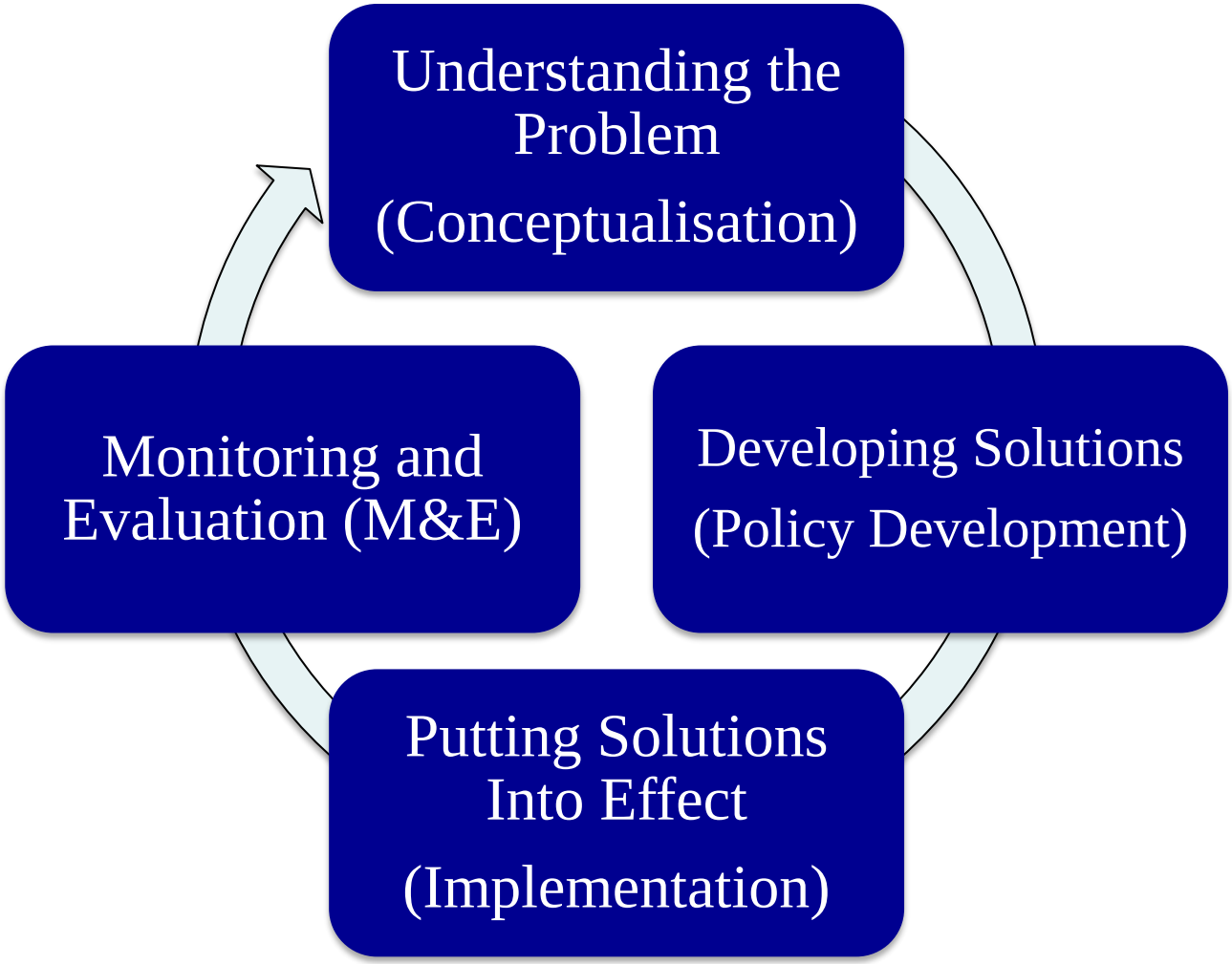
ADB-3ie Workshop - Making Impact Evaluation Matter
Manila, 1st-5th September 2014

Programme Theory and Theory of Change Analysis

Radhika Menon, Birte Snilstveit, Philip Davies,
International Initiative for Impact Evaluation [3ie]

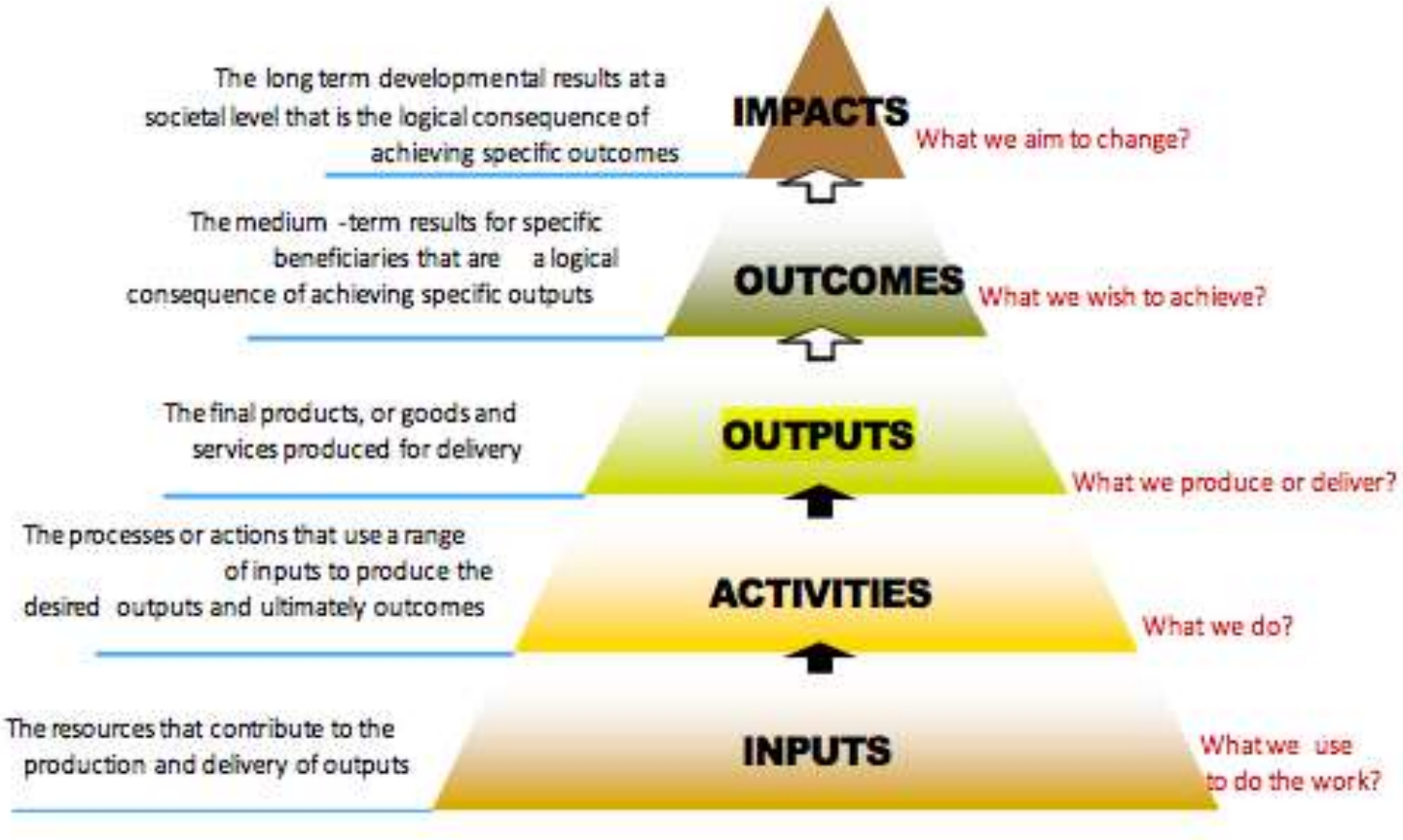
The Policy Cycle

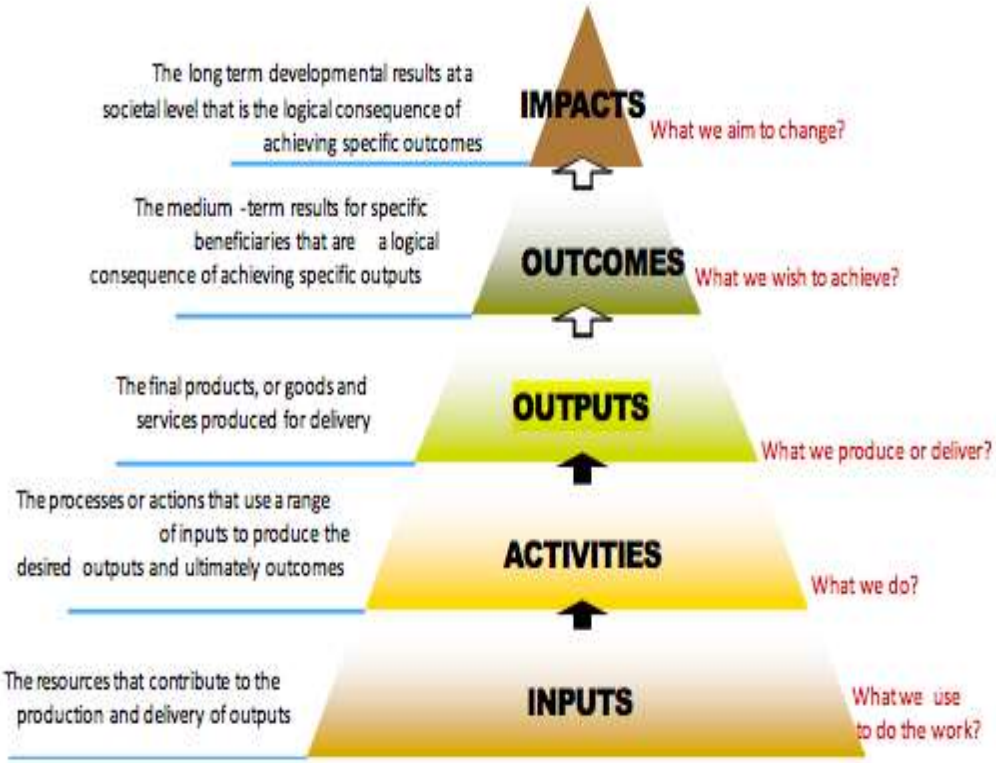


Evaluation:
Programme Theory/Theory of Change/Logic Model

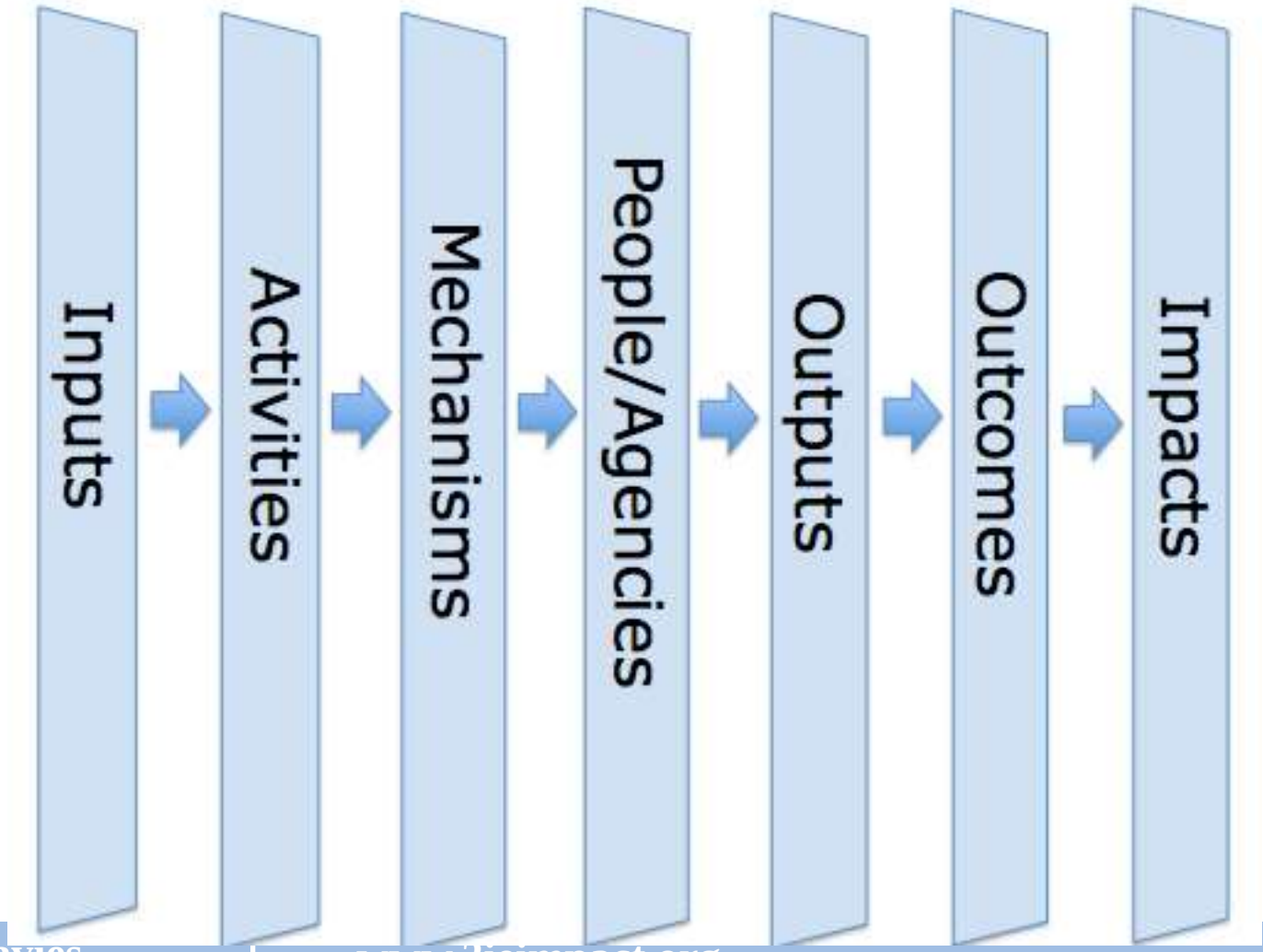
- How is a policy/programme supposed to work?
- What activities, mechanisms, people have to be in place?
- And in what sequence – what is the causal chain?
- What resources are required – and are available?
- What data are required – and are available?
- Is the policy/programme feasible/achievable?

Building a Theory of Change: From Inputs to Outcomes





Constituent Features of a Theory of Change



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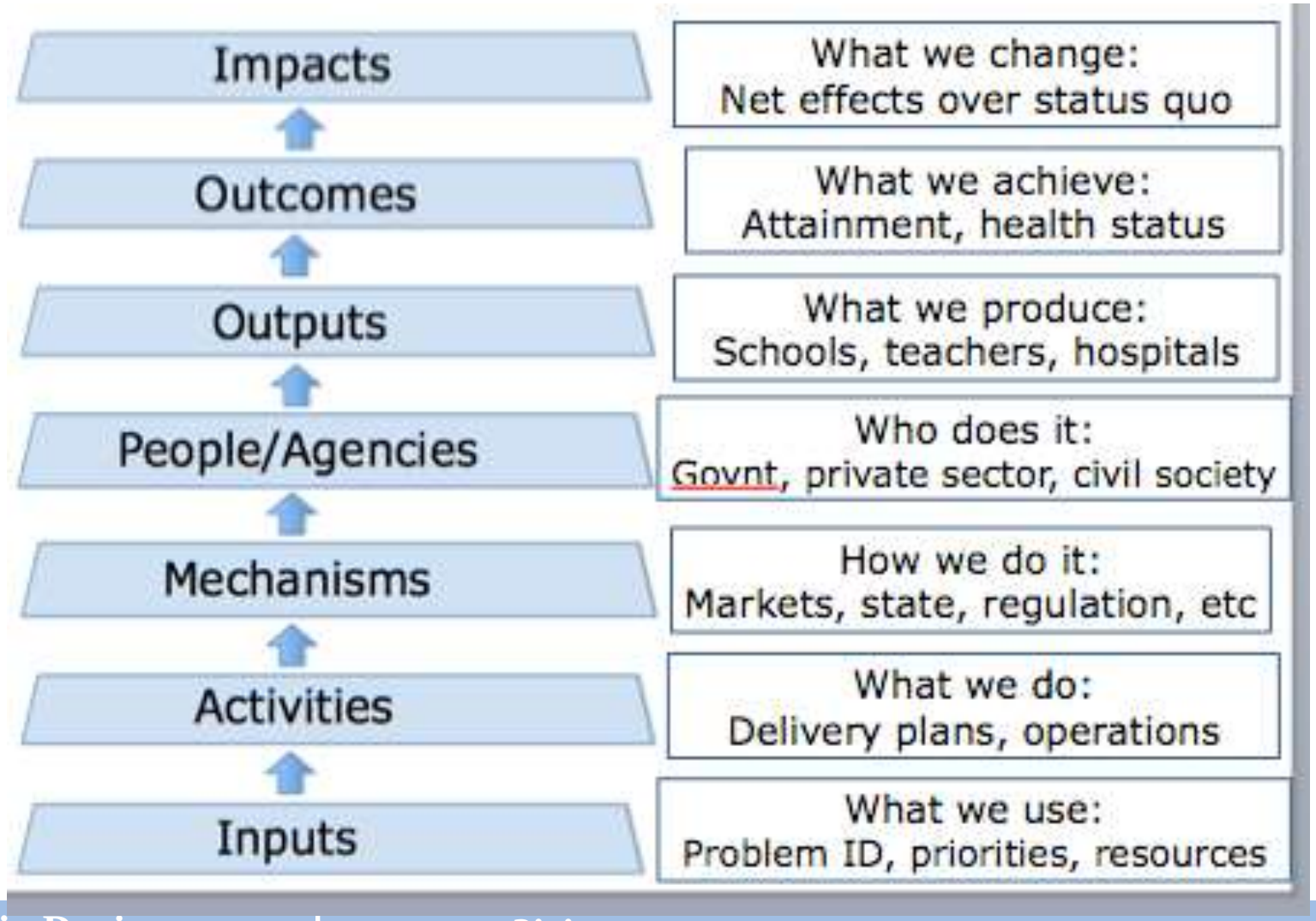
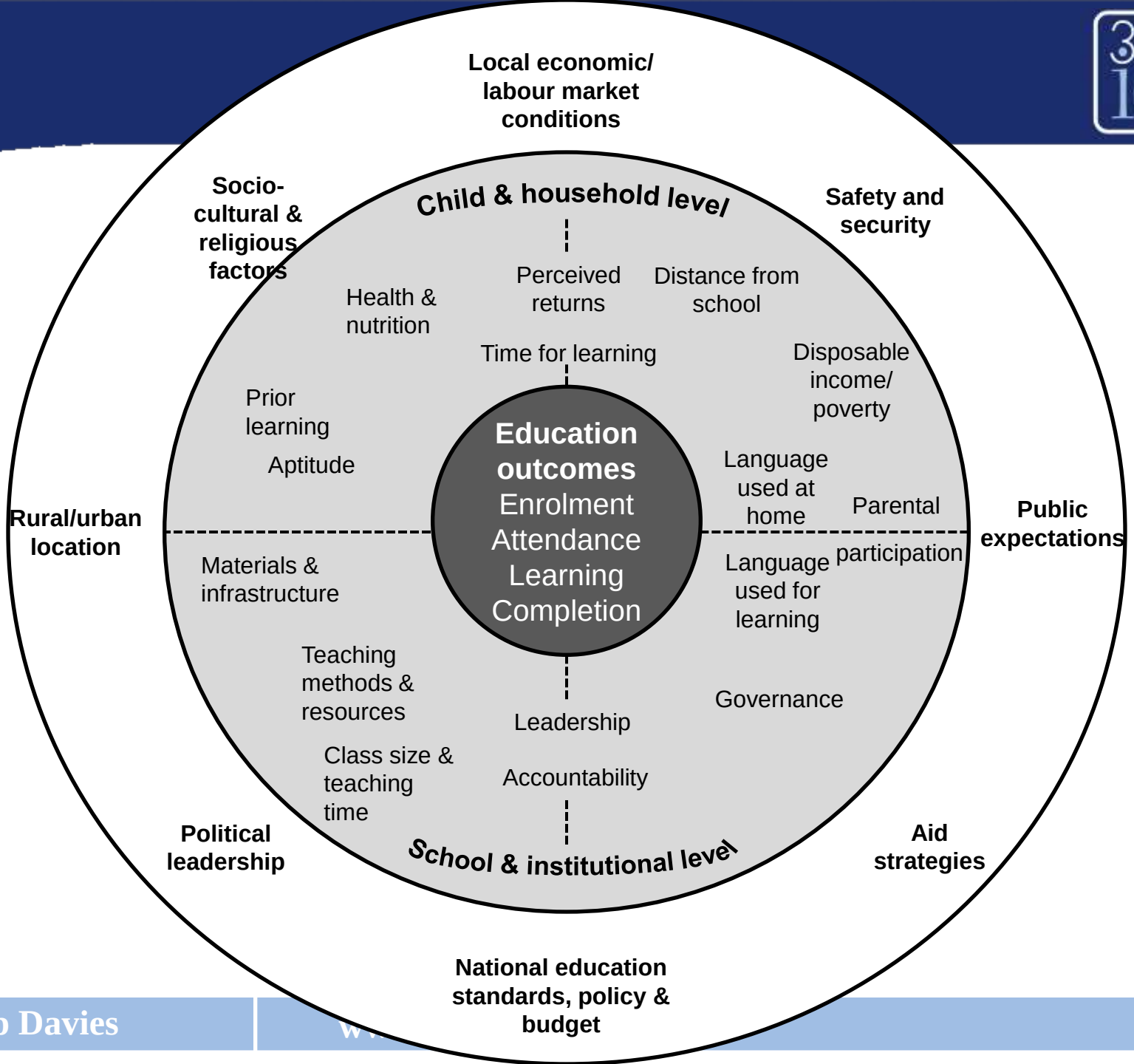
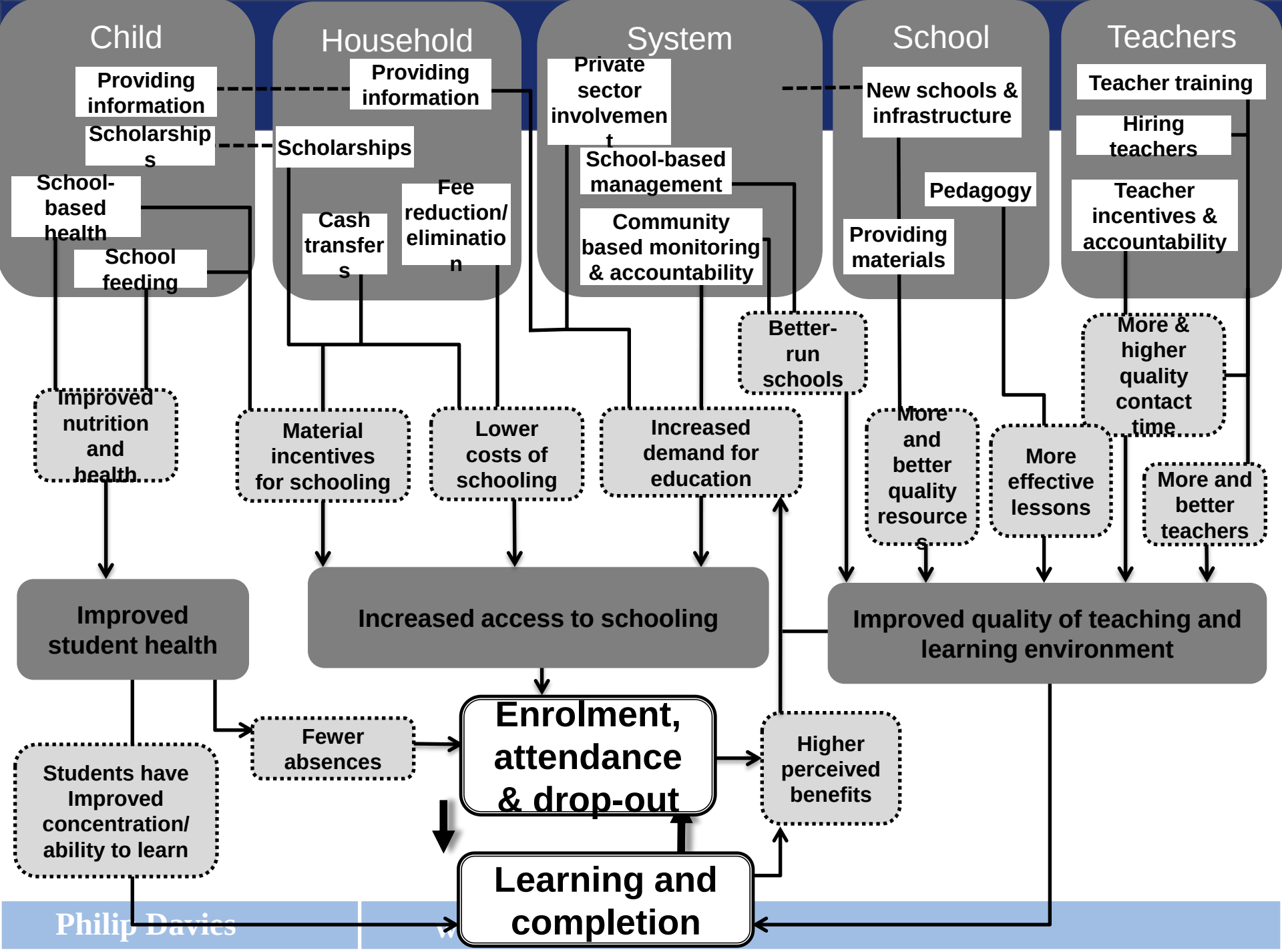


Establishing the Policy Logic/Theory of Change Basic Principles

- Map out the causal chain
- Understand context
- Anticipate heterogeneity
- Rigorous evaluation of impact using an appropriate counterfactual
- Rigorous factual analysis
- Use mixed methods

Example: Using program theories for SR of education interventions


Local economic/ labour market conditions
Socio-cultural & religious factors
Safety and security
Child & household level
Perceived returns
Distance from school
Health & nutrition
Time for learning
Disposable income/ poverty
Prior learning
Aptitude
Education outcomes
Enrolment
Attendance
Learning
Completion
Language used at home
Parental participation
Rural/urban location
Public expectations
Materials & infrastructure
Language used for learning
Teaching methods & resources
Governance
Leadership
Class size & teaching time
Accountability
School & institutional level
Political leadership
Aid strategies
National education standards, policy & budget


Child
Household
System
School
Teachers
Providing information
Scholarships
School-based health
School feeding
Providing information
Scholarships
Cash transfers
Fee reduction/ elimination
Private sector involvement
School-based management
Community based monitoring & accountability
New schools & infrastructure
Pedagogy
Providing materials
Teacher training
Hiring teachers
Teacher incentives & accountability
Better-run schools
More & higher quality contact time
Improved nutrition and health
Material incentives for schooling
Lower costs of schooling
Increased demand for education
More and better quality resources
More effective lessons
More and better teachers
Improved student health
Increased access to schooling
Improved quality of teaching and learning environment
Fewer absences
Enrolment, attendance & drop-out
Higher perceived benefits
Students have Improved concentration/ ability to learn
Learning and completion

Inputs	Activities	Outputs	Intermediate Outcomes	Final Outcomes
Financial resources Staff Educational Material	**Information Campaign** (via radio, newspaper, door to door. village or parents meetings) **Training** on the use of tools to monitor education service providers (eg: score cards)	**Citizens participate in monitoring activities** such as public forums, school /village committees, school visits, parent meetings /associations; make complaints if services are lacking	**Increased responsiveness and accountability of providers and politicians**: greater teacher effort and better resource allocation	**Improved education outcomes:** increase in student learning and completion
Assumptions: • Adequate resources are available to pay for educational material, staff delivering training • Staff is qualified to deliver appropriate training and facilitate information campaigns	*Assumptions:* • Community participants receive adequate information on the performance of educational services provided as well as training/ instructions on how to use the tools to monitor education service providers • The information solves potential information gap/ asymetry and attention span problem.	*Assumptions:* • Community members are aware of the program • Participants want and are able to participate in decision- making and hold public officials to account as they believe that it will improve • Participants are able to coordinate action to collectively pressure providers (high degree of social cohesion/ low expectation of free- riding) • Institutions are in place to avoid elite capture of monitoring process	*Assumptions:* • Political authorities are accountable and the given community is important to the politician's electoral strategy • Providers (schools/ teachers) are accountable to politicians and the community • Community members/ parents have sufficient capital and voice to change providers' behaviour	Assumptions • Children are able to attend school regularly • Available resources are sufficient to improve student outcomes

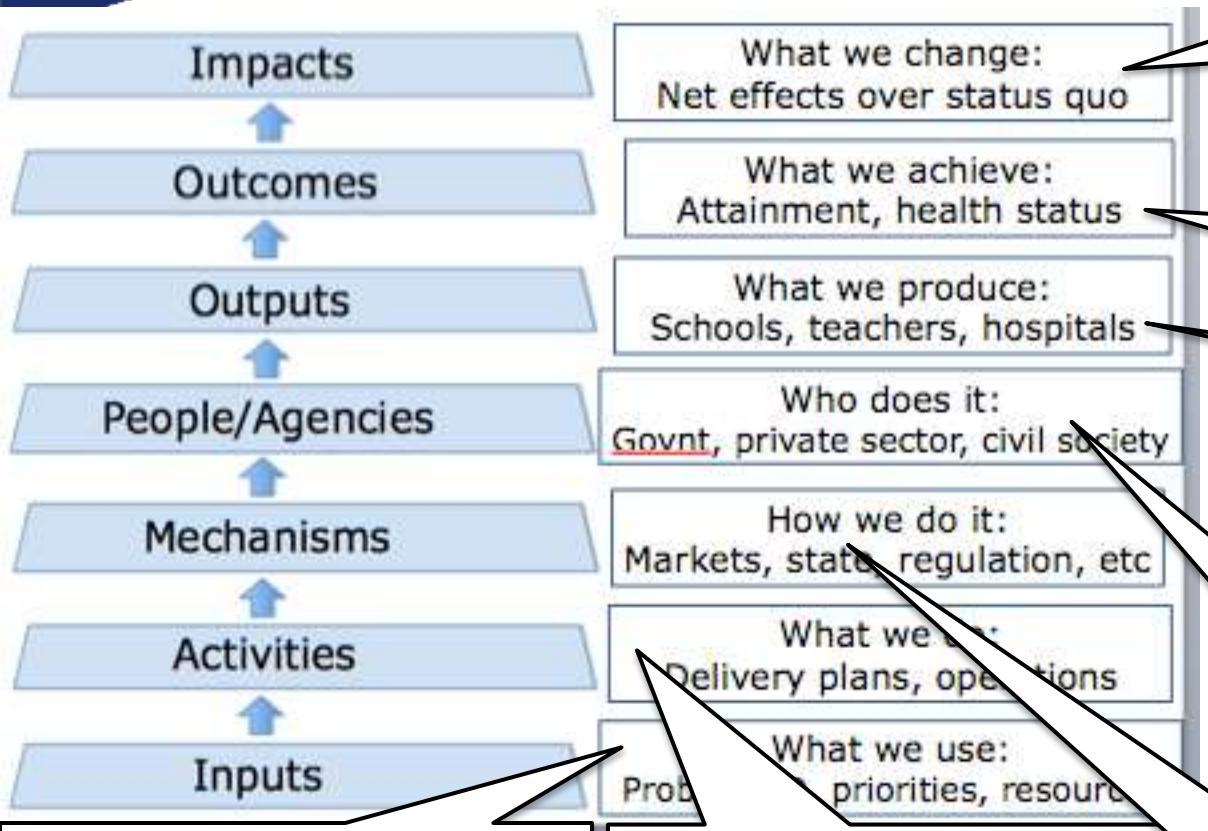
Exercise 1

- Develop a program theory for your selected intervention, identifying key inputs, activities, outputs, intermediate and final outcomes.
- Identify assumptions associated with each stage of the causal chain

Testing the ToC

What types of data/ information do you need to test the program theory of change?

Theories of Change – Data Required



- Counterfactual data
- Administrative data
- Survey data, statistics

- Administrative data
- Performance data
- Qualitative data

- Administrative data
- Performance data
- Costs/benefits data

- Performance data
- Effectiveness data
- Stakeholder data
- Qualitative data
- Costs/benefits data

- Surveys, statistics, demographic data
- Qualitative data
- Costs/benefits data
- Systematic review data
- Documentary analysis

- Performance data
- Historical data
- Diversity data
- Qualitative data
- Effectiveness data

- Stakeholder data
- Qualitative data
- Public opinion data
- Effectiveness data

Unpacking the theory of change of an education intervention

Radhika Menon
International Initiative for Impact Evaluation

Enhancing learning in India

This 3ie supported impact evaluation was conducted in **Mahendragarh and Kurukshetra districts** of Haryana, India.

Researchers from J-PAL collaborated with the Government of Haryana.

Impact evaluation of two interventions:

- Continuous and Comprehensive Evaluation system (CCE)
- Learning Enhancement Programme (LEP)

Mainly looked at impact on children in grades 1-4

Photo © Haryana_in_India/wikimedia

Duflo, E, Berry, J, Mukerji, S and Shotland, M, 2014. *A Wide Angle View of Learning: evaluation of the CCE and LEP Programmes in Haryana*, 3ie Impact Evaluation Report

Continuous and Comprehensive Evaluation

The Right to Education Act (2009) eliminated 'high stake' final exams.

Continuous and Comprehensive Evaluation emphasises:

- Frequent and broad based feedback on student performance
- Assessment of academic and non-academic performance
- Variety of techniques to assess performance

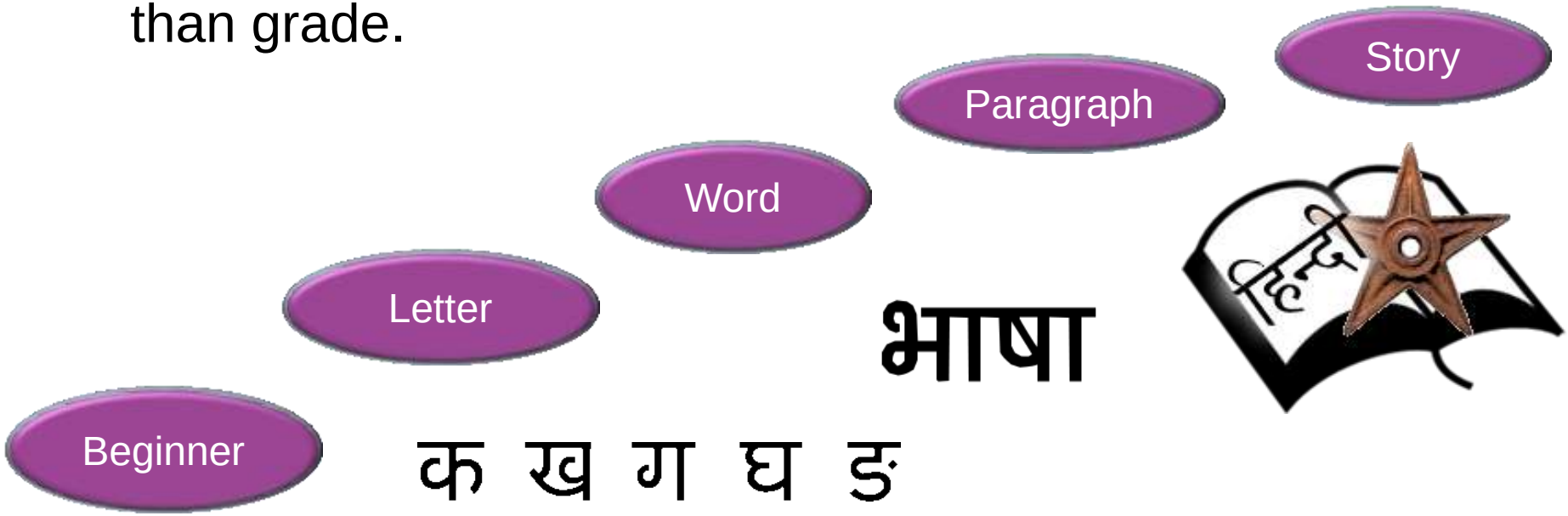

Photo © Yann/wikimedia

Photo © Chris hand/Flickr

Learning Enhancement Programme

Developed by **Pratham**, a large Indian NGO focussing on basic literacy and numeracy

- Programme involves quick oral assessment of students
- Classes are regrouped according to learning level rather than grade.



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Process monitoring

On the request of the government, researchers revived school monitoring system.

The system includes block and district supervisors, field level monitors.

Monitoring consisted of

- Surprise visits to each of the schools
- Extensive questionnaires on implementation, availability of inputs such as text books and uniforms
- Observations of randomly selected teacher in the classroom

Research questions

- Does Continuous and Comprehensive Evaluation improve test scores in Hindi and Maths?
- Does the Learning Enhancement Programme improve test scores in Hindi and Maths?
- Does a combination of both improve test scores in Hindi and Maths?

Randomised Controlled Trial

400 schools

- 100 CCE schools
- 100 LEP schools
- 100 CCE+LEP schools
- 100 schools in control group

Results

- Students in CCE schools did not perform significantly better than students in control schools.


Photo © Jose Antonio Marcillo Valenciano/Flickr

- LEP had a large, positive and statistically significant effect on students' basic Hindi reading abilities, both oral and written tests.
- LEP had a larger effect for girls than boys.


Photo © JPAL SA

- Combining LEP and CCE had no significant effect on test scores relative to the LEP programme alone.

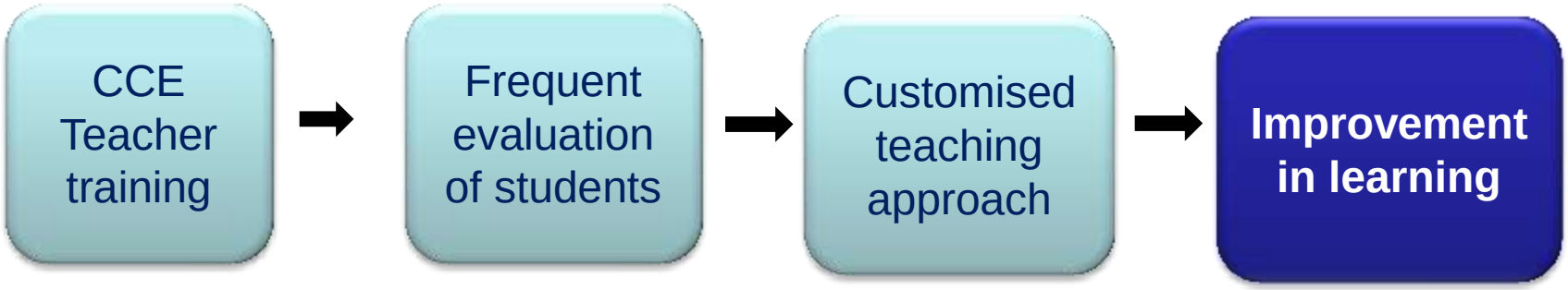

Photo © Jose Antonio Marcillo Valenciano/Flickr

Why didn't CCE work?

Process monitoring showed:

- CCE training did not lead to change in teaching practices.
- School headmasters thought requirements to be burdensome and time consuming. Guidelines were unclear
- Overall, CCE not well implemented.
- LEP on the other hand had a high level of compliance and was well implemented

CCE Theory of Change



Assumptions not met

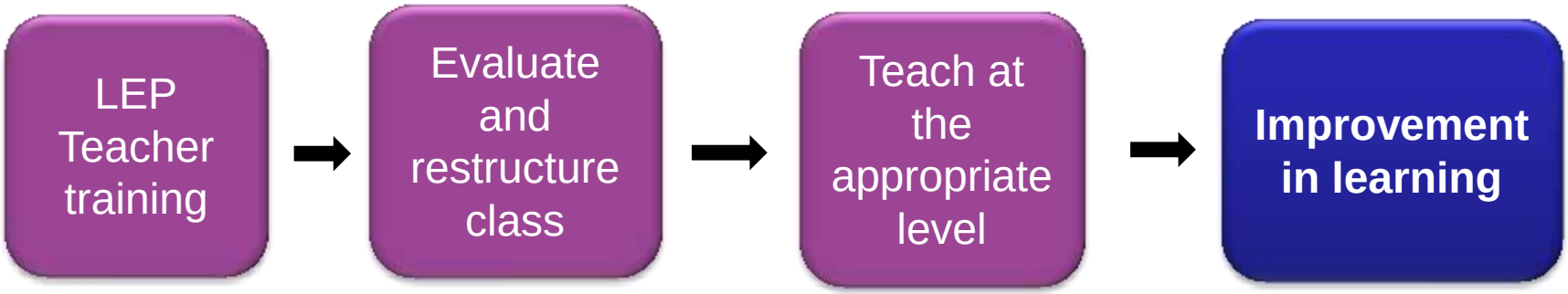
Teacher training is adequate.

Teachers have time and resources to implement.

Teachers have pedagogical tools.

Teachers attend training

LEP Theory of Change



Assumptions met in most part

Teacher training is adequate.

Teachers have time and resources to implement.

Teachers have pedagogical tools.

Teachers attend training

Key takeaways

- Process monitoring helped collect data along the causal chain
- Process monitoring is important for implementation
- It helped answer the question of 'why' the programme worked or did not work
- Theory of change maximises the value of research for policy and practice

Exercise 2

- Identify questions that would allow you to test the program theory
- What type of data would you need?

Thank you

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on

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Programme Theory and Theory of Change Analysis - Data

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Quantitative Methods and Data

- Social Surveys – cross sectional and time series
- Longitudinal Studies – cohort and panel data
- Administrative data – official statistics
- Census data
- Performance data
- Experimental Designs (random allocation)
- Quasi-Experimental Designs (Matched samples, Interrupted Time Series, Regression analysis)
- Economic Methods - Cost-Benefit and Cost-Effectiveness Analysis

Qualitative Methods and Data

- Theory of Change Analysis
- In-Depth interviews
- Focus Groups
- Other Consultative Designs
- Observational and Participant-Observational Studies
- Ethnography
- Documentary Analysis
- Case Studies

Sources of Data

Census

+ near 100% coverage of entire population
+ results reliable at small area level
- only every ten years
- relatively limited indicator list
- extremely expensive

Surveys

+ clear research focus
+ potential for extensive indicator list
- sampling error
- results often not reliable at small area level
- very expensive

Administrative Data

+ near 100% coverage of population of interest
+ constantly updated
+ results reliable at small area level
+ already collected for operational purpose
- some indicators are proxies
- dependent upon support of data providers
- data protection

Samples of Anonymised Records (SARs

- Majority of census outputs are typically macrodata, at either national, regional, district/municipality, or small area level.
- Some countries also release Samples of Anonymised Records (SARs), which consist of individual and/or household level microdata.
- In South Africa, the 2001 Census SAR contains 10% of the households and their respective individual members.

Key Features of Survey Data

- Cross-sectional or longitudinal (panel data)
- Can include questions about a person's status, such as 'what is your employment status?'
- Can include questions about a person's attitudes, such as 'how worried are you about being the victim of burglary?'

Examples from South Africa:

- Income and Expenditure Survey (IES)
- National Income Dynamics Study (NIDS)
- South African Social Attitudes Survey (SASAS)

Examples of Admin Data in the UK

- National Pupil Database (NPD)
- Higher Education Student and Staff Records
- Hospital Episode Statistics (HES)
- Social security benefits and tax data (e.g. WPLS)
- Continuous Recording (CORE) – Social housing
- Police recorded crime data

Some datasets are more easily available than others

Some Advantages of Admin Data

- Already collected for operational purposes
- Collection process not intrusive to target population
- Should be:
  - Regularly updated
  - Collected in a consistent way
  - Near 100% coverage of population of interest
  - Reliable at small area level
- Potential for datasets to be linked

Limitations of Admin Data: Coverage

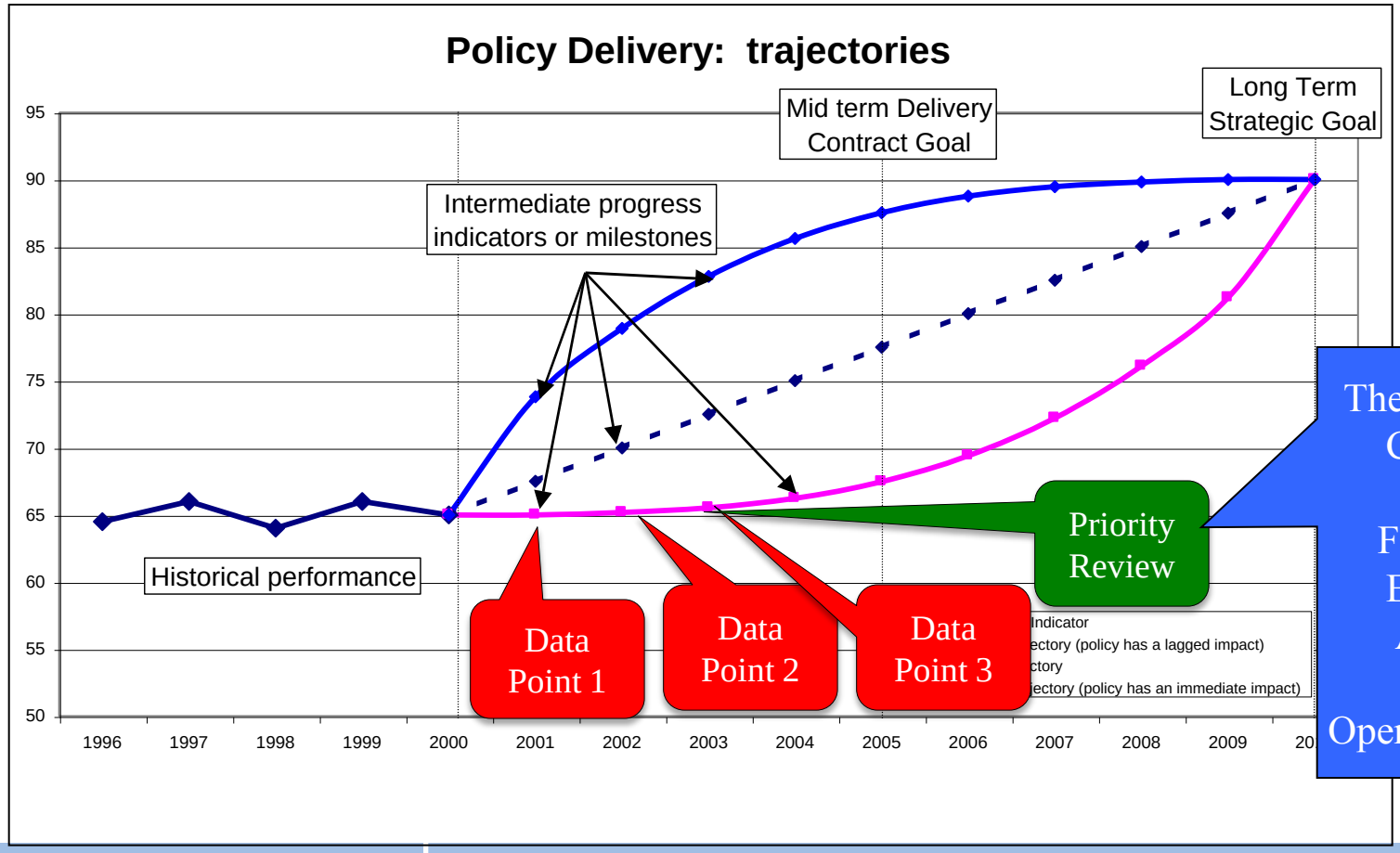
- Users of services (specific population, choice)
- Exclusions
- Geographical coverage
- Time (not always immediate or historical data)
- Incomplete data: non mandatory information not provided

Limitations of Admin Data: Data Quality

Some possibilities:

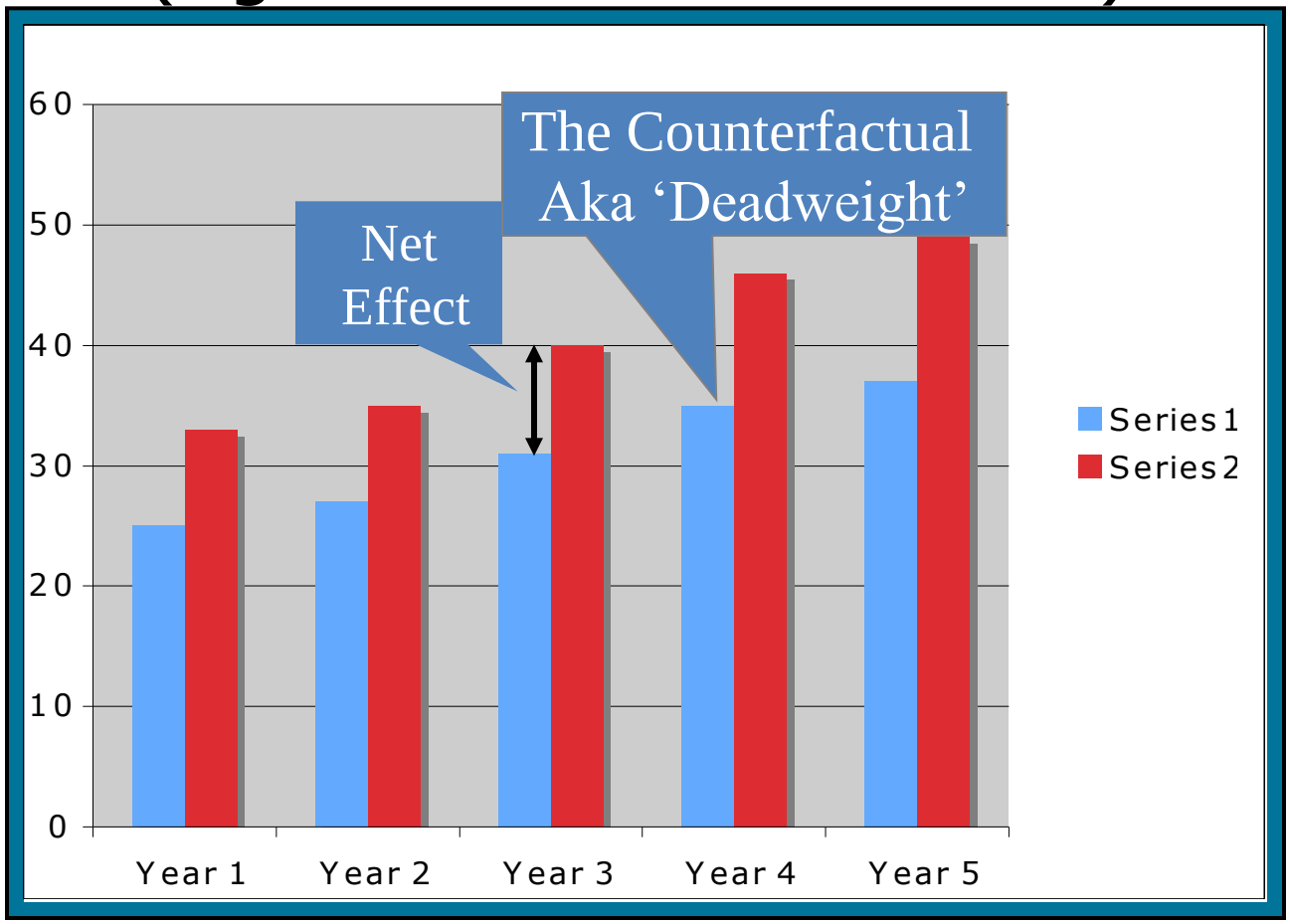
- Provisional and final data (revisions)
- Missing data
- Errors
- Inconsistent data
- Discontinuity
- Duplicates
- Address information may not be up-to-date
- Lack of contextual information (but can link in other datasets)

Using Performance Data to Identify and Manage Delivery Failure



Theory of Change
Case Studies
Interviews
Focus Groups
Ethnography
Admin data
Surveys
Operations Analysis

Evaluations of Net Effect Impact (Against a Counterfactual)



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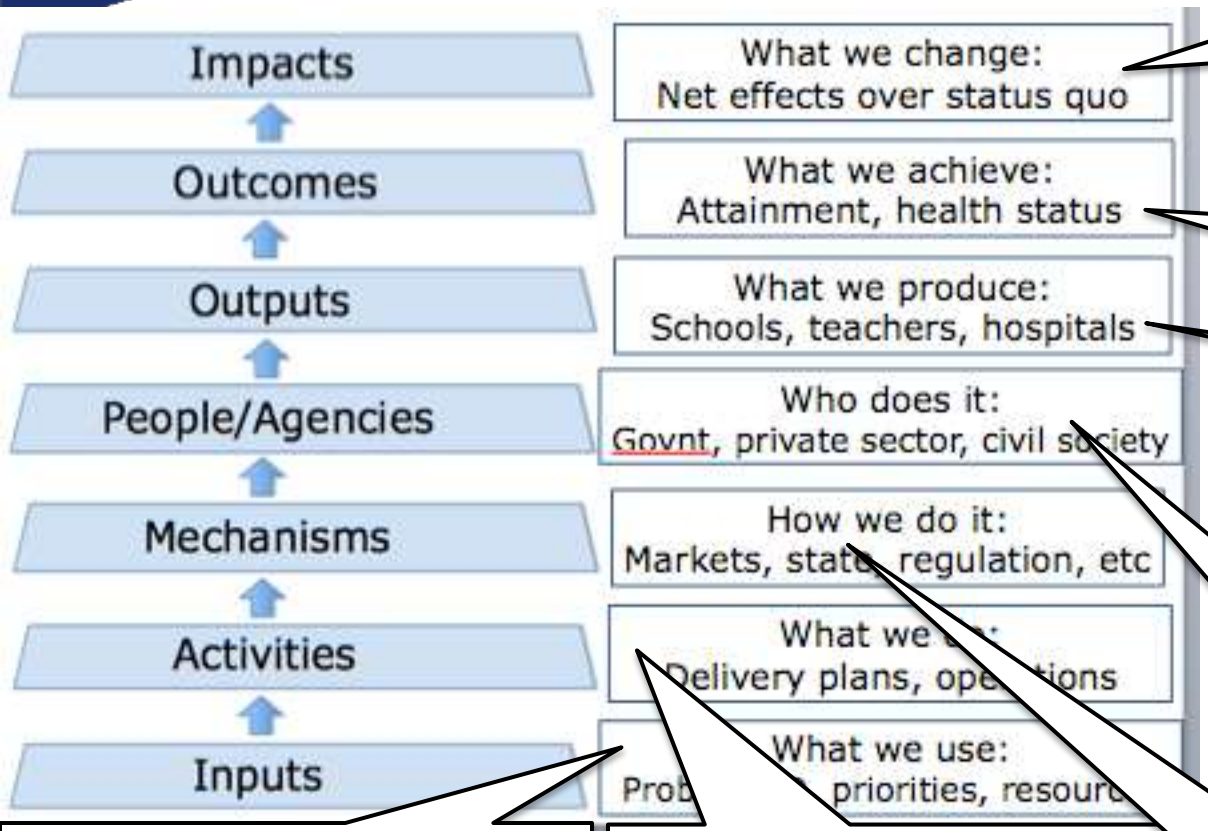

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