

Erasmus + CBHE APFAA Project

Final Seminar: Results Assessment & Perspectives - Report

From 05/10/20 to 14/10/20

Participants

Institution	Personnel	Fonction
Agrocampus Ouest	Thibault SCOAZEC	Coordinateur du projet
National University of Mongolia	Baldorj OCHIRKHUYAG	Vice-président, coordinateur pour la Mongolie
Mongolian University of Science and Technology	Dorjgotov DULGUUN	Enseignant chercheur en biotechnologie et nutrition
Mongolian University of Life Sciences	Tumur ERDENECHULUUN	Enseignant en économie agroalimentaire
Banat University of Agronomical Sciences and Veterinary Medicine	Cosmin SALASAN	Enseignant, coordinateur pour BUAS
	Florin PRUNAR	Enseignant
Universidad Santiago de Compostela, campus de Lugo	Pedro ROCHA	Agronome, gestionnaire pour USC
	Manuel MAREY	Enseignant, coordinateur scientifique pour USC

1. General comments on the project developments

According to the Mongolian partners, and taking in account the encountered difficulties and the very particular context of 2020, the Consortium reached its objectives. Mongolian beneficiaries are then satisfied with the project results, which they believe have brought a true evolution in their mentalities and those of their colleagues. It will surely lead to efficient reforms in Mongolian HE system in the years to come.

All partners regret the impossibility to travel in year 2020, which impeached them to meet again and to pursue the activities on a “face-to-face” mode. They believe however that despite the forced distance, they managed to reach their objectives.

In general, the project contributed to increase expertise and knowledge in the partner country in relevant fields, with potential to bring a worthy change to the academic and socioeconomic development. Filling an expertise and knowledge gap will help overcome the mismatch between the outputs of the education system and the needs of Mongolian labour market, boosting competitiveness of Mongolia’s production.

An active approach based on promoting employability lies behind the focus of this initiative. Inter-institutional collaboration at national, regional and international levels will contribute to a better understanding between the countries and cultures involved fostering modernisation. This will

lead to an increase in high-developed human resources in the field of entrepreneurship and a subsequent increase of job opportunities.

At the international level, all partners know each other much better today. Already established relationships will lead to further collaborations. Some partners have already proposed and launched common projects for future cooperation (for example exchange of teachers and later students). Difficulties and adversity encountered during the project period reinforced both quality and strength of the Consortium' relations.

BUAS and MULS manage to tie especially close links. In addition to project' achievements, the relation set led to a very close and resilient cooperation. Aside from the future actions planned (certain already in implementation), a very open and friendly working environment generated a large number of personal links and exchanges about culture, traditions, history, society values. Although unquantifiable as project outputs or outcomes, people-to-people relations prove to be the most solid ground for developing future activities as human networks prove to have a superior resilience over the strict institutional ones.

2. Project results

a) WP.2 E-learning development

The Mongolian three partner Universities pioneered to introduce the Blended E-Learning methodology to the Universities and it expanded into the National Higher Education system. In the beginning of the project there was no clear understanding regarding blended e-learning and online training amongst the leaders and faculty members of Mongolian Universities. This problem was one of the debatable issues between and within partner Universities and at the national level.

Contributing to the resolution, the project brought the right knowledge and wider information regarding the blended e-learning and online training. National project coordinator Dr. B. Ochirkhuyag led presentations at national level in discussion forums and on online trainings hosted by the Ministry of Education and Science for mid and top managers of the Universities.

In addition, the project team organized a series of trainings for the faculty members of the three Universities regarding better development of blended e-learning systems in each institute. As a result, a core team of e-learning and online education formed up with collaboration of three Universities. The already existing E-Learning centre at MULS has provided services to NUM and MUST in order to develop e-contents, and has facilitate online workshop and trainings.

MULS and BUAS collaborated to introduce a comparatively new learning method of simulation-based decision-making tool into the training programme of MULS. The teaching staff, technical staff and students have learnt the new methodology.

Concrete results:

- A total of 4 Trainings from EU experts to introduce e-learning and e-content development,
- Conversion of existing pedagogical materials into digital content. Creation of 20 e-learning curriculum materials for Bachelor and Master students.
- 70 teaching staff and 5 technicians involved in the creation.
- Instalment of required equipment, training for its use, for digitization and acquirement of technical skills. This equipment has proven to be particularly useful in the context of COVID-19.
- Creation of a new E-learning department at MULS and of online Moodle platform common to the 3 MNG partners <https://inrae.mn/moodle5593/login/index.php>

- Creation and analysis of surveys to examine the quality of new content : twice with an audience of 50 teachers and 400 students

b) WP.2bis 1 Food hygiene, analysis and transformation

NUM and MUST have collaborated into the creation of a “Food Hygiene” joint-Master programme that received official Ministry accreditation and is currently under implementation. It consists in online training and capacity building of the teaching faculties and master students. The content of this degree is highly innovative for Mongolia, as it aims to provide food quality and safety knowledge through a combination of distance and lab training.

Therefore, the complementary associated “Food Assessment Open Education Laboratory” supports this degree. It is accessible and used by students of current Master and Bachelor Biology programs of the 2 universities (representing currently around 300 students)

NUM and MUST staff involved in this WP wrote a Handbook for lab work for identification of foodborne bacteria (microbiology and molecular biology).

c) WP.2bis2 Greenhouse construction and greenhouse production

At MULS, GERES has built for the university (via a Memorandum of Understanding) an experimental passive bioclimatic greenhouse of 120 m², used for teaching as well as professional trainings in market gardening. This facility is installed at MULS “AgroPark”, a space dedicated to market gardening located close to the campus, in Ulan Bator. It is used complementarily with heating greenhouses financed by MULS and other partnerships.

- 65 students of the Agricultural Construction Department of the School of Engineering of the MULS were taught 20 hours of greenhouse construction lessons in classroom and 8 hours of self-study assignments on the job basis of greenhouse construction methods during the week.
- 30 students in the Agronomy class were taught vegetable growing techniques and technology for 14 days, with 30 hours in the greenhouse and 12 hours in the classroom.
- In association with NAMAC, a producers’ cooperative, GERES led trainings to farmers from the suburbs of Ulaanbaatar about technology of growing vegetables. Twice for 60 people for 3 days of 30 hours lecturers (22 hours in the greenhouse for practical work and 8 hours in the classroom for theory). Guides and manuals have also been produced.

At MUST, staff and students from the School of Engineering and Architecture built on a voluntary basis a 60 m² passive bioclimatic greenhouse. Plans and expertise were provided free of charge by Caritas Mongolia (not a partner of the project), materials were purchased with the MUST equipment budget.

Around 100 students and 5 teachers and technicians of the biotechnology and nutrition department use this facility for practical and research work: cultivation and study of native edible plant species, analysis and potential economic development.

The plant chosen for production is kale cabbage. Therefore, the combination of bioclimatic greenhouse and the kale cabbage, a niche product with relatively high demand on the urban markets, is an implemented solution that builds on a winning combination for both production and product.

In Sept 2020, MUST organised a training about the function, mechanisms and future prosperity of bio organic fungicide for greenhouse producers, in collaboration with the foundation named “Save Mongolian Mother Nature” at the “Flowers” exhibition, in Ulaanbaatar Mongolia.

d) WP.2bis3 Costs/benefits training and computerised management

Practical tool used for pedagogic use but also for professionals’ and farmers. The support for planning and decision-making tool was developed considering the following series of variables:

- realistic and reflecting the Mongolian agriculture particularities including local sorts,
- races and varieties,
- easy access,
- intuitive interface,
- low-data transfer on remote transport/download,
- offline use fully featured,
- further development and additions,
- no future costs for maintenance and/or updates.

From an initially considered feasible mobile device app, eventually using JavaScript, to run on handheld devices and also on the computer browsers, the option needed adjustments as an online app requires a mobile data connection. However, the farmers carefully choose the content they download or the mobile data links to minimise the traffic load and respectively the data traffic volume and the adjacent costs.

Supplementary, the mobile app requires regular updates following the operating system's updates, including major ones, implying costs beyond the project's end. Under these limitations, a standalone operational offline tool with easy potential development was required and the solution pointed out on a set of linked spreadsheets operating throughout a front page, protected from the possibility to alter (accidentally) the functionality. The choice proved to be a winning combination, particularly within the context of the 2020 pandemic, when even students operating online had to manage carefully the amount of data downloaded.

Considering the above-mentioned particularities, the most popular and demanded productions were retained for the initial build of the support tool: livestock, vegetables and cheese. The development phase included several rounds of testing before the internal validation and the passage to the students' test phase. The test and the feedback from the students were very positive marking the validation stage on the tool development. Starting with that moment (October 2019) the tool was regularly used by students on all study programmes level and also employed by farmers participating in trainings organised by School of Economics and Business of MULS.

e) WP.3 Career development and relations with businesses

Career centres for development of students’ employability are newly introduced in NUM and MULS and have enlarged existing activities at MUST.

The project team share their best experiences of the career development activities at institutional level and also at Ministry level. The universities provided the office space and created new job places for the faculties responsible for the career development activities.

NUM & MULS established a Career development unit, under the “Training department” of the Universities, with dedicated staff, budget and office, validated through rector’s resolution. MUST strengthened its existing career centre.

Their aim is to introduce students to the specifics of the education system and curriculum, to provide learning opportunities, and to prepare students to develop ethical and soft skills that they can value during their future career.

Developments during the project at NUM:

- Job & Career fair at NUM in 2019, meeting of students (attendance of 300) and employers (around 10 private companies)
- Surveys production and analysis for students and private companies needs assessment
- Specific trainings organised (105 students at NUM) and of a Career Incubator for new graduates (30 in 2019)
- Online events and trainings launched in 2020 : NUM Online Training on Facebook in 2020, 778 students registered
- Exploitation of Alumni database (around 600 graduates)