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Development of carbon-offset methodologies based on sustainable land use practices – results from the CaLas project

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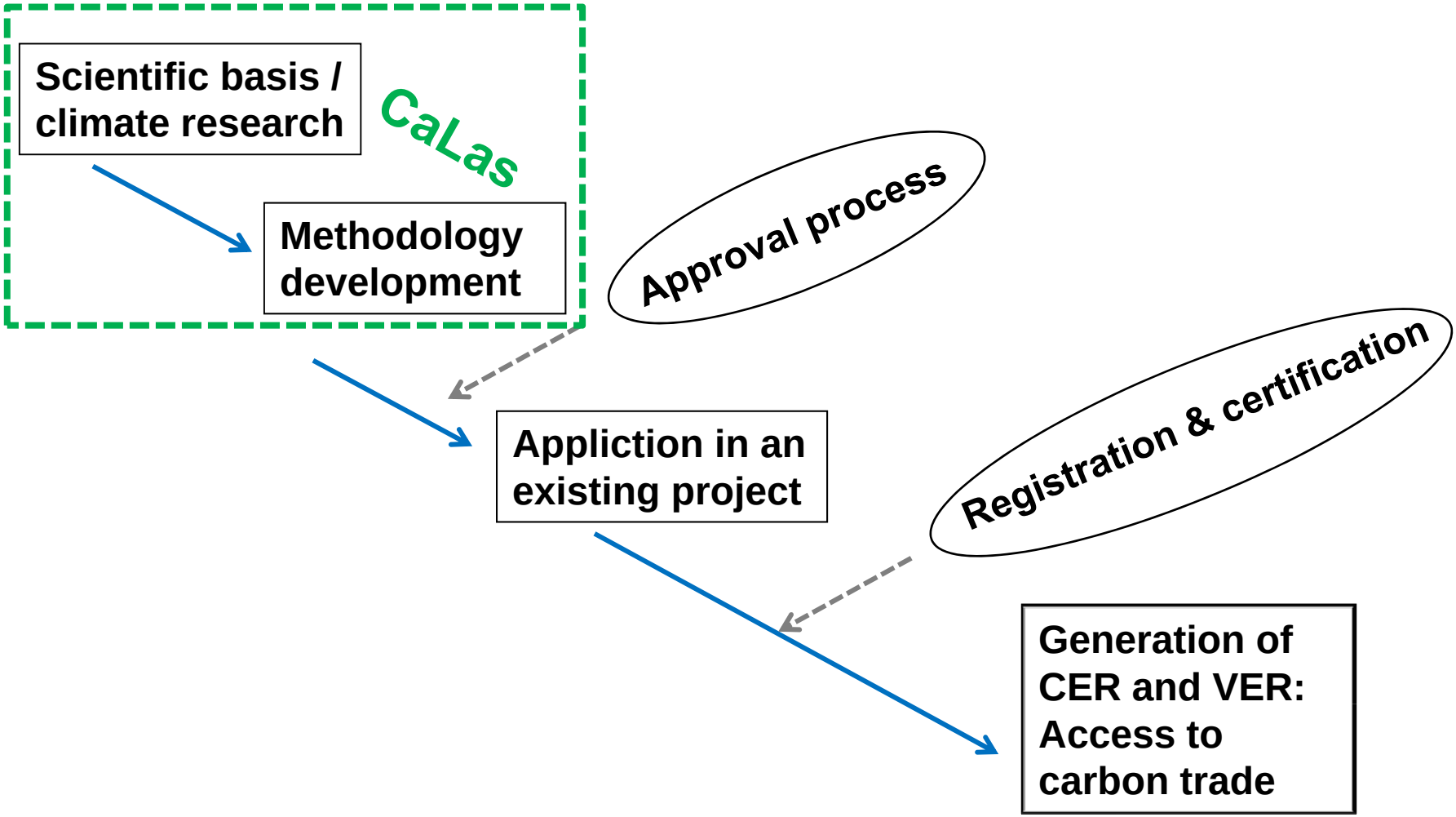
Organic Agriculture and Carbon Offset:
From Research to Carbon Trade



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- Goal: provide premium carbon credits
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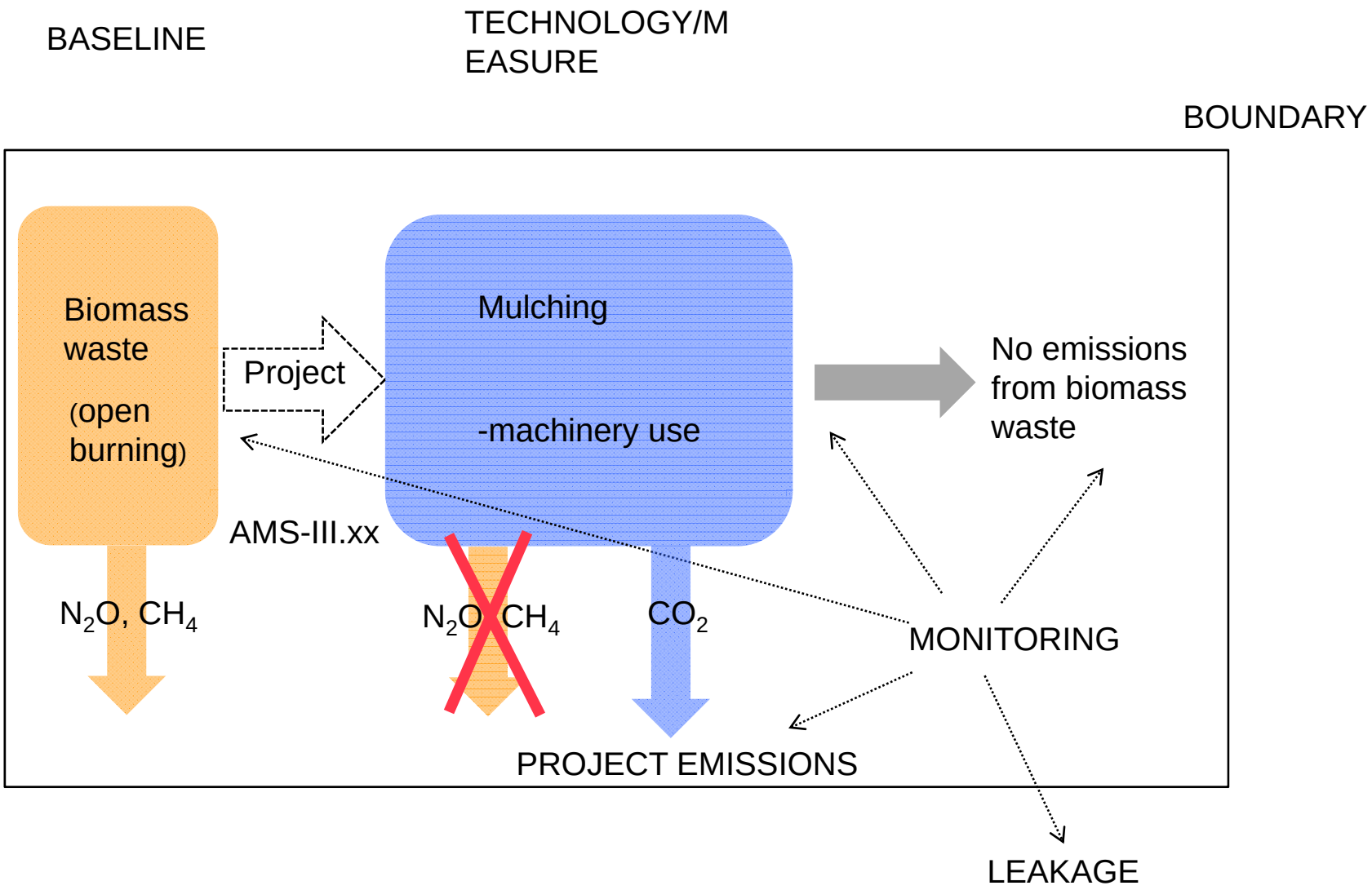
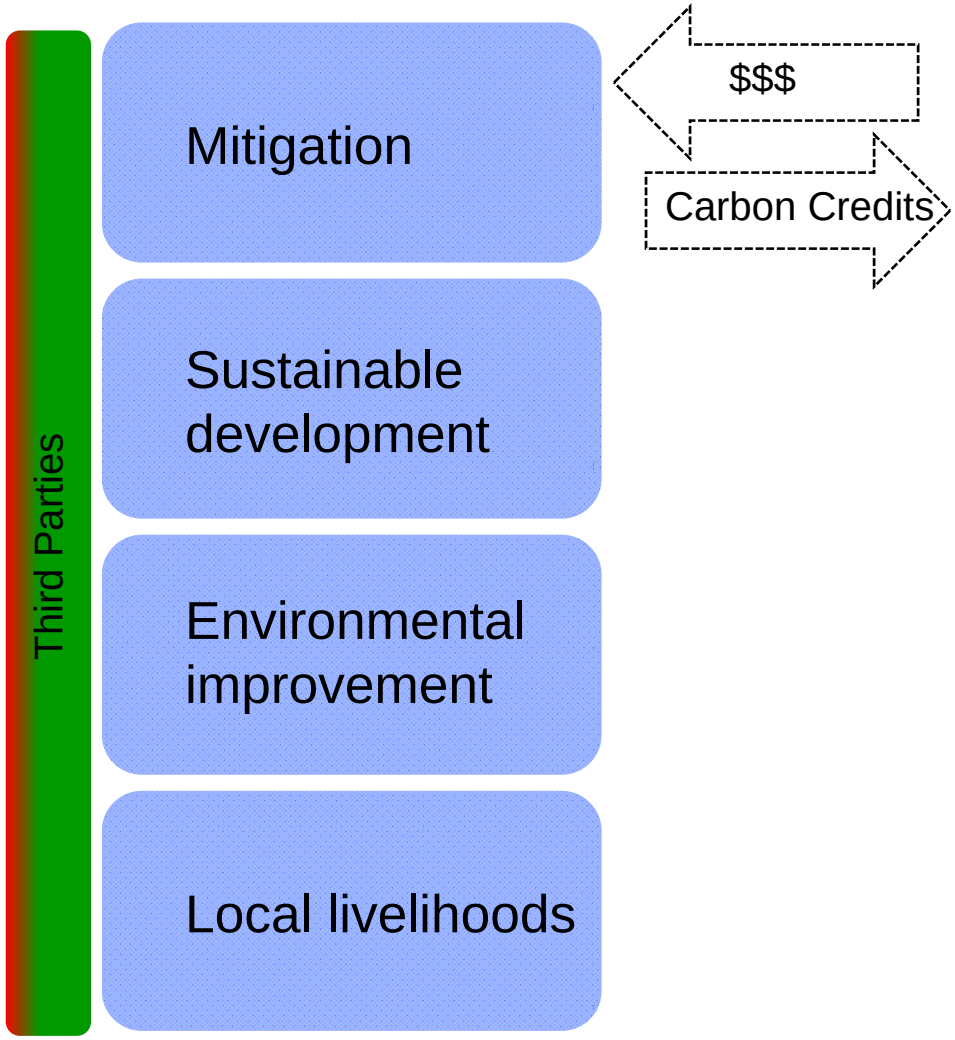
- What next?

Key messages

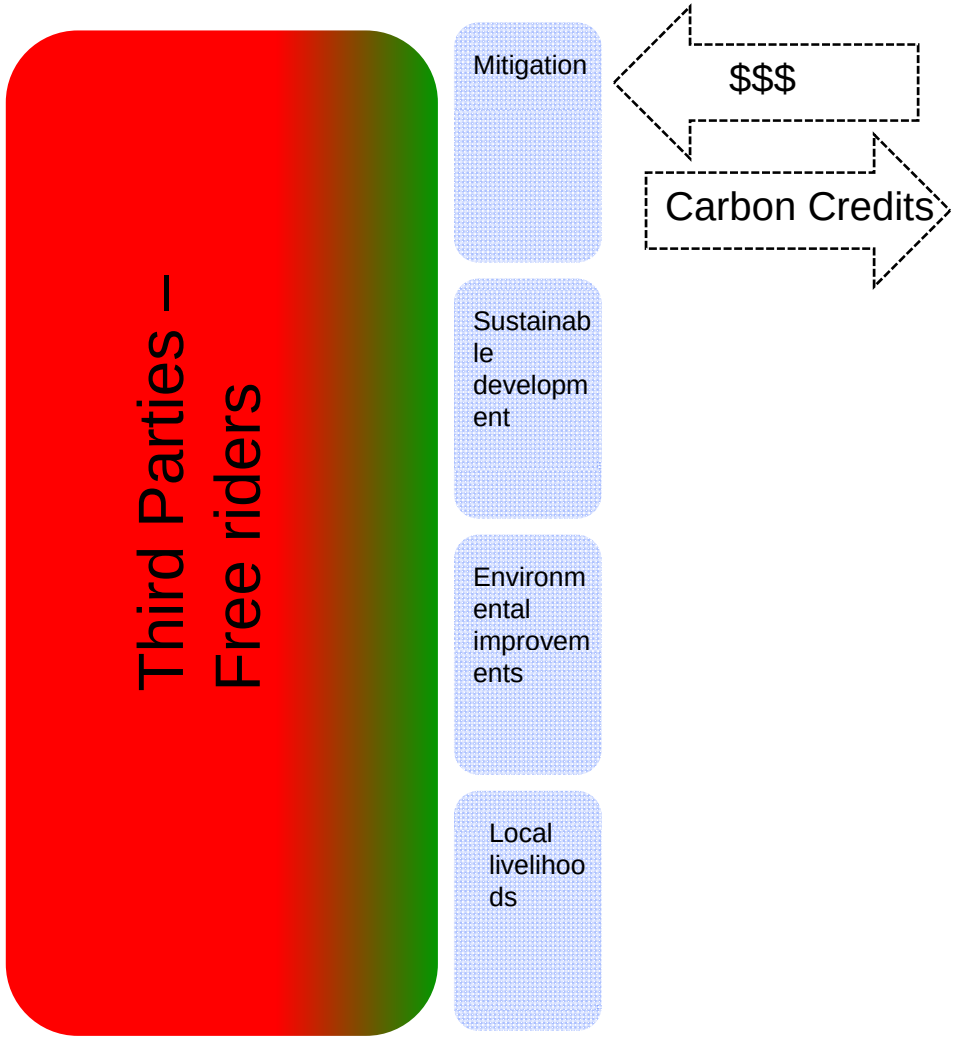
- Organic certification allows to reduce monitoring requirements
- Standardised approaches, nutrient recycling in organic agriculture contexts and micro-projects go well together
- The reliability of the quantification of emissions remains a challenge
- Optimal climate policy for agriculture – project based or not?
- More experience in concrete projects needed


BASELINE
TECHNOLOGY/M
EASURE
BOUNDARY
Biomass
waste
(open
burning)
Project
Mulching
-machinery use
No emissions
from biomass
waste
AMS-III.xx
N_2O, CH_4
N_2O CH_4
CO_2
MONITORING
PROJECT EMISSIONS
LEAKAGE

Goal: Providing premium carbon credits

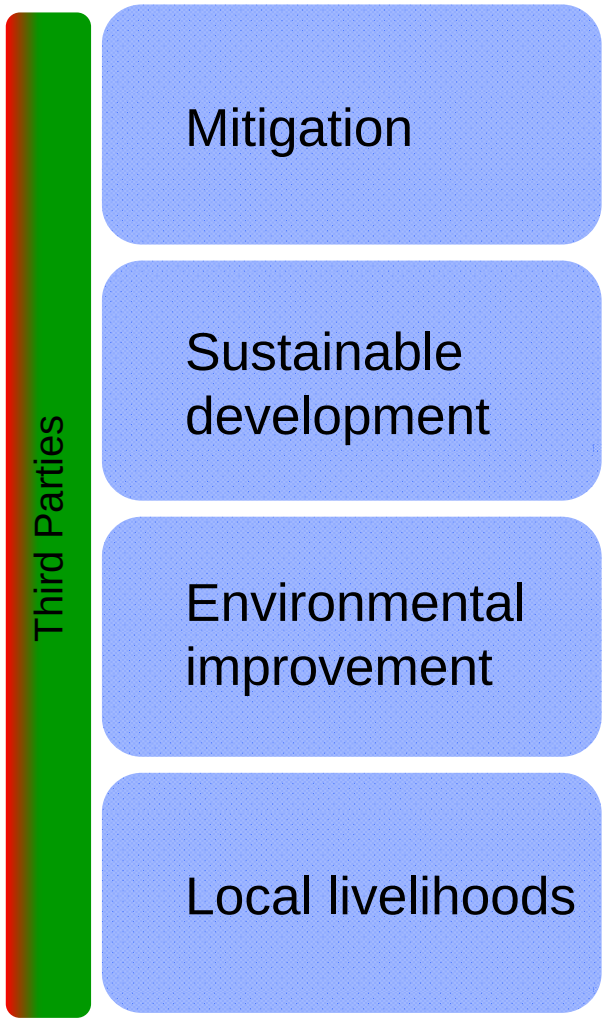


Goal: Providing premium carbon credits



Strong criticism of carbon credits!

Goal: Providing premium carbon credits



Affordable quantification is a challenge

Organic agriculture delivers this without problems

Big potential, implementation possible

Which project types - options in agriculture

- Typical practices in organic agriculture
  - Fertilizer replacement
  - Composting
  - Legumes
  - Avoided biomass burning
  - Increase soil organic matter (-> soil carbon sequestration)

- Optimal agricultural waste management
  - Methane recovery from biomass waste/manure (biogas/electricity)

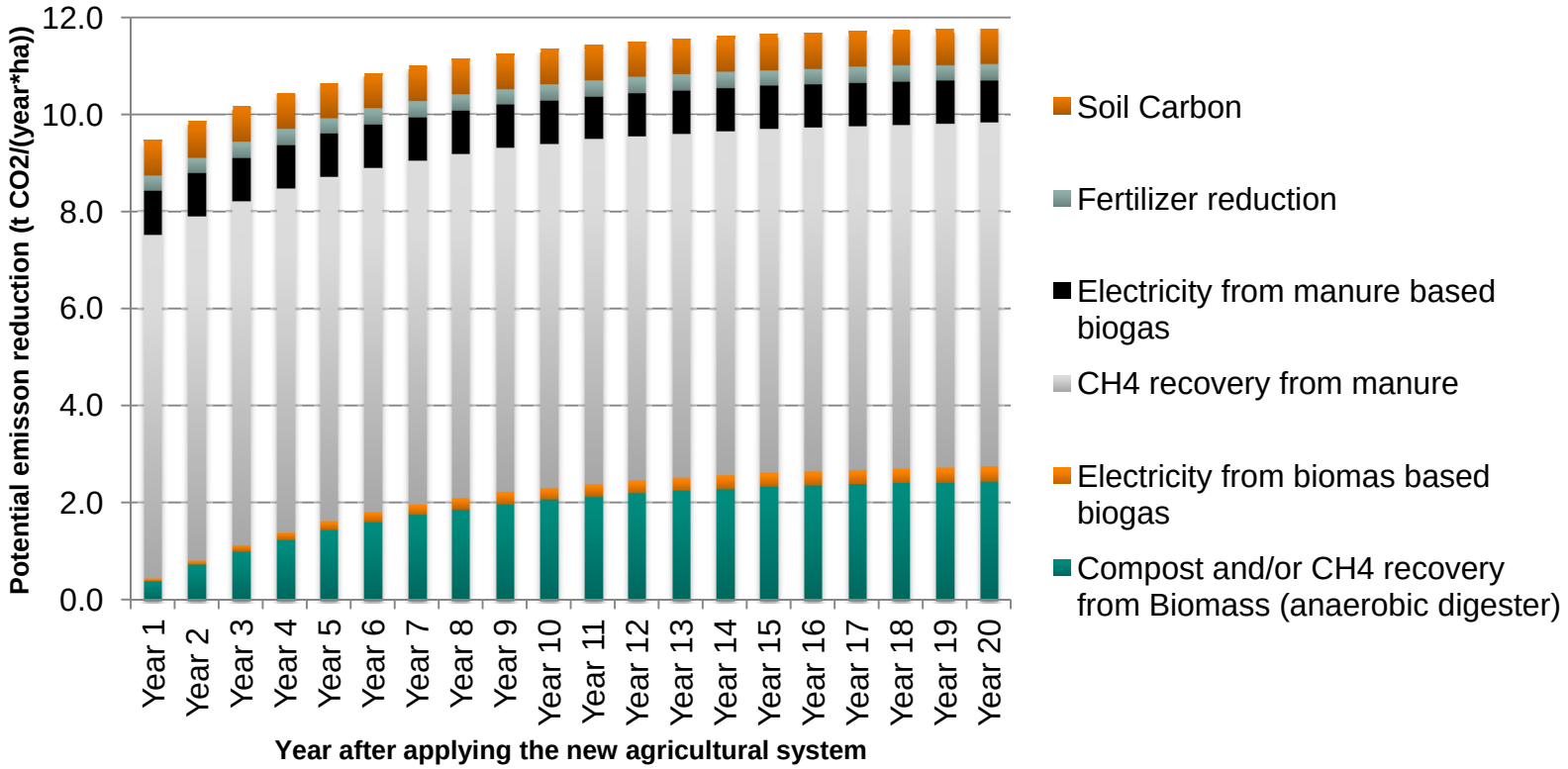
- Further sustainable options
  - Agroforestry
  - Peatland restoration
  - Dry rice production
  - Replacement of peat as planting substrate

  - Energy efficient processing (wine, cheese)

Combination of methodologies in the context of organic farming – assessment from project phase I

Estimation based on an optimised crop rotation including optimized manure handling

(business potential: low < 5 $tCO_2e/ha*y$, medium: 5-10, high: >10)



(very rough and preliminary numbers!!!)

High standards for quantification vs. simplicity in application

- AMS-III.A: Offsetting of synthetic nitrogen fertilizers by inoculant application in legumes-grass rotations on acidic soils on existing cropland
  - prescribed crop rotation
  - data collection
- AMS-III.AU: Methane emission reduction by adjusted water management practice in rice
  - Monitoring will be a challenge (viable for large-scale only)

CaLas: New and revised methodologies

- AMS-III.xx (new methodology): Avoidance of Methane and Nitrous Oxide Emissions through Mulching
  - No fuel use of the biomass in the baseline
  - Organic certificate for monitoring of areas, avoidance of open burning, mulching (alternatives: sampling, satellite data,…)
  - Default values for fuel use
  - Micro-scale (<20'000 t CO2eq,…): no barrier analysis needed
  - Example PDD: Sugar cane in Mexico

- AMS-III.F (revised methodology): Avoidance of methane and nitrous oxide emissions through composting
  - Organic certificate for monitoring of avoidance of open burning

Strengths

- Establishes organic certification as a monitoring standard accepted by the UNFCCC (-> thus also accepted in the voluntary carbon market):
  - utilize synergies with a well-established monitoring system for the carbon-monitoring
- Includes avoided biomass burning to the possible baselines of the CDM (thus also for the voluntary market)
- Includes mulching as a possible project activity in the CDM (thus also in the voluntary market)
- Employs a standardised approach – minimal monitoring costs (if organic), thus adequate for micro-projects and smallholders
- First agricultural CDM methodology that is viable for smallholders

Weaknesses

- Reliability of the quantification of the emission reductions?
- Very low volumes –> PoA, Grouped Projects
- Same-level-of-services/Leakage: how to deal with it?
  (It is no problem in our sugar-cane project)
- Co-benefits: are they indeed realised?
- Compatible with optimal mitigation policy in agriculture?

Key messages

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- More experience in concrete projects needed

Next steps

- Gain experience in concrete projects (MRV, scale,…)
- More data needed – mitigation and adaptation
- Develop optimal climate policy instruments for agriculture
  - NAMAs, NAPAs…
  - Not putting sustainable agricultural production systems at a disadvantage

Acknowledgements:

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