



# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean Montevideo, Uruguay 01-02/10/2024





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# Paolo Berizzi

European Union Ambassador to Uruguay



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**Erasmus+**  
Enriching lives, opening minds



Erasmus+



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# Dra. Agustina Cabrera

Director of International Cooperation and Projects  
Ministry of Education and Culture





# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean Montevideo, Uruguay 01-02/10/2024





# Erasmus+ opportunities in Latin America and the Caribbean



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# Germán Bernal

Policy Officer for International Cooperation in  
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DG EAC, European Commission



# Erasmus+ 2021-2027: Objectives

Article 1 of the Erasmus+ Regulation:

*The **general objective** of the Programme is to support, through lifelong learning, the educational, professional and personal development of people in the fields of education and training, youth and sport, in Europe and beyond, thereby contributing to sustainable growth, quality jobs and social cohesion, to driving innovation and to strengthening European identity and active citizenship. The Programme shall be a key instrument for building a European Education Area, supporting the implementation of European strategic cooperation in the field of education and training, including its underlying sectoral agendas, advancing youth policy cooperation under the 2019-2027 European Union Youth Strategy and developing the European dimension in sport.*

# Erasmus+ 2021-2027 - Horizontal priorities



## **Inclusion and diversity**

Reaching out to all participants and fostering inclusive approaches for mobility and cooperation activities



## **Green**

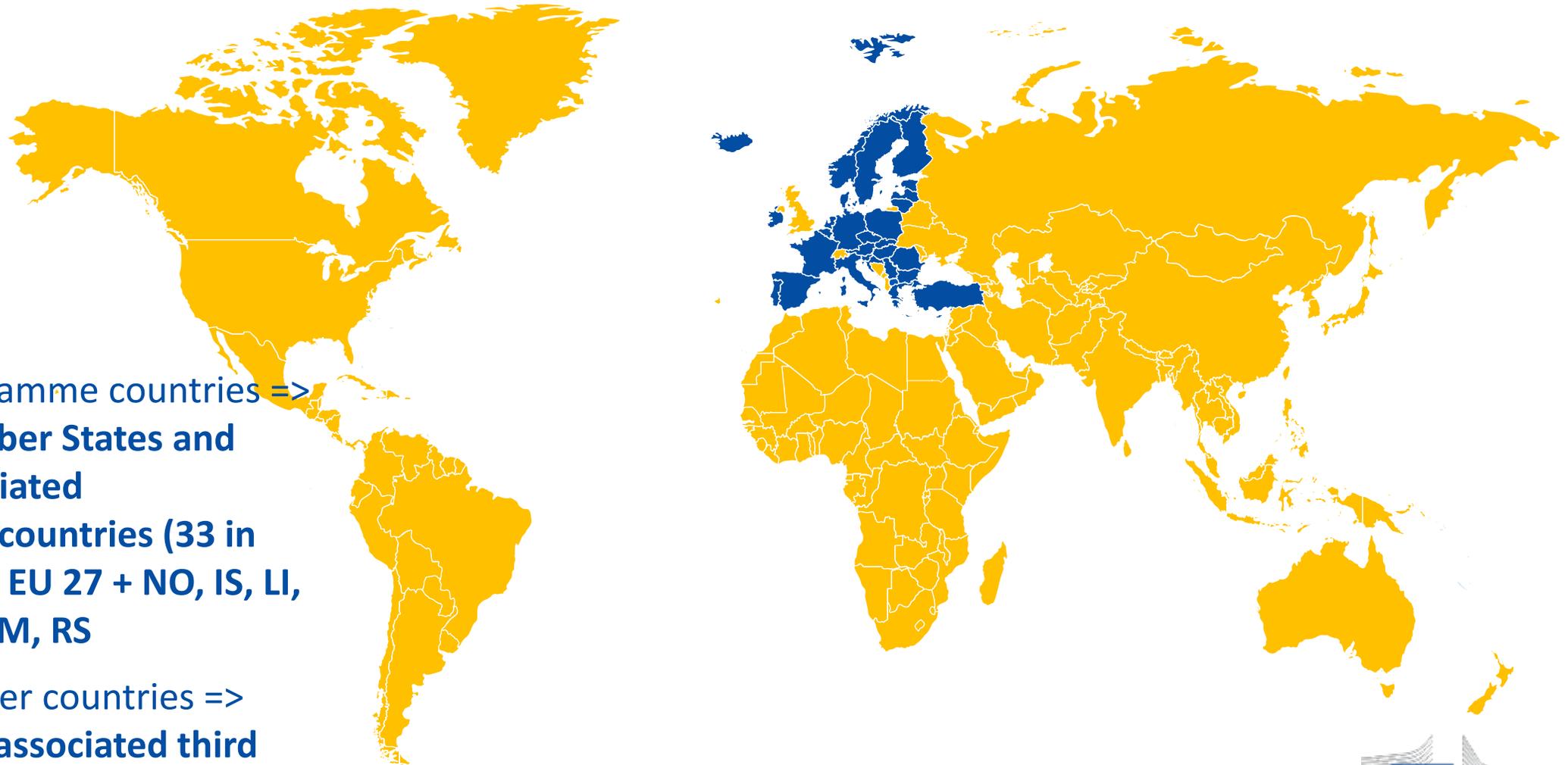
Building up knowledge on sustainability and climate action and promote the use of green travel



## **Digital**

Developing accessible and high-quality digital learning and foster digital capacities

# International dimension of Erasmus+ 2021-2027 – Structured in regional budget envelopes



● Programme countries =>  
**Member States and  
associated  
third countries (33 in  
total) EU 27 + NO, IS, LI,  
TK, NM, RS**

● Partner countries =>  
**Non-associated third  
countries**

# Latin America and the Caribbean within Erasmus+

- Latin America (Region 10): Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay, Venezuela
  - 2021-2027 Regional budget: 139 million euro
- Caribbean (Region 11): Antigua & Barbuda, Bahamas, Barbados, Belize, Cuba, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, St Kitts and Nevis, St Lucia, St Vincent and the Grenadines, Suriname, Trinidad and Tobago
  - 2021-2027 Regional budget: 13.5 million euro

# Main features of the Inter'l Dimension of the new programme

- Strong international dimension, linked to the European Education Area and the Digital Education Action Plan, allowing:
  - cooperation between education and training institutions,
  - strengthen Europe's reputation,
  - support the green and digital transitions,
  - focus on inclusion.
- Closer alignment of European int'l cooperation actions with the EU priorities.
- Foster greater coordination among the EU and MS, strengthen Europe's positioning as a key partner in education at global level and cement the links between the European Education Area and the rest of the world.
- **Intra-regional cooperation:** a feature of many projects, particularly Capacity-Building ones

# Erasmus+ opportunities open to LAC

- ✓ International Credit Mobility (ICM)
- ✓ Erasmus Mundus: Joint Masters, Design Measures and scholarships
- ✓ Capacity Building – Higher Education (CBHE)
- ✓ Capacity Building – Vocational Education and Training (CBVET)
- ✓ Jean Monnet Actions in the field of Higher Education

# International credit mobility

## MAIN FEATURES

- Short-term higher education mobility for students, academic and administrative staff
- Focus on learning mobility when relevant
- All levels: Bachelor, Master and PhD candidates for LAC students (**only staff and PhD candidates from Europe to LAC – except for CL and UY – ‘DACability’**)
- Mobility in any subject or academic discipline
- Duration: 2-3 years projects
- Also supports traineeships for students and training for staff
- Study periods and traineeships of 2 – 12 months (5 days to 2 months for staff)
- Blended mobility (physical mobility of 5 – 30 days + virtual component)
- **Budget 2021-2027: 28 million for Latin America and 6.4 million for the Caribbean**

Message to  
Universities:

*“Begin to engage with  
European partner  
universities able to  
apply”*

Message to students:

*“only possible if your  
university has an  
agreement with a  
European one”*



## Organisational support

EUR 500/participant



## Individual support

EUR 800-900/month for students and  
EUR 148-190/day for staff

EUR 79/day up to the 14th day of activity and  
EUR 56/day from 15th to the 30th day of  
activity in case of blended mobility

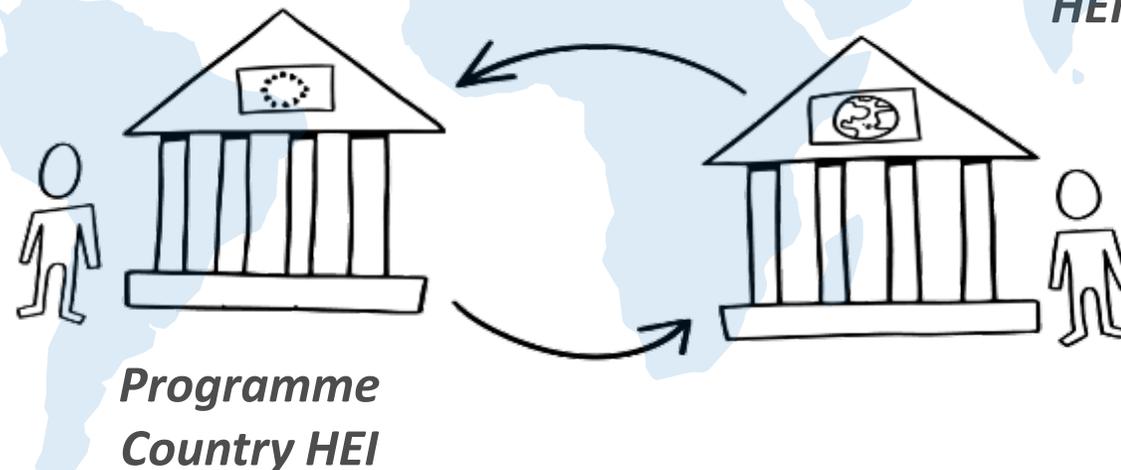


## Contribution to travel costs

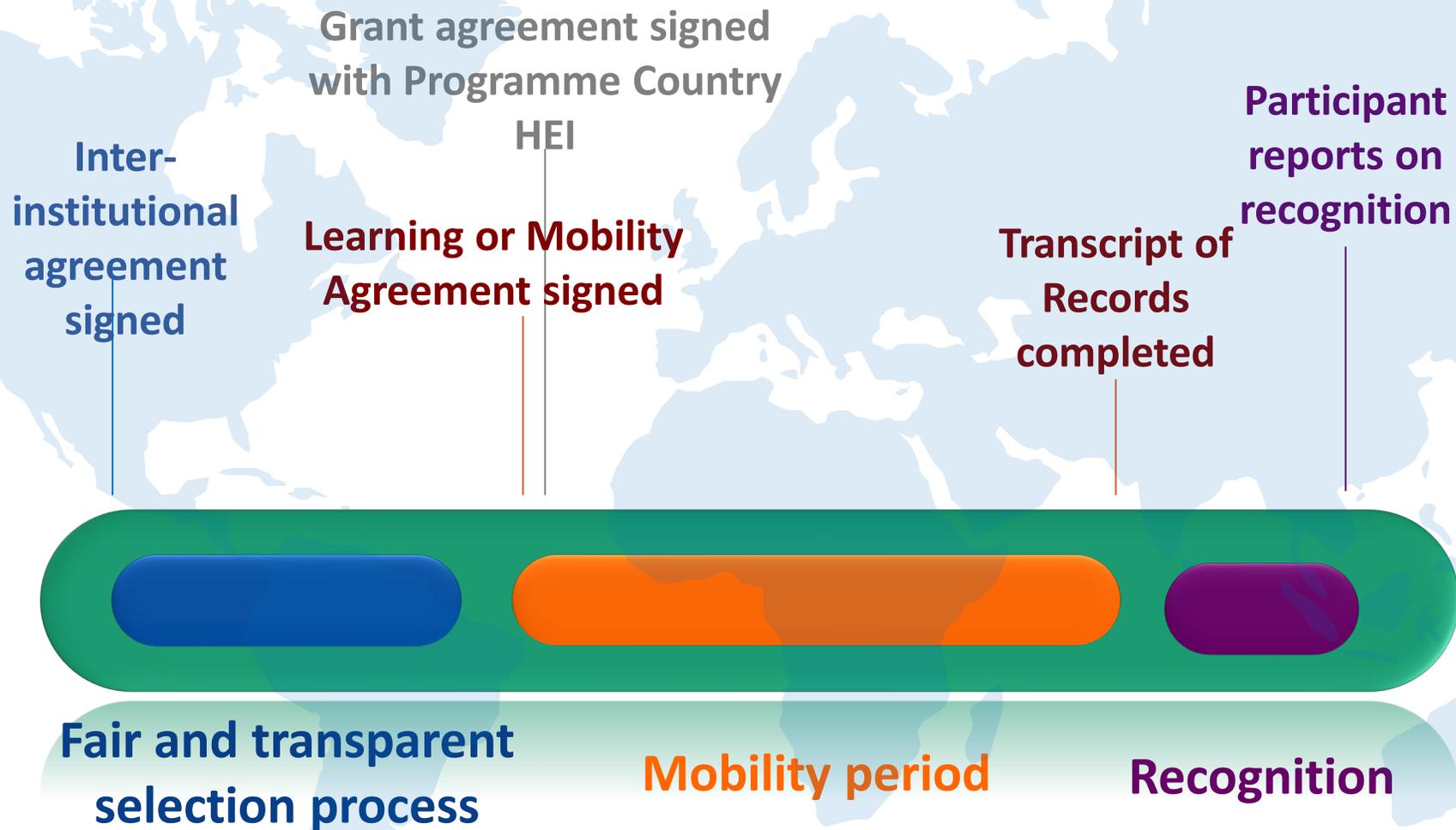
EUR 1188 (4,000 – 7,999 km) or 1735 (8,000 km or  
more)

# Who can apply and how?

- Only Higher Education Institutions (HEIs) from the Programme countries apply directly to their National Agency (NA). Each NA receives a share of the regional budgets to cooperate with the 2 LAC regions.
- The **ICM project in their application** contains the countries and partner universities they intend to cooperate with, as well as their **cooperation plan in each region**
- **Bottom line: interested HEIs from LAC need “only” to ensure that their European partners include them in their applications!**



# ICM project implementation



# ICM: LAC is popular...

- In 2022 and 2023 together, HEIs from the 33 Erasmus+ programme countries requested a total of 87.8 million euro to cooperate with Region 10 (Latin America): the Commission could only allocate 9.2 million (11.2% success rate).
- For the Caribbean (Region 11), 11.6 million were requested and 1.5 allocated (12.8% success rate).
- Unfortunately, these are the 2 lowest success rates across the world!
- The success rates change across the 33 Erasmus+ countries: for instance, in Malta it was 101% (while only 59% of the budget was absorbed) while in Spain it was 23% or in Türkiye 11%.
- Countries with higher success rates (50% or above) offer more room for new successful applications, e.g. as per the 2023 results, French-speaking Belgium (72%), Cyprus (53%), Finland (56%), Ireland (53%), Iceland (67%), Malta (101%), Netherlands (53%) or Slovenia (71%).

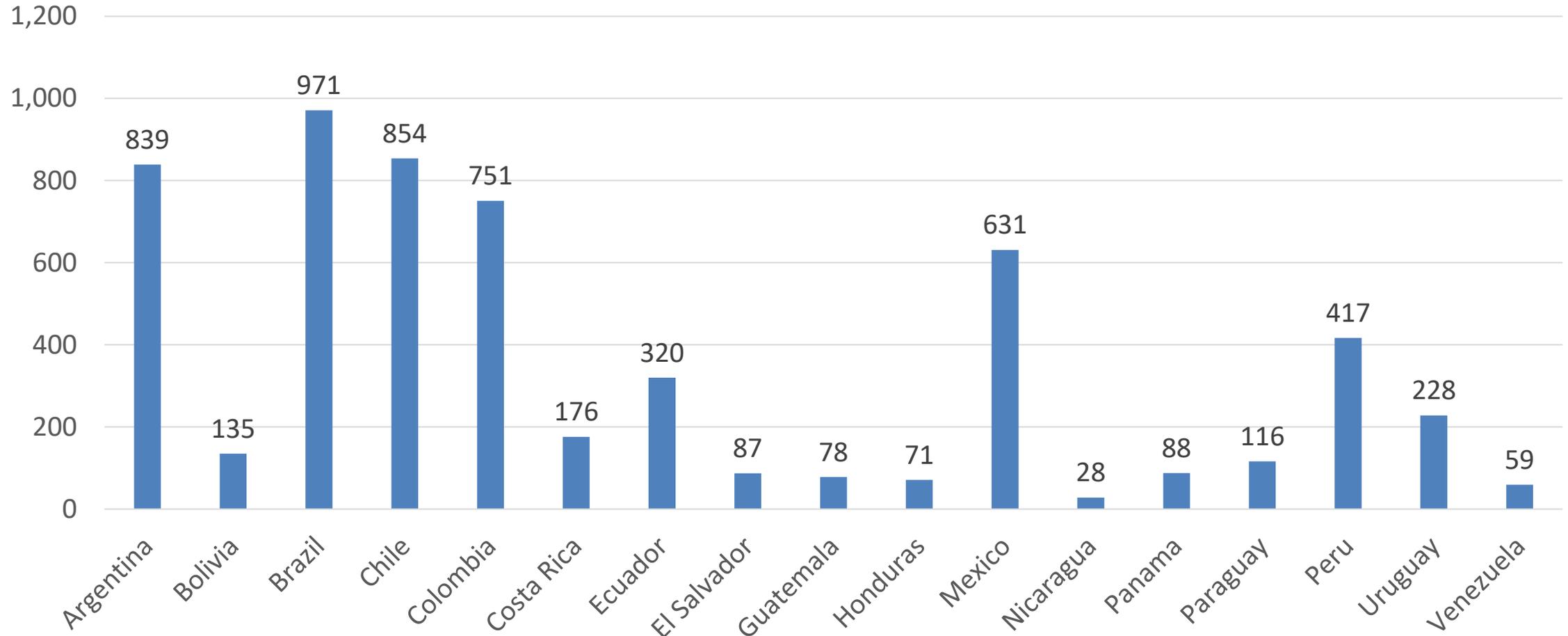
# Latin America – ICM results of the call of 2023

Partner countries (non-assoc.)	Staff Mobilities from LA to Europe	Staff Mobilities from Europe to LA	Student Mobilities from LA to Europe	Student Mobilities from Europe to LA
Argentina	102	76	104	28
Bolivia	14	13	21	2
Brazil	122	81	110	39
Chile	99	65	109	47
Colombia	70	58	86	17
Costa Rica	29	23	23	8
Ecuador	43	32	46	14
El Salvador	6	5	14	0
Guatemala	11	7	13	0
Honduras	12	7	9	2
Mexico	94	58	93	14
Nicaragua	3	2	7	0
Panama	13	10	10	5
Paraguay	12	6	18	1
Peru	40	32	40	6
Uruguay	29	18	19	17
Venezuela	7	5	11	0
<b>Grand Total</b>	<b>706</b>	<b>498</b>	<b>733</b>	<b>200</b>

# Caribbean – ICM results of the call of 2023

Partner countries (non-assoc.)	Staff Mobilities		Student Mobilities	
	from CAR to Europe	Staff Mobilities from Europe to CAR EU	from CAR to the EU	Student Mobilities from the EU to CAR
Bahamas	0	1	1	0
Barbados	4	4	4	3
Belize	1	1	4	0
Cuba	42	34	41	12
Dominican Republic	39	24	22	4
Guyana	1	0	1	0
Haiti	11	4	12	1
Jamaica	8	5	8	2
Saint Kitts and Nevis	1	1	0	0
Suriname	11	9	7	1
Trinidad and Tobago	4	5	10	2
<b>Grand Total</b>	<b>122</b>	<b>88</b>	<b>110</b>	<b>25</b>

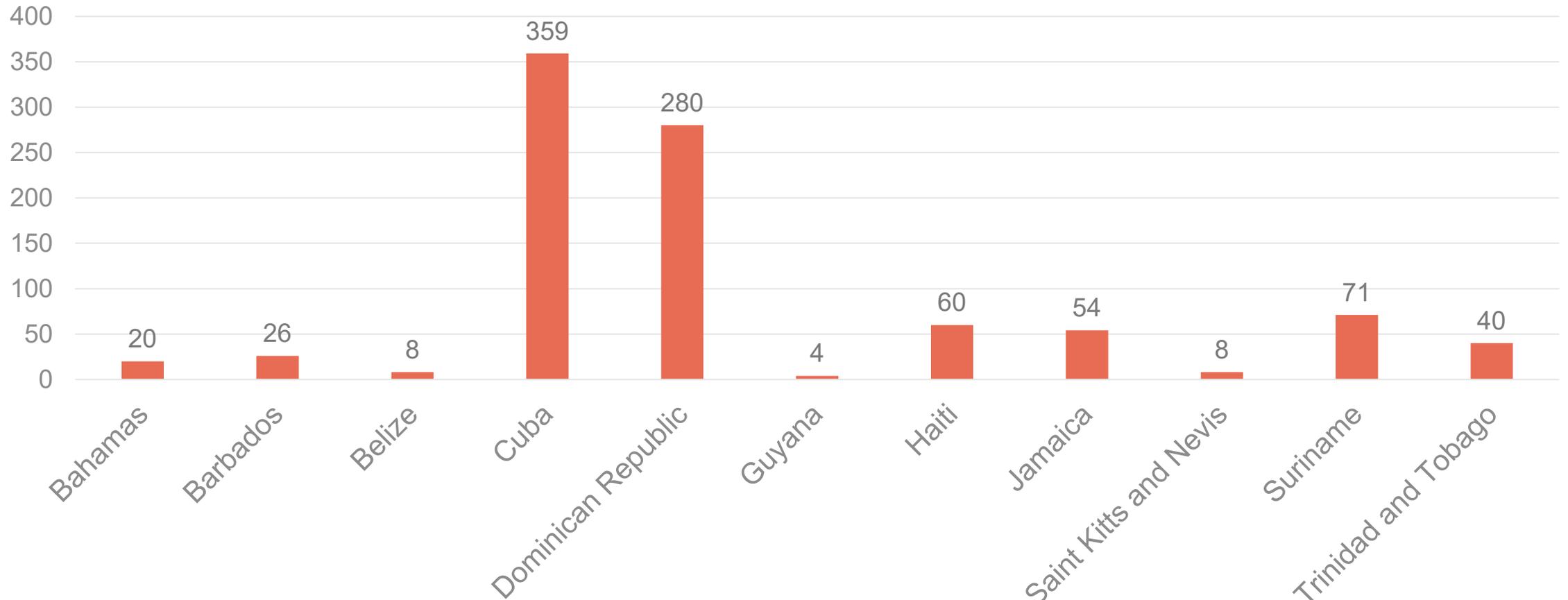
ICM awarded participants from/to LA  
2022-2024 Total: 5,849  
*Provisional figures*



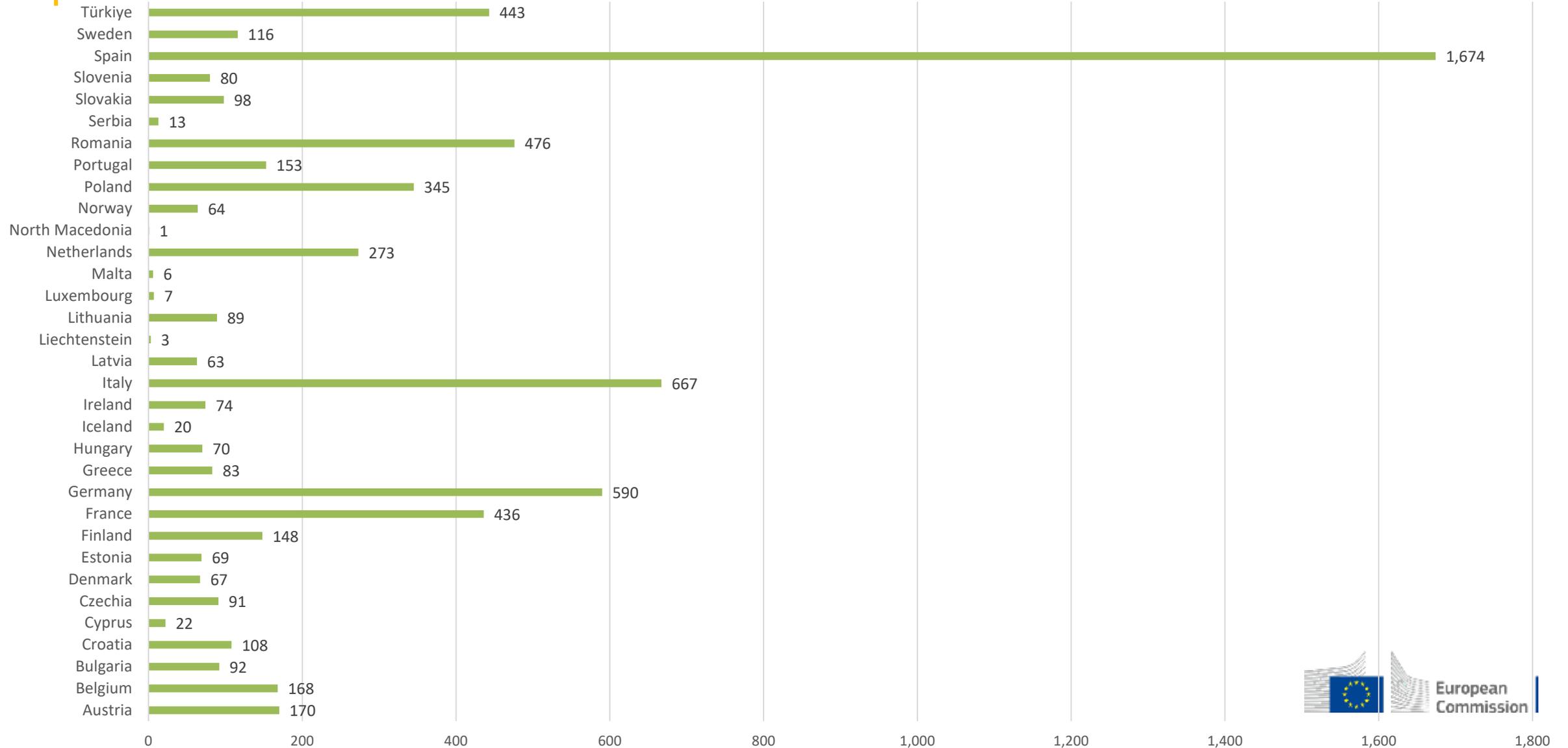
# ICM awarded participants from/to CAR

2022-2024 Total: 930

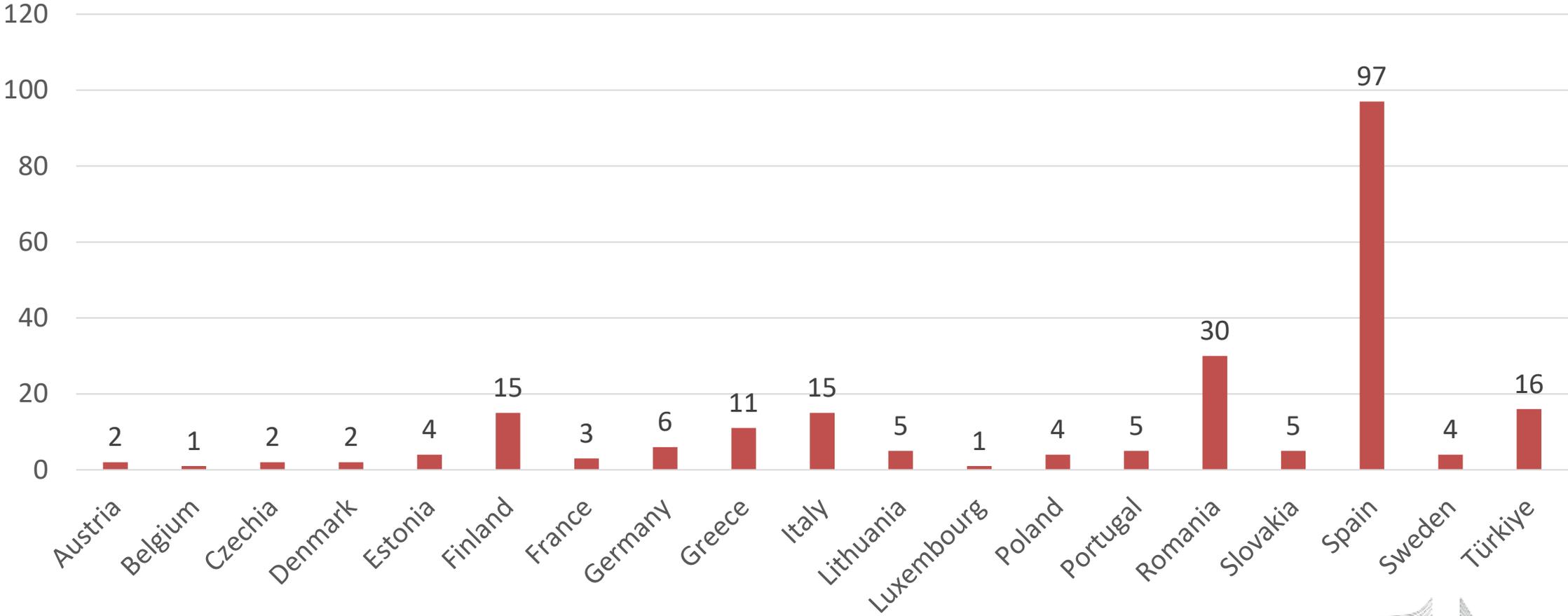
*Provisional figures*



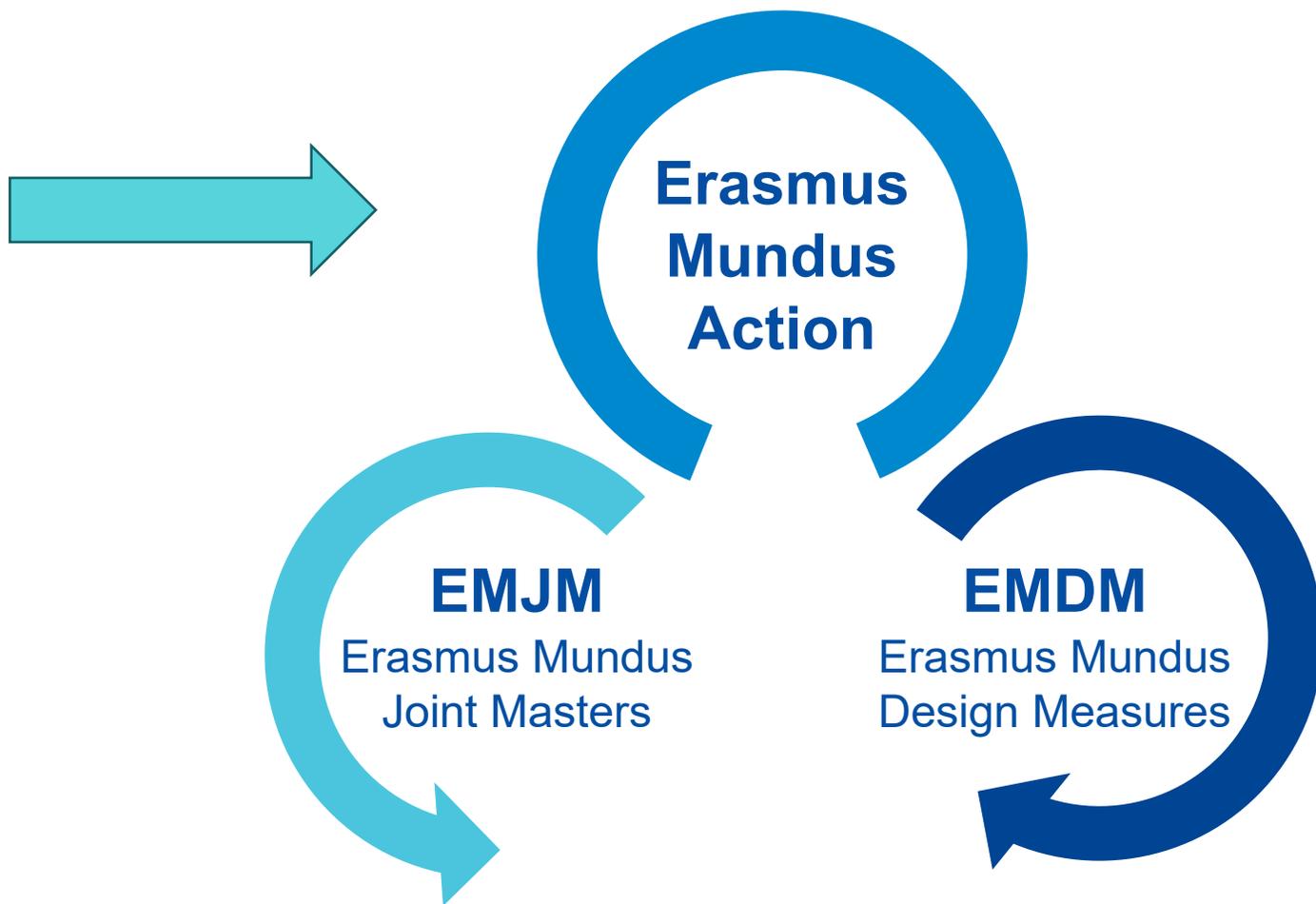
ICM awarded participants from/to LAC  
European countries of destination or origin of the mobility period  
2022-2024 Total: 6,779  
*Provisional figures*



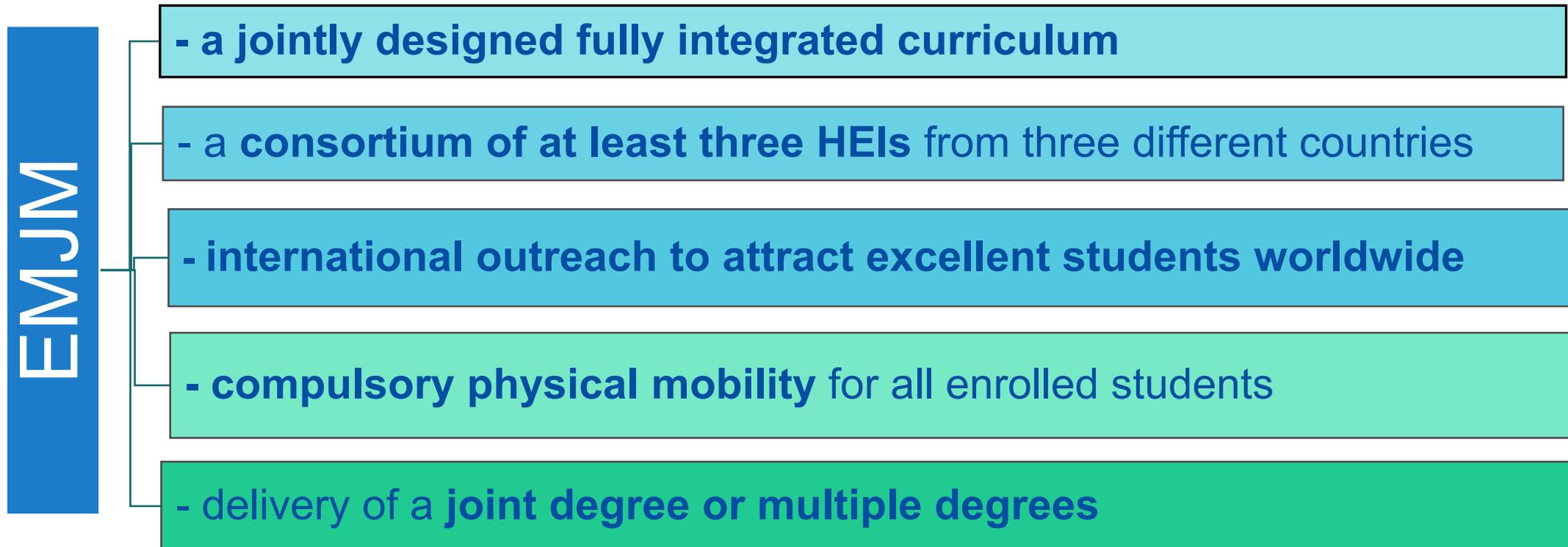
ICM awarded participants from/to Uruguay  
European countries of destination or origin of the mobility period  
2022-2024 Total: 228  
*Provisional data*



# Erasmus Mundus 2021-2027



# What are the requirements of an EMJM?



At application stage EMJM proposals must present fully developed joint study programmes, ready to run and to be advertised worldwide after their selection.

# How does an EMJM look like?

Fixed Grant Agreement of **74 months**

Maximum 60 **scholarships** per project + top-up scholarships for students from targeted regions of the world

At least **4 complete editions** lasting 1 to 2 academic years  
(60, 90, 120 ECTS)

Maximum budget of **over € 5 million**

## Country participation in 2024 EMJM selected proposals (34) and success rate by country

Country	Applicants (APP)	Partners (PAR)	Associated partners (no funding)	Grand Total	Total APP+PAR	Success rate per country (APP+PAR)
Argentina			4	4		
Brazil		2	15	17	2	3,77%
Chile			5	5		
Colombia		1	3	4	1	7,14%
Cuba			2	2		
Ecuador			2	2		
Mexico		2	7	9	2	8,00%
Panama			1	1		
Peru			1	1		
Uruguay			1	1		
Venezuela			1	1		

# Taking part as student

- Open to **students worldwide**
- The best ones can benefit from a **scholarship**
- **Additional scholarships for LAC**

(Up to max. **1.400 € per month**) which covers subsistence, installation and travel + fee waiver

- Attention to students with special needs
- **Students apply directly to the EMJM consortium**  
Catalogue with ongoing EMJMs offering scholarships:  
<https://www.ec.europa.eu/erasmus-mundus>

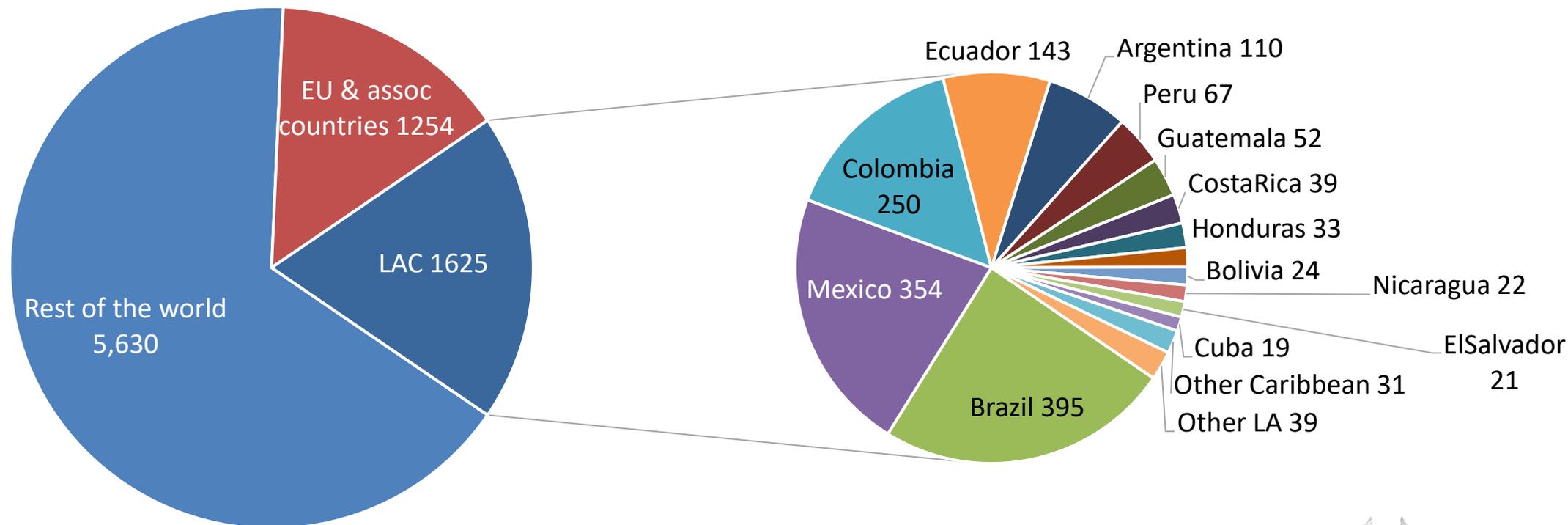


# Erasmus Mundus scholarships 2021-2023

Essential to allow increasing high-level professionals in areas crucial for the development of LAC

**Extra** budget for grants for Latin American students 2021-2027: 32.5 million euro

**Extra** budget for Caribbean students 2021-2027: 1 million euro



# Erasmus Mundus Design Measures (EMDM)

Sub-action, supporting the design of high-level study programmes at master level

Autonomous action (no automatic transition to Erasmus Mundus Joint Master)

Strong integration between partners necessary (curriculum, management, student services, accreditation, etc.).

Mono-beneficiary grant mobilising a group of HEIs

15 months project

Lump sum contribution amounting to 55 000 €

2 EMDMs in 2023 (1 Ecuador and 1 Brazil)

# Capacity building for Higher Education

- Develop and adapt curricula, in terms of content and teaching/learning methods
- Support university-enterprise cooperation
- Work on upskilling of academic and administrative staff
- Reform of governance and management systems at national, regional or HEI level
- Foster internationalisation of universities in research, scientific and technological innovation
- Introduce Bologna-type reforms at institutional, national or regional level
- Develop new approaches and tools for policy making and monitoring
- In support of EU-LAC Common Higher Education Area and Regional Integration
- Open also to High-Income countries

59.5 M€ for LA  
and 4.5 M€ for  
CAB 2021-2027 !

**The Applicant** can be in Europe or in a LAC country.

Minimum 4 organisations  
Minimum 1 HEI from 2 EU/Associated Countries and 2 HEIs from one or more Non-Associated Countries.

The number of organisations from EU27/ associated countries should not be higher than the number of organisations from Non-Associated countries

# One action – 3 strands to better answer needs

## FOSTERING ACCESS TO COOPERATION IN HIGHER EDUCATION

- Smaller scope projects
- Focused on higher education institutions.
- Designed for newcomers to the programme, less involved countries/regions, and for disadvantaged target groups.
- Enhance management capacities, quality of education and accessibility
- Budget between 200 000 and 400 000€
- 2-3 years.

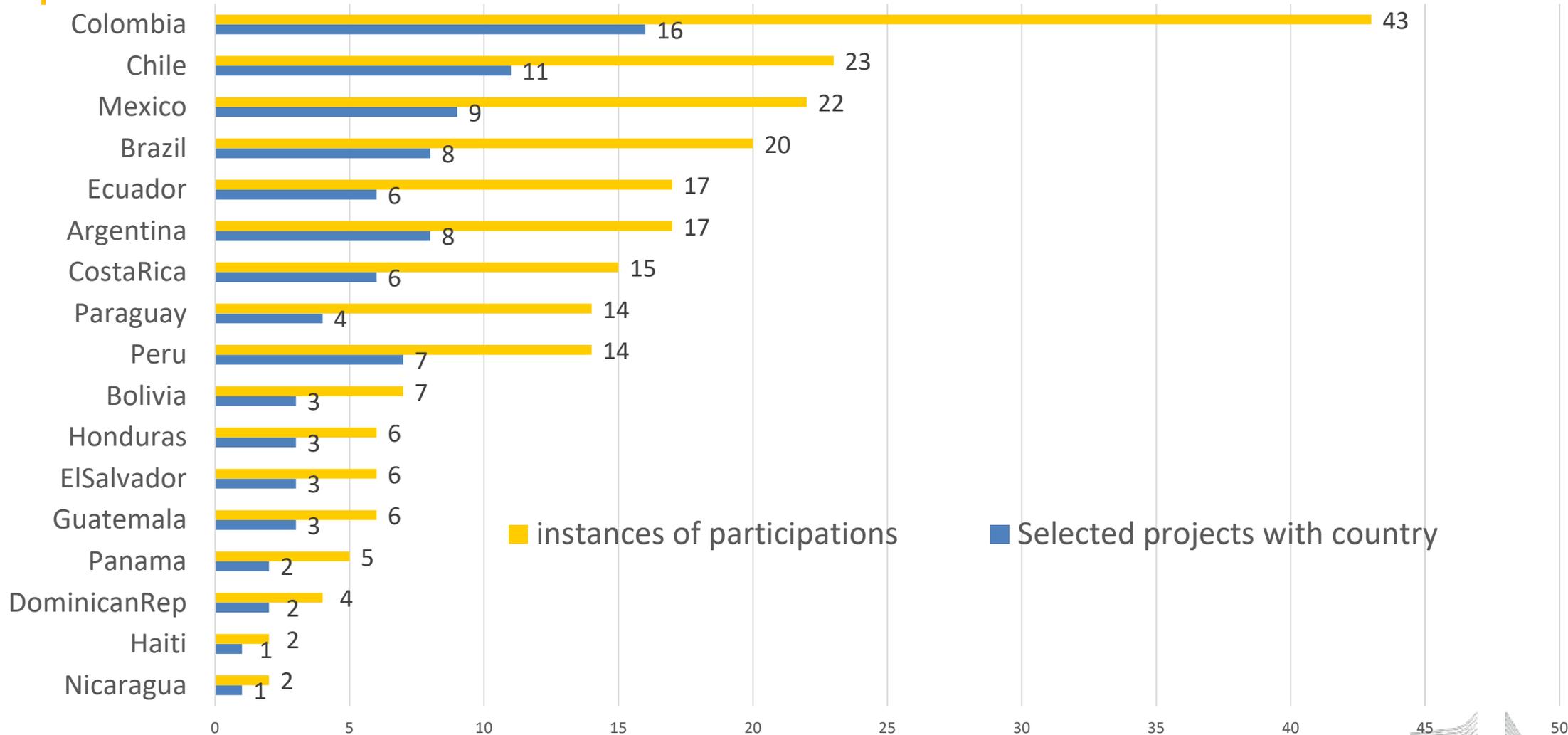
## PARTNERSHIPS FOR TRANSFORMATION IN HIGHER EDUCATION

- Focused on higher education institutions and local actors linked with industry
- Designed to have a larger impact on innovation, university/business relations and institutional governance.
- Promoting reforms in universities
- Budget between 400 000 and 800 000€
- 2-3 years.

## STRUCTURAL REFORM PROJECTS

- Focus on macro level policy reforms
- Involve national competent authorities, HE sector and institutions
- Support Policy making (expert advice, training, creation of representative bodies ...)
- Develop Implementation of tools (Quality assurance, credit systems, accreditation procedures, recognition...)
- **New in 2024: Projects must be aligned with the Global Gateway Priorities**
- Budget between 800 000 and 1M€
- 3-4 years.

# CBHE projects contracted in LAC in 2022-2023



# Examples of CBHE projects

## EU-BEGP

“Modernising Digital Education in Energy Transition for Circular Economy in Latin America” (EU-BEGP) is a [project](#), implemented in Bolivia, Ecuador, Guatemala and Peru. Coordinated by Universidad Privada Boliviana (Bolivia), it aims at modernising Master and Bachelor programs and Expert courses in the energy sector, with emphasis upon circular economy towards energy sustainability.

## FLEE-ASSET

The “Fighting Labour Exploitation through Education - Agricultural Sector Specialist Training” (FLEE-ASSET) [project](#) is coordinated by Universitat de Barcelona (Spain) and implemented in Argentina, Brazil, Paraguay and Uruguay. It aims to develop different educative tools and training programs to ensure solid standards of decent work in EU-LA agricultural and trade relations and the fight against labour exploitation.

## ELA4ATTRACT

“Empower LA HE for Inclusion and STEAM Attraction” (ELA4ATTRACT) is a cross-regional (Latin America and Caribbean regions) [project](#) implemented in Argentina, Colombia, Chile, and Dominican Republic. Coordinated by Universidade de Lisboa (Portugal), aims to promote and implement good practices that will enhance the capacity to attract, recruit and retain national and international degree seeking students in STEM areas, with a gender focus so that more women consider a career in these fields.

# Capacity building on Vocational Education and Training

## **Applicant must be based in Europe**

Project duration: 2 or 3 years

EU grant per project: Min 100 000 € - Max 400 000 €

At least 4 full partners from a minimum of 3 countries (2 European countries, 1 or more LAC ones)

**Budget available 2021-2027: 12 m€ for LA region and 1.8 m€ for CAR region**

### **Build capacity of VET providers**

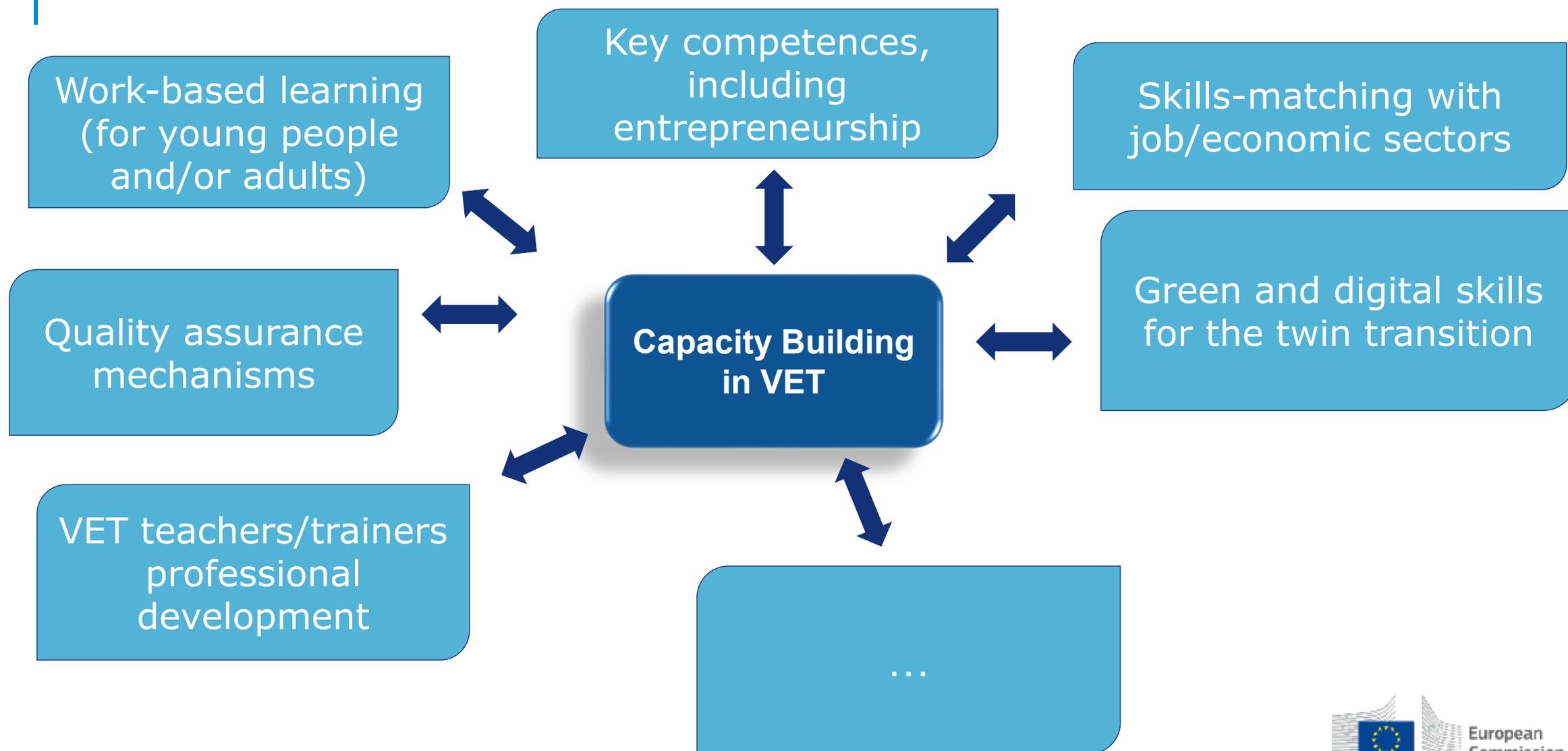
to strengthen cooperation between private and public stakeholders for demand-oriented and opportunity-driven VET interventions

### **Improve the quality and responsiveness of VET**

to economic and social developments to enhance the labour market relevance of skills provision;

Align VET provision to local, regional and national development strategies

# THEMATIC AREAS – Focus on one or more



# CBVET projects contracted in LAC in 2022-2023

## Capacity Building for Vocational Trainings involving Latin America, 2022-2023



**15 projects**



**56 instances of LAC  
participation**

### **METAVET – Moving towards sustainable industry engagement in VET**

This [project](#) is focused on VET for the metal and energy sectors in Paraguay and Argentina, bringing organisations from these two countries together with Polish and Spanish partners. The project shares best practice on curricula design, multimedia resources and innovative VET delivery, as well as ways of reaching those from disadvantaged backgrounds.

**VET4CHAINS** is the acronym of “Boosting VET excellence in Work Based Learning to support SMEs of Latin America and Europe in their transition to Sustainable Value Chains in the Automotive sector”. The [project](#) focuses on enhancing VET Excellence in Work-Based Learning (WBL) to enable SME transitions to Sustainable Value Chains in the Automotive Industry, with partners from Germany, Spain, Colombia, and Mexico.

- Aiming at impact at system-level; staff mobility is prioritised
- Open to all LAC countries to enhance the regional dimension

# Jean Monnet Actions in the field of higher education

- Promote the excellence in teaching and research on EU studies worldwide.
- Scope of EU studies may vary so long as an EU angle is explored
- Promote dialogue between the EU, other international authorities and the higher Education sector worldwide → policy-makers, officials, civil society, education sector, media
- Generate knowledge to support new European and regional policies and support the EU role in the world
- Reach a wider public beyond academia and specialized audiences → bring closer to society the knowledge about the EU
- Enhancing awareness of the European Union: European citizenship and values; Role of the EU in a globalised world; Facilitating future engagement as well as people-to-people dialogue: Vector of public diplomacy in third countries, promoting EU values and enhancing the visibility of the European Union
- Key for the EU to promote research on regional integration and promote regional integration processes in LAC



# Actions open to LAC (budget: 5 m€ for LA; 0.3 m€ for CAR; 5.5 m€ for North America)

ACTION TYPE	Eligibility	Years	Max EU grant	%	Cost Type	OPEN TO LAC
MODULES	One HEI world-wide*	3	30.000	75	Fixed lump sum	<ul style="list-style-type: none"> <li>• Minimum 40 teaching hours per academic year at applicant HE institution.</li> <li>• Direct contact hours (no individual tutorials)</li> <li>• Summer courses / distance learning allowed</li> </ul>
CHAIRS	One HEI world-wide*	3	50.000	75	Fixed lump sum	<ul style="list-style-type: none"> <li>• Permanent staff members at applicant institution</li> <li>• Teaching a min. 90 hours per academic year</li> <li>• Direct contact hours (no individual tutorials)</li> <li>• Additional hours and support of other staff possible</li> </ul>
CENTRES OF EXCELLENCE	One HEI world-wide*	3	100.000	80	Customised lump sum	<ul style="list-style-type: none"> <li>• Only one at a time per HEI</li> <li>• Should seek to become structured centres providing EU specific high-level knowledge</li> </ul>



# Jean Monnet in LAC

- Out of a total of 952 successful applications to Jean Monnet between 2021 and 2023, **29** are Latin American projects managed by institutions from **Argentina, Brazil, Cuba, Chile, Colombia, Ecuador** and **Uruguay**. There have been **11** JM Chairs, **3** Centres of Excellence, **15** JM Modules. In addition, **4** non-EU JM Networks include **17** partners from Latin America and Caribbean. **Brazil** alone concentrates **20** projects.

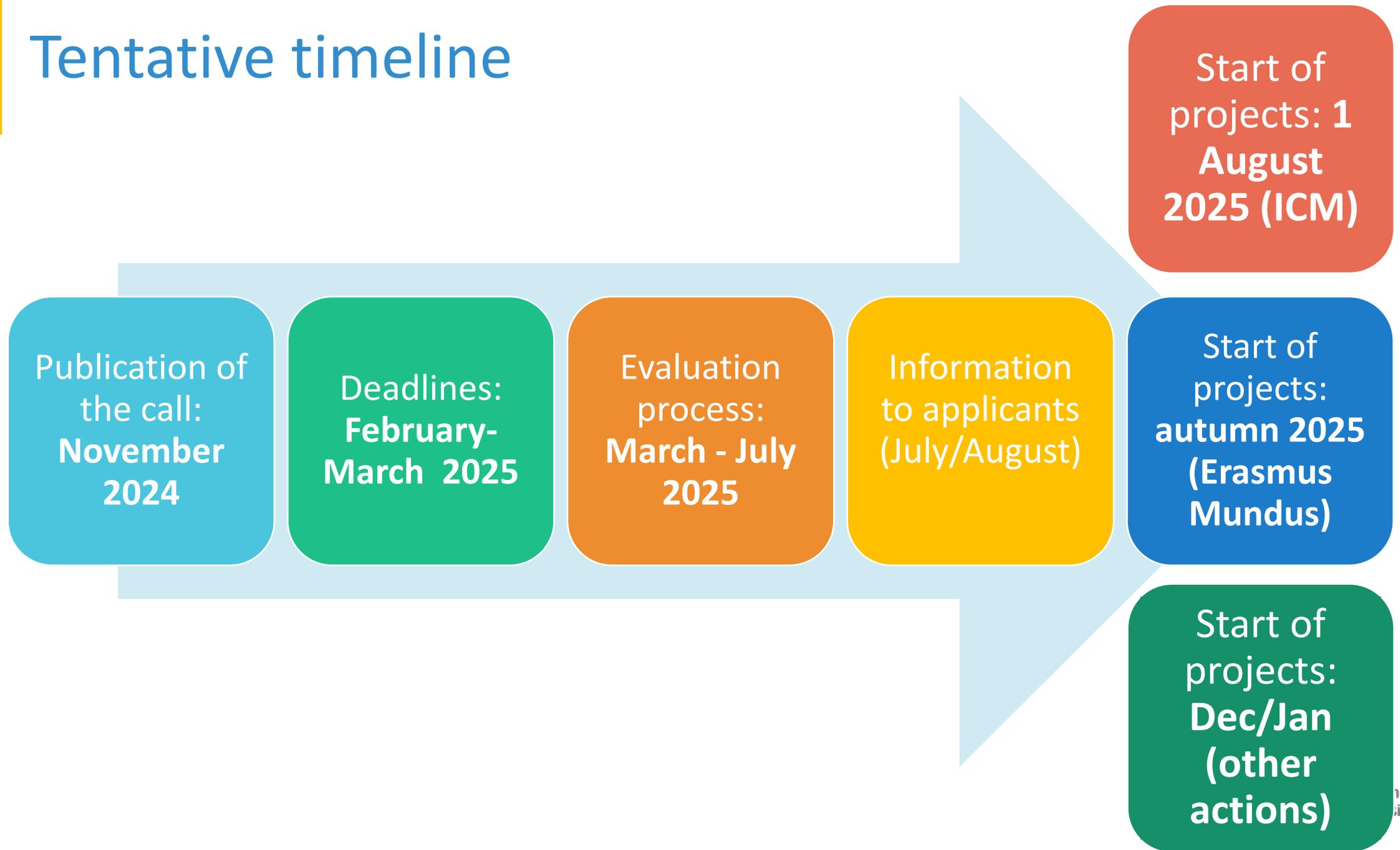
## FGV Centre of Excellence on EU-LA Global Challenges

Building upon previous versions of the Centre of Excellence, this [project](#) focuses on the EU's contribution to Global Governance related challenges, in particular: (i) the EU's role as a promoter of democratic values and as a global regulator; and (ii) the EU's role in regional and international dispute settlement systems in a globalized world. The project responds to an identified need to expand awareness of the Global Governance debate with a focus on the EU's role in the Global South.

## OBSERVING DEMOCRACY: The Impact of EU Election Assistance and Observation on the Quality of Democracy

This [JM Chair](#) aims at integrating the EU instruments of election assistance and election observation onto high-level research and teaching activities. It relies on 4 axes: comparative impact of EU election observation missions on the quality of democracy worldwide; high-quality teaching activities; improving democratic practices and electoral processes in Ecuador; and refinement of the existing EU instruments of election assistance and observation.

# Tentative timeline



# Alumni and events; ENFPs

EUR 1m + activities from the EU Delegations and the Study in Europe Campaign

Role of ambassadors of Europe and European programmes

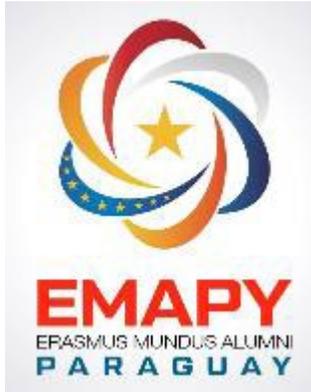
EUR 1m to support the ENFPs in order to better engage with LAC countries



Pre-departure online event for Brazilian Erasmus+ Grantees



ERASMUS+ STUDENT AND ALUMNI ALLIANCE



STUDY IN EUROPE



# More information



[Erasmus+ Programme guide!!](#)



[Erasmus+ Call for proposals](#)



[ErasmusPlus Facebook](#)



[ErasmusPlus X](#)

[Erasmus Project Results Platform](#)

[EACEA online info sessions!!](#)

[Funding and Tender Opportunities Portal \(FTOP\)!!](#)

EU Delegations in your countries

29 NOV 2022	Info days <a href="#"><u>Online info session: international dimension of the Erasmus+ programme - Focus on Latin America and Caribbean</u></a>
01 DEC 2022	Info days <a href="#"><u>Online info session: international dimension of the Erasmus+ programme - Focus on Sub-Saharan Africa</u></a>
07 DEC 2022	Info days <a href="#"><u>Online info session: European Solidarity Corps 2023 – Volunteering Teams in High Priority Areas</u></a>
07 DEC 2022	Info days <a href="#"><u>Online Info Session: New action - Capacity building in the field of Vocational Education and Training (VET)</u></a>  Live streaming available
08 DEC 2022	Conferences and summits <a href="#"><u>Erasmus Mundus Design Measures Kick-off meeting 2022</u></a>
09 DEC 2022	Info days <a href="#"><u>Online info session: Erasmus+ programme - Capacity Building in Higher Education</u></a>
12 DEC 2022	Info days <a href="#"><u>Online info session: Capacity Building in the field of Youth (CBY) 2023</u></a>  Live streaming available



# Study in Europe

## New period for the project 2024 – 2027

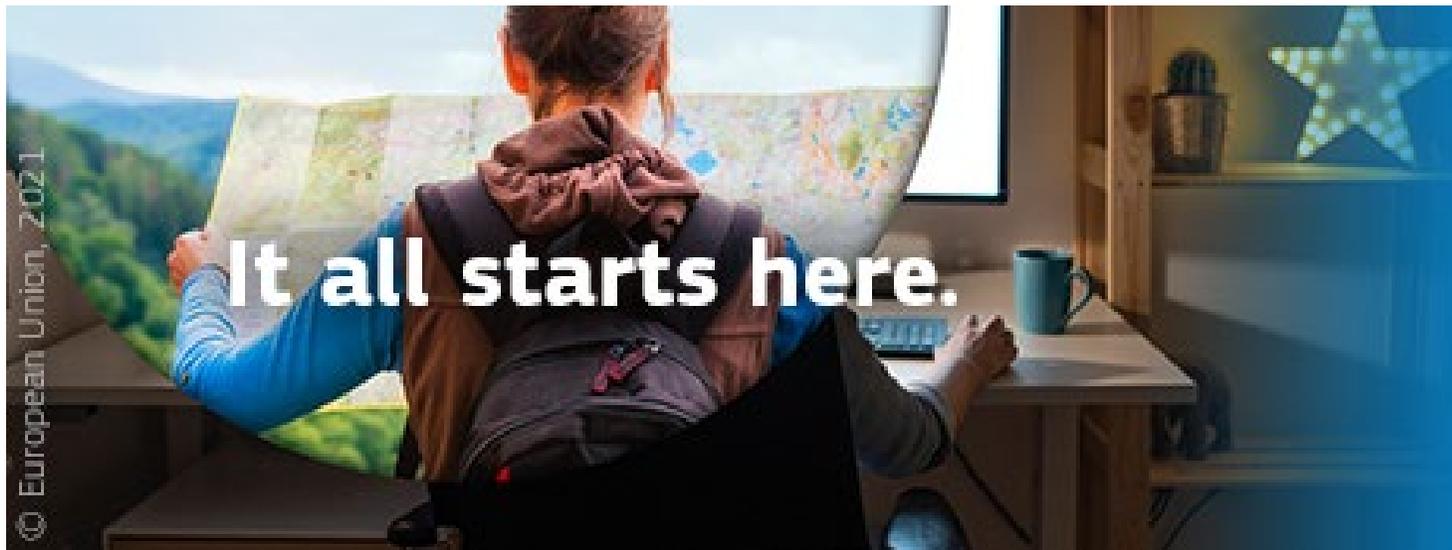
### ➤ Objectives of SiE:

- To help strengthen the profile of European higher education on the world stage
- **To improve the availability of targeted information on programmes and study opportunities in Europe, presenting its quality and diversity as a study destination.**
- To strengthen the promotional expertise among European higher education institutions and agencies
- To increase visibility of the European higher education sector support to potential beneficiaries and stakeholders

### ➤ Activities:

- **12 Worldwide Fairs (4 per year) – 2 in LAC**
- **12 Institutional Events (4 per year) – 2 in LAC**
- **Study in Europe Portal (articles, publications, testimonials, etc.)**

*Thank you for your attention!*



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**It all starts here.**

**Erasmus+**  
Enriching lives, opening minds



European Commission



# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean

Montevideo, Uruguay  
01-02/10/2024





# Setting the scene

How to accompany digital transformation in education



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# Germán Bernal

DG EAC, European Commission



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# Digital Education

## Action Plan

2021-2027

Resetting education and  
training for the digital age



Germán Bernal Ríos

Directorate-General for Education,  
Youth, Sport and Culture

# DIGITAL EDUCATION IN EUROPE: STATE OF PLAY

## The COVID-19 pandemic – as a catalyst

- Large scale shift to distance and online learning during COVID-19 outbreak has been far from simple:
  - 1.6 billion learners in more than 190 countries were out of school;
  - 100 million learning staff were impacted by the sudden closure of learning institutions;
  - Mass unprecedented use of technology for learning revealed many opportunities for students and educators;
  - Yet, also significant challenges in terms of equity and quality as well as new divides.
- For 90% of the respondents of our Open Public Consultation, the pandemic was a turning point for the use of technologies in education.

## But also...

- Only 54% of the Europeans have at least basic digital skills;
- Every third 8-grader is underachieving in computer and information literacy;
- 16% of teachers report a strong need for professional development in the area of digital competences;
- While 90% of the jobs around the world already require at least some digital component.

# HOW DOES THE DIGITAL EDUCATION ACTION PLAN WORK?



## 1 GOAL

High-quality and inclusive digital education

## 2 STRATEGIC PRIORITIES

- Fostering the development of a **high-performing digital education ecosystem**
- **Enhancing digital skills and competences** for the digital transformation

## 1 HORIZONTAL PRIORITY

Boosting cooperation and exchange

**13 ACTIONS + The European Digital Education Hub**

# A CLOSER LOOK



## Digital transformation plans for education and training institutions

Digital Education  
Action Plan



**What?** SELFIE - A free self-reflection tool for schools to reflect on how they use technology for teaching and learning.

**Impact:** 6+ million users worldwide in 86 countries and translated into 41 languages

In Latin America and the Caribbean: 24,077 users in 98 schools across 15 countries

## PRIORITY 1



### Ethical guidelines on the use of artificial intelligence (AI) and data in teaching and learning for educators

#### Objective

Help understand the potential that the applications of AI and data usage have in education and raise awareness of the possible risks

#### How

- Provide **hands-on guidance and support**: examples of AI and data use in education; ethical considerations and requirements, guiding questions, emerging competences, glossary and etc.
- Developed by a dedicated **Expert Group**

#### Target group

- **Teachers and educational staff in formal education**, mainly in primary and secondary levels of education, with some or no prior experience on using AI and data in teaching and learning

#### When

- Published on 25 October 2022. Available in all EU languages.





## Guidelines for teachers and educators to promote digital literacy and tackle disinformation through education and training

### Objective

Strengthen the role of education and training in **developing digital literacy and skills related to tackling disinformation among young people.**

### How

- Provide **hands-on guidance, activity plans, tips, cautionary notes for teachers**
- Developed by a **dedicated Expert Group**

### Target group

- **Teachers in primary and secondary education** with some or no prior experience in digital education
- School leaders, policymakers, civil society, parents

### When

- Published on 11 October 2022. Available in all EU languages.

## TARGETED SUPPORT FOR TEACHERS





**Goal:** train 40K girls by 2027  
(achieved!)



**How?** A free online learning programme focused on concrete societal challenges related to the circular economy

**Who?** girls in secondary schools (aged 14-18) across countries defined with modest or moderate innovation scores (RIS countries)

Celebrated in the annual **Women and Girls in STEM Forum**

Winners of the 2023 challenge

+/- 40,000 girls trained  
since 2022

#EUDigitalEducation  
#DEAP



## THE EUROPEAN DIGITAL EDUCATION HUB

### Objective

→ **Improve cooperation on digital education at the EU level**, promote exchange of best practices and develop solutions with stakeholders from all sectors of education and training.

### How

- **Set up and develop a community of practice** for cooperation to support cross-sector collaboration, and the agile development of policy. More than 4000 members!
- **Set up a network of National Advisory Services (NAS)** to stimulate dialogue between the private and public sectors
- **Collect examples of best practices** through the work of the new Support, Advanced Learning and Training Opportunities (SALTO) resource centre for digital education



## WHAT IS COMING NEXT?

### Highlights for 2024 and 2025....

- Launch of the **Review Process** of the Digital Education Action Plan (April-November 2024)
- Launch of 4th edition of the **Digital Education Hackathon** (November 2024)
- Launch of Commission Expert Group dedicated to producing **Guidelines on High Quality Digital Education Content** (Group Launched in July 2024/Guidelines to be published in 2025)
- Launch of Commission Expert Group dedicated to producing **Guidelines on Teaching Informatics** (Group Launched in July 2024/Guidelines to be published in 2025)
- Finalisation of the **Review Process and next steps** for the Digital Education Action Plan (2025)

## Examples of ongoing CBHE and CBVET project on “Digital”

- **DigiUGov - Digitalization meets University Governance** (Colombia, Germany, Mexico, Spain)
- **NETeJOB - Strengthening interdisciplinary knowledge networks on the impacts of digital transformation on work conditions in Latin America** (Argentina, Brazil, Chile, Costa Rica, Ecuador, Portugal, Spain)
- **EMBRACE - Education Modernization Brazil, Colombia, Europe - the new era of digital higher education cooperation** (Brazil, Colombia, Finland, Portugal)
- **CL.au.DI.A. - Cultura Digital Antillana: Jóvenes artistas se forman y promueven la cultura digital en el caribe** (Cuba, Dominica, France, Haiti, Italy)
- **EU-BEGP: Modernising Digital Education in Energy Transition for Circular Economy in Latin America** (Bolivia, Ecuador, France, Guatemala, Peru, Spain)



## Interested to know more?

Get in touch by email:

[EAC-DIGITALEUCATION@ec.europa.eu](mailto:EAC-DIGITALEUCATION@ec.europa.eu)

**Find out more on our webpage**

Digital Education Action Plan (2021-2027) | European Education Area (europa.eu)

**Stay tuned**

#EUDigitalEducation

@EUDigitalEdu



# Doerte Bosse

EU-LAC Digital Alliance

European Union Delegation to Uruguay



Erasmus+

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# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean

Montevideo, Uruguay  
01-02/10/2024





# Comfort break

Restart at 15:45



Erasmus+

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# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean Montevideo, Uruguay 01-02/10/2024





# Developing digital education ecosystems



Erasmus+

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# Jenny Elmaco

Erasmus+ National Focal Points Academic Expert  
PRACISIS srl



**Erasmus+**  
Enriching lives, opening minds





# Benigno Rodriguez

CBHE project "NEON"

Universidad de la República (Uruguay)



# Digital in Education



**Dr.-Ing. Benigno Rodríguez**  
**Facultad de Ingeniería**  
**Universidad de la República**  
**Uruguay**

Disclaimer: The European Commission support for the production of this publication does not constitute an endorsement of the contents which reflects the views only of the authors, and the Commission cannot be held responsible for any use which may be made of the information contained therein.

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



October 1-2nd 2024

# Network of Competence in IoT

- 27 courses created or improved, 4406 hours, 1037 students (D3.4)
- 19 Memorandums of Understanding with industrie entities (D4.2)
  - 15 Laboratories created or improved (D4.2)

<https://www.project-neon.eu/documents/>



Fig. 6: UNI-KLU, UC3M, UNC, UNS, UNMDP, UDELAR, UCU, URJC, UAH, LUZ, UFJF, UO,....

# Laboratories with Hardware in UDELAR

- **Courses that share similar methodologies**
  - Real Time Embedded Systems (U, G and CE)
  - Wireless Sensor Networks (U, G and CE)
  - Digital Design for Low Power (G and CE)
  - Communication Technologies for IoT (G and CE)

## Based on:

- Lectures
- Hands-on laboratory at home
- Final project

## Support material:

- Moodle
- Gitlab hosted on university server
- Microcontroller and sensors kits

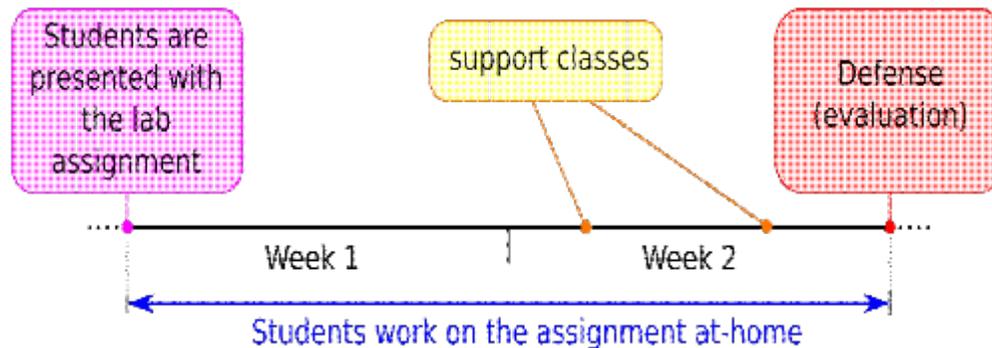


Fig. 1: Time Frame.



Fig. 2: Microcontroller kit.

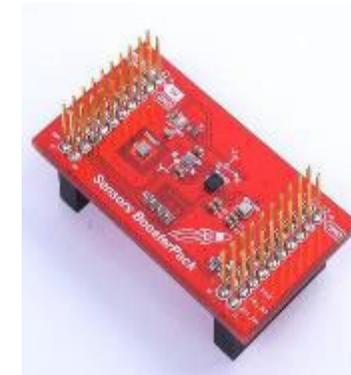
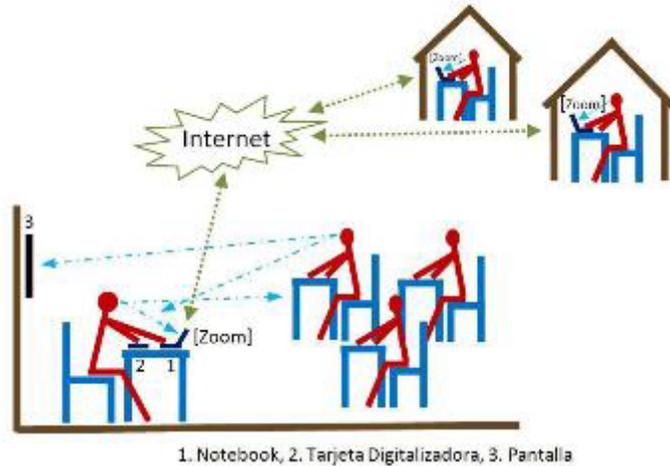


Fig. 3: MSP430 launchpad.

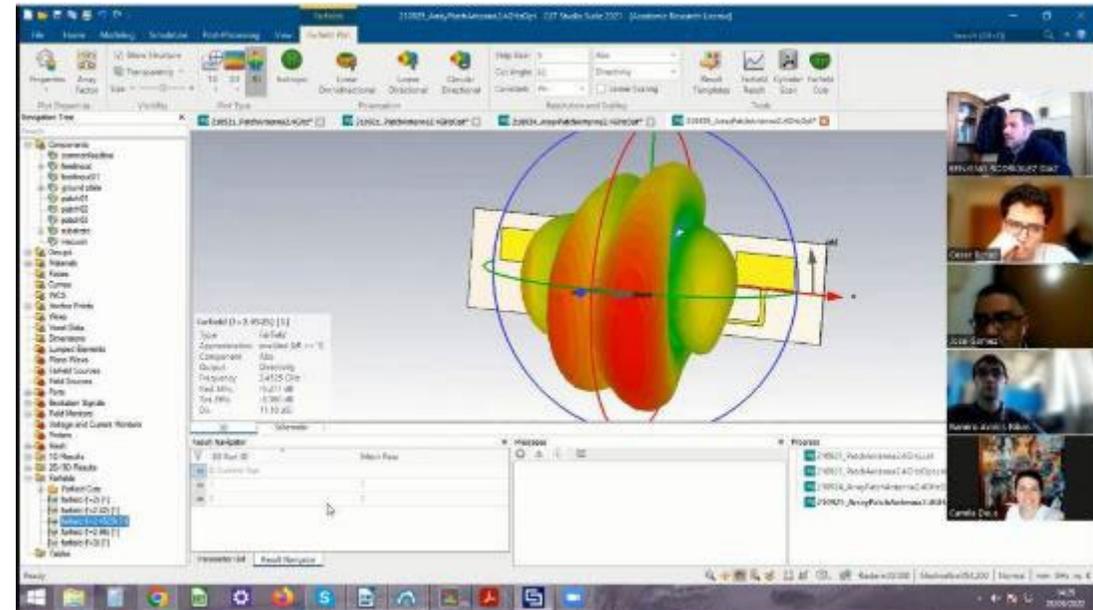
- **These courses benefit more than 80 students annually just in UDELAR**

# Course with Software Licenses (CST) in UDELAR

- 100% virtual, global access
  - Antenna Design (U, G and CE)



**Fig. 4: Global course offered thanks to NEON.**



**Fig. 5: “Antenna Design” course (students from: Argentina, Brasil, España, Venezuela, Cuba y Uruguay).**

- Borders are erased (24 students, 6 countries, 7 universities)
- All type of global academic/scientific cooperation is promoted
- A lot of synergy is produced between institutions and between teaching and research

**Thank you !**

[www.project-neon.eu](http://www.project-neon.eu)





# Maria Sinche Gonzalez

EMJMD project “PROMISE”

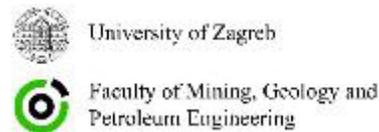
University of Oulo (Finland)



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Erasmus+



# Desarrollo de sistemas educativos digitales *Developing digital education ecosystems*

**Doc. Dr Maria Sinche Gonzalez**  
**University of Oulu**

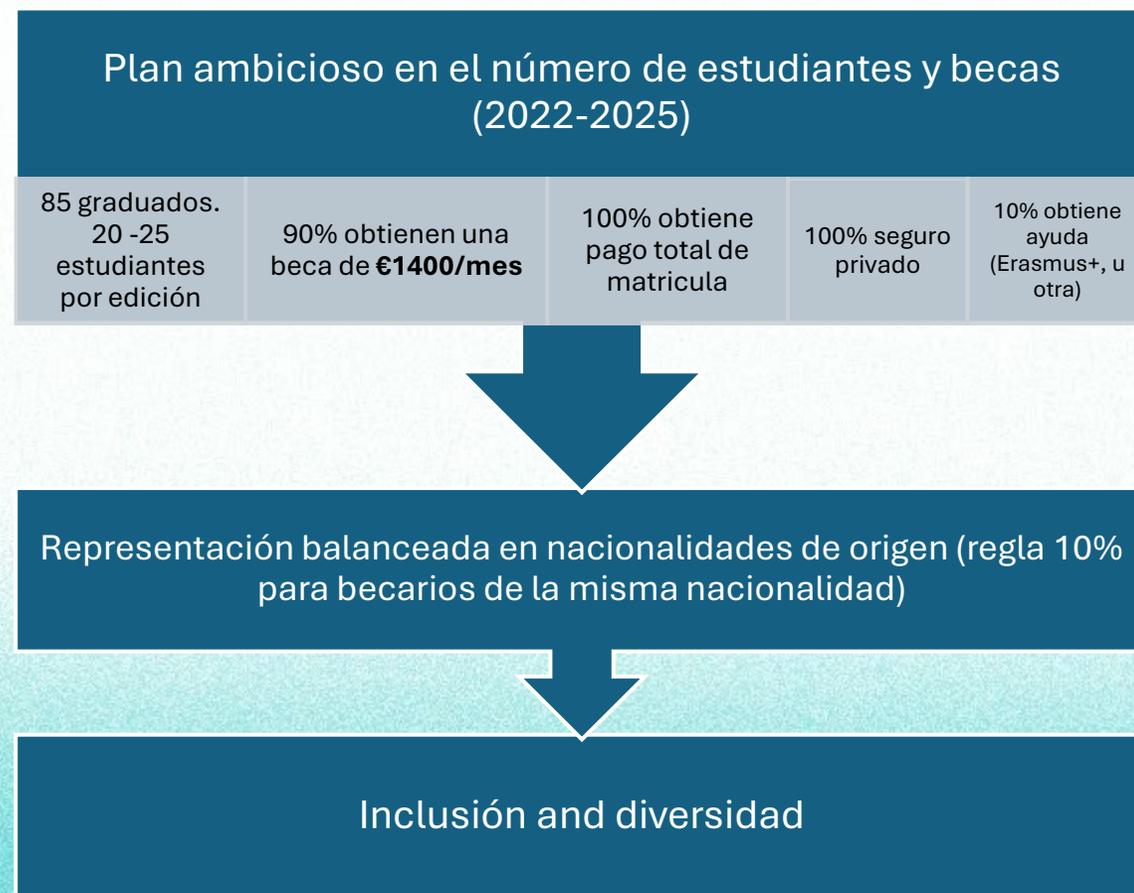
**Coordinadora del programa Erasmus Mundus Joint Master in Sustainable Mineral and Metal Processing Engineering**

**EMJMD-PROMISE**

Erasmus+ Seminar 2024 for LAC/ Montevideo , 1-2 October

# Erasmus Mundus Joint Master in Sustainable Mineral and Metal Processing Engineering, EMJM-PROMISE

El objetivo de EMJM-PROMISE es preparar ingenieros (MSc) de procesamiento de minerales altamente calificados y futuros líderes para apoyar la creciente demanda de minerales, metales y materiales a medida que avanzamos hacia una economía verde y una transición energética.



## Un graduado de EMJM-PROMISE experto en Procesamiento de Minerales

ICT

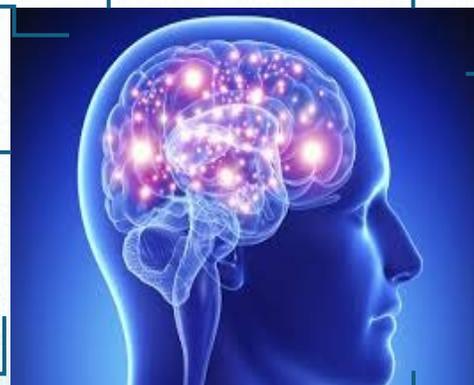
Entender los fundamentos de matemáticas, química e ingeniería

Conocimiento de geología, mineralogía, teoría de liberación, mecanismos de rotura

Conocimiento de manejo de materiales, cominucion, flotación, hidrometalurgia, pirometalurgia

Conocimiento de pruebas de laboratorio y caracterización de materiales

Conocimiento de prácticas y directrices de gestión, SOPs y planes de control-respuesta.



**Comunicación 360°, capacidad de trabajo en equipo**

Conocimiento del negocio de la minería y mejores prácticas en tecnologías específicas.

**Capacidad de observación y análisis, recolección de datos.**

**Acceso a / conocimiento de herramientas de diagnóstico**

**Flexibilidad, curiosidad, pensamiento rápido, autogestionario, responsivo**

***Capacidades que sustentan las buenas decisiones metalúrgicas***

# Necesidades digitales EMJM-PROMISE

1. Educación digital

2. Análisis de datos e inteligencia artificial

3. Simulación y modelación

4. Caracterización automática de minerales

5. Automatización, instrumentación, sensores avanzados, control de procesos (productividad, cuidado de medio ambiente, estándares de seguridad),

- Monitoreo de minerales en tiempo real
- Optimización de Procesos

6. Mantenimiento Predictivo



1.1 Conectividad (internet, acceso y equipos, laboratorios)

1.2 Plataformas para registrarse, obtener certificación, acceso a material educativo, ubicación, calendarios (Peppi, Moodle, Tuudo, comunicación). E-library, e-books

2.1 Cursos específicos (Machine Learning, Python, Matlab, R, otros)

3.1 Cursos específicos

- Modelling and simulation in mineral processing
- Digitalization and smart systems in mineral processing
- Digital analytical chemistry in geo, material and environment

3.2 Programas específicos para procesamiento de minerales: HSC, JKSim, Bruno, Modsim, otros

4.1 Equipos de caracterización de minerales con conexión a terminales digitales.

- Métodos de imagen, i.e. Light (Optical) Microscopy, Electron Microscopy (TEM, SEM), Scanning Probe Microscopy (AFM, STM, Profilometry).
- Métodos Espectroscópicos, i.e. DLS, XRF, XRD, XPS, XAS, Raman,...
- Ejemplos: Digital imagen Split-Online, VisioRock (textura), Tata, Wipware

5.1 Cursos y práctica en laboratorios, planta piloto y equipos

- Automation in mineral processing
- Interphases transport CAD in mineral technologies
- Sistemas de control automático con Digital Twin=Gemelos Digitales
- Estrategias de control DCS, PLC, MPC, FL

6.1 **Sistemas de monitoreo en tiempo real**, diseñada para hacer que la resolución de problemas y el diagnóstico en el procesamiento de minerales sean más rápidos y eficientes que nunca. Ejemplo: ABB Ability™ Predictive Maintenance for Grinding (PMG), TXR Ultrasonic flowmeter, Millsense®, otros

# Participan in EMJM-PROMISE

## INDUSTRIA

1. METSOOUTOTEC (FINLAND) OY, Finland
2. TERRAFAME GROUP OY, Finland
3. Agnico Eagle Oy, Finland
4. Geopyora, Finland
5. Dragon Mining Oy, Finland
6. Monolithos, Grece
7. BioSO4 Oy, Finland
8. Boliden, Sweden
9. Copperstone Vicaria AB, Sweden
10. Timegate Instruments Oy, Finland
11. Spectra-Media, Croatia
12. Depos d.o.o., Croatia
13. Holcim (Hrvatska) d.o.o., Croatia
14. FLSmidth GmbH, Austria
15. Karntner Montnindustrie GmH, Austria
16. PMT-Jetmil GmbH, Austria
17. CEMTEC Cement and Mining Technology GmbH, Austria
18. Zementwerk LEUBE GmbH, Austria
19. IFE Aufbereitungstechnik GmbH, Austria
20. Bernegger GmbH, Austria
21. Omya GmbH, Austria
22. Binder & Co AG, Austria
23. RHI Magnesita GmbH, Austria
24. Corporacion Chilena de Investigacion del Agua, CETAQUA, Chile
25. Nacional de Pilotaje de Tecnologías para la Minería, Chile
26. Santo Domingo, Chile
27. Saulo SPA, Chile, No/PIC
28. Seven Project SPA, Chile
29. Maelgwyn, Germany
30. Flottec LLC, USA
31. Gumiimpex-GRP d.o.o, Croatia
32. Metis d.d., Croatia
33. IGM Sljuncara Trstenik d.o.o., Croatia
34. IAB Weimar Institute of Applied Construction Research, Germany
35. Knauf d.o.o., Croatia

## CENTROS DE INVESTIGACION

36. Centro de Tecnologia Mineral, Brazil
37. Geologian tutkimuskeskus GTK, Finland
38. Helmholtz Institute Freiberg for Resource Technology
39. IAB Weimar Institute of Applied Construction Research, Germany

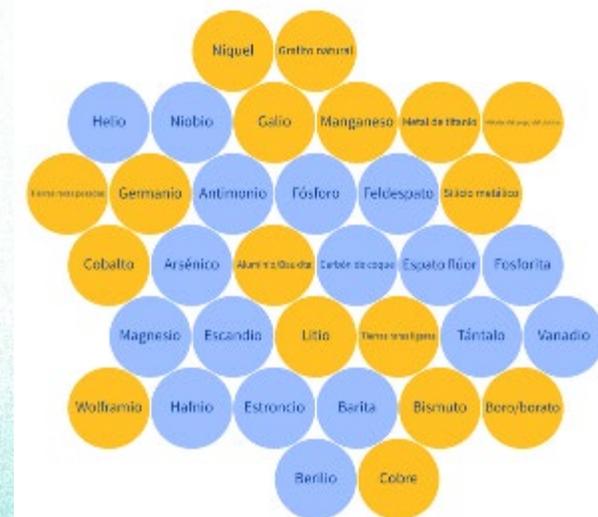
## UNIVERSIDADES

40. Dpto. Ingenieria Geologica y Minera/Universidad Politecnica de Madrid/ E.T.S.I. Minas y Energia, Spain
41. Copper Belt University, Zambia
42. University Catolica del Norte, Chile

## ¿Quién se beneficia?

### Stakeholders:

- Universidades (socios)
- Países anfitriones
- Estudiantes de todo el mundo
- Industria
- Sociedad





# Judith St Surin

Adelante2 cooperation project

Université d'Etat d'Haiti



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Erasmus+



# Maria Rosa Terradellas

Adelante2 cooperation project  
Universitat de Girona (Spain)





# Carlos Alberto Heuza

Adelante2 cooperation project

Cooperacion Minuto de Dios UNIMINUTO (Colombia)



**Université d'État d'Haïti**

UEH - TICE  
EXPERIENCES AVEC  
ADELANTE2

- Erasmus+ Cluster Meeting
- and Contact-Making Seminar
- for Latin America and the Caribbean
- 1-2 October 2024 | Montevideo, Uruguay



# 0. Cómo se gestó el Proyecto

## Breve descripción :

La UEH se encuentra en una encrucijada para modernizar sus procesos de enseñanza-aprendizaje y cumplir las normas internacionales. Para ello, necesita consolidar nuevas prácticas pedagógicas y formar a sus profesores en el manejo de la formación a distancia y virtual. A través del programa ADELANTE, con el apoyo de UNIMINUTO y UdG, la universidad busca implementar prácticas metodológicas de enseñanza virtual y mejorar las competencias de su cuerpo docente para poder ofrecer una educación de calidad y alcanzar sus objetivos estratégicos.

## Objetivo :

Esta Iniciativa de Cooperación Triangular permitirá a la entidad Beneficiaria de la Alianza aprovechar el conocimiento de las entidades Oferentes en modelos de educación a distancia y virtual, caracterizados por el fuerte énfasis en la calidad técnica y pedagógica que promueva el acceso al aprendizaje permanente y la inclusión. social.

# 1. Que hemos producido (productos y modelos).

- Diagnóstico de la formación del profesorado de la U.E.H. a nivel pedagógico y tecnológico.
- Elaboración de materiales pedagógicos para aplicar metodologías activas y colaborativas centradas en las nuevas necesidades de formación universitaria (competencias)
- Elaboración de materiales para la formación tecnológica, que permita la aplicación de la formación virtual
- Documento “Orientaciones prácticas para incorporar la perspectiva de género y derechos humanos en la educación virtual”.
- Elaboración de material audiovisual para plasmar la experiencia llevada a cabo.
- Reelaboración de los materiales tecnopedagógicos para aplicar en los talleres de formación de Haití.
- Evaluación de las distintas fases del proyecto: Girona, Madrid, Haitía (Les Cayes, Puerto Príncipe y Limonade).

## 2. Cómo se va a aplicar el conocimiento

- Formación en cascada al profesorado de Haití por parte de los profesores formados en Girona y Madrid.
- Aplicación contextualizada al entorno de Haití de los materiales elaborados en el Proyecto
- Creación de aulas virtuales
- Aplicación de esta formación a distintas facultades
  - Derecho y Economía
  - Medicina
  - Escuela Normal Superior: Educación
  - Ingeniería e Informática

### 3. Perspectivas de sostenibilidad

- ❑ Creación de un nuevo servicio TICE para el acompañamiento del proceso de formación en los aprendizajes tecnopedagógicos adquiridos, dentro de la dirección de Formación Permanente del profesorado de la UEH.
- ❑ Implementación de un Master Virtual de Profesorado Universitario, impulsado por Kairós y la UEH para los años 2023-2024 y 2024-2025 en el que participan todos los miembros de la Alianza. Este master va a permitir tanto la actualización del profesorado de la UEH como la formación de estudiantes que pueden llegar a ser futuros profesores de la UEH o de otras universidades de Haití.
- ❑ Calendario de formación para los profesores. Semanalmente se reciben solicitudes de formación, por lo cual se dará continuidad al proceso.



Girona



# Atelier de travail

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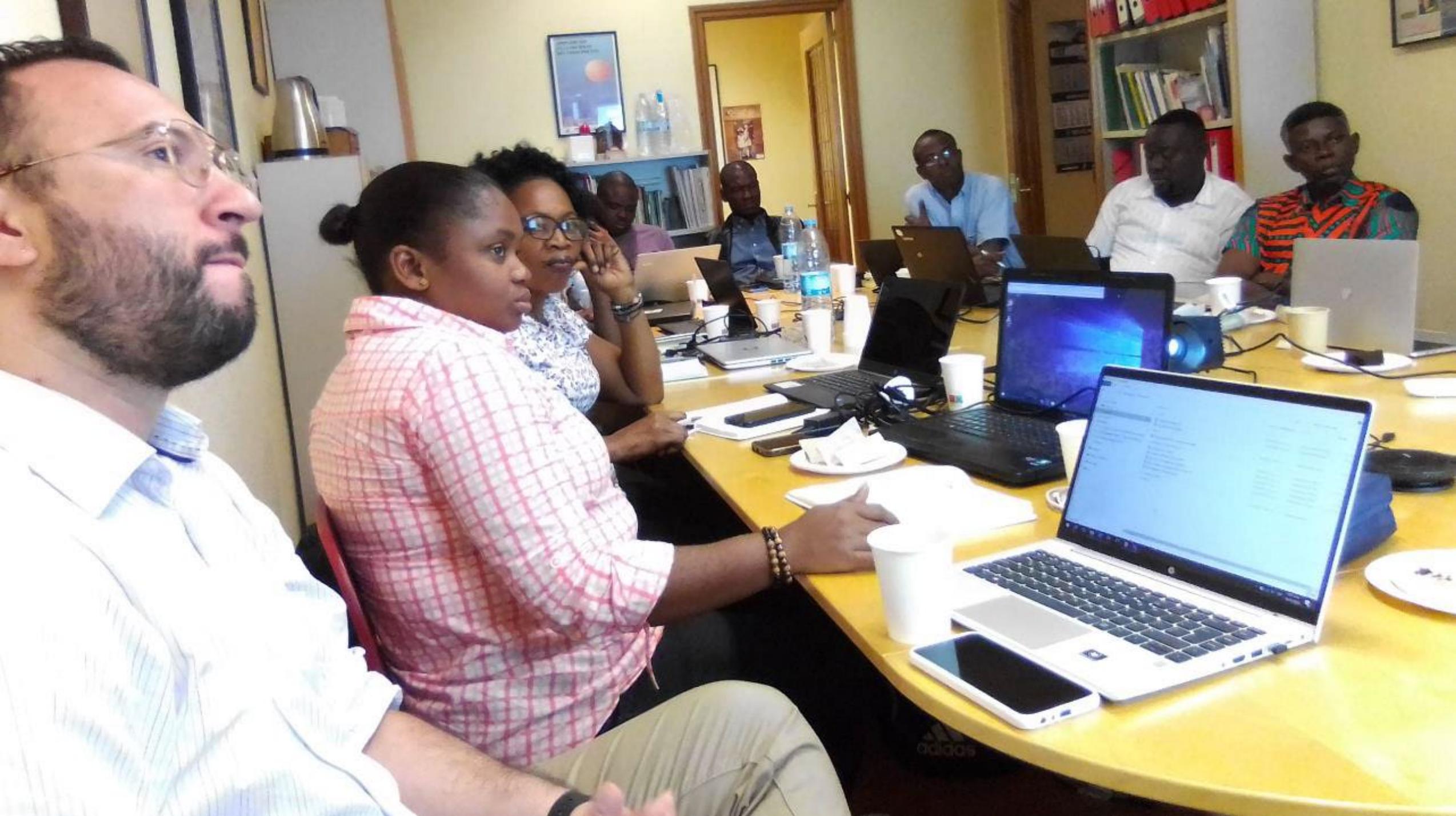




# Madrid

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Logo of the United Nations Development Programme (UNDP) and other text on a framed document on the wall.

CONGRUENCIA  
NIVEL  
P

8/11  
DÍA INTERNACIONAL DE LAS MUJERES

Document title and content on a certificate held by a man in a blue patterned shirt.

Document title and content on a certificate held by a man in a white shirt.

Document title and content on a certificate held by a woman in a dark patterned dress.

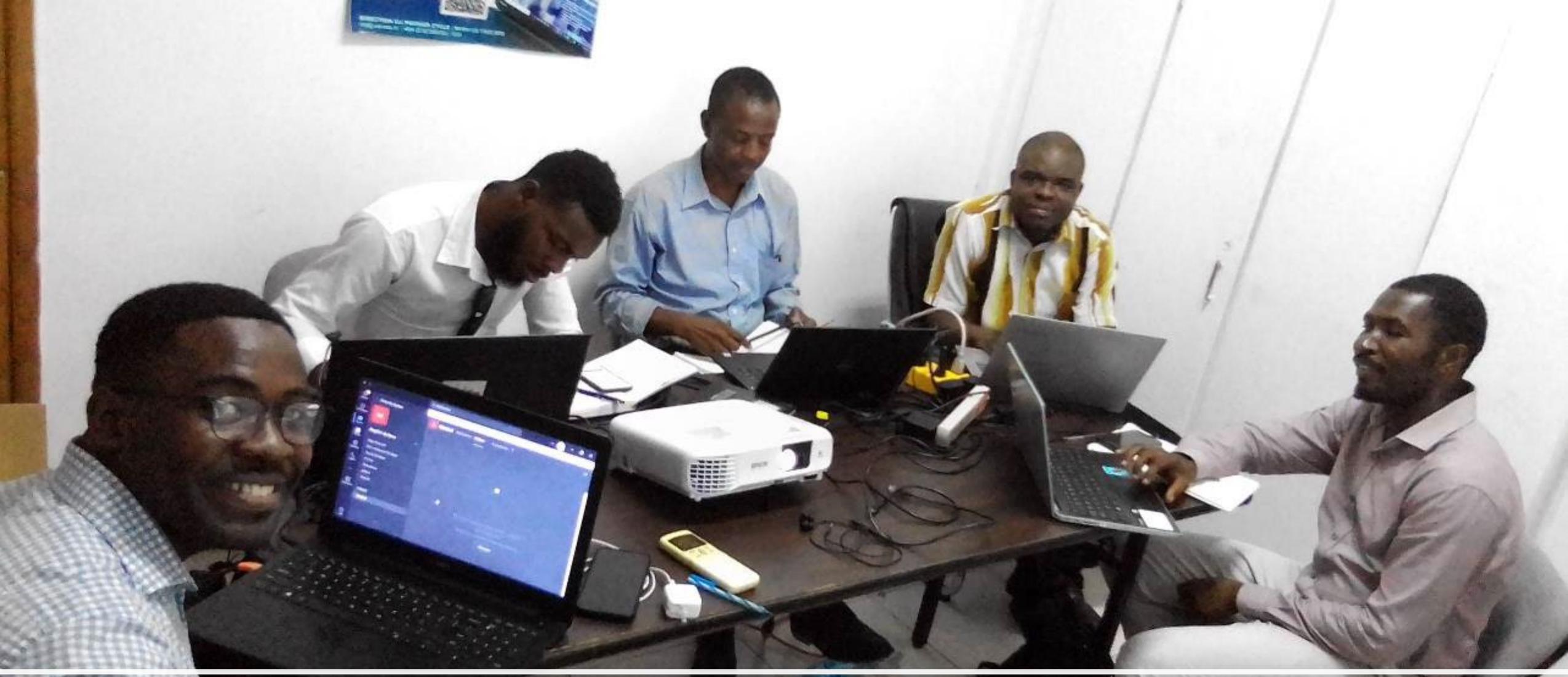
Document title and content on a certificate held by a man in a dark shirt.

Document title and content on a certificate held by a man in a white shirt.

Document title and content on a certificate held by a man in a brown shirt.







Port-au-Prince



# Ateliers Port-au-Prince











Adelante 2  
PROJET DE COOPERATION INTERNATIONALE



Compétences chino-pédagogiques pour l'éducation virtuelle



3 ans de formation  
120 enseignants  
100 000 élèves  
100 000 000 € de budget

Partenaires de coopération internationale pour l'éducation virtuelle

- 1. Partenaires de coopération internationale pour l'éducation virtuelle
- 2. Partenaires de coopération internationale pour l'éducation virtuelle
- 3. Partenaires de coopération internationale pour l'éducation virtuelle
- 4. Partenaires de coopération internationale pour l'éducation virtuelle
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- 10. Partenaires de coopération internationale pour l'éducation virtuelle

# Les Cayes









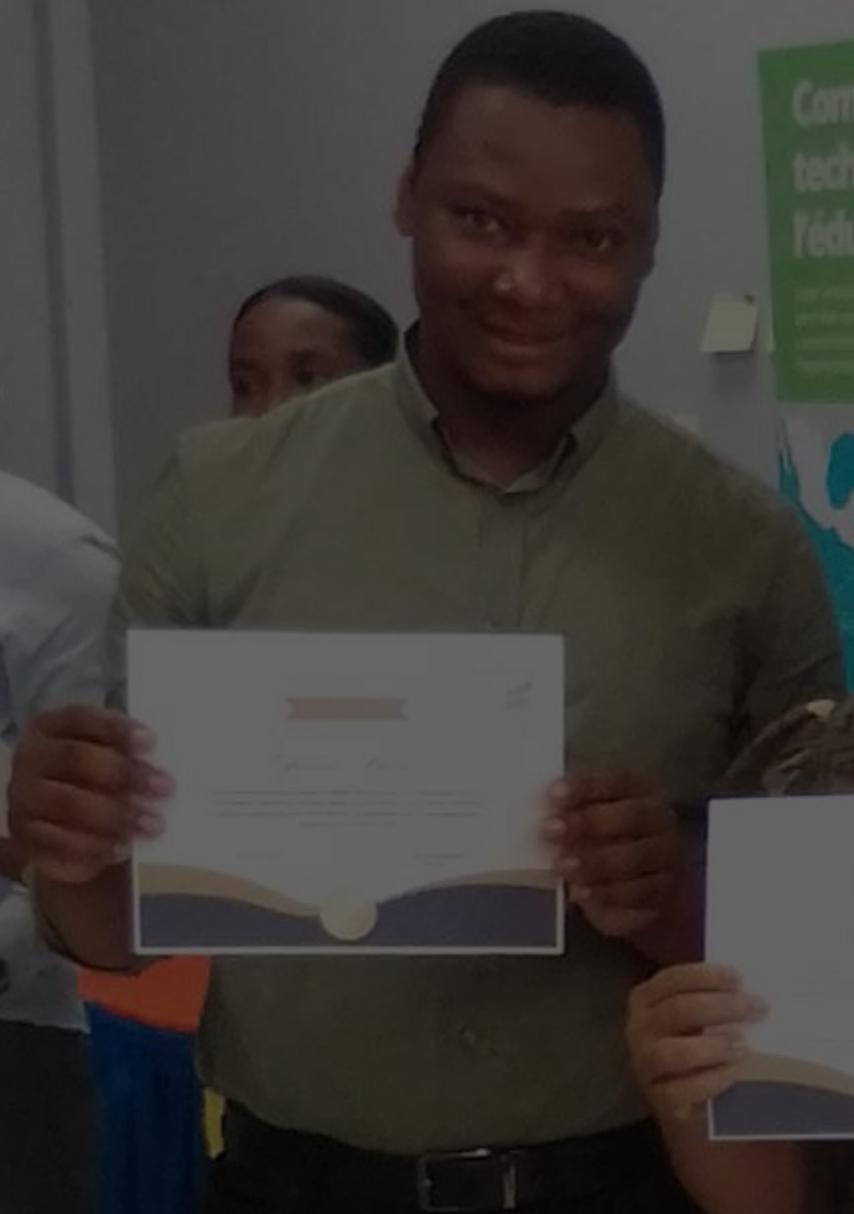
Adelante 2  
COOPERACION TRIANGULAR DE A.L.C.  
PROGRAMA COMUNITARIO PARA LA UNIÓN EUROPEA



Compétences  
techno-pédagogiques pour  
l'éducation virtuelle

Adelante 2  
COOPERACION TRIANGULAR DE A.L.C.  
PROGRAMA COMUNITARIO PARA LA UNIÓN EUROPEA

Compétences  
techno-pédagogiques pour  
l'éducation virtuelle





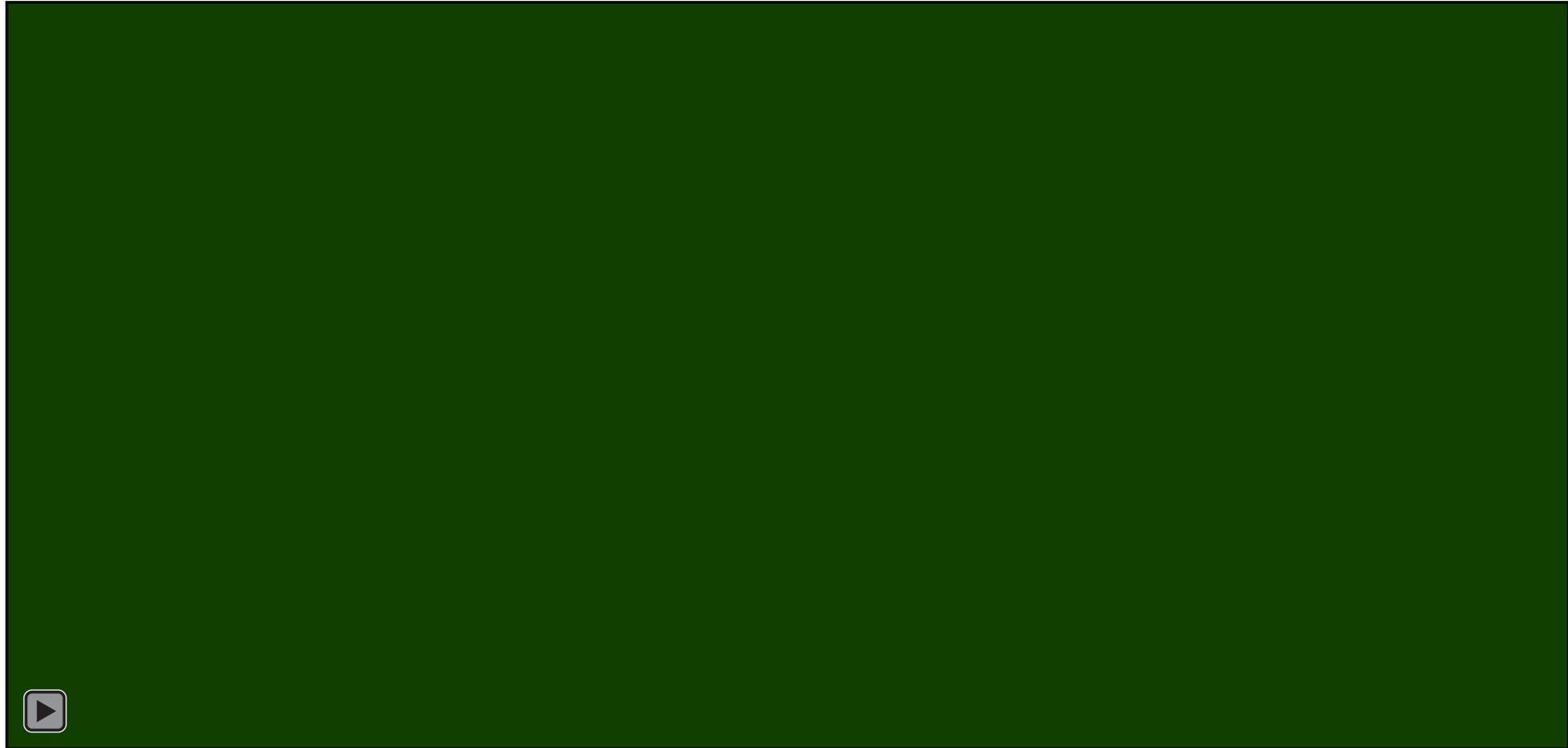


LIMONADE





# Courte vidéo de la plateforme Moodle de l'UEH



**Merci!**



# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean Montevideo, Uruguay 01-02/10/2024





# Focus on Artificial Intelligence



**Erasmus+**  
Enriching lives, opening minds





# Jenny Elmaco

Erasmus+ National Focal Points Academic Expert  
PRACISIS srl



**Erasmus+**  
Enriching lives, opening minds





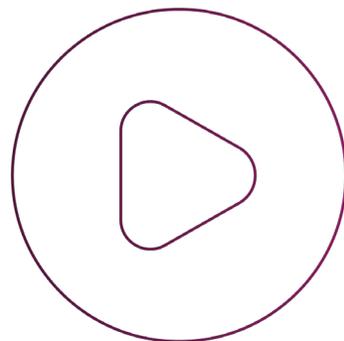
# Clemencia del Consuelo Zapata

CBHE project “EPA!”

Cooperación Universitaria Rafael Núñez (Colombia)



# IA al servicio del aprendizaje



El proyecto EPAI potenciará nuestro *PLE* con inteligencia artificial, mejorando su gestión y transformando nuestra manera de aprender.

ENTORNOS PERSONALES  
DE APRENDIZAJE INTELIGENTES

**EPA!**



# Socios y Beneficiarios

- Docentes
- Estudiantes
- Gestores Académicos
- Empleadores



# Resumen Marco lógico



# Metadatos para la recomendación

- ▶ Formación a docentes en DUA
- ▶ Definición de metadatos de:
  - ▶ Competencias -> ESCO
  - ▶ Características de accesibilidad de los contenidos educativos
- ▶ Mediante la Plataforma EPAI



# Gracias por su atención

Clemencia Zapata Lesmes

[proyecto.epai@gmail.com](mailto:proyecto.epai@gmail.com)

<https://epai.digital>

ENTORNOS PERSONALES  
DE APRENDIZAJE INTELIGENTES

**EPA!**

2024/10/01

Erasmus+ Cluster Meeting and Contact Making Seminar for  
Latin America and the Caribbean



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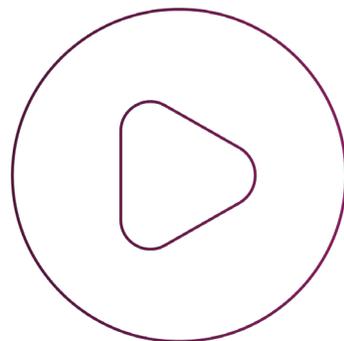
# Emmanuelle Gutierrez y Restrepo

CBHE project “EPA!”

Universidad Nacional de Educación a Distancia  
(Spain)



# IA al servicio del aprendizaje



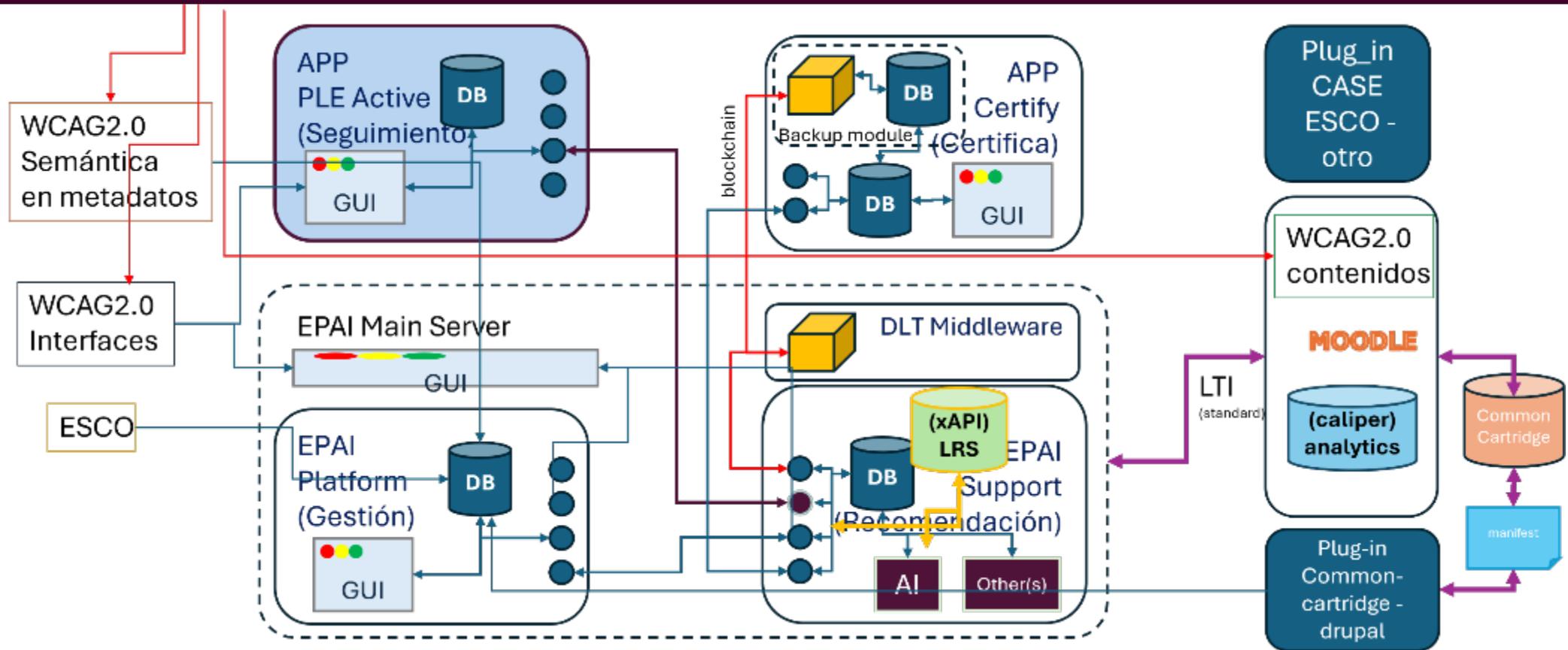
El proyecto EPAI potenciará nuestro *PLE* con inteligencia artificial, mejorando su gestión y transformando nuestra manera de aprender.

ENTORNOS PERSONALES  
DE APRENDIZAJE INTELIGENTES

**EPA!**



# Arquitectura y estándares del sistema EPA!





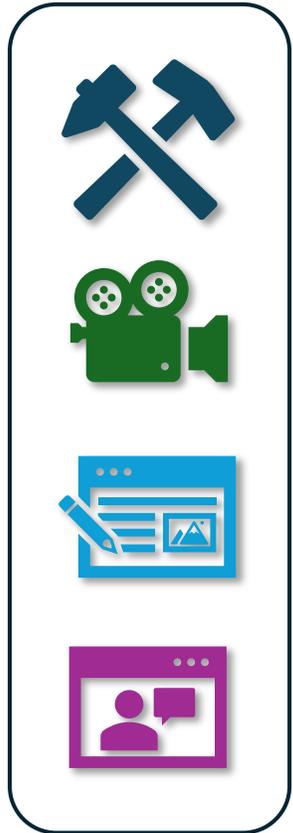
EPAI recomienda herramientas y actividades basadas en el perfil del docente, ayudando a optimizar la enseñanza.



El sistema sugiere contenidos, habilidades y cursos según las necesidades del estudiante y del mercado laboral.



Conectamos a empleadores y académicos para certificar competencias y mejorar la empleabilidad.



# Socios y Beneficiarios

- Docentes
- Estudiantes
- Gestores Académicos
- Empleadores



# Gracias por su atención

Emmanuelle Gutiérrez y Restrepo

[proyecto.epai@gmail.com](mailto:proyecto.epai@gmail.com)

<https://epai.digital>

ENTORNOS PERSONALES  
DE APRENDIZAJE INTELIGENTES

**EPA!**

2024/10/01

Erasmus+ Cluster Meeting and Contact Making Seminar for  
Latin America and the Caribbean





# Dr. Sergio Forster

ICM project “¡Autostop!”

Universidad Torcuato Di Tella (Argentina)





# Serge Miranda

CBHE project “DEEP-FARM”

ESTIA and University of Nice (UCA) (France)



# DIGITAL AGRICULTURE

(*DEEP FARM\*project*) and ...DIGITAL  
EDUCATION

*ERASMUS+, URUGUAY, October the 1<sup>st</sup> 2024*

---

**,Pr. Serge Miranda (ESTIA scientific coordinator)**

**ESTIA DATALAB**

\*DEEPFARM : ERASMUS+ project coordinated by ESTIA



***« Agriculture\* is entering a disrupting era based upon DATA with predictive AI and Generative AI applications »***

*\* Education, health, Engineering..*

# The « 5 P » of digital assistance (in data-driven agriculture)

## PRODUCTION

production estimate, Crop monitoring

DATA production (agricultural commons; data governance)

Traceability and blockchain

## PREVENTION

diseases, drought insurance evaluation

## PREDICTION

soil monitoring and , natural , irrigation, harvest time

## PERSONALIZATION

Personal digital TUTORING and ...Administration support (Generative AI application cf NABLA success for doctors)

## PRECISION

Smart irrigation (water optimization), Seeds

Complete value chain from seeds to storage



# Context of « data-driven AGRICULTURE »

- 4 dimensions :
- - population growth ; doubling population in Africa by 2025 (UN Report, 2023)
- - Water scarcity and reduction of arable land (66% of the world reserve in Africa)
- - Reduction labor in agricultural sector
- - Climate change/warm-up (European Green Deal)



# 17 United Nations SUSTAINABLE GOALS for 2030 : 14 concerned by DIGITAL AGRICULTURE



Goal 1 : No poverty

Goal 2 : Zero hunger

Goal 3 : Good Health

Goal 4 : quality education

Goal 6 : Clean WATER and Sanitization

Goal 7 : Clean Energy

Goal 8 : economic growth

Goal 9: innovation infrastructure

Goal 10 : Reduction of inequalities

Goal 11 : Sustainable communities

Goal 12 : Responsible production

Goal 13 : Climate change action

Goal 17 : Partnerships

# DATA (tsunami) and applied AI : a disruptive couple! an Iceberg!



The 4<sup>th</sup> paradigm of science (Jim Gray) :  
« *the DATA paradigm* »

(with GPU as 3<sup>rd</sup>  
“*musketeer*” !)

# Needs for disruptive digital agriculture

## Example : Madagascar

Madagascar : la double peine face aux dérèglements climatiques



*Les pluies arrivent de plus en plus tard chaque année, et le manque d'eau provoque de lourdes pertes pour les producteurs malgaches : jusqu'à 50% de la production pour certains.*

*@Charlotte Kreder/CCFD-Terre Solidaire*

[https://societe-faim-climat-meme-combat.telerama.fr/madagascar-la-double-peine-face-aux-derreglements-climatiques/?fbclid=IwAR3ZYhSWzooJ6B0P1xwknry\\_hqxWzD\\_T9XpnRLjx1KIXggCCUH-1ipR3jUg\\_aem\\_ASnW00Tp8DvKwcZWdH5VV6y\\_UpAhjsURzD-APR5Pte-DQxfZ1Q7Rn1HwZSLw6HAJhmWg7P5W5iNvhWRIPSv0LPOZ](https://societe-faim-climat-meme-combat.telerama.fr/madagascar-la-double-peine-face-aux-derreglements-climatiques/?fbclid=IwAR3ZYhSWzooJ6B0P1xwknry_hqxWzD_T9XpnRLjx1KIXggCCUH-1ipR3jUg_aem_ASnW00Tp8DvKwcZWdH5VV6y_UpAhjsURzD-APR5Pte-DQxfZ1Q7Rn1HwZSLw6HAJhmWg7P5W5iNvhWRIPSv0LPOZ)

- **Food safety critical at the world level**
  - Climate warming
  - Water optimization
  - 828 millions on human population and angry in 2022 (50% of population in Africa and its population in 2050 !)
- **Feeding more and better**
- **Example : Rice in Madagascar**
  - **Weak yields**
    - Madagascar: 2,45 tons per hectare
    - World average : 4,8 tons per hectare
    - China : 7,31 tons per hectare
    - Balance sheet : 20% of rice needs are not met

# PREDICTIVE AI (ML & DL) : AIOT ( AI + IOT)

- IOT
  - SENSORS (humidity, soil nutrient measurement, ..)
  - DRONES (pictures, seedling, nutrient dissemination,..)
  - SATELLITE images for land monitoring
  - (family) ROBOTS
- Predictive AI (ML, DL)
  - Image analysis with DEEP LEARNING (diseases, drought anomalies, soil quality..)
  - Time series analysis for sensors
  - RIPENING

# DATA and generative AI in Agriculture

- **Family farming vs industrial farming**
- **Mobiquitous farmer of the future**
- **Portfolio of monitoring services**
  - Crop monitoring with sensors and drones (and satellite images for territory)
  - Humidity Sensors for irrigation optimization
  - Blockchain for tracking (Ex AGRILEDGER in Haïti)
  - **ChatGPT for administrative support** (see NABLA for doctors)
  - Systematic **Tutoring** support : real and virtual (chatgpt)
  - **Crop monitoring during the complete value chain**
- Open source IOT platform for digital farming (FARMPLUG from ESTIA for DEEP FARM project)
  - Digital sovereignty (GAFAM clouds are candidates)
  - Data gouvernance
- *SOWING IDEAS to HARVEST better future*

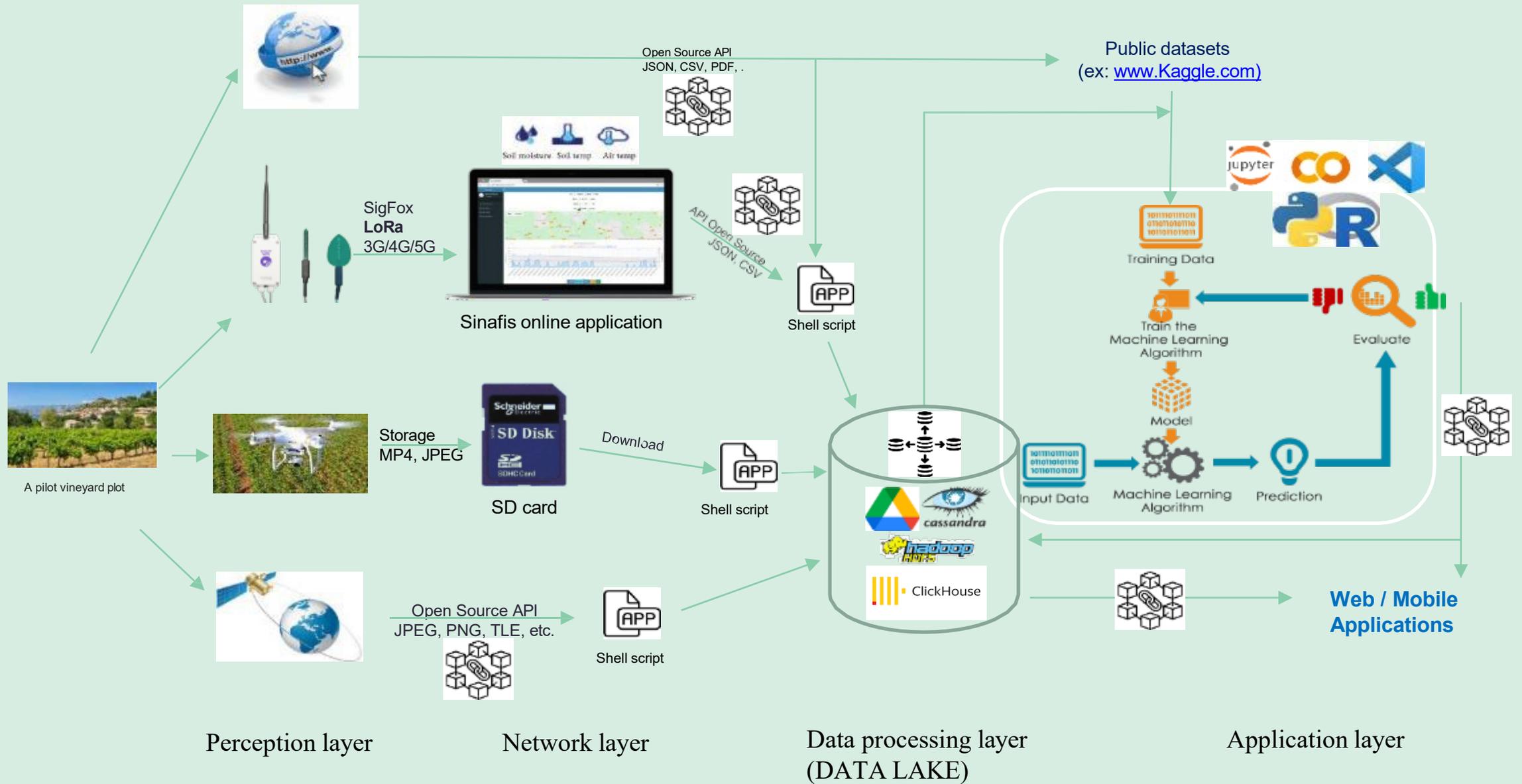


# Erasmus+ DEEP FARM project (2024- 2026)

## DATA –driven agriculture

- 800 K European project managed by ESTIA with 6 Countries
  - DATA LAB of the BIHAR master (on usage of BIG DATA and AI)
    - Formal partnership with Google in 2021, Oracle in 2023 and Microsoft in 2024
    - ESTIA connected–digital–(on–line eBIHAR) campus for its Bihar master in 6 countries
- France and Italy (Univ of Siena) providing AI and BIG DATA expertise
  - Spring schools in 2024 in France and Italy for eBihar students( DEEP FARM scholarships) and professor mobility
  - Free Moocs
  - Gradeos/COMPANIONS (micromasters) for agronomists
- In each country : pairs of eBIHAR students with agronomists with digital farms to be implemented (along with TUTOS/DIGITAL COMPANIONS ) by eBIHAR students
  - **TURKEY (YASAR Univ) for OLIVES**
  - **IVORY COAST (ESATIC) for CACAO**
  - **MADAGASCAR (ITU) for RICE**
  - **DOMINICAN REPUBLIC for BANANA**
  - **HAITI (ESIH) for vegetables and mango**
  - (BENIN– AFRIA– for MANIOOC or Cotton ?)

# FARMLUG within ERASMUS+ DEEP FARM project : Open source IoT open-system architecture (BIHAR Master, Estia Data Lab , Agyul Epimakhova 2022)



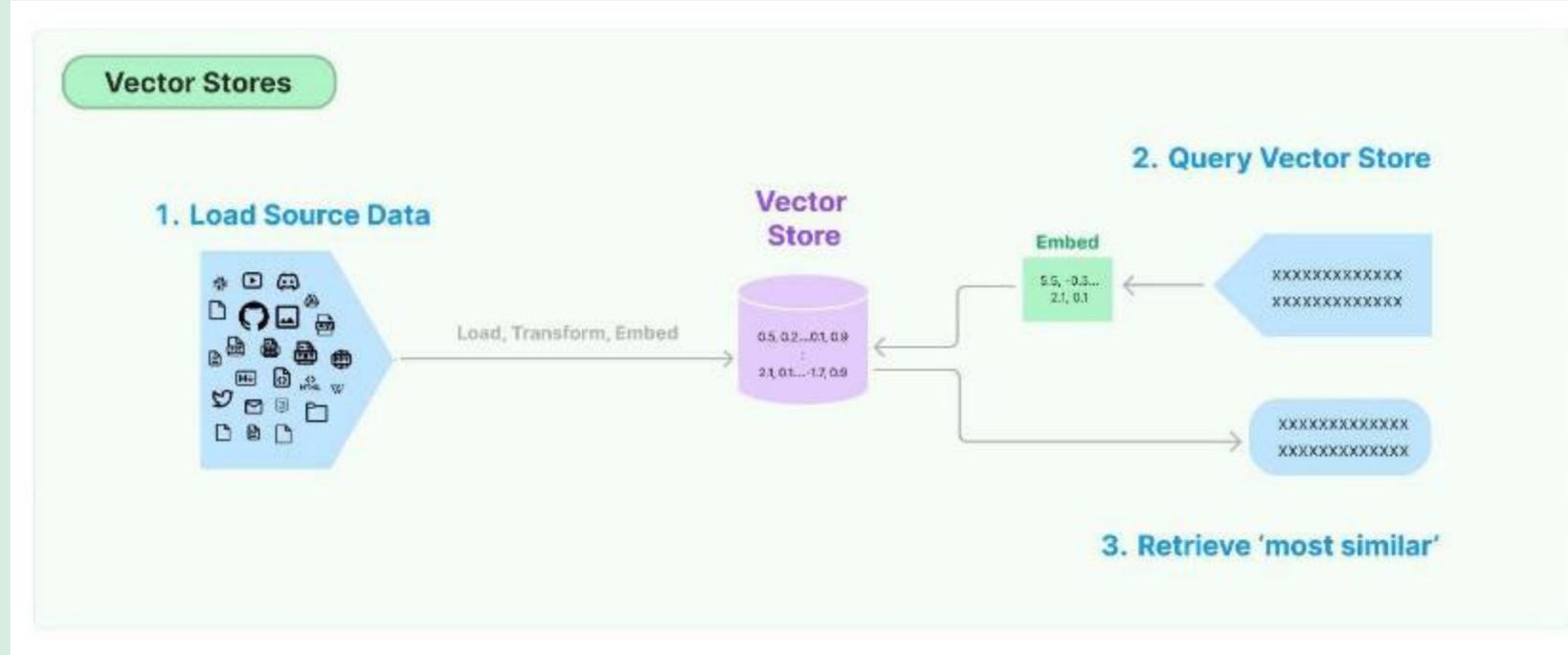
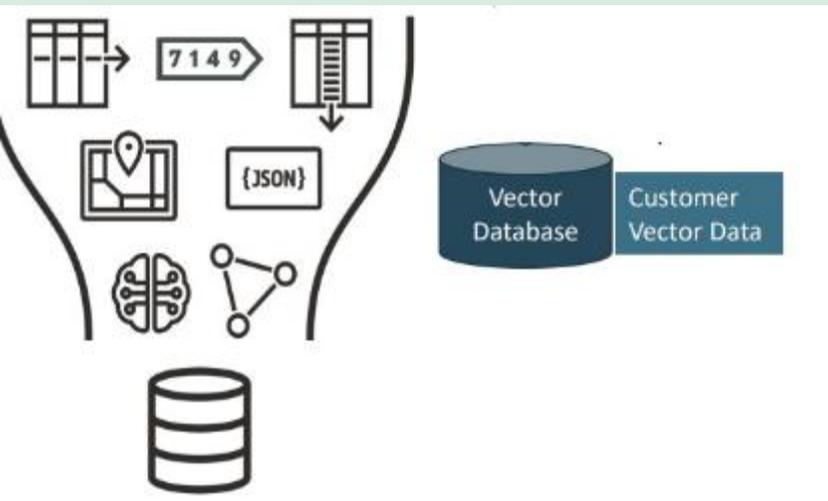
Perception layer

Network layer

Data processing layer  
(DATA LAKE)

Application layer

# RAG Systems for GENERATIVE AI on public and private DATA SETS (with vector DATA BASES)



# Summary : Three dimensions of digital agriculture of the future (also education, health)

- **The 6 W of DATA**

- 3 for past : **WHAT?**, **WHERE?**, **WHEN?**
- 3 for the future : **Why ?** **Whereabout?** and **Warrenty? !**

- **VIRTUAL agricultural TUTOR** (“DIGITAL customized AI-based **TUTOR**»)

(with GENERATIVE AI and RAG: GPT, Bard, Copilot, Mistral, LLAMA, ..)

- Tipping from “*the era of the ANSWER to the era of the question (PROMPT) \**”

- **Automatic PROMPT generation** in digital agriculture to be a virtual TUTOR
- From synthetic intelligence to analytic intelligence
- **THOUGHT** >> **CALCULATION** (on DATA of the past)



\* discussion with Olivier Theron Professor, Master in Journalism, UCA

# Conclusion2 :

## A Gascon proverb for digital agriculture future !

- « *In an apple you can count the seeds but in a seed you cannot count the apples* »
- *Dans une pomme on peut compter les graines mais dans une graine on ne peut pas compter les pommes »*





# Erasmus+ Cluster Meeting 2024 for Latin America and the Caribbean

Montevideo, Uruguay  
01-02/10/2024

