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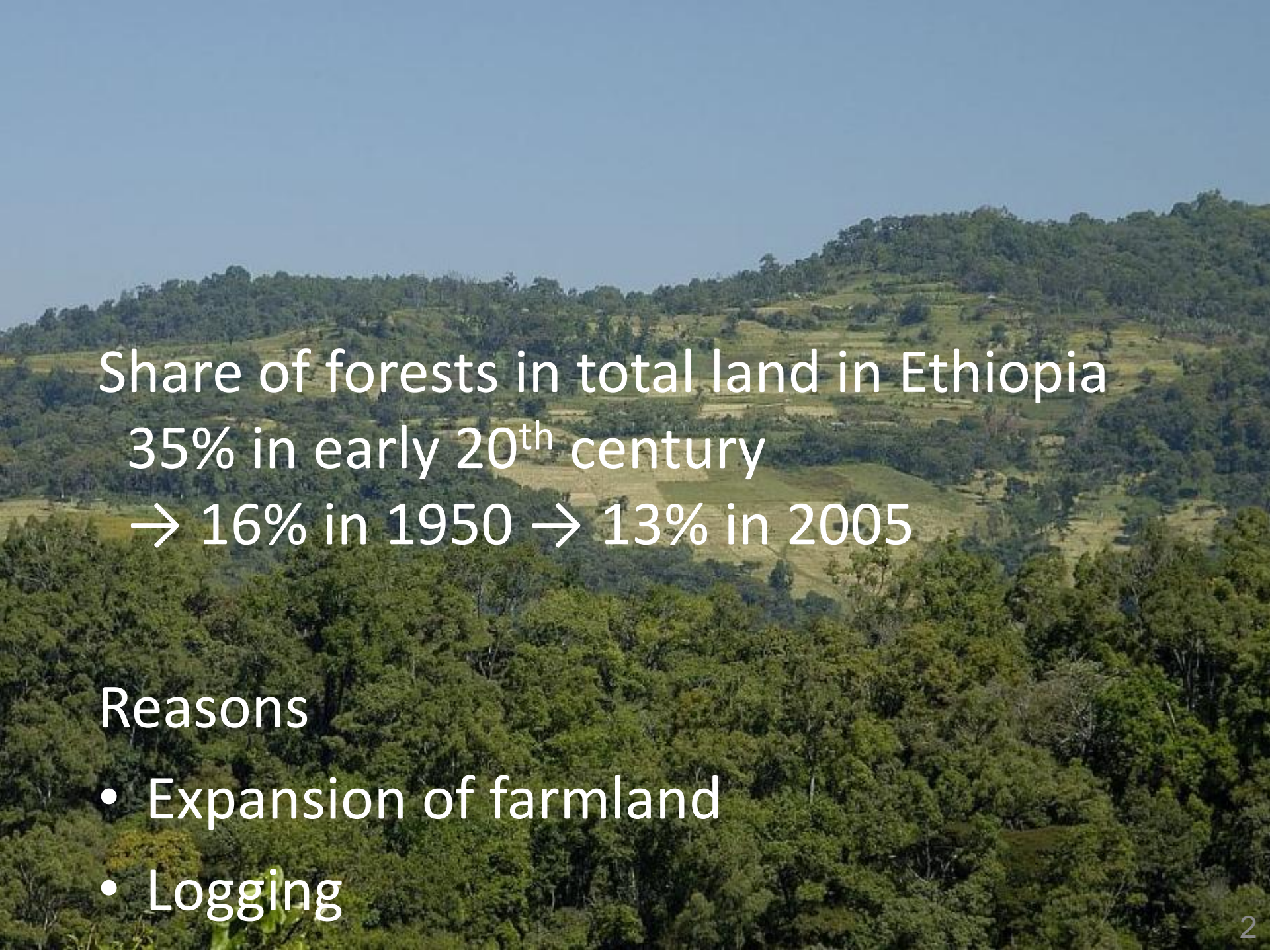
Effects of a Participatory Forest Management Project by JICA in Ethiopia on Deforestation

Yasuyuki Todo

Department of International Studies

University of Tokyo

(Based on joint works with Ryo Takahashi)

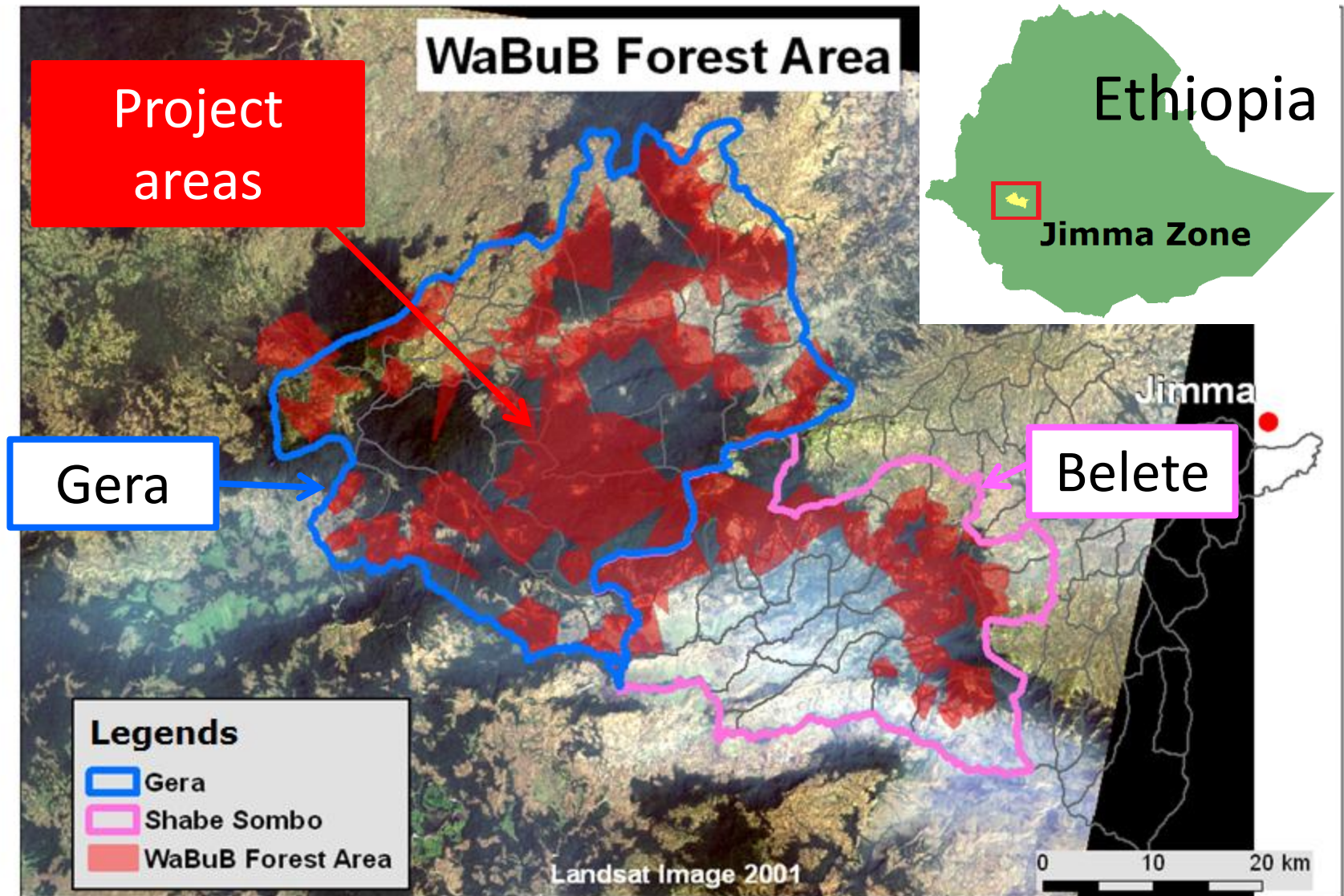


Share of forests in total land in Ethiopia
35% in early 20th century
→ 16% in 1950 → 13% in 2005

Reasons

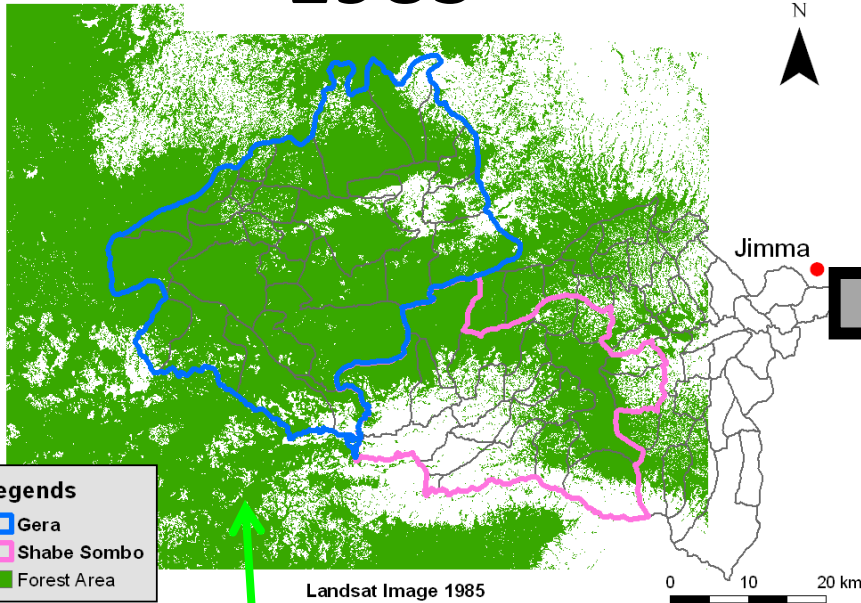
- Expansion of farmland
- Logging

Project Area: Belete-Gera Regional Forest Priority Area

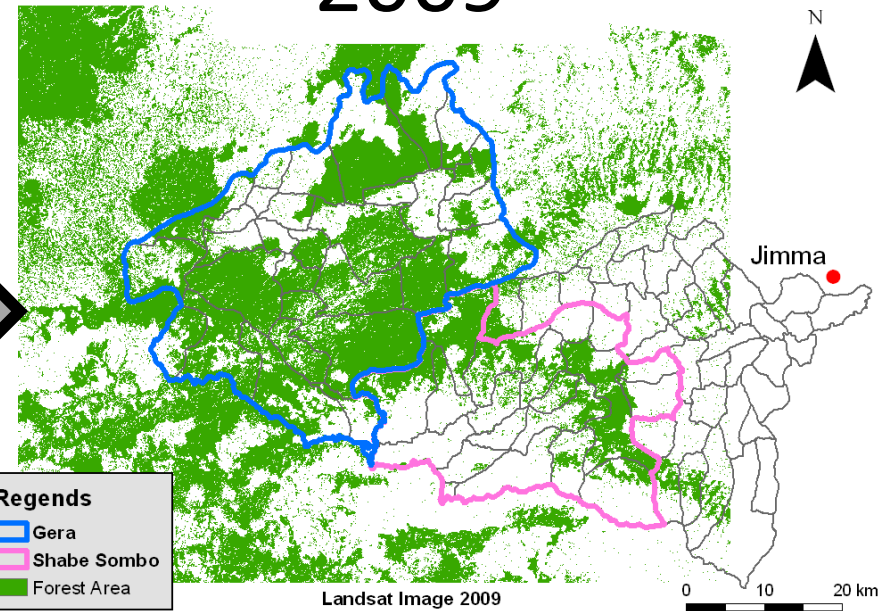


Deforestation in Project Areas: Constructed from Remote Sensing Data

1985



2009



Forests
(green areas)

40% of forests have been
lost since 1985.

Project Outline

Forest Protection

Participatory
forest association

Income
generation

Farmer field
school

Forest coffee
certification

Participatory Forest Management Associations

- Established at the sub-village level
- Identify border of forest
- Prohibit logging in forests
- Monitor illegal logging
- Plant trees in boundary areas and wastelands



	No.		No. of WaBuB established		
	Village	Sub-village	2006-2008	2008-2009	2009-2010
Total	43	126	35	58	32

Forest Coffee Certification

- Coffee naturally grows in some forests.
- Certified by Rainforest Alliance (US-based NGO)
 - ➔ ↑ price by 15-20%
- Farmers have incentive to protect forests.



No. of certified	2007-2008	2008-2009	2009-2010
WaBuBs	4	21	48
Farmers	550	1,700	2,808

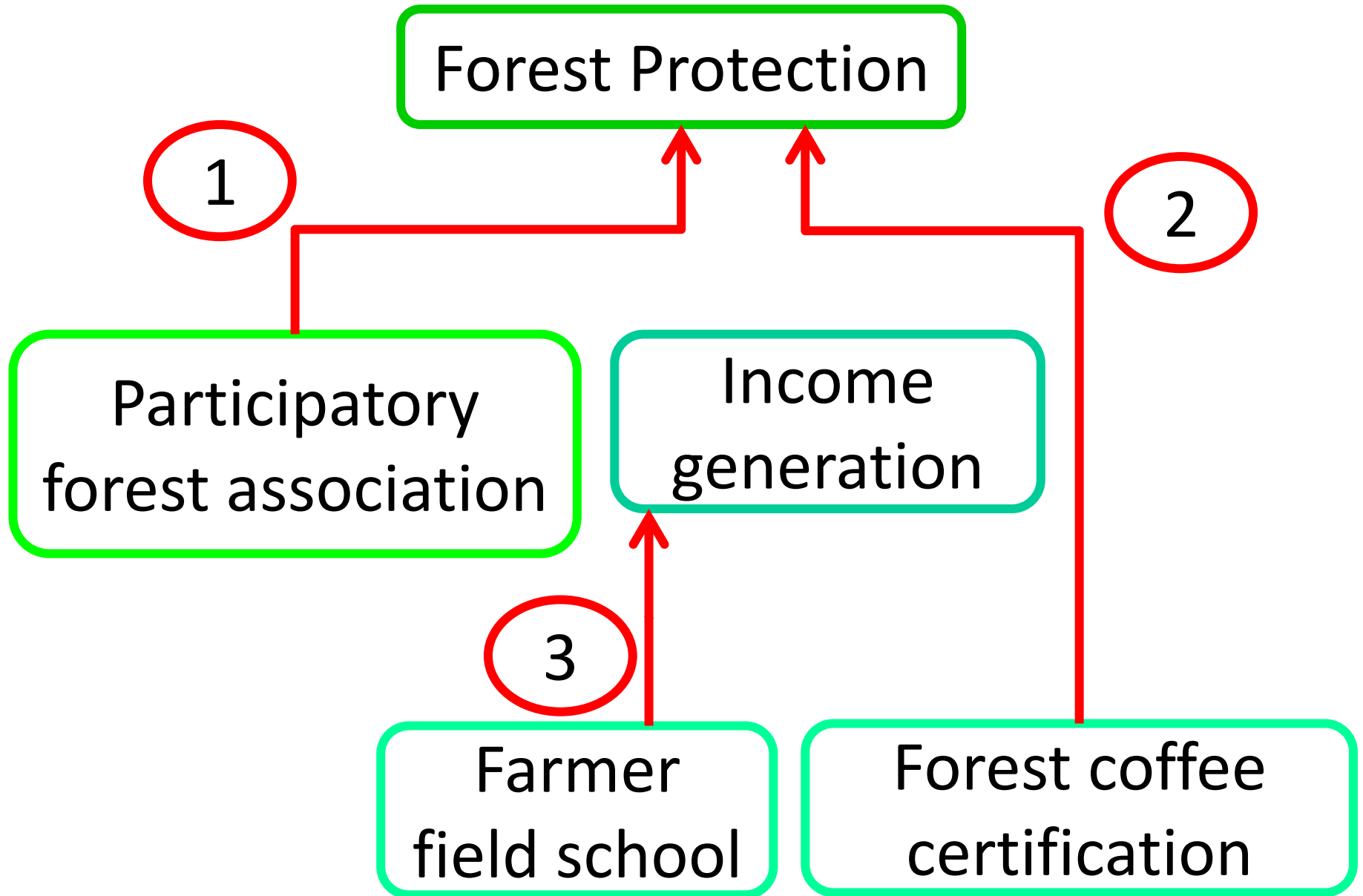
Farmer Field School

- Established together with establishment of WaBuB
- 1 meeting a week for 1 year
- Technology transfer through lectures & experiments

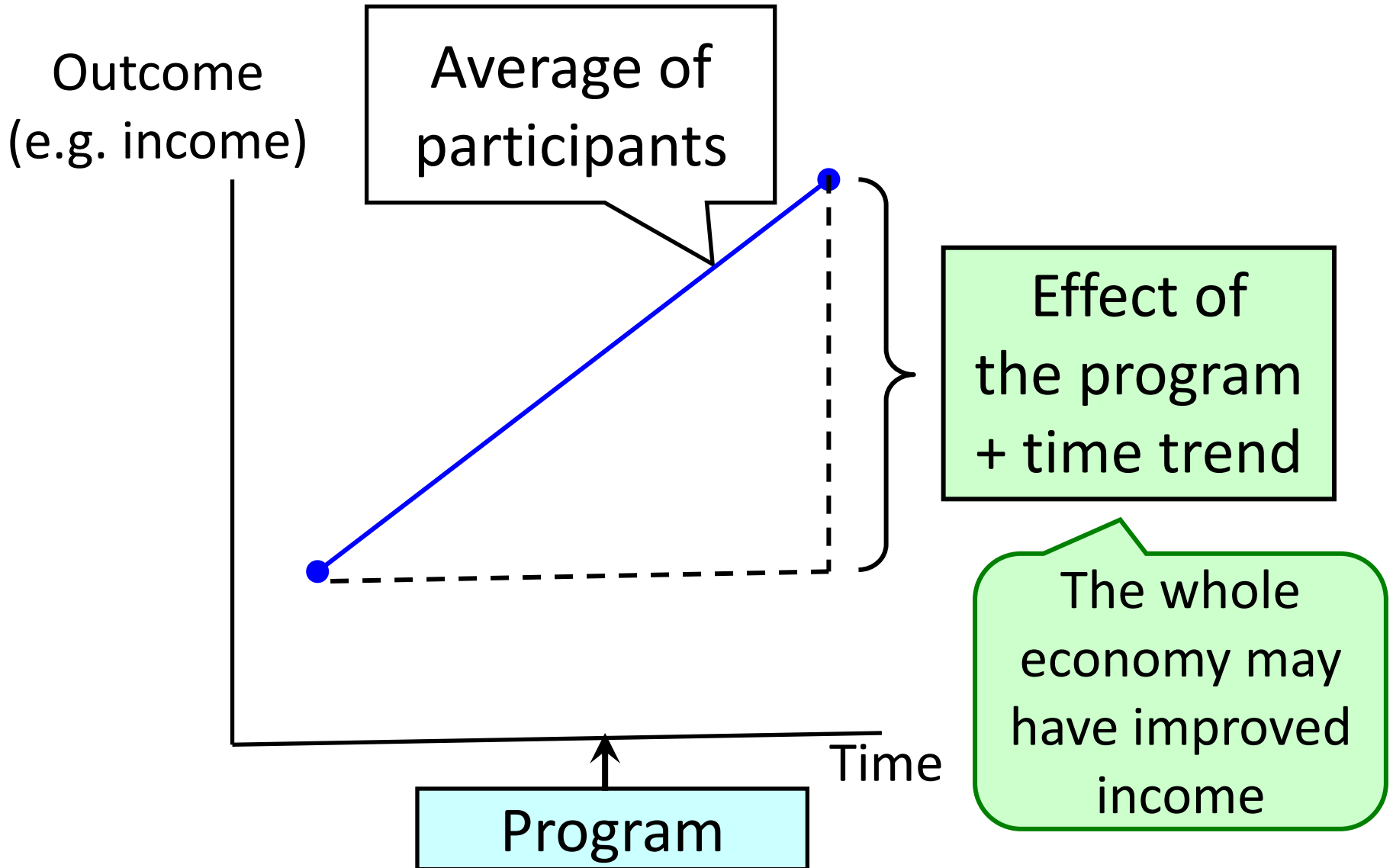


	2007-2008	2008-2009	2009-2010
No. of schools	53	134	82
No. of graduates	1328	3235	NA

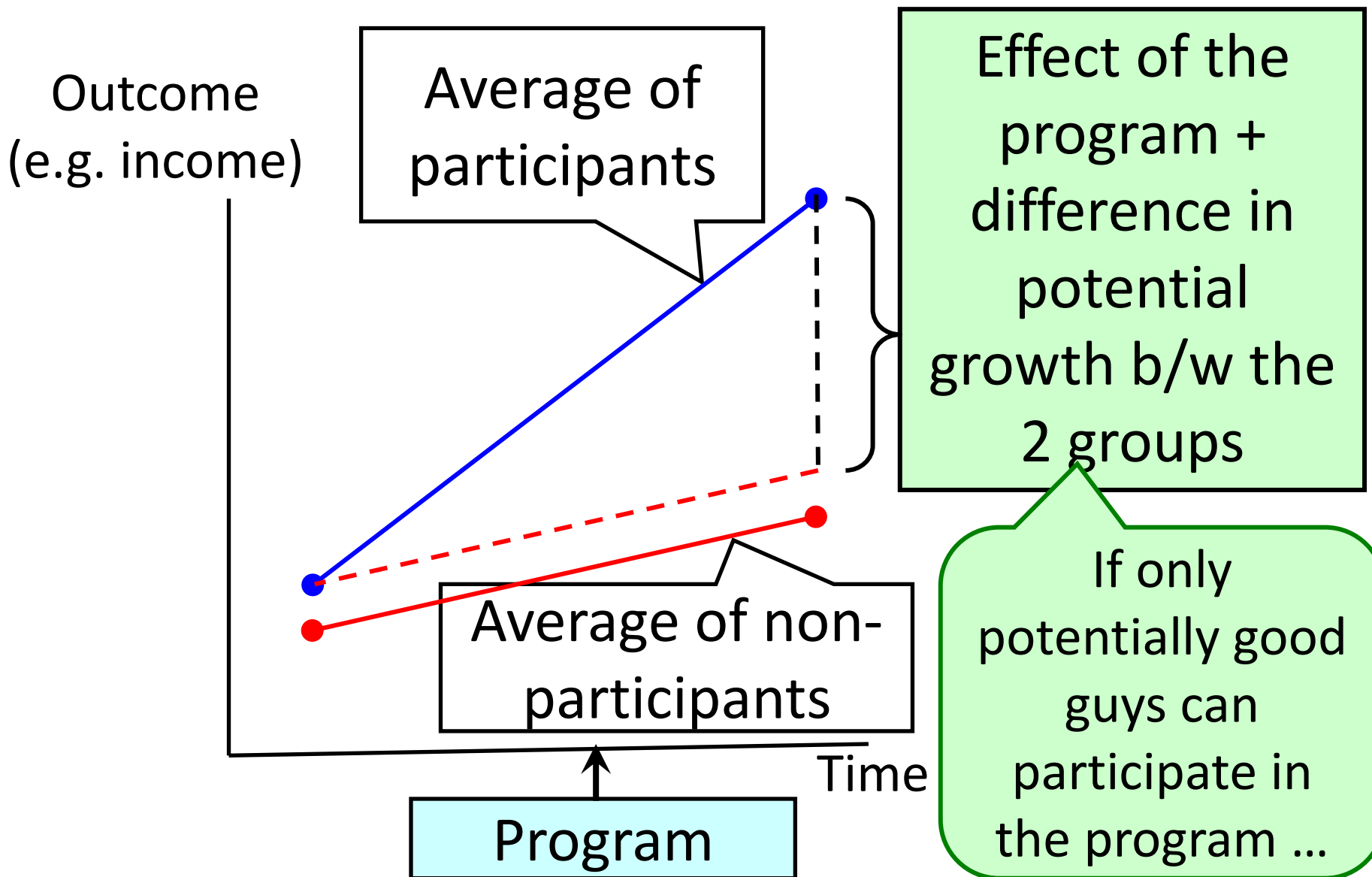
3 Sets of Impact Evaluation



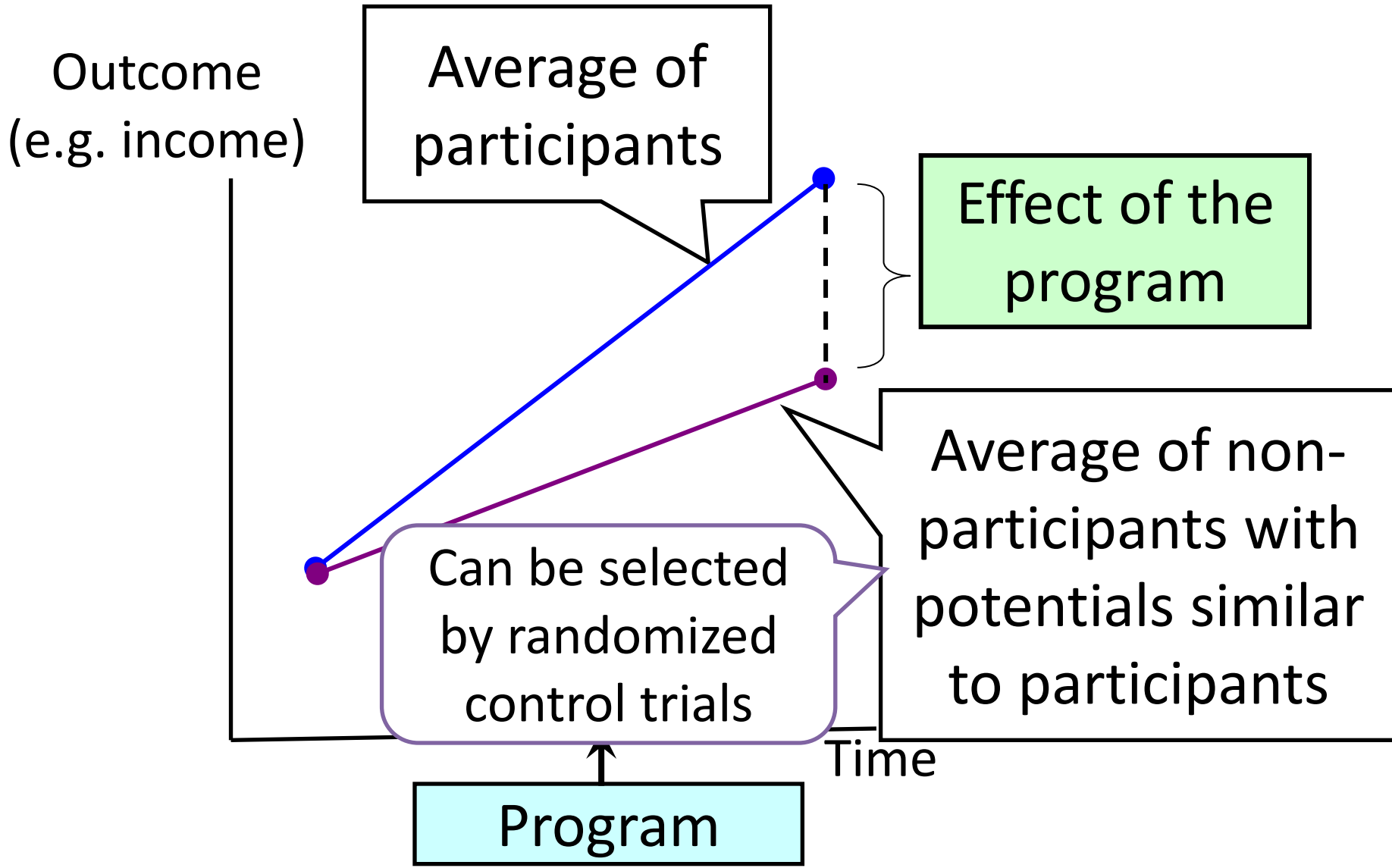
Why Is Program Evaluation Difficult?



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Propensity Score Matching (PSM)

Systematic difference due

to arbitrary selection



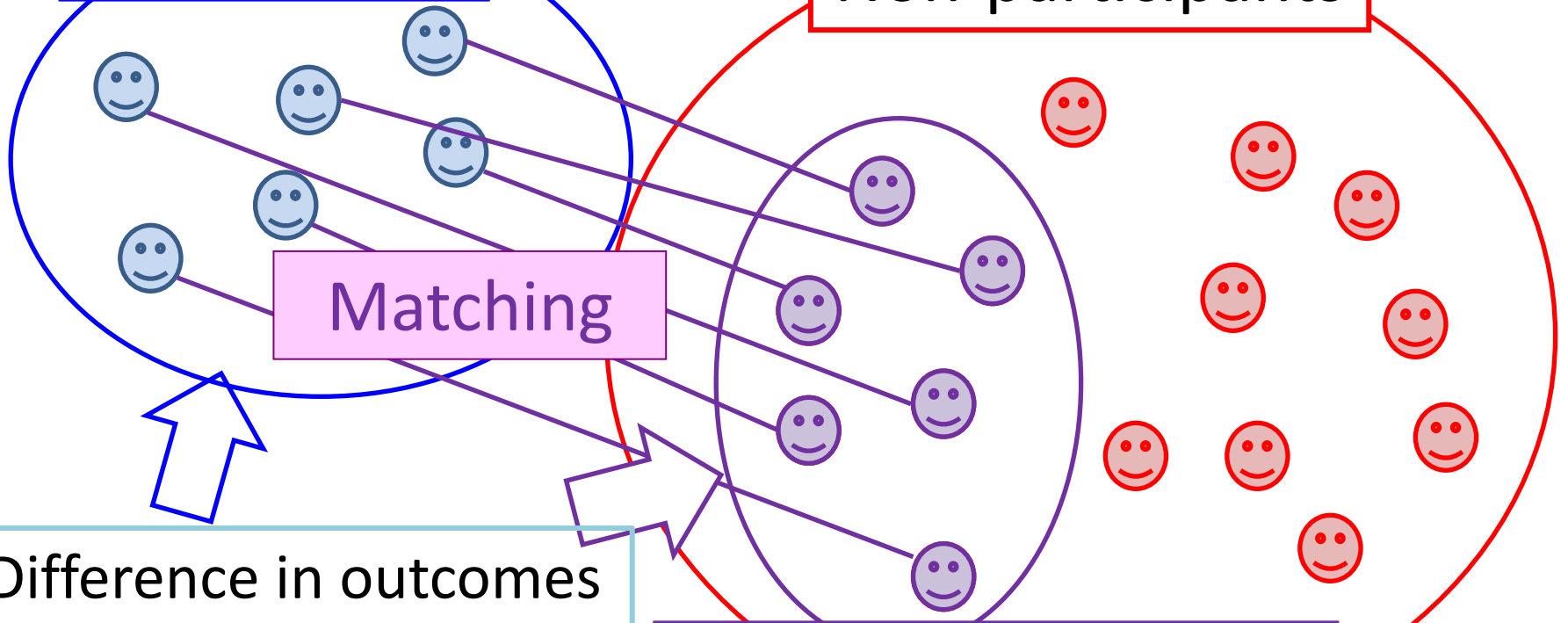
Participants

Non-participants

Matching

Difference in outcomes
b/w 2 groups =
effect of project

Non-participants with
similar pre-program
characteristics



2 Data Sources

- Data from Satellite (Landsat 7) during 1985-2010
 - Identify forests using Normalized Difference Vegetation Index (NDVI) and ground truthing
 - Examine effects of forest associations and forest coffee certifications on forest protection
- Household-level data from 298 HHs in 2008 (pre-program) & 2010 (post)
 - Collected by JICA
 - Examine effects of farmer field schools on income

Methods of Impact Evaluation

Treatment	Forest association	Forest coffee certification	Farmer field school
Control	Non-participants who later participate	Non-coffee areas within forest associations	Non-participants who later participate
Data unit	Sub-village	Grid (900m ²)	Household
Estimation	2SLS	PSM	PSM
IV/ covariates for matching	Geographic and ecological variables	Geographic and ecological variables	Pre-program HH characteristics
Outcome	Change rate of forest areas	Probability of deforestation	Income per worker/year

Main Results

Treatment	Forest association	Forest coffee certification	Farmer field school
Outcome	Change rate of forest areas	Probability of deforestation	Income per worker/year
Effect	Yr of establishment: -12.2%pt, Next yr: +17.4%pt ➔ +5.2%pt in 2 yrs	-1.7%pt in 2 yrs	+US\$ 60-160
Note	Average Δ rate w/o association: -3.3%	Average probability without coffee: 4.5%	Average income before project: \$60
Reference	Takahashi et al. (2012a)	Takahashi et al. (2012b)	Todo et al. (2012)

Summary of the Results from Ethiopia

Large positive effect on forest protection

- Directly through forest associations and forest coffee certification
- Indirectly through income generation due to farmer field schools

Lesson learnt

Effect of forest associations on forest areas in the year of establishment: - (though + in 2 years)

➔ "Last-minute logging"

Impact Evaluation of JICA's Projects: Overview

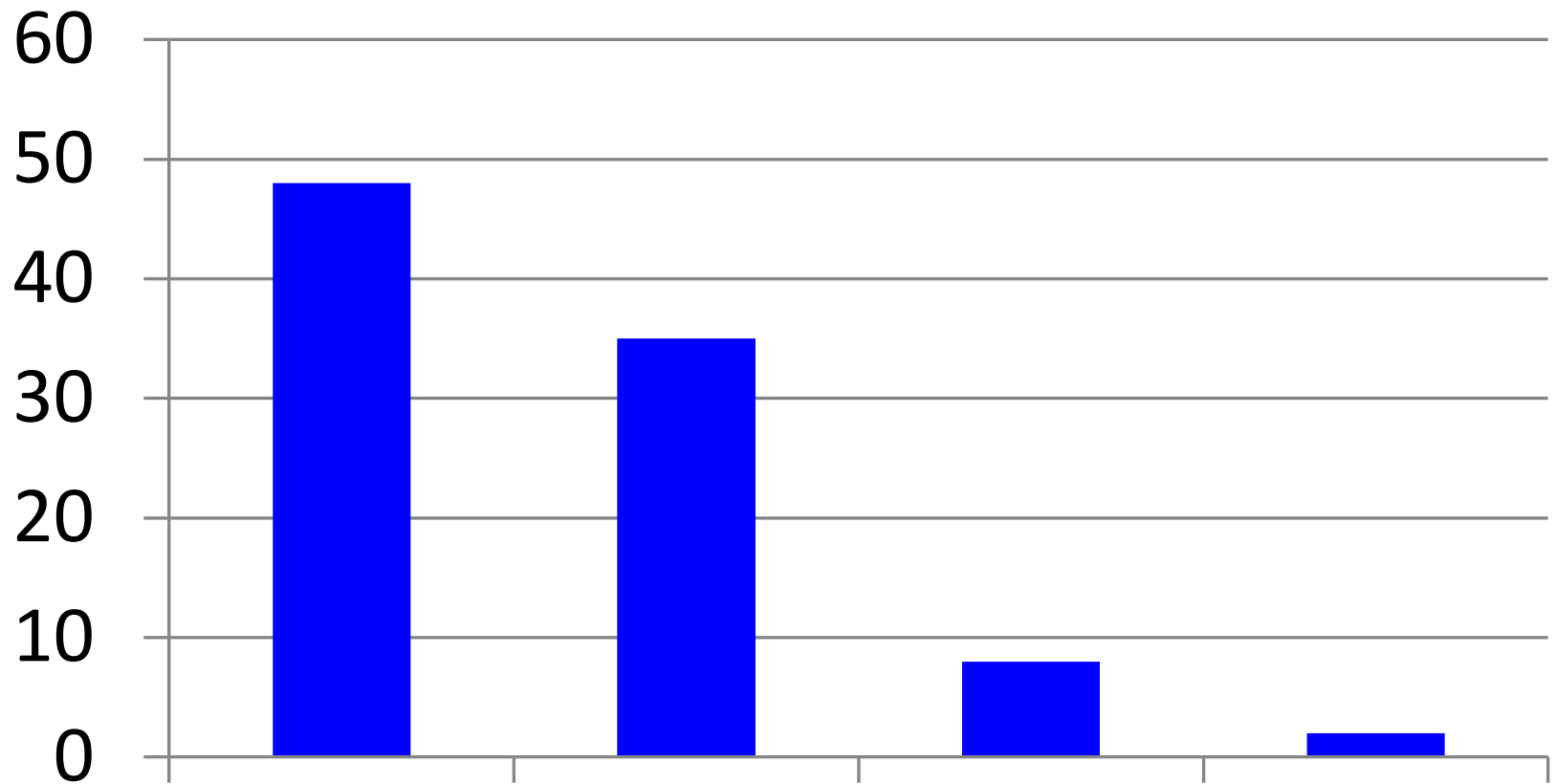
- JICA's project evaluation is almost always based on less rigorous, qualitative methods.
- Only a few rigorous “impact evaluations” were/are officially conducted by JICA
 - Third Elementary Education Project in the Philippines
 - Propensity score matching
 - Yamauchi et al. (2011), Yamauchi et al. (2012)
 - “Support to the Improvement of School Management through Community Participation” in Burkina Faso
 - Randomized control trials
 - Sawada et al. (2012)
 - Some more ongoing ones

Impact Evaluation of JICA's Projects: Overview

- Some “semi-official” impact evaluations were done in and outside JICA (mostly in JICA RI)
 - Irrigation project in Sri Lanka
 - Natural experiments & PSM
 - Sawada et al. (2010)
 - Some were done by Todo
 - Participatory forest management in Ethiopia (funded by JICA RI)
 - Tech assistance in the foundry industry in Indonesia (funded by Research Institute of Economy, Trade and Industry, a public institution related to the Ministry of Economy, Trade and Industry)

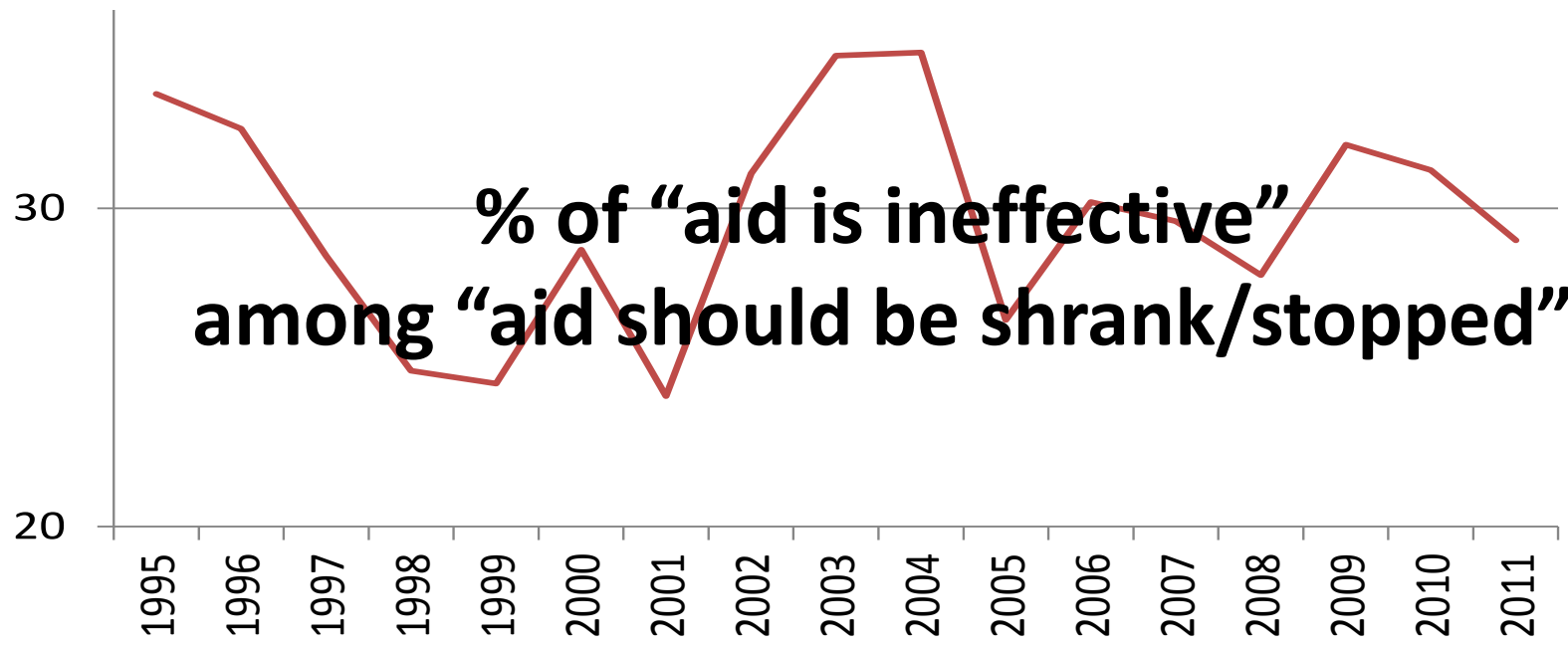
Results from current (less rigorous, qualitative) evaluations look very good.

Results of ex-post evaluation of 93 projects conducted in 2010 (A [very good]-D [poor])



Consequence of Few Impact Evaluations?

Cabinet Office (2011), Opinion Survey on Diplomacy



Ministry of Foreign Affairs (2009), Opinion Survey on ODA

- “What should be done regarding ODA?”
47%: “Clearer information should be provided.”
- “What should be on the web site of MOFA?”
36%: “Outcomes of ODA”

Toward Better International Cooperation on Natural Resource Management

Implications from our study

Foreign aid projects

➔ natural resource management in
LDCs

But, we need to expand impact evaluation

- To convince beneficiaries in LDCs and tax payers in donor countries
- To improve future projects

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