# CARBON FINANCE

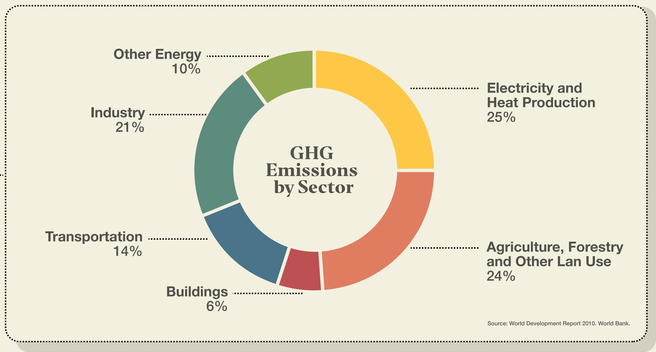
## FOR CLIMATE MITIGATION AND SUSTAINABLE DEVELOPMENT

IEG Independent Evaluation Group | WORLD BANK GROUP World Bank • IFC • MIGA

## EXPLOITING SYNERGIES

The Clean Development Mechanism (CDM) was launched with the dual objective of reducing the cost of climate change mitigation and contributing to sustainable development in host countries. The greenhouse gas (GHG) emission reductions in the different sectors can produce significant additional development outcomes.

**CLIMATE CHANGE COULD FORCE MORE THAN 100 MILLION PEOPLE INTO POVERTY BY 2030.**




Source: World Development Report 2010. World Bank.

## REDUCING THE GHG EMISSIONS IN ALL THE KEY SECTORS could CONTRIBUTE to TACKLING PRESSING ENVIRONMENTAL PROBLEMS

- AIR POLLUTION
- WATER POLLUTION
- OCEAN POLLUTION
- LOSS OF BIODIVERSITY
- DEFORESTATION
- LAND DEGRADATION
- WASTE ACCUMULATION

## THE ENVIRONMENTAL CO-BENEFITS ARE RELEVANT FOR CLIMATE ADAPTATION AND RESILIENCE

The synergies between climate mitigation and sustainable development can create incentives for stronger climate mitigation.

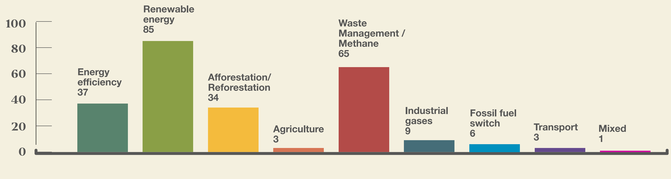
- GHG Emission Reduction
- Clean Water and Improved Waste Management
- Reduced Air Pollution
- Clean and Affordable Energy
- Sustainable Agriculture
- Protection of Forests and Biodiversity

**GLOBALLY AND LOCALLY SUSTAINABLE DEVELOPMENT**

The World Bank Group experience shows that Carbon Markets developed through using Carbon Finance instruments can be leveraged to produce development and environmental co-benefits.

## HOW CAN CARBON MARKETS PRODUCE CO-BENEFITS?

### WORLD BANK GROUP CARBON MARKET ACTIVITIES (2000-2017)




The Sustainable Development benefits from Carbon Market development are not automatic. When projects are designed to generate multiple wins, Carbon Markets can provide opportunities to strengthen synergies between mitigation and other development and environmental objectives.

These include greater access to clean and affordable energy, reduced pollution and improved health.

Revitalizing Carbon Markets can therefore help reduce mitigation costs and raise ambition for climate mitigation, as well as help developing countries in their aspirations for sustainable development.

# CARBON FINANCE

## FOR GENERATING LOCAL CO-BENEFITS – WHAT DOES THE EVIDENCE SHOW?

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## WHAT ARE CO-BENEFITS FROM CARBON FINANCE?

The co-benefits from Carbon Finance include the additional benefits beyond climate change mitigation in terms of improvements in public health, education, energy security, income, and environmental sustainability that contribute to sustainable development in host countries.

**THE CO-BENEFITS LINKED TO THE CLEAN DEVELOPMENT MECHANISM (CDM) PROJECTS MAY INCLUDE**

**01** enhanced local infrastructure (e.g., roads, health clinics, schools, water);

**02** access to cleaner and affordable energy;

**03** improved income and employment; and

**04** improved natural resource and environmental services (e.g., reduced pollution, natural resource conservation, forest protection, biodiversity).

# IEG'S EVALUATION

## CARBON MARKETS FOR GREENHOUSE GAS EMISSION REDUCTION IN A WARMING WORLD

The World Bank Group conceptualized carbon funds to experiment, pioneer and demonstrate a "proof of concept" for a carbon market as an instrument for low-cost climate change mitigation, and as a global public good in support of development goals.

The World Bank Group has played multiple roles and functions in carbon finance which included catalyzing and developing carbon markets; innovating and developing new tools and methodologies; building capacity; and exercising thought leadership and convening partnerships for carbon markets and carbon pricing.

**This evaluation focused on answering the following overarching question:**

What has been the strategic objective, nature of engagement and contribution of the World Bank Group in supporting Carbon Finance? And going forward, what lessons can be drawn from this to inform the World Bank Group's strategic direction in supporting the next generation of market-based carbon mitigation activities given its potential comparative advantage?

**DOWNLOAD THE EVALUATION**

**ieg.worldbankgroup.org/evaluations/carbon-finance**

## WHAT DOES THE EVIDENCE SAY?

An IEG global review of the Clean Development Mechanism (CDM) projects in producing local co-benefits shows an uneven situation[1].

**INDUSTRIAL GAS** projects provided few tangible development or co-benefits for local communities and did not have significant employment effects.

**LANDFILL GAS** projects contribute to improved sanitation and water quality, but also often generated opposition from local communities related to pollution concerns.

**LARGE HYDROPOWER** projects are criticized for bringing negative social and environmental effects to local communities due to displacement effects.

**SMALL AND MEDIUM HYDROPOWER** projects had high possibilities of delivering energy access and improved air quality, while having lower undesirable environmental and social impacts.

**WIND POWER AND SOLAR POWER** projects. Have high potential, but the limited field studies found both low and high co-benefits.

**ENERGY EFFICIENCY** projects such as improved cookstoves and efficient lighting were seen as delivering local benefits but face high transaction costs.

**BIOMASS ENERGY** projects had moderate performance on local air quality and good performance on local employment generation.

**AFFORESTATION/REFORESTATION** projects produced significant local co-benefits.

Projects with **THIRD-PARTY QUALITY LABELLING** were more likely to deliver co-benefits.

[1] The structured literature review (SLR) conducted in 2017 included 82 peer-reviewed papers and studies published during 2007 and 2015.

## WHAT WORKS TO MAXIMIZE LOCAL CO-BENEFITS?

The evidence from the World Bank Group CDM projects provides more useful insights.

Local co-benefits were more likely when local stakeholders and communities were engaged in project development.

Facilities that emphasized local co-benefits (for example, the Community Development Carbon Fund, BioCarbon Fund, Ci-Dev) delivered tangible co-benefits to local communities.