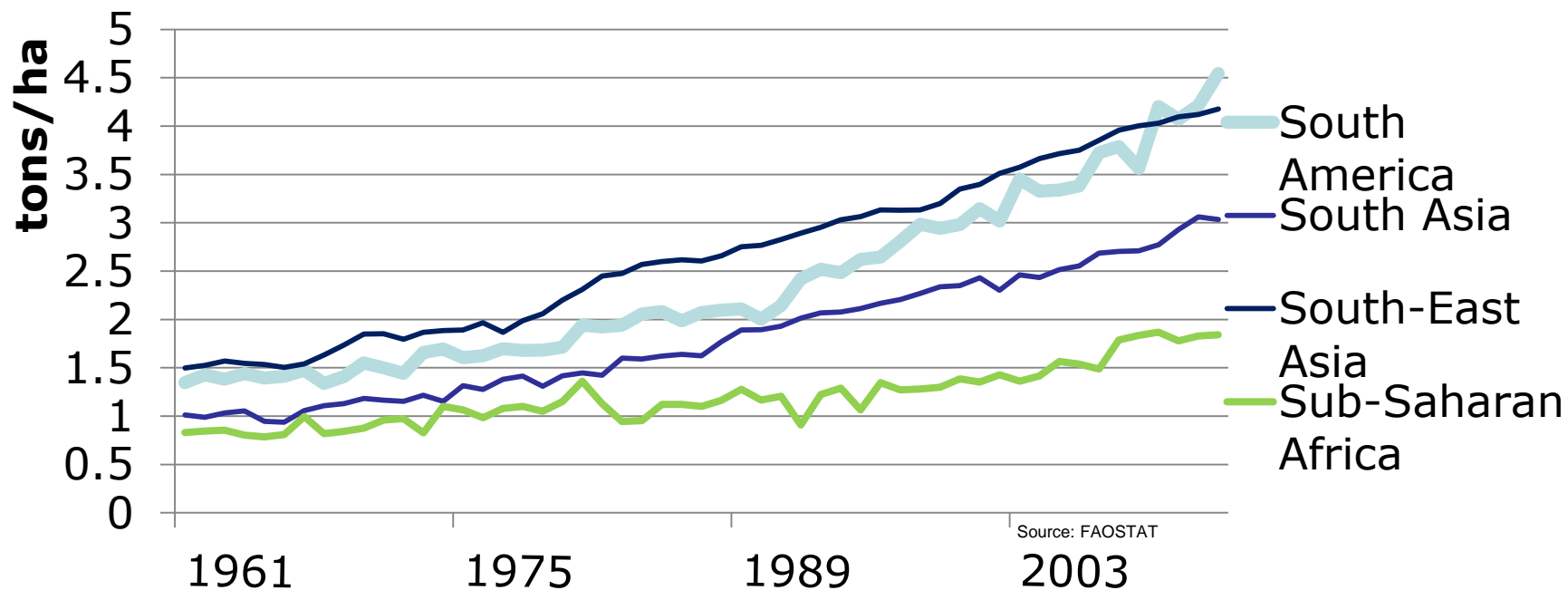


Impact Evaluations of Agriculture and Rural Development Projects and Programmes: Considering Farmer Field Schools

Dr. Markus Olapade

International Initiative for Impact Evaluation (3ie)

Low productivity in farming



Innovative technologies and production methods could increase yields and contribute to poverty reduction and food security

Questions in Agricultural Development



- **But application of innovative technologies is not widespread in Sub-Saharan Africa**
- **Are farmers aware of these technologies?**
 - **How can we ensure they are aware and know how to use them if they want to?**



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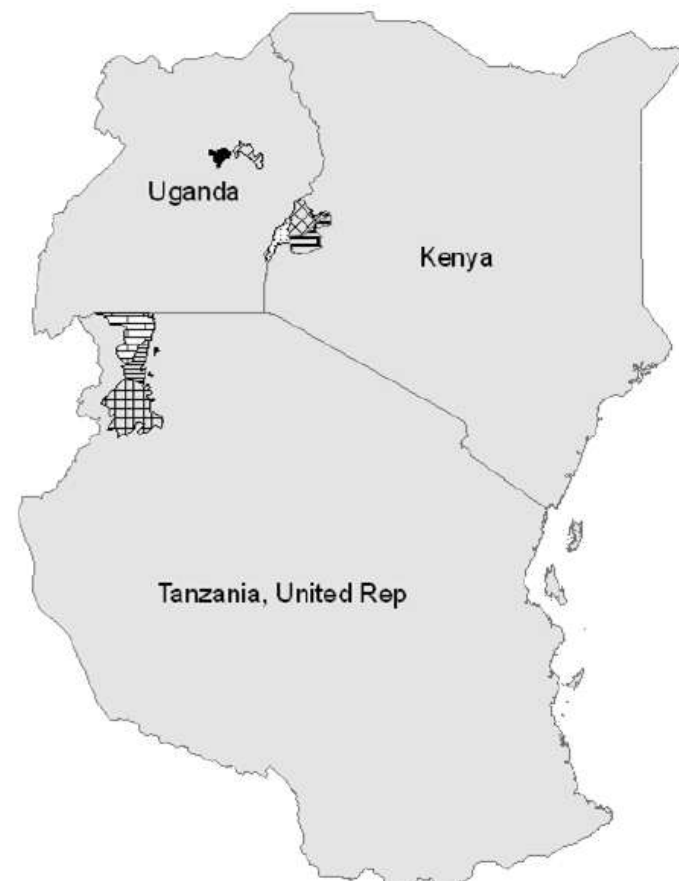


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Impact Evaluation Example

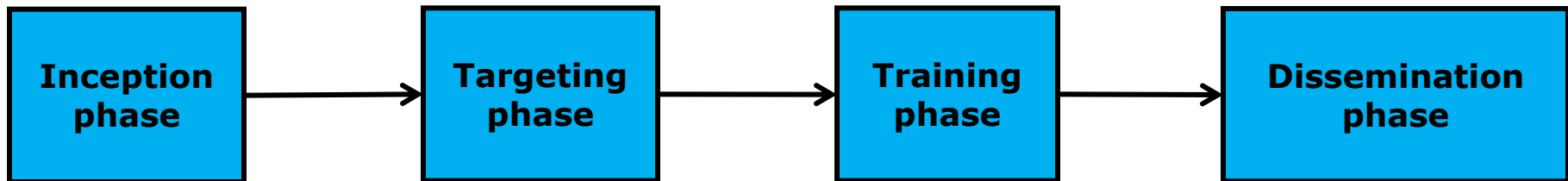


- **Food and Agriculture Organization: Sub-regional Project for Farmer Field Schools (FFS)**
 - **Uganda**
 - **Tanzania**
 - **Kenya**
- **Project implementation from 2005 until 2008**



Source: Davis, K. & Nkonya, E. & Kato, E. & Mekonnen, D.A. & Odendo, M. & Miiro, R. & Nkuba, J., 2012. "Impact of Farmer Field Schools on Agricultural Productivity and Poverty in East Africa," World Development, Elsevier, vol. 40(2), pages 402-413. .

- **Support farmers' access to agricultural knowledge**
- **Farmer field schools use a participatory approach to fostering technology adoption**
 - **Adult learning**
 - **Experiential learning**
 - **Farmers conduct own research, diagnose and solve problems**
 - **Trainer is facilitator**



Adopted from Waddington, H and White, H, 2014. Farmer field schools: from agricultural extension to adult education, 3ie Systematic Review Summary 1. London: International Initiative for Impact Evaluation (3ie).

Propensity Score Matching (PSM)
Difference - in - Difference (DID)

We need to compare like with like!

Implementation:

FFS were purposefully placed in villages

Comparison group:

Find villages similar to the FFS villages

Data collection:

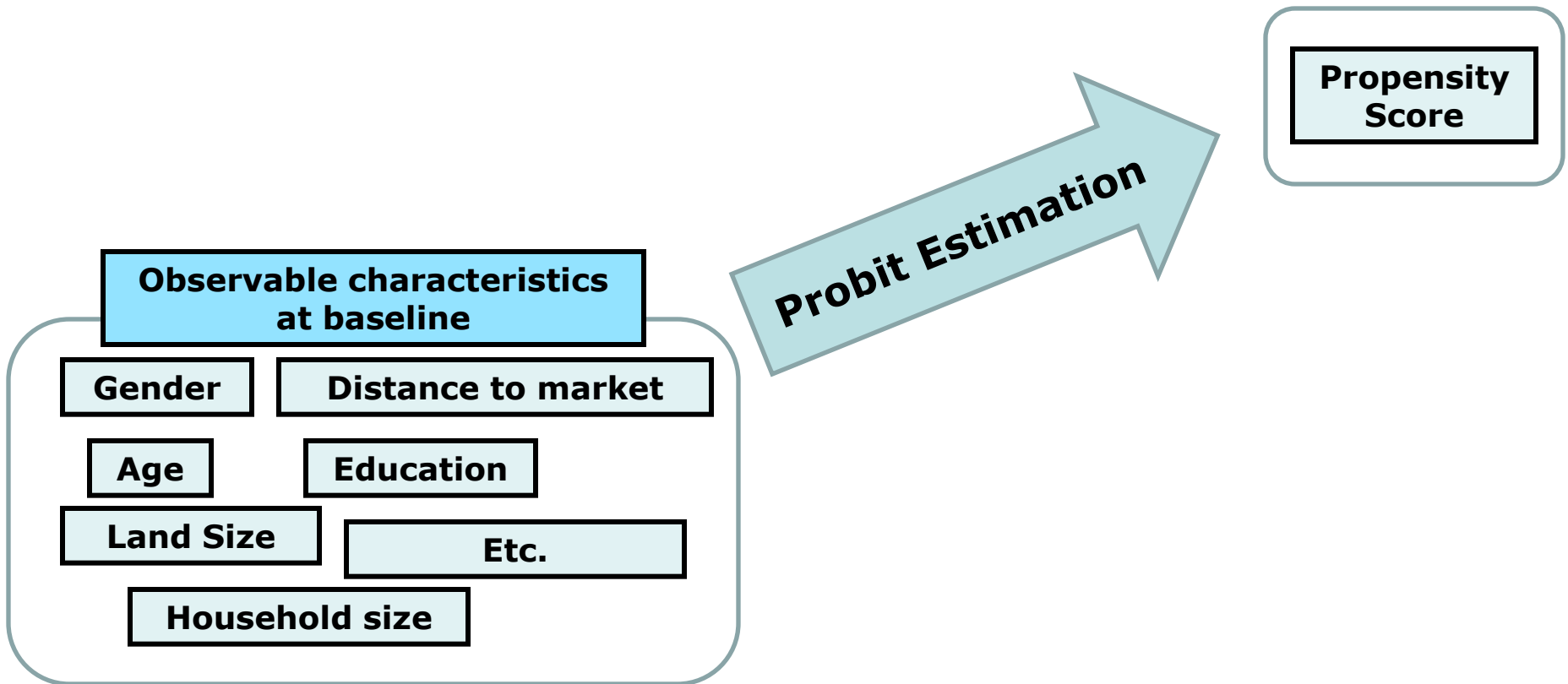
Random Survey in FFS and non-FFS villages



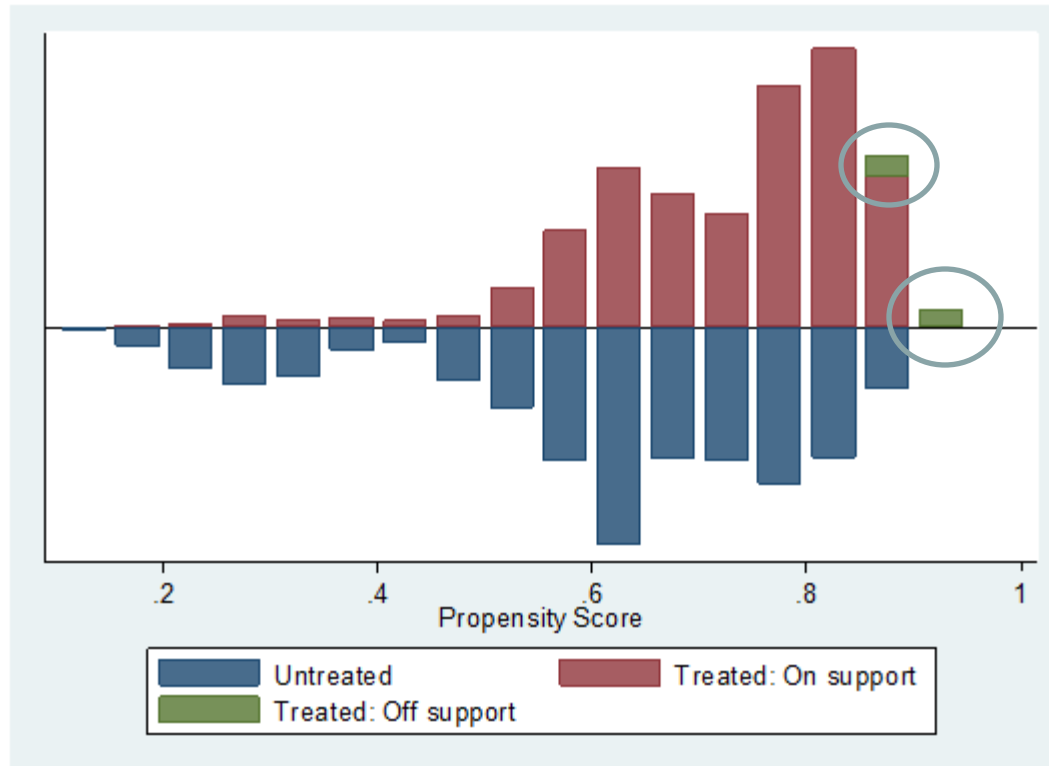
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How to ensure that farmers that participated in FFS are similar to the farmers interviewed in non-FFS villages?

Evaluation Design: PSM/DID



Evaluation Design: PSM/DID



Source: Davis et al.

We still need to *assume* that balance in observables gives us also balance in **unobservables!**

Evaluation Design: PSM/DID



Comparison and treated might look very similar
"on paper"...

Comparison:



Treated:



before

after

Evaluation Design: PSM/DID

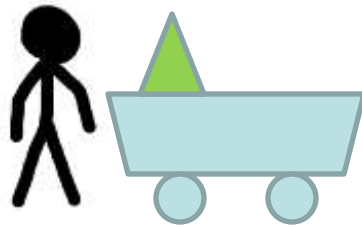


.... but besides observable differences () ...

Comparison:



Treated:



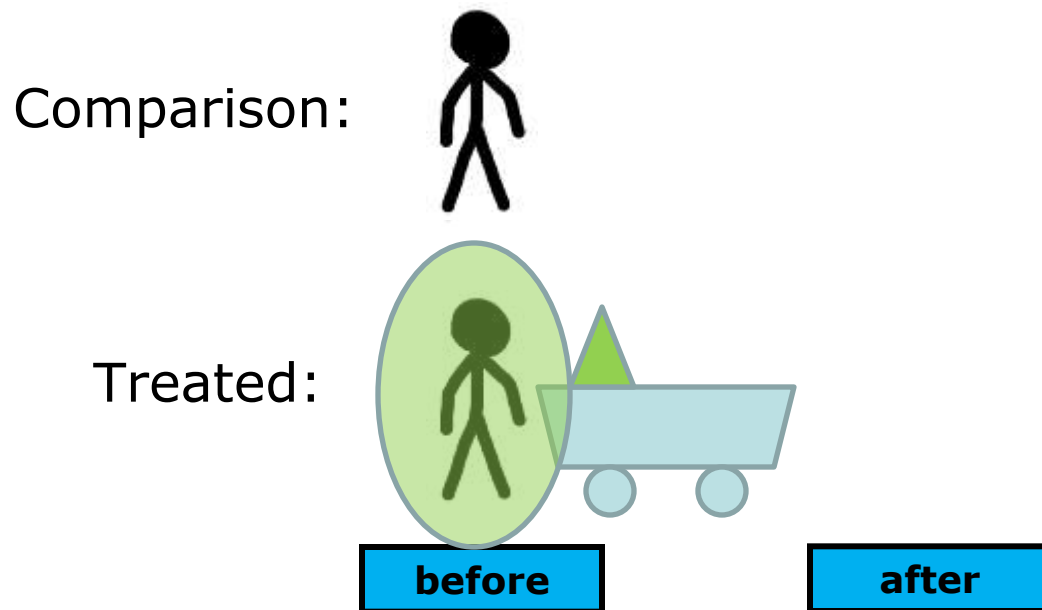
before

after

Evaluation Design: PSM/DID

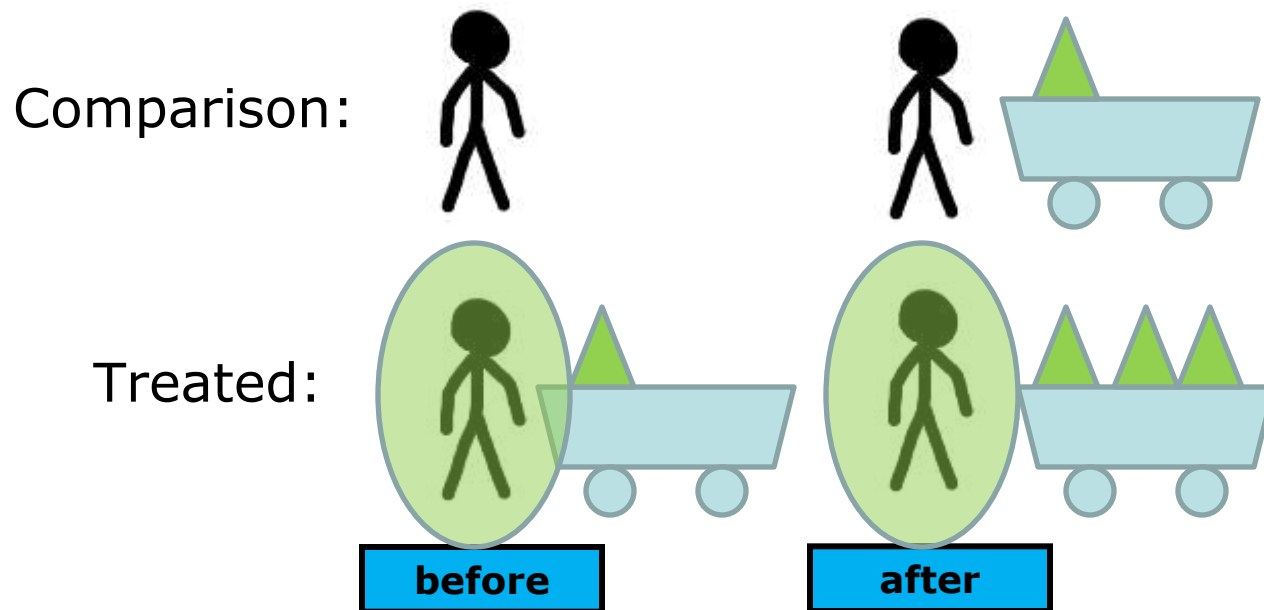


....there might be unobservable differences
(like e.g. the green thumb).



Evaluation Design: PSM/DID

If the unobserved characteristics are time-constant we can “difference them away”.



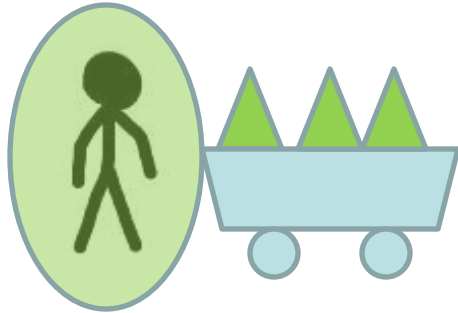
Evaluation Design: PSM/DID



after

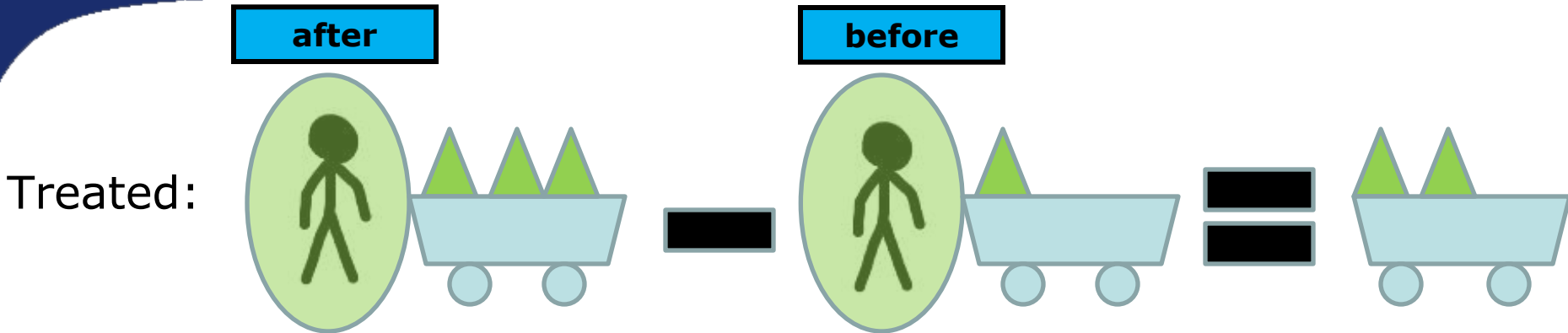
before

Treated:



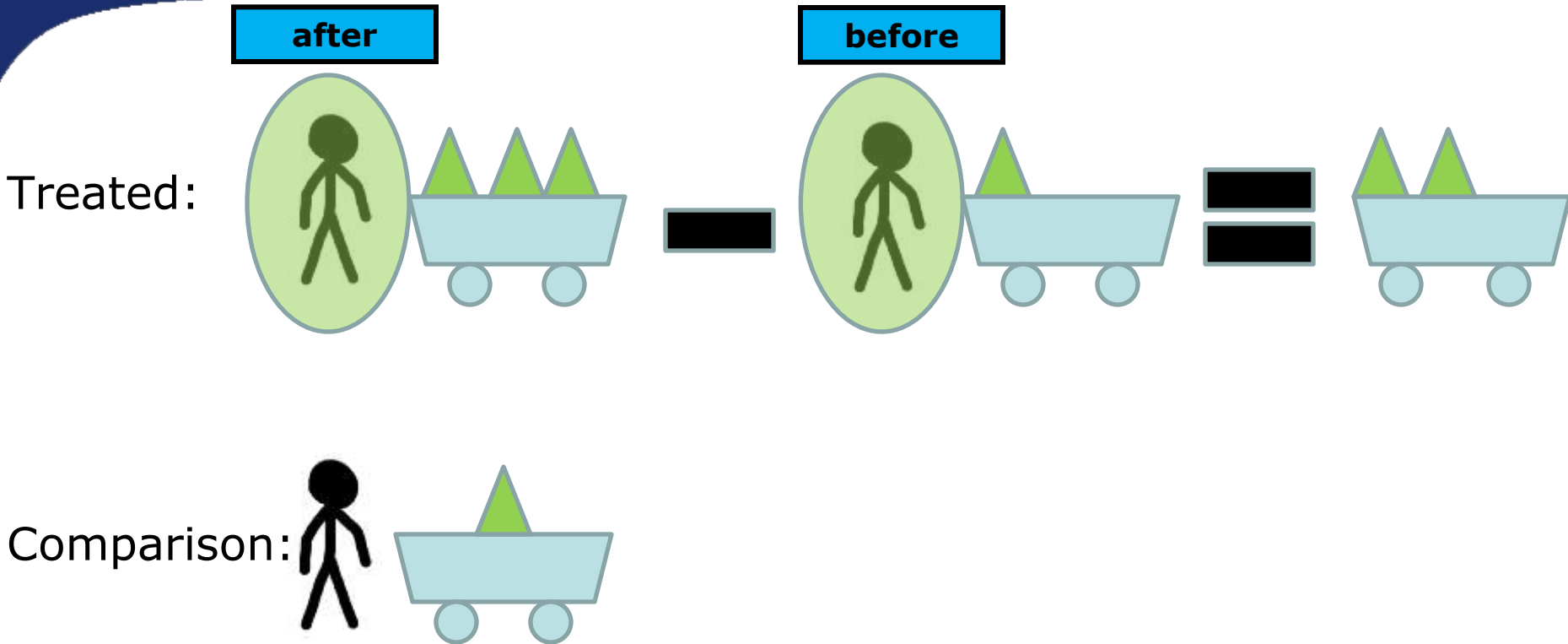
Comparison:

Evaluation Design: PSM/DID

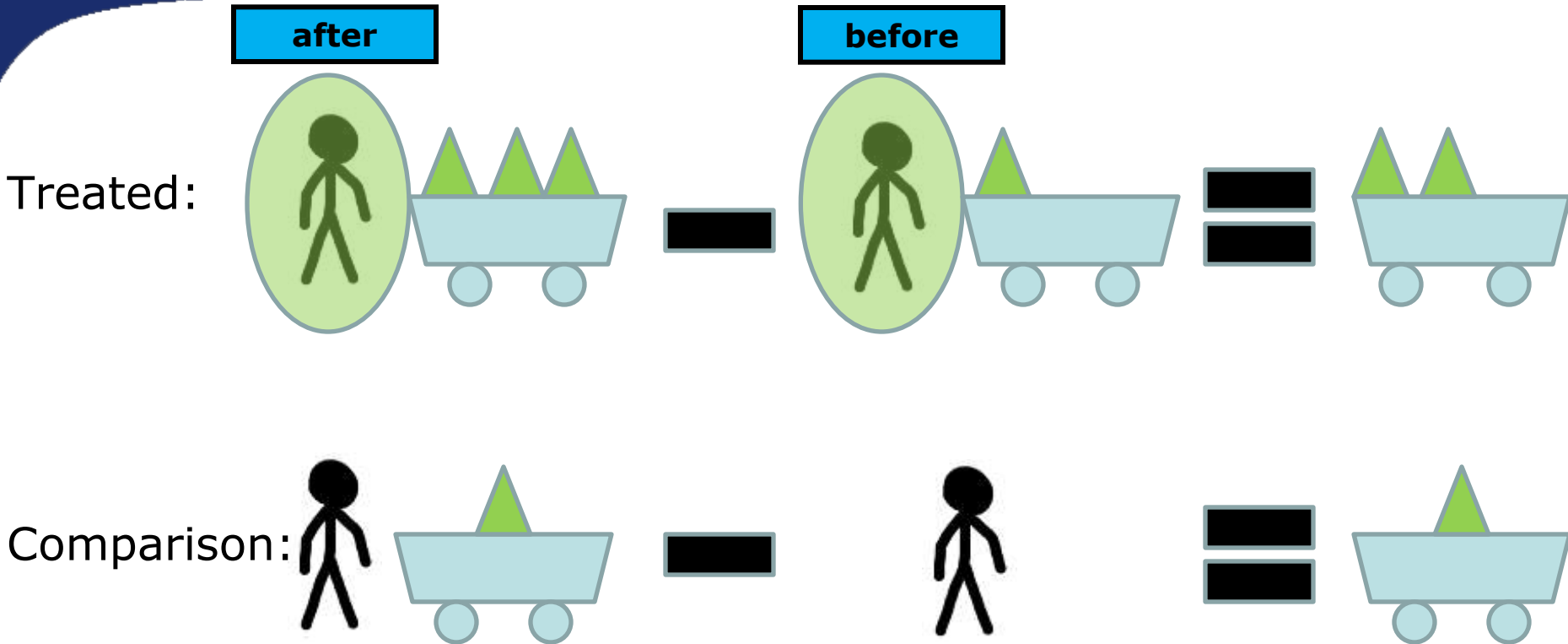


Comparison:

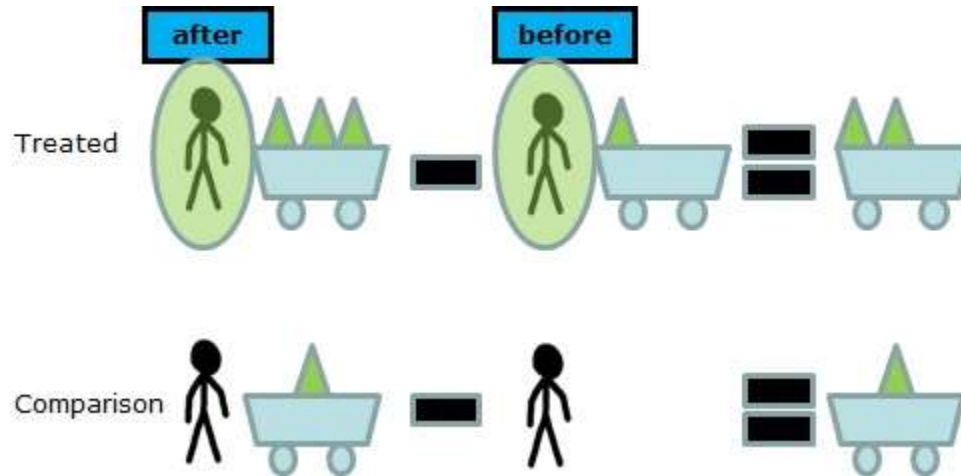
Evaluation Design: PSM/DID



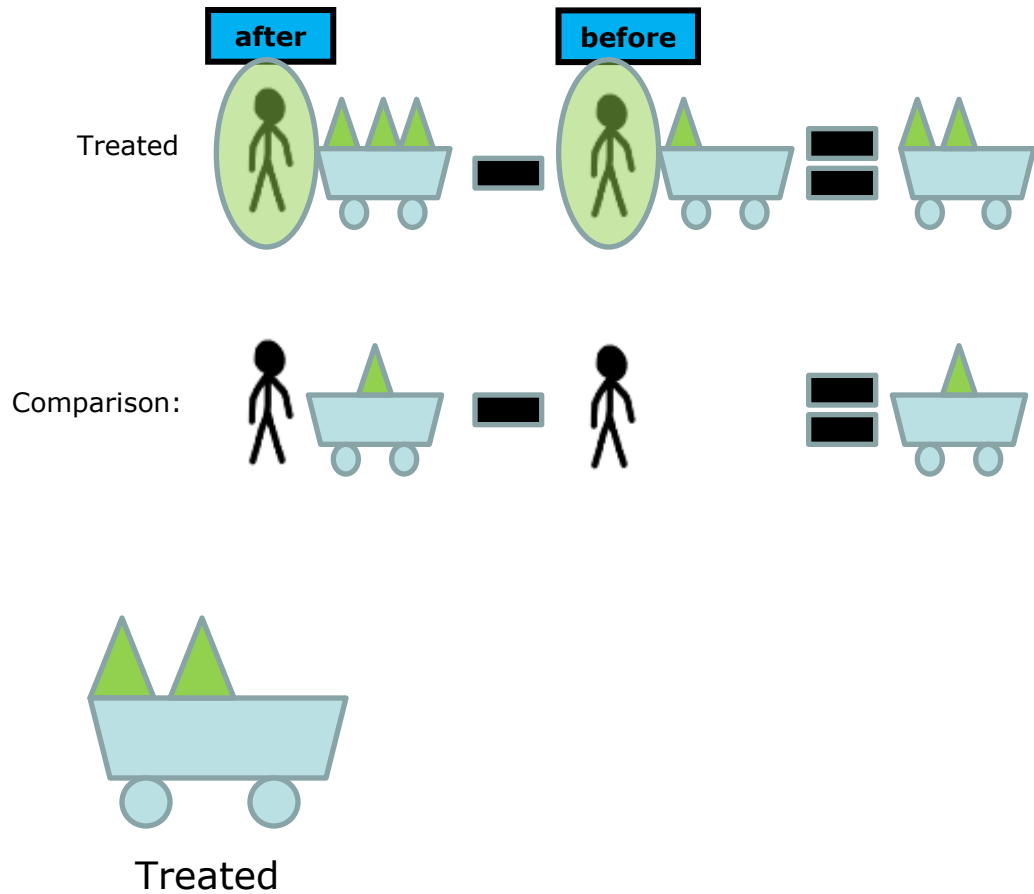
Evaluation Design: PSM/DID



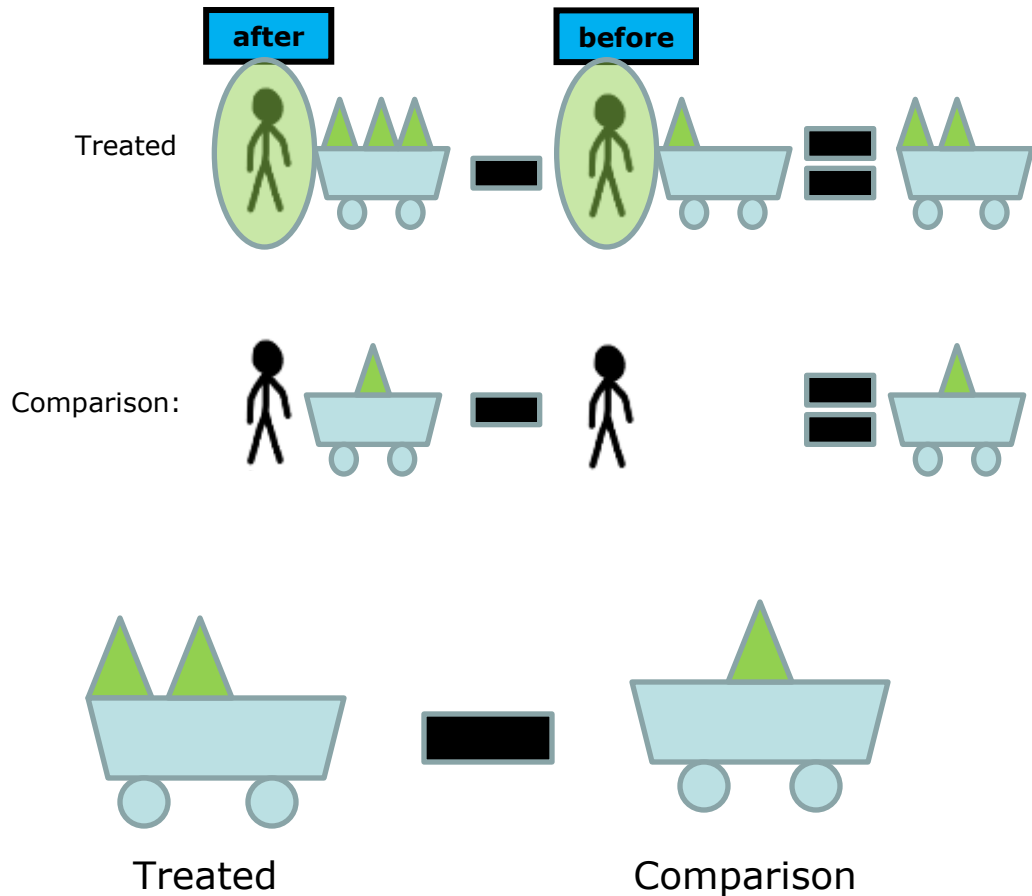
Evaluation Design: PSM/DID



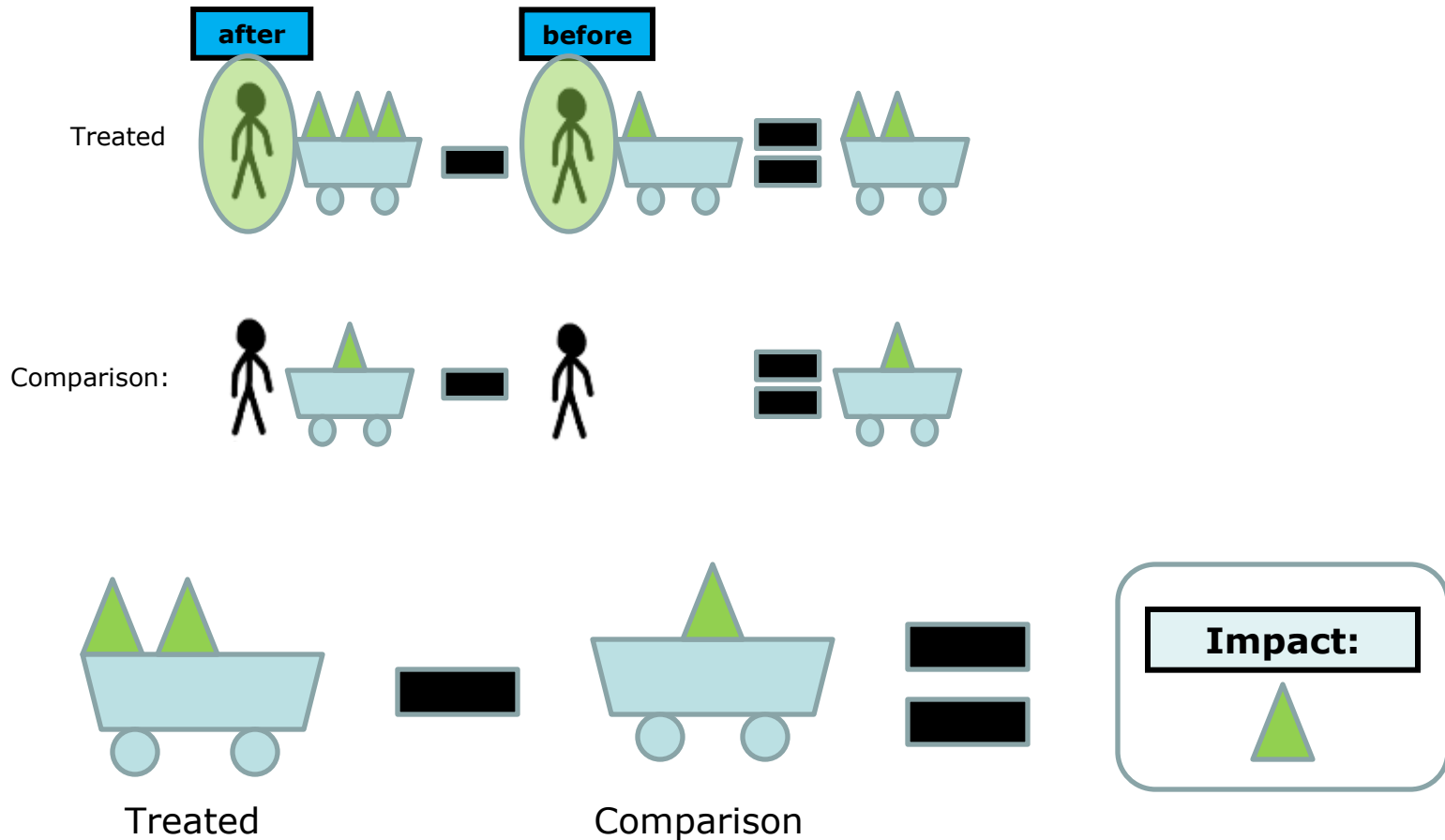
Evaluation Design: PSM/DID



Evaluation Design: PSM/DID



Evaluation Design: PSM/DID



- **Baseline Survey conducted in 2006**
- **Endline Household Survey conducted in 2008:**
 - **1,126 households randomly selected from project and non-project areas**
 - **non-project areas chosen to resemble project areas in terms of biophysical and socio-economic characteristics**

Kenya		Tanzania		Uganda		Total	
FFS	Non-FFS	FFS	Non-FFS	FFS	Non-FFS	FFS	Non-FFS
281	117	272	107	231	118	784	342

Main Results



- **Crop productivity increased by 80% in Kenya and 23% in Tanzania**
- **Agricultural income per capita increased:**
 - **104% in Tanzania**
 - **21% in Kenya**
- **Female headed households benefitted most**
- **No significant increases in Uganda**



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Subgroup analysis by land size



- **Crop productivity increased most for households with medium-sized land area (1-3 hectares)**
- **Agricultural income increased most for medium sized farms**
- **Smaller and insignificant effects for small farms**



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Subgroup analysis by level of education



Impacts are larger for farmers with no formal or little education in all countries



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- **FFS approach seems a suitable tool to target women in this context**
 - Women are not sufficiently targeted by ordinary extension services
- **Farmers with lower levels of education were more likely to participate in FFS**
- **Farmers with medium levels of land benefitted most**
 - One would want farmers with small land to benefit as well

Other Evidence



- **FFS pilot projects improve agricultural outcomes**
- **No evidence for effectiveness of large-scale FFS projects**
- **No evidence for knowledge diffusion**

