

The European Commission's science and knowledge service

Joint Research Centre



European
Commission

Initiatives to promote the Three Rs in education and training

Francesca Pistollato, European Commission, Joint Research Centre

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The Joint Research Centre (JRC)

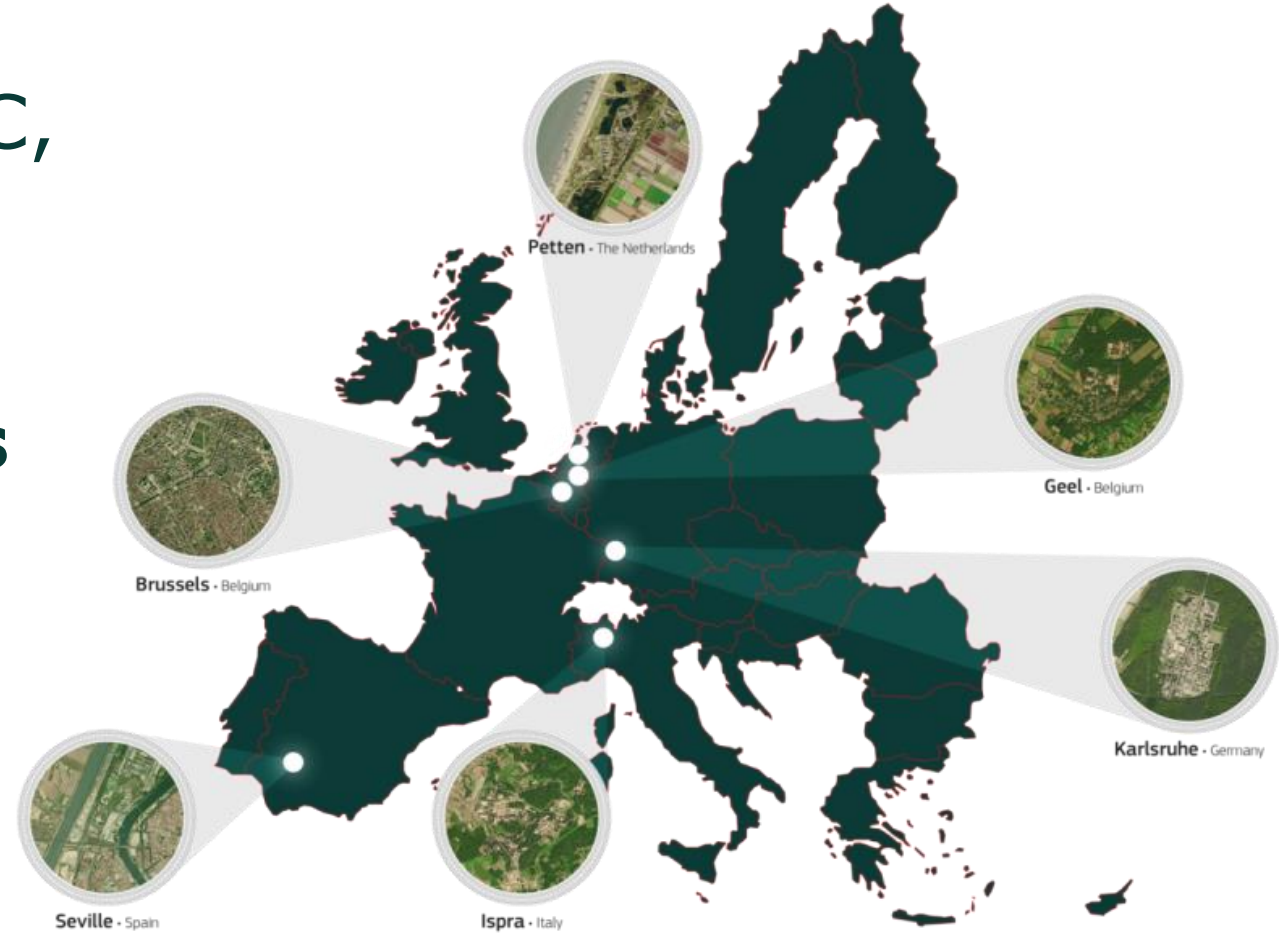
A Directorate-General of the EC,
**provides science and
knowledge support to the
Commission and EU policies**

~ 3000 staff

Almost 75% are scientists

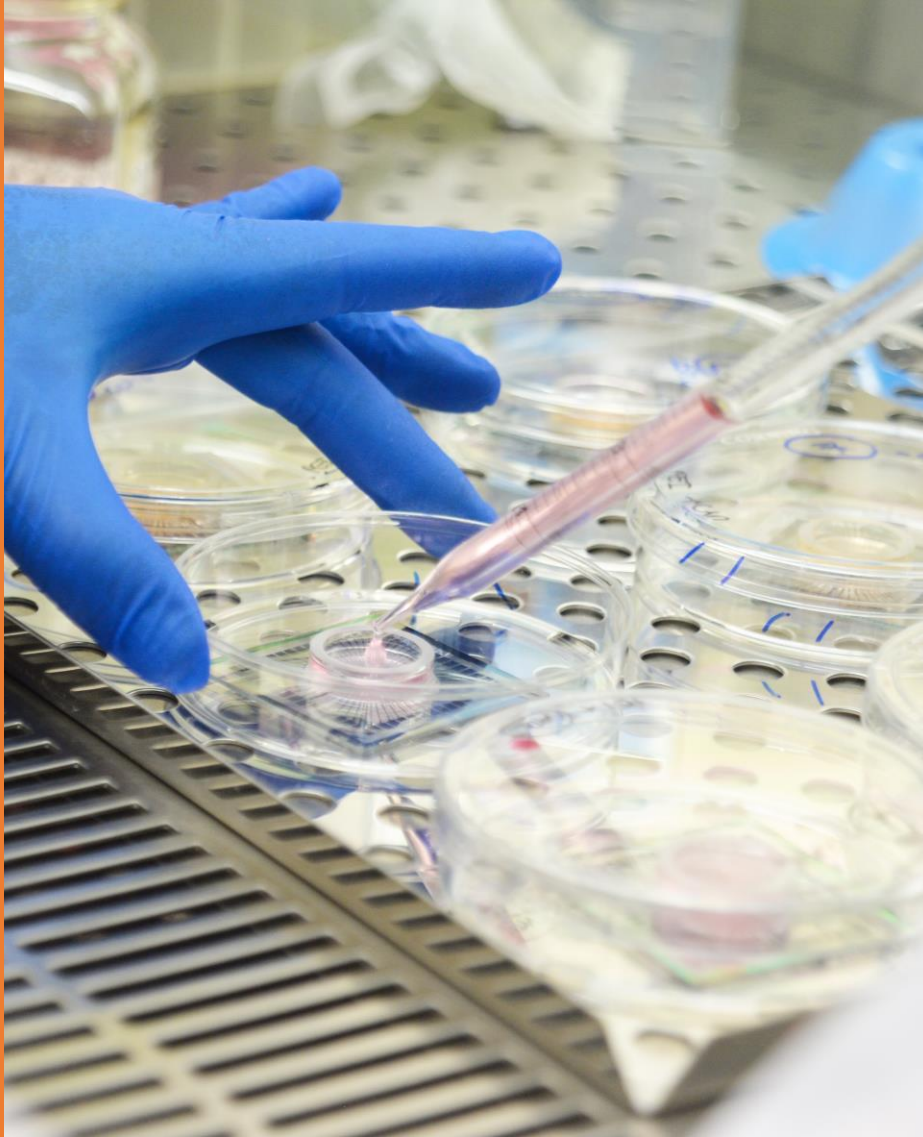
Headquarters in Brussels.

Research facilities located in 5 EU Member States.



Chemical Safety and Alternative Methods and EURL ECVAM

Directive 2010/63/EU



The EU Reference Laboratory for alternatives to animal testing (EURL ECVAM)



Validation



Research



Dissemination



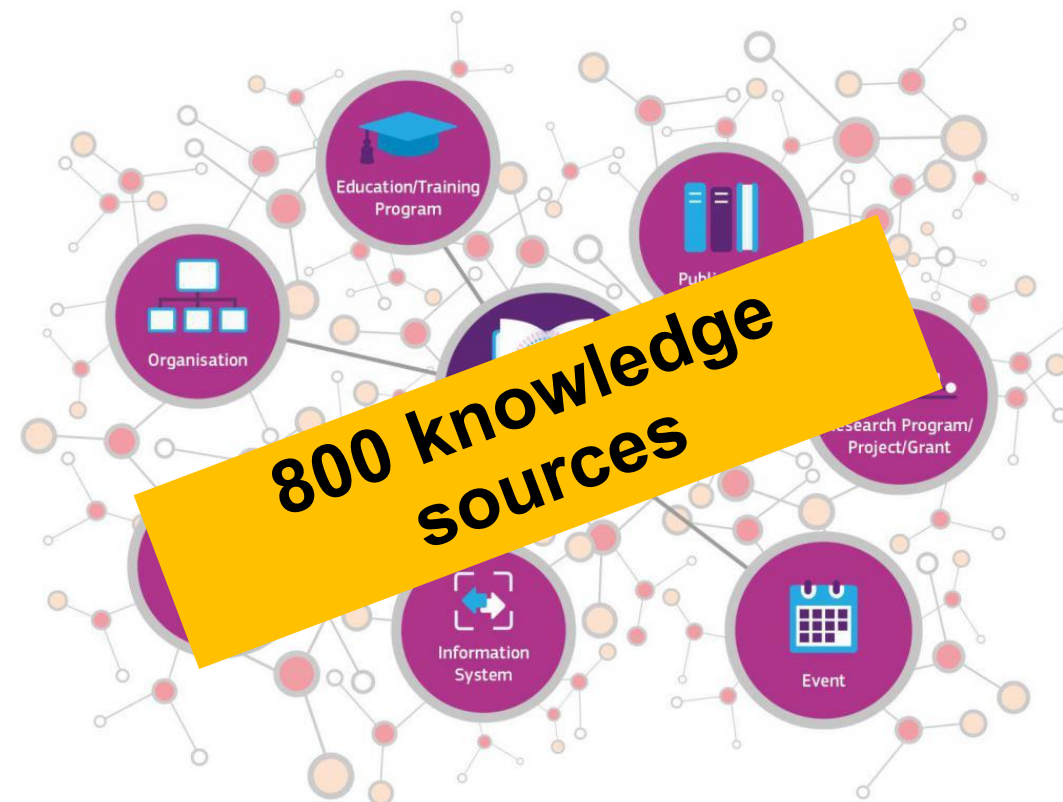
Promotion



European Citizens' Initiative (ECI) "Stop Vivisection"

**EC-JRC: What is the current
status regarding the sharing
of knowledge relevant to
3Rs?**

Inventory of the 3Rs knowledge sources



Publicly available: JRC Data Catalogue¹

Edelweiss Connect²

Norecopa³

¹<https://data.jrc.ec.europa.eu/dataset/jrc-eurl-ecvam-eurl-ecvam-3rs>

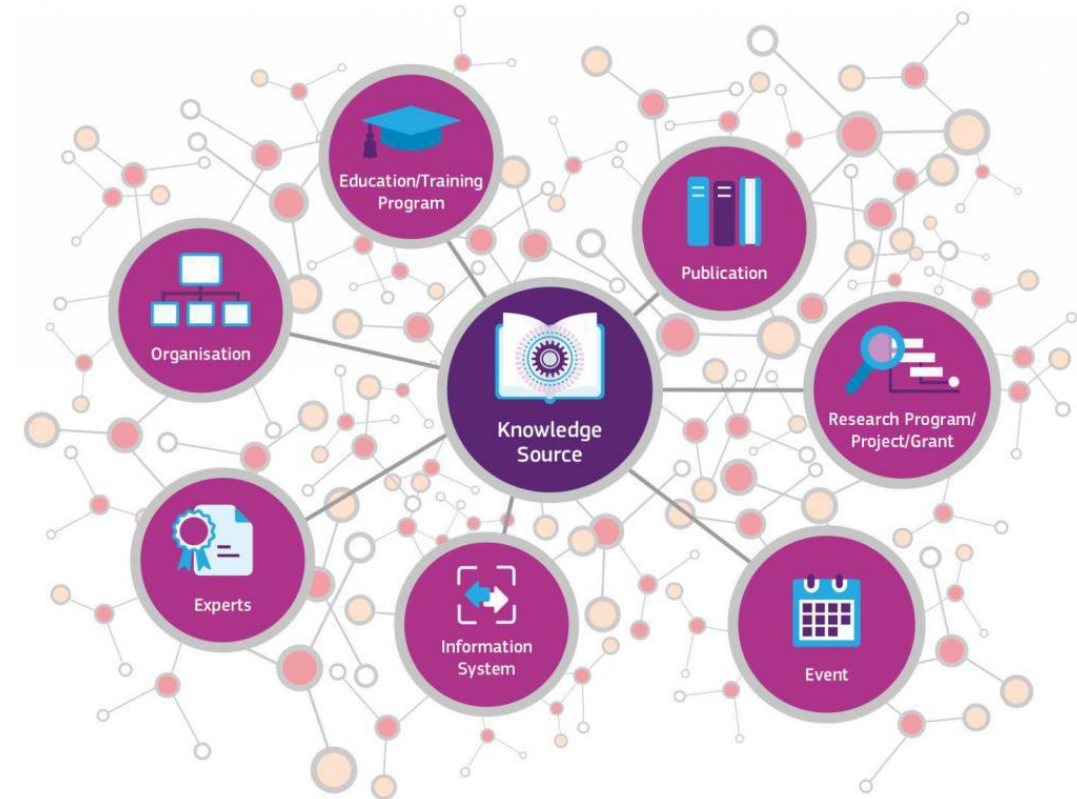
²<https://3rs.douglasconnect.com/>

³<https://t.co/ZmhHd83fhm>

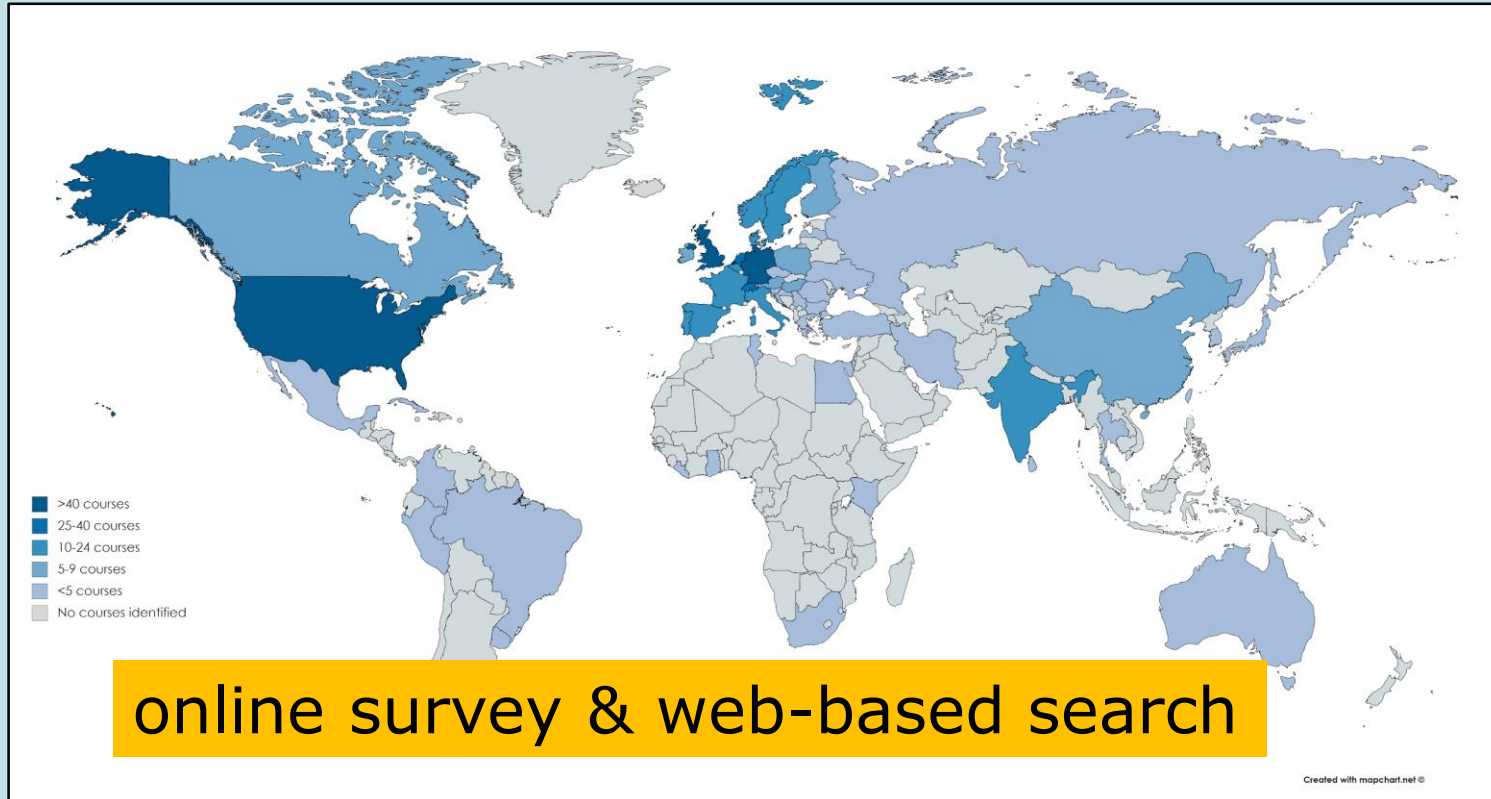
Pillars for advancing the Three Rs

- ❖ Coordination
 - ❖ Communication and outreach
 - ❖ Education and training
- sharing can be improved through more emphasis on E&T initiatives to promote the 3Rs in the three levels of education:
- 1.secondary school
 - 2.university
 - 3.continuing education (CE)

Inventory of the 3Rs knowledge sources



What is the current provision of E&T courses/resources?



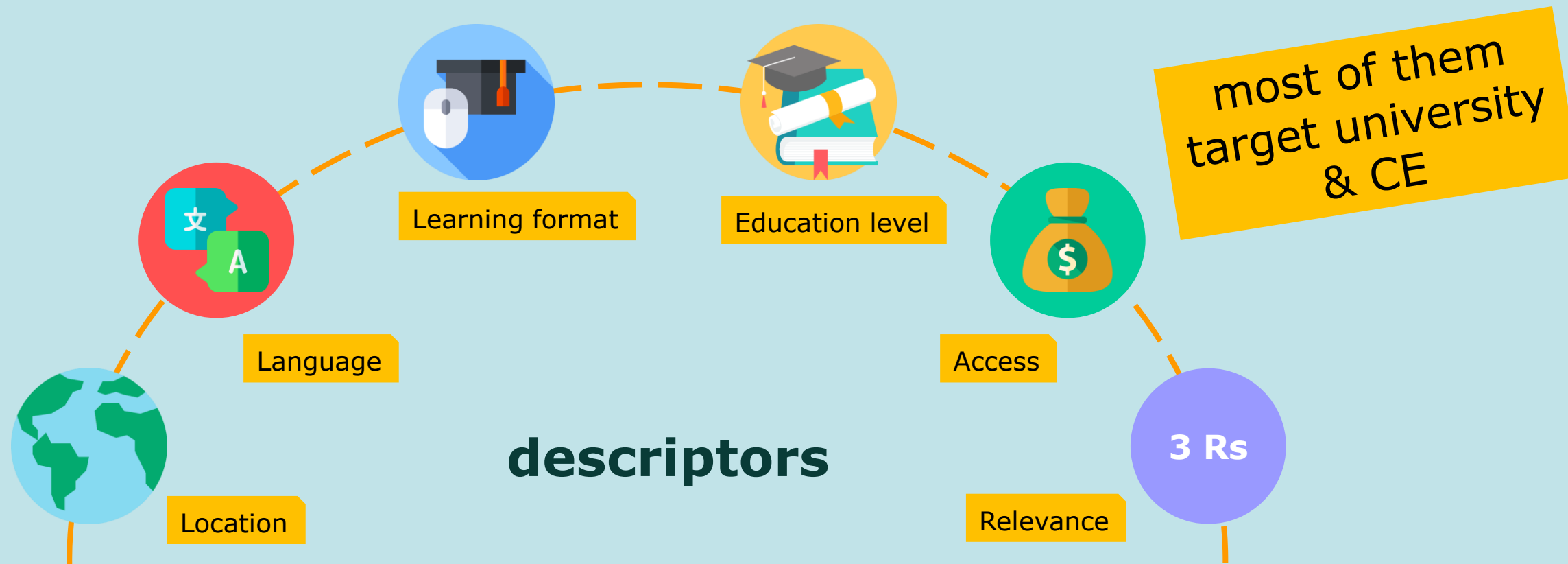
Three Rs Education and Training Courses and Resources¹

569 courses/resources in 52 countries:

- 67% Europe
- 14% North America

¹<https://data.jrc.ec.europa.eu/dataset/d0569abb-b5ab-4b9e-9e16-d70cea7a89f9>

Characterisation of E&T courses/resources



¹<https://data.jrc.ec.europa.eu/dataset/d0569abb-b5ab-4b9e-9e16-d70cea7a89f9>



European Parliament pilot project "Promoting alternatives to animal testing"

1m€ to EC (DG-ENV) - **300,000€** for JRC

1. Develop guidance on how to introduce the 3Rs in education programmes and curricula

note: education falls under each Member State competence as defined by the Treaty of the Functioning of the European Union (TFEU)

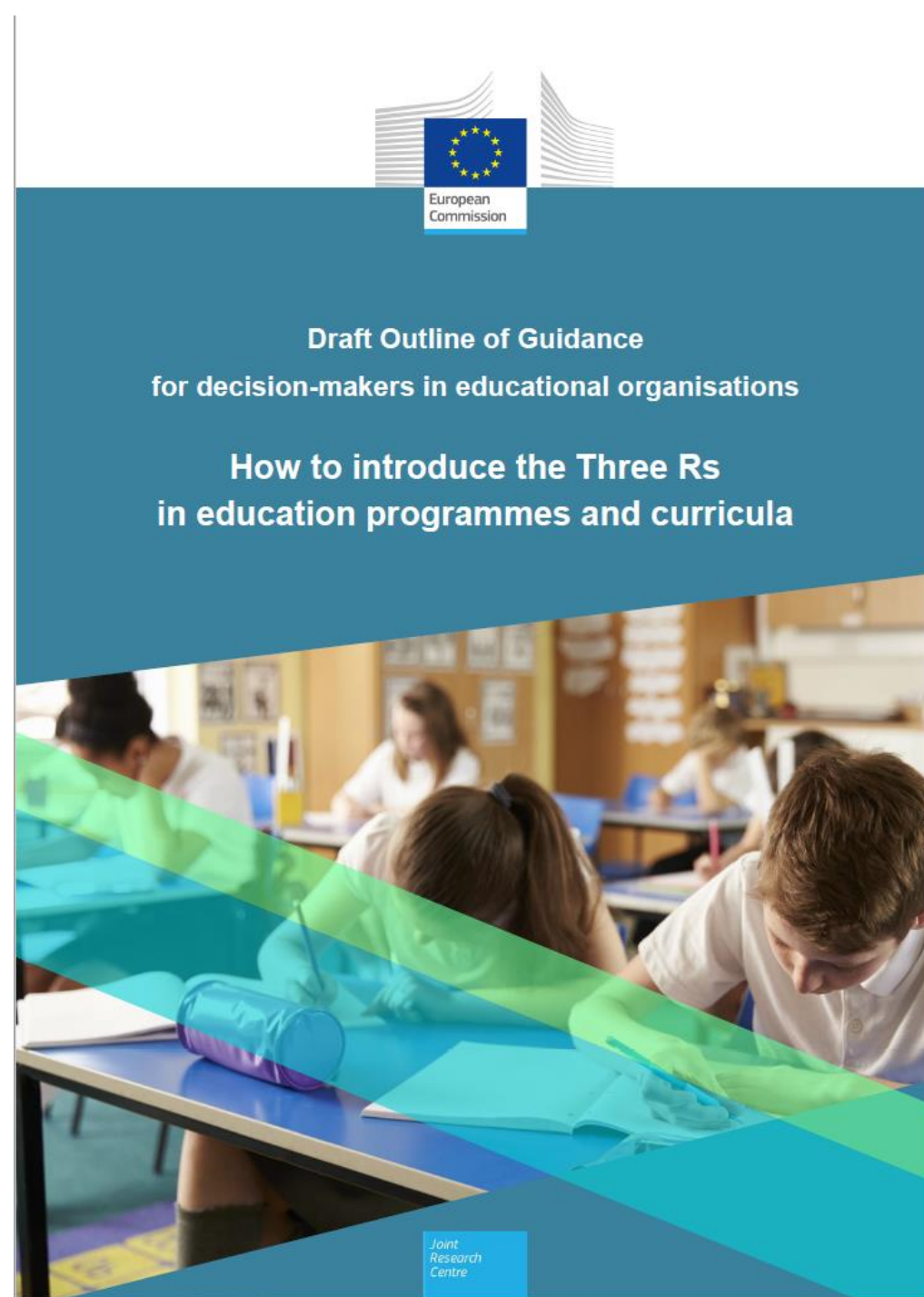


2. Develop practical 3Rs teaching resources



1. Guidance for introducing 3Rs in education curricula

- Curriculum frameworks
- Learning scenarios and MOOCs (massive open online courses)



Draft Outline of Guidance
for decision-makers in educational organisations

How to introduce the Three Rs
in education programmes and curricula



WHO is the guidance for?

- ☐ policy-makers
- ☐ educational influencers (e.g., deans of university departments, teachers, students, head of secondary schools, etc.)

WHY is it important to introduce the 3Rs in education programmes?

- ☐ legislations (Directive 2010/63/EU, REACH)
- ☐ citizen's attitude and sensitivity towards the topic
- ☐ poor translatability of animals models and need for more human relevant science
- ☐ new jobs opportunities (e.g., in 2016 the World Economic Forum listed organ-on-chips among the 10 most promising emerging technologies)

Draft Outline of Guidance
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How to introduce the Three Rs
in education programmes and curricula



WHAT are the 3Rs?

- ☐ not only a science subject...
- ☐ also relevant to Ethics and Philosophy, History (e.g., history of animal welfare movements), Economics, etc.

HOW can the 3Rs be introduced in education programmes and curricula?

- ☐ Top-down strategy: develop and implement curriculum frameworks following some already existing documents (e.g., by International Bureau of Education of UNESCO → 5 step, flexible process)
- ☐ Bottom-up strategy: influence the existing curricula by targeting teachers, lecturers, and their hierarchy, through the use of teaching resources.

2. Develop Teaching resources

✧ Secondary schools

✧ Universities and continuing education

interviews to specialists in teaching 3Rs:
→ limited awareness of existing tools and resources...

→ recommendations:

- **Develop class plans for teachers**
- **Invest in teacher continuous professional development**
- **Approach schools for guests/presentations**



✧ target secondary schools



network of 34
ministries of
education in
Europe

- 12 biology teachers from:
Belgium, Italy, Malta, Portugal, Spain, Turkey
- developing & implementing **6 learning scenarios/lesson plans** on three topics:
 1. Animals in society and in science
 2. The 3Rs and human-based science - modern approaches and tools in science (eg, organ-on-a-chip)
 3. Critical thinking – debate (emotions vs facts) & science literacy, fake news, learning how to critically evaluate messages, data and research results
- publicly available in February 2020 on Scientix.eu
- in February 2020 (4 weeks) → MOOC will be made available (European Schoolnet Academy) for teachers and everyone who wants to learn about the 3Rs and how to implement some lessons in their classes



✧ Target universities and continuing education

- **developing 3 practical teaching resources:**
 - ☐ Slide set with storyboard
 - ☐ Poster/Infographics
 - ☐ Virtual reality module
- **Set of learning scenarios of already implemented courses:**
 - ☐ University modules
 - ☐ Summer schools
 - ☐ Master programmes and skills training (CE)

(will be made publicly available on our JRC website)

Stay in touch!



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Any questions?

francesca.pistollato@ec.europa.eu

marcelle.holloway@ec.europa.eu

adelaide.dura@ec.europa.eu