

ALFA III

Supporting social **equality** and **integration**
between **Latin America** and the **European Union**



FINANCED BY
THE EUROPEAN UNION

Building the future on education:

Cooperation programme between higher education institutions
in the European Union and Latin America



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Supporting social **equality** and integration between **Latin America** and the **European Union**.



Members of the Sapuvet-Peru group raising awareness on Veterinary Public Health among rural communities in Peru. © Grupo Sapuvet-Perú

Front cover: Spreading the word about the UNICA project in a secondary school in Colombia.
© Beatriz Elena Restrepo

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ALFA III is a cooperation programme between the European Union (EU) and Latin America (LA) that promotes higher education (HE) as a means of social and economic development and struggle against social inequality.

1 | What is ALFA III?

Building the future on education

In order to achieve sustainable social change all ALFA III projects seek to:

- ▶ Improve the quality of higher education and its relevance to the needs of society, creating links between higher education institutions (HEIs) and the job market.
- ▶ Foster enduring access to HEIs for the most vulnerable sectors of society.
- ▶ Modernize, reform and harmonize higher education systems in Latin America.

The ALFA III programme comprises 51 projects managed and implemented through networks of higher education institutions in both regions.



The **participating countries** are the **27 Member States** of the **European Union** and the **18 countries** of **Latin America** and the **Caribbean**.

Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Slovakia, Slovenia, Spain, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, United Kingdom, Romania and Sweden. Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Cuba, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela.



Since 1994 ALFA has defended the role played by higher education institutions (HEIs) in the struggle against social inequality.

3 | History of ALFA III

From the outset the programme has contributed to training HEIs in Latin America (LA) and fostering academic cooperation between LA and the European Union (EU), leading to the formation of longstanding links.

ALFA III strengthens the links between countries in LA by creating opportunities for medium- and long-term collaboration both inside and outside academia.

ALFA has also mobilised forces among governments and private enterprise as part of its efforts to promote higher education as a means of enhancing social cohesion and more equitable development.

“The ALFA projects promote exchange between continents, which not only enriches Latin America, but Europe too.”

Alvaro Maglia, Executive Secretary,
Association of Universities of the Montevideo Group.



Spreading the word about the UNICA project among rural communities in the Andes (Department of Antioquia, Colombia). © Omar Ramírez Quintero.

ALFA III, 51 projects a single vision



The impact of ALFA III and its projects goes beyond higher education to include a broad swathe of Latin American society.

There are **7 impact categories**:



Access to Higher Education



Creation/Modernization of University Courses



Knowledge Transfer



Millennium Goals



Alliances/Cooperation



Creation/Strengthening of Networks



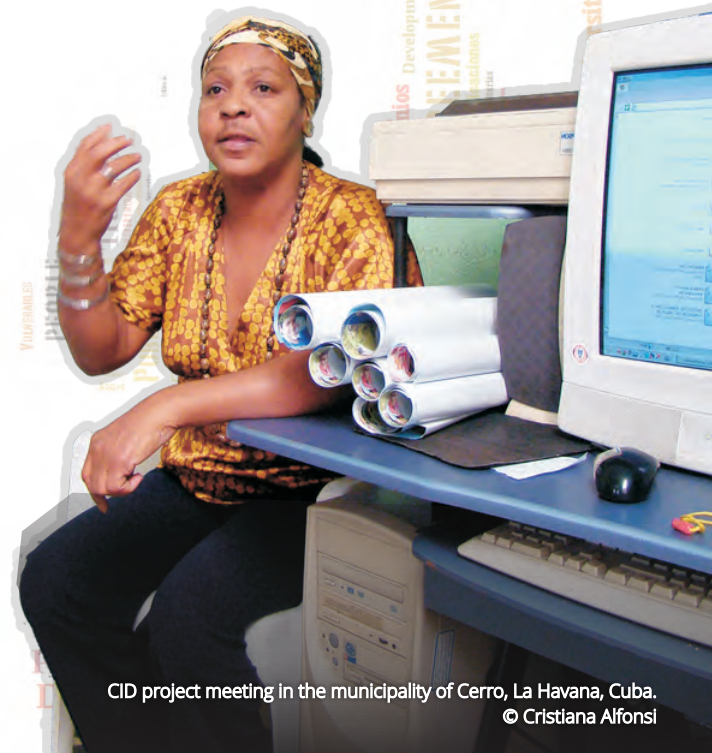
Spreading Awareness

Information about the **51 projects** is available at www.alfa3programme.eu

Beyond higher education.

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Impact categories



CID project meeting in the municipality of Cerro, La Havana, Cuba.

© Cristiana Alfonsi



Access to Higher Education

Promoting social cohesion through the training of active, responsible citizens, and fostering the conditions for a fairer society.

RIAPE 3: providing an alternative for rural inhabitants

Access to higher education remains limited, especially for vulnerable sectors. Many young people are excluded from the university system due to lack of educational resources or infrastructure.

The RIAPE 3 project supports the structural transformation of higher education institutions (HEIs) in Latin America. One of the most important advances made by the project is the strengthening of distance learning programmes to compensate for the lack of infrastructure, especially in rural areas.

For example, the RIAPE 3 team at the Universidad Nacional Autónoma de Honduras (UNAH) contributed to the modernization of the distance learning system in Honduras by setting up University Telecentres. These centres support the learning process of students who live far from the physical university campus. In order to take quality educational services to remote areas of the country, the UNAH has created three University Telecentres, the most recent of which is located in the town of Gracias in the department of Lempira, where there is a large indigenous Lenca population.

THANKS TO RIAPE 3

*almost **300 young** Hondurans are
now pursuing their **university**
dreams.*



University Telecentre in Gracias, Lempira, Western University Regional Centre
of the Universidad Nacional Autónoma de Honduras (UNAH).
© Office for Innovation in Education, UNAH.



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ALFA III: Beyond higher education



Creation/Modernization of University Courses

Promoting the quality and coverage of education and ensuring its capacity to support sustainable and equitable development in Latin America.

CapWEM and the creation of a Masters programme in Water and Environmental Management

Management of water resources is one of the most important issues of the 21st century. Addressing the shortage of wastewater treatment plants is a priority in Latin America (LA), since 86% of wastewater reaches rivers without any prior treatment.

To improve the relevance of higher education to the water sector, the CapWEM project brings together researchers from 8 universities in LA and the European Union (EU) in order to modernize the curricula of the higher education institutions (HEIs) involved. CapWEM trains professionals to provide drinking water in rural and urban communities.

Thanks to this project, over 200 students from LA are following the Masters programme in Water and Environmental Management, learning about water supply, sanitation and sewage treatment. Additionally, the project carries out awareness raising activities on environmental conservation at an institutional and community level. Examples include the “Urban flooding” event in El Salvador and the “Impact of agriculture on water resources” seminar in Brazil, which were attended by over 60 students and professionals.



The CapWEM seminars in Argentina and Brazil provide the scientific community with an opportunity to debate water management challenges.

©Ingrid Althoff.



Knowledge Transfer

Promoting circulation of knowledge and best practices at all levels of society and between the continents, encouraging an equitable access to knowledge.

KickStart and the transatlantic network of knowledge exchange

In recent years the interaction between universities, governments, companies and civil society in Latin America (LA) has increased. However, knowledge transfer initiatives need to be supported to achieve concrete results.

In order to increase exchange of knowledge and technology between regions and continents, the KickStart project establishes a network of cooperation between higher education institutions (HEIs) in the European Union (EU) and LA. The activities run by KickStart develop strategies to train innovative professionals who are able to respond to society's needs.

For example, KickStart facilitates the training of small business owners in LA through the "Business innovation" workshop targeted at entrepreneurs in Bolivia, Peru and Colombia. It aims to deliver practical tools to participants to promote innovation in their business. With this kind of actions, KickStart consolidates a platform of innovation and exchange among HEIs in the participating countries.



“ We created the 'Business innovation' workshop together with universities in the countries involved, Colombia, Bolivia and Peru, thanks to the knowledge transferred from the European universities.”

Alfredo Naranja,
Kickstart Colombia.

First I.S.L.A.E. (Innovation Support in Latin America and Europe) conference organized by the KickStart project in Glasgow, Scotland.

©Mark Anderson/ KickStart

Millennium Goals

The results of ALFA III respond to the Millennium Development Goals (MDGs) set out by the United Nations.

Equality: promoting gender equality and the independence of women

“Women’s participation in technology-related fields remains low. Very few women work in leadership roles such as in the vice-chancellor’s office. There are also gaps in the labour market from the perspective of wages and occupational segregation”.

Ana Rosa Ruíz, Science coordinator of Equality and head of the gender equality office at the Instituto Tecnológico de Costa Rica.

The Equality project strengthens the quality, relevance and accessibility of higher education institutions (HEIs) in Latin America (LA) and especially seeks to promote female leadership, thereby contributing to the third MDG. To achieve its goal, the project organizes workshops and conferences in 18 countries in LA, contributing towards the increased visibility and participation of women in academia. For example, the workshops aimed at the empowerment or creation of gender equality offices in participating HEIs in Ecuador and Argentina have trained 100 women who will then become “trainers of trainers” in their respective countries. The goal is to reach the participation of 120 European and Latin American universities and broaden the network of training and activities related to gender equality in higher education. *“The events received widespread coverage in the national press and enabled the authorities to learn more about the project and display their interest in supporting actions targeted at promoting women’s equality”*, concludes Marisela Bonilla, coordinator of the Equality project.



Equality kick-off meeting at the Instituto Tecnológico de Costa Rica (ITCR).
© Office of communications and marketing, ITCR.



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ALFA III: Beyond
higher education

Alliances/Cooperation

Amplify the impact of the ALFA III programme and its projects outside of academia, working together with the private and public sectors.

The PILA Network promotes alliances among intellectual property managers in Latin America

Higher education institutions (HEIs) in Latin America (LA) promote academic research and the transfer of its results to the private and public sectors. However, the lack of qualified personnel often sets limits on this trend, as does the deficit of adequate public policies in the area of intellectual property (IP) rights.

The PILA Network is a system of universities and other participating organizations including the World Intellectual Property Organization, the European Patent Office and Red Universia, which promote international cooperation between universities and companies. The Network encourages the use of interactive tools for knowledge exchange processes (e-learning, expert network and exchange forum). During its implementation, the Network organized on-line courses and training workshops in 18 countries in LA. The PILA Network also promotes partnership and cooperation at a national and international level through round tables and conferences.

Seven years ago one of PILA Network's partners, the Universidad de Chile, had an average of 0.7 patents protected per year. Today, the university achieves 10 patents per year. The goal is to reach 50 per year at each Chilean HEI. The PILA Network project ended in November 2011, however a permanent outcome is the PILA Latin American Network, which started with 22 members and now has 52. This is an example of sustainability and commitment to strengthen IP in LA.



"The project offered us the opportunity to interact on an international level of cooperation between countries in the field of IP and technology transfer in the university sector."

Jaime Ferrera Nóbrega,
Director of the Department of Development and Technology
Transfer at the Universidad de Chile

Working session at a PILA Network project workshop to promote mutual assistance in consolidating intellectual property management-related issues.

© Sari Scheinberg



Creation/Strengthening of Networks

Consolidate relationships and promote integration processes between countries, regions and continents in order to foster the exchange of experiences, people and knowledge.

Alfa PUENTES: collaboration between universities in Latin America (LA) and their counterparts in the European Union (EU)

The Alfa PUENTES project facilitates spaces for joint learning among higher education institutions (HEIs) in LA and the EU. The success of Alfa PUENTES lies in its participants: these are not HEIs but rather pre-existing collective regional and national bodies (such as the Central American University Superior Council). The project trains them and evaluates their role as intermediaries between member universities and governments. Likewise, Alfa PUENTES builds on existing processes of sub-regional convergence in LA taking place in the Andean Community, Mercosur and Central America/Mexico, playing an unprecedented role in the processes of regional integration currently underway.

Alfa PUENTES consolidates a vast international network, bringing together 15 national and regional associations of universities in LA and 5 in the EU, which together represent 150 HEIs on both continents. Each member university of this coalition contributes to the creation of a common higher education (HE) area. The participating universities directly benefit from mutual learning from other members. For example, inter-regional studies are produced in LA on how different universities deal with teaching methodologies, research, mobility and internationalization, quality control and governance/management, thereby producing an analysis of major trends in HE in LA.

“

LA needs more spaces for exchange, collaboration and joint organization among universities at a continental level."

Francisco Alarcón, coordinator of the Alfa PUENTES project in the Central America region.

Symposium on
"Interculturality and higher education"
at the Universidad de Loyola, La Paz, Bolivia.
© Universidad de Loyola





Spreading Awareness

Ensuring that the relevant audiences are aware of the results achieved by ALFA III in Latin America (LA) and the European Union (EU).

ALFA III projects leave a legacy

Together with its mission of promoting cooperation between the EU and LA and strengthening higher education, ALFA III contributes to the production and circulation of knowledge at a national and international level. Many of the ALFA III projects produce one or more printed and/or digital publications to ensure the validation of their outcomes as scientific resources.

For example, after three years of work, the INCA project (Promotion of Internationalisation in Central America) resulted in the publication “Management of International Relations Offices in the Central America Region”. With over 2,000 copies, the guide is a key tool in the development of Central American universities’ plans to internationalize. The publication offers good practices for international relations offices, providing information about how to train the staff in charge of international relations in the use of information and communication technologies to make their work more effective.

Another example is the USO+I project (University, Society and Innovation. Improving the Relevance of Engineering Education in Latin America). The project has published 4 books and over 50 scientific papers compiling its experiences and conclusions. The USO+I publications ensure that the project's three years of research can serve to improve the relevance of engineering education not only in the partner universities but throughout LA and the EU.





A bottom-up approach to knowledge creation!

A responsible citizenship is based on education. The KID Project (Knowledge, Inclusion, and Development) invests on the education of all professionals that are in the process of re-entering the workforce, seeking training opportunities to enhance their living conditions.

The KID Project implements territorial agreements ("Agreements for Learning and Knowledge" – ALK) in all the regions where there is a participating university. These agreements are oriented toward strengthening key sectors of the local economy.

Through local KID committees, training programmes are defined which benefit both people in vulnerable working conditions and employers searching for workers.

Different agents participate in the committees: local public institutions, unions, worker organizations, organizations that represent civil society, educational institutions (schools), NGOs that help women in socially disadvantaged situations, and private companies.

Impacts of the KID project:



The footwear industry case

KID Paraguay, coordinated by the National University of Asuncion, has chosen Carapeguá city and its footwear industry to carry out the Project activities.

Carapeguá is a city with around 33,000 inhabitants, located about 100 km away from Asuncion, and it has a rather unsophisticated footwear industry. The KID committee has the participation of the Shoemaker Association in Carapeguá and other public and private agents that get together to make decisions around training and employment.

"One of the problems in the footwear industry has always been the lack of a qualified workforce in regard to sales and production," says Rosana Marcoré, from the National University of Asuncion. *"That is why our first action was to find an expert in marketing to train the sales force. The workshop was open to anyone that had an interest in attending," says Rosana. "The second workshop we offered was about patching. The aim was to train the participants in the fundamentals of the shoe-making process."* The KID Carapeguá committee trains people that have been traditionally excluded from training opportunities giving them access to a decent employment. Among the beneficiaries is Diana Valdez, a 23-year-old woman, who decided to participate in the KID classes aiming to improve her current working conditions. Her long-term goal is to gain expertise in a profession and to have her own small company. For the beneficiaries, such as Diana, who have always considered it impossible to gain access to higher education, this opportunity to study has also been essential for improving their self-esteem.

1 In shoe-making, patching is the process used to sew together the trimmed leather pieces, or any other materials, that are part of the shoe.



Diana Valdez benefits from leatherworking training courses arranged by the KID project.
© Office for Institutional Relations and Communications of the Vice-Chancellor's Office, National University of Asuncion.

The training programmes, which resulted from a local agreement process, become instruments of bottom-up transformation. The programmes strengthen employed workers' competencies or qualify unemployed workers according to the needs of the region.

The model developed by the KID Project in Carapeguá is something that can be replicated in other districts, regions, and even countries. In Paraguay, our experience has shown that other communities also begin to think of ways to replicate this experience in their own regions as soon as they see the results of the Project and how it works.

“We work with people who hardly have a chance to enter university. They have never seen university studies as a possible option for them in order to get a job. This project is helping all of Paraguay,”

Aníbal Viveros, President of the Shoe Association in Carapeguá, Paraguay, and a member of the KID Carapeguá committee.

Facts

- ▶ The project benefits 8,000 women re-entering the workforce for personal reasons (maternity, imprisonment, social problems, etc.) and 4,000 workers aged over 40.
- ▶ 120 public institutions participating in the KID Committees which have learned to implement new labour and training policies.
- ▶ 160 private sector institutions contributing to the design and implementation of the ALKs.
- ▶ 180 association sare involved in the project. They protect the rights of women and those in difficult situations, and school dropouts.



Social cohesion through mathematics

During the first year of university education there is a high failure rate in math related courses, and this is one of the main reasons for dropping out in Latin America (LA).

Improvement in teaching methods is essential to support all young people who wish to complete an engineering degree or a natural science programme. To solve this problem, the Clavemat Project (both a virtual math class and a tutoring system) focuses on two main initiatives. On the one hand, it provides math tutoring for freshmen and sophomores in five Latin American universities (National Polytechnic School in Quito, Ecuador; Cauca University, Colombia; National University, Colombia;

Catholic University in Temuco, Chile; and Granma University, Cuba).

On the other hand, the project benefits 100 public schools in each of the participating countries by providing them with a virtual platform to teach mathematics to students in the last year of high school and first years of university. The virtual classes have several objectives: increasing the number of students that finish high school studies, guaranteeing that a larger proportion of those students go on to pursue a university degree, and promoting the choice of math-related majors such as engineering or the like.

The tutoring system is an academic support strategy for students belonging to vulnerable groups. The goals are to improve their self-esteem, strengthen their study methods, develop their cognitive and instrumental competencies, and respond to the needs arising in their courses to help them progress in their programmes of study without having major difficulties.



Oscar Jarrin, Clavemat mentor at the National Polytechnic School in Quito. © Clavemat project.

Impacts of the Clavemat project:





The mentors are students from advanced courses called “peers” who conduct their work under the supervision of their professors. The rapport between students and peers is enhanced by their age similarity and trust level.

In two months more than 400 individual tutorials have been implemented and collectively more than 300 students have benefitted in the five participating universities in LA.

Clavemat: innovation in Mathematics!

School teachers must take advantage of the new information and communication technologies (ICT) to assist in the teaching process. A new pedagogy, based on the evolution of ICT and on how the youth use that technology, is essential to motivate students to succeed at school.

With this in mind, Clavemat helps to train math teachers so that they become familiar with virtual learning tools. The teachers who participated in “#cmat12” also participated in online classes, which allow them to experience the same methods they will later use in their classes.

Facts



270 school teachers participated in the virtual class #cmat12, and 63 of them did so through the Cuba platform. This was the first step towards the construction of a virtual community, which is part of Clavemat's mission.



21 workshops have been carried out with 758 teachers from Chile, Colombia, Cuba, and Ecuador.



The tutoring programmes developed have benefitted 383 students.



My motivation to participate in the tutoring system was my desire to learn Linear Algebra, an essential subject for my major. I was having too many problems in that class, and those marks were my worst ones. I was able to establish a good rapport with the tutor as he used a different methodology to teach me. I found a place where I felt confident to ask questions that did not even occur to me in class,”

19-year-old Ernesto Camacho, a physics sophomore at the National Polytechnic School in Quito.

© Clavemat project.

Together for One Health!



The Sapuvet-Peru group implements educational programmes on the risk factors for Hydatidosis, a zoonotic disease. © Sapuvet-Perú Group.

Impacts of the Sapuvetnet III project:



Higher education for public health professionals must be guided by an ongoing process of adaptation to the changes of animal and human populations. Therefore, it is essential for this process to arise from the cooperation of all participating agencies, both nationally and internationally. The concept of “*One World, One Health*” is the result of this type of thinking. According to the World Organization for Animal Health, this concept “*enables a cooperative and comprehensive approach to both animal and public health at a world-wide level.*”

Sapuvetnet III, Network for Public and Veterinary Health, gathers together 16 faculties of Veterinary Medicine from Latin America (LA) and the European Union (EU). They are all seeking adequate solutions to contemporary challenges in the areas of Veterinary Public Health (VPH) and food hygiene.

Through the Network for Public and Veterinary Health Sapuvetnet III, researchers, students, veterinarians, and physicians take advantage of conferences and seminars in order to share solutions to contemporary problems such as the reappearance of zoonotic diseases (illnesses that originate in animals but are contagious to humans, for example, bird flu). Such diseases were considered a thing of the past not long ago.



Sapuvet Peru as an example

The Sapuvetnet III project disseminates information to train vulnerable populations and eradicate public health problems. For instance, in the fight against rabies, illustrative stickers have been distributed to school children. Local public health groups have been created in order to link academia with rural communities in LA. These groups are made up of students and veterinary science professors. They provide training activities through courses and conduct various sensitizing activities, all aimed at reaching the different communities found in the areas nearby university campuses.

"The group gives us the chance to improve our skills in areas that are beyond the scope of our university studies. For example, we develop leadership skills in order to organize different events. We learn to work with rural populations. We travel and face conflict situations, etc. Furthermore, we deal with animals and have the chance to apply the theories we learn in very concrete situations in which people really need our help," says Daphné, coordinator of the Group Sapuvetnet Peru.

The group SAPUVET-Peru, from Cayetano Heredia University, intervenes in communities located around Lima. The students teach the ranchers, for instance, and at the same time they develop campaigns to raise awareness about different kinds of dangerous behaviors. These initiatives seek to bring about a healthier and more productive cohabitation between people and animals. Behavior changes have a positive impact on the economy of the communities, as they avoid economic losses when they have to sell their animals.

Facts

- ▶ SAPUVET-PERU has set an example at the international level and received the prize awarded by the Pan American Health Organization and the Global Alliance for Rabies Control. They received this recognition on World Rabies Day of Latin America and the Caribbean.

Public and veterinary health manual

One of the legacies of Sapuvetnet III is the Public Health Manual, which is available online in three languages: Spanish, English, and Portuguese. *"The manual is the response to the lack of high quality information. It compiles the procedures that are used in veterinary medicine and in agriculture. The manual has been designed for students, teachers, and professionals interested in public health,"* explains Professor Luis Carlos Villamil, from La Salle University in Colombia.

Before writing the manual, a series of debates and reflections were conducted on the ideal curriculum for public veterinary health, and on how to respond to the challenges of the millennium and to the concept of One World, One Health. The manual includes, among many other topics, themes such as food hygiene, the impact of climate change on the surge of reemerging diseases, and the role of veterinary sciences in disaster situations. *"Many of the project participants are already using this manual in their classes. The objective of the publication is to facilitate access to the manual by other universities in order for the information to reach additional interested parties. Only then will the concept of One World, One Health become universal,"* adds Manuela Vilhena, from Evora University, in Portugal.

An **answer** to the **challenges** of **climate change**

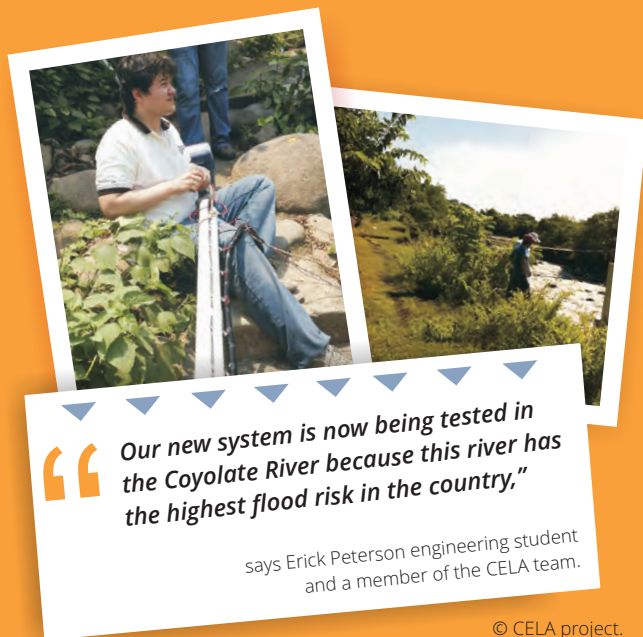
Latin American and European societies need higher education institutions that are able to foster social cohesion and support research so that their citizens can adapt to environmental changes.

The CELA Project (Network of Technological Transfer Centers on Climate Change in Europe and Latin America) creates the possibility for scientists from each of these regions to share their expertise, support their research projects, and disseminate their results, all through the establishing of these centers. The centers provide the necessary academic context to facilitate the research work of the six participating universities.

CELA Guatemala: From Theory to Practice

In Guatemala, Galileo University, a CELA Project partner, has committed itself to minimize the consequences of floods. On the one hand, the project allows for the financial support necessary to create a prevention system, which is controlled by the inhabitants of the towns at risk. On the other hand, the project encourages the replication of the same system in other areas through different Technological Transfer Centers.

Guatemala is considered one of the most vulnerable countries when it comes to natural hazards and climate change.¹ *"Most of the tragedies are associated with floods,"* says Nelson Amparo, Mechatronics Professor at Galileo University in Guatemala, and Coordinator of the CELA Project.



“Our new system is now being tested in the Coyolate River because this river has the highest flood risk in the country,”

says Erick Peterson engineering student and a member of the CELA team.

© CELA project.

¹ In the 2012 World Risk Report 2012 (compiled by the United Nations University and the Institute for Environment and Human Security –UNUEHS), Guatemala ranks 4th in the chart of global disaster risk hotspots.

Impact of the CELA Project:





Technological Transfer Center

In addition to fostering climate change research, the CELA Project guarantees the dissemination of new technologies designed by universities.

Néstor Amaro Ph.D. explains the role played by the Technological Transfer Center (CTT) at Galileo University in Guatemala: "The main virtue of the system we have developed is the low investment required. With that in mind, one of the greatest results of CELA Guatemala is the creation of a CTT. The center allows for this technology to be disseminated to the rest of the country. At the same time, we are improving our handling of the Coyolate River."

Furthermore, the CTT facilitates cooperation between all the participants and promotes research. The CTT has made it possible for a university, the ICC (a private institution), and CONRED (a public agency) to work together under the same roof.

"River surveillance systems have been developed in order to face and even foresee these disasters, especially with regards to those rivers with the highest likelihood of floods. These systems allow us to warn inhabitants when the water levels rise dangerously."

Since January 2012 the CELA team has been committed to the reactivation, maintenance, and improvement of a surveillance system that had been previously developed with the help of both the Institute for Research on Climate Change (ICC) and the National Coordination for Disaster Reduction (CONRED).

Erick Peterson is an engineering student and a member of the CELA team. In addition to his course load, he often travels to visit the towns by the Coyolate River. His work consists of installing the new systems developed at the university and training both inhabitants and other CELA team members so that they are able to monitor the surveillance system by themselves. *"I participate in both parts of our project. The first one is the system research and theoretical development, which is carried out at the university campus. The other one is the installation of sensors in the field. I travel with other volunteer students as the need arises. We visit the communities by the river in order to control the equipment."* Simply put, the surveillance system consists of five sensors located along the river which measure changes in the water levels. In case of emergency, they automatically send a signal through the phone to the people that live down the river.

Facts

- ▶ The CELA Project has established six Technological Transfer Centers in Europe and Latin America. They are crucial to foster the sharing of knowledge about climate change.
- ▶ There are more than 300 participants in the project (professors, experts, and researchers), coming from universities, industries and NGOs.
- ▶ Four technological application pilot projects contribute to the fight against the consequences of climate change in Peru, Bolivia, Nicaragua, and Guatemala.
- ▶ The Climate Technological Transfer Center earned an award from the UNEP (United Nations Environment Programme) because of the essential role it plays in the process of adapting to and alleviating climate change.

A boost to MSMEs through universities

More than 90% of the business environment in Central America is made up of micro, small and medium-sized enterprises (MSMEs). These businesses are a basic source of employment.

The EURECA Network (European and Central American Network for the Improvement of Quality and Sustainability of MSMEs) initiated, among other activities, the creation of a MSMEs management graduate programme in six Central American universities. This graduate programme is innovative for the region because at present there is no higher education programme that supports the development of this economic sector.

The EURECA Network brings together nine universities (six from Central America and three from Europe) and three supporting institutions.¹ The business sector participates actively in the design of the graduate programme, with an emphasis on practical matters. The beneficiaries acquire knowledge within the context of the socio-economic reality of the region. Lola Herrera, general coordinator of the EURECA Network, says, *"A concrete example of cooperation with the business sector is the pilot course of the future graduate programme. Different MSMEs partakers, from company owners to micro-credit experts, participated in this project."* The graduate programme debuted in August 2012 and lasted for six months. About 40 students took courses in two universities (Nicaraguan Autonomía University, UNAN-Managua, and Honduran Technological University, UNITEC). Each participant completed five modules (Operational Management, Communication and Information Technologies, Accounting, etc.) This training allowed the students to benefit from an innovative programme as well as to interact with professors from European and Latin American universities.

¹ The partnering institutions are the Central American Federation of Chambers of Tourism, the Regional Center for the Promotion of MSMEs, and the Central American University Superior Council.



Sara Hilda Suárez Garmendia, 42-year-old, mother of a 13-year-old son and a 6-year-old daughter, is an agricultural engineer and the owner of a company called Agua Tisey.
© EURECA project.

Impact of the Red Eureka Project:





"It was a truly enriching experience for both the students, who took classes for a few months, and for us, as we have been able to assess and adjust the curriculum and its pedagogy," adds Lola Herrero.

Supporting small companies, training women, strengthening society

A remarkable characteristic of the pilot course carried out in Nicaragua was the large turnout of women who are MSME owners. "In the town of Esteli, we invited associations of women to participate in the selection of candidates," says Lola Herrero. Sara Hilda was one of the participants. Sara Hilda is a 42-year-old mother. She has a 13-year-old son and a 6-year-old daughter. She is an agricultural engineer and the owner of a small company called Agua Tisey. Because she was registered in the Chamber of Commerce, she participated in the pilot graduate programme offered by Autonomía University in Nicaragua. *"The first class I attended was a course about sales. Afterward, I was invited to a class on the sustainability of MSMEs," says Sara Hilda, "and I found it very interesting because a company is not only supposed to sell, but also to continue to exist. The biggest problem for many companies is that they stop existing because of management problems."*

Another class that Sara Hilda took was on ICT (Information Communication and Technologies).



© EURECA project.

Facts

- ▶ The programme represented an experience in international cooperation for 45 university professors who designed the graduate programme.
- ▶ This MSMEs management graduate programme was carried out in six countries (Costa Rica, Honduras, El Salvador, Nicaragua, Panama, and Guatemala).
- ▶ More than ten emerging economic sectors benefitted from the training and participation in the implementation of the project. Some examples of these emerging sectors are: renewable energy production, agricultural tourism, aquaculture, timber industry in Nicaragua, mining in Panama, natural rubber extraction and fishing in Costa Rica, and transformation of raw material into finished products such as furniture, shoes, jewelry, etc.

It is essential that a small company, such as Sara's, use a computer. The best way to organise the business is with the help of a database. Social networks and websites are also an excellent, low-cost way to advertise the business. Using what she learned in the courses, Sara Hilda started helping other family members with their own businesses. *"I helped my older brother to legally register his business. I also encouraged him to buy a computer so he could keep track of his clients and use Facebook to advertise his products in a low-cost way."*

Sara Hilda's case is one more example of how the combined work of Europe and Central America generates productive results in the social and economic fabric of Central America. In order to guarantee the creation of similar experiences in the future, EURECA Network has created an organization called EURECA. This organization is open to new members and is focused on analyzing small companies' needs and demands, foster cooperation between European and Central American universities, and design training programmes that respond to the needs of small companies.

Augmented reality to help society

ALFA Gaviota creates a link between society and new technology through Augmented Reality (AR) applications. AR is a kind of technology that stems from different fields such as informatics, visual communication, architecture, patrimony, teaching, etc., aiming to better understand the reality so that it can be transformed.

For instance, the ALFA Gaviota team in Chile gathered urban planners, entrepreneurs, and designers who used an AR application to find a solution to heavy traffic in large cities. They came up with the idea of a virtual theatre that reproduces traffic congestions. The AR application combines real life and virtual elements to define different strategies that can be used to reduce accidents.

In Uruguay, a bullring comes back to life thanks to the ALFA Gaviota project

One of the objectives of the ALFA Gaviota team in Uruguay is to increase the appreciation of the historical Real San Carlos bullring in Colonia del Sacramento through the use of an AR application. Such objective also contributes to an increase in local tourism. *"Our job consists in recovering the building through the use of augmented reality applications,"* comments Fernando García Amen, a researcher from the Department of Informatics and Architecture at Republica University. Because of its style and dimensions, the Real San Carlos Bullring –opened in 1910 – has been considered one of the most important Spanish constructions in Latin America. It is the only one of its kind in Uruguay.



“In ALFA Gaviota we believe that AR technologies may be put to the service of people in their everyday lives. They can help us meet educational needs and face the challenges of local development.”

Fernando García Amen, a member of the ALFA Gaviota team in Uruguay.

Gaviota uses this AR application, available on a tablet, to help visitors visualize the previously-existing-and-now-gone structures of the San Carlos Bullring in Colonia. © Gaviota project.

Impact of the ALFA Gaviota Project:





A decade ago it was closed to the public because it was in serious danger of collapsing. In spite of that, the building's deterioration has only increased because people continue to access it illegally. Furthermore, lack of maintenance increases the building's deterioration.

"Thanks to the visual and digital interactive applications, people can see and interact with the building. They are able to visualize how it used to function in the past and what it is like now. Besides understanding what it was like in the past, people can also imagine what this building would be like if it were not abandoned," adds Fernando García. Besides the building's "digital reconstruction", the objective of this project is to draw the attention of the general public and the authorities to the need for a complete restoration of the bullring.

"If people become interested again and start to value this place, we think this will generate a desire amongst investors to fully repair the building." AR applications create a record of the existing conditions and thus become the point of departure for future interventions. ALFA Gaviota Uruguay has another objective with this project: boosting tourism in Colonia city.

"We want to be able to integrate the building and its surroundings with the touristic landscape of the region. By turning the building into a place of interest for tourists, we hope the authorities will see its potential and decide to renovate it," concludes Fernando.

Robotics in the classroom

The ALFA Gaviota Project branches off into 12 laboratories designed to develop 12 AR applications to support the social aspects of the project.

For example, in addition to its contribution to the touristic development of the Bullring, ALFA Gaviota Uruguay gave students from the elementary school "Francia", in Montevideo, the chance to carry out robotics experiments. Children between 6 and 11 years old received a LEGO ® kit as well as a set of engines and light and sound sensors. With the help of Gaviota, these children learned simple ways to programme such devices. They became programmers and were able to develop very simple applications.

Facts

- ▶ 12 universities from Europe and Latin America participate in this project.
- ▶ The project involves 80 European and Latin-American researchers.
- ▶ There are 12 laboratories, one in each of the participating universities.
- ▶ 12 new AR applications at the service of society presented in workshops.
- ▶ Six special workshops have been offered in conferences and seminars open to the general public.

Higher education for rural youth

UNICA Project (The University in the Countryside – a higher education farming programme for young people in the countryside) has been designed for high school students in vulnerable communities (indigenous people, rural areas, and communities with a high rate of violence) in Mexico, Nicaragua, Bolivia, and Colombia. The beneficiaries receive high level education on farming production, which will guarantee them a professional job in the rural areas. "The project consists of a programme of propaedeutic cycles that prepares students to pursue further studies while they are completing their secondary education. The classes are taught on Saturdays and Sundays," explains Gloria Esperanza Jurado, general coordinator of the project at Caldas University in Colombia.

UNICA's proposal is innovative in that it takes a higher education programme to remote areas that are hard to reach. The professors from the participating universities have designed a programme with 17 modules specifically focused on training rural youth in the farming industry (for example, Biology, Business Management, Botany, etc.). Bringing university professors to rural areas gives young people a chance to meet the academic world without having to travel long distances.

"The programme trains this new generation and provides them with confidence to help their parents, most of whom also work in the farming industry," says Carlos César Maycotte Morales, coordinator of the project in Mexico. "We are trying to help them organise their products, build sustainable businesses, and thus improve the economic condition of the family. Our final objective here in Mexico is to empower these young people so that we can avoid immigration to the United States."



Students from the Farming and Technological Secondary School # 67 in the Ixmiquilpan municipality, Hidalgo State holding their UNICA manuals.
© UNICA project.

Impact of the UNICA Project:





In Nicaragua, UNICA mobilizes the whole community!

In Nicaragua, UNICA's higher education Farming Programme was a success, and more than 200 students participated in it. That number was higher than expected, and it showed the strong interest of the population of the four municipalities in the Matagalpa rural region. *"We did not think so many people were going to register. These young people are highly motivated. In addition to their regular weekly studies, they come on Saturdays for the farming programme and they walk long distances because most live really far away. For those who grow up in a rural area, the possibility to pursue a higher education is not very common. The cost of living in the city is really high, and many families simply cannot afford it,"* says Cesar Andrés Pereira, professor from the Farming National University in Nicaragua and local coordinator of UNICA. *"Although the project was aimed at rural young people, a large number of adults were also accepted in the programme, as they requested admission."*

The participation of the local authorities has also been essential to guarantee the impact of UNICA and the continuity of the project. *"The town hall of Tuma –La Dalia– has helped to print 720 books in the first year (2012) and 275 books so far in 2013."*

Today, five more town halls support the programme. They not only help to print manuals, but also pay 80% of the total cost necessary to open new groups with the UNICA project," concludes Cesar Andrés Pereira.

ALFA III and the UNICA project are planting the seeds of deep change in terms of access to higher education. Thanks to this project, more than 430 young people and adults benefit from a higher education programme that has been designed specifically for them by professors from different countries. UNICA builds a bridge between the rural world and the university.

We are working to create young leaders who will respond to the needs of the rural sector in Latin America.

Source: www.universidadenelcampo.com/

Facts

► Six universities cooperated in the project.

► 12 secondary schools have been trained in the programme.

► 430 rural students from Colombia, Nicaragua, México, and Bolivia have taken the courses offered in this programme.

► A higher education farming programme has been created that is specifically oriented to rural students. Training is conducted through 17 modules (examples of classes: Biology, Business, Production and Management, etc.).

ALFA III

Supporting social equality and integration
between Latin America and the European Union.



www.alfa3programme.eu

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