

NS-281 - Reducing GHG emissions from Enteric Fermentation by including dried grape marc in cattle ratios

Republic of Moldova

NAMA Seeking Support for Implementation

A Overview		
A.1 Party	Republic of Moldova	
A.2 Title of Mitigation Action	Reducing GHG emissions from Enteric Fermentation by including dried grape marc in cattle ratios	
A.3 Description of mitigation action	Every year about 600 thousand tons of grapes are produced and processed in the Republic of Moldova. After processing (de-juicing) about 40-50 thousand ton grape marc with humidity of 9-14% remain. The fats and tannins contained in marc can reduce the formation of enteric methane by 18-23%, according to P.J.Moate, S.R.O.Williams, V.A. Toroka. "Grape r methane emissions when fed to dairy cows", J.Dairy Sci.vol.97, no.8, 2014, p.5073-5087)> Relative to the livestock involved in this technology, these reductions may amount to 69 thousand tonnes by 2030 countrywide. Since dry marc can replace the grass concentrates in ruminant ratios by up to 20-25% and its price is lower than of the concentrates, the costs for implementing technology are related not to the need to buy dried grain but rather to the need to purchase the machines for drying the marc. The price of one set of a 2-tonne / hour marc drying machine is estimated at 160 thousand euro. The aggregate is able to produce about 2.0-2.2 thousand tons per season. The total investments, including the assembly and installation of the equipment, required to implement this GHG emission mitigation NAMA action, i 350 thousand EUR. Currently, only small amounts of grape marc are used in the country - up to 100-150 tons annually, with all the costs incurred by ec agents	
A.4 Sector	☐ Energy supply ☐ Transport and its Infrastructure ☐ Residential and Commercial buildings ☐ Industry ☒ Agriculture ☐ Forestry ☐ Waste management ☐ Other	
A.5 Technology	☐ Bioenergy ☐ Cleaner Fuels ☐ Energy Efficiency ☐ Geothermal energy ☐ Hydropower ☐ Solar energy ☐ Wind energy ☐ Ocean energy ☐ Carbon Capture and Storage ☐ Low till / No till ☐ Land fill gas collection ☒ Other Enteric fermentation	
A.6 Type of action	☐ National/ Sectoral goal ☐ Project: Investment in machinery ☐ Strategy ☐ Project: Investment in infrastructure ☒ National/Sectoral policy or program ☐ Project: Other ☐ Other	
A.7 Greenhouse gases covered by the action	☐ CO2 ☒ CH4 ☐ N2O ☐ HFCs ☐ PFCs ☐ SF6 ☐ Other	

B National Implementing Entity		
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B.1.1	Contact Person 1	Vasile Scorpan
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B.1.9	Contact Person 3	
B.1.10	Address	
B.1.11	Phone	
B.1.12	Email	
B.1.13	Comments	

[Add Additional Entity](#)

C Expected timeframe for the implementation of the mitigation action

C.1	Number of years for completion	5
C.2	Expected start year of implementation	2018

D Currency

D.1	Used Currency	EUR
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Conversion to USD: 1

E Cost

E.1.1	Estimated full cost of implementation	4,350,000
	Conversion to USD: 5,627,426	
E.1.2	Comments on full cost of implementation	Funding for this NAMA is expected to be provided as international grants, state budget subsidies, concessional loans and benefic funds, in proportion of 20%, 5%, 45% and 30% respectively. The payback period for the beneficiary is about 4 years.
E.2.1	Estimated incremental cost of implementation	
	Conversion to USD: 0	
E.2.2	Comments on estimated incremental cost of implementation	

F Support required for the implementation the mitigation action

F.1.1	Amount of Financial support	3
	Conversion to USD: 4	
F.1.2	Type of required Financial support	☒ Grant ☐ Guarantee ☐ Loan (sovereign) ☒ Equity ☐ Loan (Private) ☐ Carbon finance ☒ Concessional loan ☐ Other
F.1.3	Comments on Financial support	The breakdown of the required financial support: international grant - 870,000 euro, the subsidy from the national budget 217,500 the concessional loan -1,957,500 euro.
F.2.1	Amount of Technological support	
F.2.2	Comments on Technological support	
F.3.1	Amount of capacity building support	100,000
	Conversion to USD: 129,366	
F.3.2	Type of required capacity building support	☒ Individual level ☒ Institutional level ☐ Systemic level ☐ Other
F.3.3	Comments on Capacity Building support	This NAMA capacity building program will provide a series of training and workshops for a range of commercially-focused business including those with little or no previous experience in animal husbandry, such as agricultural investors; Project Management firms & service suppliers; law firms and contract managers; Ministry of Agriculture, Regional Development and Environment, Agency for Intervention and Payments; Research and Design Institutions and any others with an interest in understanding the key factors in NAMA development and planning.

G Estimated emission reductions

G.1	Amount	0.069
G.2	Unit	MtCO2e
G.3	Additional information (e.g. if available, information on the methodological approach followed)	Calculations of the greenhouse gas emission mitigation potential are based on the number of cattle expected to be involved in this for the relevant years (59 million heads cows and 60 thousand other cattle in 2020, 90 and respectively 70 thousand heads, by 2030 emissions from one animal per year (by 2020 the CH4 emissions will reach 103.3 kg from one cow and 51.9kg CH4 emissions from other cattle, by 2030 these indices will correspondingly be 109 and 57 kg CH4), and from the livestock. Given that the implemer proposed technology will result in 20% CH4 reduction, the total reductions per technology can be calculated.

H Other indicators

H.1	Other indicators of implementation	- Number of cattle, by species, engaged in the project;
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- Number of driers purchased and installed;
- The amount of marc used in cattle rations;
- Investments made in the NAMA, including in the form of grant, loan, budget support and beneficiary equity. Pls enter Comments h

I Other relevant information

I.1 Other relevant information including co-benefits for local sustainable development	Implementation of the technology will allow to reduce the amount of traditional fodder, reduce the dumped marc waste, enhance the advanced knowledge, gain economic benefits by farmers, contribute to the sustainable development of the animal husbandry sector
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J Relevant National Policies strategies, plans and programmes and/or other mitigation action

J.1 Relevant National Policies	The following officially approved policies of the Republic of Moldova have a direct or indirect impact on the promotion of the use of marc in cattle ratios: • Government Decision no. 1470 of 30.12.2016 on the approval of Moldova's Low-Emission Development Strategy until 2030 and the Action Plan for its implementation. <Http://lex.justice.gov.md/actiuni/view?view=doc&lang=1&id=369528>. This NAMA is listed among other measures intended to meet the country's conditional and unconditional NDC; • Government Decision no. 301 of 24.04.2014 on the approval of the Environmental Strategy for 2014-2023 and the Action Plan for its implementation; • Government Decision no. 248 of 10.04.2013 on the approval of the Waste Management Strategy of the Republic of Moldova for 2013-2027.
J.2 Link to other NAMAs	(none)

K Attachments

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K.1	Attachment description					
K.2	File	Choose File No file chosen				

L Support received

L.1	Outside the Registry															
L.2	Within the Registry	<table><thead><tr><th>Support provided</th><th>SupportType</th><th>Amount</th><th>Comment</th><th>Date</th></tr></thead><tbody><tr><td colspan="5">No records to display.</td></tr></tbody></table>					Support provided	SupportType	Amount	Comment	Date	No records to display.				
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