# NS-154 - Developing appropriate strategies and techniques to reduce methane emissions from livestock production in Uganda

## Uganda

### NAMA Seeking Support for Preparation

A Overview

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| A.1 Party | Uganda |
| A.2 Title of Mitigation Action | Developing appropriate strategies and techniques to reduce methane emissions from livestock production in Uganda |
| A.3 Description of mitigation action | The major goal of the livestock NAMA is to develop appropriate strategies and techniques of reducing methane emissions associated with livestock production which, according to the FAO Statistics Yearbook 2013 is the major source of GHG emissions in Uganda's agriculture sector.<br><br>Silvopastoral techniques (converting degraded extensive, i.e. open, treeless pastures into a richer and more productive environment, where trees and shrubs are planted interspersed among fodder crops such as grasses and leguminous herbs), are used to transform degraded lands with mono-cultures of one grass species into more complex agroforestry systems that may include forest fragments, live fences, riparian forests and trees dispersed in pastures. These techniques have been shown to enhance biodiversity and sequester appreciable amounts of carbon while reducing methane production of livestock under increased tree cover.<br><br>In Costa Rica, the techniques ranged from planting trees, to natural pastures, to highly intensive fodder shrub plantations. Sequestered carbon was paid for at a rate of $2 per ton of $CO_2$–equivalent. Farmers had a very positive reaction to the initiative. Results showed a typical win-win situation: an annual sequestration of 1.5 Mt of $CO_2$–equivalent was accompanied with increases of 22% in milk production, 38% in stocking rate and 60% in farm income. The methane emission per product kilogram decreased while biodiversity (measured by the number of bird species and water quality) increased.<br><br><u>Major activities;</u><br><br>i) Exploring appropriate feeding strategies that increase productivity while at the same time reduce methane emissions from enteric fermentations. Efforts will be centred around strategies that have shown promise elsewhere including feeding livestock on improve forages; feed supplements. This will involve screening tanniferous herbaceous forages and agroforestry tree species for methane reducing potentials; supplementation using agro-industrial by-products including oilcakes; and integrating these options strategically in ruminant feeding systems or incorporating grain with pastures. |

ii) Exploring with various feed additives, including plant extracts (condensed tannins, saponins, essential oils) and rumen modifiers (yeast, bacterial direct fed microbials, and enzymes).

iii) Explore ways to improve feed efficiency through breeding and diet manipulation. Improving feed conversion efficiency (the amount of feed consumed per unit of production), helps to decrease the amount of methane produced since more efficient animals have been shown to produce less methane. This can achieved thought giving animals diets that are more highly digestible.

iv) Exploring manure and pasture management on both small and larger farms

v) Public information and awareness of appropriate strategies and technologies for reducing methane emissions from livestock as well as potential levels of mitigation

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| A.4 Sector | ☐ Energy supply<br>☐ Residential and Commercial buildings<br>☒ Agriculture<br>☐ Waste management<br>☐ Transport and its Infrastructure<br>☐ Industry<br>☐ Forestry<br>☐ Other |
| A.5 Technology | ☐ Bioenergy<br>☐ Energy Efficiency<br>☐ Hydropower<br>☐ Wind Energy<br>☐ Carbon Capture and Storage<br>☐ Land fill gas collection<br>☐ Cleaner fuels<br>☐ Geothermal Energy<br>☐ Solar Energy<br>☐ Ocean Energy<br>☐ Low till / No till<br>☒ Other Silvopastoral techniques |
| A.6 Type of action | ☐ National/ Sectoral goal<br>☐ Strategy<br>☒ National/Sectoral policy or program<br>☐ Project: Investment in machinery<br>☐ Project: Investment in infrastructure<br>☐ Project : other<br>☐ Other |
| A.7 Greenhouse gases covered by the action | ☐ CO2<br>☒ N2O<br>☐ PFCs<br>☒ CH4<br>☐ HFCs<br>☐ SF6<br>☐ Other |

B National Implementing Entity

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| B.1.0 Name | Climate Change Department |
| B.1.1 Contact Person 1 | Ag. Commissioner Chebet Maikut |
| B.1.2 Address | |
| B.1.3 Phone | |
| B.1.4 Email | chmaikut@gmail.com |

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| B.1.5 | Contact Person 2 |
| B.1.6 | Address |
| B.1.7 | Phone |
| B.1.8 | Email |
| B.1.9 | Contact Person 3 |
| B.1.10 | Address |
| B.1.11 | Phone |
| B.1.12 | Email |
| B.1.13 | Comments |

Ministry of Agriculture, Animal Industry and Fisheries, National Agricultural Research Organization-NARO and Makerere University

C Expected timeframe for the preparation of the mitigation action

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| C.1 | Number of months for completion | 6 |

D Currency

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| D.1 | Used Currency | AED<br>Conversion to USD: 1 |

E Cost

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| E.1.1 | Estimated full cost of preparation | 87000 |
| E.1.2 | Comments on full cost of preparation | |

F Support required to prepare the mitigation action

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| F.1.1 | Amount of Financial support | 87000 |
| F.1.2 | Type of required Financial support | [X] Grant<br>[ ] Loan (sovereign)<br>[ ] Loan (Private)<br>[ ] Concessional loan<br>[ ] Guarantee<br>[ ] Equity<br>[ ] Carbon finance<br>[ ] Other |
| F.1.3 | Comments on Financial support | |
| F.2.1 | Amount of Technical support | |
| F.2.2 | Comments on Technical support | |
| F.3.1 | Amount of capacity building support | |
| F.3.2 | Type of required capacity building support | [ ] Individual level<br>[ ] Institutional level<br>[ ] Systemic level<br>[ ] Other |
| F.3.3 | Comments on Capacity Building support | |
| F.4 | Financial support required | [ ] |
| F.5 | Technological support required | [ ] |
| F.6 | Capacity support required | [ ] |

G Relevant National Policies strategies, plans and programmes and/or other mitigation action

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| G.1 | Relevant National Policies | The **Agricultural Sector Development and Investment Plan** seeks to increase incomes of farming households from livestock; to improve quality and increase the quantity of agricultural produce and products; and to promote and encourage highly adaptive and productive livestock breeds. |

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| | The draft **Climate Change Policy[i] and strategy** [ii] specify agriculture as one of the major sectors for climate change mitigation in Uganda, with reduced GHG emissions through sustainable land management of rangelands and pastures and minimal GHG emissions from utilisation of agricultural products for livestock feed. |
| G.2 Link to other NAMAs | |

H Attachments

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|---|---|---|
| H Attachments | **Title** | **Description** |
| | Livestock Emissions NAMA.docx | |
| H.1 Attachment description | | |
| H.2 File | Browse... | |

I Support received

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| I.1 Outside the Registry | No support received yet |
| I.2 Within the Registry | **Support provided** **SupportType** **Amount** **Comment** **Date** |