The CCAFS-Mitigation Option Tool (CCAFS-MOT) – a demo tool

The CCAFS Mitigation Options Tool (CCAFS-MOT) is an Excel-based tool that brings together several empirical models to estimate greenhouse gas emissions (GHG) in rice, cropland and livestock systems and to provide information about the most effective mitigation options. This tool allows for management-relevant GHG assessments to be made with relatively little effort.

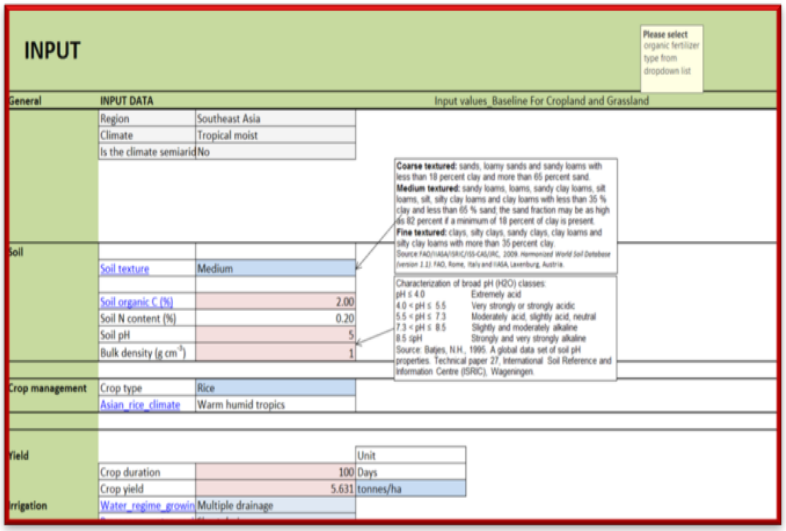
Emissions estimates are in terms of total GHG emitted in kilograms of carbon dioxide equivalent per hectare (kg CO_2eq ha^{-1}) and in terms of GHG intensity, i.e., kg of carbon dioxide equivalent per unit of product (kg CO_2eq kg^{-1}). Users choose management practices. The aim of the tool is to accommodate a range of users from an introductory to advanced level, depending on objectives and issues like time, existing knowledge, or data available.

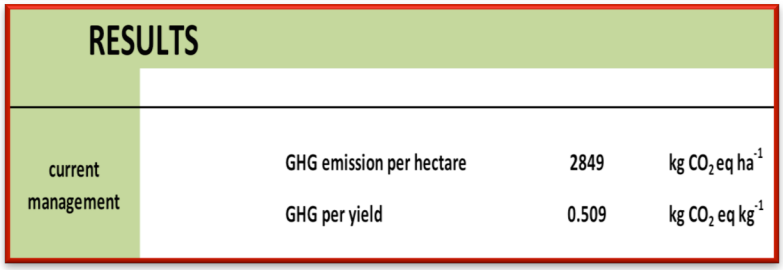
Mitigation options are estimated and ranked according to mitigation potential.

Example: Rice production in Indonesia

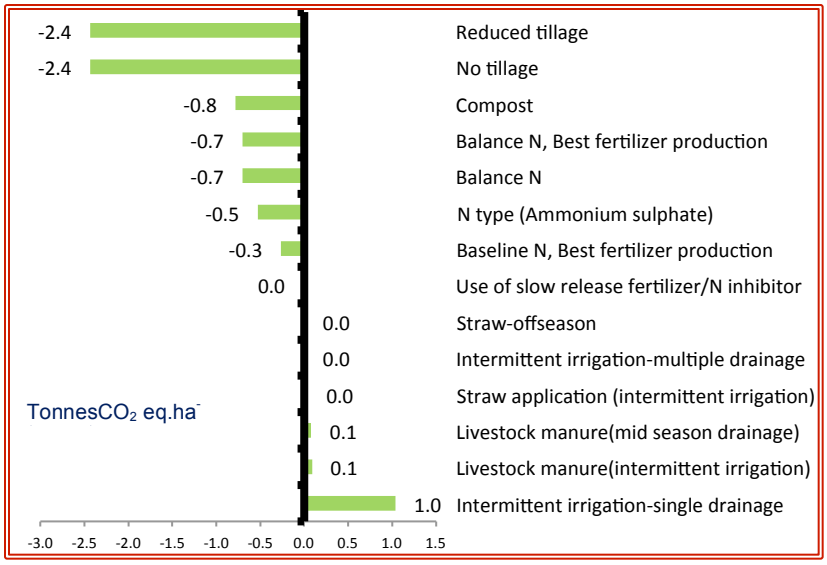
Country	Indonesia
Climate	Tropical moist
Asian rice climate	Warm humid tropics
Soil texture	Medium
SOC	2
Soil pH	5
Bulk density	1
Crop duration	100 days
Yield	5136 kg.ha^{-1}
Water regime	Multiple drainage
Pre-season water regime	Short-drainage
Fertilisers	Ammonium nitrate – 69 kg; Triple super phosphate – 100 kg; Potassium sulphate - 48 kg; Urea – 351 kg.
Application method	Broadcast
Crop residue	Not incorporated
Tillage	Conventional tillage
Cover crop	Not added
Compost	Incorporated (300 kg)
Manure	Incorporated (150 kg)

Users insert values in pink worksheet cells and management practices in blue worksheet cells. Supplementary information is provided.





MITIGATION OPTIONS



In the example shown, one hectare of rice in Indonesia with the specified management practices emits 2849 kg CO_2 eq. (0.509 kg CO_2eq per kg of rice). The most effective mitigation options are reduced tillage and no tillage.

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