Social Return On Investment of Chiang Mai's Urban Pesticide-free Vegetable Production System Development Project

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Background of the study

- Chiang Mai University's Center for Agricultural Resource Systems Research (CARSR) launched a project to grow pesticide-free vegetables in urban areas.
- The aim was to set a model for promoting sustainable urban agriculture, in line with Sustainable Development Goal 12 (Responsible Production and Consumption)
- The project of $33,642 funded by the Program Management Unit on Area-Based Development (PMU A), ran from May 2021 to April 2022.

Background of the study (Cont.)

The project comprised 6 components

1. Explore community capital and potential for understanding of urban agroecology
2. Establishing demonstration plots
3. Conducting study tours, and training
4. Providing production support and follow-up
5. Facilitating knowledge exchange through community participation
6. Implementing market management and production standards

Objective of the study

- To investigate the Social Return on Investment (SROI) of Chiang Mai’s Urban Pesticide-free Vegetable Production System Development project

The analysis aims to explore the project's varied outcomes and provide insights for policymakers to promote safe vegetable production in urban areas.

Methodology

1 **Procedures and Methods for Assessing SROI**

- investigate activities, budget and outcome
- define scope, identify stakeholders
- create outcome maps
- develop indicators linked to measurable output

2 **Identifying the stakeholders' economic and social goals**

- Two groups of pesticide-free vegetable producers
- Community consumers
- 2 Municipalities
- Faculty of Agriculture, CMU

3 **Steps of creating a theory of change, Impact Value Chain, and Base Case Scenario**

- Base Case Scenario
- attribution
- deadweight
- displacement
- drop-off

Sample of this study

1. Two vegetable producer groups (Suthep and Mae Hia)

Focus group

In-depth interviews:

- Suthep 10 producers
- Mae Hia 9 producers

2. Pesticide-free vegetable consumers

In-depth interviews
47 participants

3. Suthep and Mae Hia Municipalities

4. Faculty of Agriculture, CMU

The evaluation scope will be set up for 10 years.

Results of the study

1. Outcome Mapping

There are 4 stakeholders in this study

Stakeholders	Outcome	Indicators	Financial proxies
1. Pesticide-free vegetable producers	• Increased income • Decreased production cost • Knowledge gained from training • Better health • Strengthened community	• Increased income of pesticide-free vegetables • Reduced production costs due to the project recommendation • Number of producers attending workshops • Decrease costs for medical care • Number of participated members and frequency of activities	• Market value of pesticide-free vegetables • Market value of reduced resources • Workshop training costs • Cost of medical care and the opportunity cost of time lost due to medical care. • Cost and time value spending for exchange activities

1. Outcome Mapping (Cont.)

Stakeholders	Outcome	Indicators	Financial proxies
2. Municipality in the study areas	• Decreased promoting cost for safe agriculture • Knowledge gain from the workshop training	• Reduction of expenses due to the existing project • Number of officials attending workshops	• Decreased agricultural promotion expenditure • Reduced costs for officials' training
3. Community consumers	• Increased health outcomes from consuming pesticide-free vegetable • Diminished expenses for safe vegetables	• Number of consumers affected by agricultural chemicals and reduced costs of medical care • Decreased expenses for safe vegetables from external sources	• Expenses for medical care related to chemical-induced diseases • Time value spent traveling to purchase safe vegetables and associated travel expenses
4. Faculty of Agriculture, CMU	• Enhancing Goodwill's corporate image	• Number of individuals accessing various media	• Reduced costs in public relations

2. Value of benefits (US$) incurred to stakeholders for 10 years

Stakeholders	Outcomes	Location	NPV	Dead weight	Attribution	Drop off	Adjusted NPV
1. The pesticide-free vegetable producer group participating in the project	Additional income from increased production of pesticide-free vegetables	Suthep	29,489	38%	40%	47%	5,814
		Mea Hia	54,210	23%	40%	0%	25,045
	The value of knowledge gained from participating in project training	Suthep	345	0%	0%	0%	345
		Mea Hia	115	0%	0%	0%	115
	The value of benefits arising from improved health	Mea Hia	230	26%	40%	0%	102
	The value of benefits arising from better relationships among pesticide-free vegetable producers	Suthep	14,084	7%	0%	0%	13,098
		Mea Hia	8,173	21%	0%	0%	6,456

2. Value of benefits (US$) incurred to stakeholders for 10 years

Stakeholders	Outcomes	Location	NPV	Dead weight	Attribution	Adjusted NPV
2. Consumers in the community	Benefits value from cost savings in purchasing pesticide-free vegetables	Suthep	23,748	0%	0%	23,748
		Mea Hia	23,965	0%	0%	23,965
	Benefits value from improved health	Suthep	622	50%	40%	187
		Mea Hia	1,354	50%	40%	406
3. Faculty of Agriculture	Benefits from a better image of the Faculty of Agriculture		4,766	50%	50%	1,191

Social Return on Investment of the Project

The net present value of total benefit (US$)	100,473
The present value of investment cost (US$)	33,642
The net present value of the total benefit subtracted with the present value of the operation cost (US$)	66,831
The social returns on investment (SROI)	2.99

3. Sensitivity analysis of social returns from investments

Scenario 1:
Changing attribution rate

Attribution proportion change from 40% to 72%, the project still maintains a social return rate of 1

Scenario 2:
Changing drop-off rate

Drop off rate change from 47% to 68%, the project maintaining a social return rate of 1

Conclusion

- The urban pesticide-free vegetable production project success in establishing a sustainable source of safe food through a community of pesticide-free vegetable producers in urban areas of Chiang Mai.
- The project's SROI was 2.99 indicated every $1 invested generated a social return of $2.99.
- That is a favorable rate for agricultural projects.

MAE-HIA GREEN ROAD
ผักยิ้มแม่เหียะ

Logo of the producer groups

Suthep CM Clean Food for Life
ผักปลอดสารฯ จากชุมชนเกษตรนิเวศในเมือง


THANK
YOU