Research impact assessment: Leaning towards learning

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Two learning opportunities

- **Exploring 'grassroot' understandings of the concept of research impact**

- Experimenting with a method/system of research impact assessment

Research impact assessment – many meanings

- The assessment of impact from research is the attempt to establish to what degree research affects **certain changes** in science and society [ESF. No date. *The challenges of impact assessment*. Report by Working Group 2: Impact assessment. European Science Foundation – p.3]

- Impact represents a **demonstrable contribution** (of research) to something outside the academic system [Jones, M.M. & Grant, J. In: Dean et al. (Eds.) 2013. *7 Essays on Impact*. DESCRIBE Project Report for Jisc. University of Exeter, the UK – p.26]

- Impact (of research) is an **effect on, change or benefit** to the economy, society, culture, public policy or services, health, the environment or quality of life, beyond academia [Penfield, T., Baker, M.J., Scoble, R. & Wykes, M.C. 2014. Assessment, evaluations, and definitions of research impact: A review. *Research Evaluation*, 23, 21-32. – p.21; REF definition]

- Research impact refers to any type of output of research activities which can be considered a "**positive return**" for the scientific community, health systems, patients, and the society in general [Banzi, R., Moja, L., Pistotti, V., Facchini, A. & Liberati, A. 2011. Conceptual frameworks and empirical approaches used to assess the impact of health research: An overview of reviews. *Health Research Policy and Systems*, 9(26) – p.2]

- Etcetera, etcetera …

Notion of societal impact of research –
Impact as accumulative effects and often aggregation of effects in the (very) long term

Resources	Activities	Outputs	Short- & Long-Term Outcomes	Impact
In order to accomplish our set of activities we will need the following:	In order to address our problem or asset we will conduct the following activities:	We expect that once completed or under way these activities will produce the following evidence of service delivery:	We expect that if completed or ongoing these activities will lead to the following changes in 1–3 then 4–6 years:	We expect that if completed these activities will lead to the following changes in 7–10 years:
				Attribution

Notion of societal impact of research –
Impact as a 'sphere of interest'
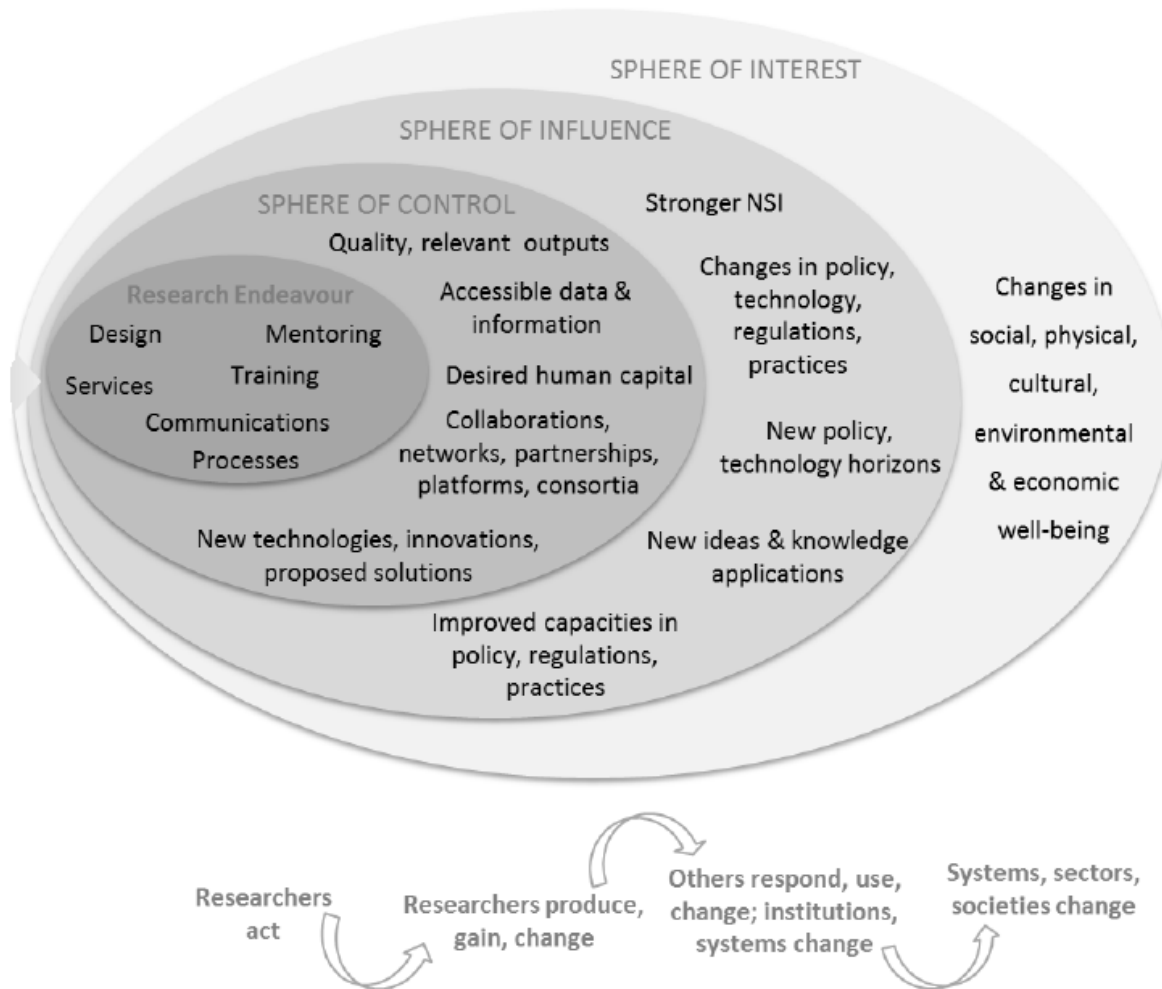
- **Control**
Under direct control of grant-holders (and funders)
- **Influence**
Influenced by work of grant-holders but not under their control
- **Interest**
Of interest to the grant-holders (and funders) but far beyond what they can realistically influence

Conceptualised by Ofir & Schwandt – In NRF (2015) *Summary report of the socioeconomic impacts of selected NRF funding instruments (Part 1)*. National Research Foundation. South Africa (p. 15).

Notion of societal impact of research –
Impact as changes in user domains

Research uptake
- "Research **users have engaged with research**, they have read a briefing, attended a conference or seminar, were research partners … or engaged in some other kind of activity which means **they know the research exists**."
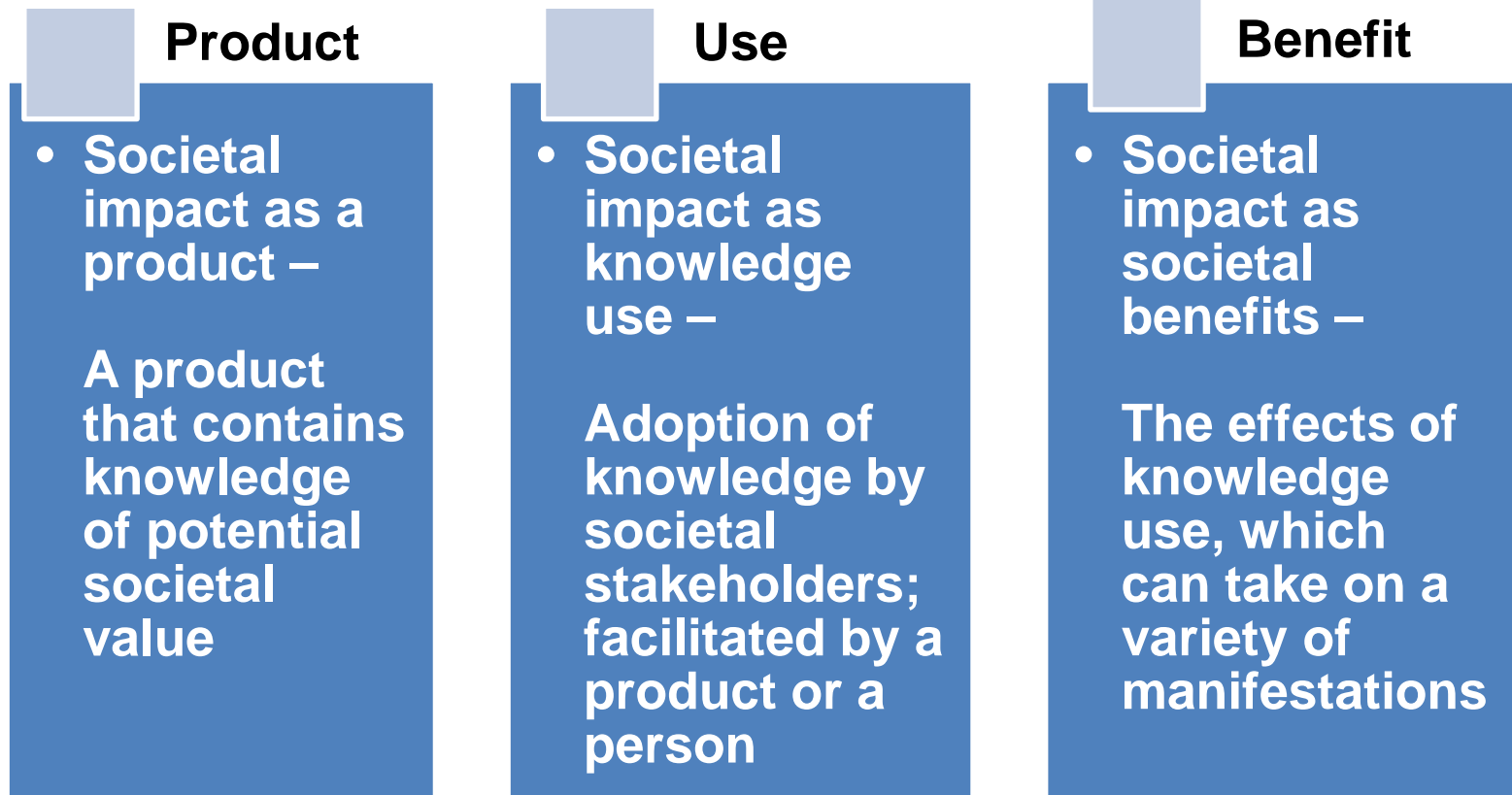
Research use
- "Research **users act upon research**, discuss it, pass it on to others, adapt it to context, present findings, use it to inform policy, or practice developments."

Research impact
- "**Changes** in awareness, knowledge and understanding, ideas, attitudes and perceptions, and policy and practice as a result of research."

Morton, S. 2015. Creating research impact: the roles of research users in interactive research mobilisation, *Evidence and Policy: A Journal of Research, Debate and Practice*, 11(1): 35–55.

Notion of societal impact of research –
Impact as any one of three stages in a process

Product

- Societal impact as a product –

  A product that contains knowledge of potential societal value

Use

- Societal impact as knowledge use –

  Adoption of knowledge by societal stakeholders; facilitated by a product or a person

Benefit

- Societal impact as societal benefits –

  The effects of knowledge use, which can take on a variety of manifestations

De Jong, S., Barker, K., Cox, D., Sveinsdottir, T. & Van den Besselaar, P. 2014. Understanding societal impact through productive interactions: ICT research as a case. *Research Evaluation*, 23, 89-102 (p. 90).

SSA survey: 485 respondents

- <u>Task</u>: Descriptions of **four research initiatives**, followed by a request to rate the extent to which the outcomes are considered **examples of societal impact**

<u>Question 1</u>: University research conducted into the automatic grammatical analysis of English text has led to the development of software that is able to grade essays. A firm that offers smart solutions for the educational sector has refined the software, and the product is now being used in rural areas at adult training centres where there are insufficient trainers for the large numbers of adult learners wanting to improve their English. A recent provincial survey showed that since its implementation at these centres the literacy levels of adults in a number of rural communities have started to improve. Adult learners generally felt that an English course from the teaching centre had increased their prospects of employment. Those who found new or better employment after completing the training were particularly excited about the resultant higher household income.
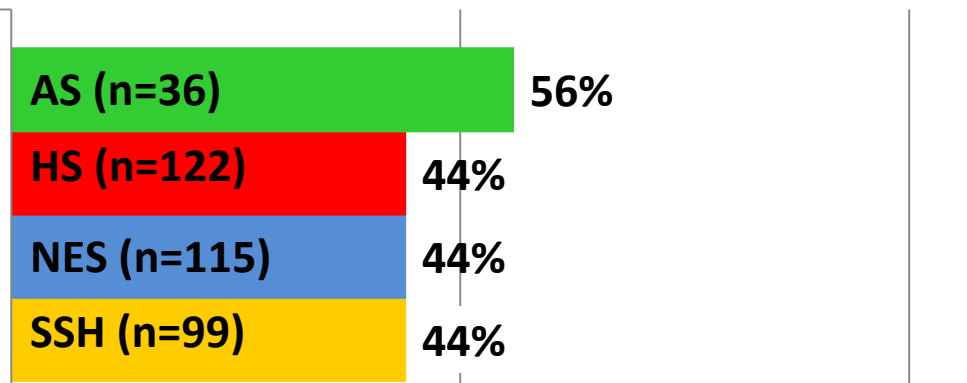
To what extent is each of the following an example of the "societal impact of research"?

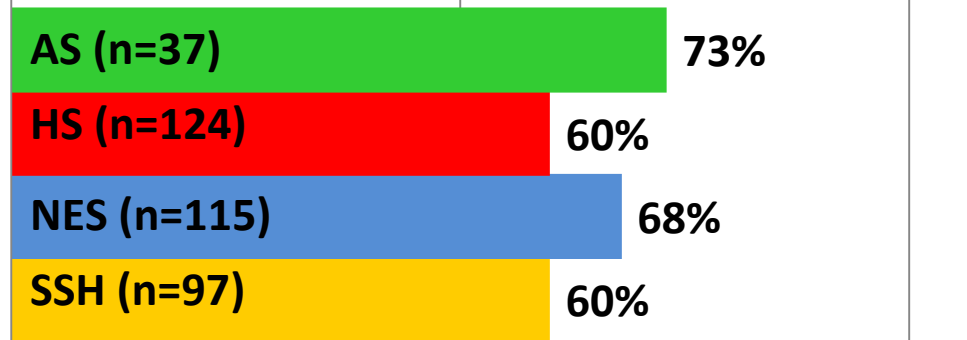| Outcomes	A strong example of the "societal impact of research"	A weak example of the "societal impact of research"	Not an example of the "societal impact of research"	Don't know
The development of software to grade English essays	1	2	3	4
The further development of the software by a firm into a product for use in the education sector	1	2	3	4
The use of the software at rural adult training centres	1	2	3	4
The improvement of the literacy levels of adults in some rural communities	1	2	3	4
The increased employment prospects as a result of the training	1	2	3	4
The new or better employment				

Example: *University research conducted into the automatic grammatical analysis of English text has led to the development of software that is able to grade essays. A firm that offers smart solutions for the educational sector has refined the software, and the product is now being used in rural areas at adult training centres where there are insufficient trainers for the large numbers of adult learners wanting to improve their English. A recent provincial survey showed that since its implementation at these centres the literacy levels of adults in a number of rural communities have started to improve. Adult learners generally felt that an English course from the teaching centre had increased their prospects of employment. Those who found new or better employment after completing the training were particularly excited about the resultant higher household income.*

To what extent is each of the following an example of the 'societal impact of research'?

PRODUCT: The development of software to grade English essays
- AS (n=36): 56%
- HS (n=122): 44%
- NES (n=115): 44%
- SSH (n=99): 44%

USE: The use of the software at rural adult training centres
- AS (n=37): 73%
- HS (n=124): 60%
- NES (n=115): 68%
- SSH (n=97): 60%

BENEFIT: The improvement of the literacy levels of adults in some rural communities
- AS (n=37): 89%
- HS (n=123): 86%
- NES (n=114): 80%
- SSH (n=98): 80%

0%   50%   100%

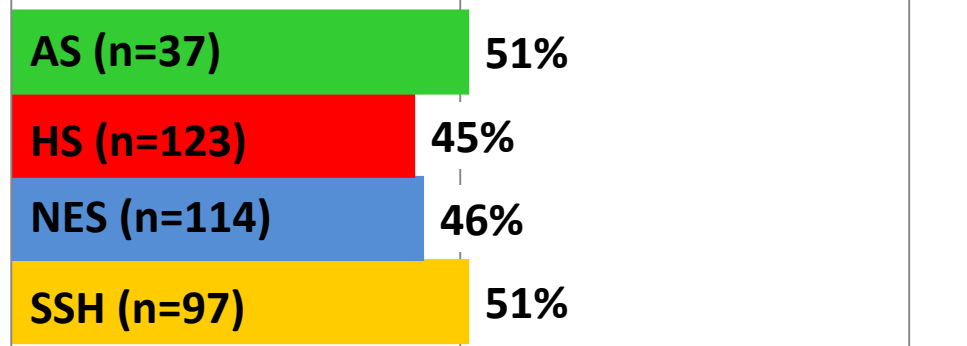**% strong example of the 'societal impact of research'**

Example: *Research undertaken by an academic at a West African university has led to the publication of a biography of an African-born French poet. This biography has since been read by most students and academics in West Africa who have an interest in French literature. In a television interview the researcher claimed that the biography has contributed to a renewed interest in French literature at his university, evidenced by a sudden growth in the number of students enrolling for French modules. Recently, the biography was also prescribed as a textbook for postgraduate study at a number of universities in France. The biography is now starting to earn significant royalties. A common opinion in international book reviews is that the biography has contributed to a greater appreciation of African literature and philosophy in Europe.*

To what extent is each of the following an example of the 'societal impact of research'?
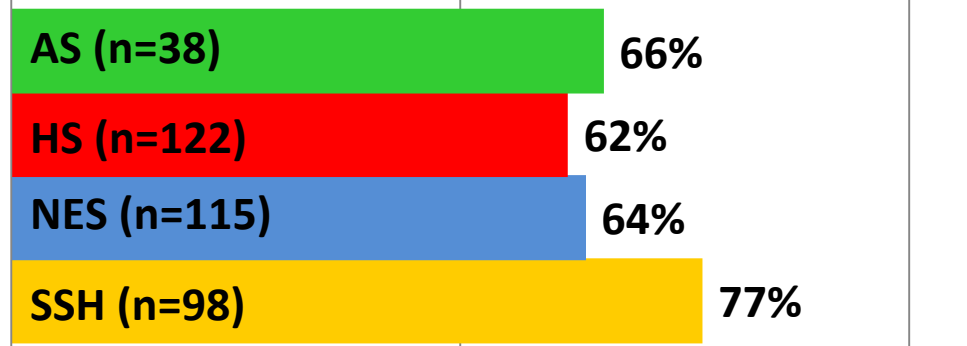
PRODUCT: The publication of the biography of the African-born French poet

- AS (n=36): 39%
- HS (n=119): 32%
- NES (n=114): 35%
- SSH (n=98): 38%
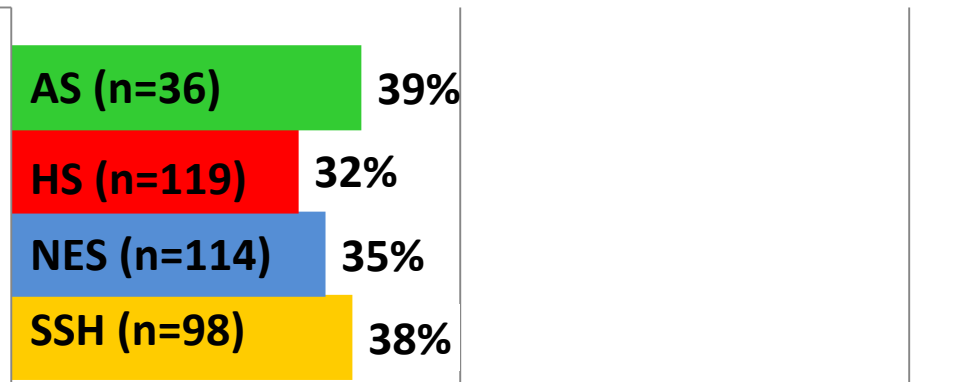
USE: The biography being prescribed for courses at postgraduate levels in France

- AS (n=37): 51%
- HS (n=123): 45%
- NES (n=114): 46%
- SSH (n=97): 51%

BENEFIT: The greater appreciation of African literature and philosophy in Europe

- AS (n=38): 66%
- HS (n=122): 62%
- NES (n=115): 64%
- SSH (n=98): 77%

0%   50%   100%

% strong example of the 'societal impact of research'

Strong examples of 'societal impact of research'

Product, use or benefit?	Software in education (N=450)	Agriculture (N=414)	French literature (N=382)	Dentistry (N=383)
None	8%	7%	**21%**	11%
Product only	4%	3%	3%	3%
Use only	2%	4%	4%	2%
Benefit only	**18%**	**15%**	**22%**	**13%**
Product & use only	2%	5%	3%	4%
Product & benefit only	5%	6%	6%	3%
Use & benefit only	**24%**	**16%**	**17%**	**20%**
Product, use & benefit	**35%**	**44%**	**24%**	**45%**

Note: "Don't know" responses not included.

SSA survey: Open question

Question: What is YOUR understanding of the "societal impact of research"?

Coding categories	Count (369)
Quality of life or transformed livelihoods/lives/living conditions	112 (30%)
General comments	111 (30%)
General impact/effect on broad domains of society	57 (15%)
General impact/effect on specific aspects of human life	37 (10%)
Solutions to societal/user problems	32 (9%)
Characteristics of impact/effect	24 (7%)
Size specification of society	21 (6%)
Specific examples of impact	21 (6%)
Process of impact/utilisation/implementation	20 (5%)
Societal audiences	12 (3)

Quality of life or transformed livelihoods/lives/living conditions (N=112)

- *"How research translates into improving the quality of life of people"* (Food science and technology; Nigeria)
- *"The positive change in the livelihood/living condition of society as a result of research"* (Veterinary public health; Ethiopia)

General impact/effect on broad domains of society (N=57)

- *"The socio-cultural, economic and political transformations in society as a result of research"* (Journalism and mass communication; Kenya)
- *"The positive influence on health, economy, or happiness of people or on the environment by research"* (Environmental engineering; Kenya)

General impact/effect on specific aspects of human life (N=37)

- *"Change in the way people live with and interact with one another including the way of doing things and the values and norms they choose to live by"* (Education; Kenya)
- *"Its how research affects society at large leading to changes in the norms, behavior and practices"* (Maternal and reproductive health; Zambia)

Solutions to societal/user problems (N=32)

- *"Investigations aims at solving challenges in the society"* (Agro climatology; Kenya)
- *"Solving immediate need of community"* (Engineering; Nigeria)
- *"When the outcome of research is used to solve problems associated with the practice of my profession"* (Library and information science; Nigeria)

Characteristics of impact/effect (N=24)

- *"**Long term** benefits or adverse outcomes of research on society"* (Health care; Ethiopia)
- *"How my research translates to **tangible impacts** that help society"* (Aquatic biology; Zimbabwe)
- *"It is the **verifiable contribution** that excellent research makes to society and the economy"* (Public health; Ethiopia)

Size specification of society (N=21)

- *"Should be an impact on wider society, i.e. not just individual beneficiaries of the study"* (Mental health; Ethiopia)
- *"The research findings have a direct effect on the lives of individuals, no matter how few, in the society"* (Foreign languages; Nigeria)
- *"Scientific findings that positively influence the living experiences of a critical mass of people in a given area"* (Psychology; Kenya)

Process of impact/utilisation/implementation (N=19)

- *"When research findings, through policies or without policies, are bringing about positive change in human life"* (Conflict studies; Ghana)

- *"Environmental benefits out of our research, in reality this generally means we try to use the outcome of our research to influence policy in such a way that it is beneficial for conservation of the environment"* (Conservation biology; Zimbabwe)

Societal audiences (N=12)

- *"That the results of my research will directly benefit the community with whom I am working"* (Linguistics & education; Kenya)

- *"Improvement induced by looking at company level"* (Nutritional biochemistry; Burkina Faso)

Specific examples of impact (N=21)

- *"Use of long lasting insecticide treated nets to protect against malaria"* (Veterinary microbiology; Nigeria)
- *"Minimizing the risk of infection by bacterial organisms especially antimicrobial-resistant strains in humans and animals"* (Public health; Kenya)

General comments (N=111)

- *"Effect of research output on the society"* (Chemistry; Nigeria)
- *"Findings of research that benefit society"* (Plant physiology; Ethiopia)
- *"The effect which result of a research has on the society"* (Mental health; Nigeria)

Qualitative interviews
(12 SS researchers)

- Who are the users of your research?
- How do you engage with the users?
- At what stages of the research do you engage with the users?
- What have been/could be the effects of this engagement?
- What will count as evidence of these effects?
- What are your thoughts on the meaning of the "societal impact of research" in your field of research?

Example: Project on mining and society (1)

STAKEHOLDERS	OUTPUT & ENGAGEMENT	IMPACT CONSIDERATIONS

STAKEHOLDERS

Academia

Government agencies

Trade unions and labour organisations

Rural community

OUTPUT & ENGAGEMENT

- Academic publications
- Reports and working papers
- Newspaper contributions
- Meetings, presentations and other platforms of interaction
- Etcetera

IMPACT CONSIDERATIONS

"Communities are contesting the rights of the chiefs to access mining revenues on their behalf. The research supports their case because it shows that they have got real claims as communities on the land which is extensively controlled by the chief and that's leading to litigation in the courts. So there's another impact."

"…it's really important for people who feel marginalised and excluded to see their story and their accounts, you know, printed and sort of verified in a real form outside of them." [In research working papers.]

"This question of impact is that it's a really complex one and we've never gone for the more quantitative, sort of hard evidence type of approach because I think we've always felt like what we're doing is **we're creating forums for debate, we're creating forums of engagement, we making visible certain realities that are otherwise invisible. We've given voice to voices that are otherwise silent and that's been sufficient.**"

Example: Project on mining and society (2)

STAKEHOLDERS

Academia

Government agencies

Trade unions and labour organisations

Rural community

TRANSFER MECHANISMS

- **Academic publications**
- **Reports and working papers**
- **Newspaper contributions**
- **Meetings, presentations and other platforms of interaction**
- **Etcetera**

IMPACT CONSIDERATIONS BASED ON CONTEXT

"So in policy, for example, if some of what we have found out had to have a direct sort of role in policy formulations that should be pointed at policy documents maybe two years later or three years later and say this particular paragraph draws, it may draw from many things, but at least it also draws from our research. So that would be a step further you know, but it still doesn't demonstrate that the policy was implemented cause that would be the problem that we have especially in South Africa and many other places where you can have great policy but it's actually not implemented."

Two learning opportunities

- Exploring 'grassroot' understandings of the concept of research impact

- **Experimenting with a method/system of research impact assessment**

Concept

- **Idea**: Integration of elements taken from three methodologies in the societal impact of research, into a single documentation system, for three South African funders of agricultural research

- **Why**: System to mainly understand the process of impact (for learning purposes) [and for purposes of advocacy; accountability; analysis; … allocation?]

- **Funders:** Wine, deciduous fruit, citrus fruit

- **Next step**: Testing of idea on a small number of completed research projects

- **Expectation**: Eventual documentation system will be significantly different than the idea …

Example of impact scoring matrix

IMPACT CATEGORY	Project 1	Project 2	Project 3	Project 4	Project 5	Project 6	Project 7	Project 8	Project 9	Project 10
ADVANCING KNOWLEDGE	🟩	🟧	🟧	🟩	🟧	🟥	🟧	🟧	🟩	🟩
CAPACITY BUILDING	🟧	🟧	🟧	🟧	🟧	🟩	🟧	🟩	🟩	🟧
RESEARCH TARGETING	🟥	🟥	🟧	🟩	🟥	🟧	🟧	🟧	🟩	🟧
INFORMING DECISION MAKING, PRACTICE AND POLICY	🟩	🟧	🟧	🟩	🟥	🟩	🟥	🟩	🟩	🟧
POPULATION HEALTH AND HEALTH SECTOR BENEFITS	🟩	🟧	🟧	🟩	🟧	🟧	🟥	🟩	🟩	🟧
DISSEMINATION AND KNOWLEDGE TRANSFER	🟩	🟧	🟧	🟩	🟧	🟩	🟥	🟧	🟩	🟩

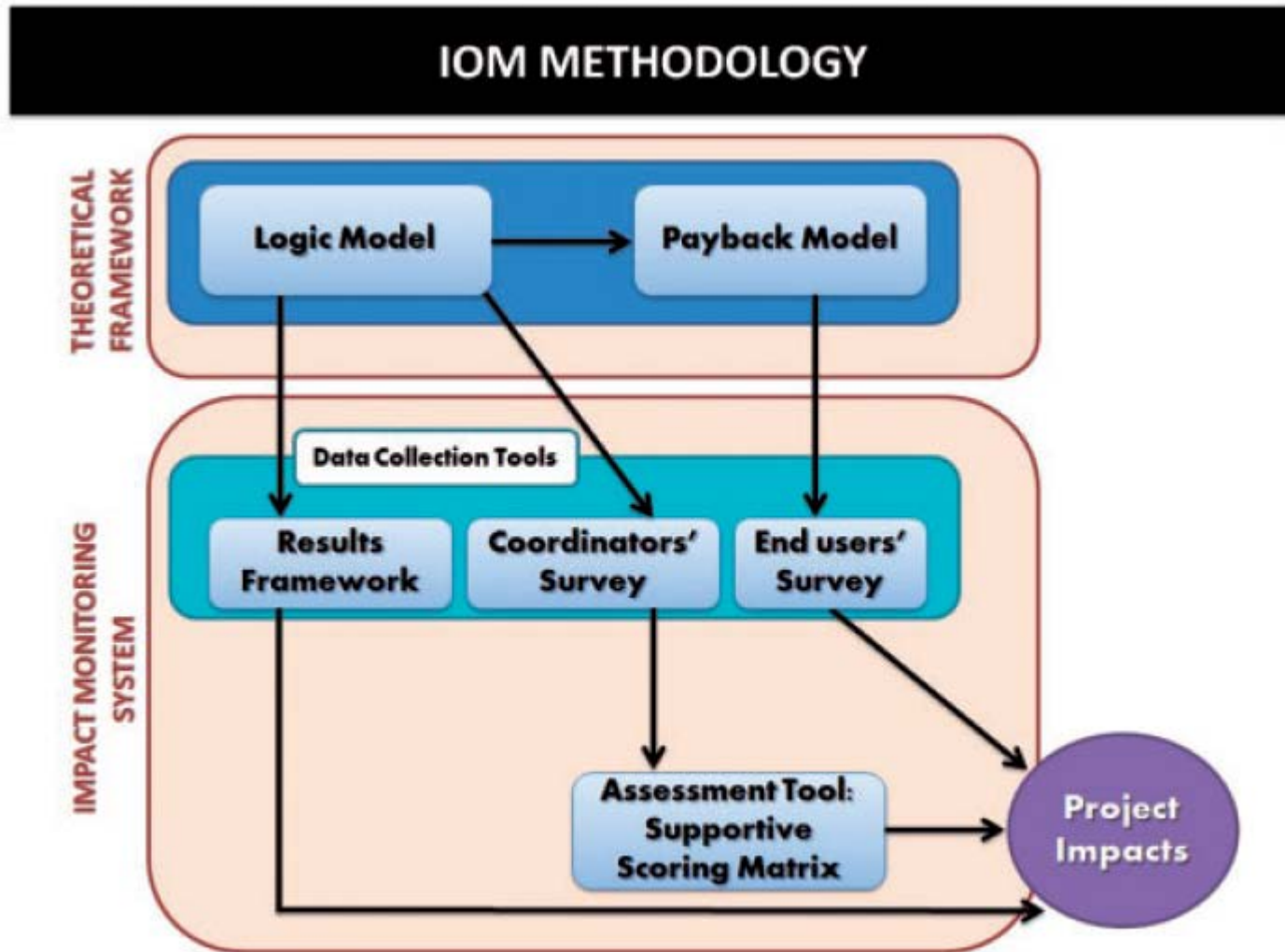| Low Impact projects	Good Impact projects	High Impact project
Q4	Q3 & Q2	Q1

Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S., & Thepthien, B. (2015). Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, *24*(2), 131–145.

Approach 1: Impact oriented monitoring (IOM)

- IOM methodology is based on "the hypothesis that proper recording of appropriate indicators during and after the project life can provide sufficient data to identify and assess immediate and short-term impacts, as well as some evidence of future long-term impacts"

- Developed by EVAL-HEALTH, a collaborative research project funded by the European Union 7th Framework Programme (FP7)

- Focus is on EC-supported public health R&D projects

- The IOM methodology consists of two components:
  - ➢ Theoretical framework
  - ➢ Impact monitoring system

Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S., & Thepthien, B. (2015). Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, *24*(2), 131–145.
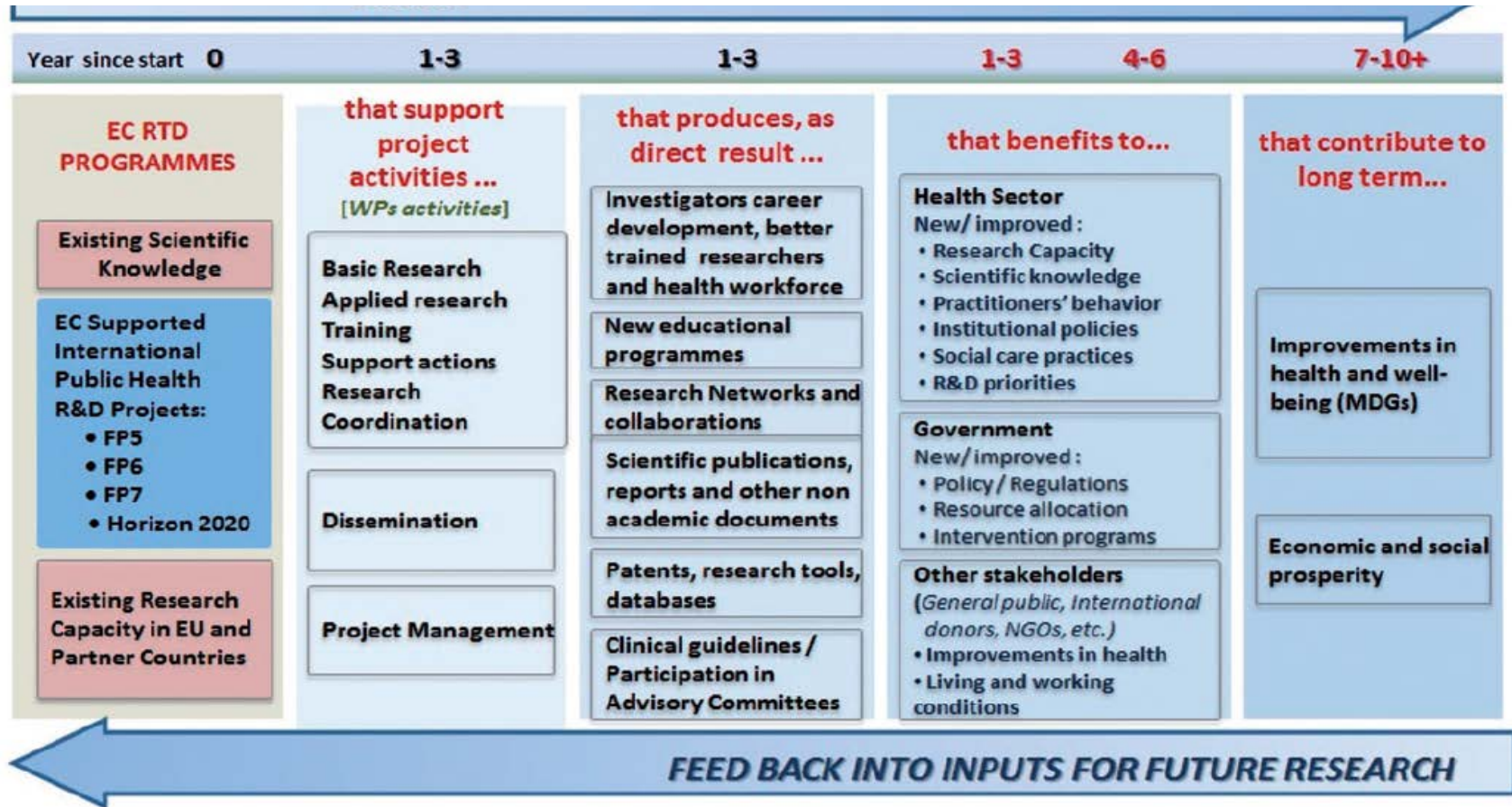
IOM methodology

Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S., & Thepthien, B. (2015). Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, *24*(2), 131–145.

IOM - Logic model of theoretical framework

Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S., & Thepthien, B. (2015). Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, *24*(2), 131–145.

IOM – Payback model (impact categories) of theoretical framework

Impact categories	Description	Example of indicators
Advancing knowledge	Impacts of the research in advancing knowledge by contributions to scientific literature, presentations, books, grey literature, etc.	• Scientific peer-review publications • Contributions to scientific congresses, conferences, and symposiums
Capacity building and research targeting	Impacts of the research in the development and enhancement of research skills in individuals and teams	• Career advancements • Additional funding attracted for new projects
Informing decision-making, practice and policy	Impacts of the research in the areas of science, public, clinical, and managerial decision-making practice and policy	• Results or findings used for policy/decision-making/health practice • Participation of members of project consortium in health-related policy/advisory committees
Population health and health sector benefits	Impacts of the research in advances in prevention, diagnosis, treatment, and palliation	• Project contribution to improvements in the health systems/health service delivery of partner countries
Pathway to impact Dissemination and knowledge transfer	Activities developed to better transfer and communicate the outputs of the project	• Final conference with stakeholder and key users • Engagement with end users

Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S., & Thepthien, B. (2015). Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, *24*(2), 131–145.

IOM data collection tools

Purpose	Purpose	Timing
Project results framework	To help to structure the expected project results and impacts To help to assess specific short-term project impacts	Prepared by the coordinator during Grant Agreement, completed at **mid-term** and **final reporting** of the project.
Coordinator's survey	Main data collection tool for capturing project results and evidence of research impacts	Middle of the project (only for projects lasting 4 or more years) **End** of the project **3 years after** the project
End users' opinion survey	Data collection tool to gather end users' opinions on the non-academic impact of projects	**End** of project
Scoring matrix	Quick estimate of the level of impact of individual projects on fixed domains	**End** of the project **3 years after** the project

Guinea, J., Sela, E., Gómez-Núñez, A.J., Mangwende, T., Ambali, A., Ngum, N., Jaramillo, H., Gallego, J.M., Patiño, A., Latorre, C., Srivanichakorn, S., & Thepthien, B. (2015). Impact oriented monitoring: A new methodology for monitoring and evaluation of international public health research projects. *Research Evaluation*, *24*(2), 131–145.

Approach 2: Social return on investment

Impact as social value – the value that stakeholders experience through changes in their lives

E.g. for every ZAR 1 that is invested into the project activities, ZAR 5 are generated in economic and social benefits.

Approach 3: Productive interactions

- Learning tool to understand how and under what conditions certain interactions between the research and the stakeholders of research become 'productive'

- Focussing on 'productive interactions' highlights the processes that create societal impact, and shows the contribution of research to such impact

- Two questions
  - What are productive interactions?
  - What is societal impact according to this approach?

Source: Spaapen, J. & Van Drooge, L. 2011. Introducing 'productive interactions' in social impact assessment. *Research Evaluation*, 20(3), 211-218.

What are productive interactions?

> we understand *productive interactions* as exchanges between researchers and stakeholders in which knowledge is produced and valued that is both scientifically robust and socially relevant. These exchanges are mediated through various 'tracks', for instance, a research publication, an exhibition, a design, people or financial support. The interaction is *productive* when it leads to efforts by stakeholders to somehow use or apply research results or practical information or experiences.

What is societal impact?

Measurable effects of interactions
• Efforts to use by stakeholders
• Changes in stakeholders' behaviour

Source: Spaapen, J. & Van Drooge, L. 2011. Introducing 'productive interactions' in social impact assessment. *Research Evaluation*, 20(3), 211-218.

Three types of productive interactions

- **Direct personal connections** – face-to-face contact or interactions over the phone, email or video-conferencing. These include meetings, conferences and chance encounters.

- **Indirect encounters** – contact is mediated by a 'carrier'. These include articles, reports, guidelines, codes of practices, artefacts, and individuals acting as intermediaries.

- **Financial interactions** – economic exchanges between researchers and stakeholders, like research contracts or financial contributions

Source: Spaapen, J. & Van Drooge, L. 2011. Introducing 'productive interactions' in social impact assessment. *Research Evaluation*, 20(3), 211-218.

Capturing the interactions and storing them in a research information system
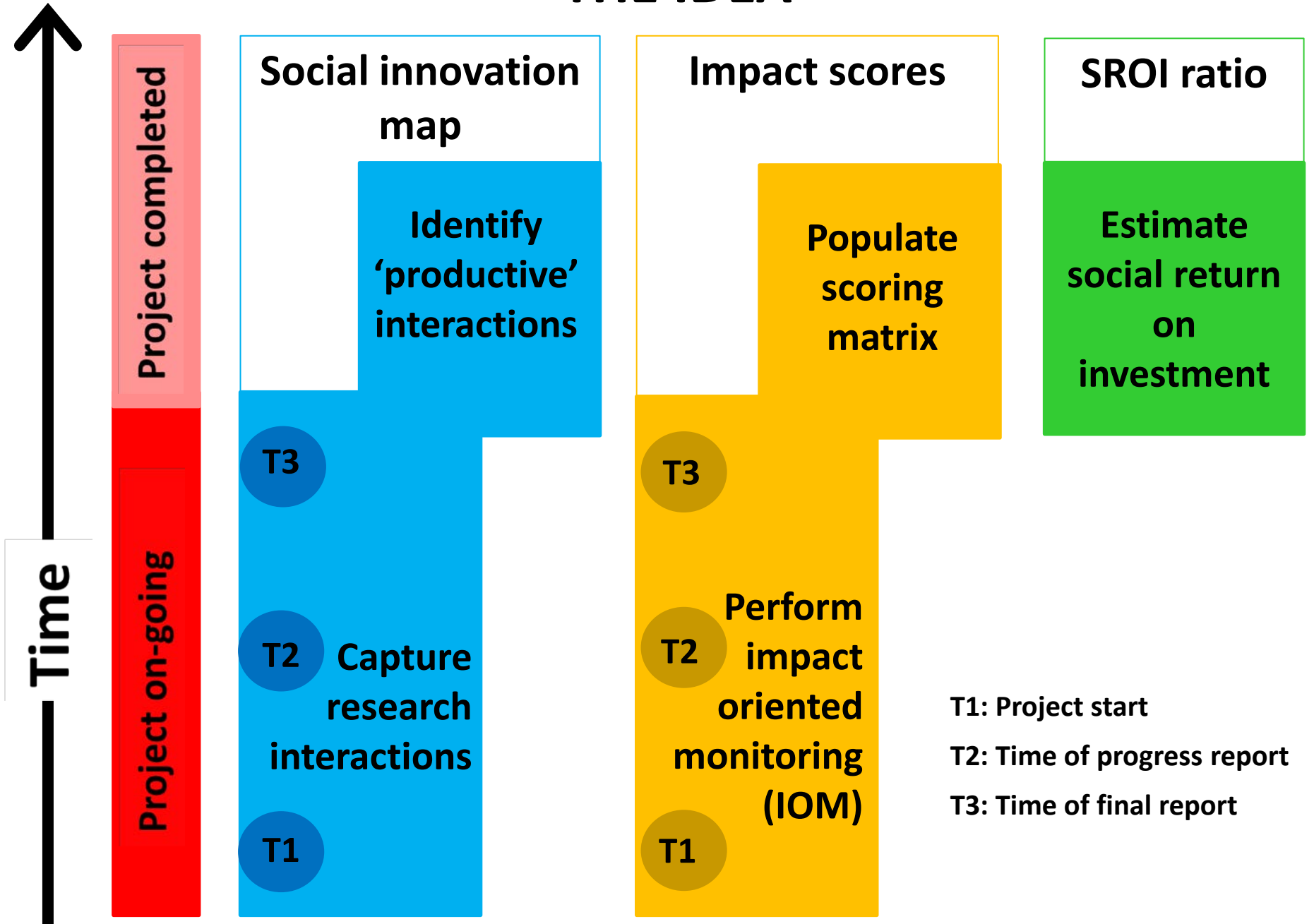
How?

- Analysis of project documents (proposals, reports etc.)
- Focus groups and interviews with researchers and stakeholders
- Extract relevant data elements from the different sources. Capture data elements in a relational database
- Establish links between the interactions and the effects of those interactions (including mapping, where possible)

Type of interaction	Data elements 1 (interactions)	Data elements 2 (effects of interactions)
Direct		
Indirect		
Financial		

- 'Mini' case studies /narratives, using captured elements as structure for telling the (qualitative) 'story'.

THE IDEA

Time

Project completed

Project on-going

Social innovation map

Identify 'productive' interactions

T3

T2 Capture research interactions

T1

Impact scores

Populate scoring matrix

T3

T2 Perform impact oriented monitoring (IOM)

T1

SROI ratio

Estimate social return on investment

T1: Project start

T2: Time of progress report

T3: Time of final report

Summary

- Experimentation / learning-as-we-go
- Who learns and what is being learnt? Reflection.
- Unit of analysis – funding clusters (priority areas) or projects?
- What elements can be automated ("tick")?
- How can **different stakeholder participation** best be accommodated in a documentation system AND without creating unnecessary 'fatigue' among stakeholders?
- Relationship between different 'scores', indicators and indications of inputs and outputs? (LEARNING! 'OPENING UP'!)
- Benchmarking of funders?

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