

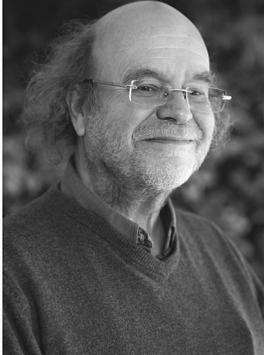
# Annual Report 2022



Faculty of Tropical  
AgriSciences



Faculty of Tropical  
AgriSciences



## DEAN'S INTRODUCTION

**Dear colleagues, students and friends of the Faculty of Tropical Agriculture,**

What a year 2022 has been ! It started like 2021 ended: with COVID-19 very much on our minds and affecting our lives, but still with some positive prospects due to the success of the vaccines. However, on February 24 Russia decided to attack and invade Ukraine, and since then the face of the earth changed completely. A whole nation was directly and indirectly hit by vicious attacks on their lives and homes. Hundreds of thousands of people fled their homes in search of a livable shelter and protection from this aggression. The war also created enormous 'collateral damage'. Food provision of the global South was and still is affected as cereal exports were stopped or interrupted as Putin did not allow transport to operate normally. People in Europe continue to suffer from high energy and food prices, and rising inflation rates. The only sectors profiting from the war are the fossil energy and war industries. Also, due to the war, the transition towards more sustainable, greener energy came to a halt, as more petrol, gas and coal are currently sourced and produced. Summarizing, one can say that the fall-out of the war is enormous.

When the war started, our university hosted quite a good number of Russian and Ukrainian students, our faculty only a few. Solutions had to be found for both groups. Our faculty confirmed the links it had and still has with Ukrainian university and research partners. We continue with keeping the AgriSci-UA platform alive and kicking (<https://agrisci-ua.com/>) and fostering credit mobilities from Ukraine to our university, whereas we also host a number of Ukrainian scholars. We also continue to host a so-called Jean Monet project: <https://biogas.czu.cz/cs/r-19036-projekty-brt-bezici/bioinwaste-bioenergy-innovations-in-waste-management-europea.html>.

These are small but much-needed, and also much-appreciated, signs of science-based solidarity showing that we are supporting, in our own modest way, the struggle of the Ukrainian people.

As highlighted above, the war brought about lots of 'collateral damage' beyond the 'mere' war zone. Prices for most commodities, including those for food, have been rising since the start of the war. This affects lots of people and countries at a global scale. It also puts under pressure the normal functioning of the university that has been facing increases in energy prices, but also a general rise in operating costs as a consequence of increasing inflation rates. The latter also affects the faculty's operations and activities, and puts our already strained financial basis further under pressure. Time will tell whether our coping strategies will allow us to maintain the same levels of activity and quality.

Since the start of the war, COVID-19 became less of a problem or so it would seem. Whatever the reason, it is fair to say, however, that the vaccines seem to have done their work. And COVID has now become endemic. Unlike what happened with the Delta variant, the number of deaths in the Omicron type did not increase significantly and remained

constant, even though the number of cases did increase significantly. It is to be hoped that the pandemic will soon appear to have been a kind of bad dream and that lock-downs will now be something from the past. However, experts tell us that in future we will be facing similar outbreaks of virus diseases, with a certain number of them being spread by animals – the recent bird flu cases seemingly proving the case... Zoonoses will become more and more important as the world's population, and mass tourism, will continue to grow. As already highlighted in last years annual report, our Department of Animal Science and Food is involved in working on animal diseases developing screening techniques and coping strategies. Likewise other departments try and develop new medicines from medicinal plants, or involve themselves with developing drought-tolerant crop species and varieties that might serve as alternative staple crops for the wheat countries in the South were used to source from Ukraine, or even Russia.

Indeed, the Ukrainian war disrupted the world food market and provision, especially hitting numerous African countries that also suffer from climate change. The international agricultural research community has a renewed interest in and focus on millets that are renowned for their drought tolerance and could help alleviate acute hunger problems, some of the varieties having short cycles of 2 – 3 months. Alternatively, the faculty's involvement in the Great Green Wall initiative helps fight desertification by offering science-based solutions to land degradation and losses in forest vegetation. COP 15 emphasized the importance of protecting biodiversity in all its forms also when it comes to climate change mitigation. We are confident that our faculty through its studies of plant and animal biodiversity and ecology, will continue to contribute to building a better, more resilient and sustainable world.

The 'end of COVID' allowed us to resume some of the activities that mark and characterize a normal academic year: graduation ceremonies, open faculty day, and the tropical fairtrade ball, to just name a few. For a number of these, our student ambassadors were very actively involving themselves in organizing and implementing the actual activities. A big 'thank you' for this ! And congratulations to academic and assisting staff and students alike for keeping up the enthusiasm and maintaining their focus throughout.

Thanks to the improved health situation, we were also able to organize 'our' Tropentag in September. From the (in)formal evaluations we received during and after the event, we gathered the event was a very, very big success. We organized it in hybrid form which allowed participation of (young) academics working in countries for which it is sometimes difficult to obtain visas. The conference's thematic, 'Can agro-ecology feed the world', was widely discussed and highlighted from different perspectives. Our high-level keynotes substantially contributed to the success of the event. To all those who were not able to participate: see you in Berlin in September !

2022 was not such a good year. Let us hope that 2023 brings back peace and normality. We at the faculty will do our best to make it a successful one. Thanks for your support and helping us with this ! !

Prague, 08/03/2023.

**PROF. DR. IR. PATRICK VAN DAMME**

The Dean



## **CONTENT**

- 5**    **BASIC FACTS ABOUT FTZ**
- 23**   **STUDIES**
- 45**   **SCIENCE AND RESEARCH**
- 75**   **INTERNATIONAL RELATIONS**
- 89**   **FACULTY DEVELOPMENT**
- 107**   **FINANCIAL REPORT**



# **BASIC FACTS ABOUT FACULTY**

# INTRODUCTION

The Faculty of Tropical Agriculture of the Czech University of Life Sciences Prague (CZU) is a unique centre of academic research in our country with what is now 60+ years of tradition in tropical agriculture and the sustainable management of natural resources in the tropics, promoting rural development, food processing and food security, alternative technologies based on renewable sources of energy, economics, and the sociology of rural areas in developing countries.

The Faculty offers studies in Bachelor's, Master's, and doctoral study programmes, with study in Master's programmes taking place exclusively in English, resulting in a significant proportion of our students coming from outside the Czech Republic.

Faculty graduates typically find employment in the Czech Republic, the EU, and around the world, both in the private sector and in governmental and non-governmental institutions dealing with issues of developing countries in general, trade, education, technology transfer and, last but not least, conducting research in the tropics.



# MISSION AND VISION OF THE FACULTY

## MISSION

The mission of the Faculty is to contribute to society through the pursuit of education, learning and research at the highest international levels of excellence possible.

More specifically, we provide higher, university and academic research-supported/derived/based education to foreign and Czech students in the fields of (sub)tropical agriculture, rural development, and the sustainable management of natural and energy resources in the tropics and subtropics.

An integral part of our mission is to perform research and promote the development of new insights into the broad field of (sub)tropical life sciences and the application of these R&D results in the specific conditions of (sub)tropical and/or developing countries.

## VISION

The vision of the Faculty is to be an institution of excellence in the Czech Republic and Europe, with the specific mandate to transfer the latest knowledge and technology between the Czech Republic, the EU and (sub) tropical regions in the Global South, building on and respecting the traditional values of local communities in the developing world as well as respecting their level of socio-economic and technological development. This also involves empowering our students to fulfil their academic and professional passions and aspirations in an environment that is – de facto – diverse, welcoming, and inclusive for all students, Faculty and staff.

This further means serving our community of alumni and friends through imaginative and creative programmes that inspire a lifelong relationship with the Faculty and help expand our contributions to the world.

# OFFICIAL NAME AND ADDRESS

Česká zemědělská univerzita v Praze  
Fakulta tropického zemědělství  
Kamýcká 129  
165 00 Praha – Suchdol

## IN ENGLISH

Czech University of Life Sciences Prague  
Faculty of Tropical AgriSciences  
Kamýcká 129  
165 00 Prague – Suchdol  
Czech Republic

## ABBREVIATIONS

FTZ ČZU (in Czech)	FTZ CZU (in English)
FTZ (in Czech)	FTZ (in English)

## WEBPAGES OF THE FACULTY

[WWW.FTZ.CZU.CZ](http://WWW.FTZ.CZU.CZ)

# STRUCTURE

## FACULTY MANAGEMENT

### Dean

Prof. dr. ir. Patrick Van Damme

### Head of Dean's Office

Ing. Lucie Ackermann Blažková, Ph.D., MBA.

### First Vice-dean and Vice-dean for Science, Research and Doctoral Study

Prof. Ing. Jan Banout, Ph.D.

### Vice-dean for International Relations

Ing. Petra Chaloupková, Ph.D., dr.h.c.

### Vice-dean for Education and Quality

Ing. Jiří Hejkrlík, Ph.D.

### Vice-dean for Development

Ing. Jana Mazancová, Ph.D.

## LIST OF THE DEPARTMENTS AND UNITS

NO.	CZECH NAME	ENGLISH NAME
51110	Katedra tropických plodin a agrolesnictví	Department of Crop Sciences and Agroforestry
51120	Katedra chovu zvířat a potravinářství v tropech	Department of Animal Science and Food Processing
51130	Katedra udržitelných technologií	Department of Sustainable Technologies
51140	Katedra ekonomiky a rozvoje	Department of Economics and Development
51150	Botanická zahrada FTZ	FTZ Botanical Garden
51900	Děkanát: Sekretariát děkanátu Studijní oddělení Oddělení mezinárodních vztahů Oddělení pro vědu, výzkum a doktorské studium Farmový chov antilop losích a lam guanako v Lánech	Dean's Office: Secretariat of Dean Academic Administration Office International Relations Office Office of Research and Doctoral Studies Eland and Guanaco Farm at Lány

## DEPARTMENT OF ANIMAL SCIENCE AND FOOD PROCESSING

The Department's activities can be divided into two main areas according to the two specialisations of the recently established Master's Degree programme Wildlife and Livestock Production, Management and Conservation, which the department guarantees: 1) sustainable animal production and 2) management and conservation of wild animals.

The research and pedagogical activities in sustainable animal production focus on applying modern knowledge about livestock farming in the Tropics. The primary focus is on breeding and use of local species and breeds of animals, their nutrition, feeding, animal hygiene, disease prevention and welfare.

Within the specialisation dedicated to wild animals, Department members deal with breeding, conservation and the agricultural use of native species in the Tropics. Research focuses on various aspects of animal protection and the environment. The Department focuses mainly on the protection of ungulates, the mitigation of conflicts between wildlife and humans or livestock, managing protected areas, and environmental education in developing countries. The conservation of animals outside their original distribution (*ex situ*) is not neglected, and research and teaching are often carried out in zoos. Both specialisations are linked by population genetics research, which focuses mainly on wild and domestic mammals. Research and teaching also focus on ethology, physiology and reproduction.

Since 2000, Department members have been involved in the Western Derby eland (*Taurotragus derbianus derbianus*)

conservation programme in Senegal. They are implementing projects to protect ungulates in the savannah of West Africa under the auspices of the Derbianus Conservation organisation. Since 2006, the Department has managed farm breeding of common eland (*Taurotragus oryx*) at CZU Experimental Farm in Lány, where a guanaco llama farm (*Lama guanicoe*) was also established three years later. The department also operates the Laboratory of Animal Science, the Laboratory of Molecular Genetics, and the Laboratory for Detection and Characterisation of Pathogens.

The Department's research activities concentrate in four research teams - Animal Physiology and Behaviour, e4 (Ecology, Evolution, Emergence and Epidemiology of Zoonoses), MEGERA (Molecular Ecology, Genetics and Evolutionary Research of Animals), and Wildlife Management and Conservation. In 2022, the Department had a total of 9 core academic staff. These staff members published 28 articles with IF. There were also 31 doctoral students in the Department.



## DEPARTMENT OF CROP SCIENCE AND AGROFORESTRY

The mission of the Department is to perform educational and research activities in the field of crop production in the Tropics and Subtropics aimed at increasing the sustainability and productivity of agricultural crops, with a special focus on small-scale agricultural systems through a wider use of crop diversity. In terms of education, the Department focuses on the cultivation, use and ecology of tropical crops with emphasis on traditional small-scale farming systems (e.g., agroforestry), but also on the use of modern methods, such as plant biotechnology, supplemented by specialised disciplines such as ethnobotany or chemoecology.

The research of the Department focuses on the selection and research of new crops (especially on neglected and underutilised species with promising economic value) and the conservation of their genetic resources. Research includes ethnoecological studies of small-farmer communities and indigenous groups to determine the species diversity of cultivated and naturally growing useful plants and to describe traditional practices in their cultivation, processing, and use.

The Department operates four specialised laboratories. The Lab of Molecular Biology focuses on the genetic characteristics of crops, especially on research into the population genetics of tropical agroforestry trees. The Plant Tissue Culture Lab focuses on research into new methods of *in vitro* propagation of plant material for the production of genetically identical and healthy planting material. The Lab of Ethnobotany and Ethnopharmacology researches the nutritional properties, chemical composition,



and medicinal effects of plants, with the aim of identifying new nutritional and health-promoting foods and developing promising products usable in the food and pharmaceutical industries. The research of the Lab of Soil Biology, Ecology and Environmental Research focuses on the evaluation of soil biodiversity and the functions of soil organisms in the conversion of nutrients. The Department also operates an Herbarium with voucher specimen collection.

The Department currently employs a total of 10 academic staff (3 professors, 1 associate professor, 3 assistant professors, and 3 researchers) and more than 40 Ph.D. students. Employees and students of the Department are involved in four research teams: the Tropical Biodiversity Research Group, the Tropical Biotechnology Research Group, the Tropical Botany and Ethnobiology Lab, and the Tropical Ethnobotany and Ethnopharmacology Lab. The research activity of the Department is mainly realised in the form of student diploma dissertations with the aim of their publication in the form of scientific articles (in 2022, the members of the Department participated in the publication of 20 articles in journals with IF). Three doctoral students from the Department successfully defended their dissertation in 2022.

## DEPARTMENT OF ECONOMICS AND DEVELOPMENT

The Department has long-term experience in analysing the economic, ecological and social aspects affecting the sustainability of agricultural production, natural resources management, added value generation, and agricultural production commercialisation. Topics such as migration, consumer behaviour, agricultural policy, adaptation to climate change, sustainability of farm systems, collective actions of small producers, and various forms of certification have become an integral part of the research.

The Department is the guarantor of the Bachelor's study programme: International Cooperation in Agricultural and Rural Development (ICARD), and the Master's study programme: International Development and Agricultural Economics (IDAE). Its academic staff is also involved in teaching other programmes at the Faculty, at all three levels of Bachelor, Master and Doctoral studies. They regularly lecture at partner universities in Czechia and Europe (Belgium, France, Italy, Germany and Greece) and in the developing world (e.g. Ethiopia, Indonesia, Cambodia, Cameroon, Kenya, Nepal, Ukraine and Zambia).

The main emphasis is given to the interdisciplinary character of research with the connection to practice. This is realised through cooperation with global research organisations and institutions (universities, the CGIAR system, the UN system, etc.) and development-oriented activities in the countries of the Global South, such as recently in Cambodia, Georgia, Kenya, Kyrgyzstan, Nigeria, Nepal, Peru and Zambia. As a result, academic staff at the Department published

19 scientific articles indexed in the Web of Science database in 2022. The Department also continued implementing R&I projects funded by Erasmus+, EUTF for Africa, GCF/FAO, Horizon 2020, and the Czech development assistance.

In 2022, the Department consisted of five regular academic staff members, including one associate professor and three assistant professors, out of which two hold the position of vice-dean at the faculty, and 24 Ph.D. students supervised by four internal and external specialists. Two researchers with postdoc position are also involved in seminars and teaching in the Bachelor's study programme.



## DEPARTMENT OF SUSTAINABLE TECHNOLOGIES

The Department of Sustainable Technologies focuses on teaching and research in fields that have a direct impact on food security and agricultural and rural development in the tropics and subtropics. The Department's research focuses on environmental engineering, sustainable agricultural technologies, food processing technologies and food security. The Department also focuses on monitoring the impact of agriculture on environmental and climate change.

As of 2020, the Department includes a team dedicated to the study of termites, their impact on the environment and human life in the tropics. Currently, research at the Department is funded by projects of the TAČR, the GAČR and Horizon 2020. Additional funding comes from the Czech Republic's foreign development cooperation, where the Department is addressing or participating in addressing a significant number of projects at the Faculty. The Department operates the Environmental Technology Laboratory, the Food Processing Technology Laboratory and the Termite Biology Laboratory. The Department is involved in the teaching in most of the accredited programmes of FTZ. The DST is a guarantor of the M.Sc. programme Agri-food Systems and Rural Development and the Ph.D. programme Sustainable Rural Development. Both are taught in English. The Department also provides teaching for foreign students within the Erasmus+ exchange programmes.



The Department currently has a total of 9 academic staff including one professor, three associate professors, and four assistant professors, and one postdoc. In addition to its academic staff, there are 17 Czech and foreign Ph.D. students.

## BOTANICAL GARDEN

The Botanical Garden of the Faculty of Tropical Agriculture of the Czech University of Life Sciences in Prague (BZ FTZ) is currently devoted to a unique and complex collection of tropical and subtropical plants on an area of almost 3,800 m<sup>2</sup>. For BZ FTZ, the year 2022 was marked by the continuation of the changes started in 2021. Anežka Daničková tried to preserve the continuity of a well-established botanical garden with a quality collection and at the same time introduce into the structure of the BZ FTZ elements of good practice common in other similar facilities. In 2022, the new work team was almost established, which was formed throughout 2021 through a demanding staffing process. During 2022, work continued at FTZ on the inventory and digitisation of the extensive data on plant and seed material. Updating of the website continued and a system of regular weekly newsletters on BZ FTZ activities was introduced.

BZ FTZ has published an Index Seminar for 2022 with 678 items offered to more than 200 Czech and international botanical gardens.

In 2022, the BZ FTZ participated in two events organized by the UBZČR: the Botanical Cooperative organized on the occasion of the 100th anniversary of the Botanical Garden of MUNI Brno and the UBZČR Conference, which focuses on long-term education of botanical garden managers.



BZ FTZ established cooperation with researchers from the Tomáš Pluskal group at the Institute of Organic Chemistry and Biochemistry of the CAS. Scientific work was carried out on pepper plants and chilli peppers.

The year 2022 was very successful in terms of changes and development planning. In addition to the aforementioned feasibility project for a new tropical greenhouse and the small projects implemented, the FTZ BZ attempted to submit its first ever grant project during 2022. This is a pilot project dedicated to environmental education and training and was submitted in the framework of an environmental call for proposals issued by the City Council.

In 2022, 84 guided tours were held at the Botanical Garden, with a total of more than 3,500 visitors.

## CENTRE FOR INFECTIOUS ANIMAL DISEASES (CINEZ)

The Centre for Infectious Animal Diseases (CINEZ) was established in 2020 as an interfaculty center involving experts from several CZU faculties, including FTZ. Researchers at CINEZ deal with the issue of infectious animal diseases and zoonoses. On behalf of FTZ, the activities of CINEZ are conducted mainly by the research group "e4 research group" led by Dr. Jiří Černý and the "CZU mobilAB" team led by Dr. Hynek Roubík. In 2022, the CINEZ FTZ research teams continued with the project focused on establishment of 3 CZU mobilAB units created to detect infectious agents in Zambia. CINEZ experts continued with training of Zambian experts on the ground and through online seminars. e4 research continued in the work on the HERA project aimed at the coordination of sequencing of SARS-CoV-2 and the increase of capacities for pathogens detection and determination in the Czech Republic, both in response to the COVID-19 epidemic and other possible infectious diseases. In 2022, CINEZ employees also participated in basic research and teaching of CZU students. Finally, in 2022 CINEZ was involved in preparation of agreement between CZU and Institute of Organic Chemistry and Biochemistry, Czech Academy of Sciences about collaboration on Ph.D. study programmes.



# CINEZ



## COMMON ELAND AND GUANACO FARMS

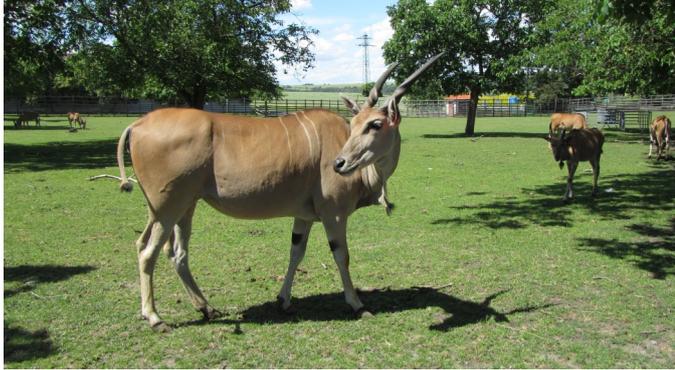
Since 2002, FTZ has been involved in the management of common eland antelope (*Taurotragus oryx*) and since 2009 in the breeding of guanaco llamas (*Lama glama guanicoe*). The farms are located at the CZU Farm Estate in Lány, where a new barn and paddocks for the common elands were opened in 2006.



Despite the fact that both farms were established for the production of farm animals and meat from the beginning, the predominant interest of the Faculty is research, whether carried out in the form of student work or research projects with extensive international cooperation. During the year, both facilities were used in student practical training, student internships and entire university, for student and public excursions and demonstrations of a unique intensive breeding method during national and international visits.

From 2017 onwards, we continued to renew tree planting on the farm, both landscaping and productive, especially of old varieties of high-stemmed fruit trees, with the aim of integrating our agroforestry system. For the llamas, this involved the transformation of non-productive apple plantations by cutting and debarking to new plantings in high-stem orchards. In the antelope enclosure, a handling system is in use, enabling contactless separation of the animals, weighing and fixation, which allows sampling and examination of the animals without the need of anaesthesia.

For the antelopes, an automatic weighing scale is installed and weighing and sampling take place on a monthly basis, which allows control of body development, condition and weight gain. Students are joining routine handling within practical subject Animal Handling, Sampling and Processing where participate in animal manipulation, sampling, and subsequent analyses including data processing. Several research projects have been carried out.



### **Common eland farm**

Eland husbandry was carried out similarly to previous years with a total overwintering capacity of 50 adult individuals. At the beginning of 2022, the total number of animals was 49 individuals (2 adult males, 23 adult females, 11 calves, and 13 juveniles under 2 years of age). Due to the full capacity of the breeding facility, a total of 8 old individuals were slaughtered. A total of 6 individuals (1.5) were sold to two private breeders for cooperation in husbandry outside CZU.

A total of 7 calves were born during the year and continued to be weighed and measured regularly at monthly intervals to monitor growth and health status. At the end of 2022, the number of animals was 38 individuals (2 adult males, 18 adult females, 7 calves and 11 juveniles animals up to 2 years of age). In the summer, the fencing between the antelope enclosures, which had been damaged by the animals, was replaced. The wooden slats were replaced with concrete blocks, which will prevent the destruction of the fencing by the mutual interactions of the animals through the fencing.

### **Guanaco farm**

We entered 2022 with a population of 8 individuals. In the breeding group at the beginning of the year, there was 1 breeding male, 5 females of reproductive age and 2 young animals. At the end of 2022, the status was 12 individuals (1 breeding male, 6 females of reproductive age, and 5 reared young. In the paddocks, the transformation of a non-productive apple orchard into a high-stemmed mixed orchard continued.



# THE ACADEMIC SENATE

The FTZ Academic Senate (AS FTZ) began its activities in the first election period in 2013. In 2022, it met until December in the composition for the student section of Ing. Iva Bernáthová, Ing. Ingrid Faltová and Ing. Barbora Motýlová and for the academic staff consisting of Ing. Tamara Fedorova, Ph.D., Ing. Johana Rondevaldová, Ph.D., prof. Ing. Ladislav Kokoška, Ph.D., Ing. Radim Kotrba, Ph.D., doc. Ing. Zbyněk Polesný, Ph.D. and Ing. Vladimír Verner, Ph.D. In December, Ingrid Faltová interrupted her studies and ceased to be a senator. Her place will be filled after additional elections.

In 2022, the Senate met a total of three times, of which twice in person, once in a hybrid form, and once voted outside the session per rollam. The first meeting took place in a hybrid form on January 31<sup>st</sup>, to discuss the double degree study programme Agricultural Sciences and Farming Systems in the Tropics and Subtropics. On July 14<sup>th</sup>, a meeting was held at which AS FTZ discussed the Annual Management and Financial Report for 2021, FTZ budget for 2022, the budget for the Internal Grant Agency of FTZ and documents for admission procedures for all levels of education.



On 11 October, a meeting was held at which documents for the admission procedure for bachelor's, master's and doctoral study programmes were discussed. Fees for study in a foreign language, the new Tropical Agroecology online study programme, the composition of the ethical committee, the Dean's Regulation on the project center and the Organizational arrangement of FTZ were also discussed. On 14<sup>th</sup> October the FTZ Annual Academic Community meet as part of the Day with the Faculty and a report on the activities of the AS FTZ and a dean's report were presented. In December, AS FTZ approved outside the meeting by per rollam the Dean's Regulation to the project center.

# FTZ LABORATORIES

FTZ has a total of nine laboratories, which are used not only by academic staff but also by students. They use the laboratories to solve their bachelor, diploma and dissertation theses and thus gain valuable skills and experience. The laboratories are also used for teaching and are often presented at open day events for both study applicants and the public.

## THE LABORATORY OF ETHNOBOTANY AND ETHNOPHARMACOLOGY

The Laboratory of Ethnobotany and Ethnopharmacology (LEE) focuses on the study of the chemistry and bioactivity of underutilised (neglected) crops of tropical and subtropical origin. Species used by native peoples in traditional folk medicinal systems are plants of special interest. Particular research activities involve ethnobotanical inventory studies, the evaluation of (ethno)pharmacological properties, and chemical and nutritional analyses of plant materials focused mainly on the identification and isolation of their bioactive components.

## THE LABORATORY OF FOOD PROCESSING TECHNOLOGIES

This laboratory focuses on the study of the technological aspects of food processing, with an emphasis on their applicability in the tropical areas of the developing world. A priority of our research is food preservation by drying, using simple and economically feasible techniques to support renewable energy sources (e.g. solar drying, solar cooking). The application of different pretreatments is investigated before drying as well as the effect of these pretreatments on the organoleptic properties of the final product.

## THE LABORATORY OF BIOFUELS

This laboratory focuses on the study of biomass - a promising renewable energy source with great potential. The purpose of this operation is to research the properties of solid biofuels (pellets and briquettes) made of different types of biomass and mixtures thereof, including interesting energy crops and agricultural waste. The Biofuels Laboratory is fully equipped with modern equipment such as a calorimeter, a muffle furnace, a laboratory oven drier, a vibrating device for determination of particle size distributions, and a flue gas analyser.



## THE FTZ HERBARIUM

The FTZ Herbarium is part of the Department of Crop Sciences and Agroforestry. It is affiliated with the Tropical Botany and Ethnobiology Lab (TRIBE) team. The Herbarium in conjunction with the Botanical Garden forms FTZ's primary facility for research and education in tropical botany and agronomy. A herbarium is a scientific reference collection of permanently preserved plant specimens for species identification and is also useful for the determination of the geographical distribution, abundance, habitats, and flowering and fruiting periods of species. The FTZ Herbarium is a collection focused on useful tropical plant species, including major and minor crops and useful wild plants.

## THE LABORATORY OF PLANT TISSUE CULTURES

The Laboratory of Plant Tissue Cultures focuses on research into in vitro cultures of plants from tropical and subtropical regions with a specialisation in the breeding, plant propagation, and in vitro conservation of plant genetic resources. Our main research objectives are focused on the optimisation of micropropagation technology (nodal and apical cultures, the formation of adventitious shoots, indirect organogenesis and somatic embryogenesis), the induction of polyploidy, the in vitro conservation of plant genetic resources (medium-term conservation, microtuberisation), and the study of somaclonal variability of in vitro regenerants.

## THE LABORATORY OF MOLECULAR GENETICS

The laboratory is fully equipped for DNA extractions from various types of tissue, standard PCR techniques including real-time PCR, visualisations by electrophoresis, and other related activities. The laboratory has been newly equipped with a real-time PCR thermocycler and an automatic pipetting robot, which are mainly used for teaching quantitative PCR. A separate laboratory room for DNA extraction from non-invasive samples has also been newly introduced to reduce contamination in analyses. The animal research working group has long been involved in all aspects of gene flow in populations, and studies have been carried out on population structure detection, hybridisation monitoring, and phylogenetic analyses in selected species. In this laboratory, students from the Department of Tropical Crops and Agroforestry are working on the genetic diversity of more, and less known, agricultural crops and agroforestry tree species, mainly from Latin America and Africa. Research mainly focuses on assessing the impact of various factors such as domestication, deforestation, habitat fragmentation, breeding programmes, etc. on the genetic diversity of the species under study.



## THE LABORATORY OF ANIMAL SCIENCE

The Laboratory of Animal Science studies biological materials of animal and animal feed origin, using simple and economically feasible techniques, focusing on their applicability in tropical regions of the developing world. Primary research activities within the laboratory include the monitoring of blood biochemical parameters, coprological investigations, basic sperm evaluation, and chemical composition and mineral analyses of feedstuffs and faeces. Incorporated is the Behavioural Studies Laboratory, equipped with a number of behavioural evaluation software. The Laboratory of Animal Science also maintains a collection of equipment for animal fieldwork studies.

# FACULTY IN NUMBERS

## THE LABORATORY FOR DETECTION AND CHARACTERISATION OF PATHOGENS

The laboratory is fully equipped for routine and safe work with biological samples potentially containing pathogenic microorganisms (BSL2) including the equipment for extraction of nucleic acids (DNA and RNA) from such samples and for further detection of specific nucleic acids by (RT-q)PCR and their sequencing by nanopore sequencer. Further, immunological assays such as ELISA and basic microbiological experiments can be performed in the laboratory. The laboratory is primarily used by the “e4 research group”, which uses it to study the ecology, evolution, emergence, and epidemiology of viral zoonoses and vector-borne diseases.

## THE BIOGAS RESEARCH TEAM LABORATORY (BRT-LAB)

The BRT-Lab focuses on the research of anaerobic digestion processes. It is affiliated with the Biogas Research Team. Within the framework of the laboratory, it is possible to conduct experiments on several laboratory stands: an anaerobic biogas generation unit and digestion of organic waste and plant residues, and a laboratory stand for biotesting the ecological effect of digestates on biological systems.

### NUMBER OF STUDENTS IN 2022

Bachelor’s studies	274
Master ‘s studies	229
Doctoral studies (in person)	96
Doctoral studies (combined)	11
<b>TOTAL</b>	<b>659</b>

### NUMBER OF EMPLOYEES IN 2022

	Absolute number	Recalculation by FTE
Professors	5	4.9
Extraordinary Professors	1	1.0
Associate Professors	9	8.7
Professors Assistants	14	12.0
Research and Science Staff	12	8.7
R & D Staff	2	1.2
Others (Administrative and Operational Staff)	28	21.9
<b>TOTAL</b>	<b>71</b>	<b>58.4</b>



**STUDIES**

# STUDY AT FTZ

Two Bachelor's programmes (one in Czech, the other in English) and six Master's programmes (in English only) cover many agricultural issues in developing countries, including rural development. In 2022, the Faculty offered three Doctoral programmes (taught only in English). Thanks to the out-of-European focus of the activities of the entire Faculty, the offer of programmes also reflects the possibilities of employment for graduates outside the territory of the Czech Republic.

Since 2019, all study programmes have been significantly restructured. In 2022, the students from the last two innovated study programmes (TZ and IDAE) graduated. The interest in studying at the Faculty is mainly confirmed by the fact that the number of applicants for the Faculty has been increasing steadily. However, the increase in the total number of Bachelor and Master students in the last three years was slowed due to reduced admission during the strict admission process. In 2019, there were 382 Bachelor and Master students; in 2020, 458; in 2021, 553; and in 2022, 503 students.



# UNDERGRADUATE STUDY PROGRAMMES

In 2022, FTZ offered two accredited Bachelor's programmes. The students from newly accredited study programmes have reached 3<sup>rd</sup> year; in 2022, they were the first graduates.

## TROPICKÉ ZEMĚDĚLSTVÍ (TROPICAL AGRICULTURE - TZE)

The graduate profile of the Tropical Agriculture study programme represents a versatile, practically equipped professional in tropical agriculture. The programme covers both tropical crop production and animal husbandry. This is complemented by a basic knowledge of technology and agricultural economics. Unlike the original accreditation, however, students can choose their preferred course of study and specialize in crop or livestock production due to the larger number of electives. The programme is designed in line with environmental protection and the need to address poverty and food security in developing countries. This programme is taught in the Czech language.

## INTERNATIONAL COOPERATION IN AGRICULTURAL AND RURAL DEVELOPMENT (ICARD)

The programme is designed with the objectives of agricultural development, environmental protection and, at the same time, the need for tackling poverty and ensuring food security in developing countries along UN SDGs. The profile of a graduate capable of preparing, managing and evaluating a development project requires that the study be based on the following foundations: the graduate's detailed knowledge and skills in project management, international communication and human resource management in a multicultural environment; a basis in biological disciplines focused on primary agricultural production; compulsory internship in non-profit organizations, state institutions and private companies engaged in international development or business projects in developing countries. The programme is taught in English.

# MASTER'S STUDY PROGRAMMES

In 2022, FTZ offered seven Master's study programmes taught in English only.



## AGRI-FOOD SYSTEMS AND RURAL DEVELOPMENT (ASRD)

The programme aim is to prepare graduates to work in agri-food systems and sustainable rural development, specifically focusing on developing countries and tropical areas. The programme is based on an interdisciplinary approach focused on food production systems in tropics, food processing, and suitable agricultural technologies based on renewable energy resources. An essential component of the programme is food security, which plays a crucial role in sustainable rural development in all developing countries.

## INTERNATIONAL DEVELOPMENT AND AGRICULTURAL ECONOMICS (IDAE)

The programme aims to train professionals with a strong socio-economic background and knowledge to address the current and future challenges in agriculture and natural resource management in the tropics. Core courses focus on the effectiveness, sustainability and empowerment of agrarian policies, institutions, farming systems, food security, cooperatives and value chains.

## **WILDLIFE AND LIVESTOCK PRODUCTION, MANAGEMENT AND CONSERVATION (WLPMC)**

Students receive a solid theoretical background in wild and domestic animal production, management and conservation in tropical and developing regions. The knowledge obtained is put to use during several training and fieldwork units. The programme offers two specialisations - Sustainable Animal Production (SAP) and Wildlife Management and Conservation (WMC).

## **TROPICAL CROP MANAGEMENT AND ECOLOGY (TCME)**

The programme aim is to create professionals for the next generation needed to address challenges closely tied to the tropical and subtropical agricultural systems, biodiversity conservation, nutrition and human health, and interdisciplinary approaches in sciences.

## **TROPICAL FARMING SYSTEMS (TFS)**

The programme is oriented towards modern farming systems in tropical regions of developing countries. The TFS study programme covers the issue of crop production with an emphasis on the long-term sustainability of farming systems and surrounding natural ecosystems. In this programme, students pay for their studies in total. However, the programme offers a wide range of specialisation through elective courses.

## **TROPICAL FORESTRY AND AGROFORESTRY (TFA)**

The study programme is based on an interdisciplinary approach in order to deepen theoretical knowledge and practical skills related to forestry and rural development in Third world countries. Students are prepared for professional forestry and wood processing activity in the countries of the tropical and subtropical zones. Great emphasis is also placed on related agriculture and rural development in these countries.

## **AGRICULTURAL SCIENCES AND FARMING SYSTEMS IN THE TROPICS AND SUBTROPICS - DOUBLE DEGREE**

The Double Degree between Czech University of Life Sciences Prague (Czech Republic) and University of Hohenheim, Stuttgart (Germany), allows students of the master's degree in the area of tropical agriculture to live an experience abroad and to study in a cosmopolitan and multicultural environment, thus increasing the job opportunities in a growingly globalized context. The double degree shall offer an additional benefit for the students by:

a) an increased selection of modules offered on tropical agriculture, b) the acquirement of soft skills in different teaching environments as well as cultural backgrounds, and c) performing scientific work under the supervision of two academics from two different universities.

More information: DD | Double Degree Programme ([agritropics.eu](http://agritropics.eu))

# DOCTORAL STUDIES

During doctoral studies, students are expected to acquire a deep understanding of their chosen subject area, develop advanced research skills, and conduct original research that contributes to the knowledge and understanding of the field. This may involve designing and conducting experiments, analysing data, developing theories, or applying existing knowledge to new problems or contexts. In addition to research skills, doctoral students are also expected to develop strong critical thinking, analytical, and communication skills. This includes the ability to evaluate and synthesize complex information, communicate research findings to both academic and non-academic audiences, and collaborate with others in their field. Ultimately, the goal of doctoral studies is to prepare students to become independent scholars and experts in their field, capable of contributing new knowledge and insights to the broader academic community. Besides the research activities, the Ph.D. students at FTZ are encouraged to publish the results in international peer-reviewed journals, and participate in the teaching and science popularisation. They must also pass the state doctoral examination including the doctoral thesis defence according to their ISP (Individual Study Plan). Currently, FTZ offers studies in three study programmes.



## TROPICAL AGROBIOLOGY AND BIORESOURCE MANAGEMENT

Programme guarantor: Prof. RNDr. Pavla Hejcmanová, Ph.D.  
Education: 37 - agriculture (50%), 3 - biology, ecology and environment (50%)

ISCED-F: 0888

Accreditation valid: November 18, 2029

Language of study (accreditation): English

Standard length of study (maximum length of study):  
4 years (8 semesters)

Minimum number of credits: 240

Possibility of studying in a combined form: yes

Tuition fee (for 1 year of study): CZK 5,000

### TABM Doctoral Degree Board:

#### Chairman of the Board:

prof. RNDr. Pavla Hejcmanová, Ph.D.

#### External members:

doc. RNDr. David Honys, Ph.D.

prof. Lukáš Kratochvíl, Ph.D.

Ing. Martin Kulma, Ph.D.

#### CZU members (excluding FTZ):

doc. Ing. Jaroslav Havlík, Ph.D.

doc. Ing. Pavel Klouček, Ph.D.

prof. Mgr. Ing. Markéta Sedmíková, Ph.D.



#### Internal members:

prof. Ing. Jan Banout, Ph.D.

doc. Francisco Ceacero Herrador, Ph.D.

RNDr. Jiří Černý, Ph.D.

Ing. Olga Leuner, Ph.D.

prof. Ing. Bohdan Lojka, Ph.D.

doc. Tersia Needham, Ph.D.

prof. RNDr. Irena Valterová, CSc.

## SUSTAINABLE RURAL DEVELOPMENT

Programme guarantor: Prof. Ing. Jan Banout, Ph.D.

Education area: 37 - agriculture (100%)

ISCED-F: 0888

Accreditation validity: 17. 12. 2028

Language of study (accreditation): English

Standard length of study (maximum length of study):  
4 years (8 semesters)

Minimum number of credits: 240

Possibility of studying in a combined form: yes

Tuition fee (for 1 year of study): CZK 5,000

### **SRD Doctoral Degree Board:**

#### **Chairman of the Board:**

prof. Ing. Jan Banout, Ph.D.

#### **External members:**

doc. RNDr. Ing Tomáš Ratinger, Ph.D.

Ing. Bo-Anne Rohlík, Ph.D.

#### **CZU members (excluding FTZ):**

prof. Ing. Lukáš Kalous, Ph.D.

#### **Internal members:**

doc. Ing., Dr. sc. agr., Dr. sc. habil. Miroslava Bavorová

Ing. Olga Leuner, Ph.D.

Ing. Jana Mazancová, Ph.D.

doc. Ing. Hynek Roubík, Ph.D.

Ing. Klára Urbanová, Ph.D.

Ing. Vladimír Verner, Ph.D.

## AGRICULTURE IN TROPICS AND SUBTROPICS

Programme guarantor: Prof. Ing. Bohdan Lojka, Ph.D.

Education area: 37 - agriculture (100%)

ISCED-F: 0888

Language of study (Accreditation): English

Accreditation valid: November 18, 2029

Standard length of study (maximum length of study):  
3 years (6 semesters)

Minimum number of credits: 180

Possibility of studying in a combined form: yes

Tuition fee (for 1 year of study): CZK 80,000

### **ATS Doctoral Degree Board:**

#### **Chairman of the Board:**

prof. Ing. Bohdan Lojka, Ph.D.

#### **External members :**

doc. RNDr. David Honys, Ph.D.

prof. Lukáš Kratochvíl, Ph.D.

Ing. Martin Kulma, Ph.D.

#### **CZU members (excluding FTZ) :**

doc. Ing. Jaroslav Havlík, Ph.D.

doc. Ing. Pavel Klouček, Ph.D.

prof. Mgr. Ing. Markéta Sedmíková, Ph.D.

#### **Internal members:**

prof. Ing. Jan Banout, Ph.D.

doc. Francisco Ceacero Herrador, Ph.D.

RNDr. Jiří Černý, Ph.D.

prof. Dr. Ing. Eloy Fernández Cusimamani

prof. RNDr. Pavla Hejčmanová, Ph.D.

Ing. Olga Leuner, Ph.D.

doc. Tersia Needham, Ph.D.

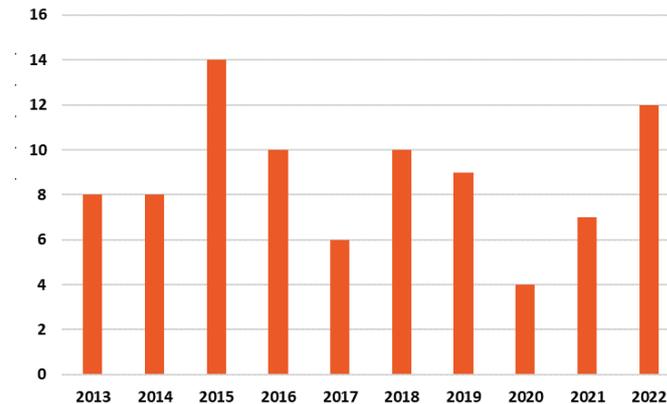
prof. RNDr. Irena Valterová, CSc.

Ing. Vladimír Verner, Ph.D.

All three doctoral study programmes at FTZ have undergone an internal accreditation process and are approved by the Council for Internal Evaluation of CZU. The topics of FTZ dissertations are approved by the DDB (Doctoral Degree Board), and applicants are admitted to the study on the basis of a comprehensive evaluation. During the studies, the doctoral students undergo department attestations twice a year, where they have to show the fulfilment of ISP (individual study plan), and the progress on research work.

The number of Ph.D. students at FTZ has increased from 60 in 2018 to 103 at the end of 2022. Two factors have mainly contributed to this increase: i) the change in the standard study period from three years to four years for two of the Ph.D. programmes and ii) the increase in the number of supervisors in all Ph.D. programmes at FTZ. However, it should be noted that the number of Ph.D. students has stabilised at 100 during the last three years. The table shows the detailed distribution of doctoral students by programme and type of study.

## THE NUMBER OF PH.D. GRADUATES IN THE LAST TEN YEARS



From the figure it is obvious that the number of Ph.D. graduates decreased in the pandemic year 2020. In the following years, the number of graduates increased again.

Programme Year of study	TABM		SRD		ATS	
	CZ	other	CZ	other	CZ	other
1.	2	12	1	10	0	0
2.	2	6	1	5	0	1
3.	5	7	1	10	0	0
4.	13	18	4	9	0	0
<b>Totals</b>	<b>22</b>	<b>43</b>	<b>7</b>	<b>34</b>	<b>0</b>	<b>1</b>

# STUDENTS IN ACCREDITED STUDY PROGRAMMES

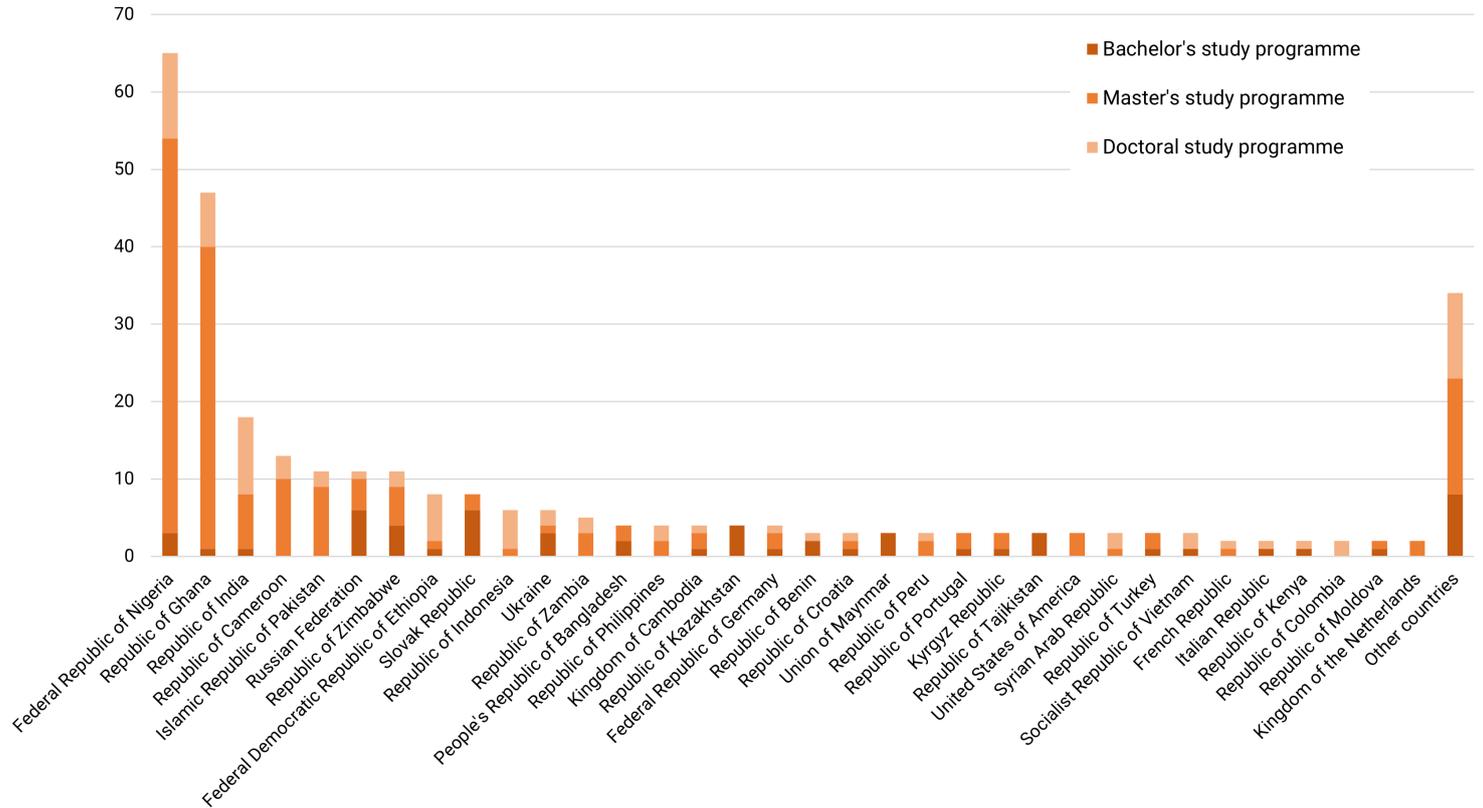
The total number of Bachelor's and Master's students in 2022 was 503 students (50 students less than in 2021). All students studied full-time forms of study. In addition, 24 students studied in lifelong learning form – at the University for the "Third Age". The overviews below contain ongoing study fields and newly accredited and innovated study programmes.

More than half of the students were international students, most of whom were students from developing countries. A multicultural environment is maintained, enabling the mutual interaction of Czech and international students.

Most foreigners in 2022 were from Nigeria, Ghana, India, Cameroon, Pakistan, Russia, Zimbabwe, Ethiopia and Slovakia (see the following chart; all figures below are from 31 October 2022).



## NUMBERS OF FOREIGN STUDENTS BY MOST REPRESENTED COUNTRIES



### NUMBER OF STUDENTS - BACHELOR'S STUDY PROGRAMMES

Programme Study year	B-ICARD		B-TZE	
	CZ	other	CZ	other
1.	11	17	75	7
2.	18	18	66	1
3.	11	10	36	4
<b>Totals</b>	<b>40</b>	<b>45</b>	<b>177</b>	<b>12</b>

### NUMBER OF STUDENTS - MASTER'S STUDY PROGRAMMES

Programme Study year	IDAE		WLPMC+WLM		TCME		ASRD+SRD		TFA		TFS+ZTS	
	CZ	other	CZ	other	CZ	other	CZ	other	CZ	other	CZ	other
1.	2	12	9	13	10	15	2	14	3	5	2	19
2.	6	31	9	11	7	12	3	29	3	6	0	6
<b>Totals</b>	<b>8</b>	<b>43</b>	<b>18</b>	<b>24</b>	<b>17</b>	<b>27</b>	<b>5</b>	<b>43</b>	<b>6</b>	<b>11</b>	<b>2</b>	<b>25</b>

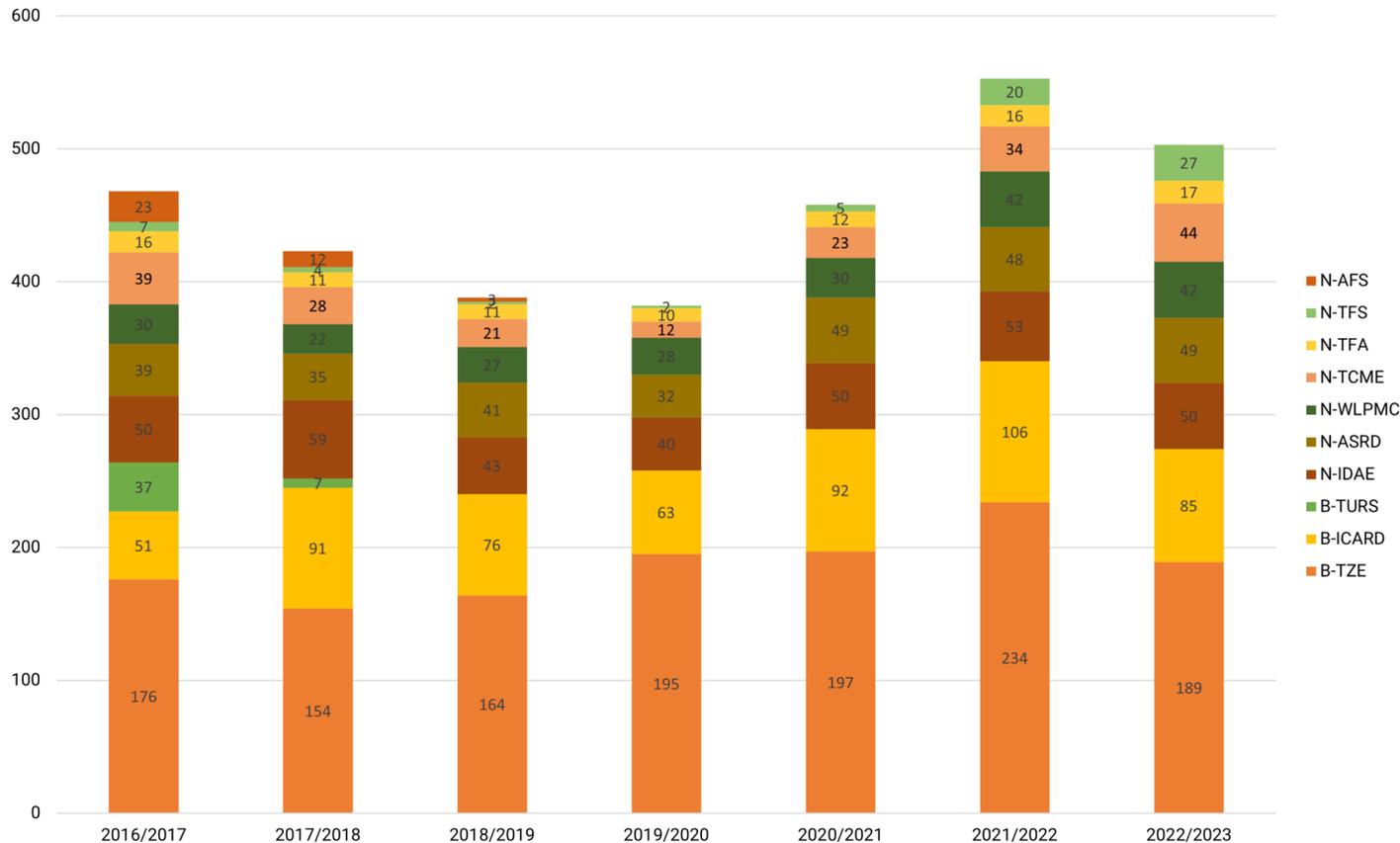
### TOTAL NUMBER OF STUDENTS (BACHELOR'S AND MASTER'S STUDY PROGRAMMES)

Form of study Year of study	Full-time	
	CZ	other
1.	114	102
2.	112	114
3.	47	14
<b>Totals</b>	<b>273</b>	<b>230</b>

### TOTAL NUMBER OF STUDENTS (DOCTORAL STUDY PROGRAMMES)

Form of study Year of study	Full-time		Combined	
	CZ	other	CZ	other
1.	3	20		2
2.	2	11	2	2
3.	4	15	1	2
4.	15	26	2	1
<b>Totals</b>	<b>24</b>	<b>72</b>	<b>5</b>	<b>7</b>

## Students in study programmes in academic years (on 31 October)



# OTHER EDUCATIONAL ACTIVITIES, LIFELONG LEARNING

Following the strategic goal of CZU, (priority strategic goal 3.1 "Linking educational activities in the study with the involvement of students in scientific and research work"), students were involved in the creative activities of the Faculty and especially in research and development projects within their final and seminar papers, and partial assignments on grant projects.

Close cooperation also took place with the application sector in the fields of science and research (collaboration with research institutes, implementation of research for application in the private sphere), development projects (partnerships with companies and non-profit organizations) and teaching (sharing external lecturers in taught subjects, offers of internships for students in companies and non-governmental organizations involved in international development projects, offers of diploma theses in cooperation with the application sphere). After the COVID-19 pandemic, the activities resumed again in full.

Since 2013, the subject "Block of Experts" has been introduced in Bachelor's programmes to enable presentations by experts with practical experience. In 2022, this was

attended by five international development experts from Czech NGOs, academia, companies and state institutions.

FTZ regularly opens a lifelong learning course - the University of the "Third Age" - called "Tropics for Everyone". In this programme, 24 students studied in 2022. The programme is opened once every two years. In addition to lectures and seminars by lecturers from FTZ, excursions are essential to the programme.



# STUDENT SUPPORT AT THE FACULTY

Student counselling is understood as an integral part of working with students. For this reason, counselling has long been provided in the main areas, following with the Higher Education Act:

- in the field of study and pedagogy,
- in the psychosocial domain,
- in the field of professional careers,
- in the legal area and
- in the field of access to information.

Counselling is provided to students through several communication channels: students can obtain the necessary information electronically on the Internet or by e-mail, or contact the FTZ specialist counsellor for the given area directly or by phone. Consultation through MS Teams has been recently adopted as well.

The CZU Institute of Education and Counselling coordinates counselling services within the university. The Counselling Center for Students with Special Educational Needs has been operating at CZU since 2006. In the case of psychosocial counselling services, these services are provided by the Department of Psychology, Faculty of Business and Economics, CZU.

FTZ mainly supports pedagogical counselling, which involves the staff of the Academic Administration Office, one specialised pedagogical counsellor, the Vice-dean for Education and Quality, and two teachers – coordinators of 1st-year Bachelor's programmes. In addition, there is mutual counselling between students at the Faculty. Six Master's degree students worked as student advisors in 2022.

International students in particular are allowed consultations beyond the regular consultation hours, and one specialised employee of the Faculty's Academic Administration Office is assigned to foreign applicants. In 2021 the Faculty also introduced systematic work by "Student Ambassadors", who assist foreign applicants and new International students.



At FTZ, exceptionally gifted students are motivated by a system of merit scholarships (a scholarship during their studies and a one-off scholarship for the State Final Examination). The current merit scholarship is CZK 1,500 per month. A total of 11 outstanding students were supported during 2022.

Furthermore, students are motivated by participation in grants from the Internal Grant Agency of the Faculty, where they are involved in scientific teams with doctoral students and teachers. They also participate in implementing development projects abroad (approximately 15 to 20 Bachelor's and Master's students per year). They are also supported in terms of international mobility associated with their qualification work (support for students going abroad to collect data for their qualification work).

Since 2013, a group of graduates has been introduced at FTZ within the professional social network LinkedIn, including 185 graduates from 2011-2021 (<https://www.linkedin.com/groups/5062023>). Through this network, the Faculty maintains contact with graduates and offers job possibilities in the international cooperation sector.

# INTEREST IN STUDIES AT THE FACULTY

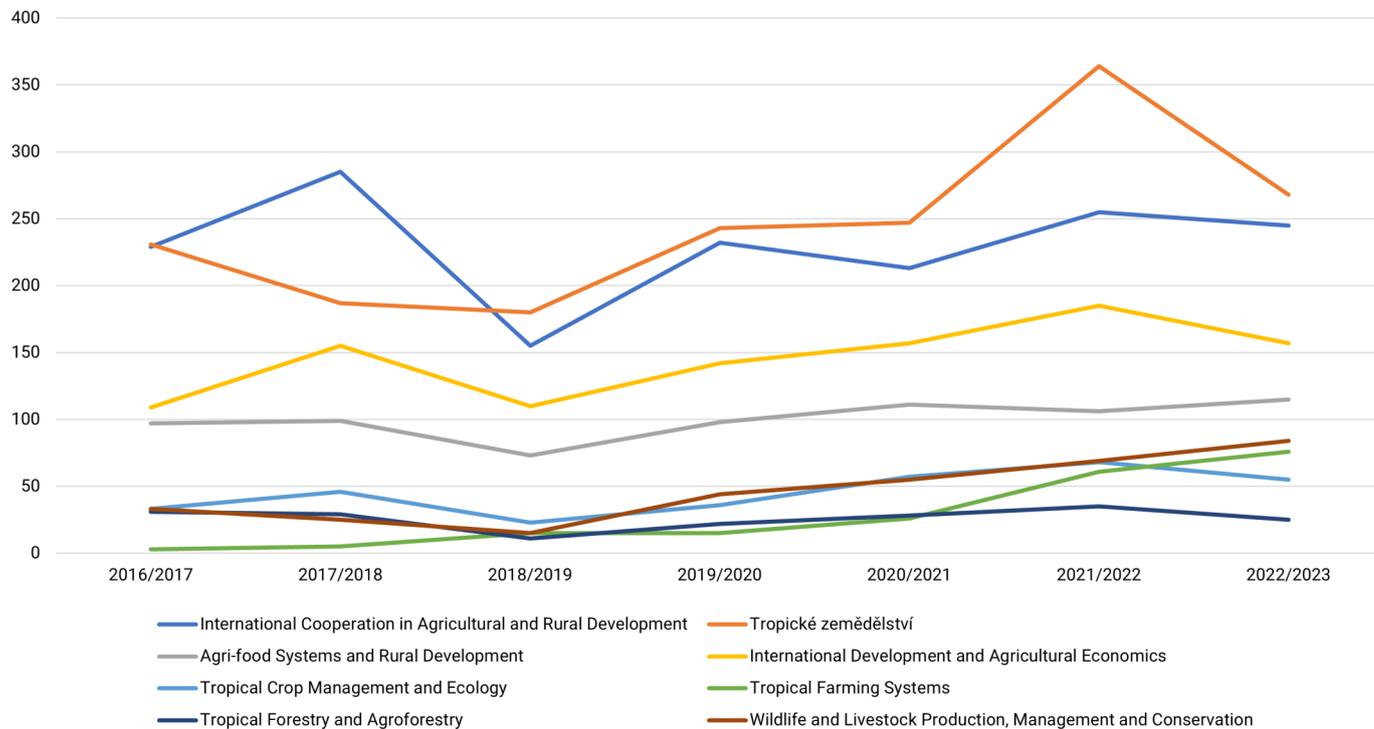
In 2022, the Faculty received 513 applications for Bachelor's and 596 for Master's programmes. The number increased significantly during 2018 – 2021. The increase slowed in 2022, primarily for Czech applicants to Bachelor study programmes (see table below). The admission procedure has become more and more selective, and the quality of admitted students increases every year. However, applicants still face significant problems when entering the study, mainly due to difficulty in obtaining a visa to the Czech Republic for applicants from African countries.

Potential Bachelor's students were addressed mainly through online advertising and traditional media. A limited number also directly at secondary schools and preparatory courses. Faculty staff also participated in several seminars and panel discussions in the Czech Republic and abroad, promoting study opportunities at the faculty. The active promotion also took place through the embassies of the Czech Republic in countries where FTZ has partners in universities.



The admission procedure for Bachelor's degree programmes takes into account the previous achievements of applicants in the form of good results in national olympiads and the study average of earlier studies - admission without an entrance exam for Bachelor's degree programmes up to an average of 1.6 (decrease from 1.8 in 2021) from their graduation certificate or the last completed year of high school.

# NUMBER OF APPLICATIONS



## BACHELOR'S STUDY PROGRAMMES

Programme	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23
International Cooperation in Agricultural and Rural Development	285	155	232	213	255	245
Tropické zemědělství / Tropical Agriculture	187	180	243	247	364	268
<b>Totals</b>	<b>472</b>	<b>335</b>	<b>475</b>	<b>460</b>	<b>619</b>	<b>513</b>

## MASTER'S STUDY PROGRAMMES

Programme	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	
Agri-food Systems and Rural Development		99	73	98	111	106	115
International Development and Agricultural Economics		155	110	142	157	185	157
Tropical Crop Management and Ecology		46	23	36	57	68	55
Tropical Farming Systems		5	15	15	26	61	76
Tropical Forestry and Agroforestry		29	11	22	28	35	25
Wildlife and Livestock Production, Management and Conservation (totals)		25	15	44	55	69	84
Specialisation SAP - Sustainable Animal Production				9	20	31	29
Specialisation WMC - Wildlife Management and Conservation				35	35	38	55
<b>Totals</b>		<b>359</b>	<b>247</b>	<b>401</b>	<b>489</b>	<b>593</b>	<b>596</b>

# STATISTICS

## ADMISSION PROCEDURE

### ADMISSION PROCEDURES FOR BACHELOR'S PROGRAMMES

Entrance exams were organized and managed only by the faculty. Entrance exams for both programmes comprise two subjects - languages and one specialised subject. For the ICARD programme, the entire entrance exam course, including a specialised test, was in English. For applicants who could not prove their knowledge of the Czech language by a school-leaving examination in Czech, the TZ programme was followed by a written interview in the Czech language focused on assessing the level of language skills required to study the programme. Applicants were admitted to study at FTZ according to the points obtained during the entrance exam until the capacity of the study programme was filled. The minimum limit for admission was at least 20 (an increase from 2021) from each test and meeting the condition of an oral language interview for foreign applicants for the TZ study programme. The sample tests are published on the website of the Faculty.

Admissions committees were proposed by the programme guarantors and approved by the Faculty Dean's Board.



## ADMISSION PROCEDURE FOR MASTER'S PROGRAMMES

Applicants had to provide a CV, an annotation of their Bachelor's thesis and a motivation letter in English for all study programmes. The entrance exams consisted of an English interview focused on the programme's content. For oral interviews for all programmes, the candidate had to achieve at least 60 points out of 100 according to the criteria set by the examination committee for each programme - according to the level of professional and standard English, assessment of cross-sectional knowledge, previous experience, experience in the field, and focus and quality of the Bachelor thesis for study. Applicants were admitted to study at FTZ according to the evaluation of the points obtained in the entrance exam until the capacity of the study programme was filled.

Students were admitted to the Tropical Farming Systems programme without an entrance exam after the submitted documents were reviewed.

Admissions committees were also proposed by the programme guarantors and approved by the Faculty Dean's Board.



Study Programme / Specialisation	Number of applications	Complete	Attended	Terms met	Terms not met	Admitted in the first round	Admitted in total	Commenced study
B-ICARD International Cooperation in Agricultural and Rural Development	245	236	225	67	156	67	67	26
B-TZE Tropické zemědělství / Tropical Agriculture	268	264	182	110	70	110	112	77
N-ASRD Agri-food Systems and Rural Development	115	101	110	26	83	26	26	13
N-TZ-IDAE International Development and Agricultural Economics	157	145	152	22	130	22	22	12
N-TCME Tropical Crop Management and Ecology	55	39	52	30	22	30	30	22
N-TFA Tropical Forestry and Agroforestry	25	20	25	13	12	13	13	7
N-TFS Tropical Farming Systems	76	60	73	47	26	47	47	12
N-WLPMC Wildlife and Livestock Production, Management and Conservation; specialisation Sustainable Animal Production	29	21	29	11	18	11	11	2
N-WLPMC Wildlife and Livestock Production, Management and Conservation; specialisation Wildlife Management and Conservation	55	51	52	29	23	29	29	19

Detailed statistical overviews, based on the Decree of the Ministry of Education, Youth and Sports No. 343/2002 Coll., giving the procedure and conditions for publishing data on admission procedures at universities, are published on the official board of the Faculty.

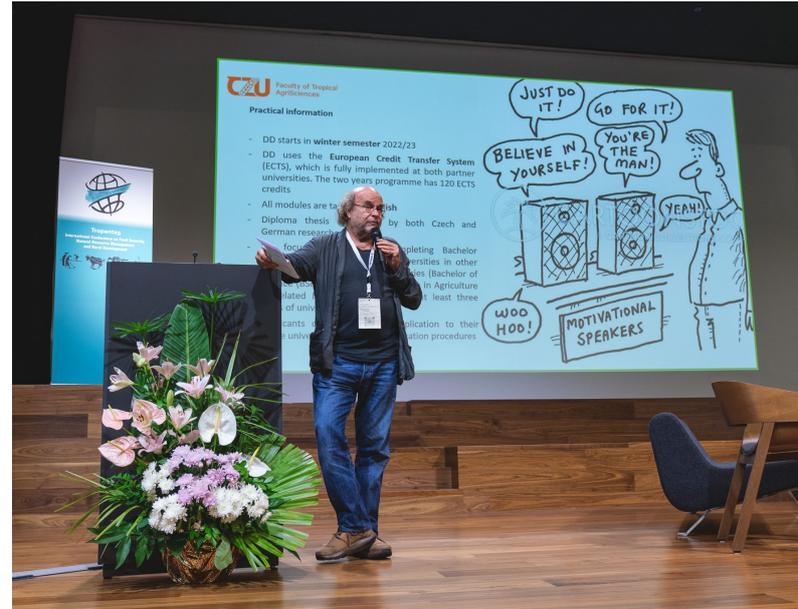


**SCIENCE AND RESEARCH**

# ACTIVITIES OF THE DEPARTMENT IN SCIENCE, RESEARCH AND DOCTORAL STUDIES

The Department for Science, Research and Doctoral Studies provide organisational and administrative support in the following areas:

- the activities of the Faculty's Scientific Board,
- habilitation and professorial procedures,
- distribution of R&D-related information,
- the organisation of support for scientific research activities at the Faculty,
- the organisation of the Internal Grant Agency of FTZ (IGA)
- the administrative management of doctoral studies.



# PROFESSORSHIP AND HABILITATION PROCEDURES

FTZ is entitled to carry out a procedures for the appointment of full professors and habilitation procedures in the field of "Tropical Agriculture and Ecology". In these procedures, the teaching and scientific qualifications of the candidate, who is a distinguished and recognised personality in his/her field, are evaluated.

## **Professorship procedures in 2022:**

- Doc. Mgr. Jan Šobotník Ph.D. - the professorship procedure has been successfully conducted at the level of the Scientific Board of FTZ and was handed over to the Scientific Board of the Czech University of Life Sciences CZU.

## **Habilitation procedures in 2022:**

- Ing. Klára Urbanová, Ph.D. - habilitation procedure successfully conducted at the level of the Scientific Board of FTZ.



# FTZ SCIENTIFIC BOARD MEMBERS

## EXTERNAL MEMBERS (OUTSIDE CZU)

prof. RNDr. Daniel Frynta, Dr.	Department of Zoology, Faculty of Science, Charles University
prof. Dr. RNDr. Oldřich Lapčák	Department of Chemistry of Natural Compounds, Faculty of Food and Biochemical Technology, The University of Chemistry and Technology, Prague
doc. Ing. Jan Chyský, CSc.	Division of electrotechnics, Faculty of Mechanical Engineering, The Czech Technical University in Prague
doc. RNDr. Josef Novotný, Ph.D.	Department of Social Geography and Regional Development, Faculty of Science, Charles University
prof. RNDr. Vojtěch Novotný, CSc.	Department of Ecology, The Biology Centre of the Czech Academy of Sciences
doc. Mgr. Zdeněk Opršal, CSc.	Department of Development and Environmental Studies, Faculty of Science, Palacký University Olomouc
doc. RNDr. Pavlína Maloy Řezáčová, Ph.D.	The Institute of Organic Chemistry and Biochemistry of The Czech Academy of Sciences

## FTZ MEMBERS

prof. Dr.ir. Patrick Van Damme	Chairman, Dean of the Faculty of Tropical AgriSciences
prof. Ing. Jan Banout, Ph.D.	Vice-dean for Science, Research and Doctoral Study, Department of Sustainable Technologies
doc. Ing., Dr. sc. agr., Dr. sc. habil. Miroslava Bavorová	Department of Economics and Development
doc. Francisco Herrador Ceacero, Ph.D.	Department of Animal Science and Food Processing
prof. Dr. Ing. Eloy Fernández	Department of Crop Science and Agroforestry
prof. Ing. Pavla Hejcmanová, Ph.D.	Department of Animal Science and Food Processing
prof. Ing. Ladislav Kokoška, Ph.D.	Department of Crop Science and Agroforestry
prof. Ing. Bohdan Lojka, Ph.D.	Department of Crop Science and Agroforestry
prof. RNDr. Irena Valterová, Ph.D.	Department of Crop Science and Agroforestry

## CZU MEMBERS

doc. Ing. Vilém Jarský, Ph.D.	Faculty of Forestry and Wood Sciences, CZU
prof. Dr. Ing. František Kumhála	Faculty of Engineering, CZU
prof. PhDr. Michal Lošťák, Ph.D.	Faculty of Economics and Management, CZU
Ing. Kateřina Černý Pixová, Ph.D.	Faculty of Environmental Sciences, CZU
prof. Mgr. Ing. Markéta Sedmíková, Ph.D.	Faculty of Agrobiological, Food and Natural Resources, CZU

# PUBLICATIONS AND RESULTS IN R&D

The Faculty of Tropical AgriSciences is a unique workplace in the Czech Republic which has the ambition to become a leader in the field of research in tropical agrisciences. The Faculty activities have been directed towards this goal for a long time, i.e. in addition to the whole spectrum of research activities, also cooperation with foreign partners and emphasis on increasing the number and quality of outputs of research activities. In a highly competitive environment, such as the scientific space, it is not only the results achieved that matter, but also their presentation as scientific publications. FTZ has developed a support system for staff and students to publish their results at conferences and in high-quality scientific journals.

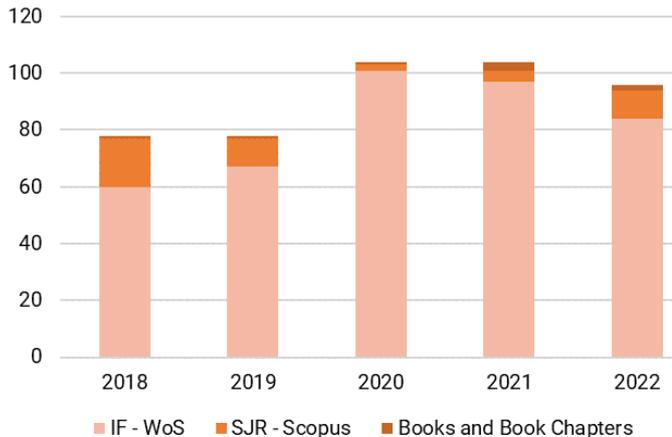
Students are motivated by an extraordinary scholarship for promoting authorship of scientific publications. The recognised form of qualifying work is, in addition to the classical thesis, an annotated scientific article accepted for publication in a peer-reviewed journal with impact factor (IF). The student must be the first author and the publication must be thematically related to the approved topic of the dissertation thesis. In addition to the traditional dissertation,

the recognised form of a Ph.D. thesis defence is a set of annotated papers, which must include at least three articles accepted for publication in an IF scientific journal. The student must be the first author of at least two articles and may be in any order of authorship on the other. All publications must be thematically related to the approved dissertation topic.

Staff are incentivised by a personal evaluation system which is updated annually according to the performance of individual academic staff members. In this system, the personal evaluation comprises two components: teaching (monitored in the form of STAT points and thesis supervision) and publications. For publications, the number of publications, the quality of the journal (quartile) and the number of authors and the author's position in the author team (the role of the corresponding author is also taken into account) plays a role. With changes in the evaluation of research organisations and the evaluation of programmes of targeted support for research, development and innovation required by the M17+ Methodology, the incentive system for creative activity at FTZ will now also need to be modified by adding an item relating to grant activity.

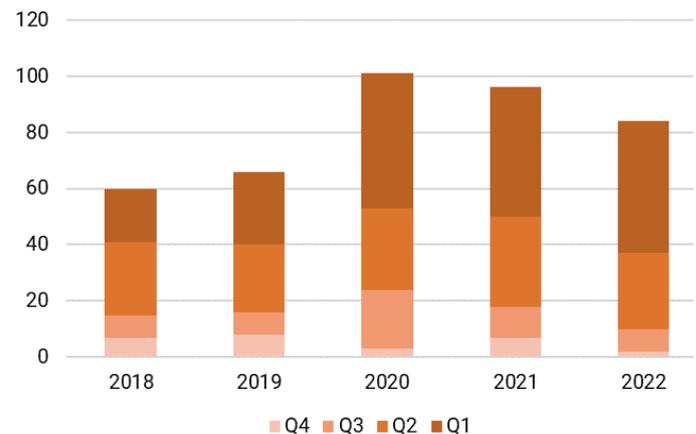
In 2022, a total of 94 articles were published in journals indexed in the Web of Science (WoS) and Scopus databases. Of these 84 have been published in WoS journals with IF, and 10 articles were published in Scopus journals with SCImago Journal Rank (SJR) - see the graph below which gives an overview of the evolution of the number of articles with IF/SJR and monographs over the last five years.

### NUMBER OF PUBLICATIONS IN THE LAST FIVE YEARS



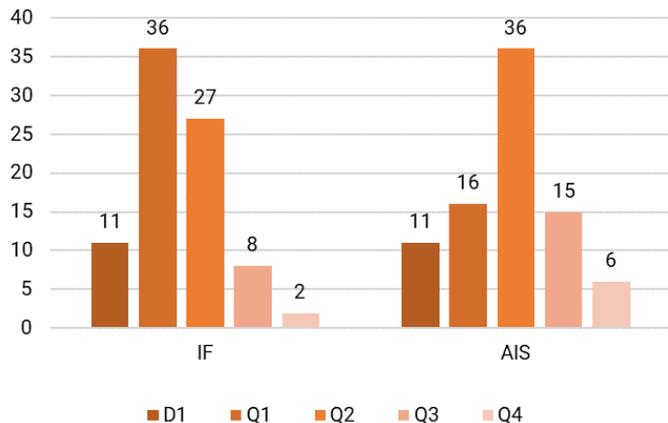
From the total of 84 publications with IF, 88% were published in journals ranked in Q1 and Q2 according to IF (WoS). In absolute numbers, this is 74 publications (47 and 27 in Q1 and Q2, respectively). The figure below shows the distribution of published papers to quartiles and the overview over the last five years. The data shows a decrease in a total number of IF papers in the last year. However, the quality remains high in favour of Q1 and Q2 journals.

### DISTRIBUTION OF PUBLISHED PAPERS OVER QUARTILES



The evaluation of research and programmes of targeted support for research, development and innovation according to the M17+ Methodology moves away from the IF as one of the important indicators of the quality of publications and instead introduces the AIS (Article Influence Score). According to AIS, journals can be divided into quartiles according to WoS categories, but for Methodology 17+ the FORD (Fields or Research and Development) division was used. The figure below shows the comparison of the distribution of published papers in 2022 to quartiles based on IF (WOS) and AIS (FORD).

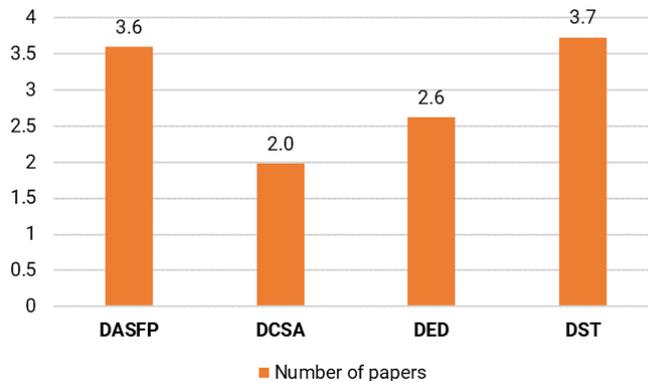
### DISTRIBUTION OF PUBLISHED PAPERS OVER QUARTILES BASED ON IF (WOS) AND AIS (FORD)



An important performance indicator is the number of published papers per academic staff member. The figure below shows these data compared to the academic FTE (Full-Time Equivalents) in each FTZ department.

To maintain high-quality publications in the long term, it is essential that the publication outputs are distributed equally among all academic staff. We could clearly observe this trend at the faculty in the past. By the way, one of the main goals is that each academic staff member of the faculty should have at least one publication in IF per year. Unfortunately, an alarming fact was noted in 2022 when 25% of academic staff did not publish any paper in WOS indexed.

### COMPARISON OF THE NUMBER OF PUBLICATIONS PER FTE WITHIN DEPARTMENTS



DASFP - Department of Animal Science and Food Processing;  
 DCSA - Department of Crop Science and Agroforestry;  
 DED - Department of Economics and Development;  
 DST - Department of Sustainable Technologies.

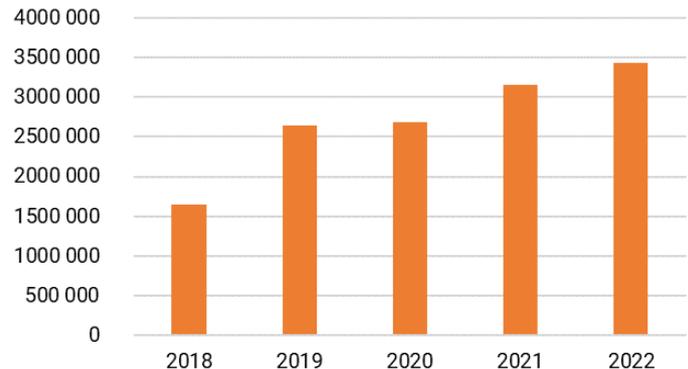
# PROJECTS AND GRANTS

## SPECIFIC UNIVERSITY RESEARCH (SUR)

In 2022, the Faculty of Tropical AgriSciences received a subsidy for Specific University Research (SUR) in the amount of CZK 3,431,457. These funds were used in accordance with the Rules for the Provision of Special Purpose Support for SUR under the Act on Support for Research, Experimental Development and Innovation and were fully spent. The figure to the right shows the evolution of the total subsidy for SUR over the last five years. It can be seen that the amount of funding for SUR FTZ has been continuously increasing.

In 2022, SUR funds were mainly used to finance the FTZ Internal Grant Agency (3,010,000 CZK) whereas the rest was used to support the following conferences organized by the faculty: 9<sup>th</sup> European Hedgehog Research Group meeting (13 - 14 January 2022); ČES 2022 Czech Evaluation Society (7 - 9 June 2022); Tropentag 2022 – Can agroecological farming feed the world? Farmers' and Academia's view (14 - 16 September 2022).

**TOTAL SUBSIDY OF SPECIFIC UNIVERSITY RESEARCH AT FTZ FOR THE LAST 5 YEARS (IN CZK)**



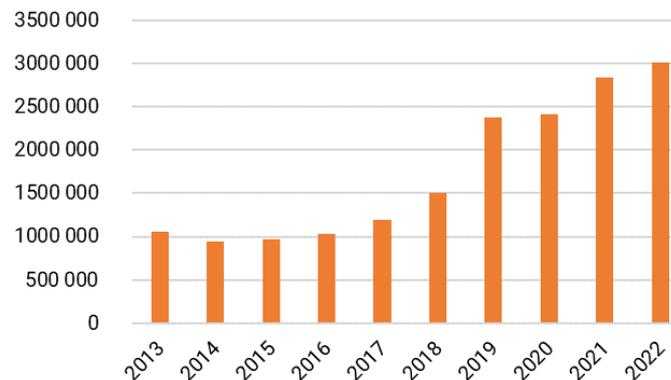
## FTZ INTERNAL GRANT AGENCY

The vast majority of SUR funds are managed by "Internal Grant Agency of FTZ" (IGA FTZ). Specific Research is research carried out by research teams that include students enrolled in accredited Master's and Doctoral degree programmes, and is directly related to their thesis research and education. The aim of IGA FTZ grants is to strengthen the independent creative activity of students in their field of research and development, to intensively involve students in research efforts, and cooperate in research teams under the leadership of their supervisors. Project leaders are members of academic staff, but the number of Ph.D. and M.Sc. students in each project must be at least equal to the number of other members in the research team. Since 2013, according to the internal rules of FTZ, no personnel costs (other than scholarships) can be claimed from IGA funds.

The funds allocated to the IGA FTZ have been continuously increasing as shown in the figure to the right. In 2022, a total of 14 one-year projects were supported for a total amount of CZK 3,010,000. These projects involved 233 master's and doctoral students; see the table on the next page.



### TOTAL DISTRIBUTED BUDGET OF INTERNAL GRANT AGENCY OF FTZ FROM 2012 - 2022 (IN CZK)



Name of the project	Principal Investigator	Number of students	Budget [CZK]
Food security and innovative food processing methods	Jan Banout	20	181,000
Sustainability and profitability of agri-food systems	Miroslava Bavorová	44	369,000
Animal community interactions in tropical socio-ecological systems	Karolína Brandlová	19	268,000
Physiology and behaviour of farmed ungulates	Francisco Ceacero	22	354,000
Genetics of selected animal species	Barbora Černá Bolfíková	14	175,000
Development of polyploid genotypes in <i>Mentha spicata</i> L. using <i>In vitro</i> somatic polyploidization	Eloy Fernández Cusimamani	7	158,000
Sustainable Value Chains: From Social Collective Actions of Producers to Responsible Consumers	Petra Chaloupková	21	127,000
Appropriate technologies in waste and water management	Tatiana Ivanova	14	109,000
Medicinal and edible plants from tropics as source of biologically active compounds	Ladislav Kokoška	18	381,000
Biodiversity in tropical agroecosystems	Bohdan Lojka	14	305,000
Challenges for Agenda 2030 – No One is Left Behind in Rural Areas of Developing Countries	Jana Mazancová	22	352,000
Trophic relations and feeding ecology of termites revealed by stable isotopes analysis	Jan Šobotník	1	45,000
Ethnobotany of neglected and underutilized plant species in tropical agroecosystems	Zbyněk Polesný	11	116,000
Biotechnological, molecular and proteomic methods: tools for crop improvement	Iva Viehmannová	6	70,000
<b>Total</b>		<b>233</b>	<b>3,010,000</b>

## EXTERNAL GRANTS AND PROJECTS

In 2022, FTZ staff and students participated in six EU-funded grants, seven national research grants funded by the Technology Agency of the Czech Republic, Czech Science Foundation, the Ministry of the Environment of the Czech Republic, and the Operational Programme for the Environment, and eight foreign development cooperation projects.

Participation in the DIGITAF (DIGITal Tools to help AgroForestry meet climate, biodiversity and farming sustainability goals: linking field and cloud) project funded by Horizon Europe can be considered a particularly great success.

The table on the next page summarises all these projects, including the programme from which the projects were funded, the principal investigator, and the total project budget.



## SUMMARY OF THE PROJECTS

Project Name	Duration	Provided by / Provider	Programme	Operator	Project Budget	Contact Person / Principal Investigator
Analysis of genetic samples of large carnivores for the project "Coexistence with large carnivores", implemented under the Operational Programme Environment	2021-2023	MŽP	OPE	CZU	1,610,000 CZK	Barbora Černá Bolfíková
Agroforestry systems for the protection and restoration of landscape functions threatened by the impacts of climate change and human activities	2019-2022	TAČR	EPSILON	Silva Tarouca Research Institute for Landscape and Ornamental Horticulture, v.v.i.	14,929,000 CZK	Bohdan Lojka
Phosphogypsum Processing to EU Critical Raw Materials	2022-2025	TAČR	ERA-MIN	Ecole Nationale Supérieure de Formation de l'Enseignement Agricole	1,000,000,00 EUR	Hynek Roubík
Development of a sealing cap for microtiter plates for testing volatiles	2021-2023	TAČR	GAMA2	CZU	1,474,508 CZK	Ladislav Kokoška
Use of molecular probes for rapid and simple detection of SARS-CoV-2 and its differentiation from influenza virus	2021-2022	TAČR	GAMA2	CZU	1,500,000 CZK	Jiří Černý
Creation of a functional sample head for 3D printed (rubber) products	2020-2022	TAČR	GAMA2	CZU	2,000,000 CZK	Lucie Ackermann Blažková
Functional evolution of termite gut microbiome	2020-2022	GAČR	standard	CZU	7,681,000 CZK	Jan Šobotník



### **DEVELOPMENT OF A SEALING CAP FOR MICROTITER PLATES FOR TESTING VOLATILES**

Principal investigator: Ladislav Kokoška

Total budget: 1,474,508 CZK

Project duration: 2021-2023

Provider: the Technology Agency of the Czech Republic, GAMA2 programme

Natural volatile substances with antimicrobial activity have a high potential for application in medical, food, and agricultural practice as antibiotic drugs, preservatives, and fungicides. However, a limiting factor for the development of such products has been the lack of suitable (rapid and accurate) methods for testing their efficacy. A major milestone in this field is the new broth microdilution volatilisation method developed by the proponent's team in 2017. However, the conventional microtiter plate cap, which the new method uses to test the antimicrobial activity of volatiles in the gas phase, has a number of drawbacks. So development of a sealing cap for microtiter plates for testing volatiles is needed.

### **AGROFORESTRY SYSTEMS FOR THE PROTECTION AND RESTORATION OF LANDSCAPE FUNCTIONS THREATENED BY THE IMPACTS OF CLIMATE CHANGE AND HUMAN ACTIVITIES**

Principal investigator: Radim Kotrba, Bohdan Lojka

Total budget: 14,929,000 CZK

Project duration: 2019 – 2022

Provider: the Technology Agency of the Czech Republic, EPSILON programme

The main objective of the project is to research and quantify the expected non-productive functions and benefits of traditional and modern AFS, i.e., silvo-plough, silvo-grazed, coppice plantations, etc. for the contemporary landscape, especially in the field of soil conservation, temperature and water regime, and biodiversity both at the level of selected habitats and landscapes. An important objective is also to obtain information on the planting, growth and appropriate management of tree crops on agricultural land and the possible impact of these trees on agricultural production itself (growth and yield of agricultural crops, welfare of livestock). The aim is also to identify appropriate support for the development of agroforestry systems suitable for the natural and economic-ownership conditions of the Czech Republic for the protection and restoration of landscape functions threatened by the impacts of climate change and human activities.



## **USE OF MOLECULAR BEACON PROBES FOR RAPID AND SIMPLE DETECTION OF SARS-COV-2 AND ITS DIFFERENTIATION FROM INFLUENZA VIRUS**

Principal investigator: Jiří Černý

Total budget: 1,500,000 CZK

Project duration: 2021-2022

Provider: the Technology Agency of the Czech Republic, GAMA2 programme

The LAMP isothermal nucleic acid amplification method has proven to be a very suitable approach for the detection of nucleic acids in biological samples. However, its main disadvantage compared to PCR is that it is not possible to detect multiple types of target nucleic acids in a single tube using current approaches. The aim of this project is to develop and test a LAMP reaction that, using molecular beacon probes, will allow either the detection of three different targets on the SARS-CoV-2 genomic RNA or the differentiation of SARS-CoV-2 and influenza virus from each other.

## **ANALYSIS OF GENETIC SAMPLES OF LARGE CARNIVORES FOR THE PROJECT "COEXISTENCE WITH LARGE CARNIVORES", IMPLEMENTED WITHIN THE FRAMEWORK OF THE OPERATIONAL PROGRAMME ENVIRONMENT**

Principal investigator: Barbora Černá Bolfíková

Total budget: 1,610,000 CZK

Project duration: 2021 – 2022

The subject of the public contract is to perform DNA extraction and genotyping of non-invasively collected samples (hair, droppings, urine, saliva) or tissue samples (carcasses, captured injured individuals, e.g. after a collision with a car) of lynx (*Lynx lynx*), wolf (*Canis lupus*), and brown bear (*Ursus arctos*) to obtain information on the size and structure of populations and on relationships between individuals.

## **PHOSPHOGYPSUM PROCESSING TO EU CRITICAL RAW MATERIALS**

Principal investigator: Hynek Roubík

Total budget: 1,000,000 EUR

Project duration: 2022 – 2025

Provider: the Technology Agency of the Czech Republic, ERA-MIN programme

More than three-quarters of phosphate fertilizers produced globally are produced using phosphoric acid as an intermediate product, leaving 4–6 t low-radioactive phosphogypsum (PG) per t P<sub>2</sub>O<sub>5</sub> produced, as relevant by-product/waste. About 85% of the 5.6–7.0 billion t PG produced globally by the phosphate industry are disposed of in stacks in 52 countries worldwide. The largest stacks in the EU are found in Lithuania, Poland, Spain, Greece, Bulgaria, Serbia and Kosovo, the Netherlands, Belgium, Portugal and Finland. 3-4 billion are accessible for recovery worldwide and approximately 2 billion t are accessible for recovery in Europe. At the current rate of production, these stacks of low-radioactive material are growing by some 200 million t per year. From a regional environmental point of view, PG may be the single most critical processing issue of fertilizer production today. The objective of this project is to further develop an innovative process for REE recovery from PG that has recently been patented by the coordinator from TRL 4-5 (lab-scale experiments) which is the current state to TRL 7-8 (continues pilot plant operation). The focus will be on the comprehensive use of PG and besides the opportunity to recover REEs from it, the remaining gypsum matrix will be used as an inexpensive material in construction/sound insulation.

## **CREATION OF A FUNCTIONAL HEAD SAMPLE FOR 3D PRINTING OF POLYISOPRENE (RUBBER) PRODUCTS**

Principal investigator: Lucie Ackermann Blažková

Total budget: 2,000,803 CZK

Project duration: 2021-2023

Provider: the Technology Agency of the Czech Republic, GAMA2 programme

Currently, there is no technological solution for the use of natural latex in 3D printing. This is because the last technological step in rubber production is vulcanisation, which guarantees the flexibility, strength, and shape memory of the final product. Re-heating oxidizes and degrades the rubber. 3D printing is currently a promising production technology with high promise for the future. However, a number of limitations and disadvantages help prevent its greater use. Among the disadvantages of 3D printing technology is the fact that the filaments are mostly made of plastic, which is difficult to recycle after 3D printing. The project addresses the current market demand to expand the supply of flexible materials with a positive environmental impact in various industries, which may make the case for the use of natural latex rubber in 3D printing.

## FUNCTIONAL EVOLUTION OF TERMITE GUT MICROBIOMES

Principal investigator: Jan Šobotník

Total budget: 7,681,000,00 CZK

Project duration: 2021-2022

Provider: the Czech Science Foundation (GACR)

Termites harbour a large number of symbiotic microbes in their gut. Gut microbes provide their host with amino acids and vitamins, and help digesting various types of organic matter, including wood, soil, and leaf litter. Few animal groups eat wood and soil, and how they evolved to do so is still largely unknown. In this project, we will address this question using the gut metagenomes of a representative set of 250 termite species. This dataset will be the largest of its kind, ~100 times larger than previous dataset, and it will represent the first attempt to elucidate the functional evolution of the gut microbiome of an insect order. We will investigate the increasingly important topic of coevolution between host organisms and their symbiotic gut microbes. The digestive functions of gut microbes will be informed from comparative analysis, which will pave the way to future efforts on metabolomics. Finally, we will study the evolution of gut bacterial genomes



## OVERVIEW OF FOREIGN PROJECTS

Project Name	Duration	Provider	Programme	Operator	Project Budget	Contact Person / Principal Investigator
GLOFOR - EMJM in Global Forestry	2022-2028	European Commission	Erasmus+	University of Copenhagen	€ 4,864,800	Petra Chaloupková
Structural Capacities for Tackling Wicked Problems (SCORE)	2022-2025	European Commission	Erasmus - Cooperation partnerships	3R-BioPhosphate Ltd.	€ 121,705	Hynek Roubík
DIGITAF - DIGItal Tools to help AgroForestry meet climate, biodiversity and farming sustainability goals: linking field and cloud	2022-2026	European Commission	Horizon Europe	National Institute of Agricultural Research (INRA)	€ 3,667,138	Bohdan Lojka
Enhancing Whole Genome Sequencing (WGS) and/or Reverse Transcription Polymerase Chain Reaction (RT-PCR) national infrastructures and capacities to respond to the COVID-19 pandemic in the Czech Republic.	2021-2022	European Commission	ECDC	State Institute of Health	€ 3,473,394	Jiří Černý
LEAP4FNSSA (Long-term Europe-Africa Partnership for Food and Nutrition Security, and Sustainable Agriculture)	2018-2022	European Commission	Horizon 2020	CIRAD France, FARA, Ghana	€ 5,136,250	Jan Banout, Vladimír Verner
Rural NEET Youth Network: modelling the risks underlying rural NEETs social exclusion	2019-2022	European Cooperation in Science and Technology (COST)		Instituto Universitario de Lisboa		Miroslava Bavorová

A more detailed description of some of these projects is contained in the chapter International Relations.

## FOREIGN DEVELOPMENT COOPERATION PROJECTS

In 2022, 8 development projects in four countries were implemented under the guidance or cooperation of FTZ experts. The implementation of development projects has aspects of international and research activities (applied research) and provides practical knowledge for students and teachers. The projects are financed from various sources, but mostly by the Czech Development Agency.

All development projects implemented under the leadership of FTZ are presented on the Faculty's website in both Czech and English. For more information see: <https://www.ftz.czu.cz/en/r-9423-projects-and-partnerships>.



The following development projects were implemented in 2022:

### **SUPPORT FOR EDUCATION AND SCIENTIFIC-RESEARCH ACTIVITIES IN THE FIELD OF ORGANIC AGRICULTURE**

Principal investigator: Iva Kučerová, Jan Banout

Total budget: 2,000,000 CZK

Project duration: 2022

Provider: the Ministry of Foreign Affairs of the Czech Republic

The aim of the project is to improve the level of scientific research skills and the quality of teaching at the Faculty of Agriculture and Food Technology at the University of Mostar and the Agro-Mediterranean Faculty of the University of Džemal Bijedič in Mostar in the field of organic agriculture through implemented activities and realized outputs, which will focus primarily on the implementation of specialized educational courses. The aim of the project is to increase the research and scientific-pedagogical skills of academic staff and students at both involved faculties, and further to prepare a joint scientific publication, where there will be a collective of authors from CZU in Prague with one of the cooperating faculties from Mostar.

## ARBA MINCH FRUIT VALUE CHAIN

Principal investigator: MENDELU in Brno, on behalf of CZU: Vladimír Verner, Anna Maňourová, Jan Staš, Iva Kučerová and Tomáš Kudera

Total budget: 11,000,000 CZK (in 2022),  
of which to CZU: 776,200 CZK (in 2022)

Implementation period: 2020 – 2023

Even though fruit crops are staple ingredients for Ethiopian households, the average annual fruit consumption in Ethiopia represents only 7 kg per capita (the recommended consumption is about 21 times higher). Arba Minch Zuria is an important fruit-growing district, which accounts for 10-15% of total fruit production in Ethiopia. However, the potential of the area is much higher. Therefore, the project aims to introduce a fruit value chain to improve nutrition as well as the health of local people and to increase the market competitiveness of farmers. Specifically, the project focuses on the diversification of cultivated fruit crops, efficient storage, post-harvest processing, and subsequent market access. The project is implemented in four target kebeles under the local administration of the Arba Minch Zuriaworeda, namely Kolla Shara, Chano Dorga, Chano Cheleba and Chano Mile. Project activities and outputs should reach at least 2,000 households and 400 young people.



## PUBLICATION AND RESEARCH ACTIVITIES DEVELOPMENT FOR EDUCATION IN LIFE SCIENCES AT HAWASSA UNIVERSITY

Principal investigator: Bohdan Lojka

Total budget: 1,500,000 CZK

Project duration: 2022

Provider: the Ministry of Foreign Affairs of the Czech Republic

The aim of the project is to strengthen research and publication capacity at two agriculturally oriented colleges of Hawassa University (HU) in fields linking ecosystem diversity with sustainable agricultural intensification (agroforestry, molecular genetics, molecular ecology of animals, *in-vitro* plant technologies, soil science). During the project, academic staff from CZU will continue to provide workshops and training to students and staff from HU and further assist with supervision of students' research activities, final theses, and scientific publications, and will organise workshops on scientific writing and statistical data analysis.

## **PROTECTING LAKE AWASA THROUGH SUSTAINABLE MANAGEMENT OF THE SURROUNDING LANDSCAPE (ETHIOPIA)**

Principal investigator: MENDELU in Brno, on behalf of CZU:  
Zbyněk Polesný

Total budget: 25,270,000 CZK,  
of which to CZU: 367,000 CZK

Implementation period: 2019 – 2022

Unsustainable land management, erosion, soil degradation, and landscape pollution are among the main problems Ethiopia has been facing recently. As a result of poor landscape management, mainly due to deforestation, stripping of slopes by grazing, and subsequent erosion, the overall damage to the environment is alarming. Therefore, the project aims to improve the environmental conditions of lake Awassa and its surrounding through the implementation of sustainable landscape management methods, reduction of water pollution, and clogging of the lake. At the end of the project, people of 11 kebeles will be able to manage their land in a sustainable way respecting the landscape. At least 370 ha of the land will be rehabilitated, reducing the percentage of degraded land around the lake by a minimum of 50%. Four kilometers of protection zone will prevent soil and waste from being flushed into the lake. The final group of beneficiaries consists of about 340 directly + 5,500 indirectly affected households, counting for at least 27,500 inhabitants, including children.





### **INCREASING PRODUCTIVITY AND SUPPORTING THE DEVELOPMENT OF MANGO, CASSAVA, AND ORGANIC FERTILIZER VALUE CHAINS IN WESTERN PROVINCE**

Principal Investigator: Caritas Czech Republic, on behalf of CZU: Vladimír Verner, Jan Staš, Radim Kotrba and Zbyněk Polesný

Total budget: 4,000,000 CZK (in 2022),  
of which to CZU: 359,909 CZK (in 2022)

Implementation period: 2020 – 2022

The project aims at supporting value addition and contributing to agricultural productivity through realisation of five selected business plans in Zambia. The implementation of this project builds on the outcomes of the first phase of the project named “Farmers Capacity Building Focusing on Value Chains Development” (implemented by Caritas Czech Republic as well). CZU provides consultancies on agricultural production, processing and marketing challenges.

### **INTEGRATED FARMING III. DEVELOPING AN INTEGRATED APPROACH TO FARMING IN THE WESTERN PROVINCE OF ZAMBIA**

Principal Investigator: MENDELU, on behalf of CZU: Vladimír Verner, Jan Staš, Radim Kotrba and Miloslav Petřtýl

Total budget: 3,000,000 CZK (in 2022),  
of which to CZU: 190,000 CZK (in 2022)

Project duration: 2022 – 2024

Provider: the Czech Development Agency

The project focuses on improving agricultural production in the Western Province of Zambia. Special emphasis is placed on a holistic approach to farming (integrated farming). The main implementer is Mendel University in Brno, while the Faculty of Tropical Agriculture and the Faculty of Agrobiology, Food and Natural Resources are the core partners in the project. The scope of work of CZU within the project is to train farmers in aquaculture, honey production and forest products management.

## **PROMOTING TEACHING INNOVATION, RESEARCH DEVELOPMENT AND INTER-UNIVERSITY COOPERATION BETWEEN THE SAUM AND TSU (MOLDOVA)**

Principal investigator: Tatiana Ivanova

Total budget: 1,375,000 CZK

Project duration: 2022

Provider: the Ministry of Foreign Affairs of the Czech Republic

The aim of the project is to innovate professional teaching, develop scientific research activities, and strengthen inter-university cooperation between the State Agrarian University of Moldova (SAUM) and the Tiraspol State University (TSU). The project will provide professional training for teachers and students of partner universities in the field of GIS applications, introducing an innovative course, equipping modern workplaces for teaching and creative activities, transferring Czech know-how in the field of higher education management, internship of SAUM and TSU representatives in the Czech Republic, cooperation in scientific and publishing activities, and organisation of a International Scientific Conference and the SAUM and TSU Popularisation Day.



## **BIO-GAS TECHNOLOGY TO INCREASE COMMUNITY RESILIENCE IN THE WESTERN PROVINCE OF ZAMBIA**

Principal Investigator: the Czech Development Agency, on behalf of CZU: Jana Mazancová

Total budget: 24,500,000 CZK,  
of which to CZU: 3,315,000 CZK

Implementation period: 2021 – 2024

The proposed project will address the challenges described above by leveraging the potential of biogas technology for improved access to clean and sustainable energy and organic fertilizer. This will be achieved by employing a holistic approach to development of the biogas market and by integrating the following key components into the project design: a) increasing the demand for the technology, b) strengthening the supply side (including provision of products and services related to the biogas technology), c) improving access to finance and financial literacy of target farmers, d) enhancing the knowledge and awareness of how to use outputs of the biogas technology for improved agricultural productivity, income, and household nutrition intake.

## LONG - TERM PROJECTS

### **DERBIANUS CONSERVATION — DERBY ELAND CONSERVATION IN WEST AFRICAN SAVANNAH**

Principal investigator: Karolína Brandlová

Project duration: since 2010

Provider: international grants and private donations

The NGO Derbianus Conservation associates experts, scientists, students and enthusiasts who want to participate in biodiversity conservation and who want to change the fate of the Western Derby eland and other antelope species in their habitat. Derbianus promotes the conservation of the whole ecosystem of the West African savannah. The NGO is based at the Faculty of Tropical AgriSciences, the Czech University of Life Sciences Prague.

The team has more than 20 years of experience in antelope conservation in West African savannah. The NGO provides scientific evidence for conservation management decisions, builds capacities for antelope conservation and provides support for field operations. Derbianus Conservation also developed and implemented environmental education and awareness programmes for everyone from school kids to the general public in many countries both in Africa and Europe and provides carefully designed educational and awareness materials for all types of public use with special focus on Western Africa (mostly in French).



# POSTDOC POSITIONS

In 2022, there was one postdoc position taken by **Dr. Ayat Ullah** at the Department of Economics and Development.

Dr. Ullah is engaged in scientific activities focusing on "The impact of adopting sustainable agricultural practices on households' food security and environmental health: key lessons from Pakistan". He is also involved in teaching FTZ master's students (course: Agricultural market information and services, economics of agriculture and natural resources in tropics).



# CONFERENCES



## TROPENTAG 2022

Tropentag is the largest interdisciplinary conference in Europe, focused on development-oriented research in the fields of tropical and subtropical agriculture, food security, natural resource management and rural development. It is jointly organised by the universities of Berlin, Bonn, Goettingen, Hohenheim, Kassel, ZALF e.V., Ghent University (Belgium), Czech University of Life Sciences Prague (CZU), BOKU Vienna, and the Council for Tropical and Subtropical Research (ATSAF e.V.) in co-operation with the GIZ Advisory Service on Agricultural Research for Development (BEAF). Tropentag 2022 was organised by the Faculty of Tropical AgriSciences at CZU from 14 to 16 September 2022. The conference theme was **“Can agroecological farming feed the world? Farmers’ and academia’s views”**. The debates on global food production challenges have become polarised among both scientists and farmers, widening the gap between the advocates of industrial agriculture and global commerce, and the supporters of local food systems and organic farming.



Discussions in plenary and thematic sessions, guided poster tours, and workshops have provided participants with new ideas to enhance the understanding of the potential capacity of the agroecological approaches to maintain and restore soil health, conserve biodiversity and adapt to climate changes, and help to face future crises, together with meeting the challenge of feeding global populations. Apart from 105 oral presentations, clustered in 24 scientific sessions, there were 36 guided and 14 online poster sessions. Moreover, 20 pre and post-conference workshops and numbers of side events, such as a film festival on pastoralism, have been organized as well. In total, more than 750 participants have been registered for the conference, from which about 200 as online participants and the rest have participated in situ.

## 9<sup>TH</sup> MEETING OF EUROPEAN HEDGEHOG RESEARCH GROUP

In 2022, the Faculty of Tropical AgriSciences hosted a meeting of the European Hedgehog Research Group. This traditional conference aims to bring together researchers and conservationists who specialize in various areas of hedgehog biology, such as genetics, microbiology, ecology, conservation, and many others. The plenary speakers were Dr. Jesper Larsen from the Danish serological institute and Dr. Anne Berger from Leibnitz Leibniz Institute for Zoo and Wildlife Research. The conference had to adopt a hybrid format due to the ongoing COVID-19 restrictions. In total, 62 attendants from 17 countries joined the meeting, along with the faculty's students who had the opportunity to attend the talks during the two days of the conference. The conference was highly successful and generated numerous innovative ideas in the field of urban ecology, health and diseases topics, population genetics, rehabilitation and sheltering, and many others.

# AWARDS

## THE RECTOR'S AWARD FOR THE BEST PUBLICATION OUTPUT OF CZU EMPLOYEES, LISTED IN NATURE JOURNAL INDEX

### Jan Šobotník:

- Evidence for Reduced Immune Gene Diversity and Activity During the Evolution of Termites - PROCEEDINGS OF THE ROYAL SOCIETY B - BIOLOGICAL SCIENCES

## THE RECTOR'S AWARD FOR THE BEST PUBLICATION OUTPUTS OF DOCTORAL STUDENTS' RESEARCH WORK

### Veit Ny:

- Potential Benefits of Amino Acid Supplementation for Cervid Performance and Nutritional Ecology, with Special Focus on Lysine and Methionine: A Review - ANIMAL NUTRITION

### Hayford Osei-Owusu:

- In Vitro Selective Combinatory Effect of Ciprofloxacin with Nitroxoline, Sanguinarine, and Zinc Pyrithione against Diarrhea-Causing and Gut Beneficial Bacteria - MICROBIOLOGY SPECTRUM



## PROFESSOR STOKLASA PRIZE

### AND

## JOSEF HLÁVKA AWARD FOR THE BEST STUDENTS AND GRADUATES

### Jerry Owusu Afriyie:

Jerry Owusu Afriyie is a talented young researcher who proved during his Ph.D. studies strong determination and endeavour to the scientific work in all its aspects. First, he was able to bring his own topic and convince the department about the importance of his topic and early in sequence, he wrote and was awarded a competitive grant from the CZU CIGA agency. He also proved to be able to design and conduct a series of field works which included work with local rural communities in Ghana, that are demanding not only logistically, but also in local human and cultural dimensions. His research reached out to protected areas across the whole West African region. He proved his ability to accomplish his work through successful publications which are far beyond what is standard.

## THE RECTOR'S AWARD FOR THE BEST PUBLICATION OUTPUT OF CZU EMPLOYEES IN JOURNALS RANKED IN THE 1<sup>ST</sup> DECILE IN WOS

### Jan Šobotník:

- Termite Evolution: Mutualistic Associations, Key Innovations, and the Rise of Termitidae - CELLULAR AND MOLECULAR LIFE SCIENCES

### Thomas Bourguignon:

- Termite Evolution: Mutualistic Associations, Key Innovations, and the Rise of Termitidae - CELLULAR AND MOLECULAR LIFE SCIENCES

### Stanislav Lhota:

- Taking the Pulse of Earth's Tropical Forest Using Networks of Highly Distributed Plots - BIOLOGICAL CONSERVATION

## THE RECTOR'S AWARD FOR TEACHING ACTIVITY

The Rector's Award for Teaching Activities in 2022 was awarded to **doc. Tersia Needham, Ph.D.** from the Department of Animal Science and Food Processing.

## THE FTZ DEAN'S AWARD FOR THE BEST SCIENTIFIC PUBLICATION OR POPULARISATION OUTPUT

### Hynek Roubík:

The prize was awarded to Hynek Roubík as a team leader for a series of scientific and popularization papers of the Biogas Research Team. The Biogas Research Team has long been involved in the recovery of organic waste, particularly its transformation into biogas and energy. This long-term focus of the research team presents new knowledge in this field and has practical implications in many countries (especially in the developing world).



# FTZ RESEARCH GROUPS

There are 14 research teams at FTZ, which consist of academic staff, doctoral students and FTZ students:

- **ANIMAL PHYSIOLOGY AND BEHAVIOUR RESEARCH GROUP**
- **BEHAVIOURAL STUDIES IN AGRI-FOOD SECTOR**
- **BIOGAS RESEARCH TEAM**
- **CONSUMERS' BEHAVIOUR & CAPACITY BUILDING (COBE)**
- **COOPERATIVE RESEARCH GROUP**
- **E4 (ECOLOGY, EVOLUTION, EMERGENCE & EPIDEMIOLOGY OF ZONOSSES) RESEARCH GROUP**
- **FOOD SECURITY RESEARCH GROUP**
- **MEGERA: MOLECULAR ECOLOGY, GENETICS AND EVOLUTIONARY RESEARCH OF ANIMALS**
- **TERMITE RESEARCH TEAM (TRT)**
- **TRIBE | TROPICAL BOTANY AND ETHNOBIOLOGY LAB**
- **TROPICAL BIODIVERSITY RESEARCH GROUP**
- **TROPICAL BIOTECHNOLOGY RESEARCH GROUP**
- **TRACE | TROPICAL FARMING SYSTEMS & ECOLOGICAL ECONOMICS**
- **WILDLIFE MANAGEMENT AND CONSERVATION RESEARCH GROUP**





**INTERNATIONAL RELATIONS**

# THE IMPORTANCE OF INTERNATIONAL ACTIVITIES FOR FTZ

International activities and cooperation with foreign partners are among the priority activities of the Faculty of Tropical AgriSciences (FTZ).

FTZ's international activities in 2022 focused mainly on:

- bilateral cooperation with institutions, especially in less developed countries,
- active participation in the international association AGRINATURA,
- implementation of development projects, and
- submission of new international projects.

Approximately 52% of FTZ students (of the total number) come from 69 countries around the world (e.g. Nigeria, Ghana, India, Cameroon, Pakistan, Russia, Zimbabwe, Ethiopia, etc.).

Most of the modules are taught in English thanks to the Bachelor's programme International Cooperation in Agriculture and Rural Development, and the Master's programmes: International Development and Agricultural Economics,

Agri-food Systems and Rural Development, Tropical Crop Management and Ecology, Tropical Forestry and Agroforestry, Wildlife and Livestock Production, Management and Conservation, and Tropical Farming Systems. Ph.D.-level programmes are also taught in English: Tropical Agrobiology and Bioresource Management, Sustainable Rural Development, Agriculture in the Tropics and Subtropics. In 2022, the new Double degree study programme Agricultural Sciences and Farming Systems in the Tropics and Subtropics was accredited in cooperation with Faculty of Agriculture, University of Hohenheim (UHOH, Germany).

FTZ students are motivated to study English and other world and regional languages as part of their preparation for future professions and are also motivated thanks to the opportunity to participate in studies or training abroad within the Erasmus+ programme. FTZ participates in the organisation of seminars, trainings, summer schools, and research projects in cooperation with major world institutions. International development projects are also implemented.

# NEW FORMS OF HIGHER EDUCATION IMPLEMENTED IN COOPERATION WITH FOREIGN PARTNER INSTITUTIONS

In 2022, a project called "Implementation of Project-Based Learning among master's degree students in selected ELLS Universities (iPBL-EU)" was implemented, financed by the ELLS Incentive Fund (Euroleague for Life Sciences). This project is coordinated by FTZ/CZU, together with partners from BOKU (Austria) and the Swedish University of Life Sciences (Sweden). This project aims to stimulate the implementation of project-based learning (PBL) within the subject Plant Health and Plant Breeding in courses at selected ELLS universities, namely BOKU, CZU and SLU. Its aim is to deepen the knowledge of students of the follow-up master's studies in the field by using innovative teaching methods based on real-time examples from practice. The objectives of the project are in line with ELLS priorities such as: (i) joint teaching and learning between the three universities by introducing project-based learning as an innovative approach to teaching in the field of plant health, (ii) realizing student and staff mobility by providing travel grants to students to ELLS' conference and (iii) supporting quality assurance by pooling experiences from the three universities.



# THE ERASMUS+ PROGRAMME

<b>STUDENTS INVOLVEMENT IN 2022 (KA103/KA107):</b>	<b>NUMBER OF PERSONS</b>	<b>NUMBER OF MONTHS</b>
Number of outgoing FTZ students	22/0	74/0*
Number of incoming students	37/23	172/97*
Number of outgoing FTZ students for training	12/6	27/16*
Number of incoming students for training	1/12	3/47*

<b>STAFF INVOLVEMENT IN 2022 (KA103/KA107)</b>	<b>NUMBER OF MOBILITIES</b>	<b>NUMBER OF DAYS *</b>
Outgoing FTZ staff	52/20	297/138*
Incoming staff	22/17	107/124*

\* Months or days from 2022 counted from the academic years 2021/22 and 2022/23.

The Erasmus+ programme is traditionally one of the main activities within the international activities of FTZ. By 2022, FTZ had concluded bilateral agreements with the following 24 institutions within the respective programme countries (i.e. KA103):

- 1) The University of Wageningen, Netherlands
- 2) La Universidad Politécnica de Valencia, Spain
- 3) La Universidad Politécnica de Madrid, Spain
- 4) La Universidad de Castilla-La Mancha, Spain
- 5) The University of Kassel, Germany
- 6) The University of Hohenheim, Germany
- 7) Montpellier SupAgro, France
- 8) O Instituto Politécnico de Castelo Branco, Portugal
- 9) Szent István University, Hungary
- 10) Ghent University, Belgium
- 11) The Catholic University of Leuven, Belgium
- 12) L'Université Catholique de Louvain, Belgium
- 13) La Università degli Studi di Firenze, Italy
- 14) La Università degli Studi di Catania, Italy
- 15) Ondokuz Mayıs University, Turkey
- 16) Akdeniz University, Turkey
- 17) La Università degli Studi della Basilicata, Italy
- 18) The Agricultural University Plovdiv, Bulgaria
- 19) Die Rheinische Friedrich-Wilhelms-Universität, Bonn, Germany
- 20) L'Haute École Charlemagne, Belgium
- 21) Josip Juraj Strossmayer University of Osijek, Croatia
- 22) The University of Angers, France
- 23) La Universidad de la Laguna, Spain
- 24) La Universidad de Cádiz, Spain.



# ERASMUS+ PROJECTS

## CAPACITY BUILDING IN HIGHER EDUCATION

In 2022, two projects were submitted to the Erasmus+ Capacity building call, in which FTZ was a partner through the faculty's IRO. However, these projects were not accepted due to limited budget. The first one - ADVALUE project – focused on the cooperation of European universities with partners in Kenya and Uganda in the field of value chain management. The second project was WB4FOOD aimed at cooperation with partners from Albania, Bosnia and Herzegovina, Serbia and Spain, which would support cooperation in the field of food tourism. Both of these projects will be submitted in the 2023 call, after incorporating the required modifications.



Co-funded by the  
Erasmus+ Programme  
of the European Union

## INTERNATIONAL CREDIT MOBILITY

In 2022, FTZ coordinated projects within the Erasmus+ programme, the so-called "International Credit Mobility" projects. There were in total 12 concurrently running projects from the 2019 (implementation period 2019-2022) and 2020 (implementation period 2020-2023) calls. These projects were carried out in the following countries: Albania, Algeria, Bosnia and Herzegovina, Cameroon, Georgia, Senegal, South Africa, Syria, Ukraine and Vietnam. The list of partner universities and the number of realized mobilities are described on the previous pages. As part of the new call for project submissions for 2022, FTZ submitted 21 applications. The faculty's success in this call was historically the highest ever - 17 countries were approved for funding, namely Algeria, Bhutan, Cambodia, Cameroon, East Timor, Fiji, India, Indonesia, Kyrgyzstan, Laos, Niger, the Philippines, Senegal, South Africa, Thailand, Ukraine and Vietnam. Their implementation is planned for the 2022-2025 period. It should be noted that the entire CZU received a total of 212 mobilities as part of the given project, with more than half of them allocated to FTZ.

More information is available on the faculty website:  
<https://www.ftz.czu.cz/en/r-9422-international-relations/r-10720-erasmus/r-16500-international-credit-mobility>.



## SCORE Project

Structural Capacities for Tackling Wicked Problems

### COOPERATIVE PARTNERSHIPS

FTZ is a partner the Erasmus+ SCORE project "Structural Capacities for Tackling Wicked Problems Programme". The main coordinator of the project is Ss. Cyril and Methodius University in Skopje, Macedonia. Other partners are Panepistimio Ioanninon (Greece) and Sofia University St Kliment Ohridski (Bulgaria). The implementation of the project with a budget of over 32,000 EUR is planned for the 2022-2025 period .

Modern policy implementations and organizational frameworks fail to create a sustainable approach to solving hard-to-identify problems that are a growing global challenge. These include problems that are difficult to define, or difficult to solve, and require different approaches to their eventual solution. Poverty, climate change, health, gender equality and justice are all so-called "wicked" problems that are part of the SDG agenda. This project thus aims to create a cooperation structure and develop a model for solving these problems. Broader transnational capacities are involved, suggesting a bottom-up approach in social planning processes. The goal is to show that such a problem can be solved with a holistic approach.

The project supports and strengthens European cooperation on this topic, while also proposing and piloting new research in the fight against climate change. Specific topics to be addressed include the environment and climate change, interregional cooperation, and research and innovation. The project consortium will mutually benefit from active participation. Practically, project participants will be able to demonstrate determination and ability to solve many problems in the relevant fields, thereby creating a basis for other organizations to be able to implement such approaches. In addition, through the implementation of the project and subsequent phases, a new generation of scientists will acquire the knowledge, tools and methods to solve wicked problems. The sharing of best practices and the development of interconnected higher education systems will be supported through the sustainability network, models, e-tools and guidelines developed within the project.

More information about the project is available on the website <https://score-eu.org/>.

## ERASMUS MUNDUS JOINT MASTER DEGREE

FTZ became a partner of the Erasmus Mundus Joint Master Degree programme "Global Forestry" (GLOFOR) as part of the new concept of the Erasmus+ programme, mainly thanks to its English-taught programme "Tropical Forestry and Agroforestry". GLOFOR is organized by a consortium of five top European universities in the field of forestry under the leadership of the Danish University of Copenhagen. Other partners are AgroParisTech (France), Technische Universität, Dresden (Germany) and University of Padua (Italy).

The consortium also cooperates with so-called "associate" partners, such as the University of Bamenda (Cameroon), Tribhuvan University (Nepal), ICRAF (Kenya), Sokoine University of Agriculture (Tanzania) and others. It is a two-year, English-taught, world-class master's programme that prepares graduates to address the enormous current challenges and potential of forestry in middle- and low-income countries. Through a high level of research-based education, graduates will acquire the required competencies for working with global forestry issues, such as practical and international experience or openness to foreign cultures. These are all competencies needed to work both as a researcher and



to work in the tropics, e.g. with a development agency, doing consultancy, NGOs, international organisations, ministries or government institutions. Successful students will also be able to apply to high-level international Ph.D. programmes.

The structure of the programme is as follows - during the first year, students will receive a thorough introduction to the local and global role of forestry in middle- and low-income countries. All students will spend their first semester in Copenhagen, where teachers from all universities in the consortium will join in the teaching activities. During February of the first year, all students and one teacher from each partner university participate in a joint field course in a middle- or low-income country. Students then move to either Dresden or Padua to complete their first year. In the second year, students focus on a specific specialization at one of the other partner universities. More information about the project is available on the website <https://globalforestry.eu/>.

# PREPARATION AND ORGANISATION OF SUMMER SCHOOLS AND SHORT-TERM COURSES

The organisation of summer schools and short-term intensive courses are among the priority areas of the international activities of the Faculty of Tropical AgriSciences. FTZ teachers and students are actively involved in the organisation or participate in the summer schools organised by both FTZ and other faculties within CZU. Unfortunately, even these activities were affected by the Covid-19 pandemic.

## SUMMER SCHOOL IN BOSNIA AND HERZEGOVINA

The summer school was implemented as part of project No. 2022-PKVV-06 "Support for education and scientific-research activities in the field of organic agriculture" financed by the Ministry of Foreign Affairs of the Czech Republic. The summer school was held 3-7 October 2022 at the Faculty of Agriculture and Food Technology, University of Mostar in Bosnia and Herzegovina.

The summer school was dedicated to the technologies and techniques of processing plant and animal commodities (e.g. milk, fruit, honey) produced in an ecological mode.

The activities focused primarily on quality assessment methods, conservation techniques and processing technologies using available and cheap energy sources, such as solar drying.

The theoretical part of the course was devoted to the processing and subsequent evaluation of the quality and quantity of selected plant and animal products with an emphasis on ecological production methods. Attention was paid mainly to the most common contaminants that enter food during production (e.g. microorganisms, heavy metals, pesticides, etc.). Nutritional parameters (content of fat, protein, vitamins, minerals, antioxidants, etc.) of products originating from organic and conventional agriculture were also discussed. Students also learned whether food from organic farming is really healthier and how it is often falsified. Last but not least, sensory analysis of food was also discussed during the course.

In the practical part, the participants tested their ability to work accurately and correctly on simple tasks involving, for example, the preparation of solutions and pipetting, as these skills represent a basic prerequisite for obtaining high-quality and correct results. Afterwards, the students devoted themselves to determining the microbiological quality of food.

Students also learned to evaluate the basic quality parameters of selected primary agricultural products, the quality of which is very important for the production of a high-quality and healthy final product. These involved methods such as determination of protein content, determination of vitamin C by titration method (fruit, vegetables, juices), or fat oxidation. The end of the course was dedicated to sensory analysis, when tasting panels were arranged, the participants themselves became judges and sensory evaluations of selected samples of traditional foods were carried out.

Excursions to local farms and visits to ecological entrepreneurs who focus on the production and processing of traditional bio-quality foods with high nutritional value were an integral part of the course. An important indicator on such a farm is also the protection of natural resources and the environment through the prohibition of the use of substances polluting the environment. Prescribed restrictions on the use of substances such as pesticides and procedures in the cultivation of plants and the breeding of farm animals are important elements. Great emphasis is also placed on animal welfare.



# HORIZON 2020 AND HORIZON EUROPE

FTZ is also part of Work Package (WP) 3, which addresses, among other things, the development of an open database of food security projects in Africa and around the world. More information about the project, which involves 34 other European and African institutions, in addition to our Faculty, and whose total EU budget exceeds 5 million EUR, is available at <http://leap4fnssa.netseven.it/>.

In 2022, FTZ had its first success in the Horizon Europe calls with the support of the project DIGItal Tools to help AgroForestry meet climate, biodiversity and farming sustainability goals: linking field and cloud (DigitAF). DigitAF consortium brings together 25 partners from 20 countries from the EU, Associated Countries and beyond. DigitAF consortium and the living labs (LL) cover all agroforestry (AF) value chain actors, thus efficiently supporting AF implementation in the EU. DigitAF will boost AF implementation in the EU and beyond thanks to the co-development of digital tools tailored to the needs and concerns of DigitAF target groups.

To engage actors whose decisions impact AF implementation, DigitAF will: (1) support policy-actors at various scales to design more efficient policies supporting AF adoption and carbon farming; (2) provide tools helping practitioners (farmers...) deal with the complexity of AF systems. DigitAF will allow them to optimize the design and management of agroforestry systems at field and farm scale; and (3) enhance capacities of actors to assess, quantify and market the economic, environmental and social performance and benefits of AF. FTZ is in charge of CZ LL and is involved in data monitoring and sharing in WP1-3.



European  
Commission

Horizon 2020  
European Union funding  
for Research & Innovation

# AGRINATURA ASSOCIATION



FTZ is an active member of the international organization Agrinatura, the Secretariat of which has been based at CZU Prague since 2004. It is a unique institution of this type in Europe, and is an important link between Europe and the Global South in agricultural research and education. The membership brings benefits in the form of exchange of information, contrasting visions, participation in international EU-funded projects and networking at European and global level. Since 2019, the Secretary General has been Ing. Tereza Slámová, Ph.D., who is a recent graduate of the doctoral study programme at FTZ. Since May 2021, Ing. Petra Chaloupková, Ph.D., dr. h.c. holds the position of Vice-president of this association. Ing. Tereza Slámová, Ph.D., held the position of the Secretary General until December 2022. Since January 2023, Agrinatura secretariat moved from FTZ' premises and CZU, which kindly hosted its office for more than 18 years, to the next member institutions.

Agrinatura member organizations are actively involved in a number of research and education projects focused primarily on developing countries in the Tropics. In 2019, Agrinatura renewed, in cooperation with FAO, the Memorandum of Understanding which includes FAO's TAP (Tropical Agricultural Platform). The aim of this Memorandum is to increase national capacities in the Global South for agricultural innovation.

In 2021, Agrinatura participated in the creation of an action plan for the coming years. In 2022, the Polytechnic University of Valencia (UPV) increased the number of member institutions. Agrinatura strengthened its partnership with various partner networks e.g. ICA (Association for European Life Science Universities), IROICA, RUFORUM (Regional Universities Forum for Capacity Building in Agriculture), SEARCA (Southeast Asian Regional Center for Graduate Study and Research in Agriculture), YPARD (Young Professionals in Agricultural Research for Development) and many more. Since 2016, the YPARD Secretariat has also been based at CZU.

Agrinatura also participates in the dialogue with the European Commission's Directorate-General for International Partnerships (DG INTPA) leading to greater involvement of science and research in political decision-making. The new initiative also includes the Nutrition Research Facility (NRF), which provides information and data to the European Commission in the field of nutrition, and the DeSIRA Lift project, which contributes to climate, productive and sustainable transformation in agriculture and food systems in low- and middle-income countries. Through Agrinatura, FTZ participated in various ERAMUS+ capacity building projects (MS FSCC, PISAI) and submitted jointly with other members multiple applications.

FTZ is actively involved in Agrinatura activities. In May 2022, Vice-Dean for International Relations, Dr. Petra Chaloupková together with the official CZU representative Ing. Olga Leuner, Ph.D. attended the organisation's General Assembly meeting and 1st Agrinatura conference in Cork, Ireland. Next year, General Assembly and Conference will be hosted in May 2023 by FTZ.



# STUDENT AMBASSADORS



Student Ambassadors of the Faculty of Tropical Agriculture (FTZ) were established within the FTZ's Multicultural Centre in January 2021. A team of 11 students from Europe, Asia, Africa, through and America are focusing on supporting newly arriving students via email, by sharing their own experiences (Welcome course, leaflets, etc.). Student Ambassadors are also organising teambuilding activities, (contributing to FTZ promotion (videos, social media, newsletter), providing links with alumni and friends of the Faculty (3x Learn and Discuss, Garden party) and cooperating with student and international organisations (BeFair, ESN, AIESEC, and YPARD). Moreover, they focus on sustainability issues (establishment of the Little Free Library in FTZ's lobby, organising plant SWAP, Mystery Book Swap, joining Climate Fresk workshop, field trips, and promoting eco-friendly activities).

Student Ambassadors actively cooperate with the Faculty throughout the study and career development of the students, creating a friendly environment and promoting the university internationally.



# FACULTY DEVELOPMENT

# STRATEGIC MANAGEMENT SUPPORT PLAN (PPSR)

PPSR projects are funded by the Ministry of Education, Youth and Sports of the Czech Republic (MŠMT). In 2022 the following projects were implemented within MŠMT projects.

## **INCREASE THE USE OF DISTANCE LEARNING METHODS IN FULL-TIME STUDY PROGRAMMES**

Sub-part: Strengthening the quality of new forms of education

Coordinator: Olga Leuner

The aim is to improve the availability of study materials in electronic form, and to introduce innovative solutions that will help to increase the efficiency and quality of distance education.

Conclusion - support developed:

1. Laboratory Rules, Procedures and Practices - an electronic tool useful in teaching courses that involve hands-on laboratory instruction and prepare students for practice/work in the laboratory.

2. Practical Animal Handling, Sampling and Processing Guidelines - a set of protocols for animal handling, collection,

and processing of faecal, blood and feed samples, recording and processing of biometric and behavioural data, analysis of blood biochemistry, parasite load, nutrient content of feed and faeces, analysis of social behaviour and status, etc.

3. Research Ethics and Academic Integrity - designed to support students in understanding the principles of research integrity and ethics, understanding the basics of good research practice, and helping them to be able to navigate issues related to plagiarism, falsification of data, deception, and cheating, as well as other forms of academic dishonesty.

4. Small-scale biogas technology for waste management - this support tool, developed for students, aims at enabling the students in investigation and understanding the sources, quantities and characteristics of biodegradable wastes produced by agriculture, the food industry, and municipalities (especially in tropical areas). Support includes biogas composition and properties, basic kinetic analysis, comparison of experimental and simulation results, and basic system dynamics of biogas technologies and their applicability in tropical areas.



## **STRENGTHEN THE QUALITY, OPENNESS AND INTERNATIONALISATION OF DOCTORAL STUDIES**

Coordinator: Olga Leuner

International internships are an integral part of the Doctoral Study Programmes (DSP) at FTZ, as it not only enhances the quality of the DSP but is also crucial in its internationalisation. The aim of the institutional plan sub-part is to support Ph.D. students in internships a minimum duration of one month. The internships could be carried out at quality workplaces in the Czech Republic, but mainly abroad in academic institutions and in companies and other relevant organisations.

The following steps led to the achievement of the set objectives: i) announcement of the selection procedure (transparent conditions were drawn up and a selection committee was set up); ii) selection of students; iii) agreement with students: a contract was drawn up with each Ph.D. student containing the conditions linked to the financial support; iv) implementation of the internships: the Ph.D. students completed their internships at a Czech or foreign workplace; v) follow-up and feedback: the graduates of the internships submitted reports on their stay.

Conclusion: A total of seven students were supported.

**SUPPORT OF MUTUAL COOPERATION WITH UNIVERSITIES AND OTHER PARTNERS IN THE CZECH REPUBLIC AND ABROAD IN SOLVING ISSUES RELATED TO IMPROVING THE QUALITY OF STRATEGIC MANAGEMENT OF UNIVERSITIES, AS WELL AS OTHER ISSUES RELATED TO THE FUNCTIONING OF UNIVERSITIES IN THE CZECH REPUBLIC AND ABROAD AND CONTRIBUTING TO THE FULFILLMENT OF THE VISION OF THIS PLAN**

Coordinator: Petra Chaloupková

The goal of this project is to strengthen the strategic management of internationalization through the support of international cooperation through strategic partnerships and membership in international networks and organizations where FTZ/ČZU provides secretariats and is part of the management of these organizations (AGRINATURA, YPARD, ELLS), e.g. preparation of joint projects and possible involvement in other networks, in order to strengthen sustainable strategic management at all levels of ČZU, helping to reduce the administrative burden and strengthening investments in human and social capital existing at ČZU (in general, in intellectual capital of ČZU). The project also includes the promotion of these networks among teachers and students and their involvement in joint activities.

The project supported the journey of the Vice-Dean for International Relations, Dr. Chalupková, who went to Italy for a meeting of the international association Agrinatura, where she represented FTZ/ČZU, and with other members

of the network she discussed the possibilities of future cooperation, as well as the outputs of ongoing projects.

In August 2022, FTZ vice-dean for development Dr. Jana Mazancová visited the Kwame Nkrumah University of Science and Technology (KNUST) in Ghana. At the meetings with representatives of KNUST IRO, FTZ was introduced in order to set up future cooperation. In addition, the formalisation of our cooperation through signing a memorandum of understanding was discussed. Furthermore, several meetings were held with the relevant heads of departments at the Faculty of Agriculture and new contacts for education, and research were established.

In October 2022, Dr. Tereza Slámová, representing the Agrinatura association, participated in a workshop aimed at supporting the 2030 Agenda and the Sustainable Development Goals (SDGs) and strengthening partnerships with European universities. In the framework of the workshop entitled "Strengthening research and educational capacities through international partnerships building on EU perspectives and experiences towards the SDGs" at the Royal University of Agriculture in Phnom Penh, Cambodia, research and educational activities carried out at European universities focused on tropical and subtropical agriculture were presented and following the perspectives and experiences of the EU with regard to the goals of sustainable development (<https://agrinatura-eu.eu/news/agrinatura-shared-their-perspectives-and-experiences-targeted-to-contribute-to-the-agenda-2030-and-sustainable-development-goals/>).

The visit of a Thai delegation from the Prince of Songkla University was also supported, with which FTZ/CZU is preparing a new Master's Double Degree programme in the field of International Development and Agricultural Economics (more information at: <https://www.ftz.czu.cz/cs/r-8383-actualities-international-relations/thai-delegates-from-the-prince-of-songkla-university-at-the.html>).

Student foreign ambassadors who participate in the promotion of FTZ both within the Czech Republic and abroad were also supported.



## **SUPPORT OF STUDENT MOBILITIES ABROAD**

Coordinator: Petra Chaloupková

The aim of this project is to support the mobility of students and teachers beyond the scope of Erasmus+ projects and the development of global competences (skills to move in an international academic and cultural environment) of students, in order to obtain high-quality and competent graduates who will actively contribute to the sustainability of life for the 21<sup>st</sup> century and deepening the international dimension of education in such a way as to help form socially responsible graduates. The project supported 10 FTZ students who went for data collection to universities abroad as part of the preparation of their bachelor's, diploma or dissertation theses. They travelled to Cameroon, Colombia, Moldova, Nigeria and Zambia.

## PROMOTING AND REPORTING ON THE PRINCIPLES OF SOCIAL RESPONSIBILITY (CSR) OF FTZ CZU

Main coordinator: Jana Mazancová

The project organised events supporting social responsibility and sustainability (promoting fair-trade values and responsible consumer behaviour). Continuous communication of the topic was ensured through the website and FB and Instagram posts. The following events were organised within the framework of these themes: 21.1.-22.1.2022 Coffee workshop, 16.2.2022 Diet and Environment, 25.2.-26.2.2022 Fairtrade Seminar and 2.11.2022 (Be)Fair Tropical Ball. In addition, the following events were dedicated to this issue: FTZ Open Days, ScienceFest and GardenFest. Publicity of CSR was ensured through publications placed on the website: *Ve stínu kakaovníku*, GardenFest 2022, Tropentag 2022.

In addition, promotional leaflets and posters were created to promote FTZ as a Fair Trade Faculty - printed leaflets and posters, paid advertising and recruitment campaigns presenting FTZ as a responsible institution – Czech Universities, KamPoMAturitě.cz.

## STRENGTHENING THE ACCESSIBILITY OF RESULTS OF CREATIVE ACTIVITIES TO THE GENERAL PUBLIC IN VARIOUS FORMS; PROMOTING THE POPULARISATION OF SCIENCE AND COMMUNICATION OF ITS CONTRIBUTION TO SOCIETY TO TARGET GROUPS

Coordinator: Jana Mazancová

Within the Project, information about FTZ's activities was disseminated through websites, Facebook and Instagram and media outlets (more in "FTZ in the Media" chapter). At least one news item was published each month: in total 33 in Czech and 32 in English. A brief selection is provided below:

- new FTZ project "implementation of project-based learning (iPBL-EU);
- successful data collection amidst general elections and the heightened C-19 pandemic in Zambia;
- love and plants are in the air;
- training on diversifying the eating habits of Ethiopians;
- new Master's Double Degree Programme with the University of Hohenheim (Germany) has been opened;





- be a Student Reporter at the Tropentag - A hybrid conference;
- Czechia and Vietnam: bilateral relations on the CZU-HUAF level have the potential for much greater expansion;
- Tropentag 2022 Conference at the CZU campus;
- meet FTZ Project Centre and FTZ experts;
- FTZ TROPICAL DAY;
- evaluation of the Great Green Wall Project.

On 22.6.2022, "Věda Fest" and "EU Presidency", where FTZ presented and demonstrated the mobile laboratory CZUmobiLAB by dr. Jiří Černý. As part of the EU Presidency, Ing. Ingrid Faltová and Ing. Kateřina Vihanová presented research on essential oils. On 11.6.2022, we organised Zahradní slavnost/Garden Fest opening the FTZ laboratories, pavilion and Botanical Garden to the public. Assoc. prof. Šobotník opened the door to the world of termites, and Derbianus Conservation NGO presented its conservation

programme for the Derby eland. On 25.8-30.8.2022, at the exhibition 'Země Živitelka', Ing. Kateřina Vihanová demonstrated her research in the field of essential oils. And finally, on 30.9.2022 within the event Noc vědců/ Researcher's Night on the topic: With All the Senses, dr. Martina Komárková offered a lecture revealing the ability of animals to predict disasters.

A recruitment campaign based on the experience of CZU alumni was conducted on social media (FB/IG) in January-March 2022. Three press releases were issued during 2022:

- 7.1.2022 - Hedgehogs starring in a story about bacterial resistance;
- 10.5.2022 - Growing sales of fair trade goods in the Czech Republic make it possible to fight climate change, among other things;
- 7.9.2022 - International conference Tropentag 2022 held at the Czech University of Life Sciences in Prague.

Part of the media output is also a podcast: ČZU podcast PLNÝ ŽIVOTA - presentation of FTZ experts and their projects:

- Barbora Černá Bolfíková: Hedgehogs, wolves, huskies: what do they have in common?
- Hynek Roubík: Food security in the Global South.
- PR: Growing sales of Fairtrade goods in the Czech Republic make it possible, among others, to combat climate change.
- PR - TROPENTAG CONFERENCE 2022 at the CZU campus.

FTZ was also presented on other web portals - VysokeSkoly.cz.

## **SUPPORTING THE ACTIVITIES OF STUDENT ORGANISATIONS AS ACTORS CONTRIBUTING TO THE QUALITY FUNCTIONING OF CZU, ESPECIALLY IN ITS EDUCATIONAL COMPONENT**

Coordinator: Jana Mazancová

The project supported the students' own creative activity through the BeFair (BF) student association at CZU, established at FTZ. Its activities are in line with the campaign promoting sustainable social responsibility. BF has been involved in teaching the course Marketing of tropical products and Fair Trade. In addition, together with the FTZ Ambassadors, they organised side events at the FTZ Open Days, Tropical Weeks for international applicants, GardenFest and ScienceFest, and popularisation events to raise awareness of sustainability and responsibility (Coffee Workshop, Learn & Discuss: Diet and Environment, Valencia Workshop, participation in the FairTrade Czechoslovakia press conference, Prague Majáles). In November 2022, the association organized the (Be)Fair Tropical Ball event.



# FTZ IN THE MEDIA

Coordinator: Klára Jiříčná

In 2022, the Faculty of Tropical AgriSciences (FTZ) gained very high media coverage thanks to the following topics: the coronavirus vaccination start, SARS-CoV-2 mutation, distance schooling at universities and its challenges, overview of universities applicants in 2019 by number, as well as a new inhalation treatment to tackle lung diseases. Dr. Černý was a guest on Otázky Václava Moravce talk show to discuss the start of vaccination in the Czech Republic. Prof. Ladislav Kokoška gave a 5-page interview to the weekly Téma on his new research into volatile antimicrobial agents as well as on his multiple research trips to the Pacific. Dr. Kotrba was featured in a 4-page interview about breeding exotic animals on Czech farms.

Patrick Van Damme was featured in an interview for PRAZSKY DENIK regarding the role of the universities in policy changes. Article featured photogallery from FTZ 60<sup>th</sup> anniversary event.



Barbora Černá Bolfíková was interviewed by DENIK N on her new findings related to her hedgehog research published in NATURE.

PR team organized Open Day, Congroo Fair and Gaudeamus: prepared presentation, organized a video shoot to promote study programmes, and communicated with students regarding the content on April.

The Faculty of Tropical AgriSciences (FTZ) gained the most media coverage thanks to the following topics: Fair trade – climate change, Press Conference and Věda a výzkum interview with Patrick Van Damme.

# ACTIVITIES OF FTZ STUDENTS AND STAFF

## BE FAIR AT FTZ CZU

The biggest change in the Be Fair organization is the registration in the public register and collection of deeds on November 8 as a special interest association. The official name is now Be Fair, z.s. and the registration number is 7611997.

The year 2022 started with an Open Day, an event called "Learn & Discuss: Diet and Environment" in February, a workshop in Valencia on Fairtrade in April, a lecture from the Learn & Discuss collection (War in Ukraine and its Impact on Global Food Security) and other events within the University.

After the holidays, in mid-October, Faculty Day was celebrated, where Be Fair organized sports mini-games and provided refreshments.

The last event of 2022 was the "(Be)Fair Tropical Ball", which was basically the same as the International Fair party, but this time the event was moved to the larger premises of Restaurant C, where approximately 200 visitors were received. At this event, an award was presented to a person involved in sustainability. We named this award "Roubik roku".

## CZU MOBILAB

In 2022, CZU mobiLAB team continued with training of local experts in Zambia to use the mobile laboratories provided. The team spent three weeks in different rural parts of Zambia collaboration with CZU mobiLAB users. We also resupplied missing consumables in the lab and established collaboration with Zambian veterinary and public health authorities.



# “STUDY IN PRAGUE” PROJECT

The Study in Prague Project is a joint effort of Prague universities (The Czech Technical University, Charles University, CZU Prague, The University of Economics and The University of Chemical Technology) to promote the capital city of Prague as an attractive place for international students.

Study in Prague (SiP) offers a unique choice of university studies from the five best and largest public universities in Prague. The study programmes offered are taught entirely in English, and the choice covers a wide spectrum, from Philology, Pedagogy, Social Sciences, Natural Sciences, Medicine, Architecture, Economics, and Management to Computer Science, Nanotechnology, Chemistry and Biotechnology, Mathematics, Nuclear Physics, Engineering, Agriculture and Forestry.



## Study in Prague

In particular, the SiP Project supports:

- 1) Active participation in international study fairs for post-secondary education.
- 2) Creation of joint printed promotional materials with the SiP logo, including the use of online marketing tools.
- 3) Involvement of self-paying students, organisation of one annual joint event for international students of participating HEIs .
- 4) Developing cooperation with international alumni.
- 5) Development of SiP social networks, expansion of the SiP website.
- 6) Participation in seminars on the recruitment of international students, quality improvement in foreign language programmes, etc.
- 7) Promotional trips to secondary schools with extended foreign language teaching (in the Czech Republic and abroad).

More information at <http://studyinprague.cz/>.

# OPERATIONAL PROGRAMME RESEARCH, DEVELOPMENT AND EDUCATION

The key principle of the Operational Programme Research, Development and Education (OP RDE) is the development of human resources for the knowledge economy and sustainable development for a socially cohesive society, and it is supported by interventions in the context of several priority axes (PA).

This is followed by support for quality research, for which a qualified workforce represents the key input factor. Interventions in the field of education will also be supported by systemic changes that aim to improve the educational system of the Czech Republic.



EUROPEAN UNION  
European Structural and Investment Funds  
Operational Programme Research,  
Development and Education

**MSMT**  
MINISTRY OF EDUCATION,  
YOUTH AND SPORTS

## DRIVERS AND MECHANISMS OF HABITAT SELECTION AND MOVEMENT PATTERNS OF NATIVE UNGULATE COMMUNITIES IN RELATION TO RESOURCE DISTRIBUTION AND LIVESTOCK GRAZING IN WEST AFRICAN PROTECTED AREAS

Call number: 02\_19\_074

Call title: International mobility of researchers - MSCA-IF III

Project title: Drivers and mechanisms of habitat selection and movement patterns of native ungulate communities in relation to resource distribution and livestock grazing in West African protected areas

Project Reg. No.: CZ.02.2.69/0.0/0.0/19\_074/0016295

Total eligible expenditure for CZU: 5,758,704.00 CZK

Project duration: 1. 3. 2020 – 31. 5. 2023

Main investigator: prof. RNDr. Pavla Hejčmanová, Ph.D.

### Project annotation:

The objective of the project is to enable the mobility and fellowship of the FTZ researcher at prestigious scientific institutions abroad, specifically the Zoological Society of London, Institute of Zoology, and Swansea University in the United Kingdom, for professional growth and expertise expansion through a research project submitted to the MSCA-IF scheme of the Horizon 2020 programme.



The research goal was to link the environmental features of the savannah ecosystems of West Africa with the spatiotemporal behaviour of large herbivores and to reveal their influence on animal spatial distribution and movement in relation to the dynamic distribution of resources and livestock on the territory of protected areas.

## **MODERNIZATION OF STUDIES AND STUDY PROGRAMMES, QUALITY AND CONSULTANCY AT CZU IN PRAGUE (THE “MOST” PROJECT)**

Call number: 02\_16\_015

Call title: ESF call for universities

Project title: Modernization of studies and study programmes, quality, and consulting at CZU in Prague

Project registration number: CZ.02.2.69/0.0/0.0/16\_015/0002386

Total eligible expenses for CZU: 182,197,504.47 CZK

FTZ' total budget: 6,429,000 CZK

Implementation of the Project: 1 July 2017 - 1 July 2023

Project annotation:

MOST is a comprehensive project of the Czech University of Life Sciences in Prague aimed at increasing the quality of higher education provided by: raising the professional level of academic staff; reworking existing and creating new study programmes taking into account modern teaching methods, labour market and practice needs; and the requirements of students with special needs, quality evaluation systems; and strengthening the strategic management of CZU.

The Project is divided into key activities and the Faculty participates in some of them. These are:

KA 2 - improving educational activities and modern teaching trends,

KA 3 - the creation of new, and the modification of the content of existing, Bachelor's and Master's Study Programmes, taking into account the needs of the labour market and practice, and

KA 5 - Strengthening internationalisation.

In 2022, the implementation of new study programmes created within the MOST Project in the University Information System was completed, and our first students successfully graduated. The preparation and development of a personal safety course for undergraduate students and an English language course for Faculty staff continued, enabling more staff to obtain a Cambridge Certificate in Advanced English in 2023, demonstrating a high level of English in teaching and creative faculty activities. The FTZ International Council, the so-called Advisory Board, was also supported as a part of the Development of International Cooperation and Staff Mobility. It meets annually at FTZ and evaluates FTZ activities in the international field. In 2022, consultancy activities related to strengthening institutional and personal security management at the faculty continued.

## KA 5 - Strengthening internationalization

5.1 Development of relations with foreign institutions through Double Degree programmes – as part of this activity, a new Double Degree programme was created in cooperation with the partner University of Hohenheim in Germany, which thematically focuses on tropical and subtropical areas. A new master's programme called "Agricultural Sciences and Farming Systems in the Tropics and Subtropics" has opened for applications to study in the academic year 2022/23, and now three students are studying this programme at FTZ; they will spend the next academic year 2023/24 studying and writing their diploma theses in Germany. More information about the programme is available on the website [www.agritropics.eu](http://www.agritropics.eu).

5.2 Development of international cooperation, staff mobilities - as part of this activity, the so-called Advisory Board was created, which meets once per year at the FTZ and evaluates the activities of the FTZ in the international field. The fifth meeting of this Board in 2022, due to the global pandemic of COVID-19, took place in a hybrid form, in addition, the members of the commission participated as honorary chairperson of the final exams and student thesis defences. Furthermore, as part of this KA, two teachers travelled abroad for the purpose of developing their pedagogical competences.

5.3 Student mobility support – this activity supports studies at partner European universities within the so-called Summer Schools, which are increasingly popular among FTZ students. In 2022, two FTZ students were supported in participating in two summer schools.



## INCREASING THE QUALITY OF STUDIES AT CZU

Call number: 02\_18\_056 17

Call title: ESF Call for HEIs II in Priority Axis 2 of the OP

Project title: Increasing the quality of studies at CZU

Project Reg. No.: CZ.02.2.69/0.0/0.0/18\_056/0013123

Total eligible expenditure for CZU: 43,044,664.82 CZK

Total budget of the FTZ: 2,140,165 CZK

Physical implementation of the Project: 1 January 2020 -  
31 December 2022

### Project annotation:

Arising from this call is a comprehensive project aimed at increasing the quality of educational activities, introducing practical elements into study programmes, increasing the participation of students with special needs in education, the internationalisation of the CZU environment, the development of links between the university and graduates in relation to the employability of graduates in the labour market with the aim of implementing the strategic management of study programmes at the university and activities leading to increased interest in studying at CZU among students from the University. The link between the Project and complementary ERDF II projects is significant.

Following ERDF II activities, Real-Time PCR and food drying methods were introduced into selected courses.

In September 2022, a special seminar on "Multicultural Environment and Study in the Czech Republic" was organized for foreign first-year students. Seminars on non-discrimination practices and attitudes were also held for academic and technical staff of FTZ and other parts of CZU in June-December 2022. A 40-hour course aimed at increasing the competence of FTZ staff in the use of modern technology in field data collection and at introducing the Spatial Survey and Monitoring method into the teaching of the Wildlife Survey and Monitoring, Wildlife Fieldwork and Protected Areas Management courses was held in September 2022.



The project from the "ESF call for higher education institutions II in priority axis 2 of the OP" call is a comprehensive project aimed at increasing the quality of educational activities, introducing practice into study programmes, increasing the participation of students with special needs in education, internationalizing the environment of CZU, developing ties between higher education institutions and graduates in connection with the applicability of graduates on the labour market with the aim of implementation in the strategic management of study programmes at universities and further to activities leading to an increase in interest in studying at CZU among students from secondary schools. The project's connection to complementary ERDF II projects is significant. The project was implemented from January 1, 2020 to December 31, 2022.

As part of this project, internationalization at FTZ was strengthened. The course "Multicultural environment and study in the Czech Republic" was introduced for newly arriving foreign students. During this course, students become familiar with practical recommendations and matters related to studying and staying in the Czech Republic.

At the same time, students increase their competences and participate in international teams through interactive cooperation. The course takes place 3 times a year and focuses on information about visa issues, information before arrival and general information about the Czech Republic and internationalization as well as own team building activities.

Furthermore, the project focused on the development of ties with alumni, within which the alumni database was developed in cooperation with the CZU Alumni Club. Graduates are involved in FTZ activities. Furthermore, the newsletter "Tropical News" is aimed at foreign graduates of FTZ and it is published in English in an electronic form twice a year. It includes information and news from the field of tropical agriculture in connection with the activities of FTZ. This newsletter serves as a form of addressing alumni for feedback and cooperation with the faculty and provides summary information for employees, students and friends of the faculty. All issues of this newsletter are available online at <https://www.ftz.czu.cz/cs/r-6859-mezinarodni-vztahy/r-7358-zakladni-informace/r-17859-newsletter-ftz> .



HR EXCELLENCE IN RESEARCH

## THE HR AWARD

The HR Award is a prestigious award given by the European Commission for excellence in human resources in a scientific environment. CZU in Prague was awarded the HR Excellence in Research Award (The HR Award) on 12 November 2021, placing it alongside other prestigious institutions in Europe. With this award, CZU confirms that it adheres to the rules set out in its Charter and Codes in the area of recruitment and employment of more than just its academic and scientific staff and proves that it is a quality employer for potential employees from all over the world. The HR Award was awarded to CZU for a period of 24 months.

FTZ employees are active members of working groups that revise or create documents in the field of implementation of the management strategy, ensuring the development of capacities, knowledge and skills of CZU employees, as well as the strategic setting and development of international cooperation in R&D, intersectoral cooperation and technology transfer, and development of the popularisation of R&D at CZU. In addition, FTZ employees actively participate in training courses that are organized at CZU within the framework of the implementation of the HR AWARD principles.

## INTERNATIONAL MOBILITY OF RESEARCHERS

The aim of this call is to support the professional growth of researchers and the development of research organizations through the strengthening of human resources and the strengthening of international cooperation. As part of this "PROMO II" project, FTZ received financial support in 2020 for the employment of one incoming post-doc from abroad for 10 months, whose acceptance was planned for September 2021. In 2021, out of the total number of 44 applications submitted, the commission chose 29 valid ones. The best candidate was selected from Pakistan, but due to the visa situation associated with covid-19, his mobility did not start as planned, i.e. in 2021, but in July 2022. In view of his publishing activities, his position was extended until June 2023.



# FINANCIAL REPORT



# MANAGEMENT OF THE STATE NON-INVESTMENT CONTRIBUTION AND SUBSIDIES IN 2022

<b>DRAWING ON THE ALLOWANCE FOR EDUCATIONAL ACTIVITIES:</b>	<b>ALLOTTED (in CZK)</b>	<b>DRAWN (in CZK)</b>
Wages and salaries	17,040,260	16,763,030
Payroll deductions 35.22%	6,001,581	5,748,185
Common elands and guanacos	500,000	500,000
Educational activities - operation	483,253	1,123,185
International Relations	395,827	286,521
<b>TOTAL</b>	<b>24,420,921</b>	<b>24,420,921</b>
<b>DISBURSEMENT OF FUNDS FOR SPECIFIC UNIVERSITY RESEARCH:</b>	<b>SVV FTZ</b>	<b>SVV FTZ</b>
The IGA Organisation	81,457	81,457
Organisation of a student scientific conference	340,000	340,000
Internal grants	3,010,000	3,010,000
<b>TOTAL</b>	<b>3,431,457</b>	<b>3,431,457</b>
<b>BUDGET AMOUNT 2022/EXPENDITURE 2022</b>	<b>27,852,378</b>	<b>27,852,378</b>

<b>DISBURSEMENT OF INSTITUTIONAL SUPPORT:</b>	<b>RVO FTZ</b>	<b>RVO FTZ</b>
Capital funds	0	0
Wages and salaries	9,739,581	10,057,824
Payroll deductions	3,430,281	3,397,008
Scholarships	222,500	263,448
Other current assets	952,974	627,056
<b>TOTAL</b>	<b>14,345,336</b>	<b>14,345,336</b>
<b>BUDGETED AMOUNT 2022/EXPENDITURE 2022</b>	<b>42,197,714</b>	<b>42,197,714</b>
<b>OTHER:</b>		
University of the Third Age	47,037	47,037
Students with Specific Needs	79,443	79,443
Basic subsidy for students with governmental scholarship (category B)	41,305	41,305
Basic subsidy for foreign students, students with governmental scholarships – English language teaching (category G)	157,051	157,051
Government scholarships B	70,000	70,000
Government scholarships (category G)	985,000	985,000
Achievement and exceptional scholarships for government scholarship holders	28,000	28,000
Achievement and exceptional government scholarships (category G)	71,000	71,000
Allowance for short stays	86,306	86,306
DSP Scholarships	11,677,500	11,677,500
<b>PROJECTS FOR SUPPORT OF STRATEGIC MANAGEMENT:</b>		
PSSM NON-INV	1,225,600	1,225,600
PSSM INV	0	0

*Data Source: EIS Magion 20. 2. 2023*

## **Annual Report 2022 - Faculty of Tropical AgriSciences**

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