

**Title: Generating Marginal Abatement Cost (MAC) Curves for the AFOLU sector using project level data**

**Level:** MSc

**Project start date:**

*Flexible, ideally Feb/March 2023*

**Host organisation and location:**

Food and Agriculture Organization of the United Nations

**Supervisor at host organisation:**

Joanna Ilicic

**Email address supervisor host organisation:**

[joanna.ilicic@fao.org](mailto:joanna.ilicic@fao.org)

**Supervisor or contact point at Science, Management and Innovation:**

Birka Wicke

**Email address supervisor:**

[Birka.Wicke@ru.nl](mailto:Birka.Wicke@ru.nl)

**Problem description:**

Reducing carbon emissions from Agriculture, Forestry and Other Land-Use (AFOLU) sector in a cost-efficient way is a major challenge for policy makers. Marginal abatement cost (MAC) curves are used in this context to illustrate the economics of climate action and contribute to decision making in climate policy. A variety of approaches (e.g., Integrated Assessment Models (IAMs), bottom-up engineering approaches) are used to generate MAC curves with different strengths and shortcomings.

**Goal of research project:**

The Ex-Ante Carbon-balance Tool (EX-ACT), a simple excel based tool developed at FAO enables users to measure greenhouse gas emissions from AFOLU activities and investments in a consistent and robust way. EX-ACT tool is used by World Bank, IFAD, and other financial institutions to analyze impact of their AFOLU investments and projects. EX-ACT tool and related project assessments from these institutions provide a unique entry-point to generate MAC curves in the AFOLU sector, as they provide field level data on marginal costs including transaction costs, marginal benefits, and estimated emissions from different activities in the AFOLU sector.

We are looking for an enthusiastic student who is interested in generating MAC curves using project level economic and financial data and emissions data as estimated by EX-ACT.

**Tasks:**

1. Collect and compile relevant data from selected EX-ACT analyses and their associated project documents.

2. Collect and compile missing data where needed to complete the generation of MAC curves.

**Requirements:**

Understanding or the willingness to understand the issues surrounding cost-efficient mitigation pathways in AFOLU sector and MAC curves.

Quantitative analytical skills (incl. Excel and some basic knowledge of STATA, R, or others)