

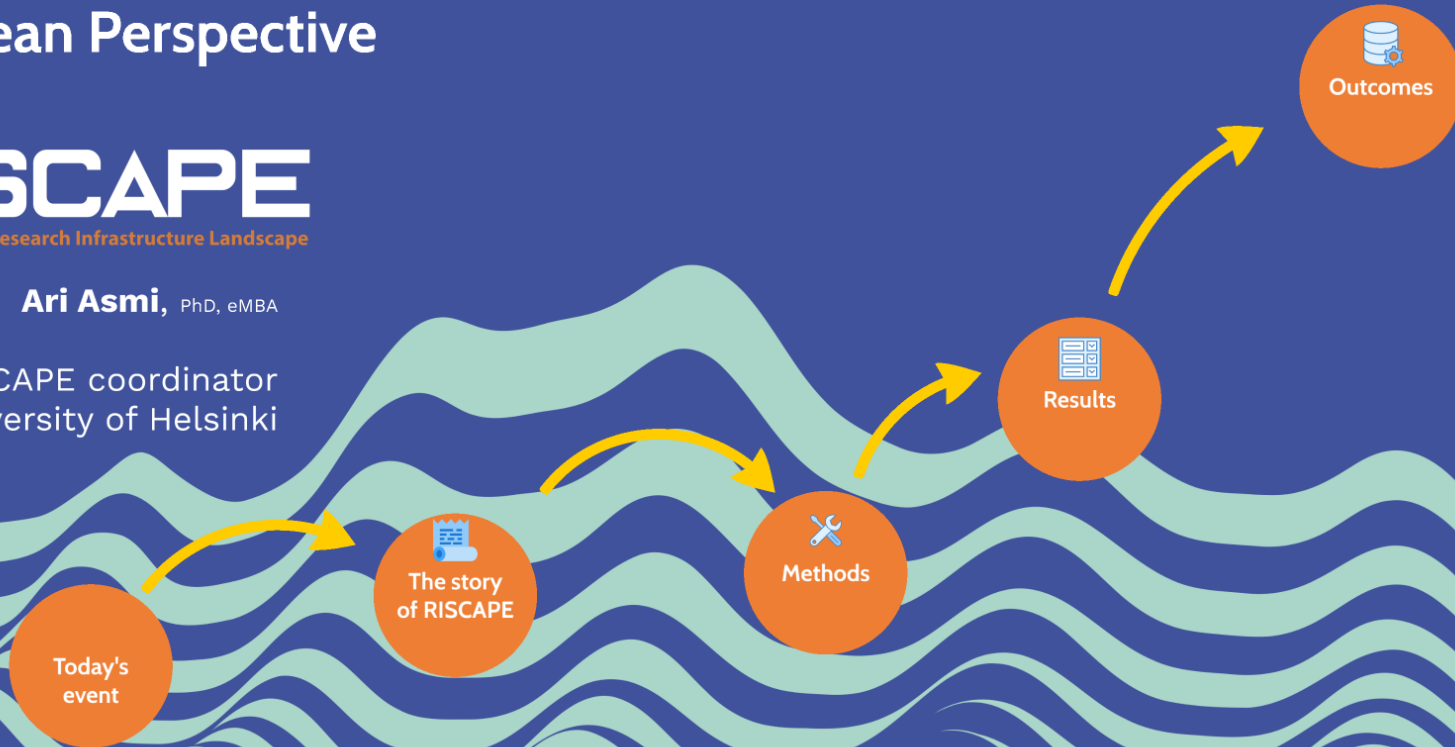
INTERNATIONAL RESEARCH INFRASTRUCTURE LANDSCAPE 2019

European Perspective



Ari Asmi, PhD, eMBA

RISCAPE coordinator
University of Helsinki



Today's Event

NOTE

You have the "Pre-Print" version of the RISCAPE report - please do not directly quote this version. Final version will be available both print and PDF in the RISCAPE website

www.riscape.eu



Programme

12:00 - 13:00

Lunch

13:00 - 13:15

Why RISCAPe? Statement from the Commission
Pierre Quertenmont, European Commission

13:15 - 14:00

RISCAPe report - motivation, methods and main findings
Ari Asmi, Riscapc project

14:00 - 14:10

ESFRI and RISCAPe
Gelsomina Pappalardo, ESFRI Executive Board member

14:10 - 14:45

Panel discussion - Challenges of landscape analysis in international context
Moderated by: Ari Asmi, Riscapc project
Lorna Ryan, ESS ERIC
Emmanuel Salmon, ICOS ERIC
Christine Kubiak, ECRIN ERIC
Gelsomina Pappalardo, ESFRI Executive Board member
Gergely Sipos, EGI
Mikkel Knudsen, U. Turku

14:45 - 15:00

Coffee break

15:00 - 15:15

International RI landscape - case of Australia
Rhys Francis, Australian BioCommons

15:15 - 15:25

Example of RISCAPe use - RI-VIS project
Natalie Haley, RI-VIS project

15:25 - 16:00

Panel discussion - Implications and future plans
Moderated by: Jostein Sundet
Carthage Smith, OECD
Pierre Quertenmont, European Commission
Natalie Haley, RI-VIS project
Rhys Francis, Australian BioCommons

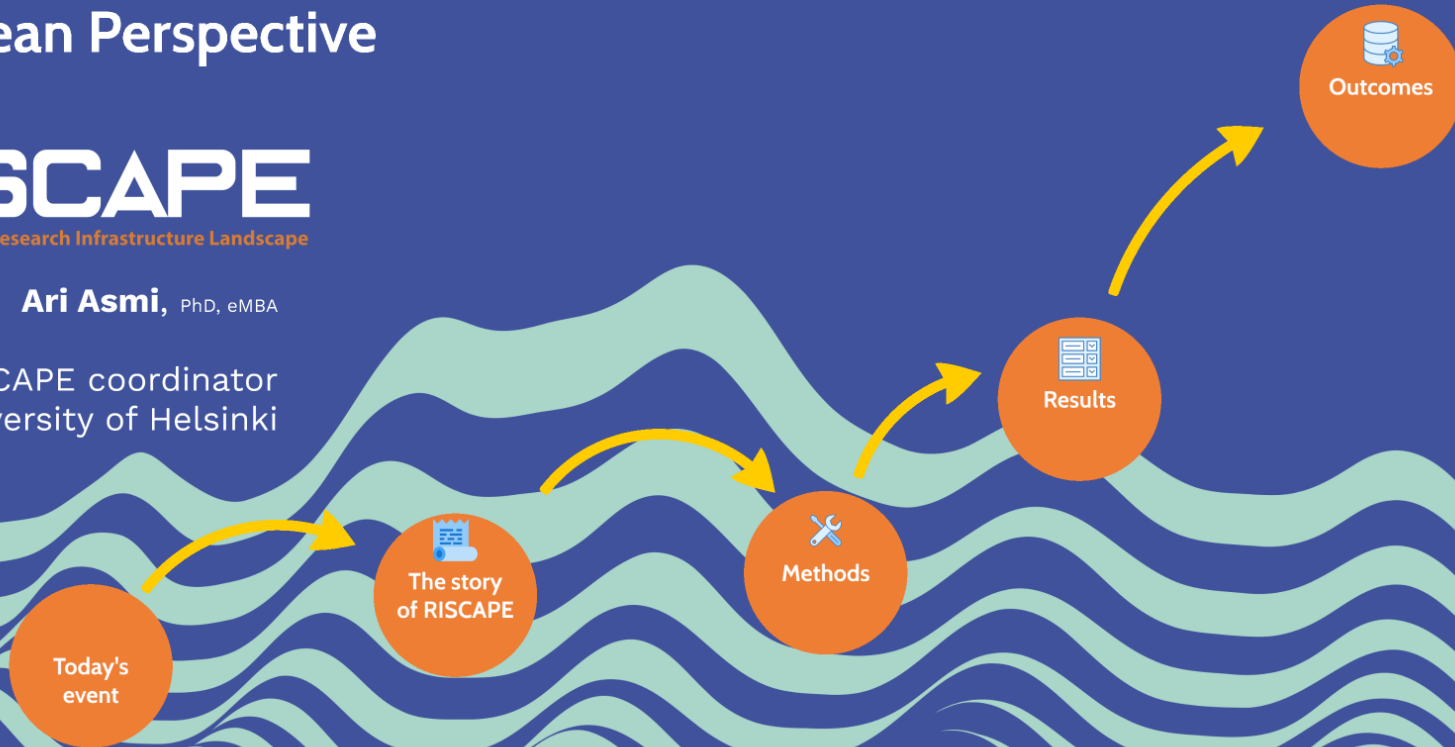
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Like any good story it
starts a long time ago
in a place far away



Concept



Proposal

Like any good story it starts a long time ago in a place far away



In this case, about **4 years ago** in **Tokyo** (where I was in a work trip)



Concept



Proposal

Like any good story it starts a long time ago in a place far away



In this case, about **4 years ago** in **Tokyo** (where I was in a work trip)

I found out about the Commission call for a project to **map the international landscape of research infrastructures**



Concept



Proposal

Idea of a project



I was involved in EC projects aimed (partly) for ESFRI **international collaboration**, and on the Environmental cluster project **ENVRI-PLUS**.

I was also aware of similar projects in other fields of science

There was a lot of **silent knowledge** in the ESFRIs and clusters on international RI landscape

Proposal



The overall proposal was then built on the concept of

- using the **existing RI clusters** (where available) and
- concentrating on **major RIs** which have potential for collaboration with the European ESFRI (and other major) RIs.
- Having an **European viewpoint** (i.e. selecting the methodology and aims from this perspective)



Team

Team



Coordination

U. Helsinki



Environment

ICOS ERIC
(ENVRI)



Health & Food

ECRIN ERIC
(CORBEL)



Physics

ILL
(EUCALL, SINE2020)



Astronomy &
Astroparticles

ASTRON
(ASTERICS)



Energy

U. Turku



DH/CH/L

PIN SRL
(PARTHENOS)



Socia Sciences
Methodology

ESS ERIC
(SERISS)



Social Sciences

CESSDA



E-infrastructures

EGI



Dissemination

APRE

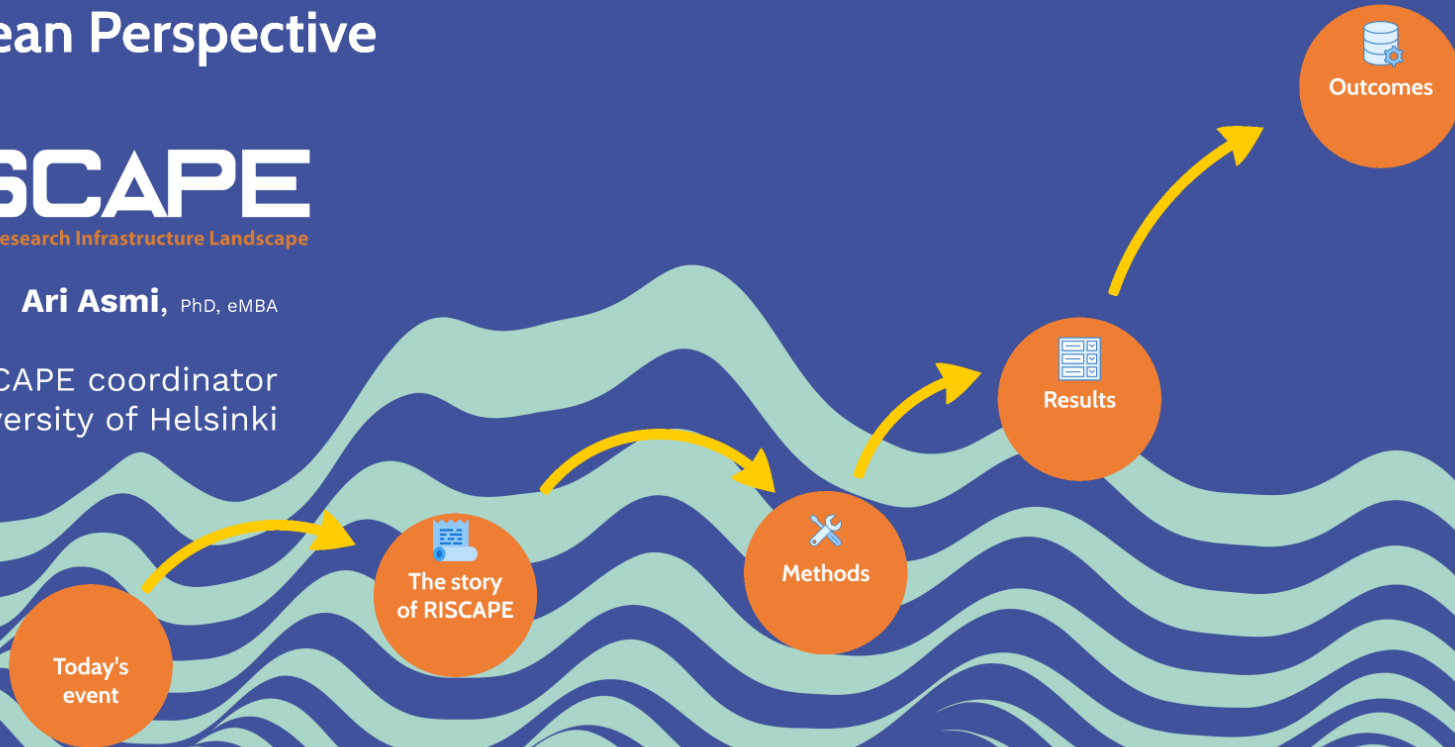
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How to do landscape analysis?



Who is this for?



What kind of information?



What do we want to analyze?



How do we collect the info?



Identifying the main user groups

The proposal included many potential user groups, but quickly the project concentrated on two main user groups

Strategic view on RIs

Research funders

European RIs

Collaboration partners

Other groups (scientists, policy makers, etc.) were also considered



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Some similarity with ESFRI RIs is needed!



What is this "Research Infrastructure" we are interested in?



Literature
analysis



RISCAPE
definition

The RISCAGE consortium analyzed the use of term Research Infrastructure



Research purpose, as a service provider.

Common aspects found in most definitions

longevity is implicit

Rarely explicitly public nature. Public nature of RIs is more often mentioned in accompanying information.

Typically defined using **examples: instrumentation, collections, collaborative networks, software, communication tools and human resources**

unique, exceptional, "more- than-national relevance", "indispensable", or "major"

Four characteristics of RISCAPE RI



4



1

RI has science or scientific research as the main driver of its activities.



the need of finding complementary facilities to the ESFRI (and similar major infrastructures) Europe, which – as science-oriented organisations – are best mirrored by facilities concentrated on the same goals.

2

RI provides research services to users outside of the organisation itself.

fundamentally based on the European view of shared research facilities, and the RI as a service provider.



3

RI has an operational time horizon longer than the typical research projects in the field in question



Any short-term projects or initiatives would make the collected information quickly obsolete.

Longevity is typical for the scale of operations required for European ESFRI infrastructures

4

It promotes excellence and is of significance for the science field in question

This requirement was needed in order to have some degree of similarity to the European ESFRI landscape facilities, all of which are important at a European (i.e. regional) level.



What kind of information we need?

- Clearly defining the questions and terminology.
- What are do we really want to know? What we can know?
- How to keep the questionnaire reasonable sized (approx 1h)?
- With the help of the **Stakeholder panel**, the set of RISCAPE questions were derived



RISCAPE
questionnaire



Questionnaire categories

General information

Identity

Position and future

Capabilities and interaction

Services

Mission and goals

Funding and scale

Data

European access

Impact

Complementarity

Longevity and plans

Most were open field questions, with explanatory remarks on terminology, and purpose of the question

Full description of the questions are in APPENDIX 2 of the report

Methodology of RISCAPE



The methods were developed with the **whole Consortium** and the **Stakeholder Panel**

Main responsibility of
ESS ERIC and UHEL



Aims

RISCAPE
methodology



The methodology had several requirements

- **transparent** (i.e. well-defined, documented and the process could be repeated using the same methodology),
- **meaningful** (suitable for purpose, collects relevant information),
- **practical** (the information can be collected with the resources)
- **available**, (the information is possible to obtain),
- **discipline-agnostic but -aware** (enough similarity between fields of science, tolerance for domain-specific differences),
- **error tolerant** (possibility to detect erroneous information or misunderstandings).

The RISCAGE methodology



Discovery of "potential RIs"



Discovery of "potential RIs"

European
interaction



Discovery of "potential RIs"

European
interaction



Experts



Discovery of "potential RIs"

European
interaction



Experts



Literature



Discovery of "potential RIs"

European
interaction



Experts



Literature



From non-
EU RIs



Discovery of "potential RIs"

European interaction



Experts



Literature



From non-EU RIs



Top-down





Desk research before contact

Rough analysis of the **identified RIs**, based **web pages, discussions,** and **documents.**

Quick mapping of the structure and operation of the RI, and discovery of potential contact points



Pre-selection

Does the "RI"
fulfill the 4
requirements?

Most likely



Does not



Not generally
contacted



Contacting the RI

Contacts either from European partners or from RI websites

- Formal invitation email
- Three attempts to contact
- If possible, use of personal contacts

Setting the date and explaining the questions, formalities



Prior to interview, the survey is pre-filled

Shared before interview with the RI in question - as potential answers

Information from websites, documents

Saves time during interview

Helped to explain the intent and expected type of answer for the survey

Interview process



- **Structured interview**

- The discussion (often virtual) was open, and each question was discussed.
- The intent was not only to collect information but also to make sure both sides understood the question and answer

Some teams (particularly Physics) also used offline surveys due to significant time required. However, they did return to confirm information in person if the answers required it



Data analysis and interpretation

The answers were sent back to the RIs for making sure they match the recollection

Key aspects of each answer category was analysed in each disciplinary team



Final analysis and conclusions

- Disciplinary reports were then collated together by the coordination
- Fact-checking for selected sections
- Consistency checks and editing the reports, and preparation of the final report
- Drawing the overall conclusions of the action

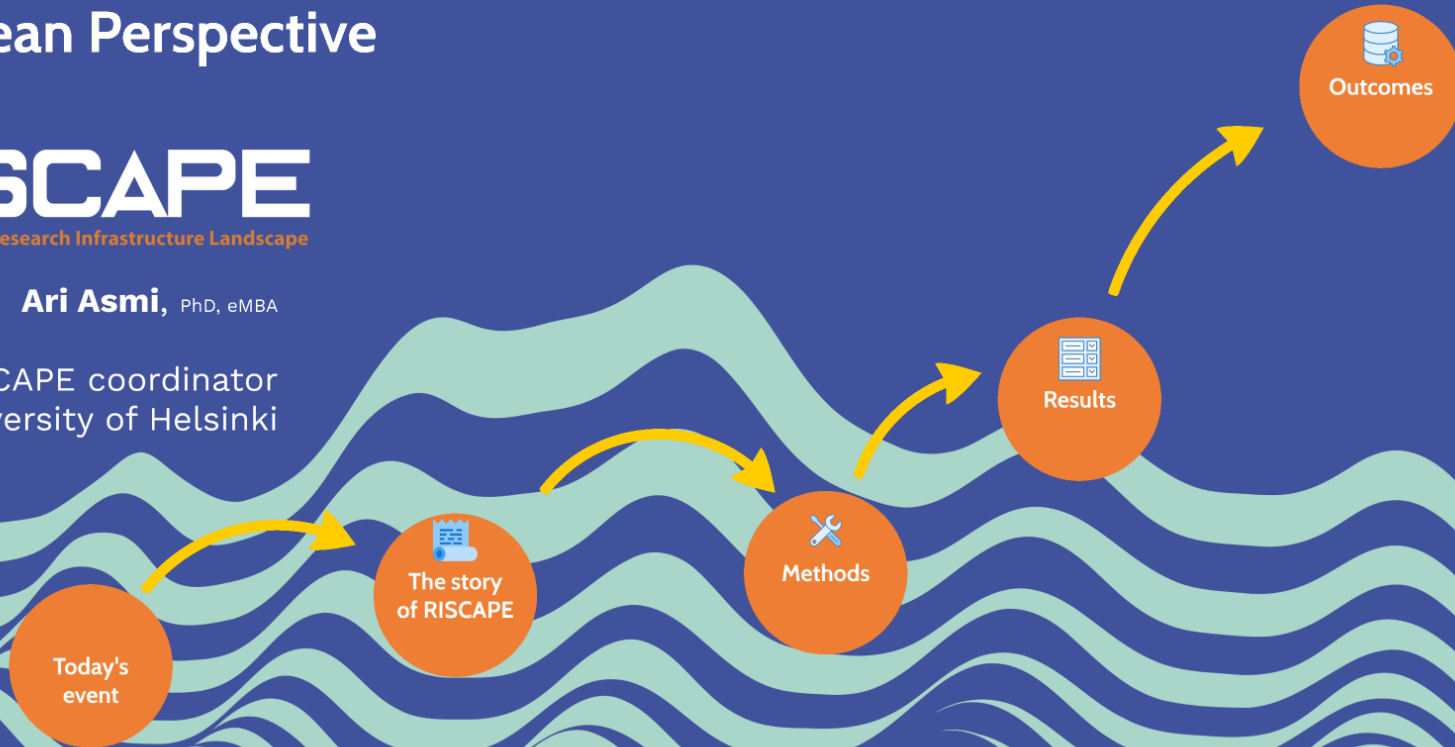
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Main conclusions the action

Each RISCAPE section contains a work of a specialist team dedicated to the field in question - viewpoints on the global RI landscape.

Each section have their own key results, but **here we concentrate on overall conclusions**

Now we go through some of the key findings and disciplinary characteristics



Getting information is hard



RIs are (usually) where the funding is



(big) RIs are not European specialty (except when they are)



Impacts are difficult everywhere



Access varies (a little)

101
010

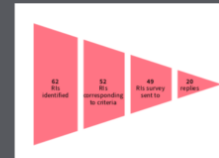
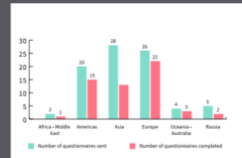
Need of data and processing services

Be aware of biases!



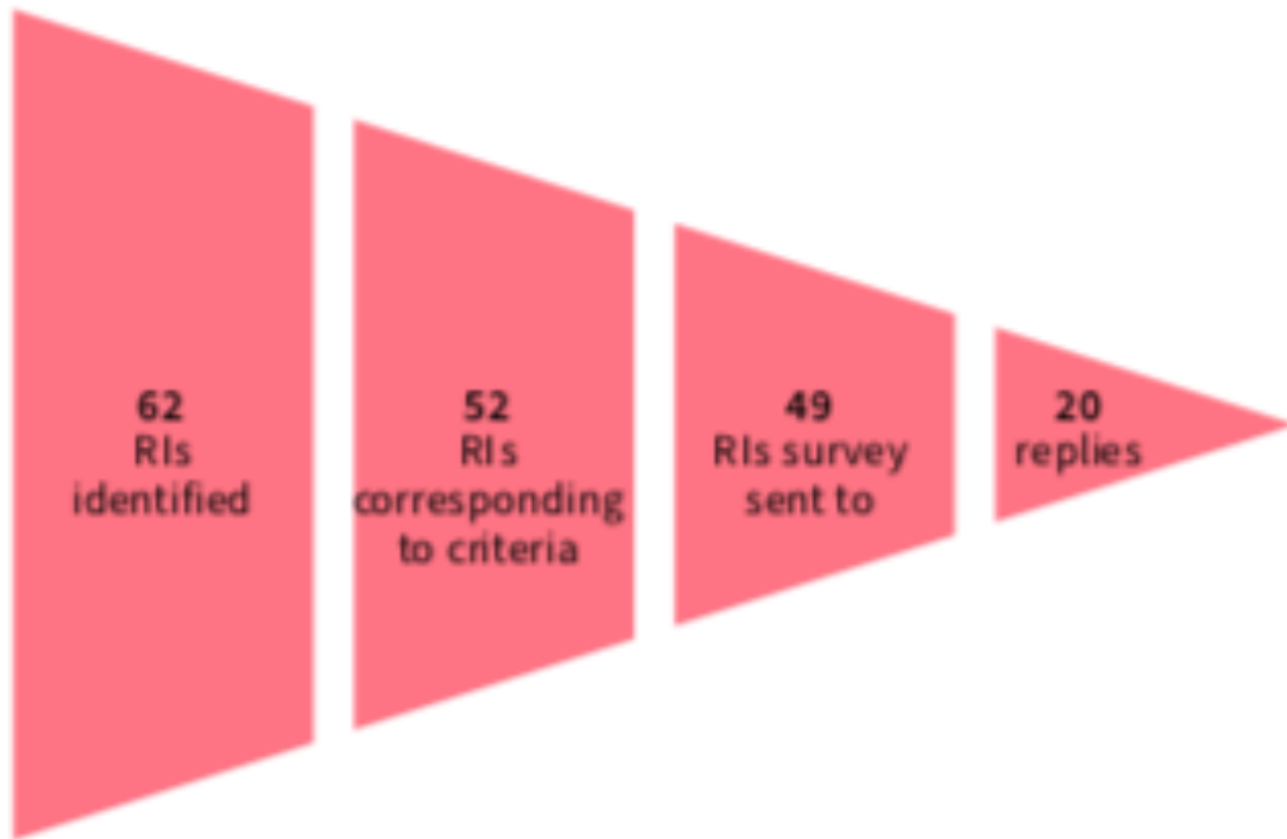
How to get RIs to respond?

The response rate for the interviews /surveys was not high in any of the disciplines. Typically less than half of contact attempts succeeded.





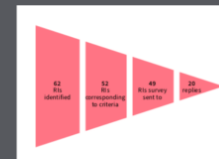
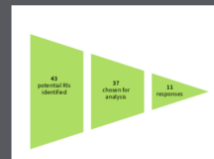






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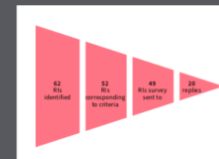
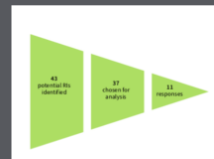
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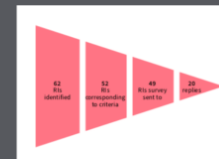
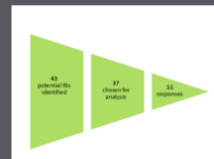


Prior ESFRI collaboration
Personal contacts
Common language



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Prior ESFRI collaboration
Personal contacts
Common language

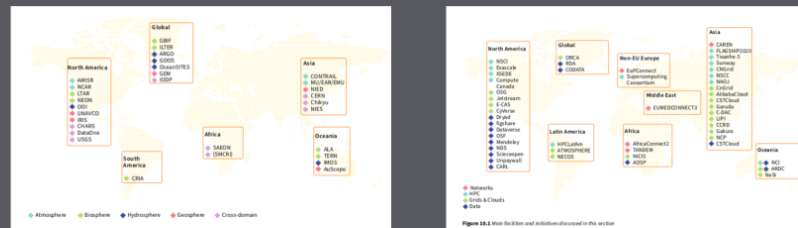


Sampling bias!



Geographical locations of RIs are concentrated

North America, Japan, China, Australia and (relatively) S. Africa highly represented



funding + research community -> RI

"ESFRI scale", methods, response rate (+language) is biasing these results!



Big RIs are everywhere (but not in all fields)

Research infrastructures are a common tool in many fields globally

- Physics
- Astronomy
- Energy

Some fields (esp. big distributed) RIs are much more scarce:

- Social Sciences
- Digital humanities / Cultural Heritage



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"European speciality"

Difficulty of characterizing RI impact

Scientific impact

Almost always followed

Service demand
Publications / citations
Conferences
Evaluations

Socio-Economic impact

Needed, but hard to assess

Often anecdotal
Construction costs
Increase in science level
Public interest
Industry users





Commonalities of access

Resource demanding

- **Excellence-based** the norm
- Sometimes "collaboration"-based
- **Fees** common for non-science use
- Access sometimes controlled by **grants**

Unlimited (e.g. data)

- **Open access** common (but not as common as in EU)
- Data policies often **not available**
- Licences, etc. undefined
- Embargo periods
- "by request" still common

Overall, the bigger the RI -
more likely to have clear
access policies



1 0 1
0 1 0

Data and processing needs are increasing

Particularly **Physics** and **Astronomy** RIs have a global awareness of resource needs in this sector.

In other fields, the **costs** of e.g. data repositories are mentioned.

Not all countries have very centralised approach, and can have several parallel initiatives

Commercial service providers are rarely mentioned

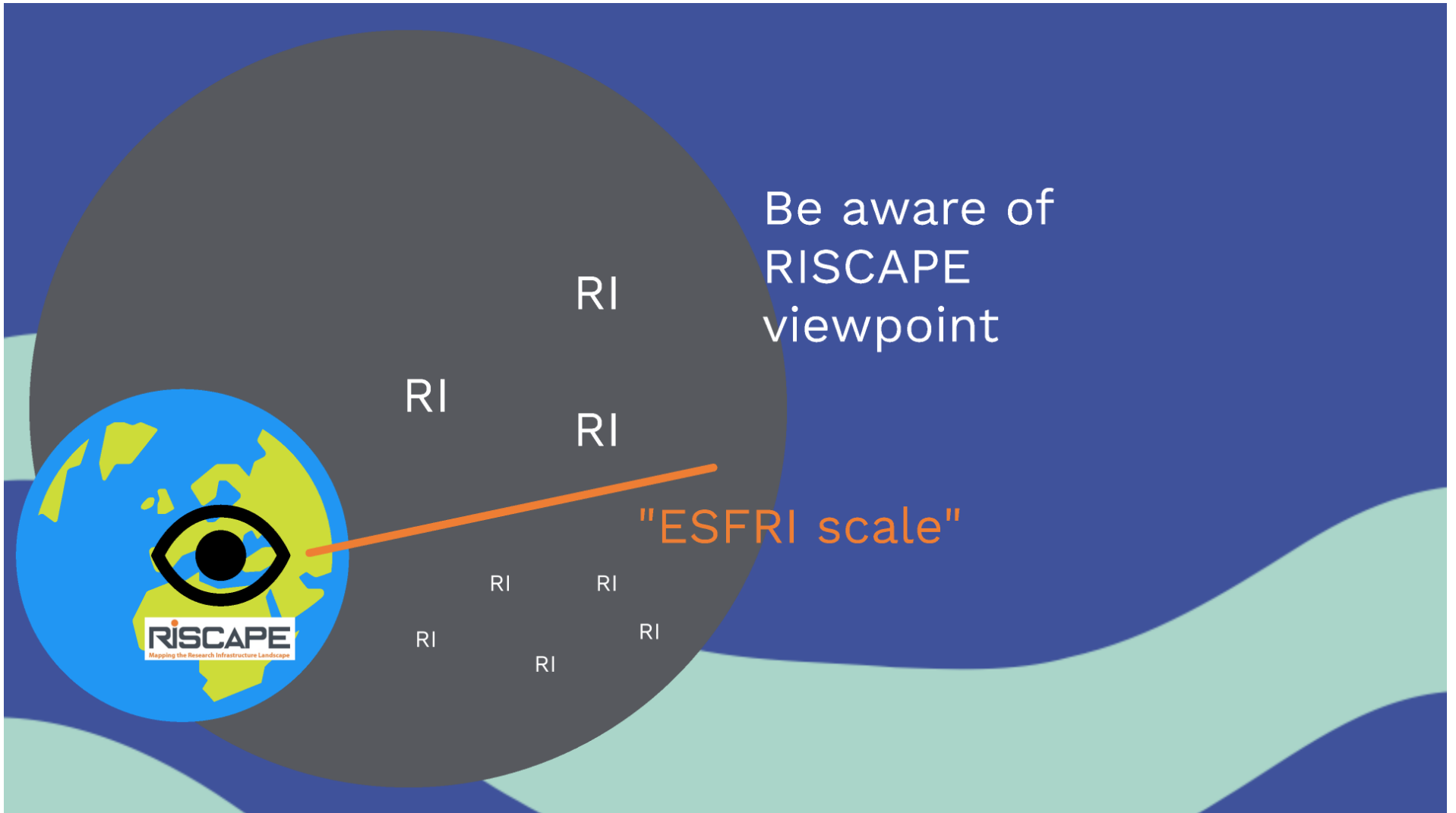
Be aware of
RISCAPE
viewpoint

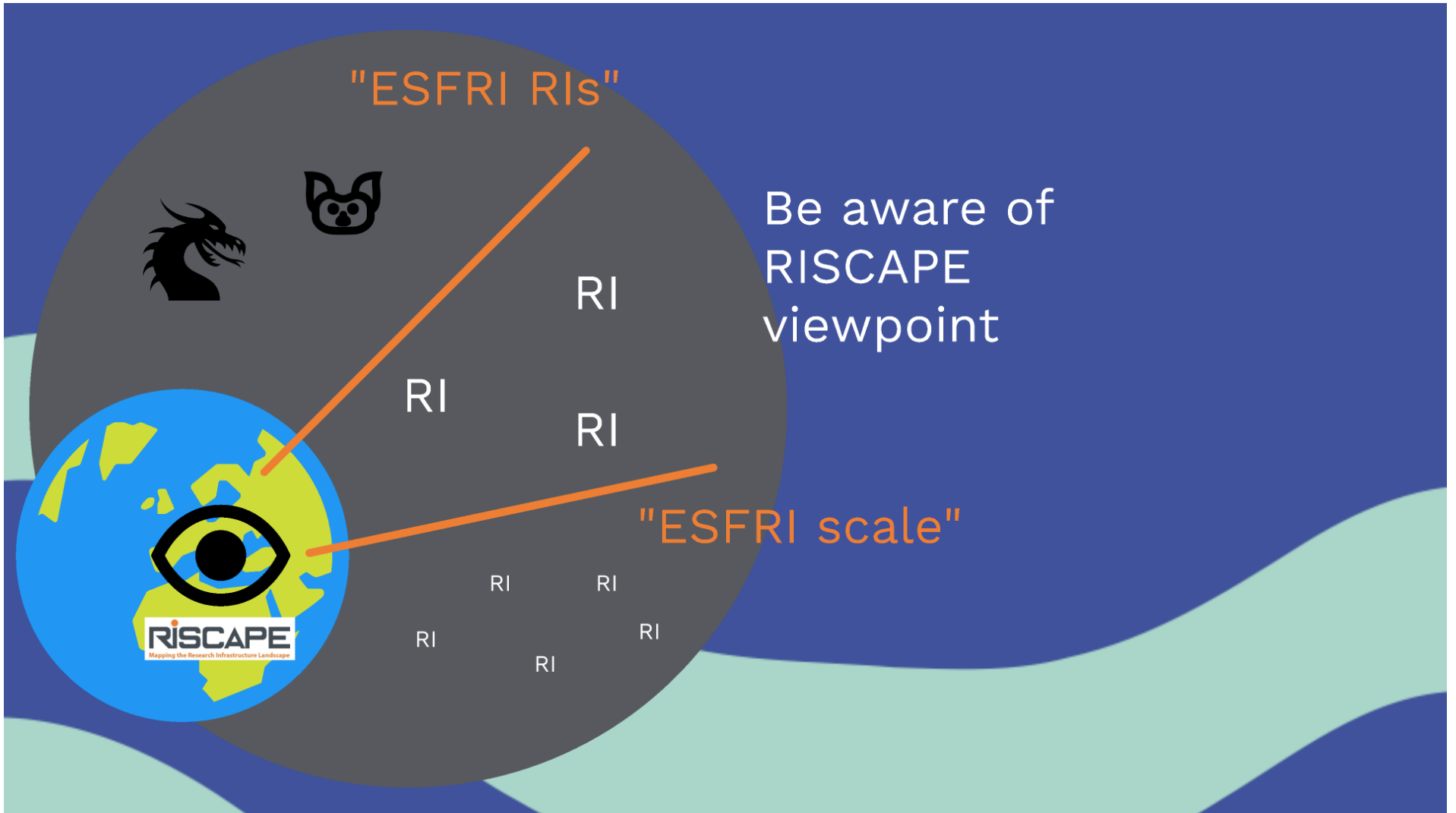


RI

RI

RI





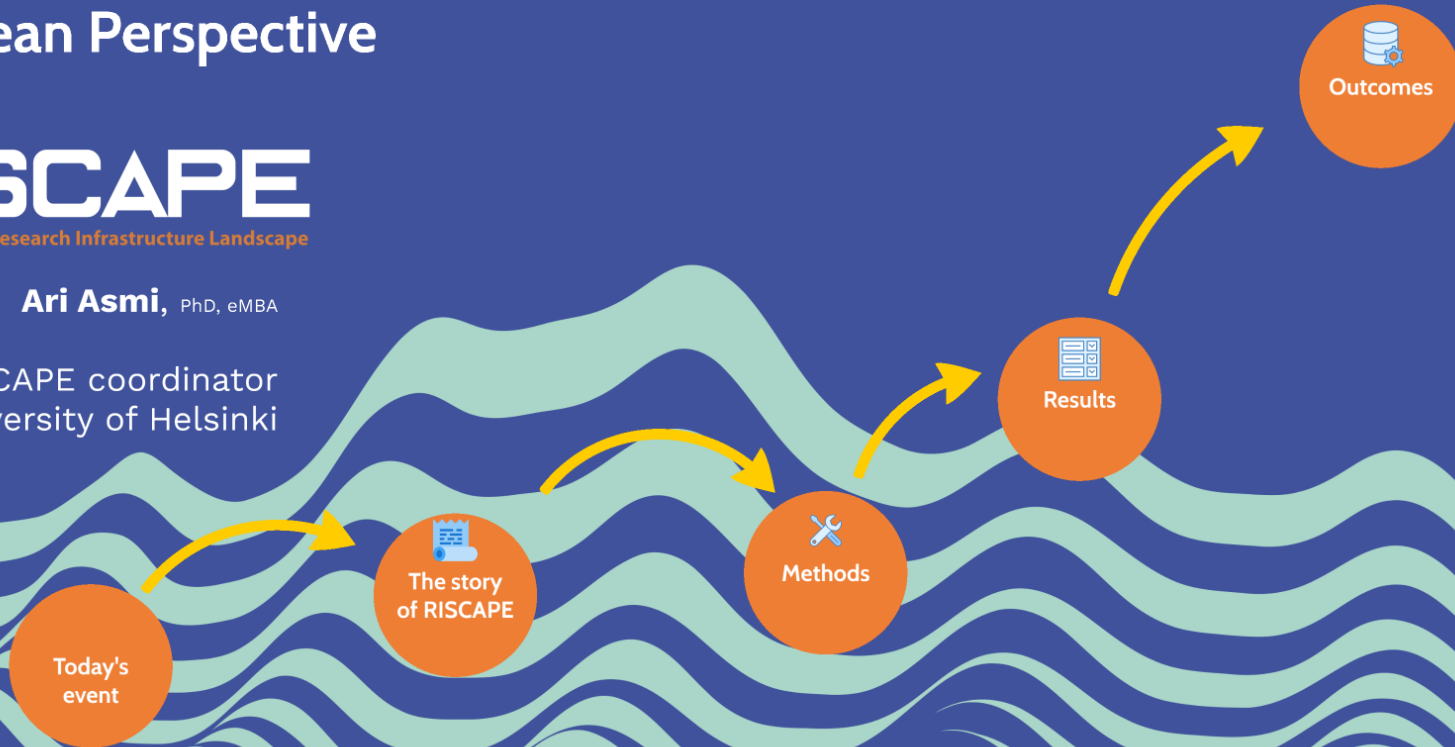
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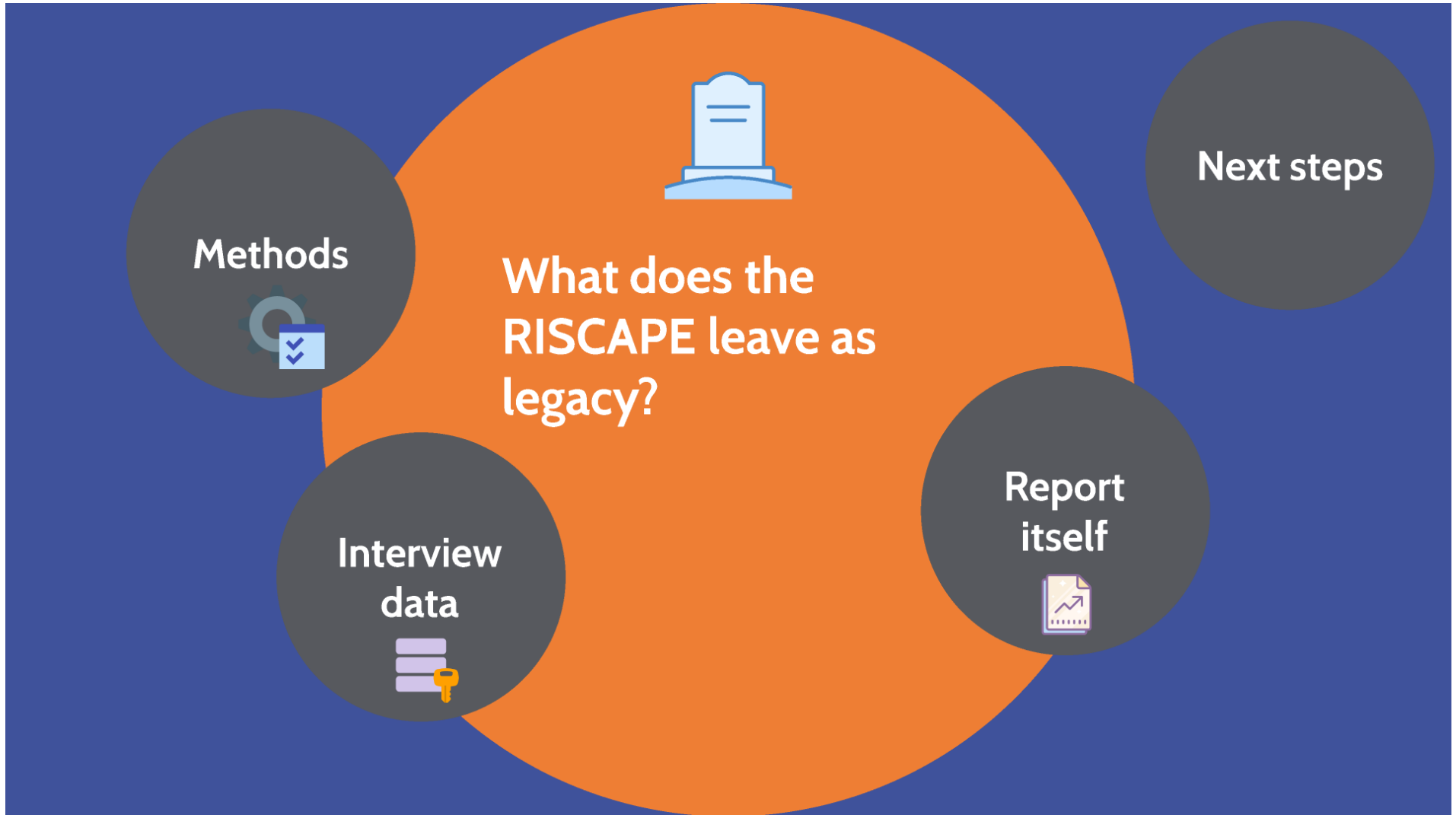
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The RISCAGE methodology

Separate publication is being prepared



- Interviews viewed good
- Potential for deep information
- Contacts for future
- Use of existing knowledge



- Biased towards "known knowns"
- Not full landscape (e.g. response rate)
- Terminology issues
- Language

RISCAPE report



Currently pre-print status
(factually correct, but minor
editing needed)

Contains:

Main report (printed)

Appendices:

- Questionnaire
- Found RIs contact sheets
- Other appendices

www.riscape.eu



Interview data

For the RIs which were interviewed

Contain personal information (names, positions) and thus is available only by (documented and valid) request.

The data is stored for five years after project ends.

The data controller is University of Helsinki / Ari Asmi

The idea of the RISCAPE report is that it is used

Find synergies

Building new RI collaboration

Identify joint activities

Build global access for RIs

Identify development needs

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