Capacity Building on
Science, Technology and Innovation (STI) Policy and Policy Instruments
for Sustainable Development Goals (SDGs)

TECHNOLOGY FACILITATION MECHANISM

Work Stream 6 on Capacity-building

OACPS R&I

Session 6 Monitoring and Evaluation of STI policies in the context of the SDGs

-key concepts

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SUSTAINABLE DEVELOPMENT GOALS

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Part II of the Mutual Learning Exercise on Research and Innovation (R&I) Policies and Strategies, 14-17 February 2023, Addis Ababa
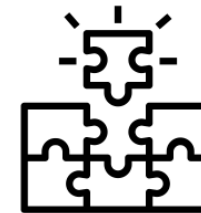
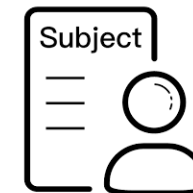Evidence-based policymaking; to inform policymakers about "what works"

Policy making as a **learning process**, learning by experience: M&E framework can enhance learning processes

Monitoring vs Evaluation :
two complementary processes

Systemic Monitoring and Evaluation (M&E) : one of the weaknesses facing the STI systems

Why data is needed? Why measuring STI?

- **Accountability** for spending of public funds
- **Informed strategy and forecasting; evidence-base**
- **Coordination** of plans and budgets
- **Monitoring** policies and activities
- **Evaluation** of programmes and projects
- **Benchmarking** and **international comparisons**

Indirect benefits:

Learning; bringing stakeholders closer

Improving management of R&D

Monitoring AND Evaluation

✓ **Evaluation** responding to *'how, why, where* and *who'* questions

✓ **Monitoring** responding to *'how much'*, *'to what extent'* and 'how fast' questions.

✓ Building evidence-based judgments, evaluation addresses specific **policy objectives** such as productivity, effectiveness, efficiency, inclusivity, diversity, relevance and sustainability

✓ M&E supported by well-designed selection of indicators. **Performance indicators** should include baseline and target measures for expected results.

Monitoring practices

Quantitative data

- Measurements approach: inputs and outputs indicators to monitor policies
- Data providing information on the effort devoted to R&D and Innovation and the outputs measured through publications etc.

Qualitative data

- Need for information on policy instruments, interactions, contextual factors, legal frameworks, coordination mechanisms
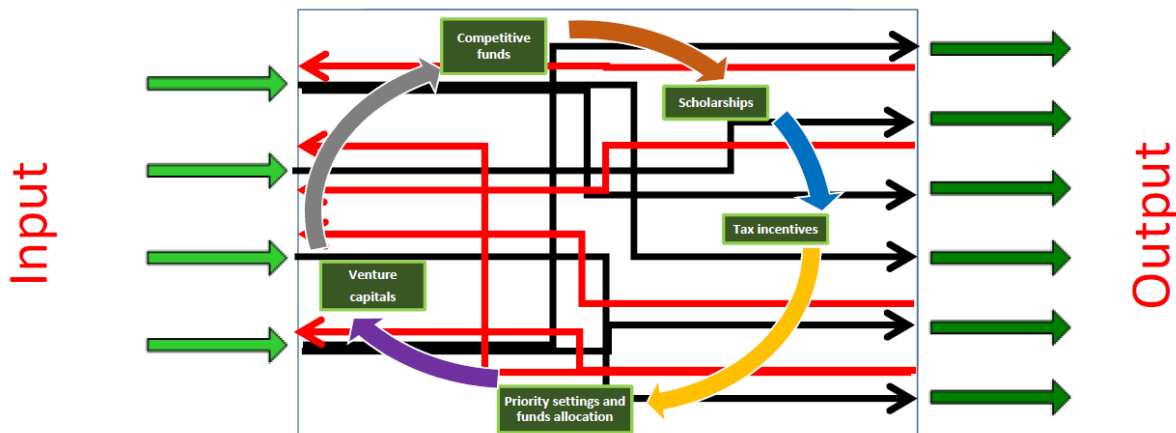
Monitoring provides information on where a policy, program, or project is at any given time compared to some baseline or objective and is largely descriptive.

Input indicators

- **R&D Funding**
- **R&D Labour force**
- **R&D Infrastructure**
  - **Foreign Direct Investment**

National Innovation system

Output indicators

- **Patents & Licenses**
- **PhDs**
- **Scientific Publications**
- **Innovations**
- **Number of High-Tech Enterprises**

Why evaluating?

Evaluation practices

- **For accountability—delivering on political promises**
- **For advocacy —convincing by using evidence from findings**
- **For learning purposes —reporting findings to help organizational learning**
- **For analysis and identifying gaps —seeing what works, what does not, and why**
- **For building institutional memory**
- **For multi-stakeholders engagement - through a participatory process**
- **For gaining support —demonstrating results to help gain support among stakeholders**
- **For building understanding—reporting results to enhance understanding of projects, programs, and policies.**

Evaluation gives evidence of why outcomes are or are not being achieved and attempts to provide a causal account.

Evaluation Methods

Quantitative: Cost-benefit analysis; Randomised Trials

Case studies; user surveys; interviews; peer reviews; focus groups

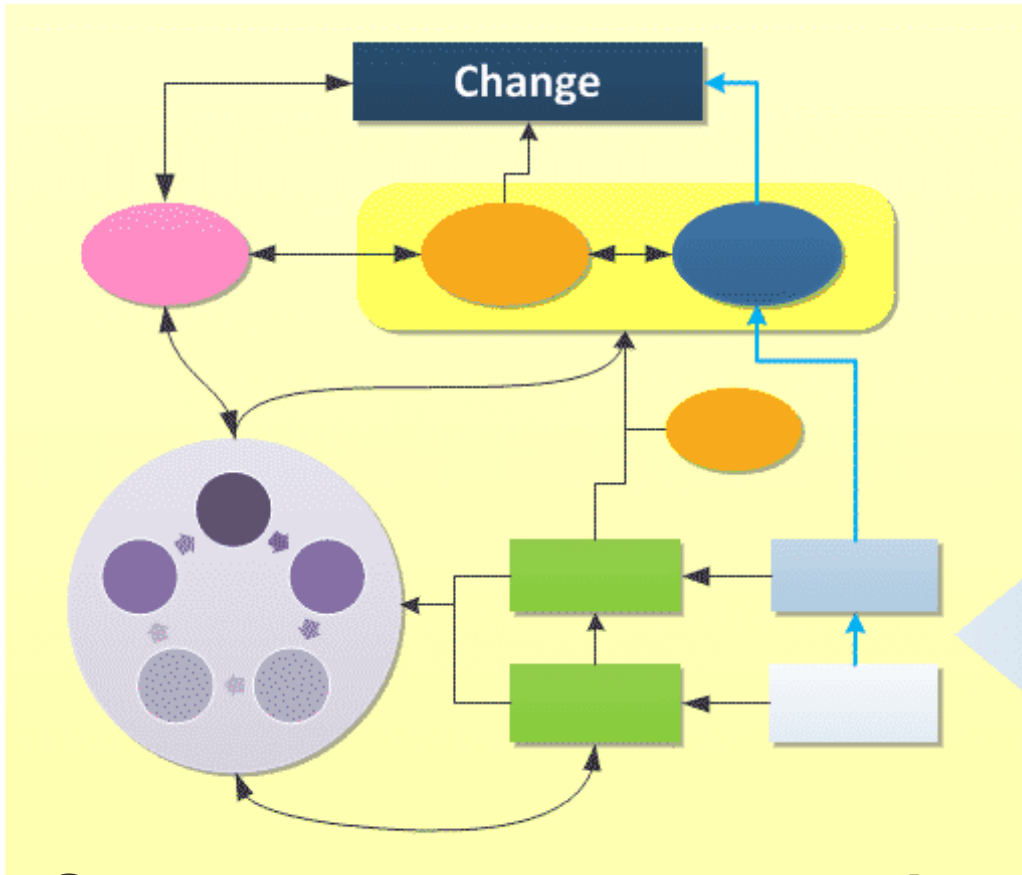# What ways to describe how a policy leads to results and impacts ?

Logical Framework: how the policies, instruments, programmes lead to outputs, and how outputs will lead to outcomes and goals

Theory of Change: : possible pathways leading to change

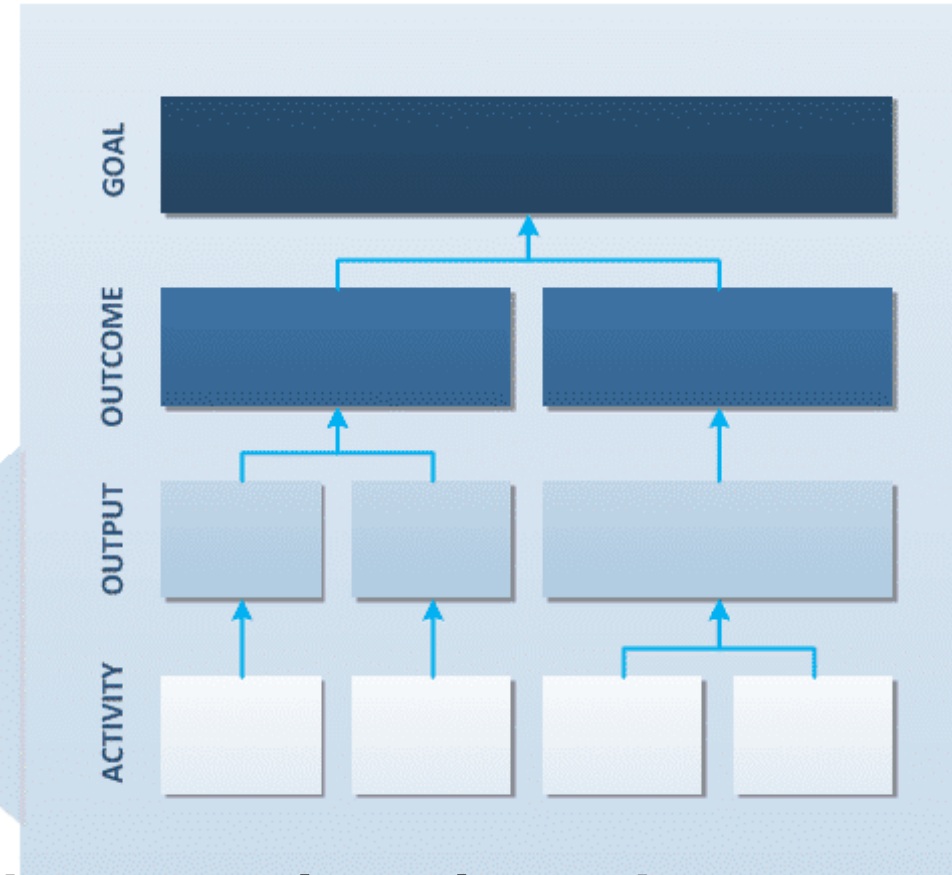# Theory of Change vs Logical Framework

Same general purpose – to describe how a policy will lead to results

M&E Framework

•**Inputs** : refer to factors required to perform the required activities in interventions and programmes (investment, funding, human resources, infrastructure, equipment)

•**Outputs**: deliverables of programme or intervention activities (tangible materials, manuals, devices, equipment, etc. or more intangible services such as technical support, consultations, and training workshops etc).

•**Outcomes:** immediate changes that we wish to bring about through policy interventions (gains, benefits...) - a change has occurred in short-term, medium-term

•**Impacts:** often seen as the long-term accumulated 'ultimate' outcomes. The term 'results' is sometimes used as synonym for impact.

Inputs

Outputs

Outcomes

Results

Impacts
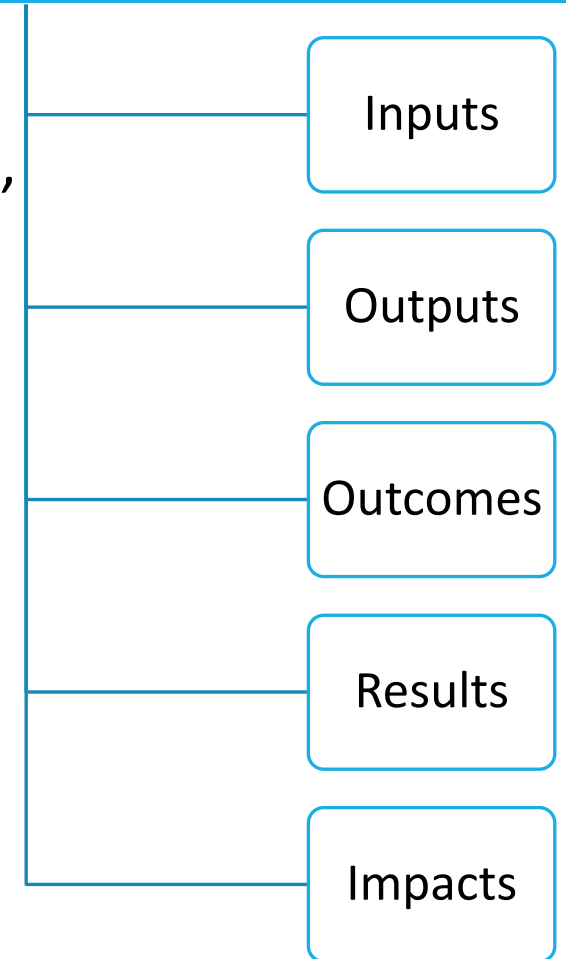
Logical Framework to M&E Framework

LOGICAL FRAMEWORK

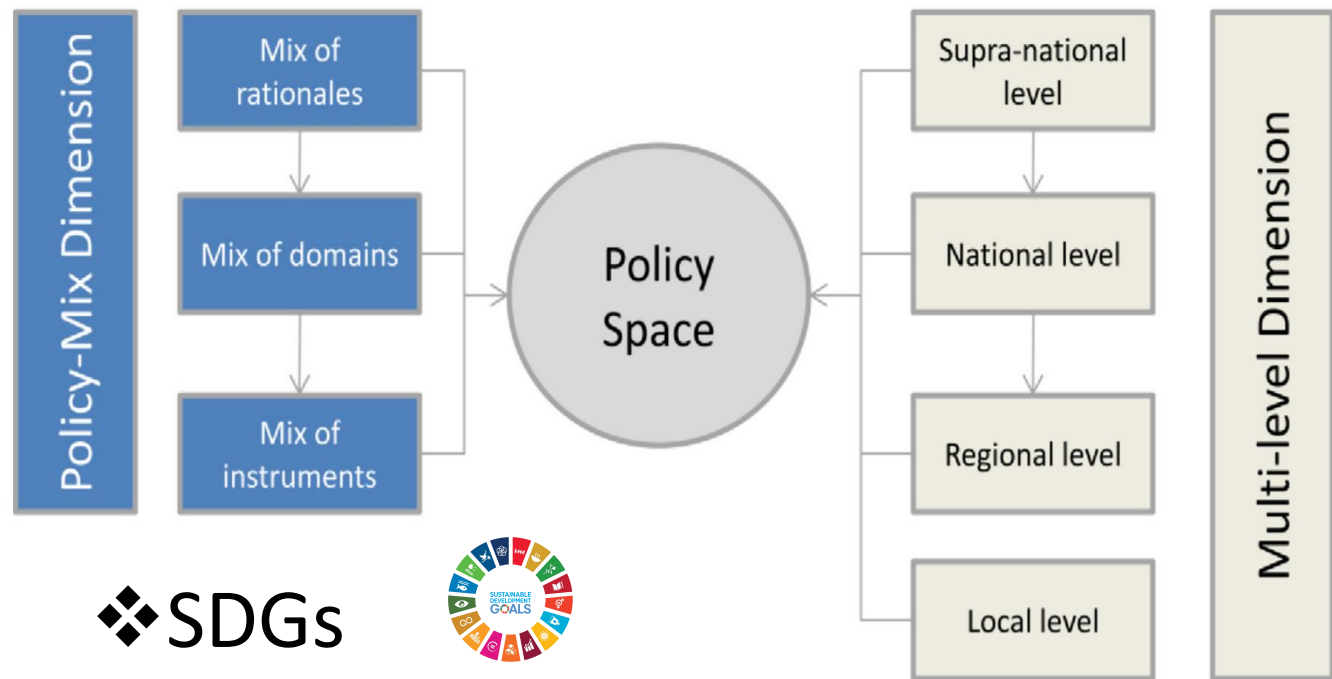|	INDICATORS	MEANS OF VERIFICATION	RISKS / ASSUMPTIONS
Goal			
Outcomes			
Outputs			
Activities			

M&E FRAMEWORK

	INDICATORS	DEFINITION How it is calculated?	BASELINE	TARGET	DATA SOURCE How measured?	FREQ-UENCY	RESPONSIBLE	REPORTING
Goal								
Outcomes								
Outputs								
Activities								

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Different Paradigms

❖Policy Mix

STI Policy Settings and Implications for M&E

❖SDGs

❖M&E

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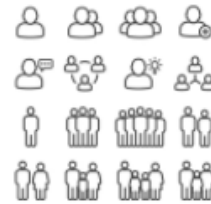# Challenges at Monitoring and Evaluating STI Policies

STI Policies

complex cause - effect relationship

Multiple goals

Variety of agents, interactions

Unclear assumptions about innovation models

M&E

- simple cost-benefit ratio of measures does not deliver
- more instruments to assess and stakeholders to inform
- Real risk of under-evaluation
- tension complexity / system vs. (simple) accountability

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Key Take away message

M&E is key, it's a learning process, individual and institutional

Monitoring and Evaluation work in tandem

Monitoring for information on where we are; Evaluation for evidence about achievements of outcomes - provides a causal account

M&E has the objective to create virtuous policy cycles

M&E should consider that Policy making is not linear process

M&E framework need to be developed as part of the STI policies