



Food and Agriculture Organization  
of the United Nations

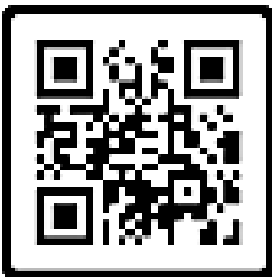


United Nations Climate Change  
Paris Committee on Capacity-building



# EX-ACT: Fostering Climate Action in Agriculture, Project by Project

**14 November 2022**  
**10:10 - 11:10**



- 📍 Sharm El Sheikh, Egypt
- 🏠 Capacity-building Hub
- 👤 UNFCCC
- 🗣️ English



[youtube.com/c/ParisCommitteeonCapacitybuilding](https://youtube.com/c/ParisCommitteeonCapacitybuilding)

---

# About us

OUR  
GOAL

WHAT  
WE DO

OUR  
REACH



---

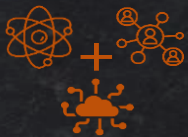
# Agriculture takes centre-stage in climate action/COP 27



**Far behind the race to 1.5°C**



**Agriculture sector could contribute up to 1/3<sup>rd</sup> of the emission reductions needed to limit global warming to 1.5 °C – 2.0 °C**



**Need of the hour? Bridge Science-Policy-Implementation**

**Economic and Policy Analysis of Climate Change (EPIC)  
EX-ACT Unit**

# **Capacity Building on EX-ACT v.8 and EX-ACT v.9**



**Food and Agriculture Organization  
of the United Nations**

---

## EX-ACT Suite of Tools



### EX-ACT

Ex-Ante  
Carbon-balance Tool




### EX-ACT VC

EX-ACT for  
Value Chains



### B-INTACT

Biodiversity Integrated  
Assessment and  
Computation Tool



## What is EX-ACT, exactly?

An Excel-based tool that **quantifies the amount of GHGs released or sequestered** from activities in the **agriculture\* sector**



Requires activity data on agricultural practices, resource use and land use change



Primarily based on IPCC guidelines for National GreenHouseGas Inventories (2019, 2014, 2006)

\* Agriculture, Forestry and Other Land Use (AFOLU), wetlands, fisheries and aquaculture, inputs and infrastructure.

Description:  
geographical  
features and  
duration of the  
project

Cropland:  
annuals and  
pluriannuals,  
perennials and  
agroforestry,  
flooded rice

Forest  
degradation  
levels and fire  
occurrence

Coastal  
wetlands and  
coastal  
waterbodies

Inputs, energy,  
irrigation and  
infrastructure

Description of  
project

Land-use  
changes

Cropland  
management

Grassland and  
Livestock

Forest  
management

Inland wetlands

Coastal wetlands

Fisheries and  
aquaculture

Inputs and  
Investments

Detailed  
results

Deforestation,  
Afforestation,  
Other Land Use  
Changes

Grassland  
degradation  
levels and  
livestock  
management

Inland  
wetlands and  
inland  
waterbodies

Small scale  
fisheries,  
large scale  
fisheries,  
and aquaculture

Results

---

## What does EX-ACT do?



**Measures carbon benefits or externalities of a proposed action**



**Identifies synergies and trade-offs and cost-efficient activities to create right incentives**



**Estimations, reporting, monitoring and evaluation**



# EX-ACT in practice



Measure carbon benefits or externalities of a proposed action

Forest and Land Rehabilitation Project in Timor-Leste  
targets to convert 2,475 hectares of annual cropland into forests



# EX-ACT in practice

Targets:  
2,475 hectares of  
annual cropland  
reforested

## 2.2 AFFORESTATION & REFORESTATION

If country-specific data are available, please go to Tier 2:

Tier 2

Final land-use	Fire used? (y/n)	Initial land-use	Initial agroforestry systems	Reforested area (ha)				Total emissions (tCO <sub>2</sub> -e)		Balance
				Without	*	With	*	Without	With	
Tropical rainforest	NO	Annual cropland	Please select	0	D	2 475	D	0	-485 234	-485 234 ▼
Please select	NO	Please select	Please select	0	D	0	D	0	0	0
Please select	NO	Please select	Please select	0	D	0	D	0	0	0
Please select	NO	Please select	Please select	0	D	0	D	0	0	0
Please select	NO	Please select	Please select	0	D	0	D	0	0	0
Please select	NO	Please select	Please select	0	D	0	D	0	0	0
Please select	NO	Please select	Please select	0	D	0	D	0	0	0
Please select	NO	Please select	Please select	0	D	0	D	0	0	0

Please go to section 3.1.1 in the Cropland Module to complete the assessment

Total af/re forestation (tCO<sub>2</sub>-e) 0 -485 234 -485 234 ▼

\*The selection of 'D' corresponds to a default (linear) dynamics of change. Other selection options include 'I' for immediate changes and 'E' for exponential - please refer to the guidelines for further explanation of these assumptions.

# EX-ACT in practice

Project name		Project duration (in years)		Total area (ha)		Global warming potential	
Continent	South-eastern Asia	Implementation	6	Mineral soil	25 233	CO <sub>2</sub>	1
Country	Timor-Leste	Capitalization	14	Organic soil	0	CH <sub>4</sub>	28
Climate	Tropical	Period analysis	20	Waterbodies	0	N <sub>2</sub> O	265
Moisture	Moist						

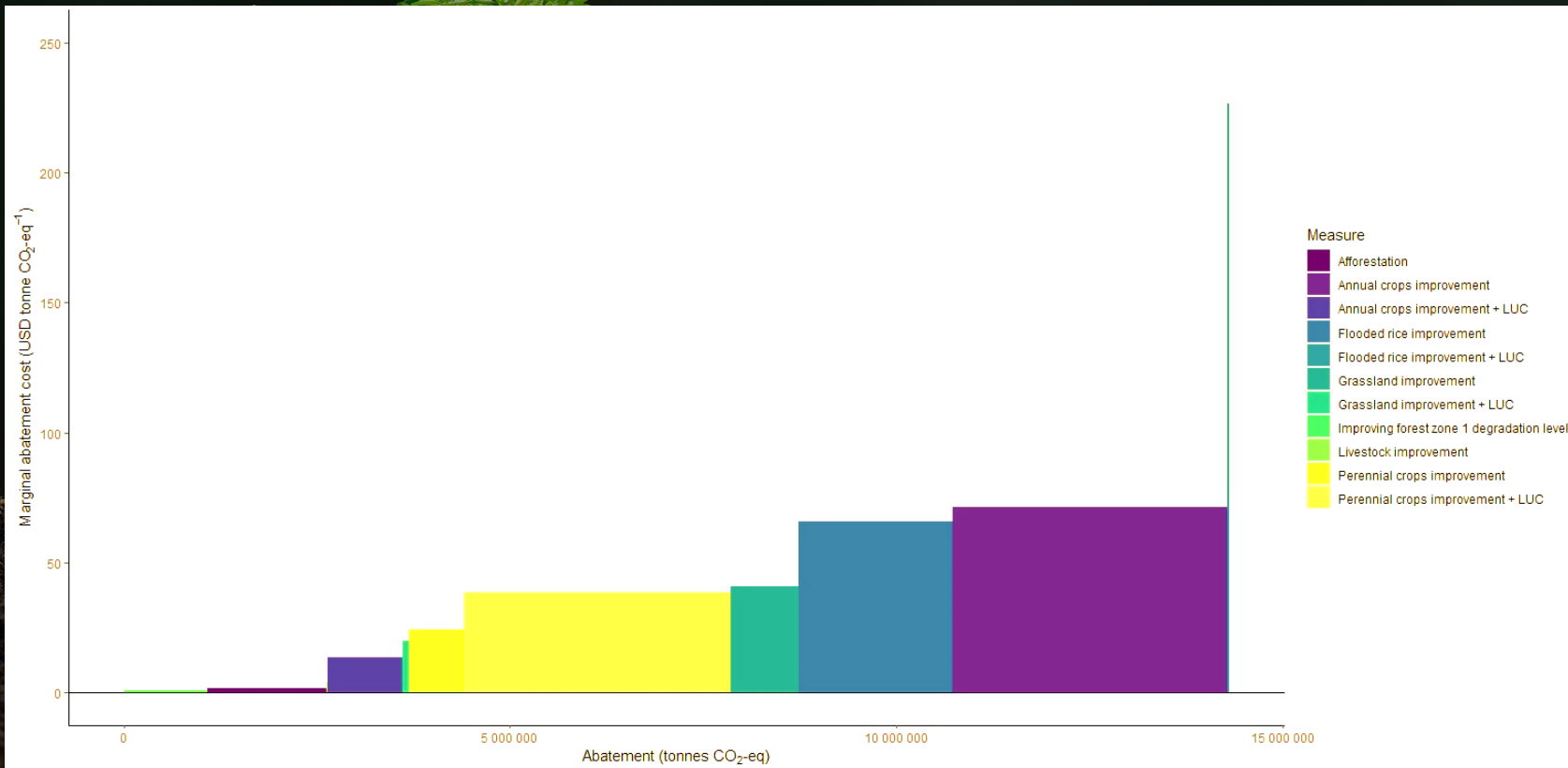
GROSS FLUXES				SHARE PER GHG OF THE BALANCE					AVERAGE ANNUAL EMISSIONS			
In tCO <sub>2</sub> -e over the whole period analysis				In tCO <sub>2</sub> -e over the whole period analysis					In tCO <sub>2</sub> -e/yr			
PROJECT COMPONENTS		WITHOUT	WITH	BALANCE	CO <sub>2</sub> BIOMASS	CO <sub>2</sub> SOIL	N <sub>2</sub> O	CH <sub>4</sub>	ALL NON-AFOLU EMISSIONS*	WITHOUT	WITH	BALANCE
Land use changes	Deforestation	0	0	0	0	0	0	0		0	0	0
	Afforestation	0	-485 234	-485 234	-432 781	-52 454	0	0		0	-24 262	-24 262
	Other land-use	0	0	0	0	0	0	0		0	0	0
Cropland	Annual	0	0	0	0	0	0	0		0	0	0
	Perennial	0	0	0	0	0	0	0		0	0	0
	Flooded rice	0	0	0	0	0	0	0		0	0	0
Grasslands & Livestock	Grasslands	0	-140 948	-140 948	0	-140 948	0	0		0	-7 047	-7 047
	Livestock	0	0	0	0	0	0	0		0	0	0
	Forest mngt.	0	-2 140 838	-2 140 838	-2 140 838	0	0	0		0	-107 042	-107 042
	Inland wetlands	0	0	0	0	0	0	0		0	0	0
	Coastal wetlands	0	0	0	0	0	0	0		0	0	0
	Fisheries and aquaculture	0	0	0	0	0	0	0	0	0	0	0
	Inputs & Invest.	0	0	0	0	0	0	0	0	0	0	0
<b>Total emissions, tCO<sub>2</sub>-e</b>		<b>0</b>	<b>-2 767 020</b>	<b>-2 767 020</b>	<b>-2 573 619</b>	<b>-193 402</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-138 351</b>	<b>-138 351</b>
<b>Total emissions, tCO<sub>2</sub>-e/ha</b>		<b>0.0</b>	<b>-109.7</b>	<b>-109.7</b>	<b>-102.0</b>	<b>-7.7</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-138 351</b>	<b>-138 351</b>
<b>Total emissions, tCO<sub>2</sub>-e/ha/yr</b>		<b>0.0</b>	<b>-5.5</b>	<b>-5.5</b>	<b>-5.1</b>	<b>-0.4</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>-138 351</b>	<b>-138 351</b>

# EX-ACT in practice



Identify synergies and trade-offs and cost-efficient activities create right incentives

An example of bottom-up context specific Marginal Abatement Cost Curves for AFOLU measures



---

## EX-ACT in practice



### Estimations, reporting, monitoring and evaluation

- ✓ **6 countries used EX-ACT tool to develop AFOLU sector scenarios to report in their NDCs**
- ✓ **World Bank, IFAD, UDB are some of the main financial institutions which adopted EX-ACT as the main tool to mainstream GHG accounting of their investment portfolios in AFOLU**
- ✓ **Green Climate Fund (GCF) and Green Environment Facility (GEF)**



# We Support Action for Climate Empowerment



Education and  
Free access to information



Training and Public Awareness



Participation and Cooperation

---

# We engage in Capacity Building and Capacity *Bridging*



# Capacity Building

## Institutional



- ✓ Support vision and strategy to monitor the impacts of investments and policies in agriculture on GHG emissions
- ✓ Capacitating individuals under different work streams to use EX-ACT tool, build realistic scenarios and perform robust assessments
- ✓ Technical backstopping to mainstream GHG accounting in agricultural investments



# Capacity Building

## Organizational



- ✓ Develop organizational capacity to integrate carbon footprint as one of the SDG consideration into UDB's due diligence and Monitoring and Evaluation (M&E) processes
- ✓ Train UDB staff to incorporate EX-ACT (along with GLEAM-i) in verification of applications and validation of funding proposals
- ✓ Exploring preferential interest rate schemes for investment projects with better GHG outcomes to spur "Green Investments"

# Capacity Bridging

## Individual



**Empowering farmers and producer organizations associated with Forest and Farm Facility (FFF) to**

- ✓ **Demonstrate environmental benefits they generate through adoption of climate friendly activities**
- ✓ **Leverage evidence to have a stronger voice in climate action and decision-making**
- ✓ **Gain visibility and eventual access to finance in the sector**



---

## We see opportunities

- **More ambition in NDC commitments**
- **Zero-deforestation commitments**
- **Private sector Zero-Carbon initiatives**
- **Carbon Market Enthusiasm**



---

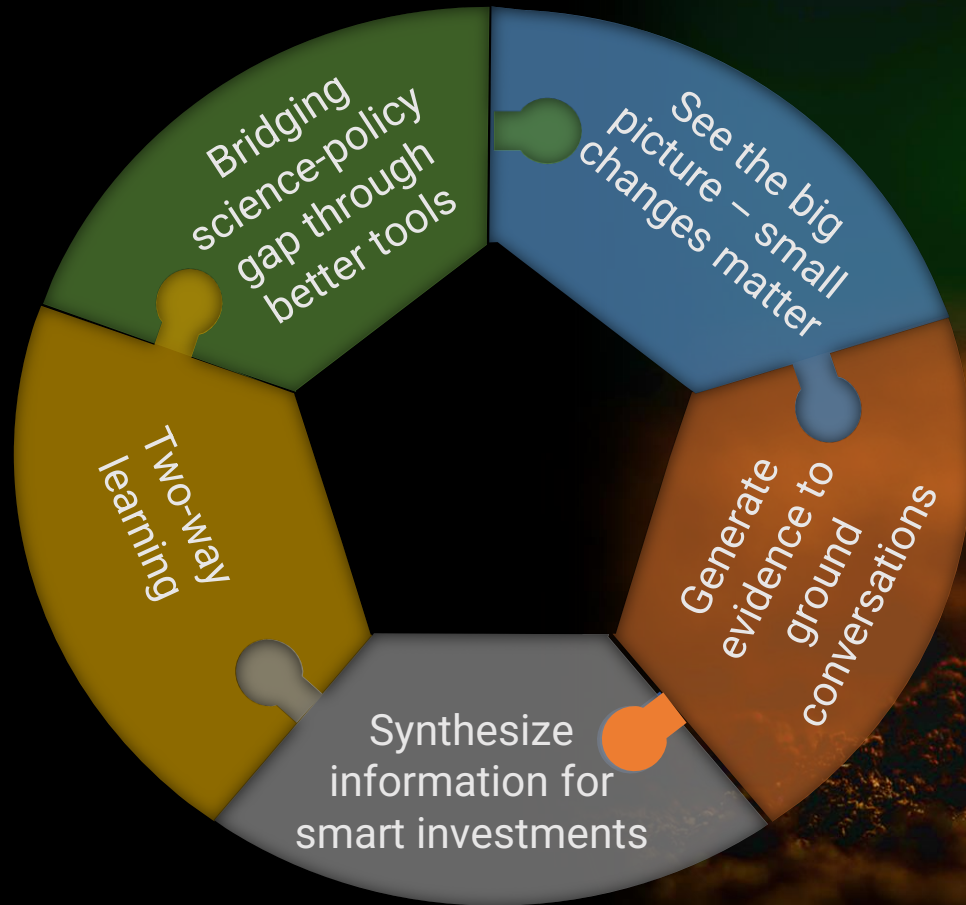
## We acknowledge challenges

- **Technical & Technological**
- **Financial**
- **Knowledge and capacity bridging**



---

# #Inspiremoreclimateaction



# THANK YOU



Scan QR code  
to EX-ACT website



**EX-ACT@FAO.ORG**

**<https://www.fao.org/in-action/epic/ex-act-tool/overview/en/>**