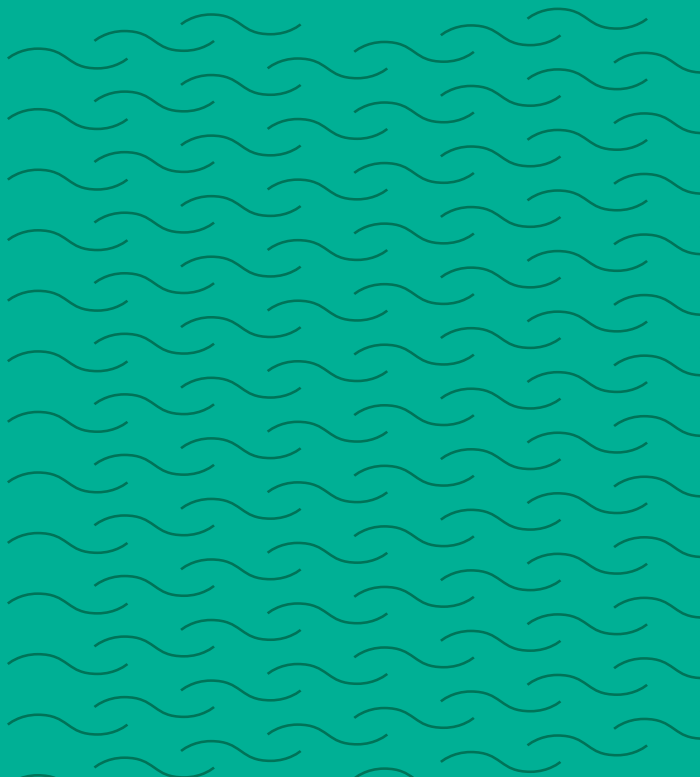
Forty years of progress

Horizon *to* date

Universities *of* *The* Netherlands



Forty years of progress: Horizon to date

This year, 2024, marks the 40th anniversary of the EU's groundbreaking programme dedicated to funding and stimulating science, research, and innovation. Through these subsequent 'framework programmes', the EU has made a huge contribution to a better, more beautiful, more sustainable, and smarter world. Since their launch, these programmes have funded over 75000 beneficiaries who have contributed to excellent science and to tackling global challenges. Together, they have garnered new knowledge, developed new solutions, created jobs and new companies, and contributed to European competitiveness and wellbeing.

The Horizon 2020 programme funded nearly 35000 projects, and resulted in 4000 patents. Its successor, Horizon Europe, has already signed off on over 10000 grants in its first three years, and average success rates have increased. Horizon projects have looked at what inventions contribute to our health, how we can increase cohesion in our society, and with what innovations we can tackle climate change. On top of that, they have contributed to standardisation, to training young people, promoting open science, sharing risk, and promoting science for policy and diplomacy.

Key to these successes have been the thousands of collaborations that lie at the heart of the framework programmes. Even many years before the discussions on knowledge security and strategic autonomy, it was clear to the European Commission and Member States that you have to join forces if you want to be the smartest. In 2024, that insight has lost none of its force. European researchers are working together on the big questions of our time and the Horizon programme has grown in size to 95 billion euros.

The Netherlands has been doing incredibly well in Horizon, above the European average. Currently we are ranked 4th place on the budget share rank and 5th for participation. This is something to be proud of, because it says a lot about the quality of our scientists, especially for such a small country. However, it is not solely down to Dutch qualities, far from it. It is mainly due to a fantastic framework programme that provides enough budget and ample opportunity to answer the toughest and most important questions of our time.

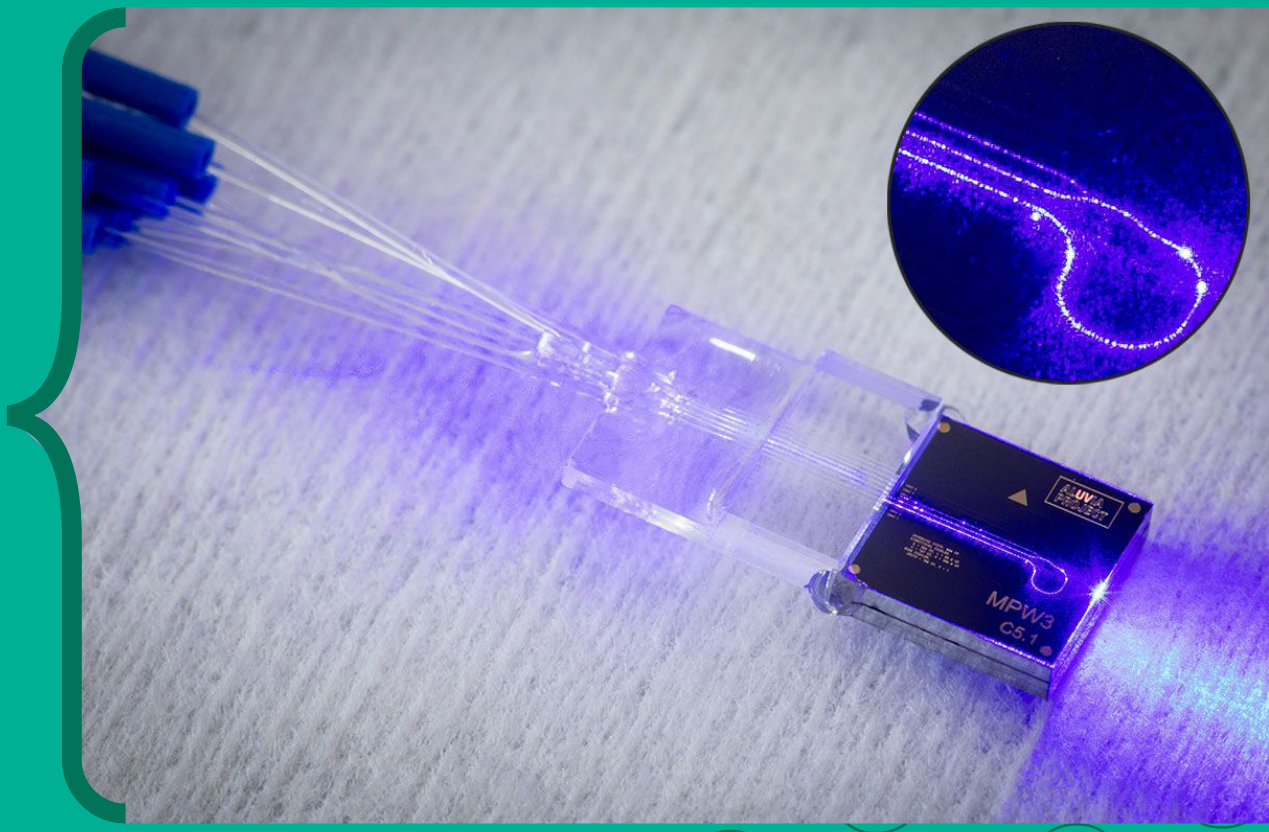
Therefore, in honour of the Horizon programme, which has achieved so much over the past 40 years, we have put together this brochure. As an ode to the programme, we highlight 15 inspiring projects on which Dutch universities have worked hard, often in collaboration with other European universities. Projects such as 'MACBETH' which has led to a start-up company that develops technologies for membrane reactors; 'REGROUP' which looks at what lessons can be learned about EU governance after the COVID pandemic; or 'RISKHUNTER', a project that develops non-animal methods for testing chemical substances. All this research would not have been possible without Horizon and its predecessor programmes. The selection in this brochure represents only a small part of the many projects realised thanks to European funding. Each project symbolises progress and shows how groundbreaking research and innovation contribute to a better future. We want to thank the Commission for retaining and strengthening this instrument, even in the sharp recession of last decade, and we hope the Commission will continue to do so in times to come.

Robert-Jan Smits
President of Eindhoven University of Technology
EU Lead, Universities of the Netherlands (UNL)

ALUVia

ALUminium oxide integrated photonic platform for applications in the UltraViolet

Horizon Europe: Pillar III - Innovative Europe
European Innovation Council, EIC Transition



Dr. Dawson Bonneville, University of Twente:
"By advancing this platform, applications in quantum, metrology, sensing, datacom and others will be enabled, which all have huge impacts on the future of society and our planet."

Introduction

Advancement in chip technology depends on rapid developments in various fields. A determining field is that of photonic integration, which enables the reduction of size and cost of optical systems while increasing robustness, maintaining performance and enabling scalability. These features are crucial in fields such as telecom/datacom, 5G communications and optical biosensing.

The EIC-funded project ALUVia is developing a novel European platform for testing photonic integration technologies. The integrated photonic platform will become a key-enabling technology for applications operating in the UV wavelength range. This will ultimately enable miniaturisation, cost reduction and scalability, while system performance is maintained.

To demonstrate the platform's excellent performance, two technologies were selected: UV Raman spectrometers and quantum computers based on ion traps, typically with operation at ultraviolet wavelengths. These emerging applications would highly benefit from the scaling and size reduction allowed by photonic integration. Current commercial spectrometers and quantum computers are bulky, costly, extremely complex and non-scalable systems. This limits their potential scientific, economic and societal impact by preventing their large-scale market penetration.

Impact

ALUVia will establish the first European Al2O3-on-SiO2 (aluminum oxide on silicon dioxide) integrated photonic platform for operation in the ultraviolet (UV) wavelength region. It further aims to mature the technology, including packaging, so that it can be offered commercially. Technology performance will be shown via two demonstrators:

1. UV Waveguide-based Raman spectrometer;
2. Multi-ion trap for quantum computers.

The successful completion of the ALUVia project will place Europe in a leadership position in UV integrated photonics.

UNIVERSITY OF TWENTE.

GHOSTWORK

The Ghost Worker's Well-being: An Integrative Framework

H2020: Excellent Science
ERC Consolidator Grant

Prof. dr. Claartje ter Hoeven, Erasmus University Rotterdam:

"It is essential to gain more insight into the human labour behind AI and to better regulate this work. First and foremost, because everyone has the right to decent work, but it is also important from a quality perspective: the work of these workers has a major impact on influential algorithms, for example algorithms used for robotic surgery, recruitment software, and self-driving cars. It is my personal mission to ensure that society pays more attention to millions of low-paid workers who do work for AI companies."

Introduction

Artificial intelligence relies on human labour: 80% of the work behind AI products involves human beings curating and annotating data and evaluating model outputs. There are hundreds of millions of these workers around the world. Tasks include data entry, data cleaning, categorising and transcribing text, adding keywords, and testing and training AI-systems. The people who do these tasks are sometimes called 'ghost workers'. Ghost workers work short-term jobs through digital labour platforms, without interacting with colleagues, without social protection, and without income security. We don't know much about this type of work and how it affects workers' well-being. The GHOSTWORK-project therefore aims to study the working conditions and well-being of ghost workers in the EU.

The project aims to contribute to, and advance, cross-disciplinary research on platform labour and organisational studies of algorithmic technologies. It uses several methodological approaches to study the effects of ghost work. It begins with in-depth, interview-based fieldwork on work conditions, and then uses qualitative diary studies of the short-term dynamics of ghost work to study both work conditions and well-being. Finally, a panel study will investigate the relationship between ghost work and well-being over time. The results of this project will be of interest to scholars in multiple fields, as well as policy makers and industry leaders.

Impact

The GHOSTWORK-project started with a large survey across the 27 EU member states to identify where the most ghost work is being done, and to classify what of types of ghost workers there are. The results demonstrate that, across Europe, geographical distribution of ghost workers does not necessarily follow general population distribution. Furthermore, the classification of ghost workers emphasised the importance of diversity and dependency for understanding variation in workers. These findings can help institutions develop stronger policies that prioritise high-density microwork areas and support workers who rely on this work for their basic needs.

The project also studied the influence of ghost workers' work conditions on their well-being. Findings demonstrate that extrinsic motivation promoted time spent on ghost work, which resulted in higher exhaustion levels. Yet, intrinsic motivation to enter the digital labour economy merely buffered the negative association between time spent on ghost work and workers' engagement levels. As such, the research to date suggests that ghost work tends to drain worker's energy. This challenges the narrative that digital labour platforms provide meaningful work for some individuals.

Erasmus University Rotterdam

Erasmus

CCINDLE

Co-Creating Inclusive Intersectional Democratic Spaces Across Europe

Horizon Europe: Pillar II - Global Challenges
Culture, Creativity and Inclusive Society

Prof. dr. Mieke Verloo, Radboud Universiteit:

"At the level of feminist influence in political institutions, there are people pushing gender equality policies beyond its current limits. They create viable alternatives. Constructing alternatives from the margins shows that feminist futures are possible…CCINDLE is looking into this."

Introduction

The EU-funded CCINDLE project aims to restore trust in democracy and strengthen institutional commitment and values in Europe by developing and implementing strategies, as well as supporting citizens and activists. Special attention is paid to the relationship between democracy and gender equality. CCINDLE will work with a range of groups and individuals, including media, think tanks and gender specialists, to co-create knowledge on anti-gender campaigns and their impact on democracy; feminist theories and their links to democracy; and feminist movements and institutional responses to forces opposing gender and democracy. The research findings will help to increase understanding of the components of democracy and their importance.

Impact

Threats to democracy and feminism are strongly linked. CCINDLE studies these threats and the responses of feminist change-makers, engaging with them to strengthen their voices.
CCINDLE co-creates analyses and solutions that are: feminist, anti-homophobic and anti-racist; and that support high quality democratic politics and strengthen responses to authoritarian and anti-gender efforts.

ENHANCE

Novel Multi-sector Partnerships in Disaster Risk Management

FP7: Specific Programme - Cooperation Environment

Prof. dr. Jeroen Aerts, Vrije Universiteit Amsterdam:

"There is an urgent need for improved cooperation among the public sector, private sector and individual households in combating extreme events. Our research showed that multi-sector partnerships can significantly improve disaster risk management and reduce risk by over 40%."

Introduction

Risks from natural hazards are increasing due to climate change and socio-economic developments. These trends are highly dynamic, with varying impacts at different times and places. With these increasing trends in natural disasters and their consequent losses in mind, it is imperative to take action on disaster risks to improve resilience of European societies to natural hazards.

The main goal of the ENHANCE project was to develop and analyse innovative ways to manage natural hazard risks. It was key to the development of new multi-sector partnerships (MSPs) that aimed to reduce or redistribute risk, and increase resilience of societies. Comprehensive and accurate risk information is important for MSPs and for policy-making in general. A better understanding of natural hazard risk helps to prevent excessive socio-economic stress at local, national and international levels, and to reduce risks from extreme events in the future.

Impact

The ENHANCE project played a major role in further streamlining the merging realms of climate change adaptation (CCA) and disaster risk reduction (DRR). For this, the ENHANCE project was actively engaged with its partner UNISDR in the UN Sendai Framework for Disaster Risk Reduction 2015-2030, the Addis Ababa Action Agenda on Risk Financing, and the Paris Agreement on Climate Change. The ENHANCE project contributed by:

- Creating a better understanding of risk and evidence-based and risk-informed public policies by introduction new risk assessment methods and data;
- Managing risk by means of assessing the pros and cons of novel Multi Sectoral Partnerships (MSPs). This risk-based approach has been actively communicated at a high policy level through UNISDR and UNFCCC, but also to the private sector such as Munich RE, Port of Rotterdam and Austrian railways.

Since ENHANCE was focused on economic instruments, and particularly on insurance, the project conducted an evaluation of the different economic instruments used within all case studies. Using this evaluation, the EU Solidarity Fund and the U.K. Flood RE programme were evaluated. These are both risk transfer mechanisms to compensate households and EU member states when they experience losses from natural disasters. The evaluation showed that under the assumption of future developments such as climate change, increased efforts in risk reduction measures are needed to maintain viable risk transfer systems.

VU VRIJE UNIVERSITEIT AMSTERDAM

EU-ToxRisk / RISK-HUNT3R

Chemical Safety Testing Without the Use of Animals

Horizon 2020: Societal Challenges
Health, Demographic Change and Well-being

Prof. dr. Bob van de Water, Universiteit Leiden:

"The integrated testing strategy comprising in silico and in vitro test methods, will provide unprecedented and reliable protection of the human population against chemical-related health effects."

Introduction

Current approaches assessing chemical safety for humans are expensive, time-consuming and error prone. Moreover, there can be ethical concerns such as animal use. Therefore, we need modern and reliable toxicological approaches that use non-animal methods.

In 2016 the EU-ToxRisk project set out to transform toxicology and to move towards mechanistic, animal-free safety assessment that is applicable across industry sectors and acceptable for regulatory purposes. This approach would improve safety for European citizens by providing more robust toxicological predictions. The project developed toxicity testing strategies that integrate state-of-the-art *in-silico* (computer modelling) and *in-vitro* (outside of a human being, i.e. test tube or culture dish) technologies.

Impact

EU-ToxRisk, which ended in 2022, yielded several results. Among other things, EU-ToxRisk demonstrated how to optimise test strategies to effectively target regulatory questions and how to report on them for safety assessment. Also, the project identified innovative strategies and methods to provide guidance for the universal application of animal-free testing concepts.

EU-ToxRisk's results paved the way for a follow-up project, again funded by the European Union's Horizon programme. RISK-HUNT3R will put strategies identified in EU ToxRisk to use, to develop a sustainable alternative to the testing of chemical substances by 2026. The research focuses on substances used in the chemical industry, including pesticides and cosmetics. 37 leading organisations from 9 countries are participating.

Project coordinator Bob van de Water explains how they intend to achieve their goal of non-animal experiments: *"There are a great many methods available in the lab. We're investigating how you can link these lab methods to predict whether a substance is safe for humans. In Leiden, we use cultured mini-kidneys and mini-livers for this, which we study with advanced microscopy."* The project will then validate their methods using existing medicines with known effects on humans.

Universiteit Leiden

IP-PAD

Interdisciplinary Perspectives on the Politics of Adolescence & Democracy

Horizon Europe: Pillar I - Excellent Science
MSCA Doctoral Network

Dr. Bert Bakker, Universiteit van Amsterdam:

"By training a new generation of researchers, we're not just understanding the political minds of today's adolescents, but also shaping the leaders of tomorrow."

Introduction

IP-PAD is a MSCA Doctoral Network funded by Horizon Europe that trains a new generation of researchers – twelve Doctoral Candidates - to study the development of political self in adolescents. The goal of the network is two-fold:

1) To offer interdisciplinary training and prepare the doctoral candidates for a career (academic or non-academic) and
2) To bring multiple disciplines together (political science, psychology and neuroscience) to study, for the first time, the developing political brain and behaviour of Generation Alpha (born after 2010) across five European countries.

Impact

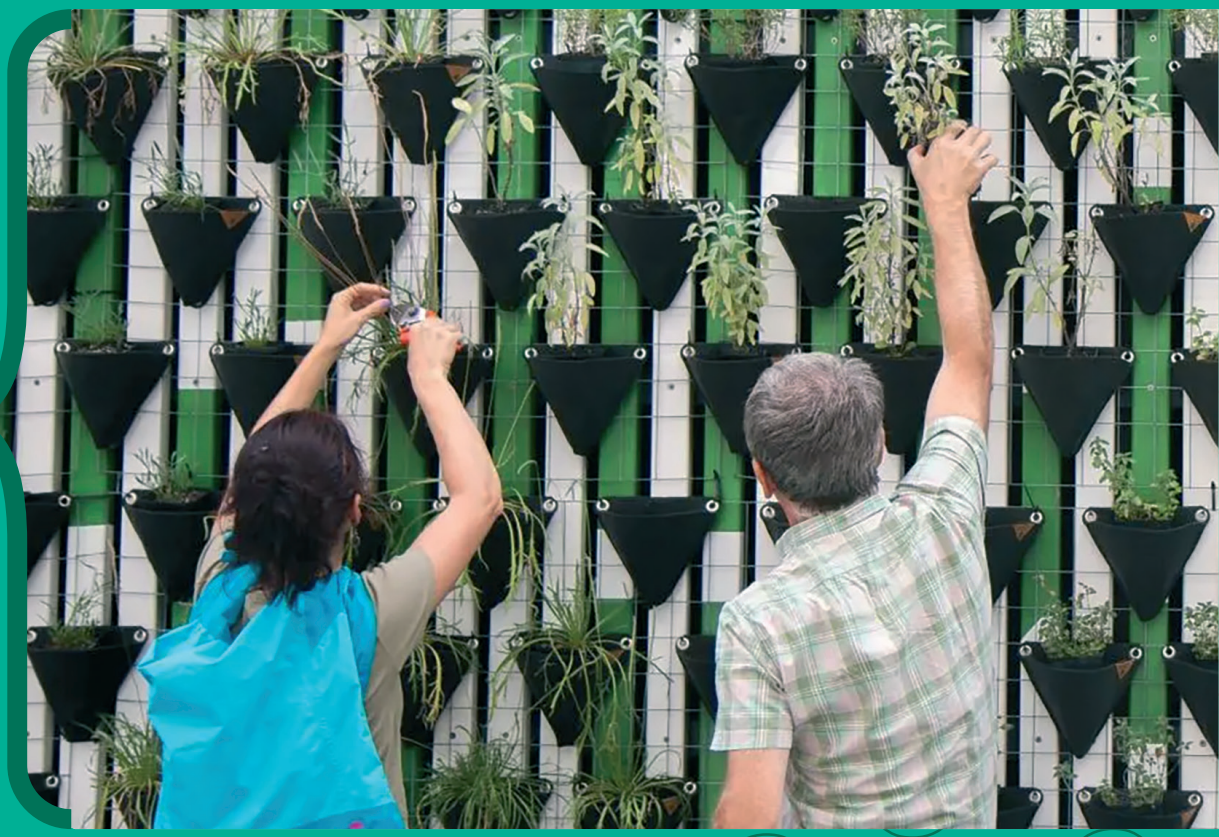
The impact of our research is profound: to safeguard the future of liberal democracies in Europe, we must understand the political development of adolescents, the voters of tomorrow. By understanding why some people are more engaged in politics than others, why some become polarised and how their belief systems form, we can design interventions to encourage political engagement and address polarisation and extremism.

Universiteit van Amsterdam

BOLSTER

Bridging Organizations and marginalized communities for Local Sustainability Transitions in EuRope

Horizon Europe: Pillar II - Global Challenges
Climate, Energy and Mobility



Dr. Michiel Stapper, Tilburg University:

"Climate change is the greatest challenge of the 21st century, but I am particularly interested in how ordinary, everyday people are affected by climate policies (...), especially those who are not involved in the conversation."

Introduction

The European Green Deal (EGD) aims to transform the EU into a fair and prosperous society, with climate neutrality by 2050, guided by the principle of leaving no one behind. It's a beautiful principle, but how do you put it into practice? Research shows that transition policies tend to benefit already privileged citizens and often reproduce social inequalities. Additionally, there is growing polarisation regarding transition plans. We know too little about how marginalised communities are affected by the Green Deal, what their interests are, how they can be involved in decision-making processes, and to what extent this could increase support for transition plans.

BOLSTER conducts action research on this issue in ten European regions. Seven of these regions are at a high risk of being impacted by the Green Deal, because they have a high concentration of carbon-intensive industries. The other three regions have already undergone an economic transition and are being studied to learn from the past. BOLSTER uses new qualitative participatory research methods to improve understanding of the experiences and needs of marginalised communities. Forums are then organised with key regional stakeholders to increase support for transition plans by better addressing the needs of marginalised groups.

Impact

The project is now halfway through. The participatory governance model and monitoring framework are being tested in all regions. Representatives of marginalised groups have been trained, and dialogues with European policymakers are ongoing. By the end of the project, the participatory model will not only be applicable in the seven regions but will also be shared with at least 40 other European regions. Lessons learned will also be discussed with European policymakers.

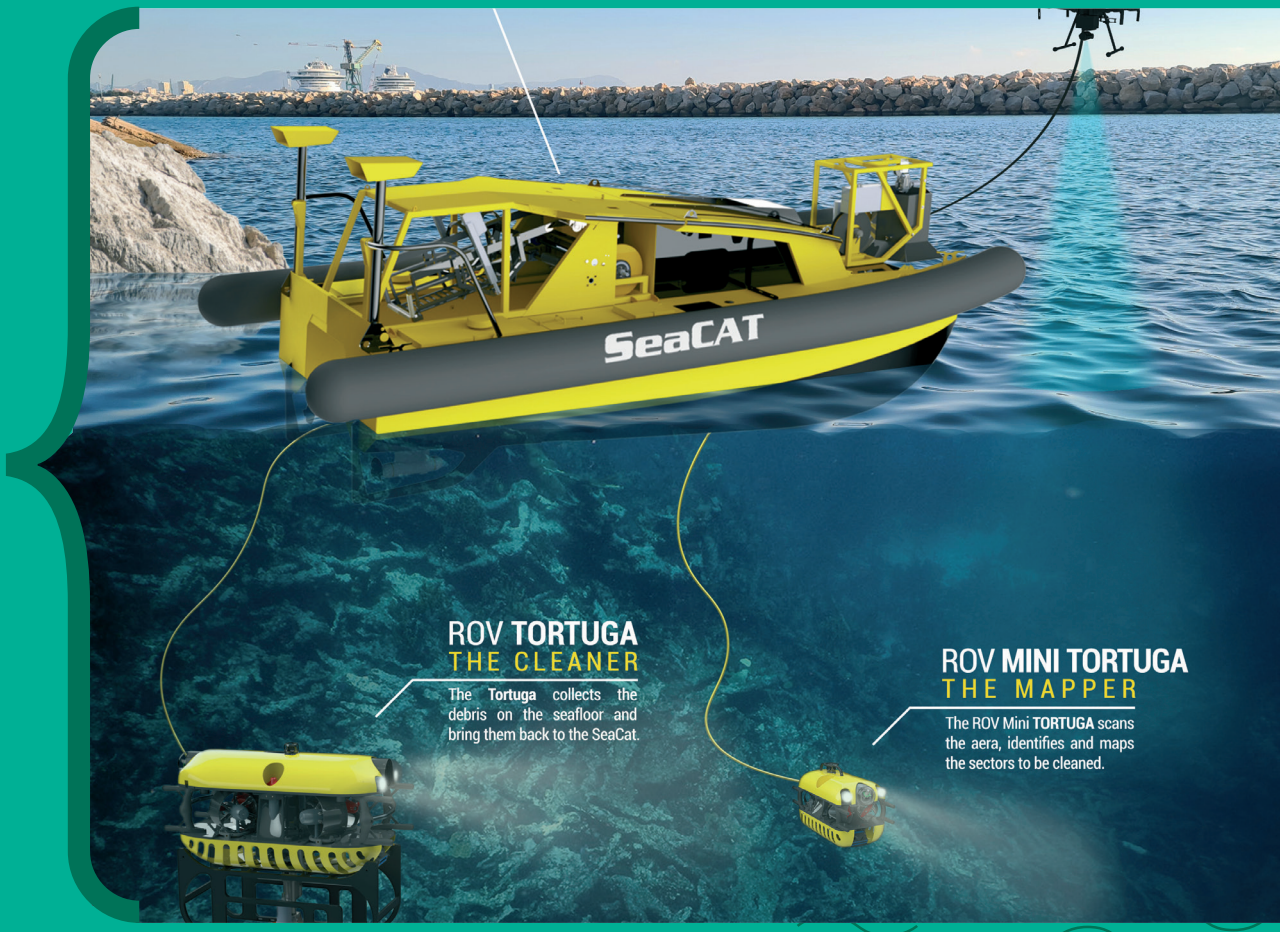
Tilburg University

SeaClear

Search, Identification and Collection of Marine Litter with Autonomous Robots

Horizon 2020: Industrial Leadership
Leadership in Enabling and Industrial Technologies

Horizon Europe: Pillar II - Global Challenges
Food, Bioeconomy, Natural Resources, Agriculture and Environment



Prof. dr. ir. Bart de Schutter, Delft University of Technology:
"With SeaClear1, we have been able to achieve the design of two components – an exploration robot, which can not only detect litter but differentiate it from fish and other creatures, and a collection robot, which moves to the location of the litter and using a gripper, picks it up and takes to the collection basket."

Introduction

Our oceans today contain millions of tons of waste, 94% of which ends up on the seafloor, which makes it very difficult, expensive, and often dangerous to remove. A consortium of European researchers launched the first ever robotic system designed to autonomously search for, identify, and collect seafloor litter. SeaClear1 has proved that it is not only possible to use robots to locate and identify litter on the seabed, but also collect and remove it.

The SeaClear system is composed of several interconnected components. The base vessel, SeaCAT, acts as the central unit, deploying and managing two underwater remotely operated vehicles (ROVs): the Mini Tortuga for exploration and the larger, Tortuga ROV, for litter collection. The litter is deposited in a special basket. Additionally, an aerial drone monitors and maps the sea surface, assisting in the identification of litter hotspots. These elements work in concert to create a map of the ocean floor, detect litter, and subsequently collect and remove it efficiently. The SeaClear system can lift up to 7 kg, the gripper can fit the volume of two 2L soda bottles, and the robots collect litter in waters up to tens of meters deep. When improved for commercial operation, the system will work with a 70% smaller cost than divers.

One of the key features of the SeaClear system is its adaptability to different conditions, including varied water properties and different kinds of litter. AI algorithms accurately detect and identify litter, and have been trained to differentiate it from marine life. Integrating machine learning and computer vision lets the underwater robots navigate underwater environments and make decisions.

Impact

The SeaClear1 project delivered a group of robots empowered by machine learning to operate autonomously in the air, underwater and on the surface to identify, map and remove trash from the sea. The follow-up project, SeaClear2.0 (EU Mission Ocean and Waters) will launch a fleet of smart robots, heavily upgraded for automated litter collection that can go deeper, lift heavier waste and collect surface litter. SeaClear2.0 will leverage on the partners' expertise in public engagement, policy-making, robotics, artificial intelligence, marine and diving technology, and litter-sorting and recycling, to maximise impact.

TU Delft
Delft University of Technology

REMIT

Reignite Multilateralism via Technology

Horizon Europe: Pillar II - Global Challenges
Culture, Creativity and Inclusive Society

Prof. dr. Roberta Haar, Maastricht University:

"By conducting rigorous research, promoting evidence-based policymaking, fostering global cooperation, and raising awareness about the importance of multilateralism, our research group can help ensure that technology policies are aligned with the needs and values of people around the world."

Introduction

The REMIT project, which began in March 2023, aims to strengthen Europe's influence in global affairs by using technology to promote cooperation among nations. As the world faces increasing challenges from authoritarian governments and the rise of digital platforms, REMIT focuses on revitalising teamwork between countries. By studying four important areas—digital technology, health biotechnology, security and defense, and financial technology—the project seeks to develop practical recommendations for better policies that protect democracy, boost economies, and tackle major global issues like climate change, inequality, and health crises.

Recently, the project hosted its first public roundtable titled 'Geopolitics and the Impact of the New Technologies in the Black Sea Region.' Held at Babeș-Bolyai University in Romania, this event brought together distinguished experts in military, diplomacy, security, and cybersecurity to discuss the EU's geopolitical strategies in the Black Sea region, especially in light of the ongoing war in Ukraine. Professor Valentin Naumescu, who moderated the event, emphasized the critical role that advanced technologies play not only in wartime but also in the future of reconstruction and multilateral cooperation.

Impact

The insights shared during this discussion underscore the societal impact of REMIT, which aims to create a safer and more collaborative world. By encouraging countries to work together and establish shared rules for technology, the project hopes to prevent dominant powers from dictating the future. With support from the European Union and various universities across Europe, REMIT is committed to ensuring that technology is used as a force for good, helping to solve pressing global problems while promoting a united approach among nations.

MACBETH

Membranes And Catalysts Beyond Economic and Technological Hurdles

Horizon 2020: Industrial Leadership
Leadership in Enabling and Industrial Technologies

Zançat Sahin, CEO Modelta:

“A big part of Modelta’s growth and success to date is thanks to the opportunities created within the MACBETH project. On a personal level, MACBETH has been the catalyst for my career as an entrepreneur.”

Michele Ongis, CTO and co-founder Modelta B.V.:

“High-tech startups are important for the growth of EU competitiveness. In public-funded projects, they are a key element to exploit the know-how developed. MACBETH, gave us the opportunity to contribute to this step up.”

Introduction

In the process industry, downstream processes are the steps with the highest consumption of energy and resources in industrial operations. Moreover, the integration of new processes often requires a large portion of Capital Expenditures (CAPEX) and Operating Expenditures (OPEX). To significantly enhance the competitiveness of the European process industry and to contribute to Europe’s goal of a clean and liveable environment, it is highly desirable to have a very broadly applicable concept for an efficient integration of downstream operations in the overall process chain.

Impact

The MACBETH consortium provides a breakthrough technology by combining catalytic synthesis with the corresponding separation units in a single highly efficient catalytic membrane reactor (CMR).

This disruptive technology can reduce greenhouse gas emissions of large volume industrial process by up to 35%. Additionally, resource and energy efficiency will be increased by up to 70%. The revolutionary new reactor design will not only guarantee substantially smaller and safer production plants but has also a tremendous competitive advantage since CAPEX is decreased by up to 50% and OPEX by up to 80%.

To achieve this, the MACBETH consortium combines the catalytic synthesis step with the highly efficient separation step via a tailor-made membrane. The predecessor EU funded projects ROMEO, BIONICO and CARENA and further fundamental developments have laid a strong basis by showing the proof of concept for CMRs at TRL 5.

Successful pilot plants have been operated for highly relevant and large-scale processes:
i) Hydroformylation,
ii) Hydrogen production and
iii) Propane dehydrogenation.

Key members of these consortiums have now joined forces in MACBETH to bring CMR to the level of TRL 7 and build the basis to move forward for commercialisation of the three novel technologies. Moreover, within the project, Eindhoven University of Technology has created a spinoff (MODELTA) that commercialises the model solutions developed in the different lines.

TU/e
EINDHOVEN UNIVERSITY OF TECHNOLOGY

AURORA

Researching early-life human health impacts from exposure to micro- and nanoplastics

Horizon 2020: Societal Challenges
Health, Demographic Change and Wellbeing

Prof. dr. ir. Roel Vermeulen, Utrecht University and UMC Utrecht:
“We will focus on (unborn) children, as this phase is crucial for human development and health at a later age. I am convinced that we can make an important contribution to the question of whether plastic particles are harmful to the developing child.”

Introduction

Plastic in the environment sooner or later falls apart into smaller and smaller particles known as microplastics and nanoplastics. Although scientists are discovering plastics in all sorts of places, little is currently known about their effects on human health. Supported by the EU’s Horizon 2020 research and innovation program, we are developing a strategy for assessing the health risks of microplastics during pregnancy and early life.

Impact

The team has already made some startling discoveries – small particles can reach the foetal side of the placenta, and this may also apply to microplastics and nanoplastics. But even if plastic particles do find their way to unborn babies, how harmful are they?

To find out, the scientists will measure exposure to microplastics and nanoplastics and its biological consequences in tissues that are relevant to early life development, such as the umbilical cord blood and placenta. But the Aurora team takes this even further; by analysing more than 800 placentas that were collected about 10 years ago they can actually study how these exposures relate to birth outcomes and further development of the child.

By knowing more about the risks of microplastics and nanoplastics for early life health, AURORA’s work can pave the way for better regulation, and ultimately, a reduction of plastic pollution.

Universiteit Utrecht

REGROUP

Rebuilding Governance and Resilience Out of the Pandemic

Horizon Europe: Pillar II - Global Challenges
Culture, Creativity and Inclusive Society

Dr. Pier Domenico Tortola, Rijksuniversiteit Groningen:
"REGROUP studies, in a comprehensive, trans-disciplinary, and participatory way, how Covid-19 has shaped our politics and societies, and produces actionable advice for policy-makers on how to make European institutions resilient to future systemic risks."

Introduction

When the Covid-19 pandemic hit in 2020, the European Union had faced a decade characterised by multiple crises, such as the financial and Eurozone crisis, Brexit, and the migrant and climate crisis. This has highlighted the limits and weaknesses of the European Union and the multi-level governance system in terms of emergency politics, where decision-making is shared across various levels of government – from local to national to supranational – its role in internal and global cooperation, and the effectiveness and fairness of democratic policy-making.

To be better prepared for future crises, it is important to reflect on how to move forward and rethink our public policies and governance systems. What lessons from the Covid-19 pandemic should we take with us in tackling post-pandemic challenges? Has the Covid-19 pandemic opened a window of opportunity for institutional and policy change?

Impact

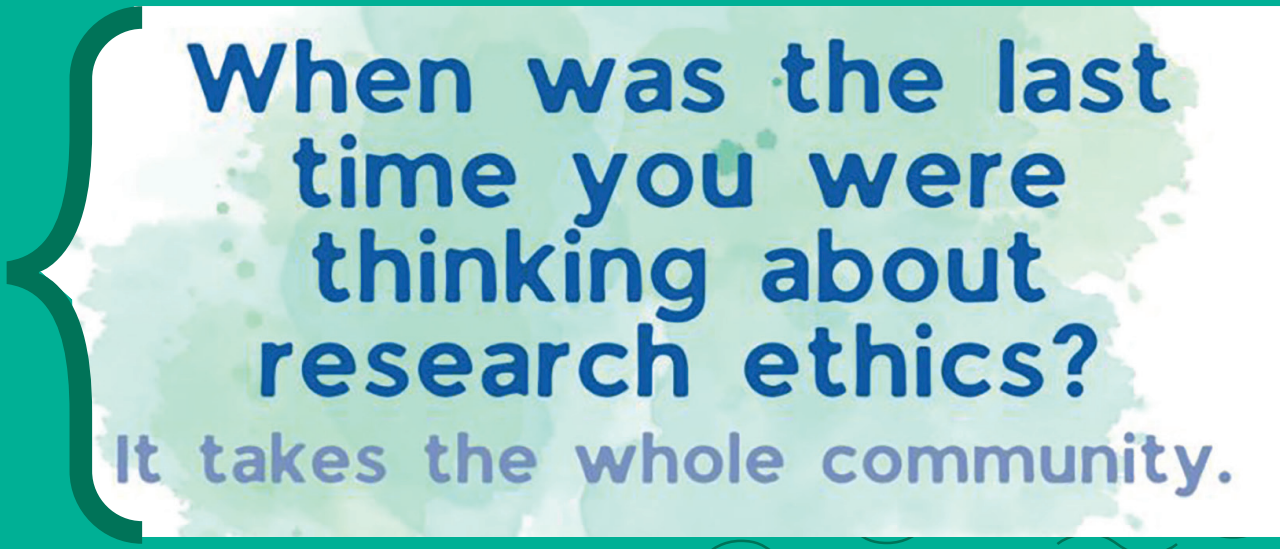
The Horizon Europe-funded project REGROUP (*Rebuilding governance and resilience out of the pandemic*) aims to provide the European Union with a body of actionable advice on how to rebuild post-pandemic governance and public policies in an effective and democratic way. These policy-prescriptive goals are in turn based on two additional and preliminary objectives: analysing the socio-political consequences of Covid-19, and reflecting on the legal and normative implications of the pandemic.

rijksuniversiteit groningen

Beyond Bad Apples

Towards a Behavioral and Evidence-based Approach to Promote Research Ethics and Research Integrity in Europe

Horizon Europe: Widening Participation and Strengthening the European Research Area
Reforming and Enhancing the European R&I System



Prof. Rosemarie de La Cruz Bernabe, University of Oslo:
“When we think of scientific misconduct, we think of that one “bad apple”. Though it is true that this researcher must be held personally accountable, it is not the main cause of the prevalence of scientific misconduct.”

Introduction

“It’s the Orchard, Not the Apples”. The main goal of BEYOND is to explore and advance individual and institutional responsibilities in the promotion of research ethics and research integrity, with a particular focus on the prevention of research misconduct through guidance and educational instruments. The project contributes to ensuring that the work carried out in the EU to tackle research misconduct relies on evidence-based foundations, moving beyond simplistic notions such as the ‘bad apples’ framework.

Impact

Work packages focus on establishing a knowledge base for understanding the current state of research ethics and research integrity, organising a bottom-up and solution-oriented public consultation, developing behavioral interventions, identifying methods and tools, creating a best practices manual, developing a roadmap and new and supplementary training materials for ethics and integrity education.

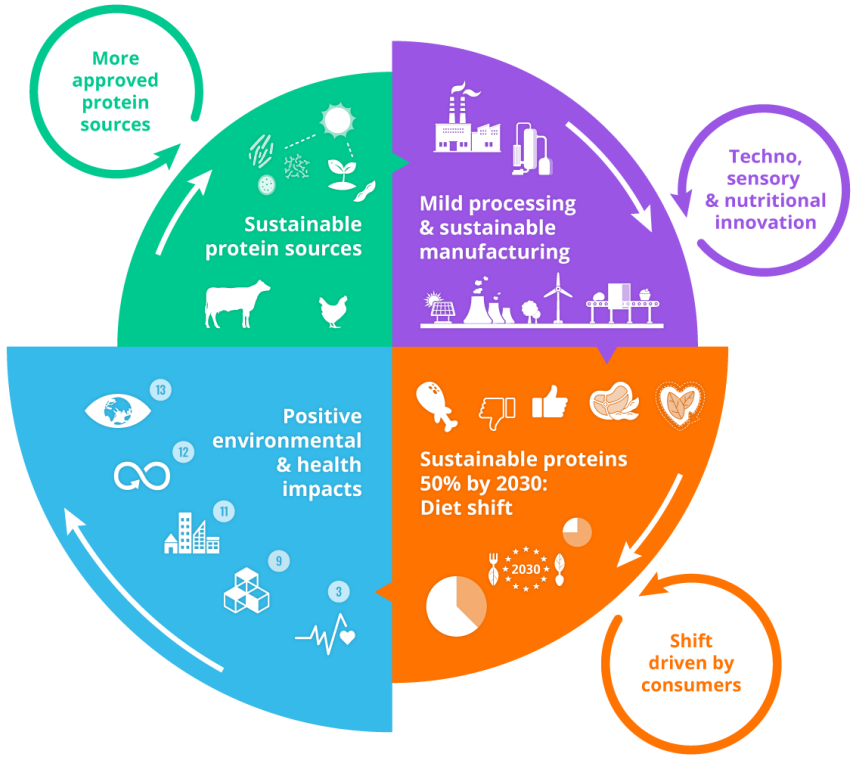
BEYOND consists of 13 partners from ten European countries, academics, research integrity organisations, national agencies, and more.

UVH
UNIVERSITEIT VOOR HUMANISTIEK

GIANT LEAPS

Gap resolution in sAfety, NuTritional, alLergenicity and Environmental assessments to promote Alternative Protein utilization and the dietary Shift

Horizon Europe: Pillar II - Global Challenges
Food, Bioeconomy, Natural Resources, Agriculture and Environment



Dr. ir. Paul Vos, Wageningen University & Research:

"I am honoured and excited to collaborate with renowned experts and organisations that share an ambition to create scientific, societal and economic impact by providing a path towards healthy, sustainable, achievable and consumer-accepted diets in Europe that incorporate alternative proteins in an optimal way."

Introduction

Food systems are responsible for a third of Greenhouse Gas Emissions (GHG). The current global production and consumption of animal protein accounts for a significant part of those emissions, causing long-term negative impacts on both our health and the environment.

In line with the EU Green Deal objectives and the Farm to Fork Strategy, GIANT LEAPS aims to transform the European food system to make it more sustainable and healthier.

Environmental and health impacts of alternative protein sources are proportional to their level of consumption. To promote the uptake of alternative proteins in European diets, they must become more accessible, affordable, and acceptable to consumers. Enabling this change in food production and consumption is a complex challenge.

Impact

GIANT LEAPS works across disciplines to foster innovative solutions, improve methods to assess the nutritional quality of new proteins, and maximise consumers' acceptance. The project includes work on consumer insights, food processing, safety and allergenicity, health and digestibility, and sustainability and climate. It also collects existing and project-generated data into an open, cloud-based data platform and defines what future European diets could look like that balance optimal impact on health and environmental sustainability parameters.

Our ambition is to partly replace the consumption of traditional animal proteins in the European diets so that 50% of total protein dietary intake is derived from alternative protein sources - such as plants, microalgae, insects, and single-cell proteins - by 2030.

To do so, we engage with policymakers, the production sectors and European citizens to generate key innovations, methods, datasets and information that empower all players in the food system to make the necessary decisions, investments and choices to enable a large-scale dietary shift towards alternative protein-containing foods with optimal nutritional and environmental impact.

WAGENINGEN
UNIVERSITY & RESEARCH

WISER

Well-being in a Sustainable Economy Revisited

Horizon Europe: Pillar II - Global Challenges
Culture, Creativity and Inclusive Society

Prof. dr. Martijn Burger, Open Universiteit:

"How do we ensure greater happiness for a greater number of people? I am convinced that by combining insights from different science disciplines, you can better solve social issues."

Introduction

The focus on economic growth as an instrument to lead societies towards sustainable high well-being is increasingly problematic. While Gross Domestic Product (GDP) growth is slowing down, its environmental and social costs are increasing, such that continued reliance on GDP growth entails a trade-off between the well-being of current versus future generations. In addition, research shows that higher GDP generally hardly improves people's subjective well-being. To better support policy options, our project aims to develop a new economic development framework that provides evidence-based and theoretically-sound policy insights on how to raise well-being of present generations (leaving no one behind) without sacrificing future well-being. We will identify how GDP growth and productivity growth can be promoted and invested in well-being, focusing on relationships that reconcile economic growth and sustainable high well-being while leaving no person and place behind. We will analyse how these relationships work at different subgroup levels, by explicitly considering gender perspectives and disadvantaged groups. The project's multi-disciplinary approach integrates knowledge from different disciplines, combining quantitative and qualitative techniques to generate solid evidence.

Impact

Our case studies will permit deriving important lessons from different regions of the world, Africa in particular. Moreover, the relevance of our policy recommendations will be supported by insights from and interaction with stakeholders. Within the triadic goals of well-being, sustainability, and productivity, the project looks for possible win-win-win pathways, producing a new economic development framework that provides insight into how societies can use greater productivity to aim at greater human well-being. Policymakers will be helped by means of a dashboard and green book, which provide guidance how to achieve sustainable growth and maximise well-being.

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