

BRT NEWSLETTER



**BioResources
& Technology**

VOLUME #3

*“Fearless minds,
Endless potential”*



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BIORESOURCES & TECHNOLOGY DIVISION



CORE AREAS OF REASEARCH

- Bioenergy
- Bioeconomy
- Complexity
- Food Security
- Waste Management
- Sustainable Agriculture & Aquaculture
- much more...



<http://biores.tech/>

Our research and innovation objectives encompass a wide array of thematic, from the determination of the real impact of small biogas plants (both in developing and developed countries) on the environment, climate change and society to bioresources technologies, including bioenergy, environmental aspects, food security, waste management, biotechnologies and more.

The global shift towards renewable energy and sustainable practices has reinforced the importance of holistic approaches to resource management. This underscores our commitment to fostering collaboration across these disciplines, enhancing our ability to address complex sustainability challenges. Interdisciplinary research is at the core of the BRT. Our team comprises environmental science, engineering, agriculture, and social sciences expertise.

The BRT is committed to applying our research findings to real-world challenges. Our team works with a broad range of stakeholders, including local communities, policymakers, researchers, NGOs, education centres, universities, etc. This expanded network enables us to scale our impact and effectively apply our research findings to real-world challenges. Because here at BRT, we strive to see our results in real-world applications!

MESSAGE FROM THE BRT FOUNDER & DIRECTOR

“

"At the BRT, our greatest achievements come from the dedication, innovation, and shared purpose of our team. From pioneering sustainable technologies and circular bioeconomy solutions to forging global partnerships, we are proving that when driven minds unite, we can shape a more resilient and sustainable future"

”



As we reach the midpoint of this dynamic year, I want to take a moment to reflect on the progress we have made together at the BRT Division. One of the greatest sources of pride for me has been witnessing the dedication, innovation, and resilience of our division. From advancing sustainable technologies to shaping new research partnerships across continents, our collective achievements are a powerful reminder of what can be accomplished when driven people come together with a shared mission.

Among the highlights are the continued success of our interdisciplinary projects, such as those exploring sustainable waste valorisation, circular bioeconomy, and renewable energy solutions or harnessing the use of EGNSS and Copernicus Data for the new solutions for Latin America ([COMUNIDAD](#)) or for investments for protecting and restoring biodiversity ([BIO-CAPITAL](#)). I am particularly proud of our growing footprint in international research consortia - evidence that the work we do at BRT resonates far beyond our borders.

What continues to inspire me is our commitment to real-world impact, particularly through our work on biogas research, waste-to-energy solutions, and environmental protection. Every research paper, every pilot project, every student thesis contributes to solving the pressing sustainability challenges we face today. I will take also this opportunity to announce the release of our new book, *Sustainable Biotechnology and Environmental Protection* (published by Springer), offering innovative insights into bio-based solutions for a more resilient and sustainable planet.

To our partners, students, and supporters - thank you. Your engagement and belief in our work make all the difference. Whether you're contributing to a research project, participating in our academic programmes, or simply cheering us on from afar, you are an essential part of our journey.

Let's continue pushing boundaries together. The future is ours to shape.

ASSOC. PROF. DR. HYNEK ROUBÍK NAMED DEAN OF FTZ

LEADING EXCELLENCE IN TROPICAL AGRISCIENCES



On April 25th, 2025, BRT Director Assoc. Prof. Dr. Hynek Roubík was officially inaugurated as the new Dean of the Faculty of Tropical AgriSciences (FTZ) at the Czech University of Life Sciences Prague (CZU). The ceremony celebrated FTZ's unique identity with symbolic traditions, including the dean's regalia and the planting of the third Dean's tree, a gesture of knowledge, growth, and hospitality. In his address, Dr. Roubík outlined a clear vision rooted in international collaboration, sustainability, and student engagement - values that continue to guide BRT's work!

We at BRT extend our warmest congratulations to Hynek on this well-deserved achievement. We are proud and grateful to have his continued leadership as we move forward together in pursuit of impactful, interdisciplinary research.

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Read all about the multifaceted career of Assoc. Prof. Dr. Hynek Roubík!



FEATURED NEWS



BRT AT CZU - FTZ OPEN DAY

BRT PhD students Manvendra Kumar and AbdulAzeez led an interactive booth at CZU Open Day, engaging visitors with demos on biogas, hydrogen fuel cells, “BRTea,” and more. The event offered a hands-on look at BRT’s research and inspired future students through accessible, sustainable science.

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TRANSFORMING AGRICULTURAL PRACTICES IN CENTRAL AFRICAN REPUBLIC

BRT Project Manager and PhD student Ing. Jan Staš led a professional assessment for the transformation of Carmel Farm in the Central African Republic. In partnership with SIRIRI and FTZ, the project aims to convert a former oil palm plantation into a model agroforestry site, blending sustainable agriculture, research, and education to support rural development and food security.

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BRT JOINS THE 2SCALE PROJECT MEETING IN SLOVENIA

BRT PhD student Antoine Bercy and Lab Head Dr. Viktoriia Chubur joined partners in Slovenia for the latest H2SCALE Project meeting, focused on developing hydrogen ecosystems in Central Europe. Hosted by ENERGAP in Maribor, the event brought together regional actors to share national priorities, assess infrastructure readiness, and shape future collaboration — with CZU and BRT supporting communication and public outreach efforts.

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INTERNATIONAL INVOLVEMENT

BRT's work is deeply rooted in international collaboration and knowledge exchange. Our members have taken part in joint research initiatives, lab stays, and academic mobility programs across Europe, Africa, Asia, and beyond. These global connections strengthen our research, enrich our technical capacity, and open new pathways for innovation. Whether co-developing sustainable technologies or sharing expertise through training and workshops, BRT's international engagement helps turn ideas into impact - both at home and around the world.



15 INTERNATIONAL
COLLABORATIONS
IN 2025 SO FAR

PUBLICATIONS

2025 kicks off with a bang! So far, the BRT team has advanced a wide range of impactful research. From innovative biogas technologies to new approaches in sustainability, our publications reflect a shared commitment to tackling pressing global challenges through science.

**16 PUBLICATIONS
THUS FAR IN 2025**

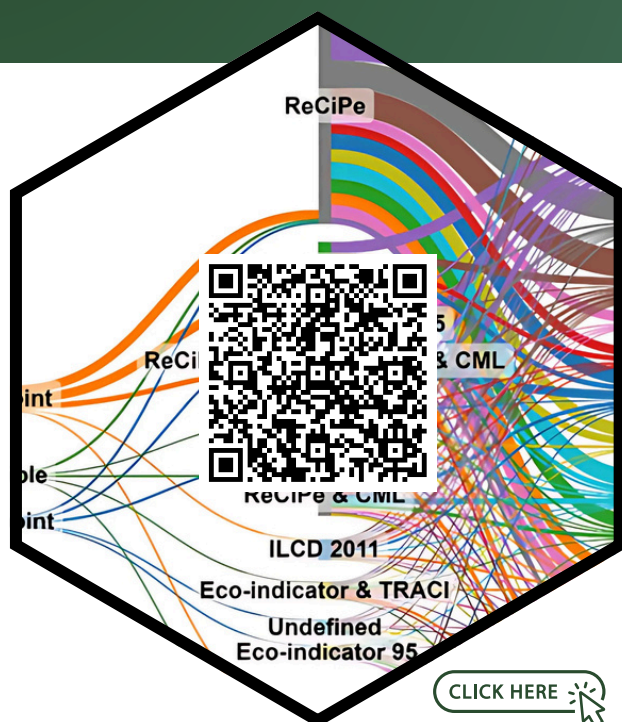
Scan the QR code to explore all our 2025 publications so far and stay connected with the breakthroughs driving our work forward!



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PUBLICATIONS - ARTICLE HIGHLIGHT



TOWARDS ENVIRONMENTALLY SUSTAINABLE WATER MANAGEMENT IN AFRICA: A COMPREHENSIVE REVIEW OF LIFE CYCLE ASSESSMENT STUDIES IN WATER AND WASTEWATER TREATMENT

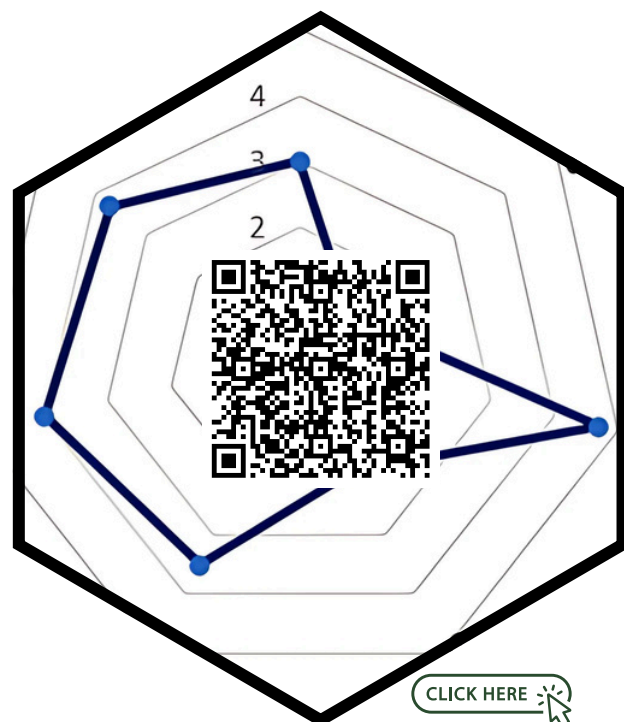
BRT Members: Charles Amarachi Ogbu, Hynek Roubík

This review examines how life cycle assessment (LCA) is being applied to water and wastewater treatment across Africa. It highlights current practices, gaps, and future opportunities, offering a roadmap to improve sustainability in the sector.

EXPLORING THE CAUSES OF SLOW BIOGAS ENERGY TRANSITION IN RURAL AREAS OF CAMEROON: A TECHNOLOGICAL INNOVATION SYSTEMS APPROACH

BRT Members: Chama Theodore Ketuama, Hynek Roubík

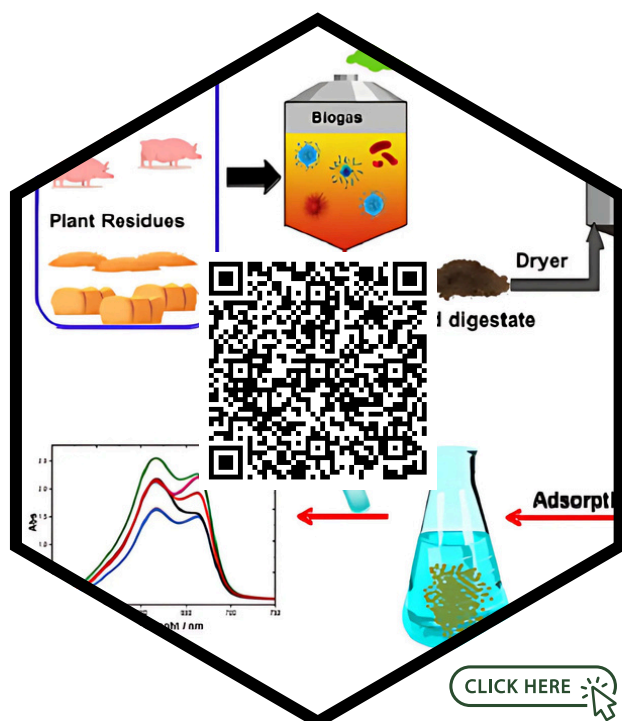
This study explores why biogas adoption remains slow in rural Cameroon, using a technological innovation systems (TIS) lens. It identifies key structural and systemic challenges, from weak institutions to limited funding, and outlines pathways to build a stronger, more resilient biogas sector.



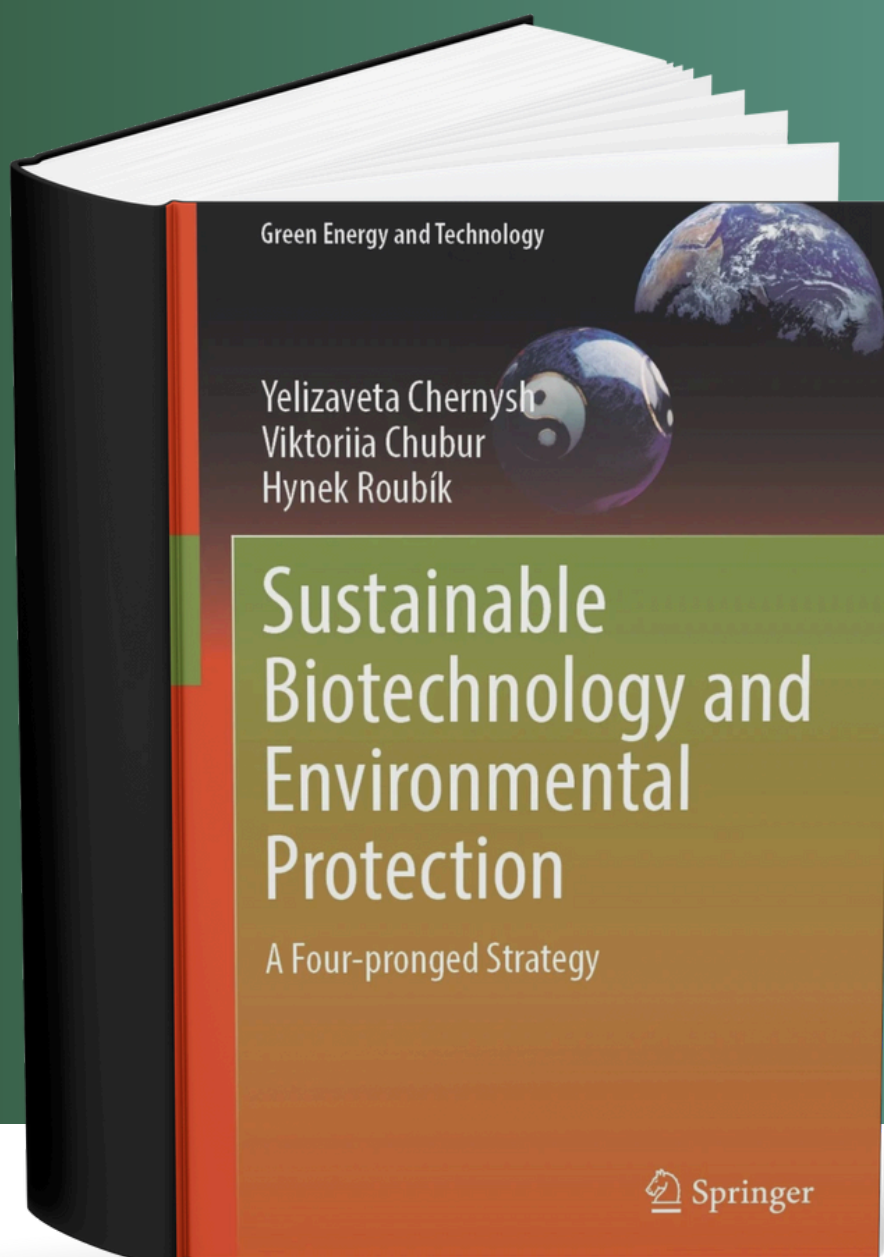
A NOVEL TREATMENT OF BIOGAS DIGESTATEWASTE FOR BIOCHAR PRODUCTION AND ITS ADSORPTION OF METHYLENE BLUE AND MALACHITE GREEN IN A BINARY SYSTEM

BRT Members: Van Hau Duong, Hynek Roubík

This study developed biochar from biogas digestate at 500–700 °C and used it to simultaneously remove methylene blue and malachite green dyes from water. With strong adsorption performance and high reusability, the work highlights a sustainable pathway to recycle digestate while tackling water pollution.



PUBLICATIONS - BOOK



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code to get your
copy!

SUSTAINABLE BIOTECHNOLOGY AND ENVIRONMENTAL PROTECTION

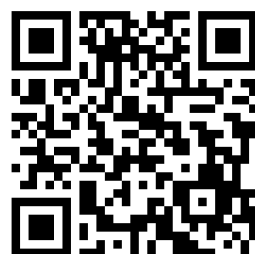
BRT Members: Yelizaveta Chernysh , Viktoriia Chubur , Hynek Roubík

This book highlights how biotechnology can tackle today's urgent environmental challenges. It presents strategies to minimize waste, cut toxicity, improve disposal, and turn waste into valuable resources – all within a sustainable bioeconomy framework. With insights into policy and urban development, it charts a path toward a safer, more sustainable world.

PROJECTS

BRT continues to transform cutting-edge research into practical, sustainable solutions. From optimizing biogas systems and exploring novel feedstocks to advancing open science and biodiversity initiatives, our projects are driving real-world change. We're harnessing tools like Copernicus satellite data to support agriculture and rural development, while also implementing hands-on solutions such as vermicomposting to close resource loops. By collaborating with international partners across diverse regions, we're enhancing digestion efficiency, promoting energy access, and strengthening environmental resilience - ensuring our science benefits communities worldwide.

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Scan the QR
code to explore
all our major
projects!



PROJECTS - HORIZON EUROPE HIGHLIGHTS



Aims to enhance Open Science and Reproducibility by gathering data on influencing factors, testing evidence-based solutions, identifying stakeholder incentives, and embedding reproducibility in research design.



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Combines European Global Navigation Satellite Systems (EGNSS) and Copernicus Data to develop innovative downstream services for forestry in Chile and rural development in Colombia.



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Focuses on mobilizing investments to protect and restore biodiversity by harnessing innovative financial solutions and advanced geospatial analytics.



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BRT PHD GRADUATES

DR. CHAMA THEODORE KETUAMA

Dr. Chama Theodore Ketuama's doctoral research focused on the viability and sustainable transition pathways of small-scale biogas technology in rural Cameroon. His work addresses the urgent need for cleaner household energy sources while tackling deforestation, waste management, and greenhouse gas emissions. In addition to authoring and co-authoring multiple publications, Dr. Chama actively contributed to teaching and international development projects across Africa, Europe, and Asia, demonstrating the collaborative and global spirit of the BRT research community!



**STAY TUNED FOR DR. CHAMA'S
PHD RECAP VIDEO COMING SOON!**



BRT INTERNSHIP PROGRAM

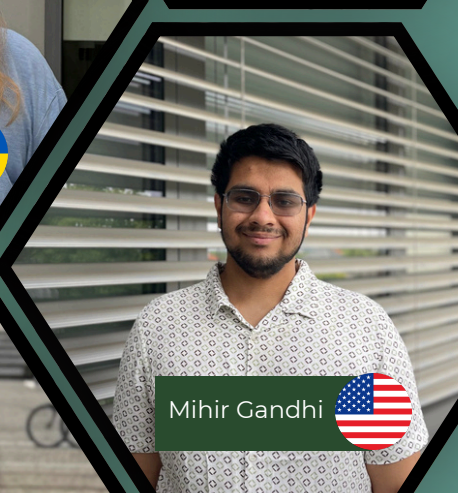
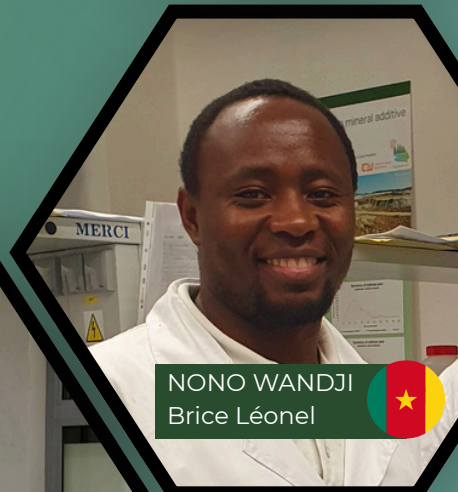
The BRT Internship Program brings together students and early-career researchers from across the globe for hands-on experience in sustainability, bioresources, and environmental technology.

Interns work side by side with BRT researchers on lab-based projects, science communication, and project coordination - gaining practical skills while contributing to a diverse, collaborative research environment. This international exchange fosters mutual learning and broadens perspectives on global sustainability challenges.



Scan the QR code to
learn more and apply!

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ONCE BRT, ALWAYS BRT



At BRT, we celebrate the growth of our team - even when it means saying goodbye to colleagues who have become part of the BRT family. Recently, two valued researchers, Dr. Eduardo Duque-Dussán and Dr. Yelizaveta Chernysh, transitioned to new roles beyond BRT. While we'll miss their day-to-day presence, we are proud of their accomplishments and grateful that both continue to collaborate with us as affiliated researchers. Their contributions have shaped our division, and their ongoing partnerships will continue to strengthen our global network.



DR. EDUARDO DUQUE-DUSSÁN

Dr. Eduardo Duque-Dussán has transitioned from his role as a BRT Researcher to join the National Coffee Research Centre of Colombia (CENICAFÉ) as a Scientific Researcher. With expertise in mechanical engineering and sustainable technologies, Eduardo played a key role in biowaste and coffee postharvest projects across multiple countries. Though now based in Colombia, he remains part of BRT as an Affiliated Researcher, and we look forward to continued collaboration on shared sustainability goals.

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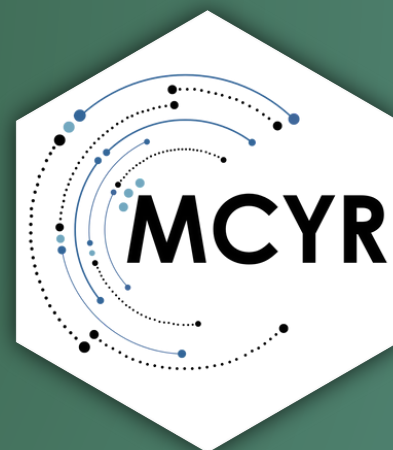


Scan the QR code to
watch their interviews
about what's next!

ASSOC. PROF. DR. YELIZAVETA CHERNYSH

Assoc. Prof. Dr. Yelizaveta Chernysh concluded her position as a senior researcher at BRT but continues her international academic work from Sumy State University, Ukraine, and through mobility at Mugla Sitki Koçman University, Turkey. A driving force behind the BRT Lab and a dedicated mentor, Yelizaveta has made lasting contributions to our research and community. Now an Affiliated Senior Researcher, she continues to strengthen ties between institutions and foster collaborative environmental research.





International Multidisciplinary Conference for Young Researchers

Czech University of Life
Sciences, Prague

9-10 October, 2025

THIS YEAR'S SUB-THEME: *"Science and Innovation:
Advancing the Path to a Sustainable Future"*

Join Us!



mcyr.ftz.czu.cz

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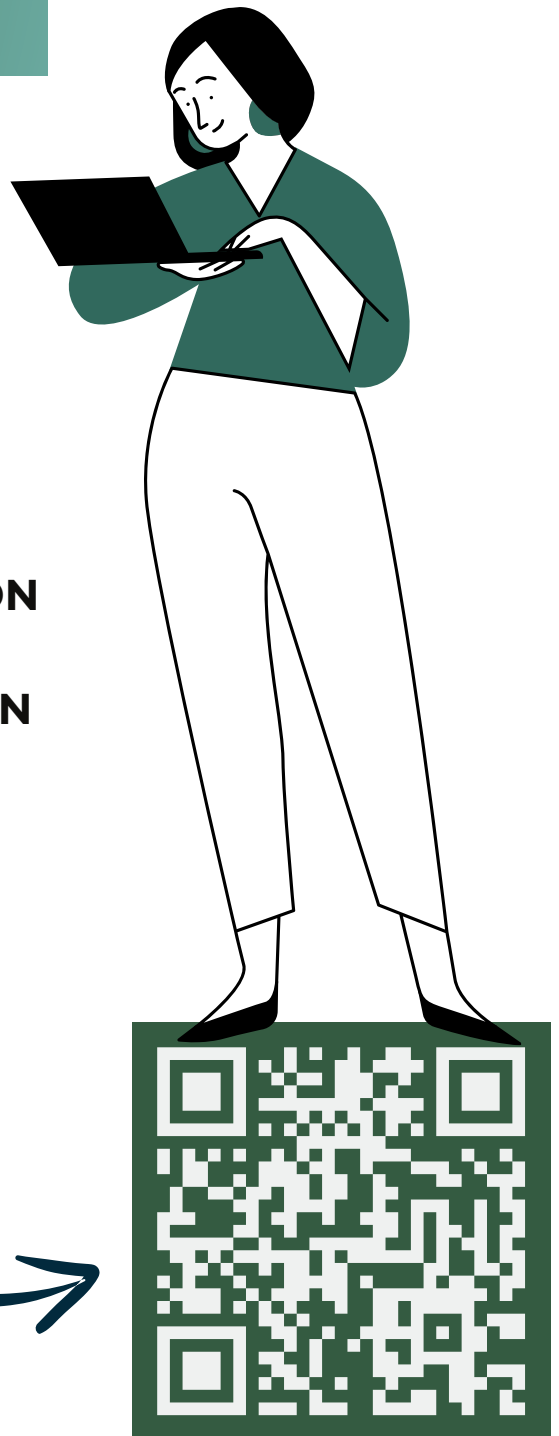
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