of Veterinary Medicine (SIVM) in 2018, to Tashkent University of Information Technologies named after Muhammad Al-Khwarizmi

(TUIT) in 2019, in on-line format to Urgench State University (UrSU) and the National University of Uzbekistan (NUUZ) in 2020.

In all the Institutional Monitoring visits there were similarities with regard to the impacts at the individual, institutional, regional, and national levels. However, the impacts at the four levels at each of the four institutions had a number of individualities.

It is positive that **SIVM**'s staff have experienced the impact by learning new practices and ideas from the colleagues who were/are involved in the EU-funded actions. Around 1300 students at the bachelor and master levels of study were beneficiaries of those projects. They were/are enrolled on the new or updated study modules and on new or updated study programmes. In the result of the TOPAS project, a number of staff members have learnt how to arrange and continuously maintain effective dialogue with the labour market – different SMEs in the agricultural sector – for the implementation of students' internships and optimising students' employability through building up practice-based education and enhancing skills required by the labour market of the sector and beyond. Due to the implementation of the IQAT project the staff and students have become aware of the system of quality assurance working at the university which motivates staff and students to bear individual responsibility for the quality of their performance and achievement of the expected results in teaching and learning. Being involved in the implementation of the MIND project students have developed entrepreneurial skills and competences of capitalising ideas and social investments. About 10 courses (around 250 students on all of them) in Entrepreneurship, developed in the project, are annually offered to the SIVM students by the established MIND centre. In general, for students, participation in / benefitting from the projects and from mobility meant/means acquiring new knowledge, skills and competences, which have improved their study results, and which have significantly boosted their employability and the quality of their performance at work places. Participation of the staff gave/gives them a wide range of possibilities of their professional development. Some of them – 3 members of the SIVM staff – were promoted, the others have acquired new knowledge and skills that can enhance their research potential in the international perspective, improve their teaching performance at work, and boost their international cooperation capacities. The academic staff also got skills in using web-resources such as e-platforms for teaching/learning as well as English language communicative skills. The managerial staff, who took part in the projects, have built up skills in managerial solutions in what concerns internationalisation of the University, building student-centred environment, stimulating and enhancing university-enterprise cooperation, creating conditions for innovative research, and assuring quality of higher education. The participating academic staff has learnt how to move to more student-centred learning and how to

interact with the world of business. Teachers have learnt how to interact with potential employers to increase the quality of their study modules and formulate learning outcomes of the modules and study programmes. The staff now know about the existing strategies and practices of developing and modernising educational standards, applications of the Bologna principles of designing sectoral and national qualification frameworks.

At the institutional level, updating of the existing study programmes by adding new professional modules into the curricula and changing the syllabi, introducing new educational technologies, or developing new study programmes took place in the CIBELES, EPASAT SAMUZ, TOPAS, BUZNET, ACADEMICA, SPHERA, and UZWATER projects. The new practice of offering English language courses for the University staff and students is also important to mention. At the level of infrastructure, the Institute is in the possession of various sets of IT equipment and a hydrological laboratory, which have been purchased gradually with the funds of the different projects. There are 5 resource centres, 3 computer rooms and a laboratory established at the SIVM, where this equipment has been installed.

Regionally, the Institute has built workable relations with the local, regional, and national business environment for future designing result-oriented, competence-based and student-centred study programmes, for stimulating students' business-related activities, and further development of the regional labour market. Local and regional business representatives are invited to deliver classes within the newly developed study modules, which helps to raise the level of students' enthusiasm and active participation in societal developments.

It is worth stating that the impact at the national level is clear: all the EU projects have contributed to the development of the SIVM as a resource and training centre in agriculture for the region and the country by enhancing the results of education of its students, by producing more reliable and effective dialogue with the business sector and society at large. It is also worth noting that the SIVM has built partnership with several governmental bodies at the national level. Thus, it has contacts with the Ministry of Education, the State Veterinary Committee, the Ministry for Emergency Situations, the Ministry of Health, the State Committee for Nature Protection, the Ministry of Water Resources and the Ministry for Innovative Development. At the national level, SIVM is one of the most active promoters of the EU-funded projects in the country, and is a very active contributor to the modernisation of the national policies in the area of higher education, by making proposals to the MHSSE based on the results of some of its projects. Thus, 2 out of all the projects – e.g. the UZHEALTH and PAWER projects, both structural by character, – were fundamental in laying out the perspectives of a system of a sectoral qualification framework in the Public Health sector compatible with the Ministerial directives and professional regulations (UZHEALTH), and making

Quality Assurance a constructional system underlying all the processes at a higher education institution and in the system of higher education at the national level (PAWER). These two projects, although carried out ahead in time to the national reforms, paved the road towards their set goals – the national government is now in the process of legitimating the sectoral qualification frameworks and has made an approach to a systematic vision of Quality Assurance. This makes the analysis of the impact of the EU-funded projects at the SIVM quite optimistic for the future.

In general, it is clear that the Tempus and Erasmus+ projects have significantly contributed to the internationalisation of the SIVM, both internally and externally. They increased regional, national, and international visibility of the institution, and enhanced its competitiveness and attractiveness.

At TUIT the impact at the individual level was positive: the trainings delivered in the projects by the EU partner institutions both in the EU, in Uzbekistan, and in the other Partner Countries, gave the participating academic staff an opportunity to upgrade their knowledge in subject-related areas and professional and pedagogical skills as well as obtain new skills and competences. They all were/are used for the modernising the existing and developing new study programmes, the establishment of the new structures – laboratories and centres, the introduction of elements of quality assurance, formulating learning outcomes for new understanding of qualifications, and establishing relations with authorities, enterprises, and with society. The upgraded and new skills have led the teaching staff to the use of innovative pedagogical approaches, methods of teaching and learning and educational technologies. The managerial staff, who took part in the project, built up skills in working out managerial solutions in the strategic issues such as internationalisation, development of quality culture, building student-centred environment, stimulating and enhancing university-society links and relations with enterprises.

At the institutional level, all the modernised and new study programmes developed in the HEICA, GREB, INTRAS, NMPLIS and TECHRECH projects have been accredited and are run with continuous enrolment of students. Besides, it is worth pointing out that some of the newly developed study programmes and study modules, such as, for example, Computer and Software Engineering, Renewable Energy, Precision Agriculture, and Computer Systems in Medicine, are brand-new in Uzbekistan and are relevant to the most recent developments of the national economy, which signifies impact at the institutional and national levels altogether. In all the curriculum development projects the issues of the Bologna system were/are mentioned as central to all the developments in the actions, but, in reality, only the introduction and use of the ECTS and some elements, not the whole system, of the internal quality assurance (e.g. accreditation of study programmes), has been focused on at TUIT so far. Participation of the university in

a series of Tempus, Erasmus Mundus, Erasmus+ CBHE and ICM projects allowed TUIT to develop certain improvements at the level of university governance and management. For example, thanks for the QUEECA and UNIQTOOL projects, new approaches and attitudes to quality assurance were introduced at the policy-making level and in 2017 a Quality Assurance Office was established at TUIT. The Office is responsible for quality checks, monitoring, and accreditation of study programmes. At the same time, it is unclear how the Office collaborates with the other central services and the academic departments at the university to enhance the quality of education. What is notable is the development, application and use of different e-platforms, for example, in project management (the “HEICA Board”), in comparing accreditation processes with EU partners and accreditation agencies (the “Transfer Platform” in the QUEECA project), the MOODLE platform for e- and b-learning, and virtual classrooms.

The impact at the national level can also be pointed out. The University has managed to establish workable relations with enterprises and wider society, with other higher education institutions across Uzbekistan, and with the national authorities in the country. As an example of such interaction within one of the Tempus projects (NMPLIS), a new national law – “Library and Information in Uzbekistan” – was adopted. An interesting innovation which was welcomed by the national Ministry of Higher and Secondary Specialised Education had been adapted at TUIT – the Problem-Based and Project-Based learning – though the ITEM project. The methods were recommended by the Ministry to the other Uzbek universities as one of the good practices in the country. Similar impacts at the individual level were noticed at UrSU and NUUZ in what relates to the skills and knowledge that the staff participating in the projects gained in the actions. At the same time, it is important to notice the individual impacts of the different projects at the institutional and national levels.

At the institutional level, all the Tempus and Erasmus+ Capacity-Building projects established parts of the **UrSU’s** infrastructure – laboratories, resource rooms, and communication centres. Most of the centres established within the projects represent resource rooms either used for training students or conducting research. A good example of such facilities is the Tempus PERSEUS project within which a REDIC resource centre (Research Development and Innovation Centre-REDIC) was established at the university, which is still operating, though with aims and functions different from what was formulated during the lifetime of the project. As a sort of continuation of the CANDI project of the Tempus programme, the ECCUM project of the Erasmus+ CBHE programme managed to establish a computing centre used at UrSU as a resource centre for the newly developed master-level study programme in Mathematical Engineering, which is new in the country. This produced an impact at the institutional level: (1) a new study

programme was launched with 25 master students enrolled in 2020, (2) a new academic department was established under the order of the MHSSE. These things made it possible to enlarge the direct impact of the project – a new bachelor programme was also developed and started at the university and new PhD students in the field of Mathematical Engineering. During the project there were initiatives to develop a double-degree study programme in the field. It has not been released yet but has potent chances to be elaborated and launched in the future. A strong institutional impact was achieved in the project: a new bachelor-level study programme in Urban Planning and Engineering was developed and launched with up to 85 students graduating every year. At the international level networking between UrSU and Russian and German partners was established through which joint students' projects were carried out. This practice is still ongoing. A spin-off effect was achieved in the project - quite recently a double-degree study programme in the field of Architecture and Landscape Design was developed and piloted together with a Belarusian university. Another spin-off effect was reached through the development of university-enterprise cooperation on the example of the Slovenian cluster the participants of the project on the side of UrSU learnt. The impact of the national RENES project was significant – a new master-level study programme “Physics of renewable energy sources and sustainable environment” was developed and launched at Urgench State University with the help of the partners from the European Union. The programme was institutionally approved and accredited at the national level in 2018. Since then, every year 6 master students are enrolled on the programme. At the Physics Department a laboratory of renewable energy sources was established, which has become a solid resource base for the research in this important area of the national economy. An integral part of this project, as the result of international cooperation, a reference base was established for new research and for the updated curriculum. In the result of this project new levels of cooperation became possible in the field of higher education in renewable energy sources and sustainable development. Thus, a New Norwegian and Chinese project has started recently and a new application for a CBHE Erasmus+ project and an application for the national funding have been planned. The EPCA regional project has managed to develop and run 3 new blended courses for 62 students enrolled in the current academic year. The fields of Disaster Risk Management with Spatial Data as methods of environmental protection are new in Uzbekistan. Therefore, the results of the project are welcomed not only by the university but also by the national government. At present, a proposal for national funding of the research and further academic development has been submitted. Strong impact at the institutional level was produced by the CLASS project – a new centre for intelligent big data analysis, which is used for teaching and learning on the newly developed and updated study modules in the respective fields, as well as for research. Through the established centres the regional and international

networking became active and is running at present, which demonstrates a slight but potential impact on further growth of cooperative links between the partners.

Another positive example of the long-term effect of the EU-funded projects in Uzbekistan is the RENES CBHE Erasmus+ project. The impact on the national level is evident – the research and participation of academics in the national debates made it possible to adopt a national regulation on energy resources in Uzbekistan (decree of the President) on 22 August 2019 – <https://uza.uz/ru/posts/ob-uskorenykh-merakh-po-povysheniyu-energoeffektivnosti-otr-23-08-2019>

At the international level, the impact is also vivid: UrSU managed to solidify its academic image as a reliable partner with dedicated human resources able to participate in the internationally run projects, fully committed to work in the project and result-oriented activities. The university's project teams also managed to renew project ideas and formulate them together with their EU partners as well as partners in the other countries in the world, which proves the established and enhanced international relations, reliability of UrSU at the international level and its capacities that can build new practices based on internationally recognised best practices.

At NUUz it is noteworthy to observe the impact of the projects at the shared institutional and at the same time national levels. Thus, the university is involved in the projects that are aimed at the development of high-tech oriented study programmes, for example, GE-UZ and DSinGIS in GIS technology, FSAMP in ICT- and Space Technology based studies for flight safety and airworthiness), SPACECOM in Space Technologies, and NICOPA in GIS- and Space-technology based studies for precision making technologies in Agriculture. This shows that the areas are highly important for the country and have full support due to their relevance on the part of the national government in Uzbekistan. The UNICAC project was an important bridge between the two levels at the university – academic and administrative – and was successful in achieving its aims at the NUUz. The International Relations Department was updated with its services and responsibilities. Internationalisation became one of the strategic goals and pivots of academic development at the institution.

It is important to note that the strong orientation of the NUUz to its internationalisation and continuous support of widening international cooperation and participation in EU-funded projects by the university's top managers contribute to the exploitation of the projects' results and stimulate the university's staff to participate in capacity-building actions. Another positive experience the NUUz has had through the Capacity Building projects aimed at curriculum development (e.g. NICOPA – bachelor and master study courses in Precision Agriculture – and CLASS – master study programme in Computational Linguistics) is introduction of

the interdisciplinary approach to the development of study programmes. This will bring in other academic innovations for the further updates in the existing study programmes and an impetus for elaborating new ones together with the NUUz's EU partners within or without capacity-building projects.

At the national level, due to the projects NUUz managed to build cooperative links with the Ministry of Higher and Secondary Specialised Education of Uzbekistan to achieve the best effects and increase the level of impact of its Tempus and CBHE Erasmus+ projects at the regional and national levels. The Ministry supports internationalisation of academic developments at the universities in the country and, therefore, promotes the EU-funded projects in the country and accepts proposals from the NUUz and the other universities most active in running projects financed by the European Union. A positive experience of enlarging cooperation between the university and stakeholders in society at the national level has been gained by the NUUz through the UZWATER Tempus project. The continuous interaction with departments for applied ecology, sustainable development, and water resources demonstrated their effects at the national level. Thus, the MHSSE of Uzbekistan turned straight to the study programme in water resource management and sustainable development and supported its further development at the university and in the country.

2.5. Relationships between CBHE and ICM projects

In addition to the Capacity Building in Higher Education action, the Erasmus+ programme funded by the Commission of the European Union also offers the partner countries an International Credit Mobility action, which substantially adds the former. ICM projects are aimed at supporting the academic mobility of students, teachers and HEI staff, as well as strengthening cooperation between universities. Students of HEIs around the world have the opportunity to continue their studies at various universities in the countries of the European Union, and teachers are able to engage in research and/or teach students at European universities.

International credit mobility is focused on proactive mobilisation of students and teachers from countries that are not members of the European Union, which is crucial for Uzbek HEIs during the transition to a credit system.

For example, the most active HEIs participating in CBHE, such as NUUz, TUIT, TIAME, UrSU, SIVM, Karakalpak State University (KKSU) and Turin Polytechnic University in Tashkent (TTPU) are also involved in ICM projects.

In the course of the study, examples of the relationship between the Tempus, CBHE and ICM projects were identified. For example, European partners under

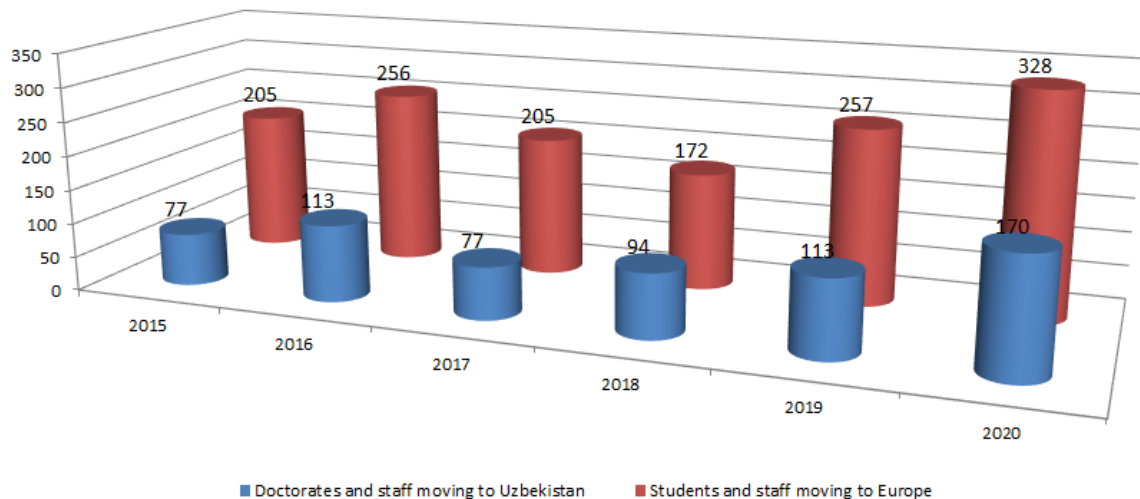
Tempus projects at Bukhara State University, Tashkent Institute of Irrigation and Agricultural Mechanization Engineers and Urgench State University used the new ICM area to resume cooperation with former Tempus partners and current Erasmus+ partners.

ICM participants from among HEI faculty and administrative staff have repeatedly noted that short-term internships in European universities helped acquire advanced experience in the field, and then introduce and adapt it at their home universities⁸ Students, on the other hand, had the opportunity to get exposure to the European education system, and then, upon returning, exchange experiences with other students and with the teachers at their university. The students and faculty who visited European universities and adopted best practices were definitely able to enhance capacity building opportunities of CBHE projects.

2.5.1. Quantitative analysis of ICM projects in Uzbekistan

In total, as a result of the 2015-2020 calls and due to these projects, 2.067 short-term mobility exchanges were carried out, with participation from more than 45 national HEIs. In total, 1.423 students, doctoral students and lecturers from Uzbekistan were involved in mobility, and 644 participants, including doctoral students and lecturers of European universities, visited Uzbekistan (see Diagram 13) under 432 partnerships with European universities.

Diagram 13. ICM activities in Uzbekistan in 2015-2020*



* based on data of DG EAC`s Factsheet of November 2020

⁸ Annual ICM conference2020 and conference proceedings
http://www.erasmusplus.uz/images/shared/file/ICM%20publication_latest_07_01_2021.pdf

Thus, the mobility of Uzbekistan students and HEI teaching staff is more than 2 times higher than the mobility from EU universities to Uzbekistan. The scale of the ICM action is quite comparable to the scale of all other scholarship programmes, both national and international, and in some cases exceeds it many times.

2.5.2. Continuity and synergy of CBHE and ICM projects

Most of the ICM projects with the participation of Uzbek HEIs are based on cooperation established by the joint implementation of CBHE projects. The mutually beneficial combination of simultaneous participation in CBHE and ICM projects was many times noted by the members of project teams in the national HEIs. Within the framework of mobility, opportunities for advanced training are used in the course of implementation of CBHE projects.

ICM partnerships support the CBHE projects aimed at improving curriculum, expanding opportunities for professional development and exchanging experience in universities of EU member states. A good example of this relationship is the cooperation of the National University of Uzbekistan and the Tashkent Institute of Irrigation and Agricultural Mechanization Engineers with Paris Lodron University of Salzburg (PLUS) in Austria at the same time under the CBHE DSINGIS project (<http://www.dsingis.eu/>) and the ICM partnership.

Due to participation in CBHE projects and the establishment of new partnerships, as well as effective interaction, European partners decided to develop cooperation under the ICM as well. It allows to expand cooperation and exchange of faculty and students. For example, the cooperation of TSAU with the University of Porto initiated under the framework of BUzNET (<https://buznet.up.pt>) was expanded due to winning an ICM project, as which is also the case for a number of other universities, and they also used the opportunity to deepen and expand bilateral cooperation (see Figure 3).

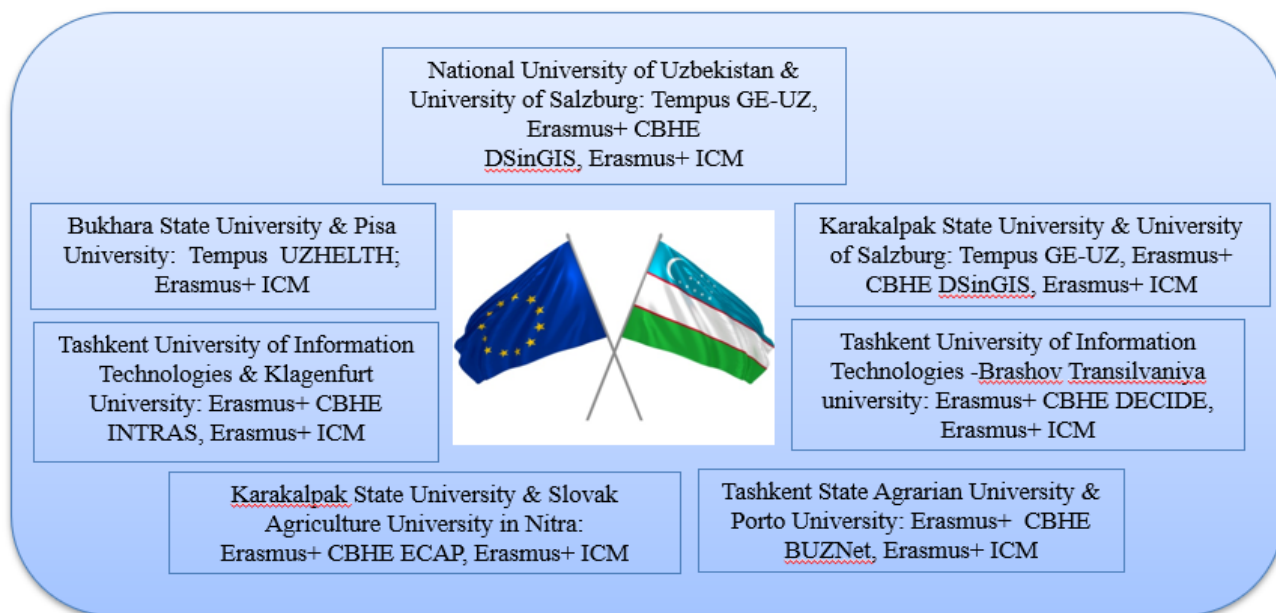


Figure 3. Synergy of CBHE and ICM projects

2.5.3 Impact on academic and administrative staff of universities

Improved academic mobility in the national HEIs has significantly contributed to the increase in education accessibility, improvement of quality and efficacy of education, as well as improvement of functioning of international departments, mutual recognition and ensuring the mobility of human capital.

ICM partnerships serve as a guarantee of continued cooperation under the joint projects, which contributes to further study of advanced pedagogical technologies, improvement of the development of curricula and teaching materials based on international best practices, improvement of teaching quality and increasing efficiency of the international and student service units.

For 6 years, the key issue was the lack of knowledge of foreign languages. In order to address this, teaching of academic and administrative staff of HEIs was organized.

The advantages of mobility for administrative staff and faculty are as follows:

- lecturing and teaching classes;
- participation in scientific activities on joint topics;
- participation in professional development programmes;
- acquaintance with the experience of international partners;
- participation in conferences and workshops.

The faculty and administrative staff of departments in HEIs that were not directly involved in ICM projects had the opportunity to acquire certain experience and knowledge from their colleagues through workshops conducted by participants of mobility to Europe.

Short-term mobility in European universities has become an important tool for the faculty supporting their professional and personal development, due to the unique opportunity to enhance their qualifications and come back with new teaching approaches and methods.

Mobility projects also helped in establishing friendly contacts with colleagues at partner universities, which was followed by the publication of joint scientific papers and articles, invitations to international events and exhibitions, as well as submitting new project proposals and joint participation in the next ICM projects or in other areas of the Erasmus+ programme.

Currently in the national HEIs the period of mobility for the faculty and administrative personnel is recognized as professional development. Due to the government decisions on the introduction of a credit and module system in 35 national HEIs from the 2020-2021 academic year, and the transition to ECTS for all HEIs, the mobility experience in European universities has become even more popular and recognized. In the welcoming speeches of the MHSSE management at Erasmus events there was a reiteration of a direct connection and influence of the EU funded Erasmus+ programme on the adoption of the key decision on the transition to ECTS as one of the key instruments for the internationalization of higher education. Particular importance is attached to increasing the involvement of professors and doctoral students from European universities in the teaching process of the national HEIs, as they can visit under the credit mobility initiative. More than 640 representatives of European universities took the opportunity to lecture and conduct classes, workshops and master classes at the national HEIs. Due to this, many Uzbek lecturers and students were able to build their qualifications without leaving the country. In addition to the academic activities, the visits of the European partners facilitated the increase in the number of joint scientific works and joint research in scientific centres and laboratories, development of joint publications and expansion of scientific contacts in general.

2.5.4 Impact on students

Favourable environment has been created in the Uzbek HEIs for the development of academic mobility of students and researchers. Through participation in mobility partnerships, students and researchers gain access to better quality education and research programmes and return to their home institutions with new knowledge.

Experience of studying abroad provides graduates with the ability to work in an intercultural and global international professional environment.

Disciplines or modules in the relevant specialties taken at the partner university are recognized by the parties, and the credits earned are automatically recalculated. ICM projects contributed to development of recognition tools and procedures for short-term mobility through assignment of new tasks for staff of academic departments of HEIs and their relationships with international relations departments.

International student mobility has become one of the most effective ways to develop educational and intellectual opportunities at the individual level.

An important factor is that the mobility participants were able to improve their knowledge of a foreign language. Some partnerships have provided free language courses.

In recent years, many Uzbek HEIs have introduced numerous English language programmes, which is one of the most significant factors for the successful attraction of intellectual resources.

Due to the efficiency of the programme, a number of HEIs now additionally allocate their own funds to finance the mobility of students and doctoral students for internships at partner universities.

2.6. Erasmus+ projects and Covid-19 pandemic in Uzbekistan

During preparation for the on-line Regional Cluster Meeting on the topic "Impact of capacity building projects in the field of higher education in Central Asia" held from November 19-20, 2020, a mini-study on the impact of the Covid-19 pandemic on the activities of Erasmus+ projects in Uzbekistan in 2020 was conducted.

The study itself was carried out in October and November 2020 by filling out an online questionnaire and covered a number of issues related to the implementation of Erasmus+ projects, interaction and communication with stakeholders and a subjective assessment of the status of projects during the coronavirus pandemic.

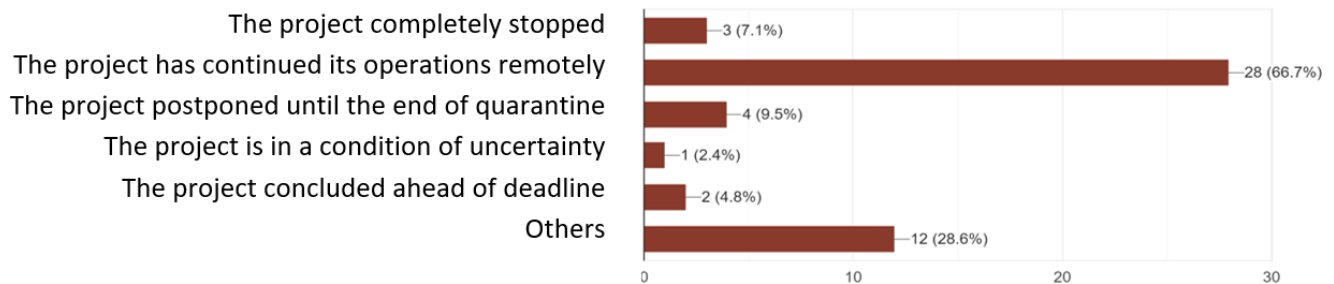
The questionnaire was sent to the international departments of HEIs and to the coordinators of Erasmus+ projects in Uzbekistan. A total of 42 responses were received, and some of them are presented below in this study.

For instance, the question "What happened to your Erasmus+ project after the introduction of quarantine measures against Covid-19 in the Republic of Uzbekistan?" the majority of respondents (about 70%) noted that their project

continued to work remotely, or even that the project team finished their project ahead of schedule, and only about 7% answered that their project had to completely suspend its activities.

Question: What has happened to your projects after the quarantine measure were announced?

42 responses



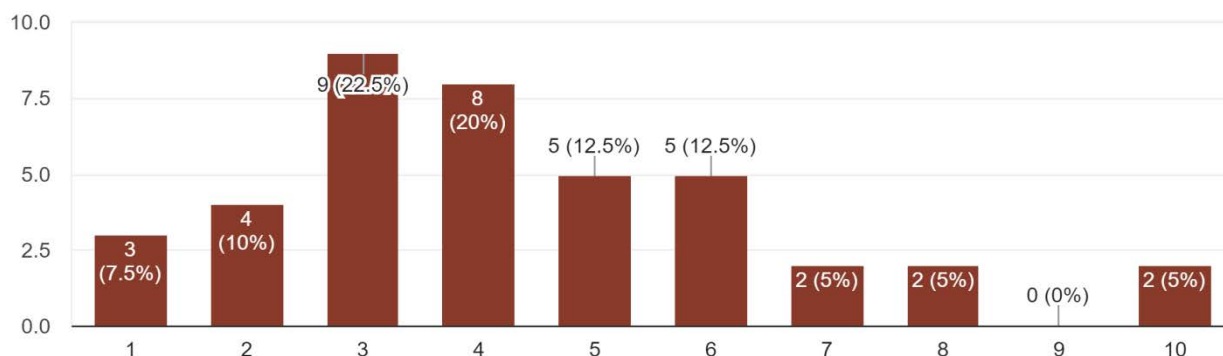
In the course of this study, the authors also interviewed respondents about the fate of existing projects during the quarantine period and the Covid-19 pandemic, and in general the participants agreed that most of them managed to continue their work remotely through online conferences and webinars. However, a number of CBHE and ICM projects had to either move mobility to an indefinite period later in the project lifetime, or to replace physical mobility with virtual alternative through distance learning and exchange of experience.

When asked about the level of impact of Covid-19 on project activities under the Erasmus+ programme, the majority of participants (more than 80%) noted that in general the level of achieving the goals and objectives set by the project was below its average value.

However, experts and focus group participants, especially students, expressed deep regret that physical mobility could not take place or had to be modified (many participants were in the lockdown and could not attend European universities because of the quarantine measures taken) during the interviews.

Question: How would you evaluate the level of impact of Covid-19 on your Erasmus+ project?

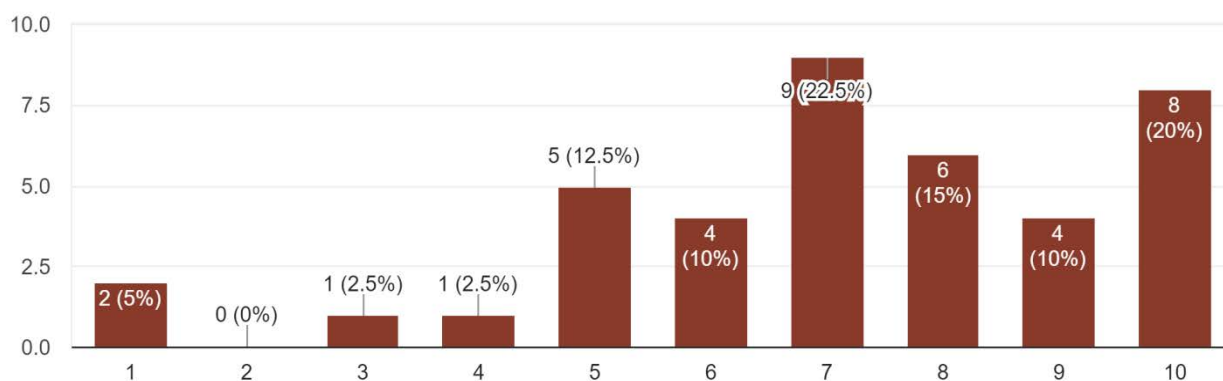
40 responses



The responders were asked a question about the role of EU partners during the quarantine period to understand the level of interaction and communication between the Uzbek and European partners.

Question: How would you evaluate the role of Erasmus+ project partners from EU during the period of Covid-19?

40 responses

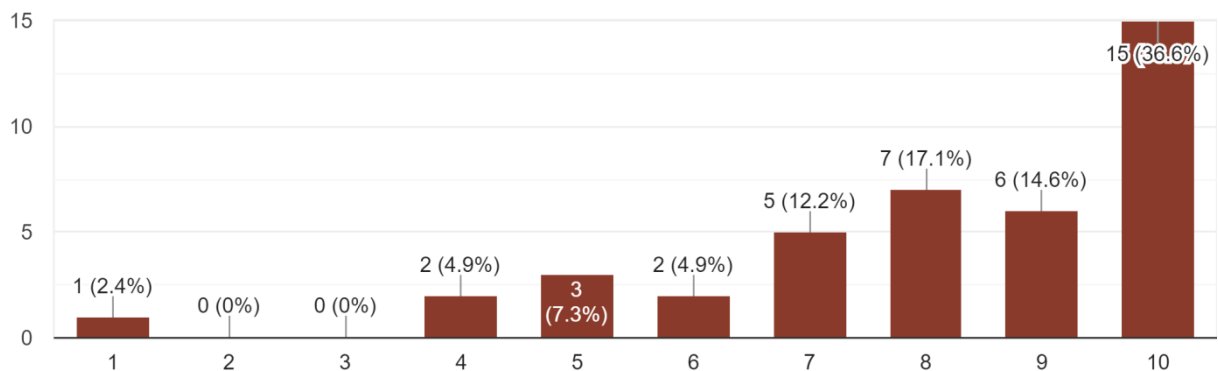


As can be seen from the diagram showing the responses which were also confirmed during oral interviews during this study, 90% of respondents score the role of European partners and its importance for continuing the project and maintaining the communication with Uzbek partners as 5 points and above. The respondents also repeatedly expressed their deep gratitude for the leadership and support of European partners in this difficult period.

Given the difficult period of the Covid-19 pandemic faced by the whole world, including the EU and Central Asian countries, it was important for us to find out how the level of support from the National Erasmus+ Office in Uzbekistan was perceived. This survey was conducted anonymously and without prior discussion with NEO staff in order to eliminate systemic errors and bias. These answers are shown in the diagram below, and in addition, during expert interviews and a survey in focus groups the participants evaluated NEO activities in the most positive way.

Question: What is the level of support that your project received from NEO?

41 responses



As can be seen from the diagram above, more than 90% of respondents assess the level of support for NEO in Uzbekistan as above average; moreover, more than 50% of them indicated that this level of support and its importance for project teams could not be higher.

In general, according to the participants in this study, the members of project teams and consortia of Erasmus+ projects managed to cope with the difficulties associated with the Covid-19 pandemic and the mandatory quarantine measures quite well. Moreover, in the opinion of all respondents, the level of trust and intensity of cooperation under international activities, including within the framework of the Erasmus + partnership, has increased manifold.

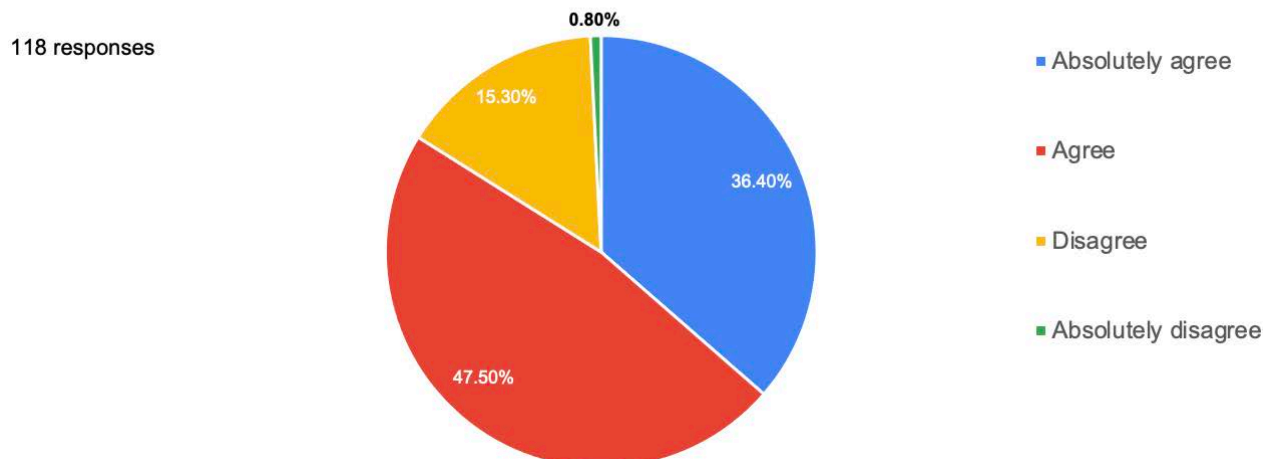
3. Examples of Erasmus+ CBHE projects

3.1. CBHE projects that impacted higher education reforms

The Erasmus + programme is the world's only large-scale technical assistance programme to support reform and modernization of higher education. As indicated in the foreword above, the systemic impact of the Tempus and Erasmus+ projects on the development of the higher education system in the Republic of Uzbekistan is a proven fact and is beyond doubt. Therefore, this section will present a number of examples substantiating the overall impact assessment of the Erasmus+ programme.

3.1.1. National/regional level

21. How much do you agree with the following statement: Participation in the Erasmus+ projects has allowed to strengthen partnerships and establish new cooperation with business/industry?




It was especially important for the NIS authors to assess the impact of the Erasmus+ programme at the national and regional levels. For this purpose, a number of questions were asked to assess the impact of projects at the national level, focus groups discussions and expert interviews with the participation of opinion leaders and coordinators of CBHE structural projects were held, and respective questions were asked in an online survey.

About 84% of survey participants agreed with the statement that the impact of Erasmus+ projects on strengthening partnerships and establishing new cooperation with business and industry was significant, and about 16% of respondents did not agree with this statement.

In this regard, the experience of the RUECVET project (**Piloting RUECVET to the national VET system of Russia and Uzbekistan**) was interesting. It was

aimed at the pilot launch of the European Credit System (ECVET) within the national systems of vocational training and education in Russia and Uzbekistan.

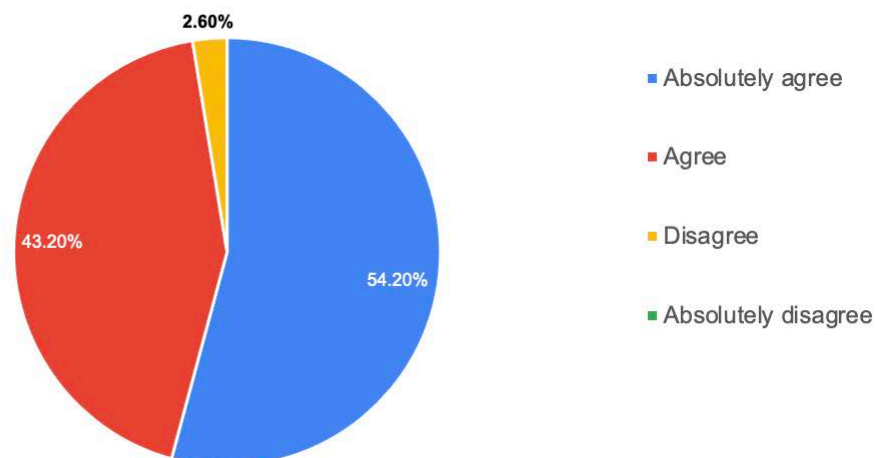
<p>Logo of the project</p>	
<p>Title and number of the project</p>	<p>RUECVET: Piloting ECVET to the national VET system of Russia and Uzbekistan 574097-EPP-1-2016-1-CY-EPPKA2-CBHE-JP</p>
<p>Project duration</p>	<p>15/10/2016 - 14/10/2019</p>
<p>Web-site</p>	<p>www.ruecvet.uz/ru/</p>
<p>Main achieved results</p>	<ol style="list-style-type: none"> 1. Recommendations for the implementation of ECVET in the national system of higher and vocational education have been developed; 2. 4 national ECVET training centers have been established in local universities; 3. Quality assurance mechanism established and quality indicators / specifications agreed; 4. A professional development programme has been developed for the implementation of the ECTS credit system in secondary vocational education and training in Uzbekistan.

Shown below are the responses to the question about the impact of projects on the modernization of higher education system of the Republic of Uzbekistan.


More than 97% of survey participants agreed with the statement that the impact of Erasmus + projects in the reform and modernization of higher education in Uzbekistan was significant, and about 3% of respondents did not agree with this statement.

24. How much do you agree with the following statement: Participation in the Erasmus+ projects has contributed to the reforms and modernization of higher education in Uzbekistan?

118 responses



In particular, let us consider the example of the following project - **IMEP: Internationalization and Modernization of Education and Processes in the Higher Education of Uzbekistan**, with the main goal to provide assistance in the field of internationalization and modernization of education and processes in the field of higher education in Uzbekistan.

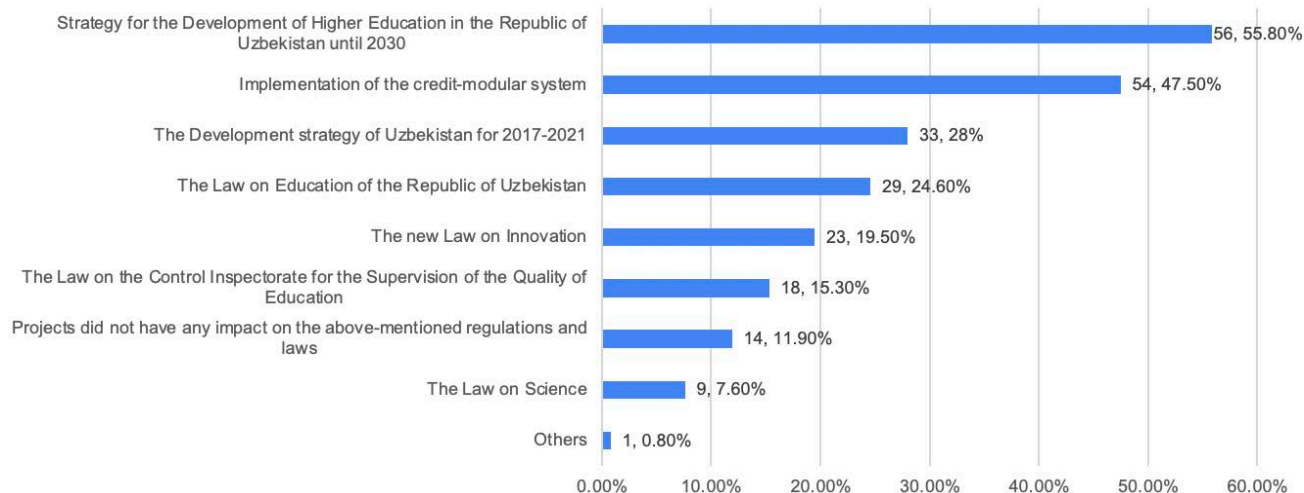
Logo of the project	
Title and number of the project	IMEP: Internationalisation and modernisation of education and processes in Higher Education of Uzbekistan 561624-EPP-1-2015-1-UK-EPPKA2-CBHE-SP
Project duration	15/10/2015 – 14/10/2018
Main achieved results	<p>1. Modernized curricula and programmes of retraining and advanced training courses for teachers of higher educational institutions have been developed. For upgrading courses and advanced training of university teachers, 288 educational and methodological complexes have been prepared on the basis of 325 foreign educational literatures;</p> <p>2. Developed and approved by the order of the Ministry of Higher and Secondary Specialised Education "Qualification requirements for the level of readiness of the teaching staff of higher educational institutions»;</p>

	<p>3. Proposals have been submitted for the State Programme for the Integrated Development of the Higher Education System for the period 2017-2021 to modernize curricula and programmes taking into account the best foreign experience and to further improve the system of retraining and advanced training of teachers of higher educational institutions through the organization of advanced internships, training of teachers in foreign partner universities.</p>
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The project outcomes were strongly supported by the MHSSE and were widely introduced into practice in order to improve the qualifications of senior staff and in general to improve the arrangements for professional development of the academic staff. Taking into account the ongoing changes in Uzbekistan, it was important to understand how the project results influenced the public legal documents, laws or government initiatives, and we received the following answers from the respondents of the online survey.

Respondents to this question could choose more than one answer and in slightly less than half of them mentioned two regulatory documents as specific impact from the Erasmus+ projects: 1) Strategy for the Development of Higher Education in the Republic of Uzbekistan until 2030 and 2) Implementation of a Credit and Module system. Further, the following two documents were noted by about 1/3 of respondents: 3) Development Strategy of Uzbekistan for 2017-2021 and 4) Law on Education of the Republic of Uzbekistan. About 20% of projects influenced the new Law on Innovations and less than 8% - the Law on Science. About 15% of Erasmus+ projects have had an impact on the development of decree on the State Inspectorate for the Supervision of the Quality of Education. And less than 12% noted that their projects did not have any impact on the above-mentioned regulations and laws. Thus, the project participants noted the real impact of their projects on the development and implementation of new regulations and laws that to a certain degree serve as a framework for the development of higher education in the Republic of Uzbekistan.

25. Indicate the normative document, law or government initiative where you and your project had an impact




As an example, **NURSLIN project: National qualification frameworks: guidelines for development and recognition of qualifications** can be considered. Its main goal was to facilitate development of the National Qualifications Framework for the higher education of the Republic of Uzbekistan. According to information of project team the Resolution of the Cabinet of Ministers of the Republic of Uzbekistan "On measures to organize the activities of the National System for the Development of Professional Qualifications, Knowledge and Skills in the Republic of Uzbekistan" (No 287 dated May 15, 2020) was adopted, among alia, based on the results of this project.

Logo of the project	
Title and number of the project	NURSLIN: National Qualification Frameworks: Guidelines for Development and Recognition of Qualifications 561742-EPP-1-2015-1-PT-EPPKA2-CBHE-SP
Project duration	15/10/2015 - 14/10/2018
Main achieved results	<ol style="list-style-type: none"> 1. The general provisions concerning educational standards in specific fields have been improved, taking into account the idea of the Qualification Framework (QF), the principles of the Bologna Process and the experience of EU universities; 2. New national standards on informatics have been introduced, which has contributed to the development of relevant sectoral information and communication technologies in the field of ICT; 3. The staff of the local universities were trained in the training on QF issues, which are involved in the process of developing special courses on QF development.

3.1.2. At the institutional level

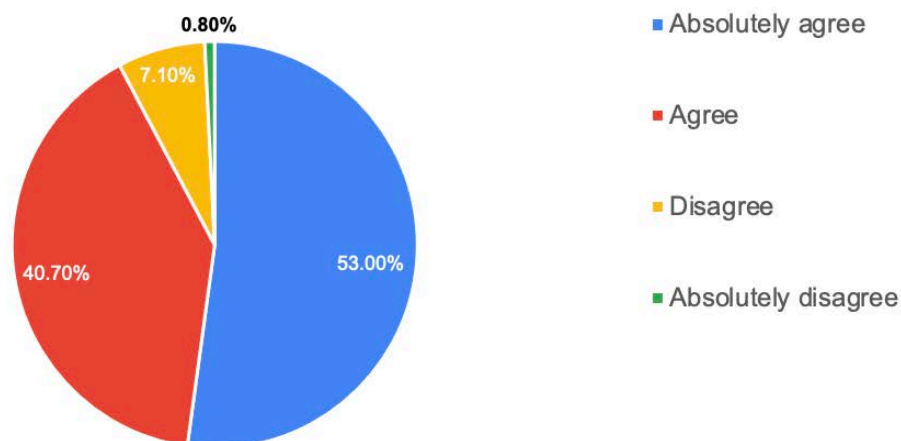
Absolutely all of the NIS study participants indicated that the Erasmus+ programme had the maximum effect on the launching of new curricula and areas of education. Below are the results of an online survey, where respondents indicated their opinion regarding the emergence of new curricula in their HEIs. This included development of new teaching materials, new methods for assessing the teaching process, new methods of working with students, colleagues and administration, new methods for managing the quality of education, introduction of elements of a credit and module system, and so on.

94% of respondents agreed with the statement that Erasmus+ projects helped introduce a new curriculum or area of education. About 6% of the respondents disagreed with this statement. Thus, the impact of the Erasmus + programme on the development of new areas of education is very significant. As an example, we can consider the **ECCUM project: Establishment of Computing Centers and Curriculum Development in Mathematical Engineering Master programme.**

Logo of the project	
Title and number of the project	<p align="center">ECCUM: Establishment of Computing Centers and Curriculum Development in Mathematical Engineering Master programme 561574-EPP-1-2015-1-ES-EPPKA2-CBHE-JP</p>
Project duration	<p align="center">15/10/2015 - 14/10/2018</p>
Web-site	<p align="center">http://eccum.famnit.upr.si/en/</p>
Main achieved results	<ol style="list-style-type: none"> 1. A Master's programme in mathematical engineering has been developed and opened; 2. Mathematical engineering is included in the classifier of master's specialties of Uzbekistan, May 2017. 3. Equipment and software packages purchased for computer centers and computer centers established at each partner university.

13. How much do you agree with the following statement: Participation in the Erasmus+ projects allowed to open a new Bachelor's / Master's / Doctoral programmes

118 responses



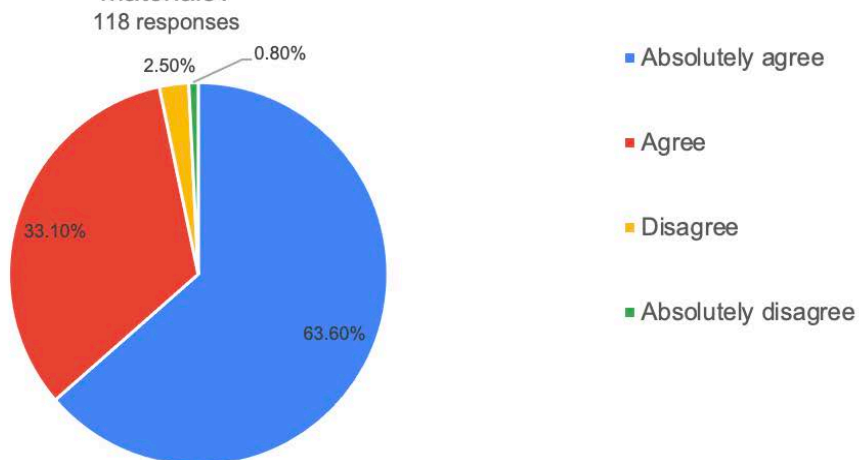
On the issue of the development and implementation of new teaching and learning materials, there was also a full agreement with the statements about the high level of impact of the projects on the curricula modernization.

For example, the following 8 new Master programmes with allocated student quotas were accredited and well promoted during admission period of 2020/2021 academic year by the MHSSE through the website and social networks:


1. "CLASS" "5A120106- Computer linguistics" at 4 HEIs: NUUz, TSUULL, SamFLI, UrSU
2. "ECCUM" "5A130301- Mathematical Engineering" at UrSU
3. "RENES" "5A140204- Renewable energy sources and sustainable environment physics" at UrSU, AndSU, GulSU, KarshSU
4. "INTRAS" "5A310609-Intellectual transport network" at Tashkent State Transport University, AndMBI, JizPI, TermezSU
5. "INTRAS" "5A350902-Intellectual IT network" at TUIT
6. "MECHAUZ" "5A312601-Mechatronics and Roboto technics" at AndMBI
7. "GE-UZ" "5A313401-Geodezy and Geoinformatics" at TIAME, NUUz, TSACI, KKSU
8. "SPACECO" "5A350903- Satellite communication systems" at TUIT
9. "SPHERE" "5A440115- Veterinary control and public health in emergencies" at SamVMI

Sustainability of the Erasmus+ Master programmes is ensured by allocation of student quotas and continuous accreditation, duly justified by high level employability of graduates supported by the industry and enterprises.

14. How much do you agree with the following statement: Participation in the Erasmus+ projects has allowed to develop and implement the teaching materials?

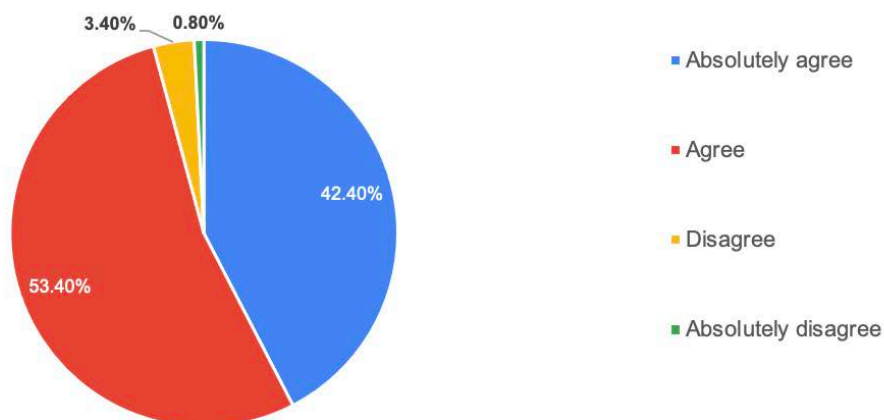


Further, 97% of survey participants agreed with the statement about the special impact of Erasmus+ projects on the development and introduction of new teaching and learning materials, and only about 3% of respondents did not agree with this statement. For example, the **ACADEMICA project: Accessibility and Harmonization of Higher Education in Central Asia through Curriculum Modernization and Development** can be considered.

Logo of the project	
Title and number of the project	<p align="center">ACADEMICA: Accessibility and Harmonization of Higher Education in Central Asia through Curriculum Modernization and Development 561553-EPP-1-2015-1-BG-EPPKA2-CBHE-JP</p>
Project duration	<p align="center">15/10/2015 - 14/10/2018</p>
Main achieved results	<ol style="list-style-type: none"> 1. Innovative methodologies implemented: ACADEMICA trainings combined methodology and content that provided lecturers with the cross-cutting and core competencies and skills needed for their active inclusion in the global digital learning and learning space. 2. University programmes in the field of engineering sciences have been modernized with modern content and with integrated modern approaches based on technology; 3. Systems of transnational cooperation between universities and business organizations have been established to strengthen the capacity of universities.


17. How much do you agree with the following statement: Participation in the Erasmus+ projects allowed to introduce new methods of quality control in education (polls of faculty, students, indicators, external quality assessment, etc.)?

118 responses



About 96% of survey participants agreed with the statement about the significant impact of Erasmus+ projects on the introduction of new methods of quality management in education, and only slightly more than 4% of respondents disagreed with this statement.

The **IQAT project: Enhancing capacities in implementation of institutional quality assurance systems and typology using Bologna process principles** was aimed at promoting the development of an institutional system for ensuring the quality of education in Uzbek HEIs.

Logo of the project	
Title and number of the project	IQAT: Enhancing capacities in implementation of institutional quality assurance systems and typology using Bologna process principles 561685-EPP-1-2015-1-CZ-EPPKA2-CBHE-JP
Project duration	15/10/2015 - 14/10/2017
Main achieved results	<ol style="list-style-type: none"> 1. A new internal quality assurance system (QA) has been developed, innovative and modified in higher education institutions; 2. The final version of the QA Regulation has been prepared, taking into account state requirements/university charters and documents, as well as European standards and recommendations;

	<p>3. Using the principles of the European Standard and recommendations for ensuring the quality of education in higher education institutions, an updated self-assessment system was developed;</p> <p>4. A quality assurance programme has been developed for the implementation of the self-assessment system in universities for the next years.</p>
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In addition, during expert polls and focus groups discussions, almost all respondents mentioned modernisation of HEI infrastructure through the development of resource centres, incubators, industrial parks, technology transfer centres, laboratories, etc. in the HEIs, which makes new or improved curricula more advanced academically.

For example the laboratories established and equipped within completed RENES (Renewable Energy Sources), ECCUM (Mathematical Engineering), TechRech (Technologies in Medicine) projects are in disposal of Master students and are attracting the non-academic partners. CACTLE Centres for Teaching, Learning and Entrepreneurship contribute to improvement teaching competencies of academic staff and provide education for entrepreneurs Youth Centres created within MIND are well promoted by the MHSSE as good model and best practice to support entrepreneurship. The centers of Doctoral studies of UZ DOC 2.0 at the scientific departments of 7 local HEIs in all country regions are currently supporting activities of young researches and upgrading of academic staff, as well as promoting guidelines for virtual doctoral centres in other universities. Within the framework of the RUECVET project, two National ECVET training centres were created on the basis of pedagogical universities in order to provide practical support to universities and vocational education and training (VET) organisations for training, research, development of new practices and assistance in the implementation of the European Credit System (ECVET) in the systems of vocational education and training. Three Multidisciplinary “Green Building” centres in Uzbekistan HEIs are chains of the innovative Network of Multidisciplinary Centers “Green Building” (NGB), established and equipped by GREB project.

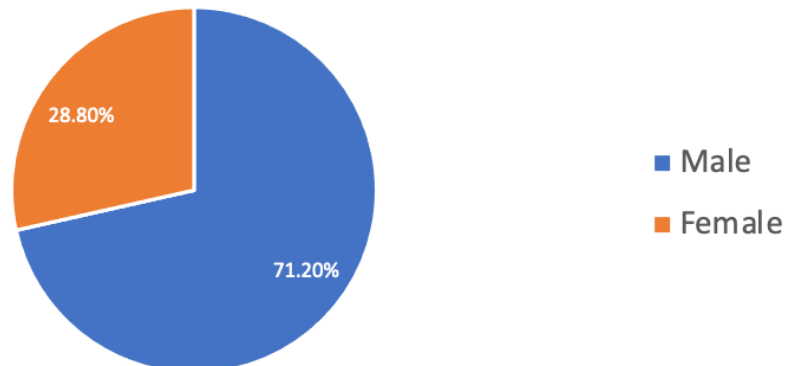
3.1.3. At the individual level

According to the analysis of the online survey, the impact of Erasmus+ projects at the individual level is basic for all of the participants. Moreover, this conclusion was also confirmed by participants of expert surveys and focus group participants. In this regard, the authors of the study consider it important to provide some examples of the analysis of the online survey and share its results. Some of the research questions were aimed to studying the gender composition of project participants, which highlighted the situation with the participation of women in projects, as well as their representation in the governing bodies of projects.

If we take the share of female leaders, such as project coordinators and heads of project teams from the side of HEIs, as the baseline, then the situation is as follows: out of 43 CBHE projects, 13 had female coordinators, which is one third, but if we take for the baseline the number of female national coordinators, then the numbers are much lower, corresponding to the share of 10%. In general, these data are correlate with the results of the online survey covering 118 people, and there were slightly less than one third of women.

2. Please indicate your gender

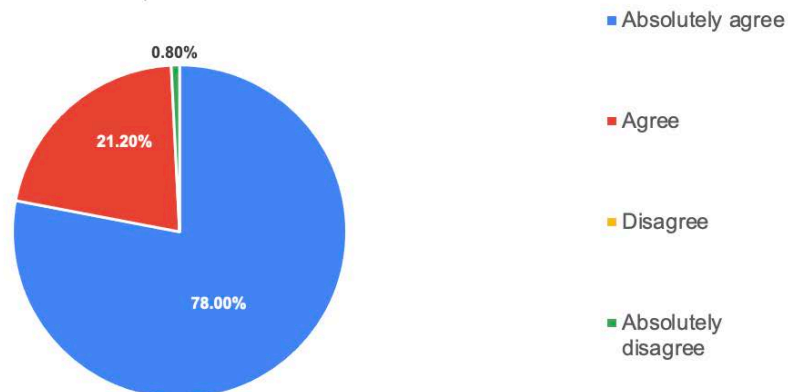
118 responses



3.1.3.1. Impact on academic and administrative staff of universities

12. How much do you agree with the following statement: Participation in the Erasmus+ projects has improved the qualifications of teachers

118 responses

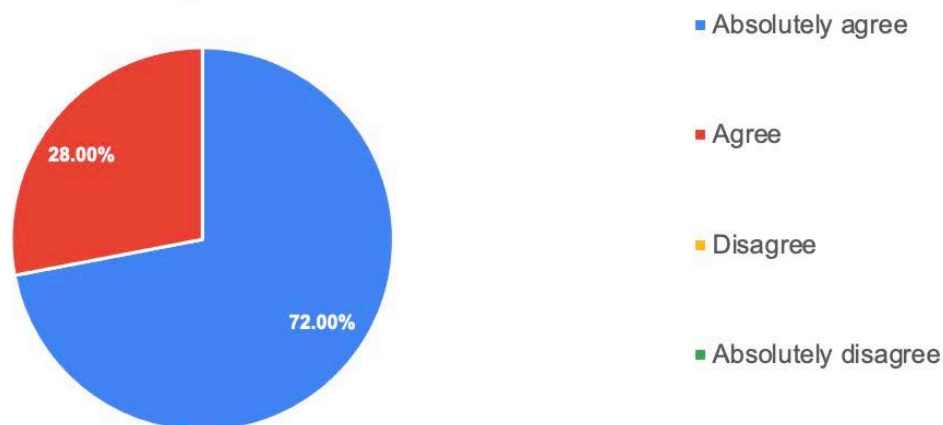


99% of the respondents agree with the statement that participation in Erasmus+ projects has improved the qualifications of the academic and administrative staff of universities, and only less than 1% of respondents disagreed with this statement. As a conclusion, based on the survey we can say with confidence that Erasmus+ projects have a huge impact on the professional development of the teaching staff of the Republic of Uzbekistan.

3.3.1.3.2. Impact on students

11. How much do you agree with the following statement: Participating in the Erasmus+ project introduces new teaching methods to students?


118 responses



All survey participants strongly agree or inclined to agree that participation in the Erasmus+ programme has enabled the introduction of new teaching methods for students. None of the respondents indicated their disagreement with this statement, which clearly indicates the significant impact of the Erasmus+ programme on the modernization of student teaching methods.

3.2. CBHE projects that impacted science and innovation reforms

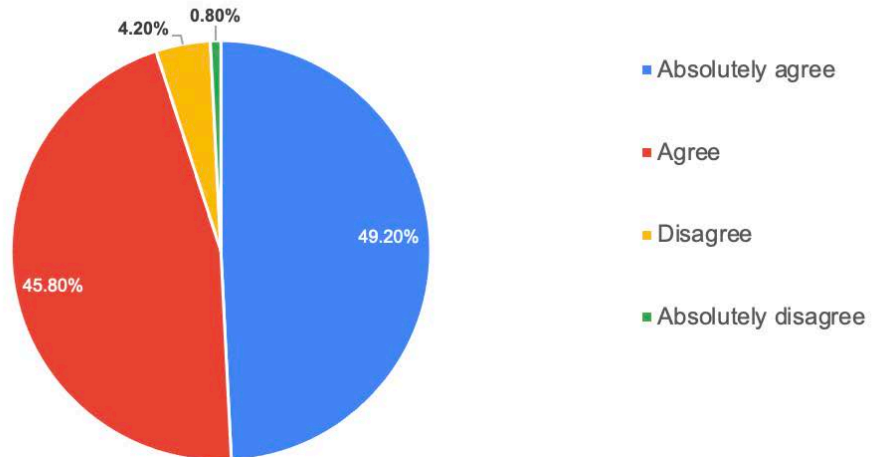
A number of Erasmus+ projects directly affected such an integral element of higher education as scientific research activity. Projects supporting the reform of doctor degree education in the Republic of Uzbekistan have had a particularly serious impact. For example, below is the profile of the CBHE **UZDOC 2.0 project: Improving the quality of doctoral education in higher education institutions in Uzbekistan**, which shows the impact of projects on this area.

Logo of the project	
Title and number of the project	<p align="center">UZ DOC 2.0: Improving the quality of doctoral education in higher educational institutions of Uzbekistan 573703-EP-1-2016-1-BEEPPKA 2-CH ESP</p>
Project duration	15/10/2016 - 14/10/2019
Web-site	http://www.uzdoc.eu/
Main achieved results	<ol style="list-style-type: none"> 1. The project has had a significant impact on building the capacity of participating universities in Uzbekistan to develop and modernize the quality of doctoral education. 2. Prepared "Guidelines for the development of doctoral studies in Uzbekistan/ Recommendations for ensuring the quality of doctoral studies in Uzbekistan". 3. The doctoral education sector in Uzbekistan is rising to the level of the latest European development trends, combining best practices and methodology, which makes it possible to improve the solution of issues facing the science and economy sectors of Uzbekistan. 4. The centers of Doctoral studies at the scientific department are organized in all Uzbek partner universities.

Moreover, participants of the online survey also noted the impact of Erasmus+ projects on enhancing research capacity in their universities.

20. How much do you agree with the following statement: Participation in the Erasmus+ projects allowed to develop new projects, including scientific projects?

118 responses



95% of survey participants agreed with the statement that Erasmus+ projects had a significant impact on the development of new projects, including research ones, and only 5% of respondents did not agree with this statement.

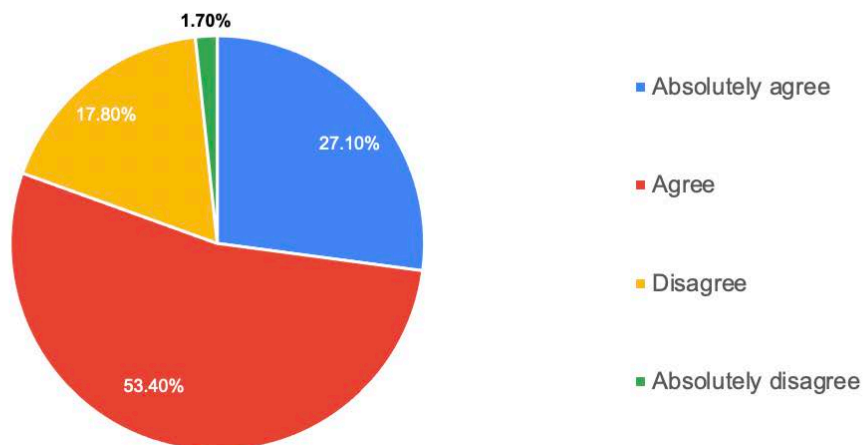
In this regard, the **MIND: Management - Innovation - Development** project is very interesting, as it was aimed at developing an ecosystem of innovations and entrepreneurship in Uzbek HEIs.

Logo of the project	
Title and number of the project	<p align="center">MIND: Management - Innovation - Development 561539-EPP-1-2015-1-ES-EPPKA2-CBHE-JP</p>
Project duration	<p align="center">15/10/2015 - 14/10/2018</p>
Web-site	<p align="center">http://mind.ulpgc.es/</p>
Main achieved results	<ol style="list-style-type: none"> 1. Youth Centers have been created, thanks to which young people who do not have the appropriate knowledge, experience and funds can start their own business or develop a project; 2. Within the framework of this Center, young people develop business models and launch their Startups, as well as create non-profit organisations; 3. Permanent courses on business and entrepreneurship were organized; 4. An online platform has been developed where students post their work and proposals for potential investors or other interested parties.

In this regard, the issue of establishing new companies, start-ups and additional spin-offs was also clarified during the online survey.


23. Do you agree with the following statement: Participation in the Erasmus+ projects allowed creating new companies, startups and getting additional unplanned results spin-offs?

118 responses



80% of survey participants agreed with the statement about the significant impact of Erasmus+ projects, which made it possible to establish new companies, create start-ups and obtain spin-offs, and about 20% of respondents did not agree with this statement.


Furthermore, another project, **CACTLE: Implementing a Central Asian Center for Teaching, Learning and Entrepreneurship**, was aimed at developing a culture of entrepreneurship among youth in HEIs in Central Asia, including Uzbek HEIs.

Logo of the project	
Title and number of the project	CACTLE: Implementing a Central Asian Centre for Teaching, Learning and Entrepreneurship 561495-EPP-1-2015-1-AT-EPPKA2-CBHE-JP
Project duration	15.10.2015 – 14.10.2018
Main achieved results	Within the framework of the project, the "Implementing a Central Asian Centre for Teaching, Learning and Entrepreneurship - CACTLE" was created, which assists in the development of best practices in this area. The activities of this center are carried out in an innovative form - an international virtual network of experts with a sustainable perspective. The activities of the CACTLE Center are dedicated to the following tasks:


	<ol style="list-style-type: none"> 1. Advanced training and certification of university teachers in the field of teaching economics and business for target groups: students, employees of private companies / public institutions and entrepreneurs; 2. Providing a catalog of courses and training materials for enterprises / institutions. Establishing links between the university and business and industry, using specific teaching and learning methods; 3. Curricula and training materials have been developed for the approved (accredited) optional course “Entrepreneurship and Business Development” in all partner universities.
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1.3 CBHE projects that had an impact on agricultural reforms

In particular, the experience of the **ECAP project: Enhancing Competencies of Central Asian Universities in Agricultural Policy focused on Environmental Protection & Land Management** is very interesting, as it was aimed at improving agricultural policies in Central Asia HEIs with a focus on environmental protection and land management.

Logo of the project	
Title and number of the project	ECAP: Enhancing Competencies of Central Asian Universities in Agricultural Policy focused on Environmental Protection & Land Management 561590-EPP-1-2015-1-SK-EPPKA2-CBHE-JP
Project duration	15/10/2015 - 14/10/2018
Web-site	http://ecap.uniag.sk/
Main achieved results	<ol style="list-style-type: none"> 1. Developed innovative curricula in universities in order to improve the quality of education in Central Asia (CA) countries in the field of environmental protection and land management in the context of the new Common Agricultural Policy of the EU (CAP); 2. Assistance was provided to increase the awareness of university students on the legal basis of agriculture, taking into account respect for the environment; 3. Long-term partnerships have been established with universities in Europe and Central Asia and work continues with colleagues in the field of environmental protection and land use.

Sustainability was also addressed in the **RENES project: Development of Master Programme in Renewable Energy Sources and Sustainable Environment.**


Logo of the project	
Title and number of the project	RENES: Development of Master Programme in Renewable Energy Sources and Sustainable Environment 574055-EPP-1-2016-1-IT-EPPKA2-CBHE-JP
Project duration	15/10/2016 - 14/10/2019
Web-site	http://reneseplus.uz/
Main achieved results	<ol style="list-style-type: none"> 1. Increasing the potential of 6 universities in Uzbekistan for renewable energy and sustainable environment (RES and SE); 2. Developed a new educational master's programme; 3. Opened a new master's degree in education on renewable energy sources and sustainable environment in universities of Uzbekistan; 4. Laboratories for renewable energy sources have been created in partner universities.

3.4. Erasmus+ CBHE projects that had an impact on health reforms


A number of projects under Tempus and Erasmus+ programmes in Uzbekistan were aimed at improving healthcare system, improving medical education and creating interdisciplinary masters degree courses and new specialties in the field of medicine. In general, healthcare and medicine as topics for CBHE projects in Uzbekistan were on the second place in terms of popularity, and in the framework of six Calls 2015-2020 for Erasmus+ CBHE projects, seven projects related to healthcare and medicine were selected for financing.

For example, Tempus **UZHEALTH** project developed sector qualifications frameworks for medicine and public health, including introduction of an interdisciplinary approach to public health research with the participation of specialists from agricultural, veterinary and environmental sectors.


The Erasmus+ **ModeHEd** project was aimed at development and implementation of public health and health science courses in non-medical HEIs.

Logo of the project	
Title and number of the project	ModeHEd: Modernising Health Education in Universities 561857-EPP-1-2015-1-DE-EPPKA2-CBHE-JP
Project duration	15/10/2015 - 14/10/2018
Main achieved results	<ol style="list-style-type: none"> 1. Courses in public health sciences have been adapted, modernized and restructured, 2. Introduced innovative teaching technologies in the educational process as multimedia and audiovisual components; 3. Introduced new curricula at universities; 4. Purchased a technical and training equipment.


The goal of the **SPHERA** project is to build capacity for disaster risk mitigation and improvement of targeted public health systems in project partner countries through the creation of an interdisciplinary master's degree courses in public health area.

Logo of the project	
Title and number of the project	SPHERA: Supporting the Professionalization of Health Engineering studies and Related areas in Asia 573909-EPP-1-2016-1-ES-EPPKA2-CBHE-JP
Project duration	15/10/2016 - 14/10/2019
Web-site	http://www.spheraproject.net/ru
Main achieved results	<ol style="list-style-type: none"> 1. The project has supported capacity building for disaster risk reduction and improved targeted public health. 2. Trainings and training seminars were held to prepare a new generation of engineers and technicians who have been able to influence the field of medical technology and the public health system. 3. An interdisciplinary programme has been developed at the Master's level in the universities of Uzbekistan according to the Bologna model (an approach based on competence, learning outcomes and compatibility with ECTS).

The Erasmus+ CBHE **TechReh** project developed and implemented a new master's degree course on computer systems in healthcare, modernized the clinical residency in rehabilitation, and assisted in strengthening research in the field of technology, healthcare and rehabilitation in Uzbekistan.

Logo of the project	
Title and number of the project	TechReh: Technology in Rehabilitation 561621-EPP-1-2015-1-IT-EPPKA2-CBHE-JP
Project duration	15/10/2015 - 14/10/2018
Web-site	www.techreh.uz
Main achieved results	<ol style="list-style-type: none"> 1. Creation of a new magistracy "Computer systems in medicine" 2. Modernization of the clinical residency "Medical rehabilitation" 3. Development of refresher courses on "ICT, medicine and medical rehabilitation" 4. Opening of 4 laboratories "Technologies in Medicine"

The **IHOD** project was targeting public health sector by educating health professionals on new curricula, which means a holistic approach to patient care and public health promotion that serves as a model for other professionals in the sector. The ultimate beneficiaries of the project are patients who benefit from advanced healthcare skills, and government, which can reduce the costs of treating chronic diseases.

Logo of the project	
Title and number of the project	IHOD: Improving Healthcare outcomes in Chronic diseases. Enhancing The curriculum at Masters level 586094-EPP-1-2017-1-EPPKA2-CBHE-JP
Project duration	15.11.2017 - 15.01.2021
Web-site	https://ihodproject.eu/
Main achieved results	<ol style="list-style-type: none"> 1. Developed approaches, requirements and workload for master's programmes in accordance with the ECTS guidelines; 2. 12 modules and short courses were developed to improve the qualifications of doctors and medical students; 3. Improvement of the qualifications of teachers and students of universities of partners from Uzbekistan was carried out; 4. Received equipment for the project for online conferences.

4. Findings, challenges and recommendations

As a result of the research, a set of findings and recommendations was prepared, both for the development of the future Erasmus programme and for assessing the impact of the Tempus and Erasmus+ projects on the development and modernization of higher education in the Republic of Uzbekistan.

A complete NIS analysis with the discussion lists for interviews, focus groups and on-line survey can be provided upon request to concerned parties in case of an agreement with the Erasmus+ programme, as a copyright holder of NIS.

The findings, challenges and recommendations developed will be presented below according to the study of the impact levels of the programme and projects, broken down into national, institutional and individual levels.

The NIS Research Team comprising staff members of the National Erasmus+ Office and National team of Higher Education Reform Experts thanks all NIS contributors and expresses its sincere appreciation for their commitment to the goals and objectives of the Erasmus+ programme.

4.1 Findings and conclusions

Impact of projects at the national level:

Most of the NIS respondents noted the systemic impact of the Tempus and Erasmus+ projects on the development and modernization of higher education, especially with regards to internationalization and development of new areas of education. It was noted that the new master's degree programmes (specialties) and improvement of quality of the educational process were the main outcomes of projects at the country level. Moreover, the projects provided some assistance in the development of the national education quality assurance agency (State Inspectorate for Supervision of Education Quality under the Cabinet of Ministers of the Republic of Uzbekistan), whose representatives also participated in several Erasmus+ CBHE projects. Moreover, the system of continuous professional development of management personnel in the MHSSE system was also established and upgraded because of the implementation of Erasmus+ project. The MHSSE initiative to create joint international faculties and master's degree programmes in Uzbekistan was supported by the Tempus and Erasmus+ projects, which served as a foundation for the development of new joint curricula on a bilateral basis with European partners. The internationalization of education has led to the emergence of new HEIs and branches of international universities in a number of regions. Their management teams consist of specialists with positive experience of cooperation with European partners under the Tempus and Erasmus+ projects. For example, experts from Samarkand universities noted the rapid career growth, the emergence of new HEIs and their effective governance as a result of the positive

impact of the Tempus and Erasmus+ projects, primarily due to advanced training and experience gained in the course of their implementation. The acquisition of unique laboratory equipment and establishment of educational laboratories which supported strengthening of research activities was important for the modernization of higher education and strengthening the scientific and innovative potential of Uzbek HEIs.

A significant role was played by the interviewed experts and a number of focus group respondents who had experience of participating in the implementation of Tempus and Erasmus+ projects in the process of developing the new Law on Education and the Law on Innovation. Moreover, the National Development Strategy of the Republic of Uzbekistan for 2017-2021 envisaged harmonization of the higher education system of the Republic of Uzbekistan in accordance with the principles of the 1999 Bologna Declaration. Thus, the basis for the implementation of the credit and module system is the Concept for the Development of Higher Education until 2030. In addition, the experts noted that the development and implementation of the credit system in Uzbekistan was carried out in accordance with the European Credit Transfer and Accumulation System (ECTS).

In general, opinion leaders have a unanimous “red line” with regards to the implementation of the Tempus and Erasmus+ projects. This line leads clearly from the impact of projects on the reform and modernization of the higher education system and capacity building within the Tempus programme. It further continues through introducing and disseminating the results of these changes in the higher education system thanks to the Erasmus+ programme. And then it comes to the point where the impact of projects is expected to increase the innovation rates and competitiveness of the national higher education system with the assistance of the future Erasmus+ programme for 2021-2027.

Moreover, the drastic increase in the number of HEIs in Uzbekistan in 2017-2020, including branches of international universities, and the emergence of a large number of non-state, private universities, also happened due to the trained personnel who took part in Tempus and Erasmus+ projects. However, experts also noted a certain cautiousness of European partners with regards to creating joint universities or branches in Uzbekistan, in contrast to partners from South Korea and the Russian Federation. But in general, the European colleagues are interested in establishment of joint master degree programmes and departments.

Furthermore, according to the latest report of the QS International Ranking Agency in Uzbekistan, four HEIs were included on the regional ranking of universities; two of these HEIs are also "internationalisation spots". This in general had a certain impact on the inclusion of Uzbek HEIs into this ranking. In December 2020, a national initiative was launched to create incubation and acceleration

centres for start-ups and innovative enterprises in the HEIs of Uzbekistan. Thus, information and methodological materials of the UNIWORK and MIND projects served as a basis for development of such centres in the Bukhara State University and the Tashkent State University of Economics. Also, some participants noted the fact that these projects significantly strengthened the innovative and scientific capacity of participating HEIs by significantly strengthening linkages with employers and introducing a culture of student start-ups, which in turn led to the multiplier effect; now virtual departments and start-ups are being created in all universities in Uzbekistan and incubators and accelerators.

Interesting conclusions were obtained in the study on the interaction of Tempus and/or Erasmus+ projects with local and national authorities and administrations. The participants in the study answered this question in different ways, but their answers showed one clear tendency: in the case of the HEIs based in the capital, interaction at the level of the city authorities did not happen or was minimal, but in the case of regional HEIs, the situation changed dramatically, and the interaction between the authorities and universities was more intense, including development of joint initiatives to create innovative clusters, technology parks and agropolises. Examples include establishment of Agropolis and Incubation Center in Bukhara region, and an innovative agricultural cluster in Samarkand. Besides, in the Samarkand region, three new HEIs were created on the basis of one HEI with a clear presence of "places of internationalisation and innovation". Their management teams include specialists with vast experience of participation in the Tempus and Erasmus+ projects, and who confirmed the importance of such experience and the impact of projects during the interviews.

A number of experts and focus group participants noted that the impact of national projects in comparison with regional projects is higher, since the number of Uzbek HEIs was increased several times, and, accordingly, the budget allocated to them was also increased, and their project management was more effective. Moreover, the sustainability of national projects lasts longer and has a deeper impact, including at the institutional and individual level.

Project impact at the institutional level:

The experience related to the impact of projects at the institutional level was very interesting. A number of HEIs have the biggest number of finalised and currently implemented Tempus and Erasmus+ projects. The researchers decided to study this phenomenon more deeply. For a better understanding of the research results, the so-called "internationalization spots" (the places of innovation) were identified and marked in a certain way. As a rule, the internationalization spots consist of a tandem: the international department of the HEI + the department which actively participates in developing project proposals and then in project

implementation. We found that it is the active collaboration between the departments of international relations and the departments of the university, as well as the commitment of the departments to international activities that gives good internationalization outcomes. Unfortunately, not all HEIs had such tandems, and therefore, despite the almost 100% geographical and quantitative coverage of Uzbek HEIs by the programmes, there are some leading institutions that stand out. Both "super coordinators" and opinion leaders noted that "the same faces" participated in a number of projects. Besides, MHSSE representatives stated in the interviews that this phenomenon was still positive and had an impact on capacity building, starting with individual impact and then expanding to the institutional and national levels of project impact, influencing development of a particular area of education.

In the course of the interviews, a number of projects were mentioned, some of which we would like to name. Others will be mentioned further in the report according to their topic. For example, the IMEP project has had a tremendous impact on the development of a continuous professional development system for senior staff in Uzbekistan. Moreover, cooperation under this project was started as early as during Tempus QAPD project implementation. Members of the project team at first created a course on Educational Process Management, and then a new Management in Education specialty. Almost all Erasmus+ CBHE projects in 2015-2017 had an impact on the introduction of the credit system, not only in their own HEIs, but also at the national level. Establishment of unique, modern and innovative laboratories due to the impact of the projects was mentioned by the experts from RENES, ECCUM and TechReh projects.

Moreover, during the COVID-19 pandemic many experts in their interviews noted the importance of experience in telecommunications, video conferencing and webinars under Erasmus+ projects. It was this experience that made it possible for Uzbek HEIs, in general, to painlessly switch to online education due to the experts and members of project teams who acted as methodologists during the transition to distance learning.

Most of the study respondents noted the impact of Tempus projects and an even greater impact of Erasmus+ projects on promoting ideas of innovation, including the importance of the role of HEIs in the process of creating regional innovation clusters and the engagement of entrepreneurs and industry as equal partners in the so-called "innovation triangle", where universities, science, business, manufacturing and the local community are active participants in the development and implementation of innovations. Also, experts noted the fact that visits to European universities and exposure to their industrial parks, clusters, business incubators and start-up accelerators, and in some cases placement in these

institutions strengthened the innovative capacity of experts as leading professionals and specialists in their area of expertise.

Half of the interviewed experts and focus group participants noted the significant impact of Tempus and Erasmus+ projects on understanding the role and importance of employers, industry and civil society for quality and efficiency of higher education. One of the experts even mentioned that he first learned about the "second and third mission of universities" thanks to his participation in the Tempus and Erasmus projects. In Uzbekistan, in general, the understanding of the second and third missions of HEIs remains somewhat fragmentary, and these projects provided an opportunity to obtain practical and theoretical experience in this matter. Because of that, there was a number of projects aimed at strengthening the interaction of HEIs and employers, with industry and partly with civil society participation. Regarding the latter, experts noted the National Committee for Tourism Development, the Farmers Association of Uzbekistan and the Youth Union that later participated in a number of joint projects.

Some of the study participants had experience with both Tempus and CBHE Erasmus+ projects and were able to compare the two programmes. As one respondent put it, "Tempus projects were more generous and flexible." However, all participants agreed that the roles and responsibilities of local partners had become significantly more important under Erasmus+ projects. And a third of the participants mentioned that they initiated their projects themselves and then looked for partners to support the project idea. In general, one thought was common to everyone who had been involved in project activities under the framework of Tempus and Erasmus+ programmes for a long time: Tempus trained teams and HEIs for the implementation of international educational projects with a more active role of European partners, and Erasmus+ made it possible to achieve the goals with more active participation of national HEIs. Interestingly, almost all participants noted that their projects anticipated some government reforms and had a real impact on the modernisation of higher education.

Project impact at the individual level:

During the expert in-depth interviews, we asked a number of questions about the impact of the Tempus and Erasmus+ projects and, in general, about internationalization and its role in improving the professional competencies of experts and their career growth. The answers of the respondents differed somewhat from each other with regards to the acquired international experience and in a number of issues related to the career growth. But in general, most of the experts stated during the interviews that their professional success was to a large degree (about 80%) determined by the opportunities and experience that they gained by participating in the Tempus and Erasmus+ projects. They defined success as the

acquisition of flexible skills such as English language proficiency, intercultural communication, project work, teamwork, as well as building their own network of contacts in the scientific and educational areas.

The strongest changes happened in the period 2017-2020, when the international experience of a specialist in a particular field was the most important factor for career growth. Because of this, several experts had undergone serious career changes towards growth and influence in their field of knowledge and education. All interviewed experts and opinion leaders had experience of participating in Tempus or Erasmus+ projects, and some were participating in Erasmus+ projects during the interview period. A remarkably interesting fact was noted by an expert from the Tashkent branch of the Turin Polytechnic University; 25 former employees constituted the backbone of the newly developed Ministry of Innovations of the Republic of Uzbekistan. All of them had experience of participation in the Tempus and Erasmus+ projects, which definitely helped them in their career growth. Moreover, a number of these specialists also work in the MHSSE system and the State Inspectorate for Supervision of the Quality of Education, which supported the introduction of ECTS in Uzbekistan, given their positive experience in international projects and in the branch of a European university. Some experts also spoke about the risk of a "brain drain" not only in terms of the departure of specialists with international experience of participation in the Tempus and Erasmus+ projects, but also in terms of their transfer to other areas. This issue deserves special attention and additional research.

The main impact of participation in mobility under the international credit mobility projects takes place mainly more at the individual level. It makes participants want to obtain a new master's or PhD degree. All focus group participants noted this and only one of them said that his participation in ICM helped him better understand the essence of ECTS and apply it in his HEI. Basically, this correlates with the fact that the interviewed heads of international relations departments and the vice-rectors for international affairs were able to assess the impact of ICM mostly at the university level.

4.2. Challenges

At the national level:

Opinion leaders from ministries and agencies noted that national priorities for CBHE projects should be updated more often, considering the speed of reform and modernization processes in all areas of the national economy of the Republic of Uzbekistan, when national priorities can change as fast as within one year. In this regard, the experts express the hope that national and regional priorities will be agreed more often than once every 3-4 years or the recent and significant reforms

should be taken into account during consultation process on a preliminary short list of selected Erasmus+ CBHE projects.

In general, experts note the absolute absence of corruption both in the former Tempus projects and in the Erasmus+ projects and highly appreciate the fair and transparent project selection process. They also expressed a wish to increase the opportunities for Uzbek HEIs in terms of participation not just in Erasmus + projects, but also in projects such as new EU framework programme “Horizon Europe” from 2021.

Universities of Uzbekistan were able to open treasury accounts for foreign currency which was not possible during the Tempus programme, but became a reality in the course of the implementation of the Erasmus+ programme. Inter alia, risk of penalties for the consortiums within the Erasmus+ programme forced to reconsider the level of participation and involvement of national teams in the implementation of projects. Because of this, Uzbek partners began to lead project work packages more often, and moreover, one university from Uzbekistan became the grantholder of CBHE project, which happened for the first time.

The next difficulty at the national level was force majeure related to two events: 1) change of the national coordinator due to the transfer to a new job or promotion/dismissal; 2) reorganisation of the university; a change in areas covered or other aspects. That caused certain difficulties, which, in principle, were successfully overcome or plans were developed to address them. Another problem was the lack of influence and lobbying of the project team and the consortium on the sectoral ministries and agencies, and because of that in some cases it was difficult to ensure systemic and national impact of the project, or this impact was delayed.

At the institutional level:

Several interviewed participants noted the overall difficulty of writing a project proposal, as well as increased administrative requirements for project reporting and monitoring, including the lack of financial and design flexibility in Erasmus+ projects compared to Tempus.

At the institutional level, the participants noted the following challenge: it was difficult for some members of the consortium to explain the essence of the Erasmus+ CBHE projects, especially for representatives of HEIs that did not have any experience in implementing Tempus or Erasmus+ projects. The respondents also noted the fact that some projects were not sufficiently supported by the HEI administration or, on the contrary, the administration “excessively” interfered with the project, often changing coordinators or not letting competent specialists work on the project.

According to some respondents, not all members of the consortium were equally effective in achieving the project outcomes, which applies both to the national partners and European partners. In this regard, there were situations when several partners did all the work on the project, and the rest were not very active. Thus, in case of imposing fines on a project consortium, it is very important to determine how this fine will be collected and ensure a fair assessment of the contribution of each member of the project consortium to the project.

At the individual level:

In general, the focus group participants did not note any problems at the individual level. Nevertheless, the majority of respondents mentioned organizational and partly financial difficulties in organizing the mobility itself. For instance, they noted problems they faced when applying for a Schengen visa and sometimes for the national visas of EU member states; some embassies were located in the Russian Federation and the costs of obtaining a visa were not covered by either the project or the HEI; most of the participants experienced organizational and financial difficulties when returning to Uzbekistan during the coronavirus pandemic.

4.3. Recommendations

At the national level:

1. Support the efforts of project teams on ensuring systemic impact of project outcomes, taking into account national priorities, as well as taking the Development Strategy of the Republic of Uzbekistan until 2030, and, in particular, the Strategy for Uzbekistan to enter the top 50 countries in the Innovation Index until 2030. Specifically, to support the task of enabling at least 10 HEIs to enter international rankings in terms of the quality of education and scientific research.
2. Experts recommend providing more opportunities for autonomy and independence of HEIs in Uzbekistan, which will support an additional breakthrough in the internationalisation of educational processes;
3. Given that the State Inspectorate for Supervision of the Quality of Education under the Cabinet of Ministers of the Republic of Uzbekistan became an observer in ENQA (European Association for Quality Assurance in Higher Education) it is recommended to harmonize national quality indicators with ESG (European Guidelines and Standards for Quality Assurance).

4. Assess the quality of education under joint master's degree courses and departments with European partners in accordance with the ESG guidelines and standards;
5. Oblige the projects to conduct regular dissemination activities and information events promoting the project results with the involvement of the mass media;
6. Recommend choosing equipment purchase for projects with more focus on laboratories;
7. Create a network (association) of Erasmus+ project coordinators and managers to enable regular exchange of practical and theoretical experience;
8. Study ECTS issues taking into account the "learning outcomes" approach, without allowing a formal approach to the usual "recalculation of classroom hours into educational credits";
9. Recognise the importance of students mobility, including national, regional and international mobility, in the development and implementation of a credit and module system;
10. Gradually include other principles of the Bologna Declaration related to academic freedom, social dimensions and quality of education (ESG) into the strategy for the development of higher education.
11. Provide investment guarantees to European partners at the level of the MHSSE and other state bodies in the event of the creation of joint universities or opening of branches of European universities in Uzbekistan;
12. Widely engage new HEIs in international activities through the information days, trainings and workshops on project management and writing project proposals within the framework of the next Call for project proposals within a new Erasmus+ programme;
13. Analyse and apply the experience of project coordinators and managers, as well as project participants in the preparation and discussion of new regulations and development concepts in the field of higher education.
14. Actively promote project outcomes in professional communities, including through digests for ministries and agencies of the Republic of Uzbekistan;
15. Strengthen interaction between universities and local authorities, taking into account the so-called third mission of universities, which is their social mission to support and develop local communities;
16. Take into account the European experience, where universities act as drivers of regional development, due to the involvement of the university expert community;

17. Conduct expert days on a regular basis with the participation of representatives of local authorities;
18. Replicate “best practices” at the national level. As an example, take into account the positive experience of Bukhara and Samarkand HEIs in attracting additional funding for project activities from local and national authorities.
19. Determine national priorities for CBHE projects before each Erasmus+ programme Call, and update/revise regional priorities every three years;
20. Include, if necessary, line ministries in the project selection process, through participating in consultations on a preliminary short list of CBHE projects;
21. Facilitate the process of writing project proposals by excluding and non-duplicating unnecessary information;
22. Reduce the level of administrative requirements and the sophistication of interim and final reports within Erasmus+ projects;
23. Revise the unit costs for travel, taking into account the national and territorial characteristics of Uzbekistan;
24. Strengthen NEO's role in monitoring projects and supporting project teams on various administrative and financial aspects of project management;

At the institutional level:

1. Widely disseminate the positive experience of efficient participation in Erasmus+ projects with a deeper study of "internationalisation spots" in a number of Uzbek HEIs, taking into account the institutional monitoring by NEO;
2. Due to the increasing complexity of project management and the requirements of the Erasmus programme for financial and administrative reporting, consider "project office" a positive experience, as it is based on the tandems of departments for international relations and employees of departments and universities, with a clear division of responsibilities related to the administration of the project and its content related implementation;
3. Motivate active departments and faculties with experience in implementing Erasmus+ projects to widely disseminate projects outcomes, as well as provide methodological assistance in writing project proposals;
4. Strengthen the requirement for project teams to focus on purchase of laboratory equipment and new innovative technologies;
5. Create an innovation ecosystem in HEIs at the national level and taking into account the "internationalisation spots", which over time also turned into "innovation spots";

6. Harmonize the innovation ecosystem of Uzbek universities with the best European practices, taking into account the implemented and ongoing Erasmus+ projects;
7. Establish the system of placements in European industrial parks for wide groups of academic/administrative staff and students;
8. Organize joint competitions for student and teacher start-up initiatives.
9. The role of employers and professional organisations, including civil society, in the implementation of the second and third missions of universities should be greatly strengthened;
10. Taking into account the transition to a credit and module system, it is recommended to conduct public consultations with the relevant stakeholders in the field of education;
11. Use experience of European projects (for example, the outcomes of the UZHEALTH and NURSLIN projects) for development and approval of the National Qualifications Framework in the field of higher education;
12. Consider the increased role of ICT and digitalization in planning and implementing the goals and objectives of Erasmus+ projects;
13. Provide for the continuity of project coordination and, possibly, create a project office in each HEI to prevent issues related to the replacement of the institutional coordinator and other members of the project team for whatever reason;
14. Strengthen the interaction of the project consortium, in particular structural projects, with the relevant ministries and agencies, with the involvement of NEO;
15. Provide for force majeure situations such as natural disasters and epidemics, with a clear action plan and areas of responsibility of partners in case of the emergency and planned return of students and faculty to their home countries;
16. Work out an agreement on visa expenses and clearly define who bears them in the absence of an embassy or consulate of programme and partner countries in Uzbekistan;
17. Recommend Uzbek HEIs to establish a reserve fund, to cover the costs of the urgent return of mobility participants to Uzbekistan in the event of force majeure situations;
18. Create favourable conditions in the Uzbek HEIs for transparency and intolerance to corruption at all stages of the implementation of mobility projects both within the ICM and CBHE projects;

19. Ensure full recognition of the mobility period abroad in accordance with the rules of the Erasmus+ programme, given the fact that Uzbekistan has also switched to the ECTS.

At the individual level:

1. Maintain and enhance the diversity of the programme and widen the opportunities for individual training and individual professional development under Erasmus+ projects;
2. Continue the activities of the National Erasmus+ Office in Uzbekistan to support project implementation and expand the number of their participants through project monitoring;
3. Provide motivation for specialists who have international experience, including through providing new opportunities for professional development and financial incentives at the expense of the HEI and other public stakeholders;
4. Conduct more events to support exchange of professional experience of project participants;
5. Create a network or association of ICM project participants like Erasmus Mundus Alumni network;
6. Conduct an open and fair selection of students and teaching staff to participate in Erasmus+ projects, including credit mobility projects involving as many participants as possible;
7. Support strengthening of women's participation in Erasmus projects through project monitoring, and when selecting participants in mobility projects, recommend giving priority to females, other things being equal;
8. In case of agreement, include representatives of European partner universities in the team for selection for mobility participants;
9. Conduct orientation mobility trainings for selected participants with elements of multiculturalism and understanding of the basics of internationalisation.

**List of national priorities of Uzbekistan and
respective Erasmus+ CBHE projects` acronyms**

Category 1 – Curriculum Development

- Education (**RUECVET**) Education science,
 - Training for pre-school teachers, Teacher training without subject, Specialisation, Teacher training with subject specialisation
- Social and behavioral science (**TALENT**)
- Biological and related sciences
 - Biology and biochemistry
- Physical sciences
 - Chemistry, Earth science, Physics
- Mathematics and statistics (**ECCUM, ITEM**)
 - Mathematics, Statistics
- Information and Communication Technologies (**INTRAS, CLASS, ELBA**)
 - Computer use, Database and network design and administration, Software and applications development and analysis
- Engineering and engineering trades (**ACADEMICA, FSAMP, RENES, GREB, DSinGIS, MECHAUz, SPACECO**)
 - Chemical engineering and processing, Environmental protection technology, Electricity and energy, Electronics and automation, Mechanics and metal trades, Motor vehicles, ships and aircraft
- Manufacturing and processing
 - Food processing, Materials (wood, paper, plastic, glass), Textiles, clothes, footwear, leather, Mining and extraction
- Architecture and construction (**ERAMCA**)
 - Architecture and town planning, Building and civil engineering
- Agriculture, forestry, fisheries and veterinary (**ECAP, BUZNET, EPCA, TOPAS, NICOPA, AgroDEV, BioEcUz**)
 - Crop and livestock production, Horticulture, Forestry, Fisheries, Veterinary

- Health (**TechReh, MODEHED, SPHERA, IHOD, CHILDCA, HARMONE, FOR21**)
 - Dental studies, Medicine, Nursing and midwifery, Medical diagnostic and treatment technology, Therapy and rehabilitation, Pharmacy, Traditional and complementary medicine and therapy
- Arts - regional priority for Central Asia (**MUSAE**)

Category 2 - Improving management and operation of Higher Education Institutions:

- Governance, strategic planning and management of HEIs (**UNICAC, DECIDE**)
 - Such as human resource and financial management, etc.
- Quality assurance processes and mechanisms (**IMEP, IQAT, PAWER**)
 - Such as the development of mechanisms and benchmarks for quality assurance in different segments of HE (academic contents and services)
- Development of research and innovation capacities (**UZDOC 2.0**)
 - Excluding research activities

Category 3 - Developing the Higher Education sector within society at large:

- Development of school and vocational education at post-secondary non-tertiary education level (**MAGNET**)
 - Such as reforming in-service training for teachers and reforms to the teaching profession
- Knowledge triangle, innovation
 - Such as reinforcing links between education, research and business
- University-enterprise cooperation (**CACTLE, TRIGGER, REILEAP**)
 - Such as support for students' practical placement, entrepreneurship, employability of graduates, etc.
- New technologies in Higher Education (**MIND, NURSLIN, HIEDTEC**)
 - Support to the modernisation of Higher Education systems through the development of open educational resources, connectivity, the acquisition of digital skills and learning methods and mobilisation of stakeholders including teachers, learners, economic and social partners

Reforms and socio-economic modernisation of the Republic of Uzbekistan for 2017-2020

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Introduction

For the last four year (2017-2020) the internationalisation process has been in particular intensive and became a period of sweeping reforms and important decisions aimed at improving quality of higher education and its organisation in accordance with wide; recognised international standards.

The Erasmus+ programme is the largest programme of cooperation not only with European universities but also universities from Central Asia, CIS countries and other regions of the world.

In the framework of the Erasmus+ programme, in addition to financing of joint projects for higher education institutions, support has been provided for the National Teams of Experts in Higher Education (Higher Education Reform Experts-HEREs) in cooperation with the Ministries of education in the partner-countries.

The HEREs activities are focused on support to modernization of higher education according to the national policy and its strategy of higher education development of the ministries of education in partner-countries.

The main goal of the national Higher Education Reform Experts' team is to disseminate information about the developments in the country's higher education system as well as transformations in the European Higher Education Area covering 49 countries of the Bologna Process.

The membership of the National team was updated following the proposal of the Ministry of Higher and Secondary Specialised Education, respectively designated by the EU Delegation to Uzbekistan and approved by Executive Agency.

Initiated by the National team the HEREs` annual publication "Perspectives of HE development" has been published as a scientific and methodological collection since 2011. Officially registered as a peer-reviewed scientific and methodological journal "Perspectives of higher education development" its 8th issue was presented at the annual HEREs` conference on 15 December 2020. The aim of the journal is enhancing the efficiency of the education process in Uzbekistan through analysis and information about progressive methods, achievements, tendencies and challenges in the field of higher education. The MHSSE supports this publication, which was stated in regular foreword for each issue. One of the strengths of EU HE cooperation programmes is prompt and flexible reaction to the latest developments of higher education.

It is also characterized the activities of the National team similar to activities of CBHE and ICM projects. For example, for 2020 a number of seminars on the

most relevant topics for HEIs were organised by the NEO and HEREs with support of the MHSSE and SISQE:

- The main problems faced by the Erasmus+ projects for the pandemic period and recommendations on their solving.
- ECTS
- Online teaching and training.

It is worth to underline that the in overall Tempus and Erasmus+ projects and their participants contributed to capacity building of the Uzbekista HEIs for introduction of credit-modular system thanks to projects activities on development of new programmes of updating the existing curricula. Undoubtedly 25-year of cooperation within Tempus, Erasmus Mundus and Erasmus+ with the European universities facilitated ECTS related task to be included into the Concept of HE development until 2030. The HEREs and the project participants were directly involved in development of this Concept. The seminars of HEREs on ECTS were become even more relevant as soon a decision on switching of 35 HEIs to ECTS from 2020/2021 academic year and later on following the Decree on overall introduction of ECTS adopted on 31 December 2020. The seminars were positively evaluated by participants thanks to practically oriented approach and involvement of the participants of on-going projects aimed on development of new ECTS-based curricula, who shared their experience. The most valuable support of the MHSSE and SISQE was appreciated in presenting the detailed information on initiatives and obtained results for the implementation of tasks of the Concept of HE development until 2030.

1. Reforms and socio-economic modernization of the Republic of Uzbekistan

The reforms and modernization of the Republic of Uzbekistan for the period 2017-2020 by their depth and impact on the socio-economic situation of the country are compatible with all 25 previous years since the declaration of independence in 1991. Reforms have particularly affected a number of aspects of State Construction, Education, Science and Innovation, Agriculture and Health Care.

The scope of the reforms is also highly appreciated by international organizations, including a number of respected experts and the mass media. For example, Uzbekistan became the country of the year according to the British magazine "The Economist". According to the editorial board, the state of affairs in this country became much more democratic in 2019. Positive changes began back

in 2018, when President Shavkat Mirziyoyev initiated reforms that "have accelerated over the last year".⁹

In this regard, the Higher Education Reform Experts (HERE) together with National Erasmus+ Office in Uzbekistan (NEO) conducted a brief analysis of the ongoing reforms and presented them in the form of analytical notes as part of the National Impact Study.

1.1. Description of the reforms implemented in Uzbekistan in 2017-2020

Large-scale reforms implemented during the years of independence in Uzbekistan laid a solid foundation for national statehood and sovereignty, safety and legal order ensuring, inviolability of state borders, rule of law, human rights and freedoms, interethnic harmony and religious tolerance in society, created decent living conditions for the population and simplified realization of the creative potential of citizens.

Rejection of the administrative-command management of economy, the phased implementation of market reforms and balanced monetary policy contributed to macroeconomic stability, high rates of economic growth, keeping inflation within the forecasted limits, creating ample opportunities and favorable conditions for the development of small businesses, private entrepreneurship as well as farmerhood.

At the same time, a comprehensive analysis of the country's past stage of development, the changing world economic situation in the context of globalization and increasing competition require the development and implementation of radically new ideas and principles of further sustainable and outrun development of the country.

In 2017, "Action Strategy on Five Priority Lines of Development of the Republic of Uzbekistan in 2017-2021" was adopted, which contributed to the launch of large-scale reforms to reach a new stage of development for almost all sectors and fields of the national economy.

Improvement of the system of State and Social Construction, ensuring the rule of law and further reform of the judiciary establishment, economic development and liberalization, development of the social sector, ensuring security, interethnic harmony and religious tolerance, as well as a reasonable, mutually beneficial and practical foreign policy have become the main priorities of the strategic development of the country. At the same time, the Action Strategy was adopted after a broad discussion among the population and entrepreneurs, scientists and practitioners.

⁹ [<https://www.economist.com/leaders/2019/12/21/which-nation-improved-the-most-in-2019>].

Elections and the new Government of Uzbekistan

On December 4, 2016, early presidential elections were held in Uzbekistan. The elections were deemed valid with more than 87% of voters participating. As a result, the candidate from Liberal Democratic Party of Uzbekistan, Shavkat Mirziyoyev, was elected President of Uzbekistan with 88.61% of the vote.

The election of the new President of Uzbekistan has marked a new stage in the domestic and foreign policy of the state. From the first days of his rule, Shavkat Mirziyoyev headed for intensive dialogue with the people, expanding the participation of citizens in state and public administration, as well as public authorities in solving social and domestic problems of the inhabitants of Uzbekistan.

The new version of the Law of the Republic of Uzbekistan "On Appeals of Physical Persons and Legal Entities" was adopted. At the same time, special attention was paid to improving the forms and types of appeals. In fact, a course was taken to create an information system that would allow, using information and communication technologies, to receive, accumulate, classify and systematize incoming appeals, as well as to monitor and control their complete, timely and qualitative consideration.

Virtual Reception of the President were arranged, as well as each region obtained People's Receptions, where local authorities contribute to the solution of problems and appeals of citizens of Uzbekistan; the procedure for discussion of adopted legal documents was introduced, Information Portals for Public Opinion Research were introduced, Receptions of the Prime Minister were established in all regions to consider appeals of businessmen. In addition, an entirely new institution, the Presidential Commissioner for the Protection of the Rights and Legitimate Interests of Entrepreneurs, or Business Ombudsman, began to function.

Particular attention was paid to the creation of an effective system for eliminating the causes and conditions of corruption in the society, introduction of integrity standards ("Vaccine of Integrity") into the civil service. Work is underway to form an intolerant attitude in the society towards all forms of corruption through development and implementation of comprehensive programs aimed at raising legal awareness and legal culture of citizens. In order to increase the effectiveness of measures taken in these fields, the Anti-Corruption Agency of the Republic of Uzbekistan was established. The staff of this new institution was recruited on a competitive basis, through an open and transparent selection, taking into account the competence of candidates.

Development Strategy 2017-2021

By the Decree of the President of the Republic of Uzbekistan dated February 7, 2017 "Action Strategy on Five Priority Lines of Development of the Republic of Uzbekistan in 2017-2021" was adopted. This document defines the main priorities and guidelines for further reforming and development of the country in the medium term. The Action Strategy aims to consolidate the efforts of government agencies, non-governmental organizations and civil society institutions to achieve the goals of sustainable development, and identifies five priority lines of development of Uzbekistan:

1. Improvement of State and Society Construction, aimed at further strengthening the role of Parliament and political parties in deepening democratic reforms and modernization of the country, reformation of the Public Administration system, development of organizational and legal framework of civil service, improvement of "E-Government" system, increase in the quality and efficiency of public services, practical implementation of public control mechanisms, strengthening the role of civil society institutions and the mass media;

2. Ensuring the rule of law and further reform of the judiciary establishment aimed at strengthening the true independence of the judiciary and guarantees of reliable protection of rights and freedoms of the citizens, improvement of administrative, criminal, civil and economic legislation, increase in the effectiveness of the system of crime counteracting and violations preventing, the full implementation of the adversarial principle in the judicial process, improvement of the system of legal aid and legal services;

3. Development and liberalization of the economy, aimed at further strengthening macroeconomic stability and maintaining high rates of economic growth, increasing its competitiveness, modernization and intensive development of agriculture, continuing institutional and structural reforms to reduce the state's presence in the economy, further strengthening the protection of rights and the priority role of private property, stimulating the development of small businesses and private entrepreneurship, comprehensive and balanced socio-economic development of regions, districts and cities, active attraction of foreign investment into economic sectors and regions of the country by improving the investment climate;

4. Development of the social sector, aimed at consistently increase in employment and real income of the population, improvement of the system of social protection and health care of citizens, increase in social and political activity of women, implementation of targeted programs for the construction of affordable housing, development and modernization of transportation, engineering,

communication and social infrastructure, development of education, culture, science, literature, art and sports, improvement of state youth policy;

5. Ensuring security, interethnic harmony and religious tolerance, implementation of balanced, mutually beneficial and constructive foreign policy aimed at strengthening the independence and sovereignty of the state, creation of a belt of security, stability and neighborliness around Uzbekistan, strengthening the international image of the country.

Each of these directions contains specific sections on further deepening reforms and transformations in the country. The implementation of the Action Strategy is envisaged in five stages. Each stage approves a separate annual State Program for its implementation in accordance with the declared year's title in Uzbekistan. Thus, in 2017 the State Program for the implementation of Action Strategy in the "Year of Dialogue with the People and Public Interests" was adopted, in 2018 it was the State Program in the "Year of Support for Active Entrepreneurship, Innovative Ideas and Technologies", in 2019: the State Program in the "Year of Active Investment and Social Development", in 2020: the "Year of Development of Science, Education and Digital Economy". Control over the implementation of these programs is entrusted to the Government and the Parliament of the country.

Reformation and modernization of the various sectors of life of citizens and the functioning of state bodies of the Republic of Uzbekistan

In the period 2017-2020, the essence of the main reforms implemented in Uzbekistan was as follows:

- Banking Sector and Money Circulation Reform (2017-2018);
- Unification of exchange rates, liberalization of the foreign exchange market and introduction of conversion on current transactions (summer-autumn 2017);
- Elimination of a number of administrative barriers to cross-border movement of goods and population (primarily with the neighboring countries) and decrease in customs duties (2017-2018);
- Reduction of a number of administrative costs of doing business;
- Implementation of the Concept of administrative reforms (2017-2020);
- Radical Tax Reform (2019);
- Essential improvement of the Human Resources Policy (2019);

- Implementation of the concept of Higher Education System Development in the Republic of Uzbekistan until 2030;
- Complete rejection of forced labor, etc.

The commercialization of the banking sector in Uzbekistan has occurred in recent years. The Central Bank has significantly restructured its activities in terms of control and regulation of commercial banks, regulation of money circulation and foreign exchange market.

In recent years, the Government of Uzbekistan did their best to improve the business environment and reduce transaction costs. It was primarily connected to the reduction of tax, customs and administrative burden, with simplification of procedures of export-import operations and obtaining different kinds of permissions, with improvement of monetary circulation system and banking sector operation.

On January 1, 2019, Uzbekistan launched the Tax Reform that managed to solve many problems (partially or completely). The most important achievements can be considered: a radical reduction of tax on labor (by 1.5-2 times); a significant reduction in the tax burden on enterprises of the general taxation regime (the most important points: reduction of VAT rate from 20 to 15%, elimination of deductions to the State Trust Funds from revenues – 3.2%); a significant reduction of the impact of turnover taxes; task in hand was set to eliminate the huge number of tax benefits and exceptions, leveling tax conditions for all economic entities. At the same time, relatively high costs of tax administration and an overall high level of redistribution of income through the budget and quasi-budgetary funds remain.

For the accelerated innovative development of all sectors of the economy and social sector, there was an urgent need for a single body that could provide strategic forecasting, support and implementation of innovative ideas, developments and technologies, integrating science, education and production. All the above led to the formation of another new institution – the Ministry of Innovative Development of the Republic of Uzbekistan.

The Government of the country also focused on Preschool Education System. Since over the past 20 years, the number of Preschool State Educational Institutions decreased by more than 45%, and the coverage of children by Preschool Institutions in 2016 was about 30% only. The existing material and technical base of Preschool Educational Institutions did not meet modern requirements. The formation of the Ministry of Preschool Education of the Republic of Uzbekistan in 2017 made it possible to begin the practical implementation of a unified state policy in the field of preschool education, creating conditions for the comprehensive intellectual, moral, aesthetic and physical development of preschool aged children.

The role and position of international cooperation

In the field of foreign policy, the new Government of Uzbekistan has held a large number of summit meetings to establish close neighborliness with the countries of Central Asia and the CIS as a whole, that allowed to solve a number of important issues relating to water consumption, borders, the renewal and expansion of transport connection. In addition, the President of Uzbekistan made visits to the United States, France, Germany, Russia, China, South Korea, Turkey and other countries to further develop mutually beneficial cooperation and implement joint projects in social, economic and cultural sectors. Partnership with the UN, OSCE, SCO, OIC and other acknowledged international organizations has reached a qualitatively new stage; also in 2020 Uzbekistan obtained an observer status in the Eurasian Economic Union.

Our Government's prioritized foreign policy, that identified the creation of "Zone of stability, sustainable development and neighborliness" in Central Asia, including Afghanistan, has played a significant role in creation of new spirit of mutual understanding in the Central Asian region.

The adoption of the Tashkent Declaration 2018 has become a decisive contribution of Uzbekistan to the activation of the intra-Afghan peace process. This document fixed the clear consensus at the regional and global levels on the basic principles of establishing long-term peace and stability in Afghanistan.

Plans, strategies and development trends until 2030

According to the Resolution of the UN General Assembly, adopted at the Summit on Sustainable Development in September 2015, Uzbekistan approved the National Sustainable Development Purpose and Objectives for the period up to 2030.

Over the past three years, fundamental research and practical study of problems at local level have been conducted. As a result, concepts for the development of key sectors and directions of public administration were adopted. In particular, 11 normative legal acts, establishing the main lines of development of the sector until 2030, were adopted. Namely, there were adopted the documents as follows:

1. The Concept of Development of the Public Education System of the Republic of Uzbekistan until 2030;
2. The Concept of Development of Preschool Education System of the Republic of Uzbekistan until 2030;
3. Strategy for the Transition of the Republic of Uzbekistan to the Green Economy for the period 2019-2030;

4. The Concept of Development of Higher Education System of the Republic of Uzbekistan until 2030;
5. The Strategy of Development of Agriculture of the Republic of Uzbekistan for 2020-2030;
6. The Concept of Environmental Protection of the Republic of Uzbekistan until 2030;
7. The Concept of Water Management of the Republic of Uzbekistan for 2020-2030;
8. The Strategy "Digital Uzbekistan 2030";
9. The Concept of Development of the Forestry Management of the Republic of Uzbekistan until 2030;
10. The Concept of Development of Science until 2030;
11. Strategies of Innovative Development of Agricultural Education System until 2030.

At the same time, the draft Concept of socio-economic development of the Republic of Uzbekistan until 2030 is being discussed by state ministries and departments, scientists and the public. The concept defines and substantiates goals, priorities and tasks of medium-term and long-term socio-economic development of the Republic of Uzbekistan, serving as guidelines for economic policy. At the same time, the main goal of the concept is the formation of an export-oriented market economy based on knowledge, providing a high level and high quality of life for each citizen of the republic with inclusive and sustainable economic growth.

Conclusion

The reforms implemented in Uzbekistan between 2017 and 2020 have made the country more open and democratic, raising some aspects of economic, political, social, cultural and foreign policy to a new level of development. Efforts and measures taken by the Government of Uzbekistan during the COVID-19 pandemic were especially in time. As a result, the number of those who recovered is 96.6% of the total number of those infected (more than 75,000 people as of December 2020) with coronavirus, and the number of fatal outcomes did not exceed 650 people.

Over the past three years a number of reforms have been implemented to improve the efficiency of public administration, form a sustainable market economy and expand entrepreneurship, improve the social sector, in particular the health care, education and science.

Within the framework of the Concept of administrative reforms in the fields with not clearly organized public administration, 12 new state bodies were established, activities of 20 ministries and agencies were significantly transformed.

Over the past three years more than 30 concepts and strategies for the accelerated development of priority directions of the socio-economic sector in the medium and long term have been adopted.

For the next five years, important tasks were set to ensure high economic growth, improve fiscal policy, develop industrial sector, power industry, transportation, agriculture, housing and utilities.

Sources

1. Decree of the President of the Republic of Uzbekistan # UP-4947 "On the Action Strategy for the Further Development of the Republic of Uzbekistan" dated February 7, 2017;

2. Decree of the President of the Republic of Uzbekistan # UP-5975 "On Measures to Radically Update State Policy in the Field of Economic Development and Poverty Reduction" dated March 26, 2020.;

3. Decree of the Cabinet of Ministers of the Republic of Uzbekistan # 841 "On Measures to Implement the National Purpose and Objectives for Sustainable Development until 2030" dated October 20, 2018;

4. Report of the President of Uzbekistan Shavkat Mirziyoyev "Critical analysis, strict discipline and personal responsibility should become a daily norm in the activity of every leader" – Tashkent: "Uzbekistan" Publishing House, 2017, page 48.

5. <https://www.president.uz/>

6. <https://www.lex.uz/>

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8. <https://www.regulation.gov.uz/>

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1.2. Structural Reforms in Public Administration and the Economy

The Action Strategy on the five priority lines of development of the Republic of Uzbekistan in 2017-2021, adopted in early 2017, triggered large-scale reforms in all sectors of State Construction and Public Administration. Uzbekistan entered a new stage of development, radical renewal and modernization, and these days a new image of the country is in progress.

The final objective of all reforms and transformations is to build a democratic state as well as an equitable society with priority principle: "Human oriented values

are above all" which closely resonates with the main principle of the Sustainable Development Objectives "Leave no one behind".

Transformations in the Public Administration system are supposed to help ensure the full implementation of all planned reforms. At the same time, the basic philosophy of reforms in this field is reduced to the principle "It is not the people who must serve the state bodies, but the state bodies must serve the people". To embody this principle, in September 2017 for the first time the most important document was approved: "The Concept of Administrative Reform in the Republic of Uzbekistan".

Improvement in the quality of life of the people and achievement of sustainable rates of economic growth were the fundamental conditions for structural transformations in the economic sector. Measures are being taken to liberalize the economy, introduce market mechanisms, reduce the role of the state and expand the participation of the private sector in the economy, and develop transparent mechanisms of economic management.

Uzbekistan has made significant progress in liberalization of the currency market, improvement in monetary, fiscal and foreign economic activities, as well as creation of favorable investment climate and business environment.

Reforms in the Public Administration system.

The Administrative Reform of the Republic of Uzbekistan gained traction with the publication of Presidential Decree # UP-4947 dated February 7, 2017 "On the Action Strategy for the Further Development of the Republic of Uzbekistan".

In the context of the main directions described by the "Five Actions Strategy" the Decree of the President of the Republic of Uzbekistan dated February 21, 2017 # UP-4966 "On Measures to Radically Improve the Structure and Increase the Efficiency of the Judicial system of the Republic of Uzbekistan" was issued.

This Decree established the Supreme Judicial Council of the Republic of Uzbekistan to assist in ensuring compliance with the constitutional principle of independence of the Judiciary in the Republic of Uzbekistan. Also, the concept and model structure of administrative courts – specialized courts of regional, district and city levels, whose tasks would include the consideration of administrative disputes arising from public relations, as well as cases of administrative offenses, were introduced. Another important change was the transformation from commercial into economic courts. Thus, territorial judicial bodies obtained a clear specialization: economic, administrative, civil, military, and criminal.

The changes set forth in the Presidential Decree dated February 21, 2017 were reflected in the amendments to the Constitution of the Republic of Uzbekistan

dated May 31, 2017. The law amended Articles 80, 81, 83, 93, 93, 107, 110, 111, 112 of the Constitution of the Republic of Uzbekistan to reform the country's Judicial system. In accordance with these amendments, the Higher Economic Court and the Supreme Court of the Republic of Uzbekistan were merged into a single supreme judicial authority in the field of civil, criminal, administrative and economic proceedings - the Supreme Court of the Republic of Uzbekistan. As part of these amendments, economic and administrative courts were also established.

In addition, Article 93 of the Constitution of the Republic of Uzbekistan has been amended to establish a new procedure for the election of judges of the Constitutional Court. Members of the Constitutional Court are elected by the Senate of the Oliy Majlis (Parliament of Uzbekistan) from among those recommended by the Supreme Judicial Council, including one representative from the Republic of Karakalpakstan. The powers of the Constitutional Court have also been enlarged [O.Z. Mukhamejanov, I.T. Tulteev – Administrative Reform in the Republic of Uzbekistan: evolution, current status and development prospects // Studia Politologiczne, 2018, vol. 48, – page 141].

In September 2017, Presidential Decree # UP-5185 stated a detailed action plan for Administrative Reform in Uzbekistan.

The concept included a list of specific tasks aimed at solving the problems identified in the text of the Decree.

In terms of improving the institutional, organizational and legal foundations of the activities of public authorities, the following key destinations have been identified:

- Introduction of clear criteria and procedures for the creation and abolition of executive authorities, including territorial subdivisions, in order to prevent an unjustified increase in number of the state employees;

- Optimization of the Executive Authority structure in order to eliminate imbalance between republican and territorial executive authorities and rational distribution of resources between them.;

- Increase in the independence and responsibility of the Executive Authority and their head officers for the implementation of Public Policy;

- Further implementation of the "E-Government" system and modern ICTs into the activities of Executive Authority;

- Improvement of public services system (implementation of the "Single-Window" system, development of administrative regulations);

- Development of the system of administrative justice by improving the procedure for appealing the decisions and actions of Executive Authority.

One of the most important points of the Concept of Administrative Reform was the requirement to develop a set of legal acts regulating the civil service. It is difficult to overestimate the importance of this point, since until 2017 in the Republic of Uzbekistan there was no separate law regulating the civil service. The introduction of this task into the Concept enabled the launch of gradual work to create a consistent system for the selection of personnel for the civil service, to ensure transparency in its activities, to increase the labor productivity of civil servants along with the expansion of their social guarantees and an increase in the prestige of the civil service.

At the same time, the process of reforming the civil service system is still incomplete. A draft law "On Civil Service" was submitted for public discussion back in 2017, but yet did not attain its final form. This delay is partially compensated by the multitude of bylaws designed to help solve the problems of training and selecting civil service personnel, but without a systemic law, the process of reforming the civil service system cannot be considered complete.

Among the indicators that characterize the political and legal development of Uzbekistan, a special place belongs to "The Worldwide Governance Indicators", calculating by the World Bank and including indicators of accountability and responsibility of government, political stability, public administration efficiency, quality of public administration, rule of law, as well as control of corruption.

Analyzing the dynamics of the WGI indicators, we can note that the greatest success was achieved by the Republic of Uzbekistan in the field of maintaining the stability of the political system and the efficiency of public administration. This indicator showed a fairly rapid growth at the turn of 2013-2016. Such dynamics can be explained by the acceleration of Administrative Reform, as well as the active introduction of ICT into the activities of Public Authorities.

Economic reforms

Since the end of 2016, the country began to move toward economic liberalization, building a market economy, ensuring its openness to foreign investors.

By the Decree of the President of the Republic of Uzbekistan # UP-5177 "On the Top-Priority Measures to Liberalize the Foreign Exchange Policy" dated September 2, 2017, it was established that only market mechanisms should be used for fixing the exchange rate of the national currency against foreign currencies.

A key factor in ensuring the effectiveness of economic reforms aimed at improving living standards and creating conditions for sustainable economic growth is the implementation of measures to further reduce the inflation rate.

International experience indicates that in a market economy one of the effective ways of conducting monetary policy is the regime of inflation targeting, in which through the active role of the Central Bank in the monetary market, as well as regular analysis of economic development and broad coverage of Public Policy plans the achievement of the established quantitative objective for inflation is delivered.

On January 1, 2020 the Central Bank of the Republic of Uzbekistan was entrusted to ensure phased transition of the monetary policy mechanisms to the inflation targeting regime, with the inflation rate reduced to 10% in 2021 and the permanent inflation target set at 5% in 2023.

Establishing of the effective budget system is an integral part of the development strategy of market economy in Uzbekistan.

The effectiveness of the economic strategy of the country depends primarily on forming up the fiscal policy that helps maintain financial balance in the country, create incentives for further socio-economic growth, development of entrepreneurship.

On January 1, 2020 a new version of the Tax Code was introduced in Uzbekistan. This document consolidated the simplification of the current tax legislation. Many changes and additions were made to the Tax Code, in particular:

- Social Tax was introduced instead of Single Social Payment;
- Also, Single Tax Payment was changed to Turnover Tax, and Flat Tax – to Personal Income Tax. Payers of the new taxes are eligible for the benefits that they enjoyed under the previous taxes;
- Sections on State Fees and Fees for the right to sell certain types of goods were removed from the Tax Code. They will be regulated by a separate law;
- Special tax regimes for markets and agricultural producers were abolished;
- Individual entrepreneurs obtained the right to choose whether to pay Income Tax on the basis of a declaration or a fixed amount of Income Tax.

The changes also affected the Budgetary Policy sector in Uzbekistan. Thus, starting from 2020, the State Budget is adopted in the form of a Law and a system of parliamentary appropriations is introduced. Since then the budget is approved in the context of ministries, thereby increasing their authority and responsibility.

In addition, a mechanism was introduced to increase responsibility in the formation and performance of the local budget, as well as the autonomy of local Councils and public authorities.

A favorable investment climate is a prerequisite for stable high economic development, attracting investment to the regions and industries and activation of entrepreneurship.

Potential investors usually monitor the quality of the investment climate in the country by studying the data of various analytical, research companies and agencies. The World Bank's Doing Business rating is widely known among them.

Uzbekistan ranked 69th in the World Bank's Doing Business 2020 rating among 190 countries, gaining 69.9 points out of 100 at the end of 2019. Thus, compared to the previous rating, the country has risen from the 76th place by 7 positions.

Uzbekistan pays special attention to making a positive image of the country. In June 2020 the Decree of the President of the Republic of Uzbekistan # UP-6003 dated June 2, 2020 "On Improvement of the Position of the Republic of Uzbekistan in International Ratings and Indexes, as well as Introduction of a New Mechanism for Systematic Work with Them in State Bodies and Organizations" came into force. According to this Decree, specialized working groups were created under the Ministry of Finance and the Ministry of Justice of the Republic of Uzbekistan to promote the country's position in international rankings – 14 socio-economic and 5 politico-legal working groups in total.

It should be noted that Uzbekistan has positive changes in the international indexes. One of the most indicative positive trends is the Human Development Index (HDI). The growth of this index indicates a gradual improvement in the quality of life of the citizens of the country, in particular, an increase in life expectancy, level of education and general well-being of citizens.

Conclusion

Taking into account the above changes in the system of state and public administration of the Republic of Uzbekistan, it is necessary to emphasize the role of the President Shavkat Mirziyoyev as the main reformer and initiator of innovations.

As noted by foreign experts, Mirziyoyev's "courageous policy" based on such principles as: "Human oriented values are above all" and "It is not the people who must serve the state bodies, but the state bodies must serve the people" influenced the regional policy of the Central Asian countries and increased confidence in Uzbekistan not only among neighboring countries, but also among the international community.

In general, according to researchers, the catalyst for change in the system of public administration of the Republic of Uzbekistan is the development and adoption of the "Five Actions Strategy" that broadly covers the most important

problems within the country, and provides solutions on the legislative and rational government base.

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1.3. Reforms in Higher Education

In recent years, Uzbekistan has been active in the implementation of strategic objectives for reforming the system of Continuous Education, particularly Higher Education.

Large-scale work is being performed in the country for modernization of Higher Education and Secondary Specialized Education System, to develop science, and to introduce modern forms and technologies of education. Structural and substantive reforms are being performed, affecting all levels and components of the education system that were aimed at ensuring its compliance with the long-term objectives and interests of the country and the requirements of the present.

In particular, an appropriate legal framework for reforming this field was established, determining as a priority the growth of investments and injections to the human capital, training of an educated and intellectually advanced generation, which is the most important value and decisive force in achieving the objectives of

democratic development, modernization and renewal, stable and sustainable economic growth.

In order to radically improve the Higher Education System, radically revise the content of training in accordance with the primary objectives of socio-economic development of the country, to provide the necessary conditions for training specialists with Higher Education at the level of international standards, the Decree of the President of the Republic of Uzbekistan # PP-2909 dated April 20, 2017, "On Measures for Further Development of Higher Education System" was adopted. This resolution approved the Program of complex development of Higher Education System for the period of 2017-2021, including many important applications, as well as targeted programs for development of Higher Educational Institutions for the period of 2017-2021. Based on the aforementioned the roadmaps for Higher Educational Institutions on the implementation of this Decree and action programs were developed.

In order to establish effective state control over the quality of education and training, the State Inspectorate for Quality Supervision of Education was established under the Cabinet of Ministers.

On July 27, 2017, the Presidential Decree # PP-3151 "On Measures to Further Expand the Participation of Industries and Sectors of the Economy in Improvement of the Quality of Training of Specialists with Higher Education" was adopted.

Following that, on June 5, 2018, the Presidential Decree # PP-3775 "On Additional Measures to Improve the Quality of Education in Higher Educational Institutions and Ensure Their Active Participation in the Ongoing Large-Scale Reforms in the Country" was signed.

In accordance with the Presidential Decree # PF-5812 dated September 6, 2019, "On Additional Measures to Further Improve the Secondary Specialized Education System" the fundamental changes were introduced to the Secondary Specialized Education System of the Republic of Uzbekistan.

The Presidential Decree # UP-5847 dated October 8, 2019 "On Approval of the Concept of Higher Education System Development of the Republic of Uzbekistan until 2030" plays an important role in the system of ongoing reforms.

Problems of higher education system described in the Concept

The system of higher education still faces a number of urgent issues and shortfalls with regards to producing highly qualified personnel, in particular:

a) enrollment in higher education and assurance of education quality:

- coverage by higher education is still low;

- the content of existing qualification requirements, curricula and programs is not aimed at the development of practical skills of graduates, and the proportion of non-specific subjects in the curriculum is still high;
- cooperation between higher educational institutions and customers in the field of personnel training is inefficient, and employers are not involved sufficiently in the development of the content of programs for higher education institutions;
- students do not develop skills such as critical thinking, ability for independent search for information and analytical thinking;
- hands-on training at enterprises is poorly organized, the qualifications of specialists trained does not meet modern labor market requirements;
- due to the low level of teaching staff's proficiency in foreign languages and information and communication technologies, their professional skills do not comply with the modern requirements;
- there is a shortage of teaching and learning materials, and a significant part of what is available does not meet modern requirements; activities on improving the quality of teaching and learning materials and using foreign literature as complementary or alternative resources are poorly organized;
- the mechanisms for conducting student contests in higher educational institutions are not transparent, and there are no procedures for systemic work with contest winners;
- there are no mechanisms for selecting students for higher educational institutions from among the talented youth;
- the system of teacher professional development is ineffectively organized, in particular, highly qualified professors and teachers are not involved in conducting training in professional development institutions, and when the trainees are selected for training, their existing potential is not taken into account;
- it is necessary to further develop activities aimed at improving the content related to ethics and morale, patriotic education of youth based on respect for national values, humanism and high principles, and ensure resilience of young people to the alien ideas and ideologies in higher education;

b) research and innovation:

- the research activities of higher educational institutions do not take into account the plans of social and economic development of the regions; there is no analysis-based forecasting of innovative development;
- there is no efficient practice of introduction of the results of innovation and research, commercialization of scientific developments and involvement of talented youth in research and development; the integration of education, science and industry is weak;
- the research capacity of higher educational institutions is only 36.4 percent;
- the average age of faculty members with a degree is 49 years (Doctors of Science are 56 years old, and PhDs and associates are 43 years old on average) and it remains high, with the share of retired doctors of science amounting to 45 percent;
- research studies are not focused on the actual issues in the social sphere and sectors of the economy;
- in recent years, the citation rates of articles published in authoritative international scientific journals have been going down;
- there are no effective mechanisms in place to incentivise professors, lecturers, researchers and young scientists involved in research activities;

c) strengthening the infrastructure of higher educational institutions:

- the existing dormitories, libraries, workshops, laboratories, sports and recreational facilities and social facilities do not cover the demand, and many of them do not meet the current technical requirements;
- the higher educational institutions do not have a sufficient number of modern educational and research laboratories; the proportion of educational laboratory equipment that meets international standards is only 10 percent; at the same time, the teaching process is not adequately supported with laboratory supplies (reagents, chemical glassware, components, biological materials and other supplies);

- the bulk of financial resources of higher educational institutions is spent on wages; the funds allocated on updating educational and research laboratories and maintaining buildings and facilities are inadequate;

d) increasing the attractiveness and competitiveness of the national higher education internationally:

- national higher educational institutions are not included in the first 1,000 positions of the ranking of internationally recognized higher educational institutions, and their official websites are not included in first 1,000 positions in the Webometrics international ranking;
- educational programs and student knowledge assessment system are not in line with the international standards;
- existing student residences and social infrastructure do not meet the needs of foreign students;
- the marketing activities, including PR projects (such as Days of Uzbek higher educational institutions, presentations etc.) are not of the adequate quality, and there is no interactive virtual platform in this area;

Strategic Goals and Priority Areas for the Development of Higher Education System

The strategic objectives of the development of the higher education system are as follows:

- improving the quality of training of highly qualified personnel; development of human capital based on labour market requirements aimed at modernization and stable social and economic development of the country;
- creating the necessary preconditions to increase the level of enrolment in higher education; training of highly qualified personnel with the creative and analytical thinking skills, who can independently make decisions in order to fully utilise their intellectual capacity and develop further as a personality, based on the international standards;
- development of a healthy competitive environment; increasing attractiveness and ensuring the competitiveness of the sector internationally.

The development of the higher education system should be based on the following priority areas, taking into account the concrete long-term objectives:

- expanding the higher education coverage and improving the quality of training of specialists with higher education;

- introducing digital technologies and modern methods into the teaching process;
- improving the effectiveness of research in higher educational institutions, ensuring broader involvement of young people in research and developing innovative research infrastructure;
- increasing the effectiveness of activities aimed at developing ethics and morale;
- Actively engaging employers into the process of training highly qualified specialists;
- ensuring financial independence and sustainability of higher educational institutions and strengthening their infrastructure;
- systemic development of higher educational institutions and improvement of their governance;
- combating corruption and introducing efficient mechanisms to ensure transparency;
- increasing investment attractiveness of the higher education system and ensuring its recognition and competitiveness at the international level.

Results for 2020 on the fulfilment of these objectives

In the academic years 2020-2021 the coverage of country's population with Higher Education has significantly increased and reached more than 25% of young people. The basis of this result is the creation of new Higher Educational Institutions, the opening of branches of leading universities in the provinces, the establishment of branches of leading foreign universities in our country. To date, the number of universities and institutes in the country has reached 129. 96 of them are State Higher Education Institutions, 9 are private, and 24 are foreign universities and their branches. Also, the training of personnel by correspondence and evening courses in Higher Educational Institutions is developing in order to provide on-the-job training for students.

The State Inspectorate for Quality Supervision of Education under the Cabinet of Ministers of the Republic of Uzbekistan conducts systematic monitoring to improve the quality of training of specialists in universities; it is reflected in the national rating of universities that covers all the main parameters of the activities of universities to train highly qualified specialists. Since 2017 the results of the rating of universities of the country are announced, which contributed to the creation of competition between universities. And there is also a Department for Supervising

the Quality of Education in all Higher Education Institutions that are directly connected to the State Inspectorate.

The roadmaps were developed in all universities for introduction of digital technologies and modern methods in the educational process. To eradicate corruption in Higher Education, the "E-University" system will be gradually introduced, minimizing the human factor in allocation of grades and letting shift paper record books and gradebooks. At the moment, universities are equipped with a database of students, professors and teachers, the system of evaluation of knowledge and other types of work in general is implemented. The "E-University" system is able to provide the transfer of the management system, educational process, libraries and documents circulation into electronic format, to introduce the electronic system of monitoring the effectiveness of the educational process participants.

Ministry of Innovative Development coordinates research and innovation activities, whilst Ministry of Higher and Secondary Specialized Education and the Academy of Sciences of Uzbekistan, using separate roadmaps, conduct their activities for improvement of the effectiveness of research activity in Higher Educational Institutions, the broad involvement of young people in scientific work, the formation of an innovative infrastructure of science. The addition of allocated quotas for doctoral studies, the creation of a system of targeted doctoral studies, the reduction of bureaucratic barriers to thesis defense, the allocation of grants for fundamental, applied and innovative projects for youth, the creation of appropriate conditions for research, encouragement for prescheduled thesis defense and other factors have intensified the involvement of youth in scientific activity. Since 2019, a presidential scholarship for gifted doctoral students has been established. The concept of "University 3.0" that provides for a close connection of education, science, innovation and commercialization of research results in Higher Educational Institutions, is gradually being implemented. To ensure the gradual inclusion of scientific journals of Higher Educational Institutions in Scopus, ScienceDirect and other international scientific and technical databases, a separate platform was created that includes 43 scientific journals of leading universities and research institutes of the country. A system of material incentives was introduced at the expense of extra-budgetary funds for scientists, professors-teachers and young scientific applicants with a high Hirsch index (h-index) indicating the recognition of the results of scientific activity by publishing articles in prestigious scientific journals included in the international database of scientific and technical information. Also, starting from 2020 budgetary funds are allocated to encourage teachers of universities with scientific degree on the basis of assessment of the

results of their scientific activity on certain criteria (up to 60% of the salary of a Doctor of Sciences, up to 30% of the salary of Candidate of Sciences and PhD).

To actively involve customers in the process of training highly qualified specialists in the preparation of educational and regulatory documents, qualification requirements, curricula, coordination with potential employers is required. Also, specialists from customer enterprises are involved in the educational process and scientific activities. An important role in this direction is played by the organization of classes in enterprises and institutions by the areas of activities. Types of practices of students, such as introductory, industrial, pedagogical, research, etc., have expanded.

The important moments for modernization of Higher Education are provision of financial independence and stability of Higher Educational Institutions and strengthening of material and technical support. According to the Decree of the Cabinet of Ministers PKM-967 dated December 3, 2019 "On the Gradual Transition of Higher Educational Institutions to the Self-Financing System", since 2020 10 Higher Educational Institutions of the country have switched to self-financing.

Academic autonomy is gradually being granted to Higher Educational Institutions. Joint programs are created, a number of educational directions and specialties of Master's Degree program are expanded.

The regulatory, legal and educational and methodological basis for the introduction of systems of continuous professional development and retraining for specialists in the social sector and all sectors of the economy, using the possibilities of distance learning in this direction, is being improved.

For instance, the Cabinet of Ministers adopted Decree # 824 dated December 31, 2020 "On Measures to Improve the Organization of the educational process in Higher Educational Institutions".

According to this Decree, starting from the academic year 2020/2021, the educational process in Higher Educational Institutions should be gradually transferred to the credit-module system. The document approved the Regulation on the implementation of the credit-module system in the educational process of Higher Educational Institutions, based on the European system (European Credit Transfer and Accumulation System – ECTS).

In accordance with the decision of the Council of Higher Education Institution:

The faculty staff can train and improve their qualification in prestigious foreign universities and scientific institutions under the condition of registration of an agreement providing for the work in HEI for 3 years;

Teachers have a chance to take part in doctoral programs at prestigious foreign universities and scientific institutions under the condition that they sign an agreement to work at HEI for 5 years.

International cooperation

Increasing the investment attractiveness of the Higher Education System and ensuring its international recognition and competitiveness is one of the most important tasks. In this regard, in recent years active work is in progress. There are great opportunities for integration into the global community, the educational environment and the rapidly changing scientific and innovative life of advanced countries.

Work is underway on inclusion of at least 10 Higher Educational Institutions of the country into the Top 1000 List of Higher Educational Institutions by internationally recognized organizations rating (Quacquarelli Symonds World University Rankings, Times Higher Education or Academic Ranking of World Universities), as well as inclusion the National University of Uzbekistan and Samarkand State University into the Top 500 List with the introduction of modern mechanisms of targeted state financial support for these Higher Educational Institutions. To date, 4 Higher Educational Institutions of the country have been included into the international rating at the regional level.

The recognition of diplomas is an important point in internationalization. Now, if a student graduated from a university that is in the Top 500 List of the world ranking or graduated from a university that Uzbekistan has signed an agreement with, he will get Confirmation Diploma without exams.

The activity of universities in training on the basis of joint educational programs in cooperation with foreign Higher Educational Institutions is expanding. The number of joint scientific conferences, seminars, as well as organizing educational forums, conferences of rectors and other events that contribute to a good exchange of experience heavily increased especially during the pandemic.

In the process of studying and analyzing the educational process the leading foreign universities started the gradual transfer of the educational process in Higher Educational Institutions to the credit-module system. In 2020-2021, 35 Higher Educational Institutions have switched to this system.

Advanced standards of Higher Education are being studied and introduced, in particular the gradual transition from an education system with curricula focused on theoretical knowledge to an education system aimed at building practical skills, based on international experience.

Higher Education reforms in Uzbekistan are being implemented in cooperation with many international organizations, including Erasmus+ (European Union Programme), JICA (Japan International Cooperation Agency), KOICA (Korea International Cooperation Agency). As a result of implemented joint programs hundreds of teachers and students in Uzbekistan have the opportunity to learn international best practices in the education system, to acquire new knowledge and skills, to improve their skills at leading universities around the world.

Conclusion

According to the analysis of the development of the Higher Education System, we can conclude that public policy of the country started the systematic giving attention on education in general. Since 2017, the regulatory framework has been updated, a new Law "On Education" was adopted, the development concept until 2030 for all stages of lifelong learning has been approved. The development of international relations contributes to the intensive development of Higher Education, since the potential for the implementation of joint educational, scientific, investment projects opens up.

It is important to emphasize the important role of the Erasmus+ Programme, its projects for the development of Higher Education, contributing to the development of internationalization and capacity building of university specialists, improving the learning process, the development of new educational programs and plans, independent thinking of students and other important points of the Higher Education System. In general, the republic is working on implementation of the purpose and objectives of the Concept of Higher Education development until 2030.

1.4. Reforms in the field of Science and Innovation

Science and the introduction of innovative solutions provide a solid foundation for the stable development of the state. Scientific achievements allow countries to follow the path of progress and implement advanced solutions in all sectors of life. In today's rapidly developing economy, no state can stay away from innovation.

Analysis of the state of development of science and technology in Uzbekistan shows that at present there are not yet sufficiently favorable conditions conducive

to the development of the scientific potential of universities and research centers, as well as the promotion and implementation into production of innovative developments, from the stage of formation and to entry into market. There is a great need for reforms, development of mechanisms to stimulate scientific research, support scientific youth and implementation of innovative developments.

The President of the Republic of Uzbekistan in his speeches and decrees defined the primary objectives of the country as all-round development of science and education, attracting young people into this sector, active cooperation with developed countries in the field of innovation. This is most clearly highlighted in his Message to Parliament dated January 24, 2020: "... We have set a goal of joining the ranks of developed nations and will be able to achieve it only by implementing accelerated reforms, relying on science, education and innovation. To do this, we first of all need to educate a new generation of reform-minded people with a strategic vision, deep knowledge and high qualifications."

Strategic aspects of science and innovation development in Uzbekistan

A number of problems that hinder the establishment of effective mechanisms of interaction and strengthen the link between scientific research and production industries are listed in the Presidential Decree # PP-3698 dated May 7, 2018 "On Additional Measures to Improve Mechanisms for Innovation in Economic Sectors":

- First, low and unsatisfactory rates of commercialization of the results of scientific work of Higher Educational Institutions and research of Scientific Research Institutions;
- Second, the lack of mechanisms to stimulate innovative processes, implementation of comprehensive programs of innovative development and innovative activity at the regional and sectoral levels, support for innovative and active business entities;
- Third, the insufficient involvement of representatives of the private sector in innovation activity, including due to their low interest;
- Fourth, the lack of effective measures to improve the efficiency of distribution and rational use of grants within the framework of state scientific and technical programs;
- Fifth, the unsatisfactory level of international cooperation and foreign investment in research and innovation.

Being eager to solve these urgent problems last years the Government has paid more attention to innovation activity, support for knowledge-intensive technologies in both industrial production and agriculture, promotion and implementation of advanced developments in production, from the formation stage to market entry. In order to commercialize and introduce domestic scientific and innovative developments into production, innovative technopark "Yashnabad", Advanced

Technologies Center under the Ministry of Innovative Development of the Republic of Uzbekistan, as well as other similar organizations under ministries and Higher Educational Institutions were established, contributing to the development of innovative entrepreneurship in the country (Decree of the Cabinet of Ministers of the Republic of Uzbekistan # 721 dated September 11, 2018 "On Measures to Further Support of Innovation"). Significant attention is paid to the development of fields of Information Technology and Telecommunications. The year 2020 was titled "The Year of Development of Science, Education and Digital Economy".

Concept for the development of science until 2030

One of the main documents designed to bring domestic science to a new level is the Law "On Science and Scientific Activities", signed by the President on October 29, 2019. It emphasizes that the priority directions of development of science and technology are developed in order to provide a scientific solution to the problems associated with the achievement of competitiveness and efficiency of the national economy, the creation of new industries, and the improvement of living standards of the population.

In October 2020, the Decree of the President of Uzbekistan # OP-6097 dated October 29, 2020 "On Approval of the Concept of Development of Science until 2030" was adopted. The document comprehensively covers all fields of further improvement of the sector, and also defines a number of important tasks to achieve high economic performance through the implementation of innovative projects. The Concept, its targets and indicators provide for the introduction of a national rating system aimed at assessing the effectiveness of research and innovation activities of scientific organizations, improvement of social partnership between the state and Scientific Institutions through the development of self-management system in science, as well as the implementation of projects within its framework.

It is envisaged to improve the system of financing science and scientific activity, as well as to diversify the sources of funding: increasing 6 times by 2025 and 10 times by 2030 of all funds allocated to science in relation to GDP; bringing the share of funds allocated by the private sector to research and development from the current 8% to 20% by 2025 and to 30% by 2030 in total science funding; creating two venture capital funds in 2021 and ten by 2025 together with leading foreign investment companies to finance innovative developments and startup projects.

An important point of the Concept is the introduction of system of training and professional development of heads of scientific organizations at the Academy of Public Administration under the President of the Republic of Uzbekistan on a permanent basis and the creation of scientific communities in each field of science in order to form and ensure the effective operation of these areas, as well as

increasing the responsibility of scientific schools, academic figures and leading scientists in this sector. And the following point has particular importance: the audit of scientific-innovation activity of all state scientific organizations with the involvement of international independent expert companies at the expense of the Fund for Support of Innovative Development and Innovative Ideas. This would enable improving the efficiency of management of scientific centers, programs and projects.

Development of science and innovative technologies in universities

Support of young scientists is among the priorities of Uzbekistan's state policy, as transformations initiated in all sectors, including the Economy, Education, Health, Culture, and Sports, require the most advanced solutions that young people are able to offer. Since Science is one of the most dynamically developing sectors, it is necessary to continuously improve the qualifications of employees of Higher Educational Institutions and Scientific Research Institutions of the republic.

In the Decree of the President of the Republic of Uzbekistan #PP-4391 dated July 11, 2019 "On Measures to Introduce New Management Principles in the System of Higher and Secondary Specialized Education" significant attention is paid to the integration of science, education and production. The Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan has identified as important tasks:

- Optimization of fields of education and specialties, taking into account the development needs of the economy, science and social sector, the organization of internships for students in manufacturing and other enterprises;
- Effective organization of Research Activity in Higher Educational Institutions, wide implementation of research results into practice, commercialization of scientific developments, ensuring close mutual integration of Higher Education, Science and Industry, wide involvement of gifted young people into Research Activity and comprehensive support.
- Expansion and strengthening of international relations, the implementation of joint programs of cooperation of Higher and Secondary Specialized Education, heavy coverage of achievements in the industry at the international level;
- Implementation of measures to modernize the base of educational and scientific laboratories, equipping them with modern equipment.

International scientific cooperation

Globalization directly affects scientific research and Higher Education Institutions by deepening their integration and changing the way they conduct their study. It also creates more opportunities for the academic community. As the experience of the world's leading countries shows, timely investments in science, education, and training are always worthwhile. That is why in recent years the Higher Educational Institutions of Uzbekistan established close cooperation with a number of foreign universities, scientific research institutes and organizations that provide support in introducing advanced teaching methods. Over the past few years, a number of new branches of major foreign universities and faculties opened jointly with foreign universities and institutes appeared in Uzbekistan; training programs that meet international standards are being actively developed.

In order to develop the scientific and human resource potential of the republic in recent years several branches of leading universities of foreign countries were opened (USA, South Korea, Singapore, Russia, Belarus, etc.). Webster University in Tashkent, AJOU University in Tashkent, INHA, YEOJU, as well as a number of branches of Russian universities. Opening in 2018 a branch of the Federal State Autonomous Educational Institution for Higher Education "National University of Science and Technology 'MISIS' in the city of Almalyk" (the Presidential Decree # PP-3714 dated May 11, 2018) and the establishment of a branch of the Federal State-Funded Educational Institution of Higher Education "Mendeleev University of Chemical Technology of Russia" in the city of Tashkent (the Presidential Decree # PP-4352 dated June 7, 2019) both had particular importance for the development of applied science.

Considering that it is planned to build a nuclear power plant in Uzbekistan, the establishment of a branch of the Federal State Autonomous Educational Institution for Higher Education "National Research Nuclear University "MEPHI" is important not only in terms of training highly qualified personnel, but also the development of scientific research in the field of nuclear physics (Decree of the President of the Republic of Uzbekistan # PP-3875 dated July 20, 2018). And opening of the joint Belarus-Uzbekistan interdisciplinary institute of applied technical qualifications brings hope of increasing in Uzbekistan the attention to training of highly qualified specialists in technical sciences and development of scientific research in this field.

Introduction in 2021 of the Academic Mobility program in order to support and widely involve gifted youth engaged in scientific activities in the regions, as well as to create and enhance the scientific potential of authoritative scientific schools is noteworthy. It is envisaged to allocate grants to stimulate scientific ideas of gifted youth engaged in scientific activities, organization of their short-term

internships in foreign universities and scientific centers at the expense of the Gifted Youth Support Fund of the Youth Academy.

Conclusion

In general, there are positive trends in the development of science and innovation activities in Uzbekistan. The above mentioned number of Resolutions of the Government and Decrees of the President of the Republic of Uzbekistan are important for further improvement of the sector; also, they determine a number of important tasks for achievement of high indicators in the field of economy by implementation of innovation projects. The Concept, its targets and indicators provide for the introduction of a national rating system aimed at assessing the effectiveness of research and innovation activities of scientific organizations, improvement of social partnership between the state and scientific institutions through the development of self-management in science, as well as the implementation of projects within its framework.

The set tasks can be realized upon the following conditions:

- Eradication of corruption in financing of scientific projects by state funds;
- Introduction of effective mechanisms of integration of science, education and industry;
- Creation of real conditions for strengthening international cooperation on joint implementation of scientific and innovation programs and projects;
- Organization and performance of objective audit of scientific-innovation activity of State Scientific Organizations of Uzbekistan with participation of authoritative independent international expert committees.

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1.5. Reforms in Agriculture

In recent years, certain work has been carried out in the direction of reforming the country's main economic sectors. In particular reforms in agricultural area considered improvement public administration system, widely introduction of market relations, strengthening of the legal framework for relations between entities that produce, process and sell agricultural products, attracting of investments into the industry, introduction of resource-saving technologies, providing agricultural producers with modern technology and training, retraining of staff and preparation of graduates in the field. This material provides the review of latest reforms in the country's agriculture sector and agricultural higher education.

Reform and modernisation of the agricultural system of the Republic of Uzbekistan

Since the national independence of Uzbekistan the government has been paying attention to development of the education system, including agriculture. A number of regulations have been adopted in order to address the problems in education regarding the agricultural sector. Agriculture is one of the dominating sectors of the country's economy and developing intensively. Nevertheless, a problem of a lack of qualified agricultural personnel still exists, and there are graduates of agricultural fields trying to find jobs in other fields. The last three-four years can be called a period of unprecedented comprehensive reforms in the agricultural sector, including the introduction of market mechanisms, advanced technologies into the agricultural sector and the implementation of the transition to a cluster production system. The development of agricultural production has become strategic. One of the priority directions of the «Strategy of actions for the further development of the Republic of Uzbekistan», adopted at the beginning of 2017, is the modernisation and intensive development of agriculture. On October

23, 2019, by the Decree of the President, the "Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020-2030" was approved, which covered nine strategic priorities, the seventh of which was development of science, education, systems of information and consulting services in agriculture.

The most important tasks of the agricultural sector in Uzbekistan today are the guaranteed provision of the population with agricultural products with the rational use of resources and opportunities, the creation of new jobs in the field, further increasing the interest of the rural population in the results of their work, the introduction of advanced approaches. In this regard, the government pays great attention to the modernization and diversification of the economy, including agriculture, food production, financial support for farms, agricultural clusters and cooperatives. This is what 5 laws of the Republic of Uzbekistan and 12 decrees are aimed at, more than 30 decrees of the President and the government adopted in 2020.

To implement the programme of measures for 2020 to implement the tasks identified in the Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020–2030, funds from international financial institutions and other foreign organizations were attracted. The experience of countries that are among the top ten in the field of digitalisation in maintaining a unified integration information platform in the agricultural sector is studied. Consistent work is being carried out to introduce digitalisation in agriculture, which is so necessary for the modernisation of specialised research institutes, the introduction of applied research and advanced developments for the further development of the industry.

In recent years, sown areas have been significantly expanded in this direction and the necessary measures have been taken to provide the domestic market with quality products and increase the country's export potential by increasing the volume of food production. Also, practical measures were taken to specialise regions in horticulture, to unite producers of products into horticultural clusters and cooperatives.

Reducing the role of the state and increasing the investment attractiveness of the sector for private investors have become other strategic priorities for the development of agriculture in Uzbekistan. In this regard, it was important to completely abandon government purchases, in addition to the volumes required for the implementation of interventions in cereal crops aimed at ensuring price stability in the domestic market. Measures were implemented aimed at creating food reserves and ensuring macroeconomic stability in the event of a possible threat to the country's food security.

The introduction of market mechanisms into the agricultural sphere, in particular, the system of agricultural clusters, is a priority path on the way of

deepening reforms at the sector. There are 97 specialized cotton-textile, 149 fruit and vegetable, 65 grain-growing, 35 rice-growing and 7 - for the cultivation of medicinal plants clusters in the country, as well as 11 cotton-textile cooperatives. Over the past period of this year, almost 11 thousand, or 90 percent, of the country's farms have been transformed into diversified farms, thereby providing employment for about 37 thousand people. About 6.5 million tons of grain, more than 3 million tons of raw cotton, 21 thousand tons of cocoons, 22 million tons of fruits and vegetables, 2.5 million tons of meat and over 11 million tons of dairy products grown in the country in 2020.

The Ministry of Agriculture of Uzbekistan is making considerable effort in establishing close cooperation links between developed countries in the field of agriculture. For instance on 8 December 2020, an online meeting was held between the Minister of Agriculture Jamshid Khodjaev and the European Union Commissioner for Agriculture and Rural Development Janusz Wojciechowski, who heads the Directorate General for Agriculture and Rural Development (DG AGRI), they have discussed potential opportunities for future cooperation in the agricultural sector, including issues of regional importance. The Minister Jamshid Khodjayev emphasised that in the next 2 years, as Chairman of the FAO High-Level Governing Body for Europe and Central Asia, he is committed to working with 53 FAO member countries in the Europe and Central Asia region and at the regional level to bring up important issues and problems for joint action. Furthermore, on 11 December 2020 a framework agreement between the Ministry of Agriculture of Uzbekistan and the French company Rungis Semmaris signed on December 9, 2020 online with the support of the Embassy of Uzbekistan in France and the Embassy of France in Uzbekistan. In the framework of the agreement with the Rungis Semmaris, the Ministry of Agriculture plans to implement, in accordance with high international standards, projects to create and manage in Uzbekistan - and in Central Asia - a network of eight large agricultural centres.

Reform and modernisation of the agricultural higher education

The introduction of scientific achievements and innovative technologies into practice requires the solution of such urgent tasks as training personnel with comprehensive modern knowledge, updating their qualifications, and adopting foreign experience. In order to radically improve the quality of higher education in the agricultural sector, to establish cooperation with leading foreign universities, to improve the activities of scientific institutions, several governmental acts and interventions are adopted.

Agricultural higher education is providing at Tashkent State Agrarian University (TSAU) inclusive its branches in Samarkand, Nukus and Termez and Andijan Institute of Agriculture and technologies. These HEIs operate under the

Ministry of Agriculture of UZB. The Tashkent Institute of Irrigation and Agricultural Mechanization Engineers operates under The MHSSE and Samarkand Institute of Veterinary Medicine operates under the State Committee of Veterinary and development of animal husbandry. They provide study programmes in the area of agriculture and water issue on the level of Bachelor and Master as well as related post-graduate education (two scientific degrees).

Starting from the 2020–2021 academic year, along with the existing agricultural universities, quotas for admission to bachelor's degrees in agricultural areas were introduced by Gulistan, Bukhara, Karshi, Namangan, Samarkand, Fergana, Urgench state universities. The number of students at agricultural higher education increased by 1.3 fold during 2017-2020 years.

Higher education in Uzbekistan is centrally planned and organised. The quality of higher education is assured by the State Educational Standards which set the minimum requirements for each educational level, describe the main features, structure, content and implementation of curricula, ensure the quality control of personnel training and set the compulsory (core) components (list of academic subjects). The fulfilment of those standards is controlled by the regular (re)accreditation of a study programme which is necessary every 5 years.

Plans, strategies and development trends until 2030

The Strategy for the Development of Agriculture of the Republic of Uzbekistan for 2020–2030 has clearly indicated the main directions of development in the agricultural sector. Priority directions for the implementation of the Strategy are:

- implementation of the state policy on food security, providing for food safety and improvement of the consumer intake, production of food products in the required quantity;
- creation of a favorable agribusiness climate and value added chain, production of agro-food products with high added value competitive on target international markets;
- introduction of mechanisms to reduce the role of the state and increase the investment attractiveness of the industry;
- improvement of the system for ensuring the rational use of natural resources and environmental protection;
- development of modern management systems, providing for the restructuring and further development of the structure of public administration in agriculture;
- increasing efficiency and a redistribution of government spending;
- the development of science, education, a system of information and consulting services, providing for the use of effective forms of dissemination

of knowledge and information, integrated with production and research, educational and consulting services in agriculture;

- implementation of programs for the development of rural regions for balanced and sustainable development of rural areas;

- creation of a transparent system of industry statistics, providing for the introduction of reliable methods for collecting, analyzing and disseminating statistical data through the widespread use of modern information technologies.

To ensure the implementation of the Decree of the President of the Republic of Uzbekistan dated July 30, 2020 No. PP-4795 "On measures to further improve the agricultural education system", Government of Uzbekistan developed the Strategy for innovative development of the agricultural education system until 2030. The strategy provides for the implementation of the following priorities:

- modernization of the agricultural sector, improving the quality of training highly qualified specialists for sustainable socio-economic development, development of human capital in accordance with the requirements of the labor market;

- the use of innovative resource-saving technologies in agriculture, the introduction of "Smart agriculture" and digital technologies;

- development of agricultural production through the implementation of start-up projects;

- improvement of the existing mechanism for the integration of education, science and production for the widespread introduction of the results of scientific research, experimental design and technological work;

- training highly qualified, creative and independent decision-making personnel in agriculture on the basis of international standards;

- provide practical assistance to graduates in engaging in agribusiness in order to launch entrepreneurial activity in the field;

- create a competitive environment in agricultural higher education, increase its attractiveness and ensure global competitiveness.

According to the Strategy it is going to be organised joint educational programs with 30 foreign universities. It is expected the new degrees will be developed applying Bologna process principles. Furthermore, measures will be taken to include universities in the system of agricultural education in the list of 1000 prestigious universities in the world (QS rating system). From the 2020/2021 academic year in all areas of training bachelors and masters in this area, a credit-modular education system will be gradually introduced. In order to widen the autonomy of higher education institutions and increase accessibility to higher education it is foreseen transformation of Nukus, Termez and Samarkand branches of the TSAU into independent institutes.

Based on the programs of socio-economic development of the regions and proposals of the job market, by 2030, a personnel training system will be created through the use of innovative resource-saving technologies in agriculture, the introduction of "Smart Agriculture" and digital agricultural technologies. Higher educational institutions will gradually introduce the concept of "University 3.0", which provides a link between the commercialization of the results of education, science, innovation and research in agriculture. Consulting centers, technoparks, start-up centers will be created in universities. The infrastructure and material and technical base of higher education institutions will be improved and gradually transferred to a self-financing system and financial stability will be ensured. Academic independence of higher educational institutions, including the Nukus, Termez and Samarkand branches of the TSAU, will be ensured.

For the further development of the agricultural sector, the government provides for the implementation of the following projects with support of the European Commission and other international organisations:

1. At the expense of EU grants, a Republican agro-service centre will be created in the Tashkent region and a Regional agro-service centre in the Fergana region.

2. With the involvement of international experts, the World Bank will allocate \$ 120 million for a radical reform of the activities of 10 research institutes and organizations, equipping them with modern laboratories, equipment and the introduction of a commercialization mechanism. Also, the EU will provide \$ 6 million to 4 research institutes in the framework of the EU horticultural support project. The Concept for the Development of Agricultural Science for 2020-2030 will be developed.

3. Starting from the 2020/2021 academic year, joint departments of the TSAU will be created in 7 universities in the regions in the areas of "Fruit growing and viticulture", "Vegetable growing, gardening and potatoes", "Organization and management of greenhouses". Also, on the basis of vocational colleges under the Ministry of Agriculture and the TSAU, colleges of secondary specialized vocational education integrated into the higher education system will be created.

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1.6 Reforms in Health Care System

The importance and role of an effective Health Care System remains a priority for many countries around the world, including the Republic of Uzbekistan, given the continuing global danger of the COVID-19 pandemic and the impact of increasing environmental and food security concerns in the Central Asian region. A number of policy documents and frameworks, as well as reports from international organizations on health and social well-being issues around the world, have been reviewed to understand these processes. At the heart of measuring the effectiveness of health care systems are the indicators proposed by the United Nations in the field of sustainable development, some of this data will be presented later in this study.

Human Development Index in Uzbekistan

On December 15, 2020, the United Nations Development Program, together with the Government of Sweden, launched the global dissemination of the Human Development Index (HDI) Report 2020, titled: "The Next Frontier: Human Development and the Anthropocene". The Human Development Index Report is a data set of published statistics on three key human development factors - longevity and health, education, and a decent life. In the Report, Uzbekistan ranked 106th among 189 countries with an index value of 0.720 (maximum index value of 1.000), having improved its result from the 2019 report by +2 positions in the ranking and +0.01 index value. Uzbekistan's results according to the Index Report are as follows:

- The Life Expectancy Index, which measures the life expectancy of the population at birth, is 71.7 years (an increase of 0.1 year);
- The Education Index measures the population's average length of education that is 11.8 years (up 0.3 years) and the population's expected length of education, 12.1 years (up 0.09 years);
- The Gross National Income Per Capita Index is \$7,142 (up US \$ 680) in purchasing power parity.

The consistent growth of the HDI in Uzbekistan over the past few years is due, among other things, to the government's attention to public health issues, improvements in the Health Care System, and a focus on effective primary health care and special attention to child and maternal health and well-being.

Despite the challenging times associated with the COVID-19 pandemic, in general the Government of Uzbekistan is coping decently with the consequences of the disease, but at the same time there is an understanding that the HDI for 2021 is likely to be lowered for many countries of the world due to the impact of the pandemic on human health, education and the economy.

Reform and Modernization Strategy for Health Care System for 2017-2021

The Action Strategy on Five Priority Lines of Development of the Republic of Uzbekistan in 2017-2021 was the most important program document that defined the priority directions of state policy in the medium term. In particular, the work on further improvement of the system of medical care and the quality of medical services was continued for the development of the Health Care System for this stated period. These measures included further reforming the Health Care sector (first of all the primary care, ambulance and emergency medical care) aimed at improving the availability and quality of medical and socio-medical services to the population, the formation of a healthy lifestyle of the population, strengthening the basic infrastructure of Medical Institutions. The implementation of comprehensive measures to improve family health, protect mothers and children, increase access of mothers and children to quality medical services, provide them with specialized and high-tech medical care, reduce infant and child mortality was continued. It is important to ensure the reduction of morbidity rates and increase the life expectancy of the population. One of the tasks was the introduction of the "Smart Medicine" system and innovative technologies in Health Care System.

During this period a number of reforms were implemented that resulted in republic's ability to prevent the collapse of the Health Care System caused by the COVID-19 pandemic and a series of natural disasters. Particular attention has been paid to the creation of quality health services for the population in remote rural areas. Until recently, people with health complaints had to travel 10-20, sometimes 50-60 kilometers to district and regional centers to undergo a simple medical examination or receive specialized medical advice. To solve this painful problem, rural medical and nursing stations are being built in remote areas and provided with the necessary specialists and medical equipment.

As a result of optimization of the primary health care, 798 rural family polyclinics were created in 2020. They are equipped with social pharmacies and round-the-clock ambulance service, antenatal clinics and girls' health clinics. The rural population receives specialized outpatient care in five subspecialties (obstetrician-gynecologist, surgeon, dentist, therapist, pediatrician), in addition, ultrasound and laboratory examinations were arranged, thereby providing the rural population with qualified specialized outpatient care. To solve urgent issues in this

field, the "Fund for the Development of Emergency Medical Care" was created. Also, during 2017-2019 dozens of centers were created, in particular, a number of branches of Republican specialized scientific and practical medical centers in oncology, neurosurgery, traumatology and orthopedics, allergiology, nephrology and kidney transplantation, neurology, addictology and children surgery. The number of medical centers providing specialized medical care to the country's population has reached 20, their branches are already in operation in the regions.

The COVID-19 situation in the Republic of Uzbekistan

According to the World Health Organization, the number of people in the world infected with coronavirus exceeded 72 million 196 thousand, more than 1 million 630 thousand of them have died (as of 17:51 Central European time on December 16, 2020). In the past 24 hours, 585,455 new cases of coronavirus infection have been identified worldwide, and 11,463 patients have died.

According to current data from Johns Hopkins University (as of 10:28 a.m. Tashkent time on December 17, 2020), more than 74,210,000 people have been infected worldwide, and over 1,648,000 of them have died.

While COVID-19 dartingly spreads around the world, thanks to timely measures taken in the Republic of Uzbekistan, the spread of the virus in the republic has been relatively contained. The establishment of treatment and prevention facilities, quarantine zones, and unparalleled anywhere in the world distribution centers played an important role in this.

As an example, let's consider one of such facilities built through the measures to combat coronavirus – isolation hospital in Zangiata district of Tashkent region. This facility is designed for 4,000 beds. Two complexes were built on an area of 33 hectares. The specifics of treatment of infectious diseases and requirements of modern medicine were taken into account. At admission patients are admitted directly to the ward through an airlock. All buildings and departments are connected by sterile and non-sterile corridors. Intensive care units are equipped with all necessary medical equipment.

In this regard, during the autumn 2020, Uzbekistan was able to stabilize the number of new COVID-19 infectees to an average of 200 cases per day, moreover, the clinics and hospitals previously reequiped to treat patients with this infection returned to their normal activities according to their disease treatment areas.

Medical Education in the Republic of Uzbekistan

Medical Education in the Republic of Uzbekistan is provided in 13 State Universities and their branches, as well as in one Non-State Educational Institution – AKFA University that trains doctors according to the state standard on the basis of international experience.

In 2017-2020, medical and pharmaceutical Higher Educational Institutions in the undergraduate system began training highly qualified personnel in such new educational fields as clinical psychology, biomedical engineering, folk medicine, standardization, certification and quality management of medicines.

Reforms of Higher Medical Education in the country also continue to be performed intensively, as well as other reforms in the Republic of Uzbekistan. In particular, since the academic year 2020/2021 there is supposed to be twice as few non-core subjects in the curricula of Bachelor's, Master's and Clinical Residency programs of higher medical education. Among other things, students of the final year admitted to clinical residency under the target parameters will be trained directly in the medical institutions of the regional level. And the target parameters of admission of Bachelors in "General Medicine", "Pediatric Medicine" and "Professional Education (General Medicine)" will be formed within the framework of admission indicators on the basis of the state grant in the context of regions (cities) based on the need of the regions for the medical profession. Graduates of these fields will have to work for at least 5 years in the regions (cities) specified in the target parameters of admission to the state-financed openings, regardless of their registration at the place of residence. At the same time, for regions with a high demand for medical profession the number of free of state-financed openings at Bachelor's and Master's degree programs will be increase to 50%.

There will be more opportunities for those who prefer to receive Higher Medical Education. Since the academic year 2020/2021, a new medical institute function, where the personnel in the field of public health and sanitary and epidemiological supervision is trained. Branches and clinics of Pirogov Russian National Research Medical University and Bahcesehir University (Turkey) will be opened in the country.

International faculties based on joint educational programs will be created in the country's medical universities, as well as branches in cooperation with reputable foreign Medical Educational Institutions that are included in international rankings.

Since December 2020, Master of Health Care System (Master of Healthcare Administration) major have been introduced at Westminster International University in Tashkent, AKFA University and Medical Educational Institutions.

Also in December 2020 an Agreement was signed that prescribed establishment of the branch of Tashkent State Dental Institute at ADEMA Dental School of the University of the Balearic Islands (Spain). It is notable to see this first branch of a Higher Educational Institution of Uzbekistan that opens in one of the developed European countries.

Strategy for Health Care System development until 2030

The Sustainable Development Goals (SDGs) are sort of call for action outcoming from all countries - poor, rich and of middle-income. This call aims to improve the well-being and protect our planet. States recognize that measures to eradicate poverty must go hand in hand with efforts to increase economic growth and address a range of issues in the field of Education, Health Care, Social Protection and Employment, as well as Climate Change and Environmental Protection.

The UN Sustainable Development Goals are 17 goals and 169 objectives that all UN member states (193) have agreed to achieve by 2030. Health takes central position being represented in SDG by Goal # 3: "Ensure healthy lives and promote well-being for all at all ages".

In this regard, Uzbekistan has agreed on its national SDGs until 2030; one of these Goals is to drastically improve the health of the population of the Republic of Uzbekistan.

National priorities in the Health Care sector are aimed at improving the quality and efficiency of the Health Care System, including preventive care and the promotion of healthy lifestyle. Particular attention is paid to ensuring access to health services for the most vulnerable segments of the population.

High-quality Health Care services include the full spectrum of care across the life cycle (children, adolescents/youth, women and men), from prevention to treatment and care, with a special focus on communicable and non-communicable diseases. The definition of access is linked to the definition of universal health care coverage.

Reducing the burden of communicable diseases such as HIV/AIDS and tuberculosis is a priority when providing prevention services to vulnerable populations and following internationally recommended protocols.

Between 2017 and 2020, more than 160 legal and regulatory documents were adopted in the field of Health Care. As a result, important changes are taking place in all parts of the Health Care System. From primary health care to specialized centers, new technologies are introduced everywhere, and the achievements of global science and medicine are widely used. These changes are based primarily on the Decree of the President of the Republic of Uzbekistan "On Comprehensive Measures to Radically Improve the Health Care System of the Republic of Uzbekistan" dated December 7, 2018. The Decree also approved the Health Care System Development Concept of the Republic of Uzbekistan for 2019-2025 and the Program of Measures to Implement the Health Care System Development Concept of the Republic of Uzbekistan in 2019-2021.

When working out the Health Care System Development Concept for 2019-2025, the recommendations of WHO experts were taken into account. The Concept covers nearly all fields: improving the legislation and Health Care Financing System, developing the private sector, improving the quality and accessibility of medical care, the gradual introduction of compulsory health insurance, the formation of an effective system of training, retraining and advanced training of medical personnel, as well as the development of medical science, and the widespread introduction of "E-Health".

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2. Recommendations for future directions of CBHE Erasmus+ projects

2.1. Recommendations for possible topics in the field of Public Administration and Economy:

In the next Erasmus+ Programme, the most promising topics of interest to Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan will be the following:

1. The active involvement of gifted youth in the civil service.
2. Broader involvement of women in the civil service, creating conditions for career advancement and professional development.

3. Development of cooperation between the state bodies and Higher Educational Institutions in the field of qualified personnel training.
4. Study of the experience of European countries in building the capacity of civil servants.
5. Improvement of the system of selection and recruitment for the civil service on the basis of best practices of European countries.
6. Creation of effective mechanisms for material incentives and motivation of employees.
7. Development of an online platform for distance learning of civil servants.
8. Problems of poverty reduction.
9. Combating corruption of civil servants.
10. Buildup a positive image of Uzbekistan and improving its position in international rankings and indices.

2.2. Recommendations for possible topics in Higher Education:

In the next Erasmus+ Programme, the most promising topics of interest to Ministry of Higher and Secondary Specialized Education of the Republic of Uzbekistan will be the following:

11. Implementation of credit-module system into Higher Education.
12. Disclosure of scientific and innovative potential of youth.
13. Digitalization of Higher Education.
14. Ensuring the academic independence and financial stability of Higher Educational Institutions.
15. Organization of Double Diploma programmes of education.
16. Increasing the investment attractiveness of the Higher Education System, ensuring its international recognition and competitiveness.
17. Organization of students' independent work and work with international scientific bases.
18. Training of specialists in the field of advanced technologies.
19. Modernization of educational programmes and educational literature.
20. Development of interdisciplinary programmes in Medicine, Engineering and ICT.
21. Internationalization of Higher Education.

22. Improvement of the quality of Higher Education, development of a national standard for the quality of education.

2.3. Recommendations for possible topics in Science, Innovation, and Information Technology:

In the next Erasmus Programme, the most promising topics of interest to Ministry of Higher and Secondary Specialized Education and Ministry for Development of Information Technologies and Communications of the Republic of Uzbekistan in the field of ICT will be the following:

23. Digital Economy of the country.
24. Development of information systems of distance learning.
25. Access to world electronic scientific and educational resources.
26. Training of specialists of the highest qualification in the sector of Artificial Intelligence System for various fields of activity.
27. Buildup of effective information infrastructure of the country in order to increase democratization of social development.
28. Development of international corporate information networks for the exchange of scientific and educational information.
29. Modernization of ICT curricula, both in specialized universities and in every Higher Educational Institution of the republic.
30. International cooperation of ICT universities with leading EU scientific schools on implementation of joint scientific and educational programs.
31. Development and implementation of information systems for management of educational process based on international standards.
32. Development of corporate electronic libraries for operational information support of educational process and scientific activities of Higher Educational Institutions.

2.4. Recommendations for possible topics in Agriculture:

In the next Erasmus Programme, the most promising topics of interest to Ministry of Higher and Secondary Specialized Education and Ministry of Agriculture in the field of Agricultural Education will be the following:

33. Introduction of credit-module system in Agricultural Education;
34. Application of innovative resource-saving technologies in agriculture, the introduction of "Smart Agriculture" and digital technologies;

35. Development of business skills of graduates of Agricultural Higher Educational Institutions, development of agricultural production through the implementation of start-up projects;
36. Improvement of the existing mechanism of integration of education, science and production;
37. Development of human capital in accordance with the requirements of the labor market;
38. Implementation of information systems in the organization and control of the educational and management process, the creation of favorable conditions for independent learning of students through the introduction of distance learning;
39. Identification and elimination of systemic problems in agricultural production through information and advisory centers (counselling centers);
40. Development of curricula on medicinal plants, forestry and ecological agriculture.

2.5. Recommendations for possible topics in the field of Health Care and Medicine:

In the next Erasmus Programme, the most promising topics of interest to Ministry of Higher and Secondary Specialized Education and Ministry of Health Care in the field of Medical Education will be the following:

41. Implementation of credit-module system in Medical Education;
42. Digitalization of Health Care and Medicine;
43. Artificial intelligence and big data in Health Care System;
44. Bioengineering and genetics;
45. Training of specialists in health economics and insurance medicine;
46. Modernization of educational programs on public prevention of communicable and non-communicable diseases;
47. Interdisciplinary programs in medicine, engineering, ICT and robotics;
48. Research of brain disease, population mental health and Personalized Health Care;
49. Inclusion in the Global Health Network, taking into account regional specific features;
50. Discovery of scientific and innovative potential in the field of Health Care, Pharmaceuticals and so on.

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