Impact Evaluation
–case studies-

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Case 1

Promote sustainable 3R activities in Maputo

Mozambique

[Case 1] 1. Project

- Objective: Promote sustainable 3R(*) activities in Maputo in Mozambique

   (*) Reduce, Reuse, Recycle

- Expected outcome of pilot phase is to develop a model that we can scale up.

[Case 1] 1. Project

- Japanese experts suggested the following approaches based on the experiences:

  A. Goods Exchange

  B. Buckets provision

  C. Periodical guidance

- None of the approaches had been tested for evidence.

[Case 1] 2. Impact evaluation

Questions

- Are the three options really effective?

- If effective, what are the benefit of the options?

Action

- Impact evaluation for the following groups.

  A. Goods exchange

  B. Buckets provision

  C. Periodical guidance

  D. None

- Methodology: Randomized Control Trial (RCT)

[Case 1] 2. Impact evaluation

	No. of House Hold	Treatment group (beneficiary)			Control group
		Group A (goods)	Group B (bucket)	Group C (guidance)	Group D (none)
Total amount of recyclable goods (16 days)	980	352.5***	427.8***	307.5*	32.66

Notes: * Significant at 10% level, ** significant at 5% level, *** significant at 1% level

Result: All the three measures are effective.

[Case 1] 2. Cost effective analysis

Questions

- What is the most cost effective measures among the three options?

Action

- Conduct cost-effective analysis using the result of the impact evaluation.

[Case 1] 3. Cost –Effective analysis

	①Gross Benefit (16 days)	②Control (16 days)	③Net Benefit (16 days)	④Net Benefit (365 days)	⑤Estimated Cost (365 days)	⑥Net Benefit /Cost
Group A (goods)	352.5 g	32.6 g	319.8 g	7,295 g	664 Mt (USD 15.3)	**10.9 g/Mt (477 g /USD)**
Group B (Bucket)	427.8 g	32.6 g	395.1 g	9,013 g	595 Mt (USD 13.7)	**15.1 g/Mt (658 g/ USD)**
Group C (Guidance)	307.5 g	32.6 g	274.8 g	6,269 g	2,348 Mt (USD 54.0)	**2.67 g/MT (116 g/ USD)**

Note : 1 Mt=0.023 USD

Result: Group B is the most cost-effective measure!

[Case 1] 4. Way forward

Some of the issues to be addressed before/during the role-out stage:

- Reduce the cost of project
- Information dissemination to the people to increase efficiency of the project
- Review real cost of the solid waste management which include not only financial but social cost as well

Case 2

Case 2

Autonomous Region in Muslim Mindanao (ARMM) Social Fund Project

-Community Development Assistance-

The Republic of the Philippines

[Case 2] 1. Project

Objective

- Improve access to social and economic infrastructure and livelihood opportunities in the conflict affected areas.

Component

- Construction, rehabilitation and improvement of small-scale social and economic infrastructure covering agriculture sector, education sector, health sector and transportation sector.

[Case 2] 1. Project

Health Station

Rural paved road

Elementary school

Sanitation

[Case 2] 2. Impact Evaluation

Questions

- Various small scale infrastructures are provided under the project in the area.

- What are the outcome of the project? Any impact on the situation of post conflict?

Action

- Impact Evaluation for the barangay and household level to measure various outcomes of the project.

[Case 2] 2. Impact Evaluation

Framework of the impact evaluation

	Treatment	Control	Total	Methodology
Barangay	230	230	460	Difference in Differences
Household	735	735	1,470	OLS, PSM

Methodology

Barangay Level: Comparison of baseline and end line of the project for both treatment and control. (Difference in Differences)

Household level: 4 methodologies including Ordinary Least Squares (OLS) and Propensity Score Matching (PSM)

[Case 2] 3. Result of the impact evaluation

Barangay Level

	2014(end line)		2007(base line)		Difference		DID
	Treatment	Control	Treatment	Control	Treatment	Control	
Utilization of toilet(%)	45.7	45.5	37.4	46.7	8.3	-1.1	9.4**
Active community	0.318	0.311	0.151	0.137	0.167	0.173	-0.006
Number of conflict	1.367	1.690	1.022	0.817	0.346	0.873	-0.528

DID 9.4% = (Difference in Treatment) – (Difference in Control) = (45.7%-37.4%) – (45.5%-46.7%)

Notes: * Significant at 10% level, ** significant at 5% level, *** significant at 1% level
"Active community" is the number of communities, per population 1,000, conducting periodical meeting and with more than 10 members.

Result: While statically significant impact is confirmed for the utilization of toilet, we can not confirm the impact on the community activity and conflict.

[Case 2] 3. Result of the impact evaluation

Household (HH) –conducted for 2 segments; i) all the HH and ii) HH head with primary education or less level (HH with lower education)

Expenditure	• <u>All the HH</u>: The expenditure level for water and electricity is reduced (around Peso – 60 to 100)suggesting an improved access to affordable water. • <u>HH with lower education</u>: The expenditure levels for food, clothes, education and total are increased suggesting an improved economic welfare on this segment. (total expenditure around Peso +1,090 to 1,230)

[Case 2] 3. Result of the impact evaluation

Education	• <u>All the HH</u>: No major outcomes except for improved travel time to school. • <u>HH with lower education</u>: Enrollment for primary education improved (around + 4 to 5%) .
Water/ sanitation	• <u>All the HH</u>: Utilization of safe water and toilet increased (around +9 to 10% and +12 to 14%, respectively). • <u>HH with lower education</u>: The similar outcomes are observed.
Health	• No major changes in the outcome indicators of health.(This result might indicate a longer causal chain to improve health)

[Case 2] 3. Result of the impact evaluation

Community activities/security	• <u>All the HH</u>: No major changes are observed except for the reduced occurrence of conflict among clans (around -3 to 4%). • <u>The HH with lower education</u>: The similar results are observed.

[Case 2] 4. Way forward

- Various positive outcomes of the project are observed.
- Based on indicators which we could not confirm positive outcome, we could learn to further improve future project design. For example, in addition to infrastructure provision, we could consider incorporating "soft component" to improve outcome of health indicators.