

# PAVING THE PATHWAYS TO IMPACT

MONITORING AND  
EVALUATING IMPACT IN  
HORIZON EUROPE



# 1. LEARNING FROM HORIZON 2020 INTERIM EVALUATION

- **Research and innovation (R&I) investment is specific:**
  - risky endeavor involving multiple trials and errors
  - spreading widely and unexpectedly into multiple domains & applications
  - providing invaluable solutions often in the very long term
- **Tell the difference EU funding is making at any moment in time: tell the story** of the programme as a whole, according to its set of objectives
- **Set realistic** indicators to track progress in **short, medium** and **long term**
- **Minimise burden** on participants, also after project ends
- **Need distinction** between management indicators & performance indicators



## 2. EVOLUTION FOR HORIZON EUROPE

### Horizon 2020 system

- 3 headline indicators **not directly attributable** to the programme\*
- **55 Horizon 2020 Key performance and Cross-Cutting issues** indicators:
  - 27 are related to **management and implementation data** (e.g. funding, participation)
  - 28 are related to **outputs, results or impacts**, out of which:
    - none is related to the whole programme (covering only programme parts)
    - 9 relate to publications
    - 7 relate to intellectual property rights and innovations
    - 4 relate to leveraged funding
    - 4 relate to researchers' mobility and access to infrastructures
- Strong reliance on self-reporting by beneficiaries or surveys

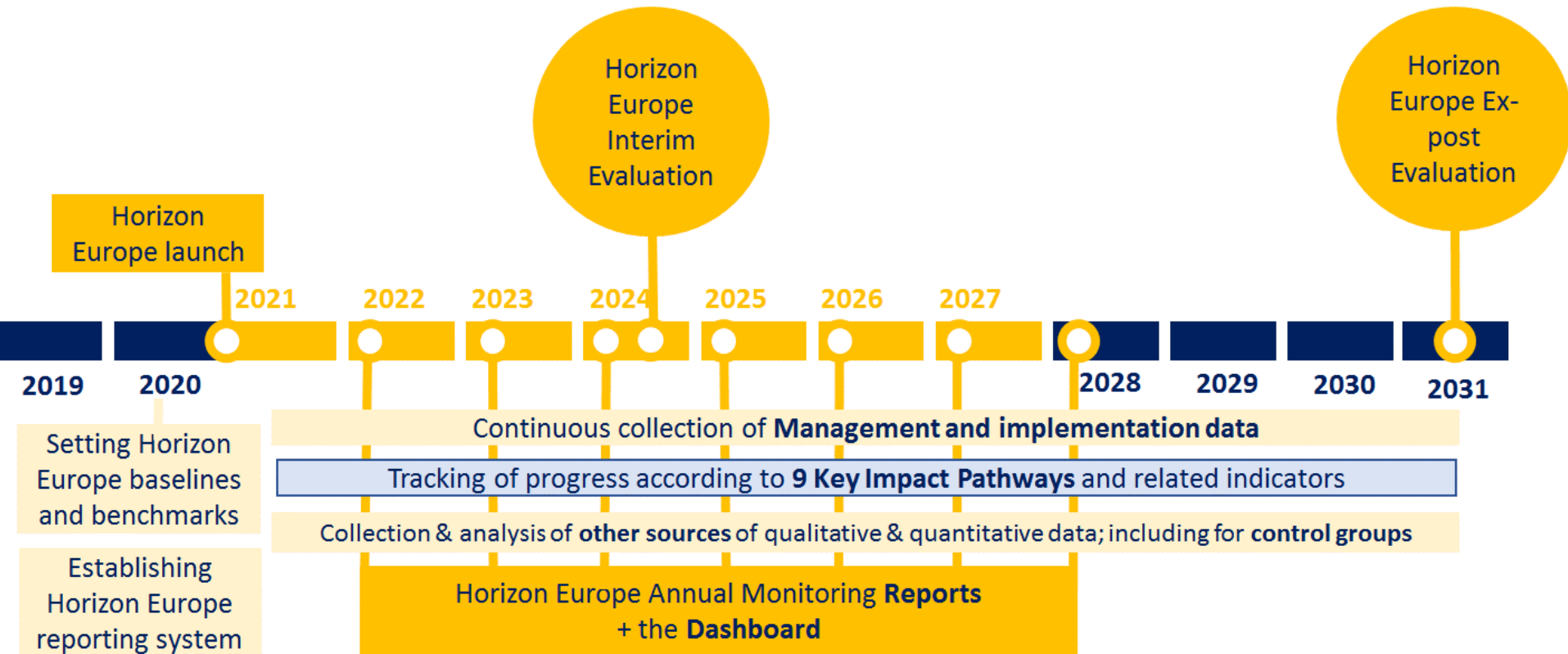
### Evolution for Horizon Europe

- All Horizon 2020 indicators related to outputs, results and impacts are maintained but **streamlined and further specified** to cover the whole Programme
- Management and implementation data are still collected and made available in close-to-real time through **online Dashboard** but are not part of "performance indicators"
- Key indicators are set at **Programme level** according to the Programme objectives and are attributable to the Programme
- Key indicators are classified according to **nine key impact pathways**, for tracking impact through short, medium and long term indicators – for more accurate reporting over time including via the Dashboard
- Higher reliance on external data sources, qualitative data and automated data tracking to **minimise burden on beneficiaries**
- Possibility for programme part or action specific indicators (but not in the legal base)



European  
Commission

### 3. MONITORING & EVALUATING HORIZON EUROPE



## 4. KEY MANAGEMENT & IMPLEMENTATION DATA

Included in Chapter 5 and Annex 6 of Impact Assessment + explanatory memorandum of Horizon Europe proposal

- Number of proposals and applications submitted, EC contribution requested and total costs of submitted proposals (by source of funds)
- Number of proposals reaching the quality threshold (funded/not funded)
- Number of retained proposals
- Success rates of proposals
- EC contribution and total costs of retained proposals (by source of funds)
- Number of participations and single participants

This information shall be collected according to:

- Types of action
- Types of organisations, including **Civil Society Organisations** (with specific data for **SMEs**)
- **Countries and regions** of applicants and participants (including from associated and third countries)
- **Sectors**
- **Disciplines (incl. SSH)**

## 4. KEY MANAGEMENT & IMPLEMENTATION DATA

Data shall also be monitored on the profiles of beneficiaries and proposal evaluators:

- **Gender** balance (in projects, evaluators)
- **Role(s)\*** in project
- Share of **newcomers** to the Programme

Data shall also be monitored on implementation processes:

- **Time-to-grant**
- **Time-to-pay**
- **Error rate**
- **Satisfaction rate**
- **Rate of risk taking**

Data shall also be monitored on:

- The financial contribution that is **climate-related**

Data shall also be collected on:

- Communication of R&I results
- Dissemination of R&I results
- Exploitation and deployment of R&I results, including through monitoring the funding allocated for uptake of R&I results through the other proposals for the long-term EU budget.



# KEY IMPACT PATHWAYS

## 6. TRACKING IMPACT – ‘PATHS’ PRINCIPLES

- **Proximity** - Knowing who the individual researchers and companies are, for example through unique identifiers such as VAT numbers, researchers IDs, funder ID
- **Atribution** – Microdata collection supporting the identification of control groups for counterfactual analysis
- **Traceability** – Minimised burden on beneficiaries through automatic data harvesting from existing databases; use of additional primary (including qualitative) data sources such as project evaluators and reviewers
- **Holism** - Telling the story of the progress of the Programme as a whole according to the objectives, at any moment in time
- **Stability** - Building on the current systems, piloting evolutions in Horizon 2020



# 7. TRACKING IMPACT IN HORIZON EUROPE

## THREE TYPES OF IMPACT BASED ON OBJECTIVES



### **Scientific impact**

Create and diffuse high-quality new knowledge, skills, technologies and solutions to global challenges



### **Societal impact**

Strengthen the impact of research and innovation in developing, supporting and implementing EU policies, and support the uptake of innovative solutions in industry and society to address global challenges

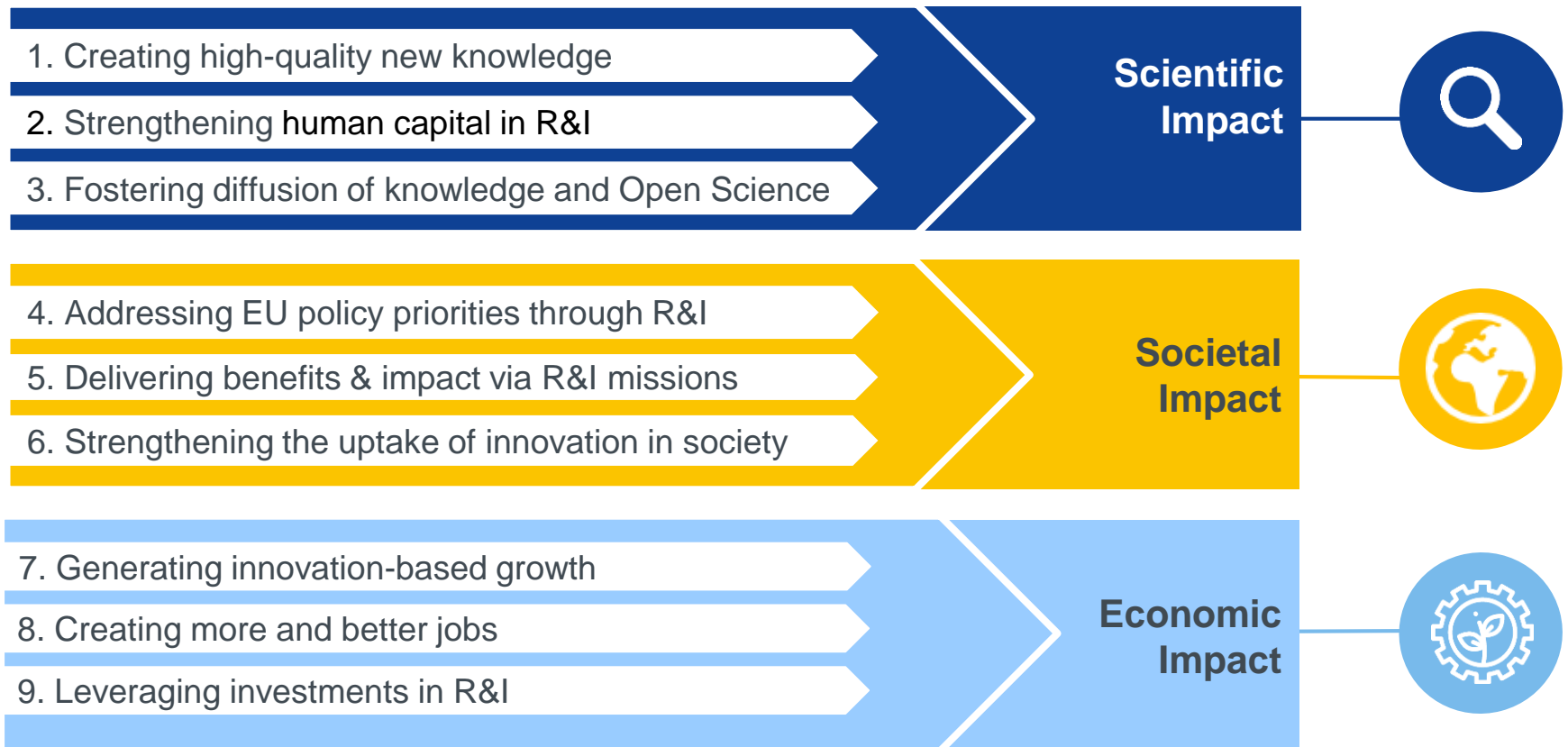


### **Economic impact**

Foster all forms of innovation, including breakthrough innovation, and strengthening market deployment of innovative solutions

# 8. TRACKING IMPACT IN HORIZON EUROPE

## NINE KEY IMPACT PATHWAYS TO TRACK PROGRESS



## Pathway 1. Creating high quality new knowledge



**STORY LINE:** The FP creates and diffuses high quality new knowledge, as shown by the high-quality publications that become influential in their field and worldwide.

**Project-level EXAMPLE\*:** In 2009 Leo Kouwenhoven received an ERC grant. In 2012 the discovery that can bring us one step closer to high-speed quantum computers was published in Science. It was cited more than 2,000 times. In 2015 the results of his team were listed among the top 10 physics discoveries in the last 10 years by Nature Physics.

### Indicator (short, medium, long-term)



**Data needs:** Identification of publications co-funded by the FP through the insertion of a specific funding source ID when publishing, allowing follow-up tracking of the perceived quality and influence through publication databases and topic mapping.

## Pathway 4. Addressing EU priorities through R&I



**STORY LINE:** The FP helps addressing EU policy priorities (including meeting the SDGs) through research and innovation, as shown by the portfolios of projects generating outputs contributing to tackling global challenges.

**Portfolio-level EXAMPLE:** After 3 years, from all projects pursuing reduction of CO2 emissions, 8% already produced relevant innovations and scientific results. After 5 years, experts estimate that all achieved solutions together can contribute to a reduction of CO2 emissions of 0.1% based on current market & policy trends.

### Indicator (short, medium, long-term)

Typically  
As of YEAR 1+

Number and share of outputs aimed at addressing specific EU policy priorities (including SDGs)

Typically  
As of YEAR 3+

Number and share of innovations and scientific results addressing specific EU policy priorities (including SDGs)

Typically  
As of YEAR 5+

Aggregated estimated effects from use of FP-funded scientific results and innovations on tackling specific EU policy priorities including contribution to the policy and law-making cycle (including SDGs)

**Data needs:** Projects classified according to specific EU policy priorities pursued (including SDGs) and follow-up tracking of their outputs, results & impacts. Portfolio analysis on effects from scientific results & innovations in specific EU policy priority/SDGs areas, text mining.

## Pathway 7. Creating more & better jobs



**STORY LINE:** The FP generates more and better jobs, initially in the projects, and then through the exploitation of the results and their diffusion in the economy.

**Counterfactual EXAMPLE:** After 3 years, on average, a company that participates in Horizon Europe has created 1,5 more jobs than a similar company not participating.

### ▪ Indicator (short, medium, long-term)

Typically  
As of YEAR 1+

Number of FTE jobs created, and jobs maintained in beneficiary entities for the FP project (by type of job)

Typically  
As of YEAR 3+

Increase of FTE jobs in beneficiary entities following FP project (by type of job)

Typically  
As of YEAR 5+

Number of direct & indirect jobs created or maintained due to diffusion of FP results (by type of job)

**Data needs:** Collection of information on individuals involved in FP projects, including their workload (Full Time Equivalent) and job profile allowing follow-up tracking of employment in beneficiary organisations. Longer-term indicator to be estimated based on dedicated study.

## 9. CONCLUSIONS



Expected to better capture and communicate the progress of Horizon Europe towards its objectives, including beyond its lifetime (visibility).



Policy makers will be able to better identify and recognise the multiple impacts of R&I investments (i.e. beyond the identification of participation patterns and raw scientific and innovation production).



Focus on microdata collection and data linking will allow for an easier identification of concrete storylines at the level of individual researchers, projects or project portfolios.



A key element in improving the quality of programme evaluations, and their usefulness for policy learning and policy design.





# Thank you!

#HorizonEU

<http://ec.europa.eu/horizon-europe>

# Pathway 1. Creating high quality new knowledge



*STORY LINE: The FP creates and diffuses high quality new knowledge, as shown by the high-quality publications that become influential in their field and worldwide*

## ▪ Indicator (short, medium, long-term)



*Data needs: identification of publications co-funded by the FP through the insertion of a specific funding source ID when publishing, allowing follow-up tracking of the perceived quality and influence through publication databases and topic mapping.*

## Pathway 2. Strengthening human capital in R&I



*STORY LINE: The FP strengthens human capital, as shown by the improvement in skills, reputation and working conditions of participants*

### ▪ Indicator (short, medium, long-term)



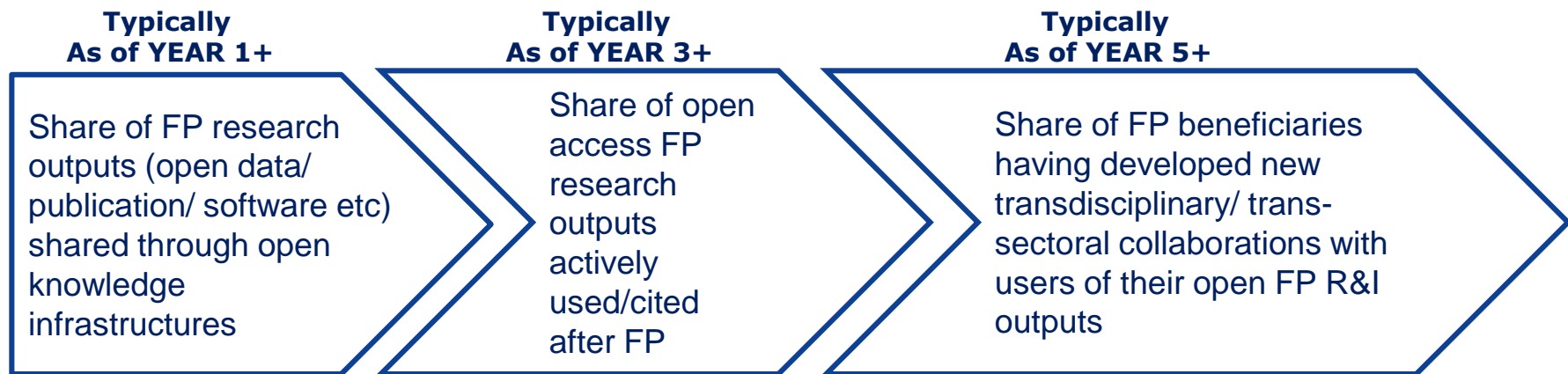
*Data needs: collection of unique identifiers of individual applicants to the FP, allowing follow-up tracking of their influence in their field through publication and patent databases, awards and prizes, as well as evolution of working conditions through salary levels and benefits*

## Pathway 3. Fostering diffusion of knowledge and Open Science



*STORY LINE: The FP opens up science, as shown by research outputs shared openly, re-used and at the origin of new transdisciplinary/trans-sectoral collaborations*

### ▪ Indicator (short, medium, long-term)



*Data needs: Identification of research outputs (esp. publications & research data) co-funded by the FP through the insertion of a unique identifier for FP funding when publishing or sharing openly (e.g. OA journals/platforms (publications) and open FAIR repositories (data)), allowing follow-up tracking of open access performance in terms of active use/citations and collaborations.*

## Pathway 4. Addressing EU priorities through R&I



*STORY LINE: The FP helps addressing EU policy priorities (including meeting the SDGs) through research and innovation, as shown by the portfolios of projects generating outputs contributing to tackling global challenges*

### ▪ Indicator (short, medium, long-term)

**Typically  
As of YEAR 1+**

Number and share of outputs aimed at addressing specific EU policy priorities (including SDGs)

**Typically  
As of YEAR 3+**

Number and share of innovations and scientific results addressing specific EU policy priorities (including SDGs)

**Typically  
As of YEAR 5+**

Aggregated estimated effects from use of FP-funded scientific results and innovations on tackling specific EU policy priorities including contribution to the policy and law-making cycle (including SDGs)

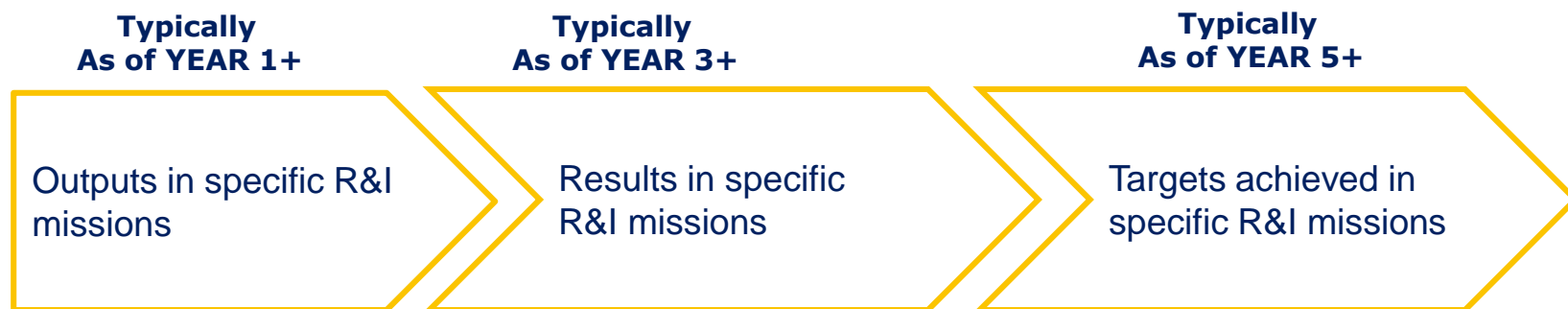
*Data needs: Projects classified according to specific EU policy priorities pursued (including SDGs) and follow-up tracking of their outputs, results & impacts. Portfolio analysis on effects from scientific results & innovations in specific EU policy priority/SDGs areas, text mining.*

## Pathway 5. Delivering benefits and impacts through R&I missions



*STORY LINE: The FP produces knowledge and innovation that contribute to achieving missions of EU interest.*

### ▪ Indicator (short, medium, long-term)



*Data needs: Projects classified according to the missions pursued and follow-up tracking of their outputs, results and impacts according to the target set. Portfolio analysis on effects from scientific results & innovations in mission areas.*

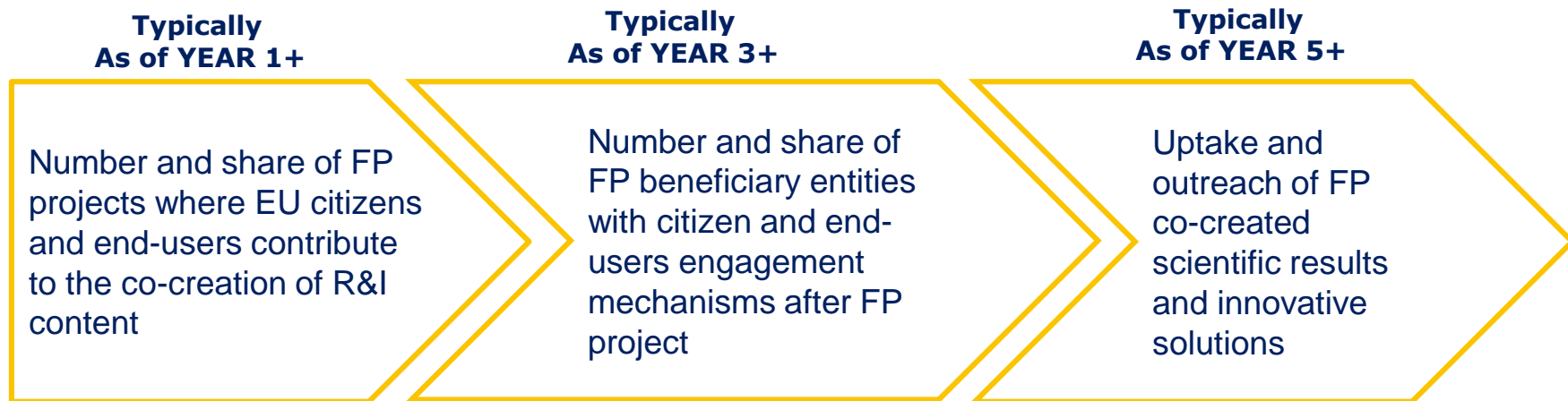


## Pathway 6. Strengthening the uptake of innovation in society



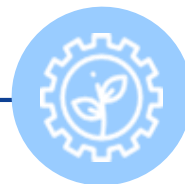
*STORY LINE: The FP strengthens the uptake of innovation in society, as shown by the engagement of citizen in the projects and beyond the projects by improved uptake of scientific results and innovative solutions*

### ▪ Indicator (short, medium, long-term)



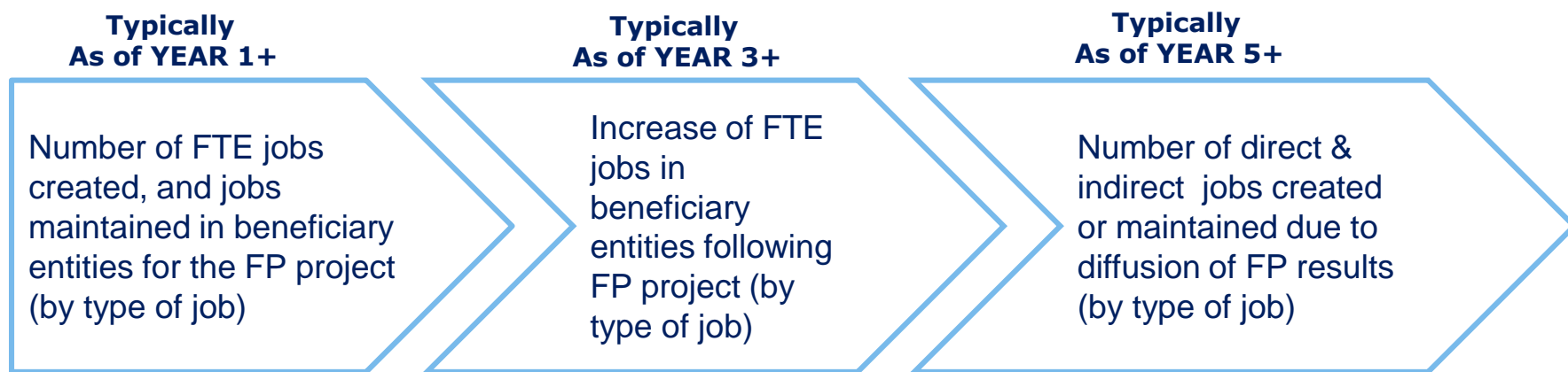
*Data needs: Collection of data at proposal stage on the roles of partners (incl. citizen) in the projects, structured survey of beneficiary entities and tracking of uptake and outreach through patents and trademarks and media analysis.*

## Pathway 7. Creating more & better jobs



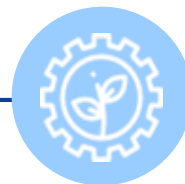
*STORY LINE: The FP generates more and better jobs, initially in the projects, and then through the exploitation of the results and their diffusion in the economy*

### ▪ Indicator (short, medium, long-term)



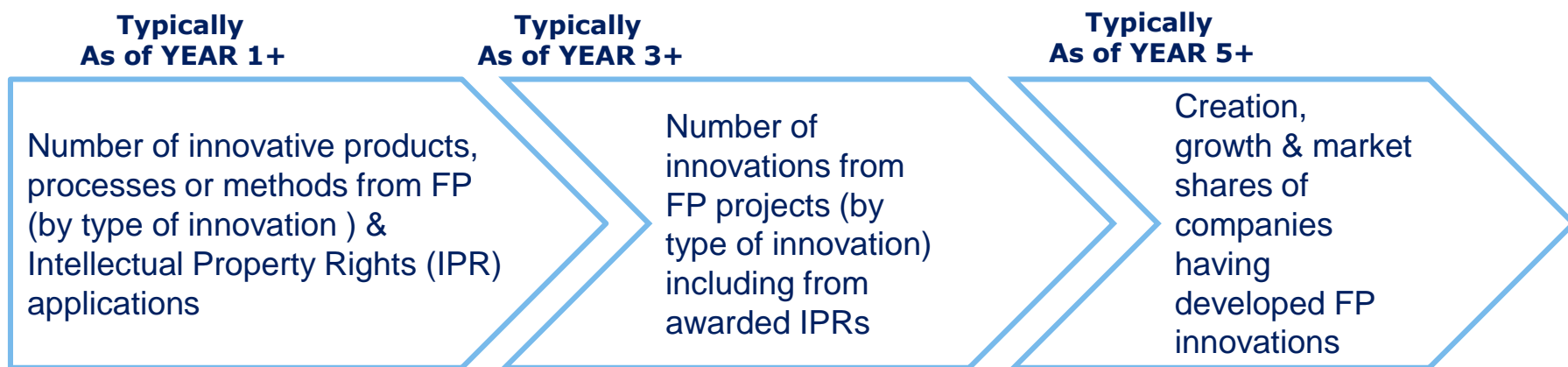
*Data needs: Collection of information on individuals involved in FP projects, including their workload (Full Time Equivalent) and job profile allowing follow-up tracking of employment in beneficiary organisations. Longer-term indicator to be estimated based on dedicated study.*

## Pathway 8. Generating innovation-based growth



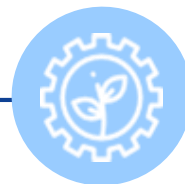
*STORY LINE: The FP is a source of economic growth, as shown by the patents and innovations that are launched on the market and generate added value for businesses*

### ▪ Indicator (short, medium, long-term)



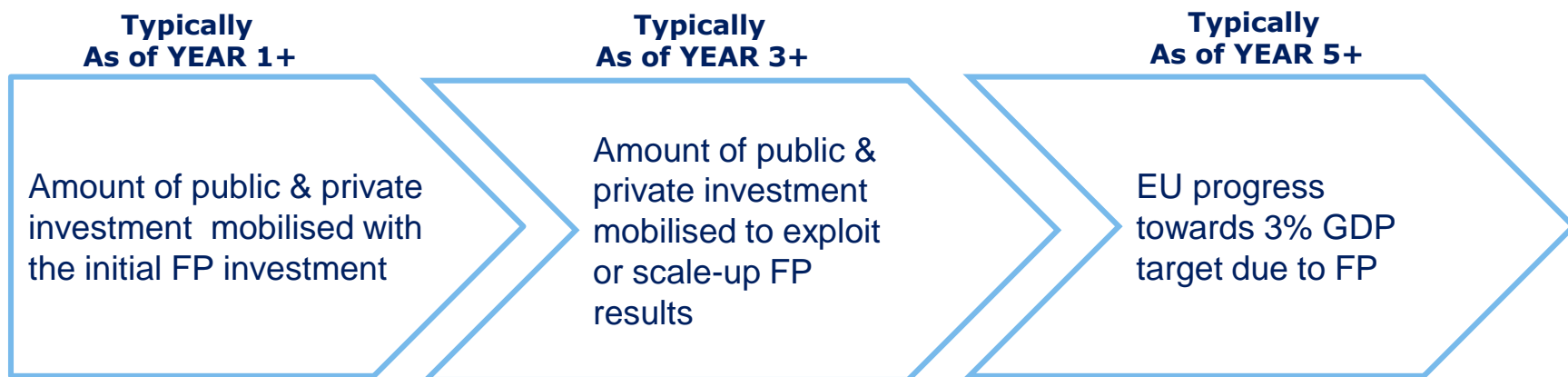
*Data needs: Reporting of beneficiaries on innovative products, processes or methods from FP and their practical use, and insertion of a specific funding source ID when filling IPR applications, allowing follow-up tracking of the patents through patent databases & trademarks.*

## Pathway 9. Leveraging investment in R&I



*STORY LINE: The FP is leveraging investments for research and innovation in Europe, initially in the projects, and then to exploit or scale-up their results*

### ▪ Indicator (short, medium, long-term)



*Data needs: Data on co-funding in FP projects by source of funds including other EU funds, collection of unique identifiers of applicants to the FP (e.g. VAT), allowing follow-up tracking of their capital. Longer-term indicator to be estimated based on dedicated study.*