H2020 Programme

Guidance document

Support for the Research and Innovation Dimension of European Universities

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1. Introduction

This guidance document is published together with the Horizon 2020 Work Programme 2020 update (published on 25 March 2020) – part 16. Science with and for Society (SwafS)¹ and accompanies its Other Actions 32 and 33 on ‘European Universities’.

The purpose of this document is to provide guidance to the ‘European Universities’ selected under the Erasmus+ 2019 and 2020 pilot calls for proposals in developing an integrated and long-term joint strategy on research and innovation, in line with the education strategies from the Erasmus+ pilot. It provides more information on the different policy areas or modules for institutional transformation in the research and innovation dimension, lays out examples of potential activities within these modules, explains the expected impact, and provides practical information to the applicants.

The document is meant as a source of inspiration for universities on the different aspects that could be considered for their research and innovation mission.

2. Rationale

Europe has a strong knowledge community composed of highly competitive, entrepreneurial universities, increasingly networked with businesses and society. Working together in a structured way, this community has the potential to further strengthen its contribution to society, operating around SDGs and Missions², across languages, borders, disciplines and sectors, pushing the barriers of fundamental research and applied science, mobilising innovation ecosystems, supporting the emergence of innovative initiatives and enterprises and empowering engaged and active citizens to transform the way we live and work.

In the first semester of 2020, in parallel to this Horizon 2020 action to support the R&I dimension of the ‘European Universities’, the European Commission supported experts from universities, stakeholder organisations and Member States to unbundle the research and innovation dimension of universities in view of specific policy initiatives linked to the European Research Area (ERA) and, where relevant, the European Education Area (EEA).

To capitalise on their potential, universities in the future will need to be empowered in their various institutional transformation efforts, including, for instance, mainstreaming of open science practices, reinforcing cooperation and co-creation with other sectors incl. academia-business cooperation, upskilling talent or digitisation. A large-scale concerted action in

support of the transformation of universities will be required under the future Multi-annual Financial Framework, combining resources from different Union or national programmes.

The purpose of the current Horizon 2020 actions are to support the research and innovation dimension of the ‘European Universities’, in line with their shared, integrated, long-term strategy and in synergy with their education dimension, using the aforementioned European University alliances selected under the Erasmus+ pilot calls as a testbed.

The current Horizon 2020 contribution to the ‘European Universities’ from the Erasmus+ pilot will not fund research and innovation activities; rather it is meant to support the development of joint strategies or vision documents, and concrete action plans empowering the ‘European Universities’ research and innovation transformations, as well as the (initial) implementation of the respective action plans, where possible in connection with other relevant EU or national funding sources.

As a result of this Horizon 2020 support to the ‘European Universities’, we expect to see a variety of successful models for institutional transformation at research and innovation level, in synergy with their education dimension.

The support for the transformation will occur with respect for the autonomy and diversity of universities. The way forward within the different policy areas for transformation of ‘European Universities’ remains the choice of the individual alliances. The joint long-term vision to drive systemic, structural and sustainable impact at all levels of your universities developed for education should, if and where needed, be elaborated for the research and innovation dimension.

3. Outline of institutional transformation modules in research and innovation

‘European Universities’ are invited to gradually implement the research and innovation institutional transformation modules referred to in the Horizon 2020 work programme 2020 – SwafS part, actions 31 and 32, while not excluding others. The following parts indicate how the research and innovation institutional transformation modules to be supported through Horizon 2020 relate to key elements supported through Erasmus+ and which are referred to in the Erasmus+ Programme Guide.

Key elements of European Universities supported through Erasmus+: 

Share an integrated, long-term joint strategy for education with links to research and innovation and society at large, that goes beyond any potential existing bilateral and multilateral cooperation:

- Based on a common vision and shared values for pursuing a high level of enhanced, sustainable cooperation across various levels of the organisation, and across different areas of activity, building on their complementary strengths and where students and staff at all levels of the participating organisations are empowered to implement this vision.

3 https://ec.europa.eu/programmes/erasmus-plus/resources/programme-guide_en
Implemented by joint structures pooling their expertise, platforms, data and resources together.

Horizon 2020 transformation modules:

- developing a common research & innovation agenda and convergence action plan and its implementation, in synergy with education strategies and regional engagement
- agreeing on best practices for research infrastructures and other resources, and setting-up an action plan and shared platforms for implementation of the common research & innovation agenda, for pooling expertise, data and resources

Key elements of European Universities supported through Erasmus+:

Build European knowledge-creating teams (“challenge-based approach”) of students and academics, together with researchers, businesses, regional actors and civil society actors - depending on the overall strategy and vision of the alliance - address together societal and other challenges of their choice in a multi-disciplinary approach through:

- Innovative learning and training that equip students and researchers with high-level, entrepreneurial, Open Science and transferable skills for a fast-changing labour market and knowledge economy and society, including through the transfer of research results back into education
- Creation of innovative solutions adaptable to different regions in Europe

Horizon 2020 transformation modules:

- developing and deploying strategies to reinforce the impact of university research and innovation, including through strengthened academia-business cooperation, knowledge sharing approach and knowledge transfer capacity; valorising an entrepreneurial mind-set amongst scientists
- mainstreaming of comprehensive Open Science practices
- involving and engaging citizens, civil society and public/cities authorities in research and innovation

Key elements of European Universities supported through Erasmus+:

Establish a European higher education inter-university 'campus' where typically:

- Students, doctoral candidates and staff can move seamlessly (physically or virtually) to study, train, teach, do research, work, or share services in any of the partner institutions. Students customise their choice of where and what to study within the confines of pedagogically sound and logically structured study programmes between the different higher education institutions and other members of the alliance.
- Embedded mobility at all levels, including at Bachelor, Master and Doctoral levels, is a standard feature. At least 50% of the students within the alliance should benefit from such mobility, be it physical, virtual or blended.
- New joint and flexible curricula are delivered, where relevant, in the three cycles (Bachelor, Master and Doctoral), based on cross-disciplinary/multi-disciplinary and cross-sectoral approaches, integrating innovative pedagogies, including the use of the latest digital technologies. While content is personalised, cooperation is global.

- Practical and/or work-based experience is provided by external mentors to foster an entrepreneurial mind-set and develop civic engagement.

- The student body reflects the diversity of the population (in terms of social, economic and cultural aspects), including lifelong learners, part-time and non-traditional students. Access, participation and completion of under-represented and disadvantaged groups are ensured.

- Any other creative and innovative activities that are key to reach the joint long-term strategy are implemented.

**Horizon 2020 transformation module:**

- developing and implementing strategies for strengthening human capital in research and innovation and for enabling balanced brain circulation

In addition, as some technical activities are expected to be common to all ‘European Universities’, European Universities are expected to be:

- exploring joint structures and sharing best practices across European Universities, facilitating collaboration in activities that could be common to all alliances

Legal obstacles and possible solutions will be tackled as part of the overall monitoring framework of the selected European Universities.

### 4. Examples of potential activities within the R&I institutional transformation modules

#### 4.1 General aspects

The way forward with and within the different policy modules for transformation of universities remains the choice of the ‘European Universities’: which modules to work on, adding modules not present in the current list, defining the weight attached to each module, choosing the most appropriate deployment models, taking the necessary transformation actions. The activities should result in initial tangible progress of the individual universities, and the alliances as a whole, as far as possible within the foreseen action duration of up to 3 years. Therefore, actions listed below are only provided as examples while any support for the R&I transformation is without prejudice to the autonomy and diversity of universities.

Where appropriate alliances are invited during the funding period of up to three years to also pursue following tasks: (i) identify legal, regulatory, and financial barriers hampering R&I cooperation among universities; (ii) provide quantitative cost-benefit analysis of possible requested actions; (iii) elaborate recommendations to national and European policy makers on the way forward.
‘European Universities’ should focus in particular on their long-term vision and cooperation across the various levels of the organisations and across different areas of activity, building on complementary strengths of the partners in the research and innovation dimension, in synergy with the education dimension: describe how your ‘European University’ will look like in 3 years and how it will progress towards the long-term vision regarding the chosen transformation modules.

4.2 Examples of potential activities

a) **Common research & innovation agenda:** Based on the joint long-term strategy and challenge-based approach as defined in the mission statement of the ‘European University’, identifying shared challenges linked to UN SDG’s, Missions, or other societal challenges, leading to individual or where relevant joint action plans to create EU-level critical mass; implementing the action plans and science agenda through additional activities.

- **Identification of challenges and convergence:** long-term roadmap development towards individual and shared research & innovation challenges addressing key global challenges; strategies breaking down walls towards the integration of scientific fields and supporting interdisciplinarity, in order to accelerate research and generate breakthroughs that can benefit various fields; roadmaps could include strategies for strengthened international collaboration and ‘internationalisation at home’ (both within and beyond Europe);

- **Preparation of action plans:** development and implementation of shared action plans (e.g. regarding the Green Deal, AI, pandemics) for joint or individual activities and international collaboration, such as platforms or capacity to facilitate interdisciplinary collaboration of researchers (incl. where relevant with socio-economic sciences and humanities), in synergy with the alliance’s common education strategy and regional engagement; merging efforts in order to approach challenges in a more holistic way;

- **Identification of resources:** identifying appropriate resources, infrastructures or partners to implement the science agenda;

- **Scaling excellence:** the alliance as a vehicle to scale scientific excellence by joining forces with other partners in the universities’ surrounding ecosystem sharing similar priorities, building and sharing (interoperable) capacity; synergies through increased capacities to manage financial engineering and mobilising resources such as InvestEU.

b) **Sharing infrastructure and resources:** Developing a strategy towards sharing resources and infrastructures across the ‘European University’ and involved research systems, incl. identification of legal and financial barriers and enablers to improve governance of scientific and innovation cooperation among research systems; deployment of the strategy, sharing capacity.
- **Needs**: Identification of specific requirements for infrastructures and resources to be shared, including access to data and information, and the possibility to introduce adjustments and customise offer;

- **Cooperation**: identification of legal and regulatory barriers and enablers to scientific and technological cooperation among universities, research organisations and operators of research and technology infrastructures, involving local, regional and national governments; implementation of joint structures for a common science agenda, pooling expertise, platforms, data and resources together; exploring and piloting incentives for cooperation;

- **Infrastructures for Open Science**: development and implementation of strategies for synergies between current and future digital infrastructures underpinning Open Science (e.g. infrastructures that support access to, preservation, sharing and re-use of scientific information); promoting their federation within the European Open Science Cloud and with other European research data infrastructures.

c) **Reinforcing cooperation in research and innovation with other sectors, especially academia-business cooperation**, while maximising competitiveness by feeding into the innovation cycle from all sources of knowledge and types of research: Development of strategies to connect universities with various other actors of the innovation ecosystem, notably business to foster entrepreneurship, uptake of new technologies and innovation, and to partner with investors to facilitate access to finance. Activities funded under this action can contribute to the preparedness of higher education institutions for their strategic involvement in future actions funded through complementary EU funding programmes (e.g. EIT, EIC, MSCA):

- **Developing an innovation strategy**, including social and cultural innovation, complementing the common science agenda;

- **Strengthening innovation capacity**: this includes developing an approach to the exploitation of associated interface services such as technology transfer services, intellectual property and patent services, innovation support staff and start-up incubators; establishment of mechanism to access new or existing research or industrial infrastructures and associated databases; establishment of cooperation arrangements; exploring alternative forms of accessing equipment and infrastructure: for instance sharing costs with other parties, renting equipment from industry, employing Augmented Reality/Merged Reality/Virtual Reality (AR/MR/VR) solutions;

- **Mainstreaming entrepreneurial mind-set of researchers**: this includes developing an approach to the organisation of courses and trainings enabling the entrepreneurial aspirations of alliances’ researchers at early career stages with adequate knowledge, skills, and resources, including for instance SME internships; activities countering the mismatch between the skills of early career researchers and the labour market needs; establishment of joint mechanisms that incentivise entrepreneurial mind-set amongst researchers (such as access to profits from
intellectual property); equipping researchers at all career stages with the necessary tools and skills to research and implement innovation: developing relevant tools and knowledge hubs, creating intersectoral collaborative spaces for exchanging experiences and sharing good practices; fostering entrepreneurial platforms such as start-up communities of early career researchers;

- **Inducing cooperation**: developing strategies to upscale or strengthen the connection of universities with other actors of their ecosystem such as investors or business, to facilitate access to funding for innovation and risk finance, to foster entrepreneurship and innovation skills of researchers, and connect to a broad set of stakeholders, including for social or cultural purposes; connecting the different ecosystems of the partner universities with the alliance; setup of local innovation networking platforms to induce collaboration between researchers and local businesses; establishment of cooperation agreements, creating innovation networking circles, establishing or reinforcing support mechanisms such as interface services;

- **Innovation pipeline development**: development of offensive strategies to attract investment in Europe; deployment of an innovation detection scheme for potential innovations or innovators among local or alliance-wide research projects; piloting activities promoting collaboration with research and technology organisations and business sector, supporting networking and mentoring programmes for researchers.

d) **Strengthening human capital**: Deploying human resources strategies, enriching research and career evaluation systems that mainstream Open Science practices, foster diversity and inclusiveness, including gender equality in research, as well as strategies for balanced circulation of knowledge and researchers, promoting intersectoral/interdisciplinary mobility of researchers.

  - **Framework conditions**: implementing action plans, notably the Human Resources Strategy for Researchers (HRS4R); identification of further needs towards transformation with respect to current national regulations towards research careers, mobility, salaries, gender balance; identification of conditions and incentives for attractive career environments and facilitating circulation of students and staff;

  - **New balance in the assessment of academics**: rewarding universities and researchers at all career stages for introducing innovative approaches during their individual career path; implementing a system that (i) enables the diversification and vitalisation of career paths, thereby promoting excellence in all university missions; (ii) acknowledges the independence and individual qualities and ambitions of academics as well as recognising team performances; (iii) emphasises quality of work over quantitative results (such as number of publications and their Journal Impact Factor); (iv) encourages the practice of all aspects of Open Science, and Responsible Research and Innovation at institutional level; and (v)
encourages high-quality academic leadership; these aspects need to be embedded in the assessment schemes for both organisations and individuals;

- **Dealing with brain drain**: development of strategies to promote a balanced circulation of knowledge and researchers (including processes to understand and act upon reasons for brain drain), deployment of activities to counteract brain drain and improve attractiveness, such as reforming Human Resources strategies, and improving working conditions for researchers;

- **Cloud of knowledge**: development of activities engaging universities to move towards capacity equipping researchers with a combination of pedagogy skills, forward-looking competencies, Open Science skills, research integrity, interdisciplinary, entrepreneurial competencies;

- **Promoting talent (skills and competences)**: ensuring training possibilities for research and research support staff with attention to promoting staff diversity; ensure exposure of staff and early career researchers to training and mentoring by persons from other sectors; actively promote re- and up-skilling through lifelong learning; ensuring implementation of gender balance strategies at all levels.

e) **Comprehensive mainstreaming of Open Science practices**: open access to publications, and other research outputs, research data management (FAIR principles), public/societal engagement, research integrity, systems incentivising and rewarding individuals and teams that practice Open Science, skills and competences for future jobs in industry and beyond, related infrastructures.

- **Open Access and research data management**: development and implementation of strategies and institutional policies for open access to publications and other research results, for research data management, for preservation of scientific outputs; guidance to researchers on how to comply with open access and data management policies;

- **Open Science skills and education**: map the gaps in training and education on Open Science skills (e.g. regarding sound data management, preservation of scientific information, research integrity, science communication, public engagement, participatory research methodologies, etc.); support the development of new practices with data analyst, data stewards, etc; develop training and education on Open Science skills for students, researchers and managers, at all career stages; develop the necessary programmes for professional profiles in the area of data handling technologies, data-intensive computational science, and data stewardship; exchange good practice and mutual learning within the alliance; coordination within the alliance;

- **Open Science incentives and rewards** (connected to (d) human capital module): develop academic career systems that support and reward researchers who participate in engaging with society and in a culture of sharing the results of their research, in particular by ensuring early sharing and open access to their
publications and other research outputs; set up strategies and institutional policies and mechanisms that enable, incentivize, measure and reward Open Science practices; enrich research and career evaluation systems through the introduction of additional indicators and metrics that can inform assessment on openness, including but not only on the broader social impact of research and at the individual level of a researcher (‘new generation metrics’); exchange best practice and mutual learning within the alliance;

- **Open Science ambassadors**: recruitment of local Open Science ambassadors or other support officers who work dedicated on implementation and promotion of Open Science practices; exchange best practice and mutual learning within the alliance.

f) **Embedding citizens and society**: active engagement of citizens, civil society, local and regional communities and public/cities authorities in all stages of the research and innovation process.

- **Science in society**: activities to engage with citizens, civil society and public authorities and to promote and implement science output, technology and innovation, such as focus groups, science shops, living labs, science slams, open seminars, science weeks, cooperation with museums, etc.; activities to attract young people of all backgrounds to science careers; institutional changes to governance that foster public engagement and science education at university and territorial levels;

- **Citizen science**: developing collaborations and sharing capacity for citizen science projects, including user-led innovation, for instance maker movement, fab labs, new approaches to co-creating innovations with society;

- **Knowledge creating teams**: research and innovation support to the transnational and transdisciplinary knowledge-creating teams supported by the Erasmus+ programme and composed of students, researchers, citizens and professionals from public and private sector to engage in challenge-based and mission-oriented science and education activities; establishment of laboratories for institutional and ecosystem learning;

- **Outreach to children and schools**: actions to increase the next generation’s creative thinking skills and resilience for changes through introducing research activities in their curricula as a standard practice;

- **Sustainable Development Goals**: development of strategies and relevant partnerships towards promotion of ‘sustainable campuses’, for instance by the deployment of a zero pollution strategy for the university, which could include a sustainable food strategy for university catering, change of car policy in a sustainable mobility plan, preservation of rural areas etc;

- **Policy feedback**: strategies and development of activities to enable science to structurally inform policy.
g) **Exploring joint structures and sharing best practices to ensure system-level impact:** alliances are invited to explore joint structures within and among the ‘European Universities’, facilitating technical collaboration in research and innovation activities that could be common to all alliances. In addition to these actions explored by universities, the Commission will pursue further coordination of sharing practices and tackling common barriers, as part of the overall European University Initiative monitoring framework.

- **Common issues:** the ‘European Universities’ are invited to join forces on issues or barriers that are common to them and for which solutions go beyond an individual alliance, or obstacles that should best be tackled at a European level. This should also avoid each alliance making isolated proposals in this direction. Common issues could for instance be linked to Open Science infrastructures or practices, obstacles to new rewards systems and incentive schemes for researchers, legislative issues on knowledge and brain circulation,…..

- **Sharing best practices:** Share best practices between the ‘European Universities’ in order to improve the average level of Research and Innovation project management; disseminate practices and exchange with institutions and ecosystems outside the European University alliances, in order to induce transformation beyond the alliances.

- **Recommendations:** The alliances are invited to coordinate, where relevant and appropriate, their recommendations on successful models towards future policy for universities in the research and innovation dimension, in close connection with the education mission.

**BOX: Example of a possible comprehensive strategic approach in research and innovation, which could enable progress on several ‘institutional transformation modules’ at once:** modernisation of the career assessment systems of research and researchers\(^4\).

A modern assessment of researchers and research would less depend on quantitative results, going beyond the number of publications and their Journal Impact Factor or the number of PhD degrees supervised. It would put more emphasis on quality and impact of research results and allow for the cultivation of different academic profiles and diversity of careers. It would reward Open Science practices, *i.e.* sharing knowledge, data, models, etc. as early and widely as possible and collaborating with all relevant knowledge actors, including citizens. It would involve scientific integrity, reward creativity, interdisciplinary collaboration, general contribution to knowledge and solving societal challenges. It would take into account outreach to and involving of citizens, as well as the quantity and quality of collaborations with businesses and/or other relevant non-academic entities, in view of fostering open innovation and uptake of knowledge into society. It may reward internationalisation efforts (collaboration and recruitment). It should take into account the

quality of teaching, general appreciation and quality of supervision of early career researchers, and the spreading and stimulation of open science skills and practices. Where relevant, also leadership roles or initiatives could be included in the assessment system.

Deploying such new systems would require a cultural change and national/regional coordination between all parties involved (higher education institutions, funders, government). It would enable the diversification of career paths of researchers, acknowledge the independence and individual qualities of academics and recognise team efforts, encourage all aspects of Open Science, stimulate knowledge transfer to society and economy, and stimulate high-quality university leadership.

5. **Expected impact**

Successful universities naturally are in a constant state of change, for which there is no real ‘end point’ in the form of a new system. The challenge is to change for the better and still be a champion for academic freedom, quality, and excellence. With that in mind, we expect from the successful applicant European Universities the following progress, as far as feasible within the foreseen duration of the Horizon 2020 grant of up to three years:

- The focus of the action should be the identification of a variety of successful models for institutional transformation at research and innovation level, in line with the shared, integrated and long-term joint strategy of the ‘European Universities’ and in synergy with their education dimension; recommendations should include a cost-benefit analysis on the actions, to assist the design and deployment of future EU funding support;
- Next to this, tangible initial progress towards the institutional transformation of the individual universities and of the alliances in the field of research and innovation, taking into account the diverse level of transformation readiness of the individual alliance members;
- Increased internationalisation of university activities in the field of research and innovation within and beyond Europe and raising the international profile.

The European Universities are expected to be a source of inspiration for successful cooperation and governance alignment models in the knowledge society (education, research, service to society, including innovation).

- These models could be used for future Commission policy initiatives and by the wider higher education and university sector community for replication/adaptation.
- Where possible and relevant, the European Universities are expected to find ways to spread the solutions, successful practices and cooperation models, in order to ensure that lessons learnt and benefits will not be limited to the alliances alone. To ensure scale-up, European Universities are asked to clearly disseminate the model used for their cooperation and governance alignment.
The type of grant for Other Actions 32 and 33 under the SwafS 2020 Work Programme is a Coordination and Support Action – Lump sum pilot (CSA-LSP). The usual submission and evaluation procedure will apply. The CSA will be evaluated by a panel of independent peer reviewers against the usual Horizon Europe evaluation criteria. The forms and templates for proposal submission are largely the same as for standard Horizon 2020 actions. However, some lump sum specificities have been implemented.

Grant to identified beneficiaries means that only the beneficiaries of the Erasmus+ pilot calls 2019 and 2020 are eligible to apply for Horizon 2020 SwafS Other Actions 32 and 33, respectively. The same associated partners in the Erasmus+ pilot can be associated to the Horizon 2020 action.

For reasons of simplification for the beneficiaries during the execution of the Horizon 2020 project, the action will apply the Lump sum pilot\(^5\) approach. The funding for lump sum pilot actions will not consist of the reimbursement of incurred costs. A lump sum per project will be contractually agreed in the Grant Agreement, as well as a breakdown per work package and per beneficiary. In practice, this removes the obligation of the beneficiaries towards financial reporting and financial audits. Guidance documents and video on the benefits and particularities of this pilot and information on how to complete the particular application are available\(^7\).

The following templates will need to be used by the applicants to complete their application. The forms and templates can be accessed or downloaded from the Electronic Submission system of the Funding and Tenders Portal, after selecting the appropriate topic:

- The online structured forms (Part A of the proposal template) are slightly adapted to lump sum pilot actions (applicants will have to tick some specific declarations).

- The technical annex (Part B of the proposal template, word document) to be used for the CSA Lump sum pilot actions is the standard one. For information, a pdf version of Part A + Part B proposal template for CSA lump sum pilot Option II is available

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\(^7\) Available guidance for the lump sum pilot:
  - Video "All I need to know about Lump Sum Pilots": [https://www.youtube.com/watch?v=VTSy9T2_yHg&feature=youtu.be](https://www.youtube.com/watch?v=VTSy9T2_yHg&feature=youtu.be)
  - FAQ on lump sum pilots: [https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq?type=undefined;categories=;programme=null;actions=;keyword=Lump](https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/support/faq?type=undefined;categories=;programme=null;actions=;keyword=Lump)

- Applicants must provide in their proposal a detailed estimation of costs and a breakdown of the lump per work package and per beneficiary. An Excel workbook will be available in the Electronic Submission System on the portal, to be used by applicants. This has to be submitted as annex at step 5 of the submission process. It is suggested to setup one work package per ‘transformation module’, next to possible horizontal work packages (e.g. project management). For a pdf version of this Excel workbook, please see: https://ec.europa.eu/research/participants/data/ref/h2020/call_ptef/pt/2018-2020/h2020-call-pt-budget-ria-ia-csa-ls2-2018-20_en.pdf.