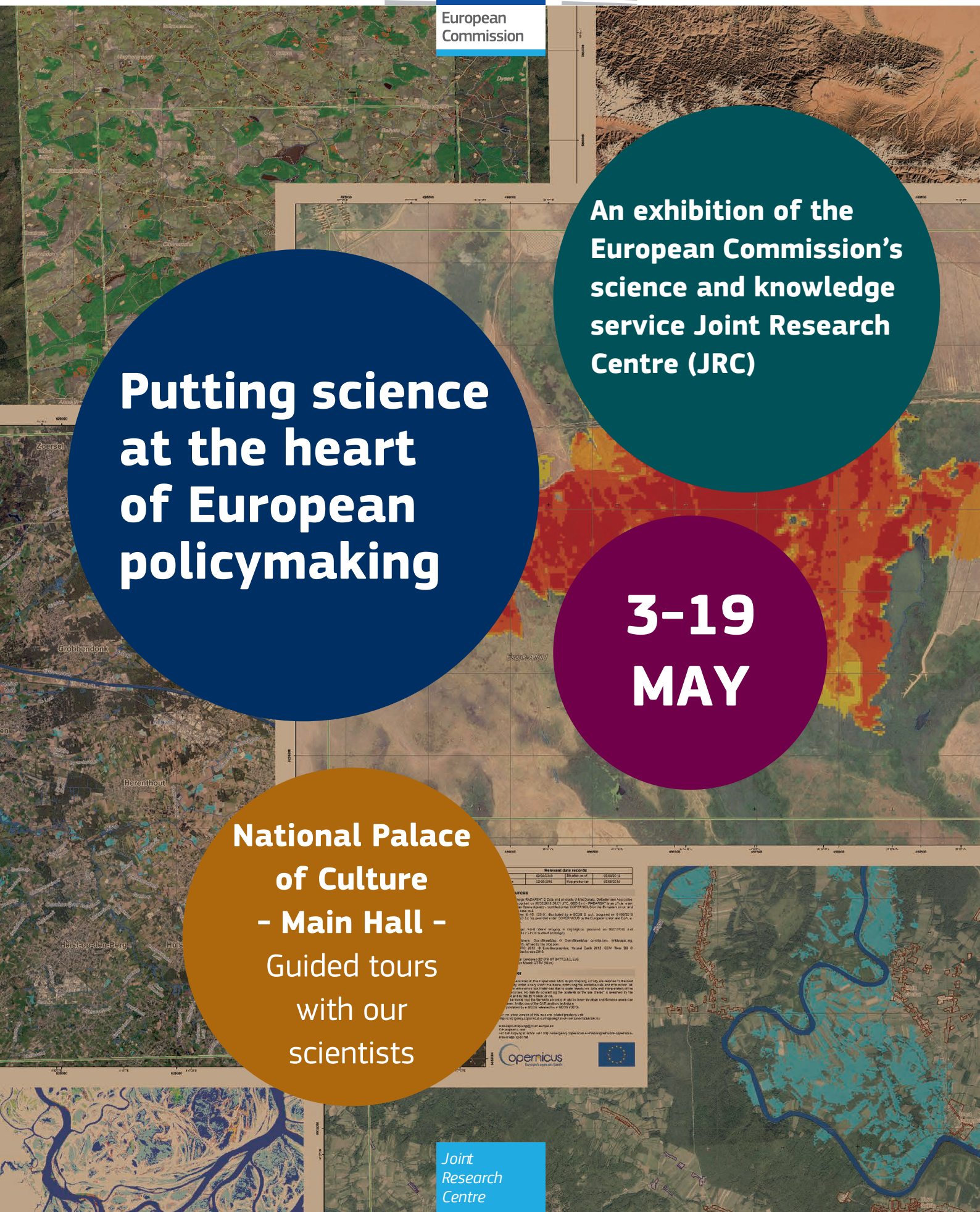
European Commission
An exhibition of the European Commission's science and knowledge service Joint Research Centre (JRC)
Putting science at the heart of European policymaking
3-19 MAY
National Palace of Culture
- Main Hall -
Guided tours with our scientists
Joint Research Centre

Putting science at the heart of European policymaking

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Introduction to the Joint Research Centre

The Joint Research Centre (JRC) invites you to discover how it places science at the heart of European policymaking. For about 60 years now, the JRC has been acting as a science provider and knowledge broker. It contributes to ensuring that policymakers have the best available evidence when taking important decisions that have an impact on EU citizens' daily lives, both when preparing policies and implementing them.

JRC's research contributes to jobs and economic growth, a healthy and safe environment, secure energy supplies, sustainable mobility, consumer protection and safety and nuclear safeguards to name but a few areas.

The JRC plays a key role in the development of standards that stimulate innovation and competitiveness in Europe; it shares its know-how with the Member States, the scientific community and international partners and uses scientific knowledge to build solutions that are effective, efficient, equitable and sustainable.

Information overload: the maze of knowledge

Hundreds of posters have been put together in a maze to reflect the difficulty in making sense of all newly acquired information. The maze further reflects the fact that information is not “open” enough, not readily available to those who might need it.

The best designers in the world all squint when they look at something. They half close their eyes to see the forest from the trees, to find the right balance. Squint at the world. You will see more, by seeing less.

John Maeda, designer

We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely.

Edward Osborne Wilson, biologist

JRC at the forefront of knowledge management for policymaking

Improving knowledge management and collaborative working at the European Commission (EC) is a priority for President Juncker. The JRC takes up this challenge by mobilising scientific competences from different directorates around the European Commission's policy goals. It takes a leading role in promoting knowledge management within the EC, championing the implementation of new collaboration practices and platforms, and developing a knowledge-management professionalisation programme. It has become a world-leader in the management of knowledge for EU policies, capable of mapping, gathering, analysing, quality-checking and making sense of the best knowledge available worldwide, wherever it is produced, to support EU policies.

- Making sense of collective scientific knowledge for better EU policies
- Knowledge centres: two-way interface between science and policy
- Anticipating future challenges
- One-stop shop for evidence based policymaking
- Bridging silos and creating synergies
- Managing of knowledge-sharing
- Translation and application of data, information and knowledge for evidence based policymaking
- Training and mutual understanding between scientists and policymakers in evidence & policy

Why is evidence-informed policy important

(VIDEO)

We asked eight experts from across the globe about the importance of evidence-informed policy, this is what they had to say...

▸ *europa.eu/!jj73DJ*

Snapshot of the evidence-informed policy landscape
(INFOGRAPHICS)

The ecosystem of evidence informed policymaking has seen a flurry of activity recently. This infographic is an attempt to capture all key organisations which work to advance evidence informed policy conceptually and practically. This is a record of the thinkers about evidence and policy and not necessarily of all the do-ers, although these worlds often overlap.

▸ *europa.eu/!jj73DJ*

The challenge of resilience in a globalised world
(REPORT)

The JRC report is the first ever attempt to deepen our knowledge and develop a holistic approach by analysing strategies for building resilience in the EU. The objective is to help EU Member States to better focus scarce resources on key vulnerabilities and, where beneficial, to join forces in building a more robust, resilient and prosperous EU.

▸ *europa.eu/!vX94tt*

Knowledge management for policy

(REPORT)

One year after the reorganisation carried out on the 1st of July 2016 to align the JRC organigram with the new 2030 strategy, this report reviews the progress made and describes the main achievements.

▸ *europa.eu/!Un48yt*

Annual report 2016

(REPORT)

The Annual report 2016 takes stock of a year of achievements. It highlights how the JRC's activities contribute to the European Commission's priorities in various policy areas. It reports on a year's milestone events and provides some practical information as well as key facts and figures.

▸ *europa.eu/!hR93gu*

Science for the AU-EU Partnership - Building knowledge for sustainable development
(REPORT)

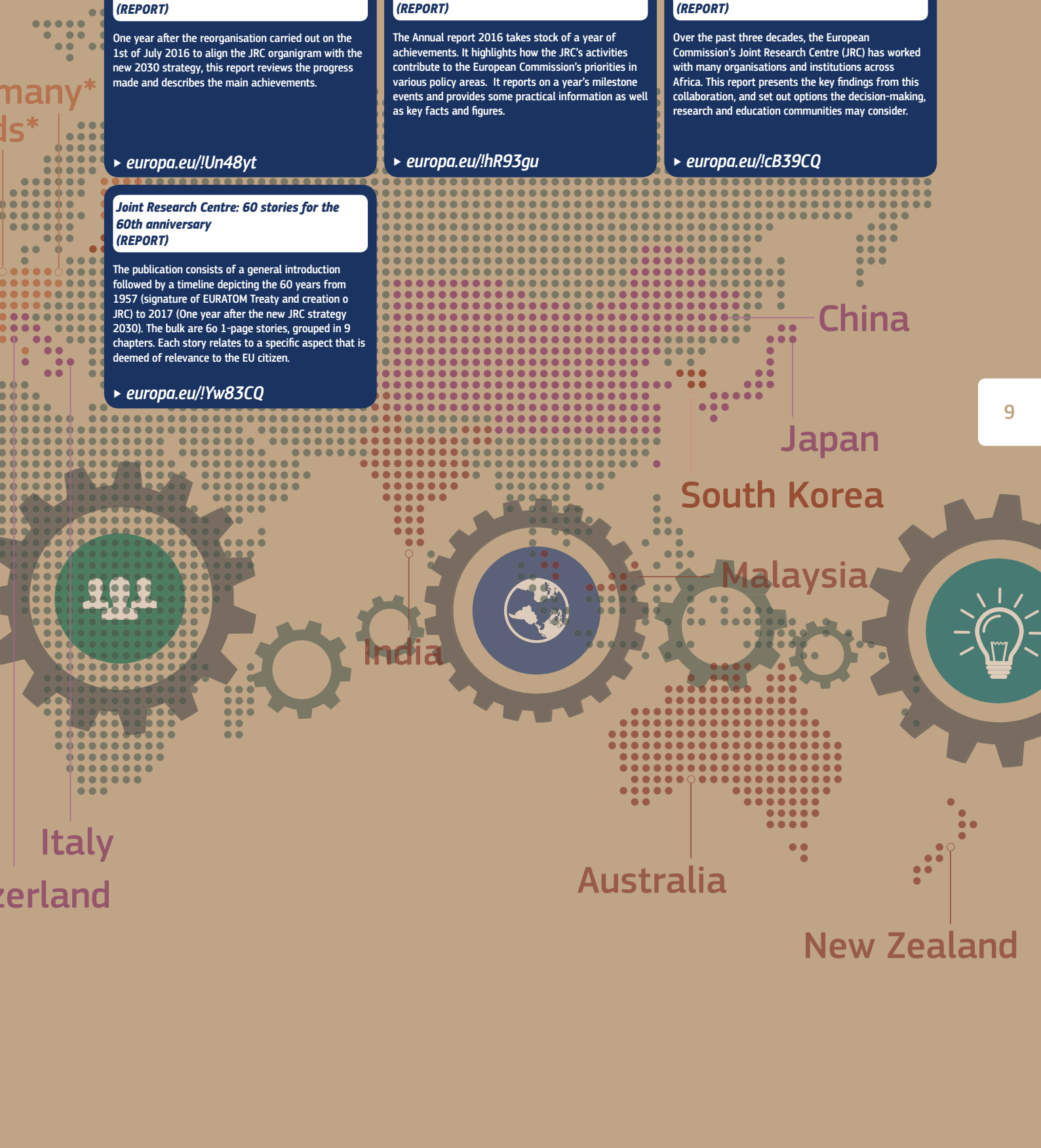
Over the past three decades, the European Commission's Joint Research Centre (JRC) has worked with many organisations and institutions across Africa. This report presents the key findings from this collaboration, and set out options the decision-making, research and education communities may consider.

▸ *europa.eu/!cB39CQ*

Joint Research Centre: 60 stories for the 60th anniversary
(REPORT)

The publication consists of a general introduction followed by a timeline depicting the 60 years from 1957 (signature of EURATOM Treaty and creation o JRC) to 2017 (One year after the new JRC strategy 2030). The bulk are 60 1-page stories, grouped in 9 chapters. Each story relates to a specific aspect that is deemed of relevance to the EU citizen.

▸ *europa.eu/!Yw83CQ*



A fair society and the economy

Migration and demography

Disaster risk management

Protecting citizens' health

Energy union

Air, water and natural resources

Regional policy

Nuclear security and safety

Vehicle emissions

Digital transformation

A fair society and the economy

The JRC is closely involved in the drive to create a strong and resilient Economic and Monetary Union. It supports regulation to ensure that financial markets are stable and serve the real economy. It examines issues around equity, inequality and fairness, assesses the impact of different taxation policies and develops indicators.

Indicators for the EU pillar of social rights

Social dimension towards a fair society

Economic modelling for the European Semester

Supporting economic reforms in Member States

A framework for resilience: shock-proofing EU economies and societies

Calculating banks' contributions to the Single Resolution Fund

Competence frameworks for the new Skills Agenda

COMPOSITE INDICATORS AND SCOREBOARDS (COMPETENCE CENTRE)

The Competence Centre on Composite Indicators and Scoreboards (COIN) contributes to better monitoring of the impact of EU strategies and policies at national, regional and local level by co-developing and auditing composite indicators and scoreboards that summarise multi-dimensional processes into simplified concepts.

▸ *europa.eu/!wM86MJ*

MICRO-ECONOMIC EVALUATION (COMPETENCE CENTRE)

The mission of the Competence Centre on Microeconomic Evaluation (CCME) is to enhance the EU policy process through ex-post casual evaluation and data-driven microeconomic analysis. It contributes to better evaluations for better regulation and better spending in the EU.

▸ *europa.eu/!Gb99mr*

MODELLING (COMPETENCE CENTRE)

The Competence Centre on Modelling (CCMOD), pools the modelling capacity and competences across the European Commission and beyond. Starting with a Commission-wide modelling inventory (MIDAS) it will support a proper documentation, use, and reuse of models by making available years of experience in the area of baseline scenarios, uncertainty analysis and sensitivity analysis and social multi-criteria evaluation.

▸ *europa.eu/!CD99vf*

Insights from behavioural sciences to prevent and combat violence against women (REPORT)

This report proposes guidelines and success factors, based on insights from behavioural sciences, to better design and evaluate initiatives aimed at preventing and combating violence against women. These principles are illustrated with numerous examples of real awareness-raising and education activities.

▸ *europa.eu/!Bp94BC*

What makes a fair society? Insights and evidence (REPORT)

This report takes as its starting point the anger currently felt by too many EU citizens and asks whether a rising sense of unfairness may be fuelling it. Many factors could be driving this frustration and this report focuses on a possible driver that is largely economic: fairness.

▸ *europa.eu/!GP49Xt*

An inquiry into the return mobility of scientific researchers in Europe (REPORT)

The aim of this report is to take stock of conceptual and measurement issues related to the observable flow of researchers moving back to their home countries after a period abroad, known as the 'return mobility' of researchers.

▸ *europa.eu/!nH87ug*

Migration to the EU: social and macroeconomic effects on sending countries (REPORT)

This study attempts to shed light on potential challenges and opportunities by analysing the impact of the new EU Blue Card proposal (which is meant to make the EU more attractive to highly qualified workers from third countries) on the knowledge-based capital in sending countries, as one of the main drivers of economic growth.

▸ *europa.eu/!qt99My*

The judicial system and economic development across EU Member States (REPORT)

This analysis presents a number of correlations between EU Member States' judicial systems and performance indicators. Although the findings reveal some interesting relationships, the evidence is best described as descriptive rather than causal.

▸ *europa.eu/!hX47fk*

The Cultural and Creative Cities Monitor (REPORT AND VIDEO)

The Cultural and Creative Cities Monitor is a new tool for monitoring and assessing the performance of cultural and creative cities in Europe against their peers using both quantitative and qualitative data. This 2017 edition – the first ever – covers 168 cities in 30 European countries (the EU-28, Norway and Switzerland).

▸ *europa.eu/!fN73bV*

A Social Scoreboard for the European Pillar of Social Rights (INFOGRAPHIC & LEAFLET)

The Social Scoreboard monitors the implementation of the European Pillar of Social Rights by tracking trends and performances across EU countries in 12 areas and will feed into the European Semester of economic policy coordination.

▸ *europa.eu/!yT94Qd*

Accessibility to basic service areas
Source: JRC, LUISA Territorial Modelling Platform

Migration and demography

The JRC analyses the root causes and likely scale and timing of population flows. It studies the impact of these flows across all dimensions: social, cultural, economic and psychological.

Integrated mapping of migration and demographic trends

Data and analysis of migration flows, trends and impacts

Migration profiles of countries of origin, transit and destination

Technical tools for surveillance and information sharing for enhanced border security

Assessment of population trends

MIGRATION AND DEMOGRAPHY (KNOWLEDGE CENTRE)

The Knowledge Centre on Migration and Demography (KCMD) provides scientific evidence to enhance the EU's capability to better manage opportunities and challenges stemming from migration and demographic change. It focuses on six priorities: legal migration and integration, the external dimension of migration, children in migration, smuggling, irregular migration and forced displacement.

▸ *europa.eu/!mQ74CK*

Long-term social, economic and fiscal effects of immigration into the EU (REPORT)

Apart from humanitarian aspects, the sustainable integration of refugees into EU society is important for social, economic, budgetary and other reasons. The study sheds light on the long-term social, economic and budgetary effects of rapidly increasing forced immigration by performing an analysis of alternative refugee integration scenarios.

▸ *europa.eu/!Vb68xX*

Patterns of immigrants' integration in European labour markets (REPORT)

This report looks at employment rates of immigrants and systematically compares them with employment rates of natives. By drawing on the academic and policy literature, it singles out some of the most likely determinants gaps across Member States and unpacks them according to their relationships with length of residency, country of origin, education and skills.

▸ *europa.eu/!Jw99NU*

Atlas of the human planet

(REPORT)

The Atlas of the human planet presents the key findings of the analysis of the Global Human Settlement Layer (GHSL). This data set reports about the growth of built-up and population in the last 40 years (1975-2015) at an unprecedented level of detail. The information supports the international frameworks of the Agenda 2030.

▸ *europa.eu/!cx76rw*

Theories of migration

(INFOGRAPHIC)

Migration is a complex phenomenon touching on many related issues such as demographics, geopolitics and economics. The infographics on 'Why do people migrate', 'Development and migration' and 'How policies affect migration' contain facts and figures to aid better understanding H47of the causes, migratory flows and impact on countries.

▸ *europa.eu/!VX93FR*

New generation of migration profiles

(LEAFLETS)

The series covers the current knowledge gaps in migration and development at regular 3-6 month intervals. It links migration, development and humanitarian aspects, as well as analyses on the EU's strategic role with regard to third countries, with the aim of supporting the identification of relevant development priorities.

▸ *europa.eu/!PX86pj*

Global Human Settlement Layer

(INFOGRAPHIC AND VIDEO)

The Global Human Settlement Layer (GHSL) is an open and free tool for assessing human presence on the planet. It maps and monitors human settlements in a detailed, measurable and globally consistent way to support policies and initiatives to prevent and reduce disaster risk, eradicate extreme poverty and promote sustainable development.

▸ *europa.eu/!hT83HF*

Population displacement in Rakhine (Myanmar)
Source: JRC, Copernicus Emergency Management Service (EMS)

Disaster risk management

The JRC's tools support emergency preparedness / response and disaster risk management in cases of natural disasters and man-made hazards.

Coordinating EU emergency response: Emergency Management Services (EMS)

Sharing information: European Forest Fire Information System (EFFIS)

Anticipating floods: European Flood Awareness System (EFAS)

Drought prevention: European Drought Observatory (EDO)

3D scanning helps reconstruction

DISASTER RISK MANAGEMENT (KNOWLEDGE CENTRE)

The Disaster Risk Management Knowledge Centre (DRMKC) enhances the EU and Member States' resilience to disasters and their capacity to prevent, prepare and respond to emergencies through a strengthened science and policy interface. Through the global dimension of the DRMKC, the EU supports the Sendai Framework for Disaster Risk Reduction. There are 11 DGs and services involved.

▸ *europa.eu/!PG43Xr*

Is your house earthquake proof?

(VIDEO)

This video explains the work done at Europe's biggest reaction wall, at the European Laboratory of Structural Assessment (ELSA). The tests on how real structures react under earthquake conditions help scientists to improve numerical models, design new solutions and contribute to European guidelines and standards for the construction sector.

▸ *europa.eu/!tT64TV*

European structural assessment laboratory

(360° TOUR)

Explore the JRC's European Laboratory of Structural Assessment (ELSA) and navigate inside, first-hand. Eurocodes for the design of buildings and other civil engineering works are based on the work done at this lab in Ispra (Italy).

▸ *europa.eu/!Uf98gq*

Science for disaster risk reduction

(REPORT)

This thematic report describes the JRC's activities to support disaster management. The JRC develops tools and methodologies to help in all phases of disaster management, from preparedness and risk assessment through to recovery and reconstruction, and forecasting and early warning.

▸ *europa.eu/!rb76Rd*

INFORM - Index for risk management

(REPORT)

INFORM is a composite indicator that identifies countries at risk of a humanitarian crisis and disaster that would overwhelm national response capacity. The INFORM index supports a proactive crisis and disaster management framework.

▸ *bit.ly/12kul0x*

Satellite images for disaster risk management
(REPORT)

This report explains how satellite images are used for disaster risk management (in particular the Copernicus Emergency Management Service), to prevent and prepare for disasters, deal with emergencies, and recover from a disaster.

▸ *europa.eu/!QV78DY*

Tsunami and the Global Disaster Alert and Coordination System
(VIDEO)

This video explains the unique automatic Tsunami Alerting Device (TAD) developed by the JRC to directly alert people at risk in the event of an incoming tsunami wave. The TAD is part of the Global Disaster Alert and Coordination System (GDACS), a cooperation framework between the European Commission and United Nations.

▸ *europa.eu/!tT64TV*

Earthquake in Amatrice (Italy)
JRC, Copernicus Emergency Management Service (EMS)

Protecting citizens' health

The JRC looks at different aspects of nutrition and health, including obesity and how differently food affects people. It contributes to the design of public health systems and e-health.

European network of cancer registries

Food contact materials

Alternative methods to animal testing for more accurate results

Evidence and toolkit to promote healthy dietary choices for schools

Rare diseases registries

FOOD FRAUD & QUALITY (KNOWLEDGE CENTRE)

Food fraud is an increasing threat that causes economic and reputational loss for the honest food producers and that poses a risk for public health. The Knowledge Centre for Food Fraud & Quality is a new EU instrument in the fight against food fraud by developing analytical methods to detect fraudulent practices and by collecting and dissemination of expert knowledge on the vulnerability of the food chain, on food composition and on traceability methodologies to the Member States.

▸ *europa.eu/!Jd93bQ*

Measurements matter in our daily life

(BOOKLET)

The JRC provides accurate, reliable and fit-for-purpose measurement and quality assurance tools needed to facilitate the millions of measurements made by laboratories around the world. These help to ensure the safety of our food, check the status of our health, and prevent major accidents and environmental contamination.

▸ *europa.eu/!nc84BJ*

Food

(REPORT)

Food is an art book on food based on material gathered during Resonances I, an ad hoc project organised by the JRC in 2015. A new narrative evokes the need of considering food not only as a mere scientific, technical and commercial matter of fact but also as a social, cultural and political matter of concern.

▸ *europa.eu/!wV68qR*

Science for food

(REPORT)

This report provides a detailed overview of JRC research on food safety, food quality and authenticity, food security, agriculture and land use, food for health, and innovation in this area.

▸ *europa.eu/!WC98qp*

Delivering on EU food safety and nutrition in 2050
(REPORT)

This foresight study aims to aid policymakers in assessing the resilience of the current food policy and regulatory framework with a time horizon to 2050, helping to ensure that EU citizens continue to enjoy high standards of safe, nutritious and affordable food.

▸ *europa.eu/!bg79fP*

Tomorrow's healthy society: research priorities for foods and diets
(REPORT)

This study was carried out by the JRC to inform the selection of research challenges to be funded under the Horizon 2020 programme. Four different future scenarios were developed using the extremes of two main drivers: agricultural commodity prices and societal values.

▸ *europa.eu/!VG78Vt*

How to avoid putting water in your wine

(VIDEO)

The JRC operates the European reference centre for control in the wine sector, in collaboration with 18 Member States. It aims to harmonise the control of wine adulteration, such as watering, illegal sugaring and non-authorised wine-making. It deploys the most advanced methodologies available to assure reliable markings on the wine quality labels.

▸ *bit.ly/2of7W3m*

A global reference tool to fight Alzheimers

(VIDEO)

The Commission's Joint Research Centre collaborates with many partners to develop a new scientific yardstick, in the form of a certified reference material, to help early detection of Alzheimer's disease. The certified reference material will help to standardise measurements of the Alzheimer's biomarker amyloid-β 1-42.

▸ *bit.ly/2EIWmYG*

Nanobiotechnology laboratory

(360° TOUR)

The Nanobiotechnology Laboratory of the JRC focuses on understanding nanomaterial properties and interactions with biological systems to support the safe and sustainable development of nanotechnology. The 2017 JRC open-access strategy opens it up for external researchers to promote the development and use of nanotechnology and advanced materials.

▸ *europa.eu/!MU99mu*

Towards suitable tests for the migration of metals from ceramic and crystal tableware
(REPORT)

This JRC report distils a series of investigations on the development of improved testing for the migration of various metals into foods from tableware, bakeware, crystalware. The work provides scientific evidence needed in support of future risk management initiatives to ensure the safety of ceramics and crystal in the EU while fostering the EU single market.

▸ *europa.eu/!pN67qr*

EURL-ECVAM Status report 2017

(REPORT)

Every year, the European Union Reference Laboratory for Alternatives to Animal Testing (EURL-ECVAM) provides an update on the development, validation and regulatory acceptance and use of alternative approaches and their dissemination.

▸ *europa.eu/!uy44Wk*

European commission initiative on breast cancer
(REPORT)

Conference report on the European commission initiative on breast cancer (ECIBC) Plenary 2016 which informs representatives from the EU-28 and 7 other countries participating, as well as patients and other stakeholders, policymakers, and the scientific and health-policy communities, about the aims, activities and achievements of the ECIBC.

▸ *europa.eu/!Uy97MJ*

Nanomaterial
Source: JRC, Nanobiotechnology lab

Energy union

The JRC supports the development and deployment of alternative energy sources (including renewables), and of energy transmission, distribution and storage systems. It works for greater energy efficiency and analyses how the EU and global energy markets function.

- Support to more than 2000 cities participating in the Covenant of Mayors
- Research in support of the Clean Energy Package
- Country energy profiles
- Information System for the Strategic Energy Technology Plan
- Scenario exploitation to optimise Baltic electricity network integration
- European Energy Efficiency Platform

Sustainable energy in the Danube region as an integral part of the EU 2020 strategy (REPORT)

The report discusses the energy mix in Danube region countries for period 1990-2013 as well as energy efficiency and renewable energy indicators as they are reported for year 2013 and the expected progress up to 2020.

▸ *europa.eu/!Rq37PD*

Strategic energy technologies information system (REPORT)

SETIS, the online Strategic energy technologies (SET-Plan) information system run by the JRC, provides the latest research results on the status, forecasts and R&D investment figures for low-carbon technologies. It underpins the effective strategic planning and implementation of EU energy technology policy and serves to the implementation of the SET-Plan.

▸ *europa.eu/!Xh39jG*

European microwave signature laboratory (360° TOUR)

The European microwave signature laboratory (EMSL) is a state-of-the-art experimental facility providing unique measurement capabilities in the field of microwave remote sensing and radio frequency compatibility. It is a key instrument for assessing potential interferences and vulnerabilities in current and future wireless communication services.

▸ *europa.eu/!vJ93kU*

JRC wind energy status report (REPORT)

This report presents the market status and technological development of onshore and offshore wind energy. It addresses the latest developments in technology in the sector and outlines policy support at European level.

▸ *europa.eu/!Yq86Jn*

PV status report (REPORT)

Over the last 15 years, the photovoltaic (PV) industry has grown from a small group of companies and key players into a global business where information gathering is becoming increasingly complex. The 15th edition of the PV Status Report gives an overview of current trends.

▸ *europa.eu/!xG86yw*

Monitoring R&I in low-carbon energy technologies (REPORT)

This report presents the methodologies that SETIS applies in evaluating selected key performance indicators (KPIs) used in the State of the Energy Union report to measure progress in research and innovation in Europe. It addresses key conceptual and operational points important for the interpretation and use of these results in the policy debate.

▸ *europa.eu/!TC38WU*

Smart grid projects outlook 2017 (REPORT)

This report is a compendium of key facts and figures on Smart Grid project data. It provides stakeholders with a tool to better understand the rapidly changing landscape, enabling the early identification of developments and opportunities, and supporting evidence-based policymaking that can be used to inform and support further analysis.

▸ *europa.eu/!Mc37Dq*

European solar test installation (360° TOUR)

The European solar test installation (ESTI) is a European reference laboratory for verifying the power and energy generation of photovoltaic (PV) devices. It has been at the forefront in developing standards for the electrical performance of PV products since it was launched in the late 1970s.

▸ *europa.eu/!qy69QC*

Tackling with critical materials (VIDEO)

The world is moving towards a greener future. In the near future we will need to drastically increase the production of wind turbines, solar panels, electric vehicles and batteries. In this awareness-raising animation the Joint Research Centre addresses the issue that materials needed for the production of these technologies are scarce.

Photovoltaic solar electricity potential in European countries
Source: JRC, Photovoltaic Geographical Information System (PVGIS)

Air, water and natural resources

The JRC focuses on climate change mitigation and adaptation, as well as resource scarcity (land and soil, water, food, fish stocks, biodiversity and critical raw materials). It helps to build a working circular economy.

Assessing marine waters and fish stocks

Technical solutions in support of the Common Agricultural Policy

Scientific support to the Circular Economy

Water, air and soil quality management

BIOECONOMY (KNOWLEDGE CENTRE)

The Bioeconomy Knowledge Centre (BKC) has a dual function: knowledge demand (identifying knowledge needs) and knowledge supply (informing knowledge producers about the needs of users and making data available to (EU) policymakers and stakeholders). It ranges from socio-economic sciences, life sciences and biotechnology, to transport logistics, waste management, environmental impact assessment and more.

▸ *europa.eu/!gw87RR*

Biomass production, supply, uses and flows in the European Union (REPORT)

Meant to support the EU bioeconomy and the related policies, the report delivers an assessment of EU biomass production, uses, flows and related environmental impacts for the sectors agriculture, forestry, fisheries and aquaculture, and algae. Quantitative estimates are derived from available data and current knowledge, yet highlighting the uncertainties and the remaining gaps.

▸ *europa.eu/!rR83km*

Fish, a treasure from the sea to be protected (VIDEO)

This video shows how the JRC contributes to Blue Growth, the maritime contribution to achieving the goals of the Europe 2020 strategy for smart, sustainable and inclusive growth.

▸ *europa.eu/!uY88Mx*

Harm caused by marine litter (REPORT)

The strategy to implement the Marine strategy framework directive (MSFD) aims to enable its coherent and harmonious implementation. It focuses on methodological questions and one of the objectives of the strategy is to develop non-legally binding and practical documents, such as this thematic report, which is part of a series.

▸ *europa.eu/!Uh97cQ*

Enhancing fish species identification using novel markers and emerging technologies (REPORT)

Establishing an efficient traceability framework for fish products is crucial for consumer protection, and fisheries management and conservation.

▸ *europa.eu/!NR74ft*

Fishing intensity (INFOGRAPHIC)

The JRC analysed a large automatic identification system (AIS) dataset covering one year of activity by EU fishing vessels over 15 metres in length. It produced the first high-resolution map of fishing intensity covering all EU waters, examining the gravitation between ports and coastal-community dependency on fishing grounds.

▸ *europa.eu/!Vg73pw*

The EU fishing fleet (REPORT)

This Economic Paper was produced by experts of Directorate-General for Maritime Affairs and Fisheries and the Joint Research Centre; it involves the processing of over 2 000 000 data points submitted by Member States under the Data Collection Framework which specifies the data requirements MS must collect on their fishing fleet.

▸ *europa.eu/!Wk34Rp*

Marine sustainability in an age of changing oceans and seas (REPORT)

The aim of this report is to contribute to addressing the governance challenge of how to integrate the various aspects of marine policy (fisheries management, biodiversity conservation and marine environmental protection) as part of a coherent ecosystem approach.

▸ *europa.eu/!BP77jJ*

European atlas of forest tree species (REPORT)

This atlas is the first JRC comprehensive publication of such a unique and essential environmental resource, that is, our trees. Leading scientists and forestry professionals have contributed in the many stages of the production of this atlas designing both a scientific publication and a dinamic database of information suited for education and dissemination of knowledge.

▸ *europa.eu/!CJ34jT*

Soil atlas of Africa (REPORT)

Leading soil scientists from Europe and Africa collaborated with the JRC to produce the first Soil atlas of Africa, which shows the changing nature of soil across the continent. It is an essential reference on a non-renewable resource that is fundamental for life on this planet.

▸ *europa.eu/!pb94WV*

Soil atlas of Latin America and the Caribbean (REPORT)

The Soil atlas of Latin America and the Caribbean is the result of collaboration between the JRC and scientists from Latin America, the Caribbean, Europe and North America. It describes the different soils and uses digital soil-mapping technology to illustrate the high diversity of soil characteristics.

▸ *europa.eu/!JW77qq*

Soil atlas of northern circumpolar region (REPORT)

The atlas is the result of a 3-year collaborative project by the JRC with partners from northern EU countries, as well as Norway, Iceland, Greenland, Canada, the USA and Russia. It describes the origin and major characteristics of the different soil types, using striking maps, informative texts and dramatic photographs.

▸ *europa.eu/!QB46Gr*

Soil atlas of Europe (REPORT)

A team of leading European soil scientists collaborated with the JRC to produce the first JRC Soil atlas of Europe. It explains the origin and role of soil, describes the different soil types that can be found in Europe, and discusses the main threats to soil across Europe and the steps being taken within the EU to protect soil resources.

▸ *europa.eu/!ug47rx*

Urban water atlas for Europe (REPORT)

The Urban water atlas for Europe reveals the new, pioneering concept of Sci-Art Water Diplomacy. The atlas compiles best practices in urban water management and demonstrates how cities are addressing issues by endeavouring to become not only smart, but also resilient to water challenges.

▸ *europa.eu/!nw38Kw*

Water innovation support laboratory (360° TOUR)

This video takes you into the JRC Water innovation support laboratory to see how we measure and characterise water.

▸ *europa.eu/!dH88DQ*

Science for environmental sustainability (REPORT)

This report describes the JRC's work to support sustainable development. It shows which tools, methods, analyses and activities contribute to a better understanding, monitoring and anticipation of the complex interactions between human activity and the natural environment.

▸ *europa.eu/!Pf93rY*

Go green with Best Environmental Management Practices, BEMP (INFOGRAPHICS)

The JRC is developing a guidance document intended to assist professionals in the agriculture sector to improve the environmental sustainability of farms. Working in partnership with experts from the sector, the JRC has identified and described a collection of "Best Environmental Management Practices".

▸ *europa.eu/!jr63xx*

Potential spread pathways for the plant pathogen Xylella fastidiosa in Puglia (Italy)
Source: JRC Scientific Reports 7, Article number 71

Regional policy

The JRC studies the implications of demographic change and rapid urbanisation. It seeks ways to measure and maximise the impact of regional funding.

Socio-economic mapping of Europe at regional and sub-regional levels

Smart Specialisation Platform (SP3)

Advanced territorial modelling to optimise regional investments

TERRITORIAL POLICIES (KNOWLEDGE CENTRE)

The Knowledge Centre for Territorial Policies (KCTP) is a new European Commission initiative on better knowledge management for sound EU policy making. To strengthen the Commission's overall support to territorial development, the KCTP aims to be the point of reference for Commission services and Member States on territorial and regional related issues.

▸ *http://europa.eu/!UP66YD*

Urban data platform

(VIDEO)

The Urban data platform is a joint initiative of the Joint Research Centre and the Directorate-General for Regional and Urban Policy which aims to provide access to information on the status and trends of European cities and their surrounding regions.

▸ *europa.eu/!gn84FH*

JRC services

(REPORT)

The handbook presents how the JRC help national governments and institutions achieve their goals on a sound evidence basis. Services are presented both in a thematic section covering different policy areas, and in a horizontal section covering more generic offering such as access to data and infrastructure, education and training or certified reference materials.

▸ *europa.eu/!HU36tB*

Practical handbook for regional authorities

(REPORT)

This handbook sets out how regional and city authorities can use existing JRC knowledge, information and tools to support their work. It contains concise topic-based descriptions of products that were conceived in a specific policy context according to a set of thematic areas.

▸ *europa.eu/!cv87wK*

Innovation and Regional Specialisation in Latin America

(REPORT)

The Smart Specialisation concept is being widely considered by several countries and regions of Latin-America. This report highlights how policy makers of Mexico, Brazil, Colombia, Peru, Chile and Argentina are considering the Smart Specialisation concept as an inspirational driver of regional innovation and specialisation.

▸ *europa.eu/!kw49Md*

Smart stories

(REPORT)

This publication takes you through the features of Smart Specialisation as applied in a number of EU countries and regions, letting you explore the concept and its policy implications in more detail, and identify complementarities and potential for mutual learning and collaboration.

▸ *europa.eu/!wk64jx*

Smart Specialisation Platform

(INFOGRAPHIC)

The Smart Specialisation Platform advises EU countries and regions on the design and implementation of their Smart Specialisation Strategy (S3). It provides guidance material, informs strategy formulation and policymaking, facilitates peer reviews and mutual learning, supports access to relevant data and trains policymakers.

▸ *europa.eu/!kr33XM*

The PESETA project

(VIDEO)

This video explains how scientists at the JRC study climate change and try to analyse the different possible affects it could have on Europe. Why should we even think about these things? Will it help us to be better prepared for what could happen?

▸ *europa.eu/!WY63Vb*

Supporting an Innovation Agenda for the Western Balkans

(REPORT)

This report gives an overview of the Western Balkans region, looking at challenges and emerging potentials for innovation. It also presents tools and methodologies available at the JRC to support an innovation agenda for economic transformation and inspired by Smart Specialisation. Each challenge is supported by a concrete implementation example.

▸ *europa.eu/!gk99jp*

Regionalisation of demographic and economic projections

(REPORT)

The work presented in this report provides scientific support to the development of the Cohesion Policy and other policies with a strong territorial dimension. It contributes to the pilot Knowledge Centre for Territorial Policies' knowledge base.

▸ *europa.eu/!br97qw*

European territorial trends

(REPORT)

This report analyses a set of territorial trends at continental and sub-national scale, looking at patterns and determinants of regional growth, while considering pan-European and national characteristics. Past and prospective demographic and economic trends are analysed to provide a picture of 'what, where, when and how' things happen in European cities and regions.

▸ *europa.eu/!UM44Vh*

RHOMOLO

(INFOGRAPHIC)

RHOMOLO is the European Commission's spatial, computable, general equilibrium model focusing on EU regions. It is used for policy impact assessment and provides sector, region and time-specific simulations to support to EU policymaking for investments and reforms covering a wide range of policies.

▸ *europa.eu/!nD94Hq*

Place-based innovation ecosystems

(REPORT)

This research study was the result of collaboration between the Committee of the Regions (CoR) and the JRC on promoting the importance of evidence-based policy development for regional and urban policymakers. It identifies key success factors in the Espoo innovation ecosystem.

▸ *europa.eu/!Xy98wr*

Accessibility to Paris (France)
Source: JRC, LUISA Territorial Modelling Platform

Nuclear security and safety

The JRC's work focuses on the safety, security, safeguarding and non-proliferation of current and new-generation nuclear reactors and fuel cycles, and investigating nuclear waste management options, decommissioning and applications of nuclear science to other fields.

- Building capacity in the EU and third countries
- Nuclear waste management options and decommissioning
- Technical support to safeguards and non-proliferation regimes
- EU radioactivity Environmental Monitoring
- Training experts in Member States and globally
- Open access to JRC infrastructures
- Radioisotopes for medical targeted therapies

Nuclear safety

(VIDEO)

Under the Euratom programme, the JRC provides technical and scientific support to EU policies on nuclear safety, security and radiation protection. The video shows how JRC scientists investigate nuclear spent-fuel samples from various types of operating nuclear reactors in the EU.

▸ europa.eu/!HW64Gy

Atomic detectives

(VIDEO)

This video shows the work of the 'atomic detectives', the JRC scientists that keep us safe from the risk of illicit or malicious use of nuclear material. Whenever nuclear material is intercepted inside Europe, the competent authorities can trust the JRC's scientists to discover its origins and its intended use.

▸ europa.eu/!Kp79fu

Management of spent nuclear fuel and its waste

(REPORT)

This report by the JRC and European Academies Science Advisory Council informs policymakers about important issues to take into consideration in national programmes for managing spent fuel and radioactive waste. It describes the options for spent-fuel management, their present state of development and their consequences.

▸ europa.eu/!qn63cd

Science for nuclear safety and security

(REPORT)

Nuclear safety and security are absolute priorities for the EU. The JRC supports the Commission in fulfilling the obligations originally established by the Euratom (European Atomic Energy Community) Treaty in the areas of nuclear research, training and education, and radiation protection.

▸ europa.eu/!dd68Mw

European radiological data exchange platform

(VIDEO)

This video explains the development of the European radiological data exchange platform (EURDEP) and its present usage. It provides radiological monitoring data across 39 participating countries, in almost real-time, through automatic surveillance systems.

▸ europa.eu/!Gv49rg

Training and education

(VIDEO)

The JRC is making a significant contribution to the European education and training efforts to maintain the high level of nuclear safety in the EU. The video shows a training session in which a car is monitored for radioactive material to detect nuclear smugglers.

▸ europa.eu/!HW64Gy

Education and training in nuclear decommissioning

(REPORT)

This report tackles questions in relation to education and training in nuclear decommissioning and gives suggestions for supporting the development, coordination and promotion of adequate education and training programmes, at EU level, in nuclear decommissioning.

▸ europa.eu/!Kf63hT

Advancing implementation of nuclear decommissioning

(REPORT)

The report supports the development of adequate policies in International Atomic Energy Agency (IAEA) Member States for decommissioning and environmental remediation. It addresses the motivations for implementation and the main constraints hindering progress in decommissioning and environmental remediation programmes, as well as solutions for overcoming them.

▸ europa.eu/!Vw96WP

EU efforts to strengthen nuclear security

(REPORT)

The staff working document was prepared in view of the upcoming (and last) 2016 Nuclear Security Summit in Washington. It describes some of the EU's achievements, focusing on key developments since the launch of the Nuclear Security Summits process in 2010.

▸ europa.eu/!BB39rN

CBRNE Glossary

(REPORT)

The EU CBRNE Glossary (Chemical, Biological, Radiological, Nuclear, and Explosives) is an information tool for practitioners in response and resilience (police, fire brigades, security, first responders, civil protection, border control, authorities etc.). It is available in 28 languages and is accessible online or as smartphone app.

▸ europa.eu/!tX73Uc

JRC research and development in nuclear safeguards

(REPORT)

The brochure illustrates the continuous development of technologies, instruments and methods by the JRC to support the implementation of Euratom and IAEA safeguards regimes.

▸ europa.eu/!KH79Fj

Illicit trafficking Radiation Assessment Program

(REPORT)

This summary report aims at making the results of the ITRAP+10 test campaign available to the international community. It includes an overview of its test programme and a summary of results across the nine classes of tested instruments, and takes into account the discussion of the standards used for testing and the feedback provided to the standards community.

▸ europa.eu/!PV49KX

European Indoor Radon Map
Source: JRC, Radioactivity Environmental Monitoring (REM)

Vehicle emissions

The JRC supports sustainable mobility for Europe: safe, connected and clean.

Designing global standards for electric and low emission vehicles to support EU industry

Joint EU-US interoperability laboratory for smart grids and electric vehicles

Shaping standards for e-mobility

Global pioneer in portable emissions measurement in real driving conditions

Scientific support for new type approval framework and market surveillance for motor vehicles

Safety of energy storage technologies including standardisation and regulations

European Research and innovation towards sustainable and competitive energy storage technologies

Battery energy storage testing for safe electric transport (VIDEO)

The JRC's research infrastructure, Battery energy storage testing for safe electric transport (BESTEST), anticipates a growing need for robust and impartial research on rechargeable energy-storage systems for normative and regulatory purposes.

▸ *europa.eu/!cw83yv*

EU competitiveness in advanced li-ion batteries (REPORT)

Outline of automotive Li-ion battery value chain identifying current market volumes, leaders and status of the EU industry. The EU industry is far from being self-sufficient in all segments of the value chain. R&I investment are essential to respond to new opportunities presented by the EV market.

▸ *europa.eu/!cb74uD*

Portable emissions measurement systems (REPORT)

This report summarises the findings of the JRC evaluation of PM-PEMS (particulate matter – portable emissions measurement system) instruments in the lab and on the road.

▸ *europa.eu/!RT34rC*

The r-evolution of driving (REPORT)

The future of driving will be radically different from now on, with the introduction of automated and connected vehicles. Coordinated automated and connected vehicles are investigated in this study as they could help avoid possible negative consequences of road automation, and enable safe low-emission mobility.

▸ *europa.eu/!GP68GM*

EV-smart grid interoperability centres in Europe and the US (BOOKLET)

The EV-smart grid interoperability centres at the U.S. Department of energy's Argonne National Laboratory and the European Commission's JRC are providing a venue for global industry-government cooperation that is focused on the joint development of standards and test procedures for electric vehicles.

▸ *europa.eu/!Dg66mj*

The European interoperability centre for electric vehicles and smart grids (LEAFLET)

The European interoperability centre for electric vehicles and smart grids combines four new, state-of-the-art laboratories. The centre establishes a transatlantic bridge with its partner facility at the U.S. department of energy's Argonne National Laboratory.

▸ *europa.eu/!tq67Rr*

Battery energy storage testing for safer, better batteries (LEAFLET)

The JRC's BATTEST (battery testing) project focuses on independent performance and safety assessment, and includes experimental battery testing and modelling for transport and energy-storage applications

▸ *europa.eu/!Fn69Ju*

Vehicle emissions laboratory (360° TOUR)

The Vehicle emissions laboratory (VELA) in Ispra, Italy, comprises two well-equipped chemical and physical analysis labs and seven major testing facilities capable of conducting emissions tests on a variety of vehicles (including measuring evaporative emissions). These range from motorbikes to passenger cars and even large heavy-duty engines.

▸ *europa.eu/!MK68Ym*

Inside the Vehicle emissions laboratory (VIDEO)

This video shows how the emissions or efficiency of scooters, cars, lorries and buses are tested in the JRC's Vehicle Emissions Laboratory. It also explains how road testing and lab tests can be compared and how to calculate whether a biofuel is really 'greener' than petrol.

▸ *europa.eu/!MK68Ym*

Geo-referenced energy demand for electric cars in the province area of Florence (Italy)
Source: JRC, Vehicle Emissions Laboratory (VELA)

Digital transformation

The JRC studies the economic and cultural roles of Internet platforms. It also focuses on emerging transformational technologies and their socio-economic impact.

- **Economics of the Digital Single Market**
- **Machine intelligence and human behaviour**
- **Citizen Science**
- **Digital competences and transformation in education**
- **Digital transformation of government**

The 2017 PREDICT. Key facts report

(REPORT)

The 2017 edition of the PREDICT Key Facts Report includes the novelty of backwards reconstruction of the series from 1995 and therefore provides a long-term analysis of the European Union (EU) ICT sector and its R&D.

▸ *europa.eu/!yn78BY*

Kaleidoscope on the Internet of Toys: safety, security, privacy and societal insights

(REPORT)

This paper gives an insight on safety, security, privacy and societal questions emerging from the rise of the Internet of Toys, meaning Internet Connected Toys that participate along with the wave of other domestic connected objects in increasing our everyday contacts with ICT.

▸ *europa.eu/!vH64nU*

Mapping EU investments in ICT

(REPORT)

This report outlines the cooperation with the EC Directorate-General for Communications Networks, Content and Technology, which has led to the development of an online tool allowing users to identify planned ICT investments under the European structural and investment funds (ESIF).

▸ *europa.eu/!mc88uh*

Internet of Toys

(INFOGRAPHICS)

JRC scientists and international experts look at the safety, security, privacy and societal questions emerging from the rise of the Internet of Toys to invite policymakers, industry, parents and teachers to study connected toys more in depth in order to provide a framework which ensures that these toys are safe and beneficial for children.

▸ *europa.eu/!Uk64jT*

Introduction to INSPIRE

(VIDEO)

The European Spatial Data Infrastructure created for the INSPIRE Directive enables the sharing of environmental spatial information among public sector organisations, facilitates public access to spatial information across Europe, and supports cross-border policymaking.

▸ *europa.eu/!FW46vU*

Crowdsourcing citizens intelligence and feedback using mobile apps

(REPORT & INFOGRAPHICS)

Tackling invasive alien species (IAS) demands international collaboration, harmonisation and data sharing. Within the framework of the MYGEOSS citizen science initiative, the JRC has developed an application that allows users to report the presence of 37 species currently listed as being of concern in the EU.

▸ *europa.eu/!TV76KJ*

7 ways to boost digital innovation and entrepreneurship in Europe

(REPORT)

This report summarises the findings and conclusions of over 30 EURIPIDIS (European Innovation Policies for the Digital Shift) studies. The aim is to better understand and assess the EU's digital innovation and entrepreneurial performance to suggest how policy makers could improve digital innovation and entrepreneurship in the EU.

▸ *europa.eu/!qN44Dm*

Innovation radar

(REPORT)

This report was prepared in the context of EURIPIDIS with the objective to provide evidence-based support for the policies, instruments and measurement needs of DG CONNECT to enhance ICT innovation in Europe.

▸ *europa.eu/!Cu94Qc*

The digital competence framework for citizens

(REPORT)

The European digital competence framework for citizens, also known as DigComp, is a tool developed in 2013 to improve citizens' digital competence, help policymakers formulate policies that support digital competence building, and plan education and training initiatives to improve the digital competence of specific target groups.

▸ *europa.eu/!cG39xQ*

Entrepreneurship is about spotting opportunities

(VIDEO)

The Entrepreneurship competence framework identifies the competences that make someone entrepreneurial and helps to promote them in organisations, companies, the education sector and among citizens. This playlist introduces the 15 competences and offers ideas on how to embed them into classroom activities by primary and secondary school teachers.

▸ *bit.ly/2fgIMjz*

The EU ICT sector

(INFOGRAPHICS)

ICT poles of excellence measures ICT activity and ranks European regions based on their performance. Results show that most ICT activity takes place in 34 EU regions (out the 1303 analysed) located in 12 countries, which represent a large share of the total EU ICT activity.

▸ *europa.eu/!Vm83nk*

Distribution of INSPIRE metadata across europe
Source: INSPIRE geoportal, metadata extracted and filtered by the JRC

Globe

Innovation and growth

Top investors in R&D

The JRC monitors the evolution of R&D investment to analyse industrial dynamics in key innovative sectors, and to benchmark EU companies against their main global competitors. The globe shows where the top 2,500 companies investing the most in R&D are located to help predict where research outcomes will be translated into business opportunities.

Creative cities monitor

JRC scientists compare the cultural vibrancy, creative economy and enabling environment of 168 European cities. The globe shows culturally vibrant cities which have the ability to attract and retain educated and creative individuals and/or perform better at providing a creative economy for their inhabitants.

Measuring global innovation

The JRC is the only organisation in the world that audits composite indicators in all policy areas. The globe shows 7 factors which were combined to produce the 2017 index for governments to use in tailoring policies for long-term growth and job creation.

Safety and security

Tsunami

Sea levels and movements are estimated by the Global Disaster Alert and Coordination System (GDACS), the automatic disaster-alert system developed by the JRC that operates worldwide to warn of tsunami. The simulation on the globe shows the behaviour of waves for several hours after the initial shock that triggered the tsunami in Japan in 2011.

Earthquake

Even though earthquakes are considered unpredictable, the JRC has developed ways to improve disaster risk management. The globe shows major earthquake alerts detected by the Global Disaster Alert and Coordination System (GDACS) during the course of a year. Alerts are launched based on the potential humanitarian impact of an earthquake.

Continents on the move

This globe shows the earth's movement over millions of years. These movements cause major natural disasters, such as earthquakes, tsunami and volcanic eruptions. The JRC's work in the Crisis Management Laboratory enables the EU's Emergency Response Coordination Centre to provide a coherent response during emergencies.

Safety and security

An eye on the sea

Vessel tracking provides knowledge of what is happening at sea, including illegal fishing. The JRC monitors and integrates ships' movements with contextual information and satellite-based imagery to track up to 160,000 vessels in real-time. The globe shows the position of large European cargo and passenger ships as detected every 6 hours over the period of one month.

Health and consumer protection

Breast cancer

The European Commission Initiative on Breast Cancer is a patient-centred initiative developed by the JRC to improve and harmonise breast cancer care in Europe. Breast cancer is the most common cancer in Europe and the most deadly for women. The globe shows the countries that have already adopted organised screening programmes by 2017.

Bacterial resistance to antibiotics

The globe shows the evolution of the resistance to antibiotics of E. coli between 1999 and 2015 in selected countries, and reveals that many countries do not collect samples to investigate antimicrobial resistance. The JRC is working on innovative techniques to investigate the resistance of E. coli and other bacteria at DNA level.

Energy and transport

Solar energy

Each issue of SETIS' quarterly magazine is dedicated to a different low-carbon energy technology or relevant aspects of the sector, covering the latest developments in each subject. The magazines also include a SET Plan update, detailing the actions taken to achieve the integrated SET Plan objectives for the relevant sector.

Mapping urban and rural areas

The JRC analyses satellite images to produce fine-scale global human settlement information as indicators of vulnerability and poverty distribution, and for disaster risk management operations. The globe shows the time required to reach a major city, and access to services meeting basic human needs, such as water, health, markets and education.

Air traffic monitoring

Air transport is still one of the safest forms of travel and is expected to continue growing in the next decades. JRC collects and exchanges accident and incident information to help improve aviation safety of European skies.

Agriculture and food security

Soil types

Soils perform a number of vital environmental, social and economic functions, which the JRC studies through satellite observation and extensive sampling campaigns across the EU and beyond. This globe shows the global classification of the major soil types detailed in the JRC Soil Atlas series.

Soil biodiversity

The JRC collects and classifies soil samples to monitor the evolution of soil health using, for example, DNA analysis. This information provides the basis for soil protection policies and is used by scientists around the world. The globe shows the level of soil biodiversity in 2016.

The changing face of Earth's water

JRC scientists have created the Global Surface Water Explorer by combining 3 million satellite scenes and using the power of 10,000 Google Earth computers. It is used to observe surface water dynamics across the globe over the course of the last 32 years. The globe shows the changes in water bodies, such as the Aral Sea.

Environment and climate change

Global urbanisation and city growth

The JRC generates detailed information used for crisis management operations and urban planning by mapping human settlements using satellite imagery, census data and geographic information. The globe indicates high density human settlements and their evolution over the past 40 years.

Monitoring forests

The JRC uses satellite images to monitor forest loss, which has an impact on climate, biodiversity and water, and increases natural hazards. The globe shows the gross forest loss detected by the JRC in the tropical belt in the periods 1990-2000 and 2000-2010. Every year, the equivalent of about 18 million football fields of forests is lost.

Rainfall causing floods

The JRC and the European Centre for Medium-Range Weather Forecasts (ECMWF) developed a Global Flood Awareness System (GloFAS), which can predict floods up to 2 weeks in advance to provide timely information to everyone who needs to intervene. The globe shows rainfall levels recorded over a 24-hour period, according to intensity.

Nuclear security and safety

Nuclear safeguards

This globe shows the location and typology of the 130 nuclear reactors across Europe and others around the world. JRC experts are present at the plants for more than 40 weeks a year, carrying out an average of 800 spent-fuel analyses and ensuring that nuclear material within the EU is not diverted from its intended use.

Simulation: radioactive release in enviroment

This globe shows a simulation of how a radioactive plume would spread over a 72-hour period if an accident had occurred at the Paks Nuclear Power Plant in Hungary at 6.30 a.m. on 21 June 2017, given the meteorological conditions at the time. Should an unexpected release of radioactive materials into the environment occur, JRC can trace its spread.

New life for nuclear buildings

The JRC Visitors' Centre used to be a nuclear research laboratory. It is the first nuclear building in Italy to be used for a new purpose. On this map, you can see the location of decommissioned nuclear reactors around the world. The JRC is supporting EU and Member State authorities in the decommissioning process and waste management of spent nuclear material.

Standards

Proteins in human serum

The globe shows the collection of blood protein samples and collaboration with international laboratories by the JRC to produce a new reference material for blood proteins, as well as the distribution of this material for calibration procedures.

Building safety

ELSA (the largest reaction wall in Europe) simulates the effects of earthquakes to test buildings' resilience to shocks. Results are used for the Eurocodes, which are standards for infrastructure design. The globe shows where the Eurocodes have already been adopted in the EU and which countries beyond EU borders have shown interest in their use.

Confidence in measurements

Certified Reference Materials (CRMs) are materials for which one or several properties are determined very accurately. The JRC first started producing CRMs in the 1960s and today we are the biggest CRM producer in Europe, distributing more than 20,000 units annually. The map shows where in the world the JRC distributed its CRMs in 2016.

Digital society

The internet

JRC scientists monitor Internet infrastructure to detect and analyse any 'abnormal' behaviour resulting from attacks or accidents, and to improve the resilience of this critical global infrastructure. The globe shows digital information transferred via undersea fibre-optic cables and local, land-based internet routers.

Cybersecurity for children

The JRC conducts qualitative analysis on children's online behaviour and parental support to create policies to keep children safer while online. The globe shows where the Happy Onlife interactive educational game – developed by the JRC to raise awareness of the risks and opportunities of Internet use among 8-12 year-olds – has been downloaded.

Cyber attacks

Smart devices are devices linked to the Internet (smartphones, toys, security cameras, fridges, heating systems, etc.). The JRC conducts research on cybersecurity and the fight against cybercrime. The globe shows a JRC experiment to observe cyber-attacks carried out on a smart device connected to the Internet during one month.

Science and knowledge service fit for the 21st century

"The worlds of science and policy are changing very quickly. Policymakers everywhere face an astonishing pace of change and increasingly complex societal challenges. The JRC must therefore adopt multidisciplinary approaches that have multiple starting points and are based on multiple perspectives.

The availability of 'big data', coupled with new data analytics, is stimulating scientific discovery. The JRC develops techniques for data mapping, analytics and visualisation to underpin policymaking.

The JRC supports innovation in policymaking through experimentation with new tools, methods and approaches applied to policy issues and problems, bringing together and, where possible, combining foresight, behavioural insights and policy design. "

Promoting innovative policymaking: the EU Policy lab offers foresight, behavioural insights and design thinking.

Anticipating emerging technologies: Tools for Innovation Monitoring (TIM).

Harnessing big data for smarter policies: text mining and analysis, media monitoring, scientific spatial information.

EU Policy lab.

TEXT MINING AND ANALYSIS (COMPETENCE CENTRE)

The monitoring of internet trends has great potential to inform sound policy action. The Competence Centre on Text-Mining and Analysis (CCTMA) develops text-mining techniques and tools that are needed throughout the EU institutions. It also provides two important tools: the Europe media monitor (EMM) and the Tool for innovation monitoring (TIM).

▸ *europa.eu/!ff98xq*

EU Policy lab

(INFOGRAPHIC)

The EU Policy lab is a collaborative and experimental space for innovative policymaking. It provides support to DGs and services through design-based, innovative exploratory sessions and prototyping.

▸ *europa.eu/!nf74DW*

Behavioural insights applied to policy

(REPORT AND INFOGRAPHIC)

The report Behavioural insights applied to policy 2016 draws on information collected through desk research, a survey and personal exchanges. This information is used to provide a twofold overview of behavioural policy initiatives and institutional developments relating to the policy application of behavioural insights.

▸ *europa.eu/!dv74mX*

Why Foresight for EU policy making?

(VIDEO)

This video offers insights into foresight, how to communicate it and how it is used in policymaking.

▸ *europa.eu/!uF36Cq*

2035: paths towards a sustainable EU economy
(REPORT)

The study takes a systemic approach to eco-industries by looking at those whose business objectives contribute to achieving greater sustainability and resource efficiency in the economy - the 'enablers'. It followed a classic foresight approach to scenario development based on an expert panel.

▸ *europa.eu/!Dq36XP*

Non-ferrous metals manufacturing: vision for 2050 and actions needed
(REPORT)

This foresight study applied a highly participatory, qualitative methodology that gathered representatives of the non-ferrous metals industry, research institutions, policymakers, trade unions and stakeholders from upstream and downstream sectors.

▸ *europa.eu/!Gm67tR*

Textiles and Clothing Manufacturing: Vision for 2025 and Actions Needed
(REPORT)

This project is set in the context of the European industrial policy objective declared in 2010 to bring the share of industry in EU GDP from 15 to 20 per cent by 2020. It applies the Industrial Landscape Vision 2025 (ILV2025), a forward looking tool developed in a previous JRC foresight study on advanced manufacturing.

▸ *europa.eu/!TJ48MD*

JRC thinkers 'n' tinkers makerspace

(REPORT)

This concept note makes the case for creating an in-house 'makerspace' geared towards citizen engagement in technoscientific innovations.

▸ *europa.eu/!gB44kt*

Citizen engagement in science and policymaking
(REPORT)

This report provides the backbone for a set of key guidelines and recommendations for pursuing citizen engagement in science and policymaking within the context of the European Commission.

▸ *europa.eu/!Ux43xw*

Tool for Innovation Monitoring

(LEAFLET)

The Tool for innovation monitoring (TIM) aims to provide specific and relevant knowledge on innovation and technological development, and makes it possible for policymakers to address specific policy needs.

▸ *europa.eu/!yT98Fu*

Unlock the power of data research

(VIDEO & LEAFLET)

Research data that the JRC produces, sometimes in cooperation with other partners, is made publicly available in the JRC data catalogue, and its datasets can be freely consulted and downloaded. It supports the Commission's strategy on open science for improved knowledge circulation and innovation to generate growth.

▸ *europa.eu/!Hw68Yj*

If you would like to learn more about the activities of the JRC, please contact:

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Belgium

Website: ***https://ec.europa.eu/jrc***
Email: ***https://ec.europa.eu/jrc/en/contact/form***

Catalogue Exhibition
Putting science at the heart of European policymaking: An exhibition of the European Commission's science and knowledge service Joint Research Centre (JRC)

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