Measuring and Evaluating the Development Impacts of Climate Investments

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Climate Investment Funds Background

- CIF is one of the largest multilateral climate funds with over **$12 billion pledged**.
- Accelerating climate action in **over 80 developing countries** with low-cost funding at scale.
- **Largest source of concessional climate finance for 6 multilateral development banks** (ADB, AfDB, EBRD, IDB, IFC, World Bank).

CIF Priority Areas:

1. Clean Technologies
2. Energy Access
3. Adaptation and Resilience
4. Sustainable Forestry
5. Accelerating Coal Transition
6. Nature People and Climate
7. Renewable Energy Integration
8. Industry Decarbonization

Evaluation Purpose and Approach

Purpose:

i. Expand the **knowledge & evidence base** on the development impacts of climate finance;
ii. Strengthen the case for **increased climate finance ambition**;
iii. Enable decision-makers to make **more informed decisions.**

Key Questions:

1. What are the **potential development impacts** of CIF investments?
2. What impacts are **being achieved**? Are there unintended impacts?
3. What are the **drivers and constraints** to achieving impacts?
4. How can impacts be **strengthened and assessed**?

Approach:

Secondary Information Review

Case Studies

Modeling Tools

Key Insights

- **Classify and map development impacts** to better understand, plan for, and achieve development impacts.
- Design for development impacts through a **backcasting approach.**
- Prioritize **development impacts that are catalytic** – called “Super DIs” – that influence the achievement of other development impacts.

DI Taxonomy

SOCIAL
1. Livelihoods, wealth, and quality of life
Increased or diversified income
Wealth generation
Recognition of tenure rights
Increased access to markets
Acquisition of transferable job skills
Improved working conditions
Increased ability to cope with shocks
Reduced losses from extreme climate events
Increased capacity of local institutions
Community engagement / collaborative implementation
2. Health and safety
Increased food security
Reduced illegal activity
Avoided negative health impacts from fossil fuels
3. Essential services
Increased access to electricity (households / businesses)
Increased electricity reliability / decreased outages (households / businesses)
Reduced costs of essential services (households / businesses)
Increased access to public transportation
Increased access to water or improved reliability
Increased access to healthcare / medicine
Increased access to infrastructure
Increased access to education

ECONOMIC
4. Employment opportunities
Increase in direct employment (permanent [perm] or temporary [temp])
Increase in indirect employment (perm / temp)
Increase in induced employment (perm / temp)
Increased earnings from employment (all types)
5. Economic value add (GDP)
Increased economic outputs

ENVIRONMENTAL
6. Natural resources
Reduced air pollutants
Improved water quality
7. Ecosystem and biodiversity
Improved legal / regulatory framework
Improved forest management planning
Enhanced forest stocks
Increase in sustainable land use
8. Soil and crop productivity
Increased productivity of agriculture
Improved soil health
Reduced use of inputs or natural resources

CROSS-CUTTING DIMENSIONS
Inclusion and empowerment
Gender inclusion, impacts on women and girls
Vulnerable populations and local stakeholders impacts
Capacity
Built capacity (within specific stakeholders)

MARKET DEVELOPMENT
9. Competitiveness and industrial development (all sectors)
Increased small and medium enterprises (SMEs) in the market
Improved integration / connectivity of systems
Supply chain development
Maturation of market structures
Increased technology adoption
Expanded access to capital
Reduced operating costs (e.g., energy)
Increased affordability of low-carbon technologies
Increased / diversified product offerings
Reduced trade imbalance
More projects / products meeting international standards
Improved legal / regulatory framework, capacity, governance
10. Energy sector security and resilience
Increased market entrants
Increased local energy generation
Reduced transmission / distribution line losses
Diversification of energy sources
Increased sector integration
Increased financial stability
Reduced fuel imports
Increased regulatory / governance capacity
Improved planning for shocks and stresses
11. Inclusiveness and justice
Inclusiveness and energy justice
Inclusive business models (e.g., women, others)
Inclusive regulation (e.g., women, others)

Methodology: Comparative Analysis of 14 Models, and Testing of 4 Models in Case Studies

	Air quality and health benefits	Economic outputs of energy investments	Agricultural yields & resilience (1)	Agricultural yields & resilience (2)
Development impact indicators	1) Avoided deaths from pollution 2) Economic value of avoided deaths	Economic outputs from 1) increased electricity 2) increased labor productivity 3) health benefits	Change in farmer revenues due to coastal investments	Pollinator abundance and crop yields
Models tested	LEAP-IBC	CGE, Joint Impact	AquaCrop	InVEST
Model type	Scenario-based	General equilibrium, input-output	Crop growth	Biophysical
Case study	Thailand wind power	Indonesia geothermal	Bangladesh coastal agriculture	Brazil sustainable agriculture

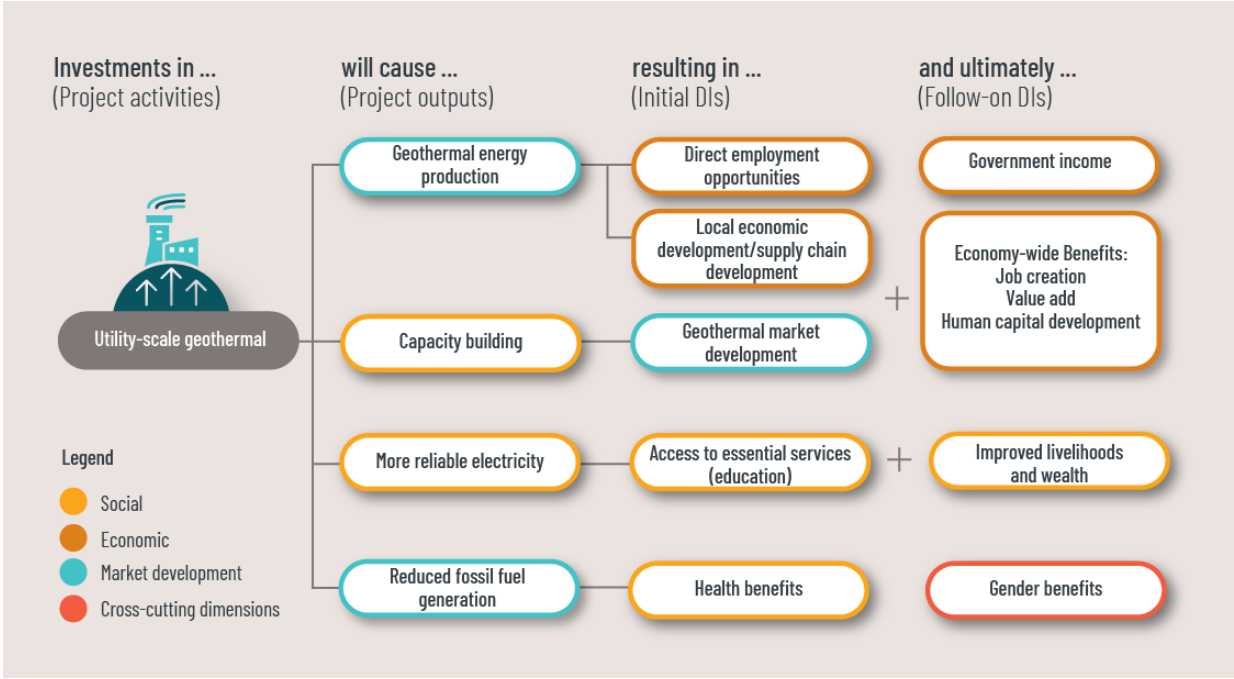
Methodology: Case Studies

CASE STUDY DETAILS							DI CASE STUDY COVERAGE					
No.	COUNTRY	CIF PROGRAM	MDB PARTNER	CASE STUDY TYPE	SECTOR	INVESTMENT IN	SOCIAL	ECONOMIC	ENVIRONMENTAL	MARKET DEVELOPMENT	CROSS-CUTTING—GENDER	CROSS-CUTTING—CAPACITY
1	Bangladesh	SREP	World Bank	Light-Touch	Renewable Energy	Rooftop solar for factories	♦●	♦	●	♦		
2	Bangladesh	PPCR	World Bank	Deep-Dive	Agriculture	Coastal embankment improvements	♦●	♦●	♦●	●		●
3	Brazil	FIP	World Bank	Deep-Dive	Agriculture	Low-carbon / sustainable agriculture	●	♦	♦	♦	♦	
4	Brazil	FIP	Inter-American Development Bank (IDB)	Light-Touch	Forestry	Macaúba value chain development	●	♦	●	♦		
5	India	CTF	Asian Development Bank (ADB), World Bank	Light-Touch	Renewable Energy	Utility-scale and rooftop solar and transmission	♦	♦●	♦	♦	●	
6	Indonesia	CTF	ADB, World Bank	Deep-Dive	Renewable Energy	Upstream and downstream support for geothermal	♦●	♦●	●	●	♦	●
7	Indonesia	FIP	ADB, World Bank	Light-Touch	Forestry	Sustainable forest management	♦	●	●	♦	●	
8	Kenya	SREP	World Bank	Light-Touch	Renewable Energy	Mini-grid electrification in rural areas	♦	♦	♦			
9	Morocco	CTF	African Development Bank (AfDB), World Bank	Light-Touch	Renewable Energy	Utility-scale concentrated solar power plant	♦●	♦		♦		
10	Nepal	SREP	World Bank	Deep-Dive	Renewable Energy	Expansion of off-grid biogas	♦●	♦	●	♦	●	♦
11	Niger	PPCR	World Bank	Light-Touch	Agriculture	Climate resilience interventions	♦	●	♦		●	
12	Thailand	CTF	ADB	Deep-Dive	Renewable Energy	Utility-scale wind power generation	♦●	♦●	♦	♦●		●
13	Türkiye	CTF	World Bank	Light-Touch	Renewable Energy & Energy Efficiency	Small-scale renewables and energy efficiency	●	♦●	♦	♦●		

Legend: ♦ At least 1 DI in this category quantitatively assessed ● At least 1 DI in this category qualitatively assessed

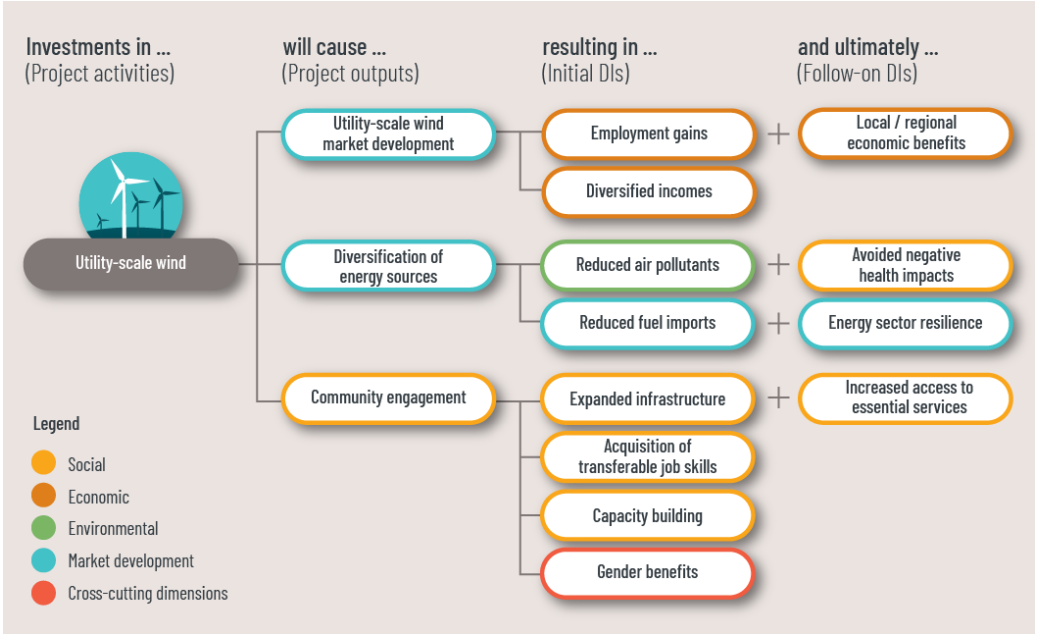
Results: Geothermal in Indonesia

- **Market development:** North Sulawesi exceeded Indonesia's national target of 23% renewable energy capacity nationwide by 2025. The project also significantly reduced systemic power shortages and blackouts.
- **Job creation:** Created or will create an estimated 4,350 long-term jobs, and indirectly support more than 27,000 jobs.
- **Economy-wide impacts:** $107 million per year
- **Education and human capital:** Expanded access to electrification, and more reliable electricity, facilitates increased access to education, and increased human capital valued at $27 billion.
- **Health benefits:** Reducing reliance on fossil fuels for electricity generation, including diesel generators for backup power, produces health benefits of over $2 billion.

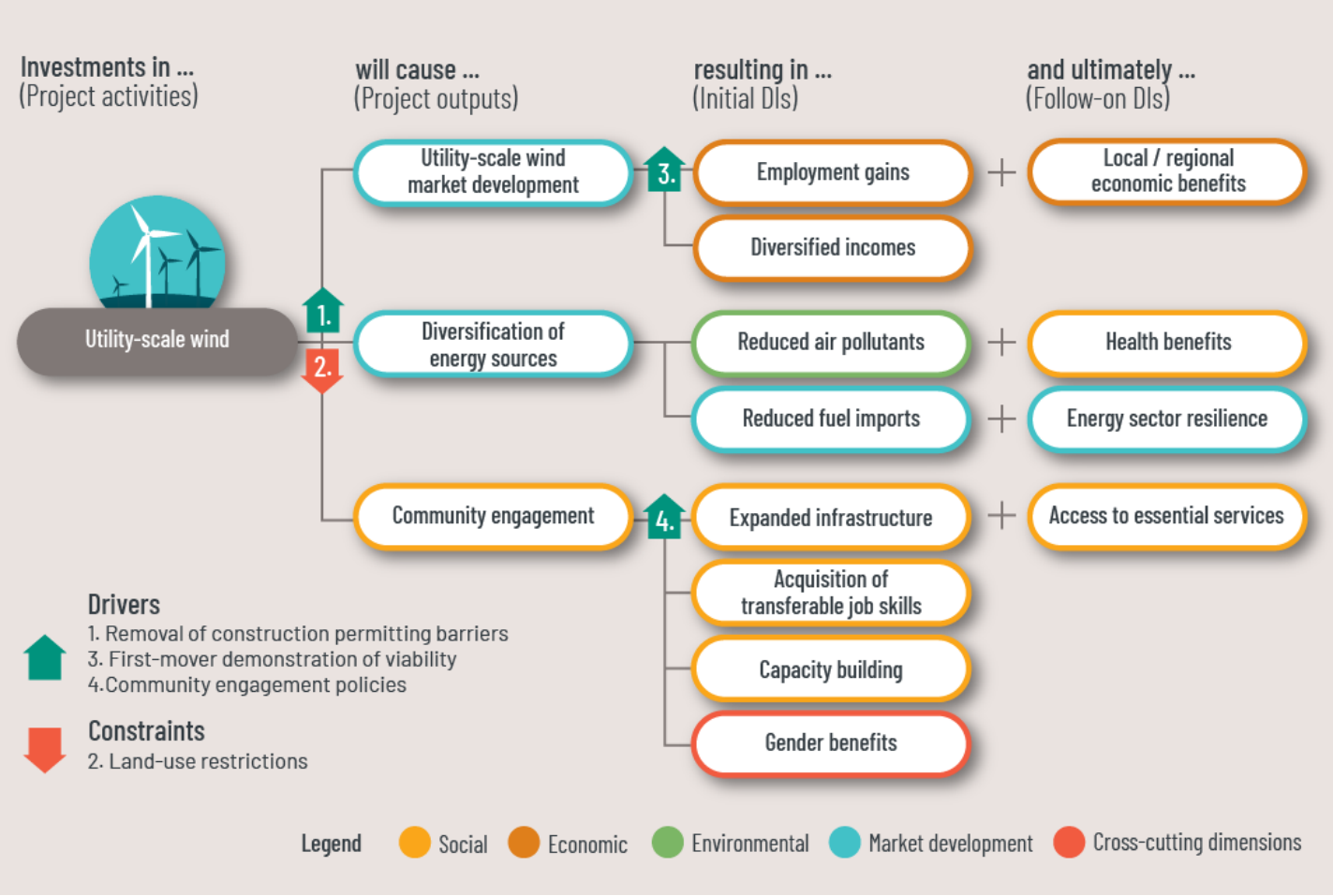


Results: Utility-Scale Wind in Thailand

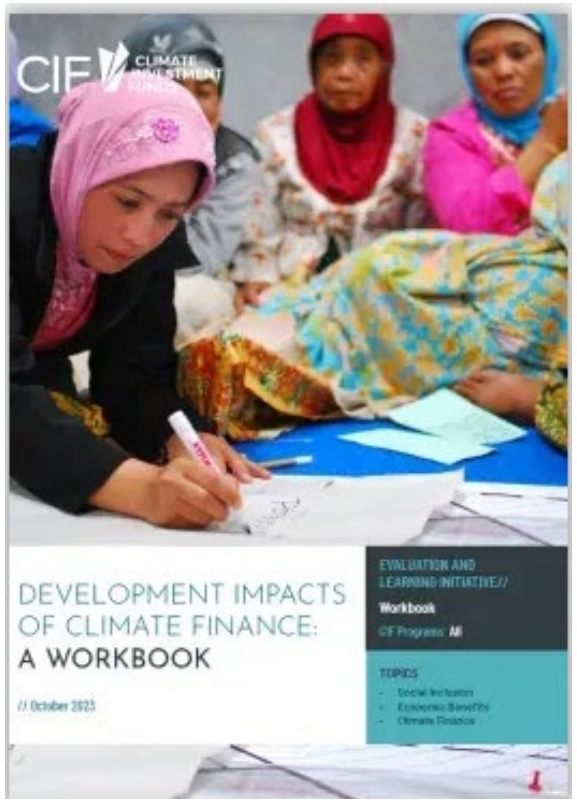
- **Market development:** Installed wind power capacity increased from less than 10 MW in 2008 to 1,510 MW in 2020
- **Jobs:** 669 construction jobs and 38 permanent positions.
- **Income diversification:** Local farmers leased land to the plants, earning higher rents than the expected returns for farming cassava.
- **Health benefits from reduced air pollution:** Expansion of renewable wind energy displaces the emission of air pollutants from natural gas and coal. The health benefit of the Theppana and Subyai facilities alone is ~$1.5 million.

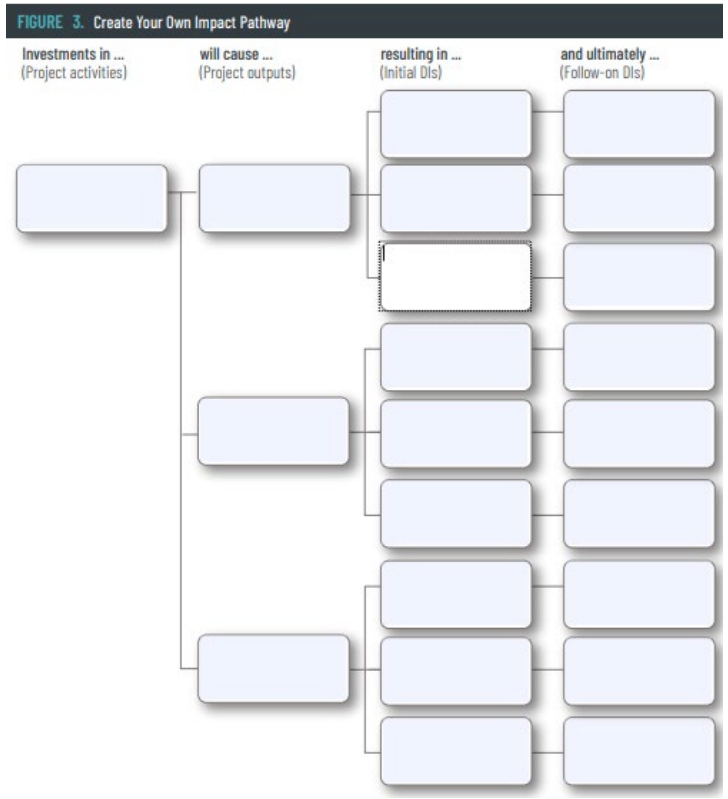


Results: DI Drivers and Constraints



Putting Knowledge Into Action: Design for DIs





Other Resources

Thank you!

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