

Assessing and evaluating new mission-orientated R&D programs

Requirements, frameworks and a review of recent experiences

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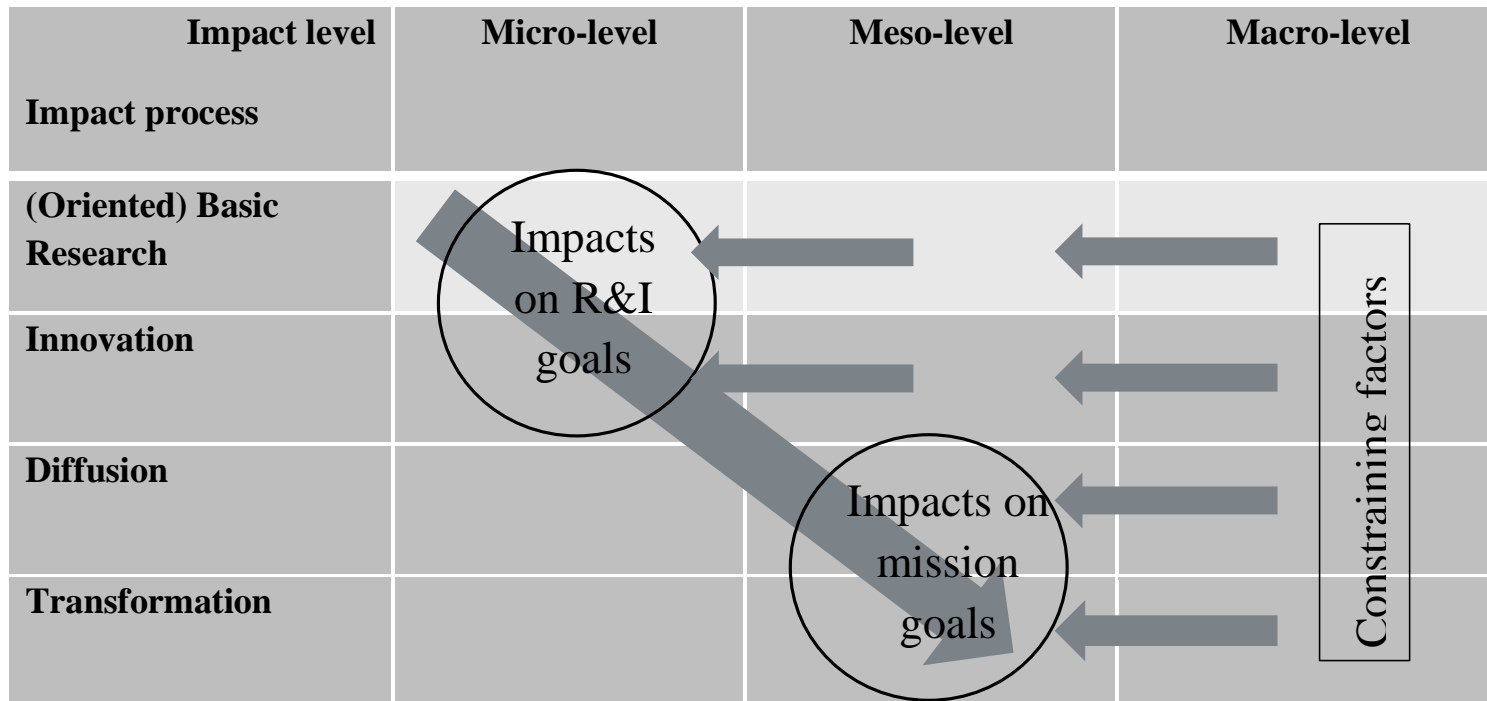
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Overview

- The turn towards new mission-oriented policy
- Requirements of assessing and evaluating new mission-oriented policy
- Some current examples
- Towards a future agenda

Starting point – the PESCA approach (2013)



Key principles of a mission-oriented policy framework (1)

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- Policy must address the uncertain, cumulative and collective **nature of innovation**, each providing rationale for government intervention
- must be **systemic** and must have a **broad perspective** of the NIS
- must create and incentivise **new relationships of actors**
- must **take risks** private sector does not want to bear, and must provide **‘patient capital’** and a sense of **direction for market development**

Adapted from Mazzucato/Penna (2016)

Key principles of a mission-oriented policy framework (2)

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- must have the necessary **‘intelligence’** and must be based on sound and clear **diagnosis** and **prognosis**
- MOP are essentially **‘big science deployed to big problems’**, but are **not the same as societal challenges**, as they define concrete problems, objectives and routes

Adapted from Mazzucato/Penna (2016)

Challenges for evaluation in the new mission-oriented paradigm

„Yet this [the traditional market failure approach] is a **limited toolbox for evaluating public policies and investments that aim to address societal challenges**, because doing so represents a static exercise of evaluation of an intrinsically dynamic process. [...]

By not having indicators for such transformative action, **the toolbox affects the government's ability to know** when it is simply operating in existing spaces or making new things happening that would not have happened anyway (ist additionality)...“

Mazzucato (2015)

- *...but she only raises the question and does not answer it...*

Assessing mission-oriented policies following Mazzucato

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- According to their ability to ,change landscapes‘ / to do what ,blind markets‘ would not have been able to achieve
 - Asks for an assessment of the intervention logic(s)
- Against their capability to adopt a portfolio approach (of a number of projects, programmes, technologies...) and to have revenues from it
 - ...needs mechanisms for ,socialising‘ also profits and not only risks

We would add / strongly emphasise another measure:

- According to their ability to reach their mission goals (goal achievement, effectiveness analysis)
 - ...for which goals must be defined with sufficiently

Assessing mission-oriented policies following Mazzucato

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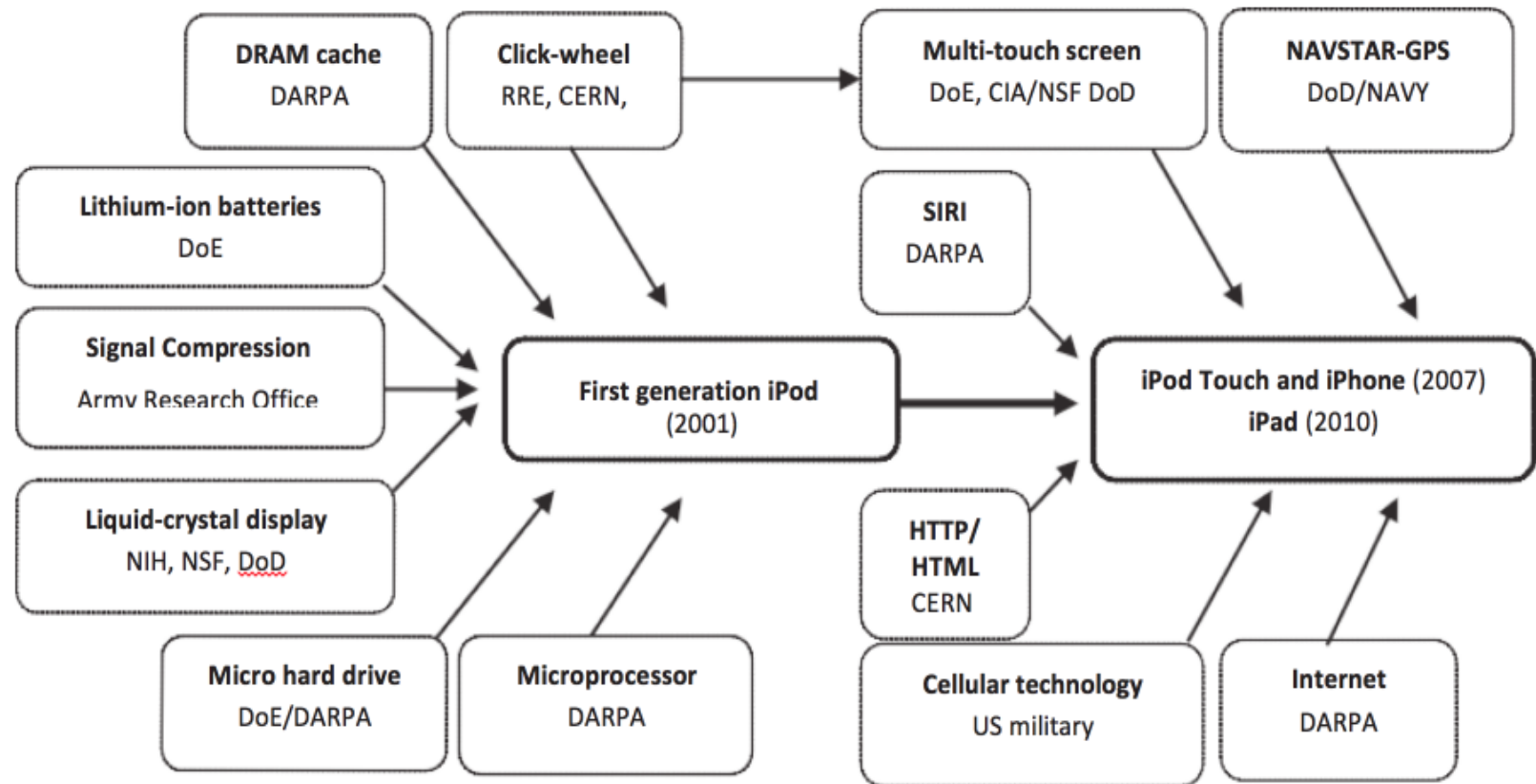
We would add / strongly emphasise another measure:

- Assessment according to their ability to reach their mission goals (goal achievement, effectiveness analysis)
 - ...for which goals must be defined sufficiently
 - ... and which would emphasise *INTENTIONALITY* and not only *DIRECTIONALITY*

A bad example for mission-oriented policy

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Figure 2 State Investments Funded all of the Key Technologies Behind the iPhone



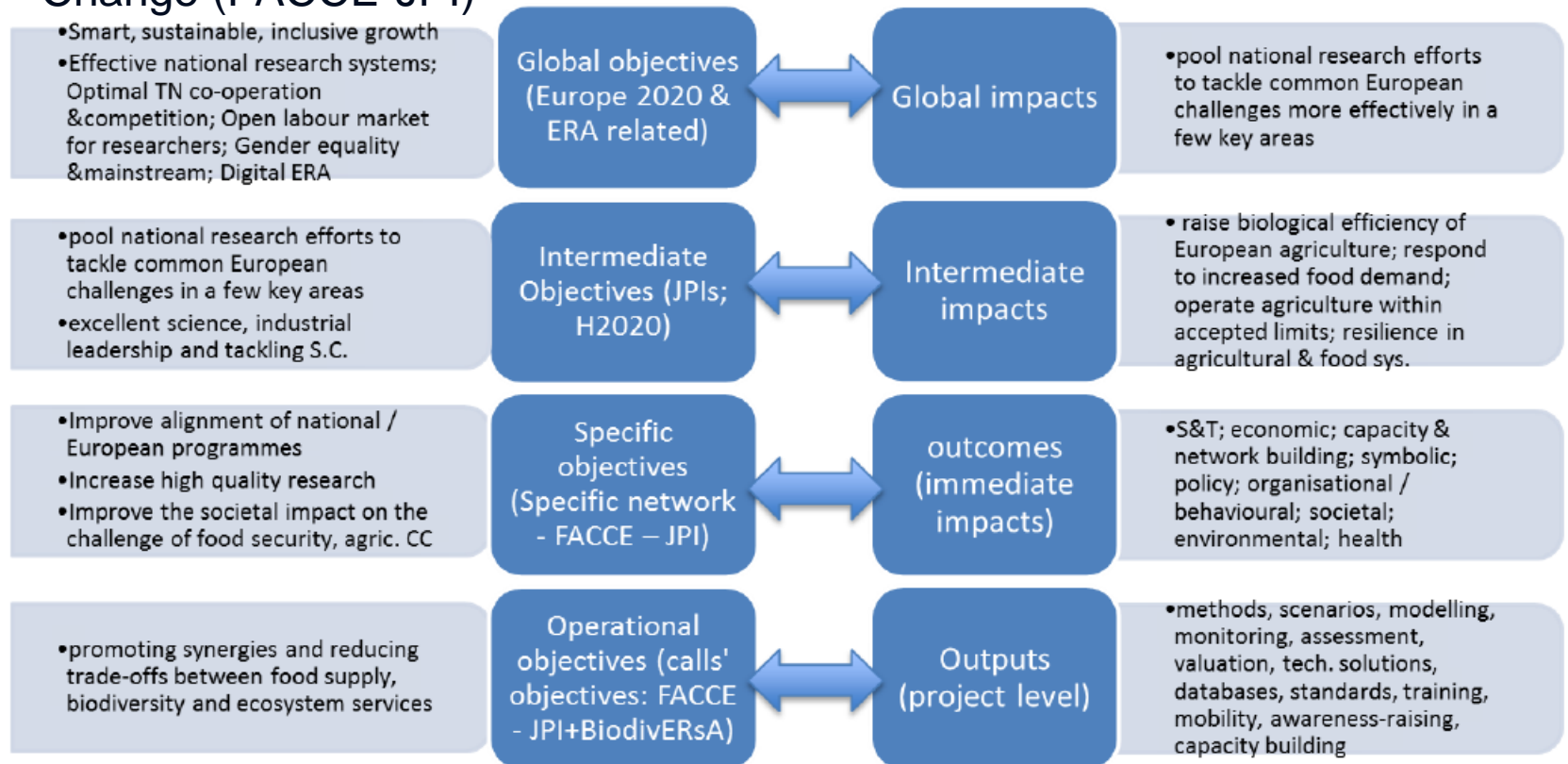
Source: Mazzucato (2013a, p. 109).

New directions for assessing new mission-oriented programmes

- Directionality and intentionality of programmes in the focus!
- Most attempts fall short of the requirements, but seek to achieve transparency about (also long-term) intervention logics:
 - Indicator-based impact assessment frameworks → ERA-Learn
 - Staged impact assessment approaches → EWN IA of R&I Policy
 - Foresight-approaches → First Finnish and Austrian experiences

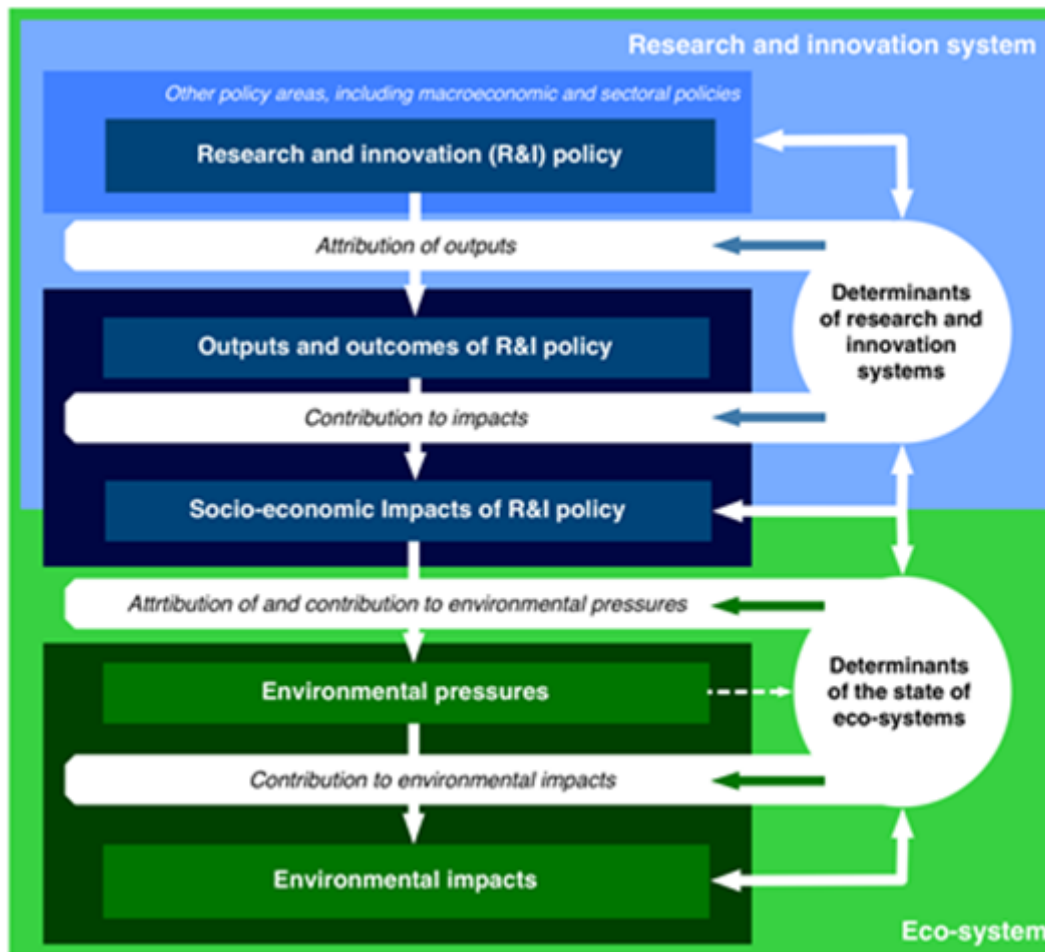
ERA-Learn 2020 Impact Assessment Framework

■ Joint Programming Initiative on Agriculture, Food Security and Climate Change (FACCE-JPI)



Source: example based on FACCE-JPI amended from ERA-LEARN 2 Del. 4.3

EWN Environmental Impact Assessment Framework for R&I Policy



- Explicit distinction between two levels of impact assessment: R&I system and eco-system
- Socio-economic impact pathways of R&I policy
- as interface to eco-system impacts

Identification of new
innovation fields

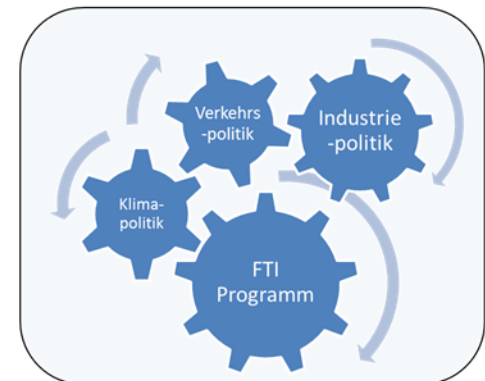
Potential uptake of
new solutions

Estimation of CO2
reduction potential

Programm	Themenfeld	Bereich „Forschungsfeld“	Innovationsfeld	Lösungen (Innovationen, Technologien)*
Mobilität der Zukunft	Personen- mobilität	Multimodale Lebensstile	Verkehrsträger übergreifende Informations- lösungen	Technische Informationslösungen als Grundlage (IKT unterstützte Haltestellen)
		Gleich- berechtigte Mobilität	Erfassung von Bedürfnissen Entwicklung barrierefreie Mobilitätsang.	Barrierefreie & leistbare Mobilitätsangebote (barrierefreie Fahrzeuge im ÖV)
	Aktive Mobilität		Fußgänger Radfahrer Unterstützte Mobilität	(Tools und Software zur Bewusstseinsbildung Navigationslösungen Radverkehr Unterstützte Fahrräder Antrieb, Sicherheit, etc.

Assessment of the
uptake **POTENTIAL** of
„new solutions“

CO2 emission
reduction potential



Approach allowed to assess maximum
CO2 impact potential of innovation
fields supported by funding
programmes in the areas of energy
and transport technologies

Limitations of the approach

- Complex interdependencies and overlaps constrain the ability to assess the impact potential
- Understanding and describing how impact unfolds
 - RTI funding for innovation activities → higher performance and attractiveness of innovation fields → reduction of certain activities (e.g. modal shift) → reduction of CO2 emissions
- Overall impact potential can be captured at the level of individual innovation paths
 - but simply adding them up will not work due to overlaps and double counting
- Size of the contribution of R&I to impact cannot be derived due to other intervening factors
 - Advanced modelling required!
 - No assessment of CO2 reduction per Euro invested possible!

Foresight as backdrop for IA

- Future scenarios describe plausible „lines of reasoning“ and „causal chains“ outlining alternative images of the future and the pathways to get there
 - Useful to capture the inherent openness of long-term impacts
- Impacts of policy interventions are explored against the backdrop of different scenarios
 - Impacts will differ, depending on the scenario context
- Examples
 - Finnish Government Foresight 2030 on sustainable growth and well-being serves as backdrop for specific impact assessments (<http://tulevaisuus.2030.fi/en/>)
 - Pilot example ongoing on MYBL JPI

A critical assessment of the current debate on ,new mission-oriented policy‘

- Has identified the growing challenges and demands towards policy (e.g. ,grand societal challenges‘)
- Has reminded us about the important role of the state and the public sector in overcoming those barriers (,entrepreneurial state‘)
- First steps in identifying mission-related impacts have been made

A critical assessment of the current debate on ,new mission-oriented policy‘

...but there are major shortcomings:

- Concepts are far from being ,settled‘ (e.g. open questions about the process of priority setting / defining the missions)
- No proper dealing with ,government failure‘
- (overly) optimistic in the governance capacities of the state in complex, multi-level, multi-layer systems
- Describes ,ideal-type‘ of government intervention of which ,real-type‘ necessarily fall short of
- In practice, just some first tentative inroads to impact assessment of MOP, confronted with serious methodological limitations
 - Indicator-based frameworks
 - Staged impact assessment
 - Foresight-inspired
- **We need a ,realistic‘, ,evidence-based‘ theory of STI policy, including the policy-making process itself**

References

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