

Session 2:

Policy instruments design for STI and the SDGs

**On-line training session on STI policy
and policy instruments
for SDGs for Asia and the Pacific**

November 18-21

UN-IATT Workstream 6 on
Capacity-Building in STI for SDGs

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- 1. Definitions of policy instruments**
- 2. Types of policy instruments**
- 3. Policy instruments for STI**
- 4. STI policy instruments in support of the SDGs**
- 5. Policy instrument design process**
- 6. Pitfalls and risks in policy instrument design**
- 7. Examples of successful policy instruments for STI**

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7. Examples of successful policy instruments for STI

Consult the handout 

TFM IATT WS6 Curriculum revision

Group Session 2: Policy instruments definitions and design (part 2a)

Contents

1. What is public policy?.....	1
2. The policy cycle.....	2
3. Definitions of policy instruments.....	3
4. Types of policy instruments.....	3
5. Policy instruments for STI.....	4
6. STI policy instruments in support of the SDGs.....	6
7. Policy instrument design process.....	8
8. Pitfalls and risks in policy instrument design.....	8
9. Examples of successful policy instruments for STI.....	9

1. What is public policy?

Three mainstream definitions of "public policy," with references to key authors and texts are listed as follows.

1. Public Policy as the Distribution of Resources

- **Definition:** Public policy is "the authoritative allocation of values and resources in society, involving laws, regulations, and decisions that allocate benefits and costs to different sectors."

Reference: David Easton, The Political System: An Inquiry into the State of Political Science (1953).

- Easton defines public policy in the context of political systems theory, where it represents the distribution of societal values and resources through authoritative decisions.

2. Public Policy as a Decision-Making Process

- **Definition:** Public policy is "a complex process that involves the formulation, adoption, and implementation of government decisions aimed at influencing public issues."

Reference: Thomas R. Dye, Understanding Public Policy, 15th Edition (2012).

- Dye highlights the decision-making aspect of public policy and focuses on how policies are made by different actors within the governmental system.

3. Public Policy as Government Action

- **Definition:** Public policy is "a course of action or inaction chosen by public authorities to address a given problem or set of problems."

1. Definitions of policy instruments

... tool or mechanism used by governments to implement their policies and achieve desired outcomes.

... the means by which governments attempt to achieve their policy objectives.

... the use of information, legal, financial and organizational resources to implement policy.

... techniques or means for implementing public policy objectives.

(See references in handout.)

2. Types of policy instruments

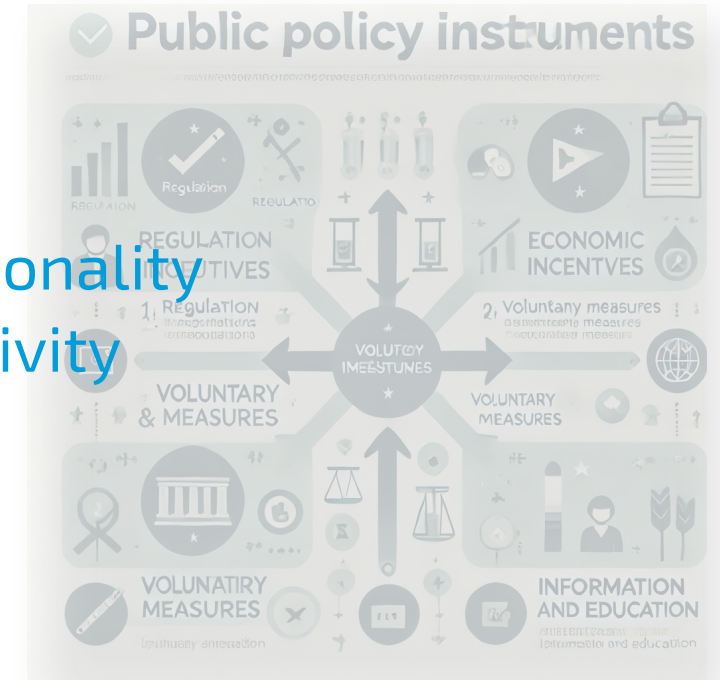
a) **By type of failure:** Market failure
Systems failure
Transformative failure

b) **By practice:** Regulatory instruments
Economic
Informational
Voluntary/agreement-based (e.g. PPP)
Direct provision, investment
National policies, strategies
International, regional strategies

c) **Other:** long/short-term, supply-demand, sectoral-horizontal, challenge (SDG), target stakeholder

d) **Policy objective will be achieved through a policy instrument mix**

- Directionality
- Reflexivity



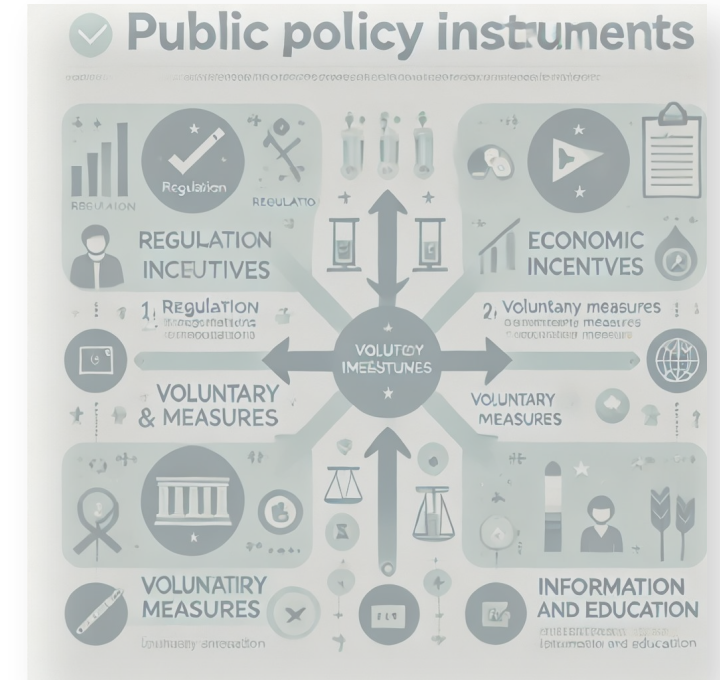
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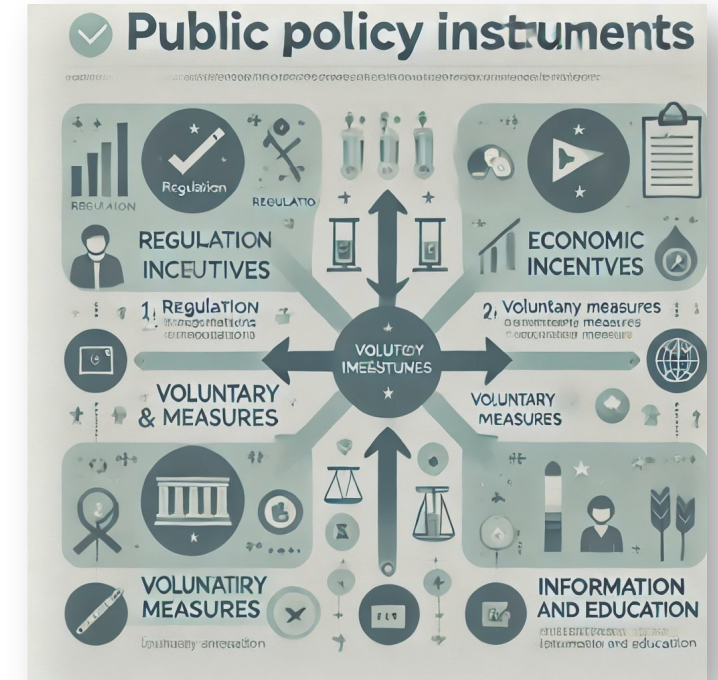
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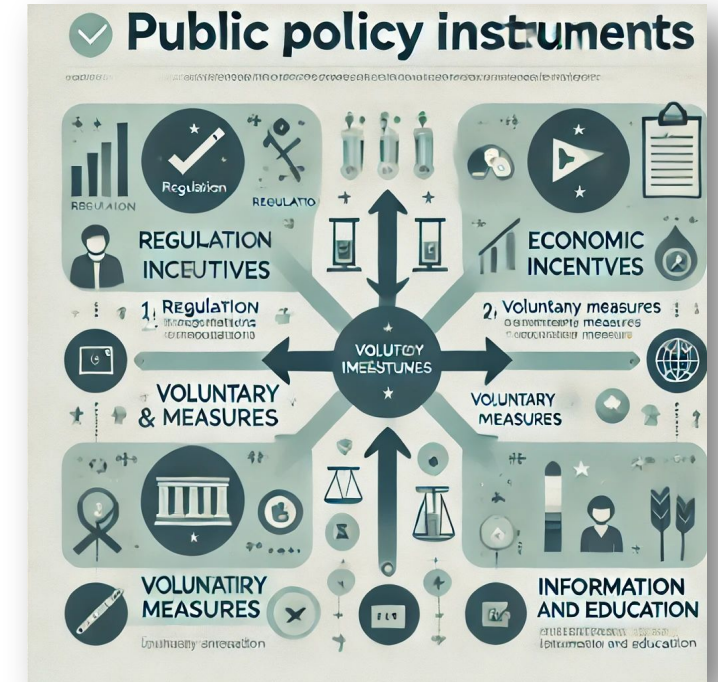
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3. Policy instruments for STI

- a) Funding, grants
- b) Tax incentives
- c) PPPs
- d) Regulations and standards
- e) Innovation clusters, hubs
- f) Intellectual property rights
- g) Education, skills development
- h) Research infrastructure
- i) Technology transfer, commercialization
- j) International cooperation
- k) Public procurement
- l) National STI policies, strategies
- m) International, regional networks

4. STI policy instruments in support of the SDGs

- a) Addressing complex societal challenges
- b) Capacity to design and deploy parallel interventions
- c) Specific to sustainable development
- d) Direct support to innovators
- e) Improving the enabling environment

SUSTAINABLE
DEVELOPMENT
GOALS

4. STI policy instruments in support of the SDGs

- a) Addressing complex societal challenges
- b) Capacity to design and deploy parallel interventions
- c) Specific to sustainable development
- d) Direct support to innovators
- e) Improving the enabling environment
- f) See handout page 6 >>>

6. STI policy instruments in support of the SDGs

Addressing complex societal challenges requires the capacity to design and deploy many parallel interventions to address various aspects of the problem. STI policy for sustainable development can draw from a wide range of policy instruments providing direct support to innovators and improving the enabling environment for innovation activities that contribute to sustainable development. The table that follows presents selected STI policy instruments and their potential role in fostering innovation for sustainable development. (UNCTAD, 2019)

Policy Instrument	How It Supports Innovation for Sustainable Development
Regulatory Framework	
Environmental and health protection regulations	Provides incentives to innovate to comply with regulatory framework (e.g., substitution of harmful chemicals). Provides disincentives by introducing penalties.
Product and industrial process standardization	Provides incentives to innovate to comply with environmental and social performance standards for products and processes.
Consumer protection, labels, and certification	Promotes innovative products and processes by providing information on environmental and social performance of products and services to customers.
Intellectual property rights	Encourages firms to engage in innovation by protecting their knowledge and opens access to knowledge contributing to sustainable development.
Competition Law	Prevents monopolies or cartels that stifle innovation and hold back its benefits for consumers or the environment.
Bankruptcy Law	Encourages a risk-taking, entrepreneurial culture by protecting investors, firms, and consumers against negative effects of failure.
Economic Instruments	
R&D funding	Provides direct support for R&D underpinning sustainable innovation.
Innovation funding for companies	Supports innovation activities in areas relevant to sustainable development.
Equity support to venture & seed capital	Provides equity dedicated to innovation and de-risks innovation investments.
Feed-in-tariffs and similar subsidy schemes	Offers financial incentives to adopt and diffuse innovative technologies in areas like renewable energy.
Tradable permit systems (e.g., emissions trading)	Allocates or sells emission rights to polluters, encouraging innovation through the price and reduction of emission rights.
Removal of subsidies for unsustainable activities	Removes market distortions (e.g., subsidies for fossil fuels) that inhibit sustainable innovation.
Fiscal Instruments	
Tax incentives for R&D for companies	Provides tax reductions for companies undertaking R&D that supports innovation.
Tax incentives for technology adopters	Offers tax reductions for companies adopting innovations with environmental and social benefits.
Environmental taxation	Provides tax reductions for companies undertaking R&D that supports innovation.
Removal of tax reliefs for unsustainable activities	Removes market distortions (e.g., subsidies for fossil fuels) that inhibit sustainable innovation.
Demand Support	
Sustainable public procurement	Creates markets for goods and services with positive local impacts related to sustainable development, such as Green Public Procurement.
Pre-commercial procurement (R&D and innovation procurement)	Stimulates markets for innovative goods and services, promoting experimentation with new technologies.
	Provides incentives (e.g., vouchers) for consumers to purchase innovative

5. Policy instrument design process

- Addresses the policy problem, so that it
- ... achieves the desired outcomes
 - i. Define the policy problem
 - ii. Set clear objectives
 - iii. Analyse context > clear picture of NSI for STI
 - iv. Identify options
 - v. Assess feasibility and impact: Evaluate each option
 - vi. Select the type of instrument(s), mix
 - vii. Design the implementation plan, M+E+L



6. Pitfalls and risks in policy instrument design

- i. Mismatch between instruments and objectives
- ii. Underestimating implementation complexity
- iii. Not fully considering the complexity of its implementation
- iv. Neglecting stakeholder interests and responses
- v. Overlooking contextual factors
- vi. Insufficient flexibility
- vii. Inadequate evaluation, poor feedback and learning mechanisms
- viii. Political and economic constraints
- ix. Risk of unintended consequences



7. Examples of successful policy instruments for STI

- South Korea's Innovation Policy Technology Development Program
- Brazil's Sector Funds for Science and Technology Investments in science and technology
- Singapore's Research, Innovation, and Enterprise (RIE) Plan Development of technological capabilities
- Finland's Business Finland Funding and Support for R&D and Innovation
- India's National Innovation Foundation (NIF) Grassroots Innovation and Traditional Knowledge

(See references in handout.)