

Developing African STI Indicators for African STI Policy

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Scope of Comments

1. STI Indicators:

- Where do they come from?
- Support or constraint for policy-makers?

2. Constraint: Two illustrative areas

- Design and Engineering:
roles in inclusive macro-growth paths
- Informal/participatory/grassroots modes of innovation
and their roles in agricultural/rural livelihoods

STI Indicators: Types, Sources and Development Paths

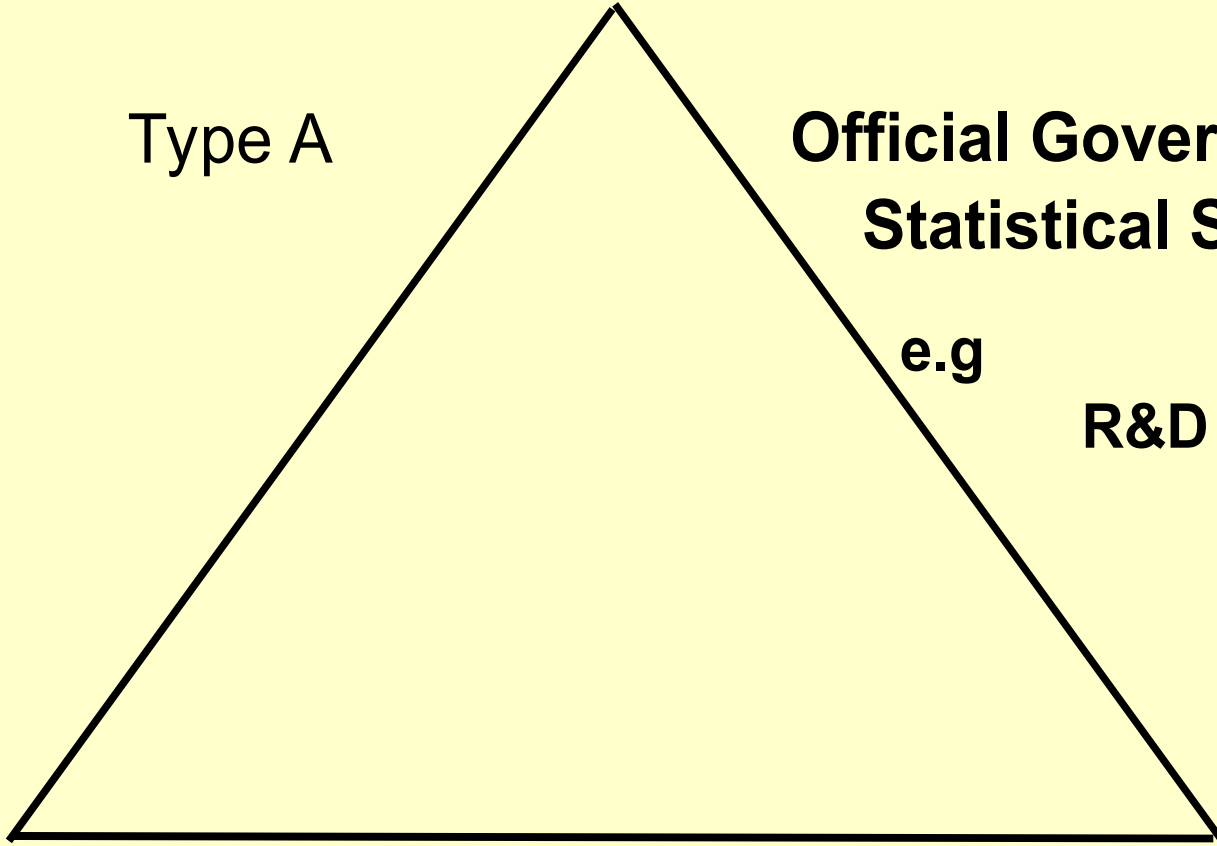
Type A

**Official Government
Statistical Surveys**

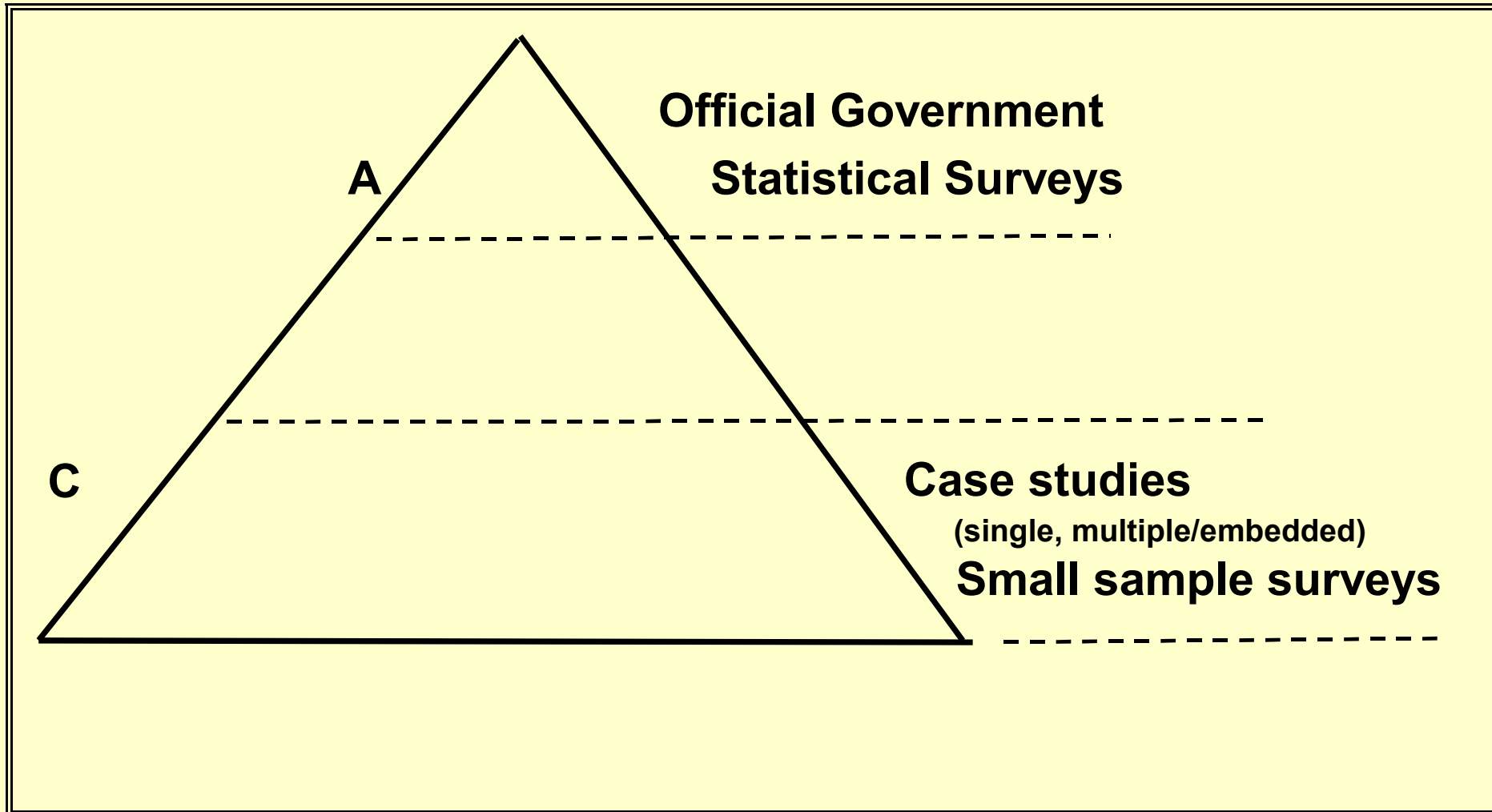
e.g

R&D Surveys
(Frascati)

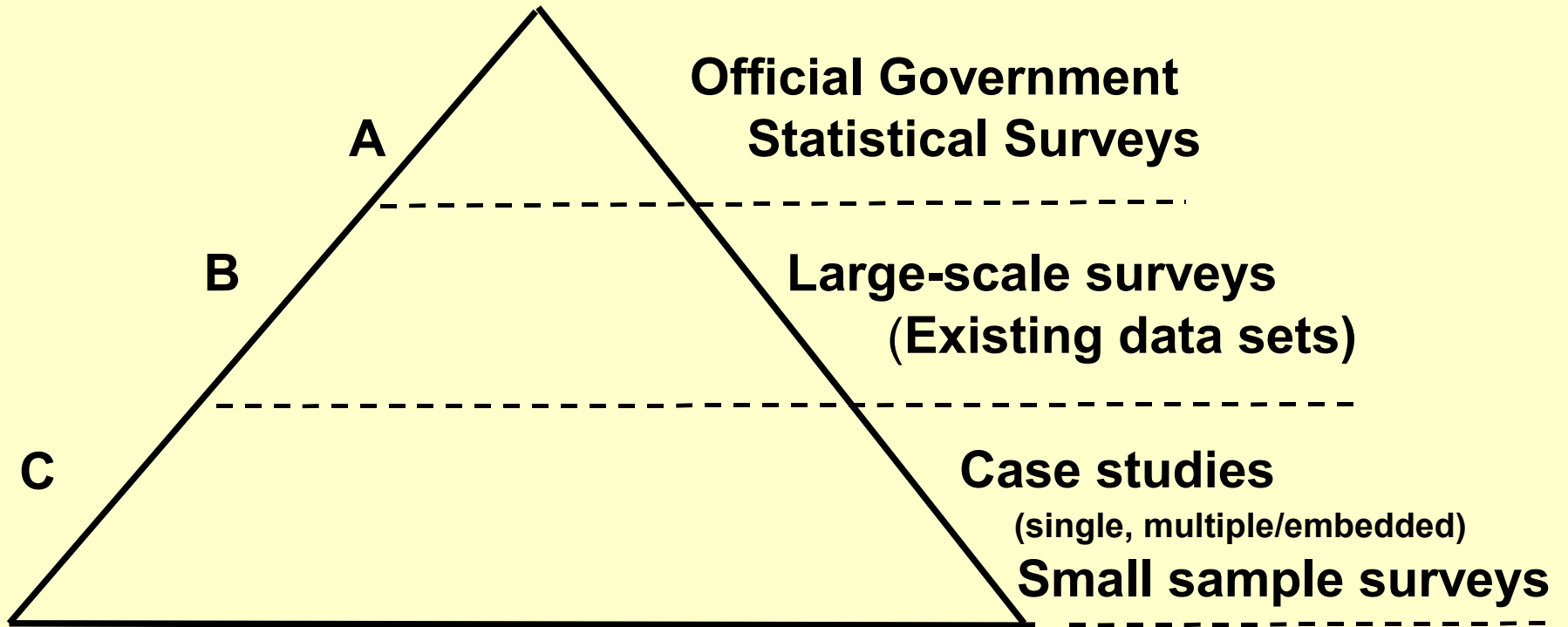
Innovation Surveys
(Oslo)



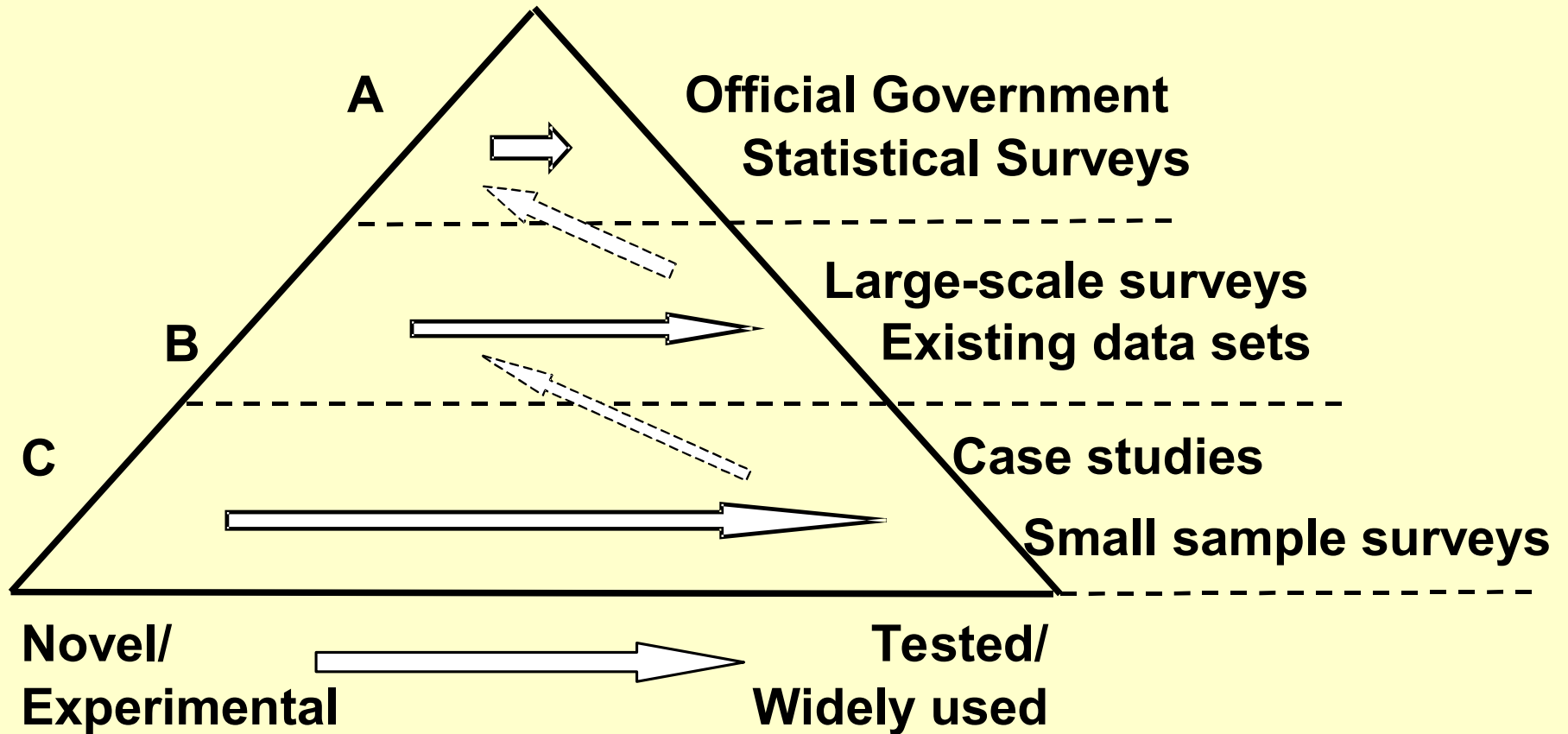
STI Indicators: Types, Sources and Development Paths



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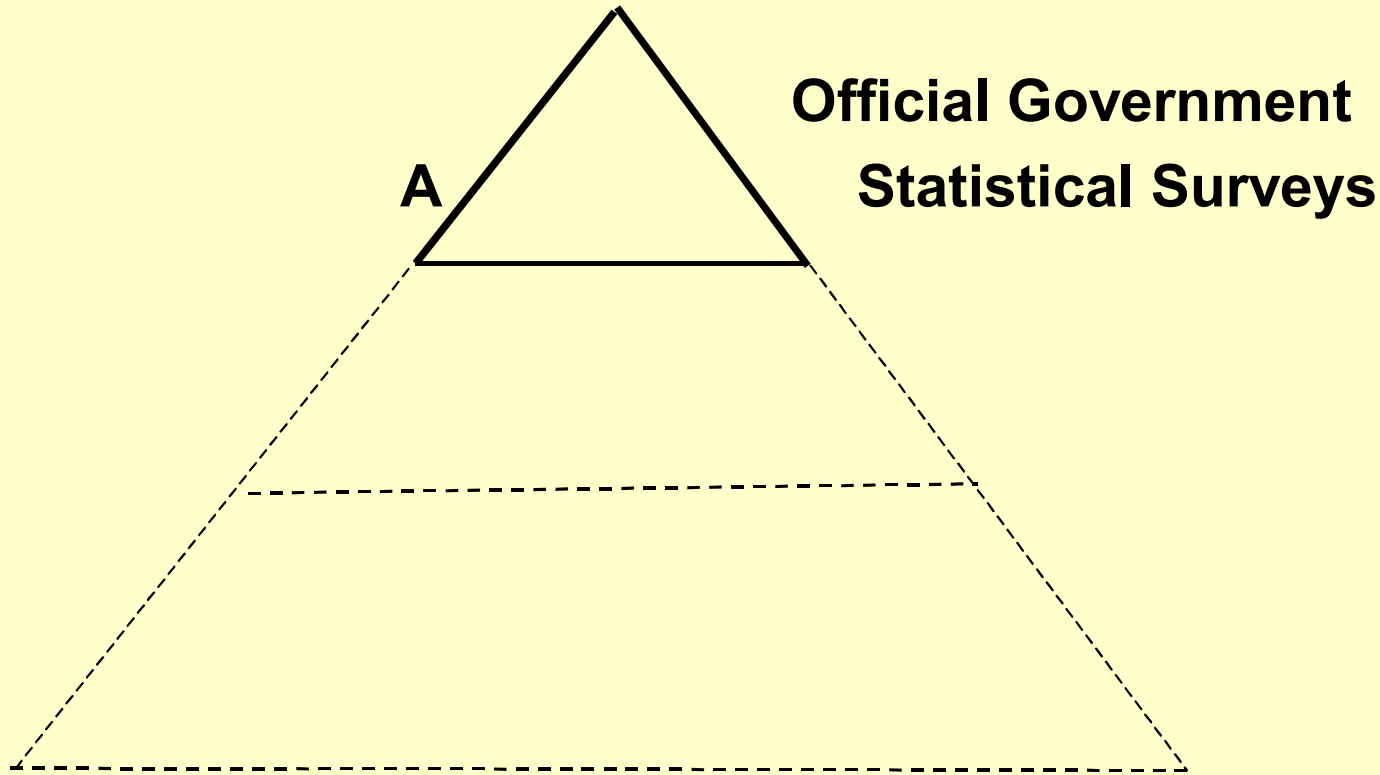
STI Indicators: Types, Sources and Development Paths



Where from?

A 'bottom-up' and 'endogenous' route

STI Indicators: Types, Sources and Development Paths



Where from?

A 'top-down' technology transfer route

Top-down technology transfer

Can be excellent, efficient and **policy-supporting**:

if the transferred indicator system illuminates reasonably well the ‘most important’ issues in the new contexts.

But can be **policy constraining**, if not.

Maybe ‘minor tweaking’ can improve

e.g Annexes to Frascati and Oslo

Maybe something different needed in some areas

Policy constraining indicator systems: Illustrative Area 1

The scarcity/absence of indicators about
Design and Engineering activities

D&E activities:

- Play particularly significant roles in developing and emerging innovation systems
- Play especially important roles in the particular industrial structure of many African economies
- Appear to constitute a quantitatively larger component of innovation systems in advanced economies than R&D
- Probably exhibit a much greater quantitative differential in developing countries

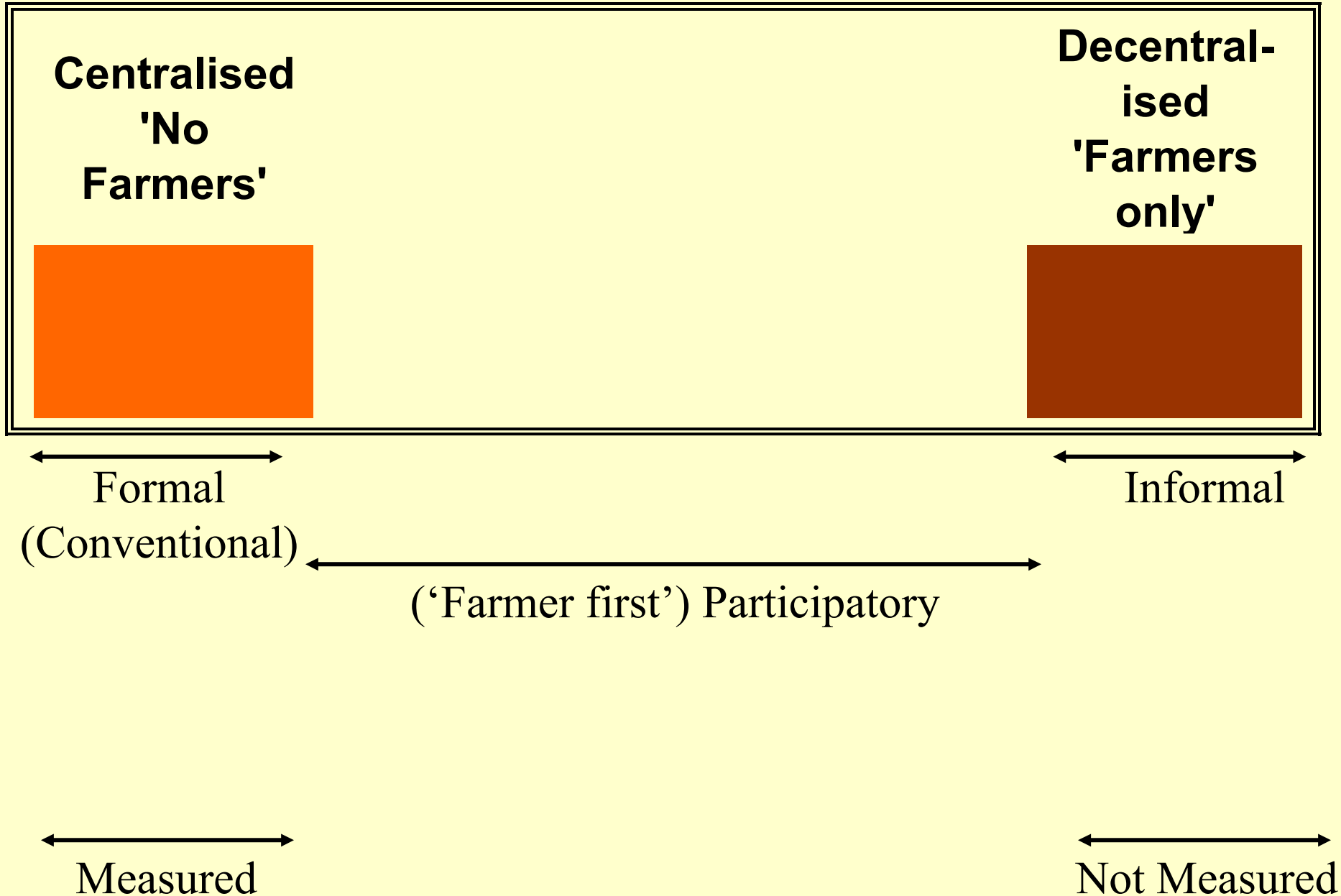
However: Almost nothing about this component of innovation systems is systematically mapped or measured

Combined with the extensive measurement of the R&D component, this acts as a serious constraint on policy

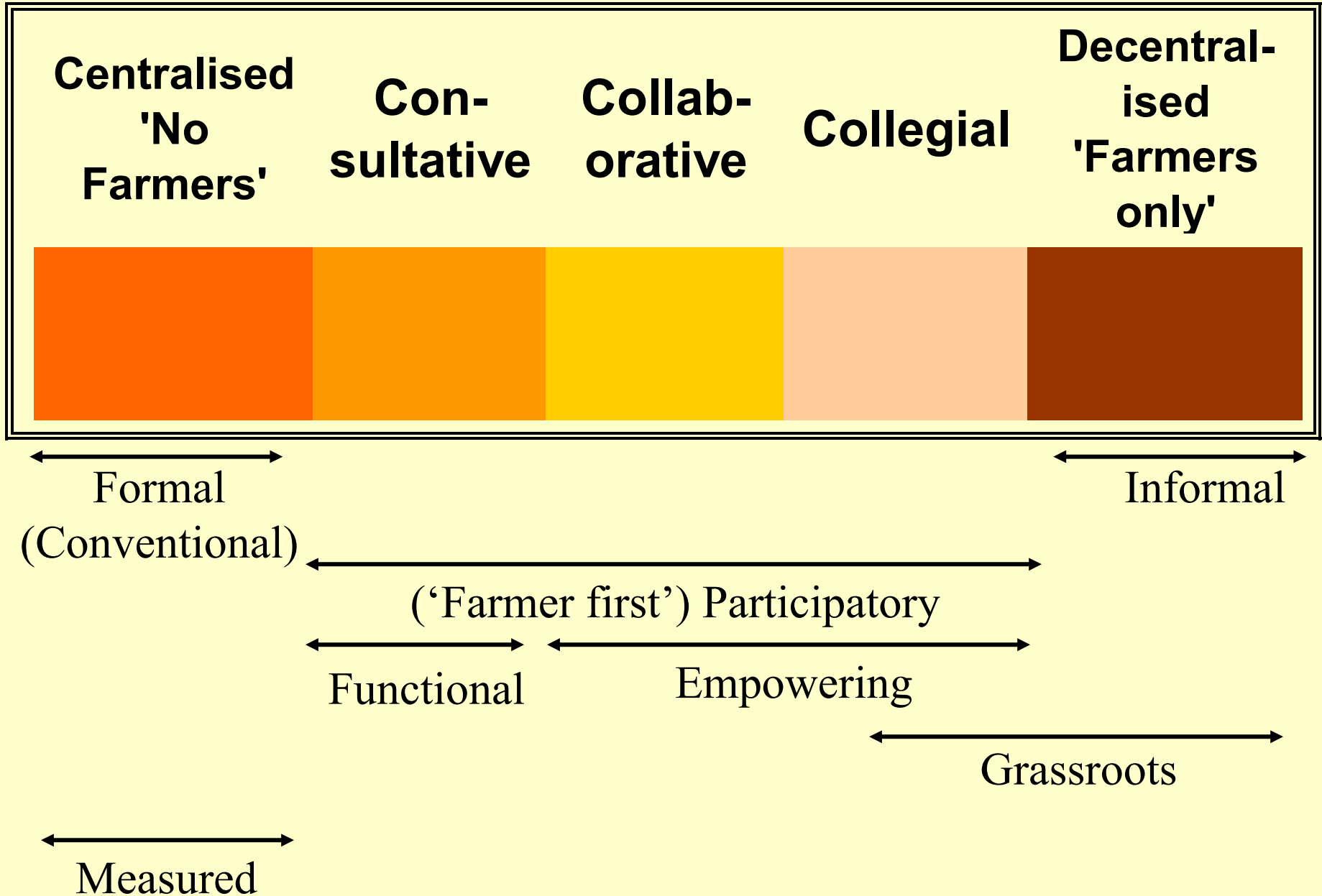
Policy Constraining Indicator Systems: Illustrative Area 2

The scarcity/absence of indicators about
Informal/Participatory/Grassroots
modes of agricultural innovation

Differing Modes of Innovation in Agriculture



Differing Modes of Innovation in Agriculture



Thirty years of case-studies

- Largely descriptive, non-comparable and non-cumulative
- Claims for significant economic and social benefits

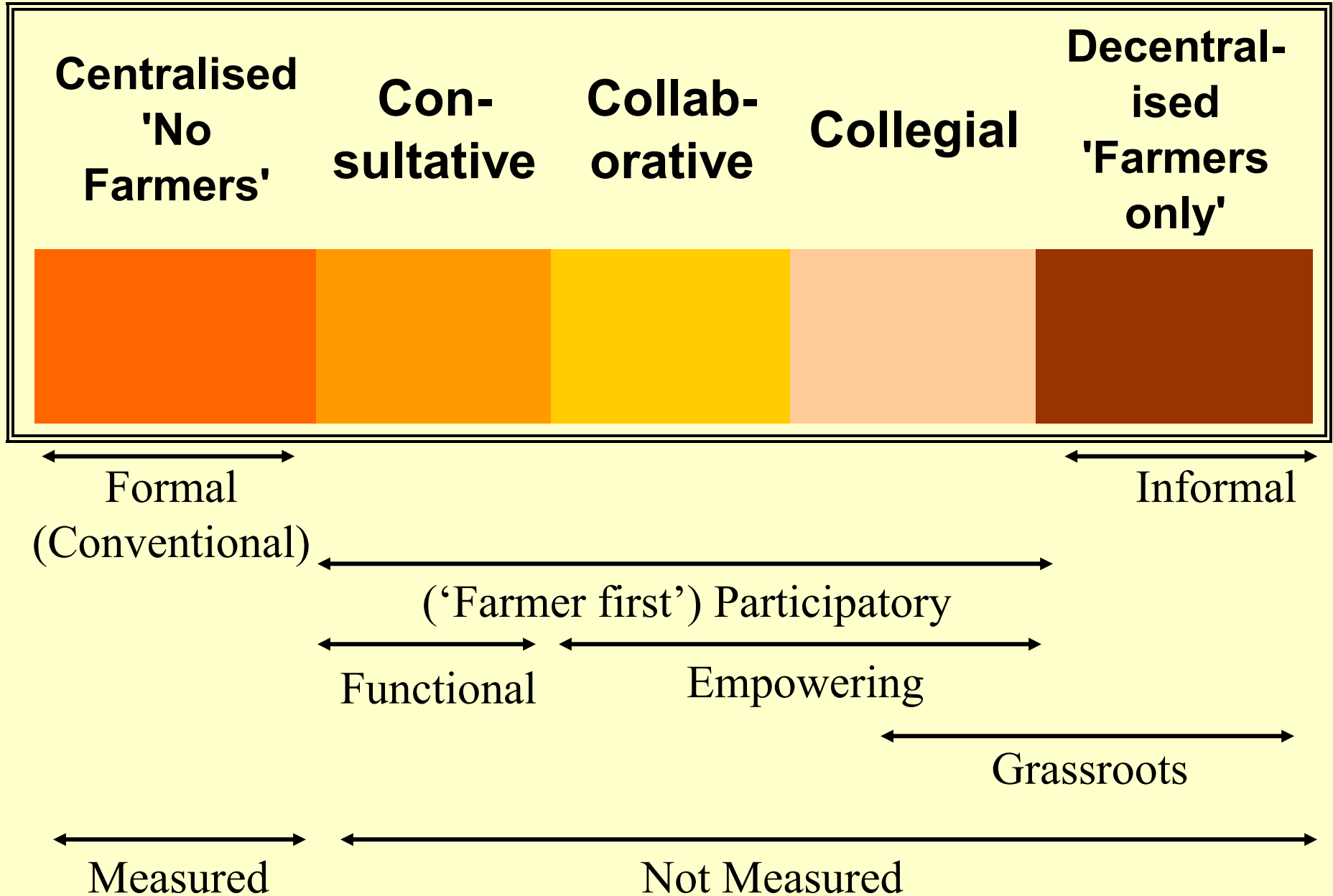
Inclusion (A): in the process of innovation

- Δ feedback to formal R&D - higher adoption rates
- Δ efficiency of formal R&D - faster varietal release and
 - lower innovation costs
- Δ local capacities for innovation - Δ incidence of cumulative localised innovation

Inclusion (B): of poor and disadvantaged in the benefits from innovation.

- Claims for more significant policy attention
- No policy-oriented analysis, measurement or indicators

Differing Modes of Innovation in Agriculture



A significant exception:

A thin strand of systematically evaluative work (CIAT) that is substantially positive about several of the claimed benefits – though generalisability is limited and some important types of benefit not yet addressed even this adequately

There seems to be an important

need, rationale and opportunity

to build on and extend that exception,

And develop a much more substantial

‘Bottom-up’ and ‘endogenous’ base of
policy-supporting STI indicators in this area

