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National Programme for Turkey 2013 –
Instrument for Pre-Accession Assistance

Technical Assistance for Developed Analytical Basis for Formulating Strategies and Actions Towards Low Carbon Development

Project Identification No: EuropeAid/136032/IH/SER/TR

Contract No: TR2013/0327.05.01-01/001

Component 3 – Briefing on Consultation Meeting with Agriculture Sector's Stakeholders

Ankara 2018



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Abbreviations

BÜGEM	General Directorate of Plant Production
HAYGEM	General Directorate of Livestock
LCDTR	Technical Assistance for Developed Analytical Basis for Formulating Strategies and Actions Towards Low Carbon Development
MoAF	Ministry of Agriculture and Forestry
MoEU	Ministry of Environment and Urbanization (Beneficiary)
TAT	Technical Assistance Team



1. Summary of the Meeting

Project Name	Technical Assistance for Developed Analytical Basis for Formulating Strategies and Actions Towards Low Carbon Development	
Project No	TR2013/0327.05.01-01/001	
Date	08.11.2018, 14:30	
Location	MoEU 6 th Floor Meeting Room, Ankara, Turkey	
Name of the Meeting	Consultation Meeting with the Agriculture Sector's Stakeholders	
Participants	Ministry of Environment and Urbanization (MoEU)	Gürcan SEÇGEL – Head of Unit Hakan AYDOĞAN - Expert
	Ministry of Agriculture and Forestry (MoAF)	Burçin DILER – Head of Working Group Abdüssamet AYDIN - Engineer. Nurdan BUĞDAY - Engineer Pelin Polat ÇAVUŞOĞLU - Economist Faruk AKÇA - Engineer. Zeliha YILMAZ – Engineer. Hasan Çağlar SEÇKİN – Engineer. Tamer BAYTIN - Engineer. Dr. Müge KÖSER ELİÇİN – Engineer
	Technical Assistance Team (TAT)	Mykola RAPTSUN – Team Leader Aynur TOKEL – Senior Statistical, Data and Sector Liaison Expert Teksin ÖZTEKİN – Project Interpreter
	Project Sectoral Experts	Prof. Dr. İlkay DELLAL – Senior Expert- Agriculture Sector Erdoğan ERSOY – Junior Expert – Agriculture Sector

2. Agenda

- Opening speech
- Briefing on the project progress
- Briefing on component 3
- Data needs in component 3
- Discussion and evaluation of GHG mitigation actions and data needs
- Identification of participants for Working Group 3 and 4

Project Team Leader, Mr. Rapsun commenced the meeting and thanked all participants for their participation. Mr. Mykola Rapsun to give information on project progress and component 3.

- Overall objective and purpose of the project
- Stakeholders and target groups
- Project consortium
- Expected results
- Identification of GHG mitigation actions
- Suggested actions for the agriculture sector within component 3

Following to Mr. Rapsun's presentation, senior expert Mrs. Tokel took the floor to inform participants regarding the needed data on assessment of potential GHG mitigation actions and cost for the agriculture sector.

Please see ANNEX for detailed presentation.

After the presentation, the opinions of the participants were taken. The representatives of the Ministry of Agriculture and Forestry stated that the General Directorate of Food and Control of the Ministry and the General Directorates of Agricultural Researches and Policies should also participate in the meetings as part of the project. It is proposed to include the General Directorates mentioned in the LCDTR project working group.

In relation to the proposed greenhouse gas reduction actions proposed to be addressed within the scope of the project;

The representatives of BUGEM stated that the Ministry has been working on reducing the use of nitrogenous fertilizers and support for soil analysis.

HAYGEM representatives stated that the biogas facilities were certified by the General Directorate of Food and Control.

The representatives of the Ministry stated that the oil additive in the ration is a luxury for our country and the application of the cover plant is very difficult. It is also stated



that there are legal difficulties regarding long-distance transportation of animal waste and it is stated that central type biogas plants are possible.

It has been stated that fertilizer pit is compulsory in farms that provide support for barn modernization.

A detailed training on Ex-Act Carbon Balance Tool was requested.

Mr. Rapsun thanked all the representatives of the Ministry for their participation and ended the meeting by inviting them to TIMES modeling tool training on November 15, 2018.



ANNEX
Presentation(s)



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Technical Assistance for Developed Analytical Basis for
Formulating Strategies and Actions towards
Low Carbon Development



LCDTR - introduction to the Project and Component 3

Dr. Mykola Raptsun
Team Leader

November 2018, Ankara



REPUBLIC OF TURKEY
MINISTRY OF ENVIRONMENT
AND URBANISATION

Project's Overall Objective and Purpose

Project title: *Technical Assistance for Developed Analytical Basis for Formulating Strategies and Actions towards Low Carbon Development*

This project is co-financed by the European Union and the Republic of Turkey

Overall objective: To reduce anthropogenic GHG emissions to contribute to the global efforts to mitigate climate change in line with the scientific evidence

Purpose: To increase national and local capacity to prepare for medium and long term climate action towards climate resilient low-carbon development, which will gradually align with EU climate policy and legislation by providing an analytical basis to support realisation of low carbon in the long-term, specifically focusing on cost-effective climate change mitigation actions related to building, waste, transportation and agriculture sectors of the National Climate Change Action Plan (NCCAP)

Period of implementation: 36 months (June 2017 – May 2020)

Project Stakeholders and Target Groups

- **Ministry of Environment and Urbanisation –Beneficiary**
 - **Central Finance and Contracts Unit (CFCU) - Contracting Authority**
 - **Ministry of Energy and Natural Resources**
 - **Ministry of Agriculture and Forestry**
 - **Ministry of Transportation and Infrastructure**
 - **Ministry of Foreign Affairs**
 - **Coordination Board on Climate Change and Air Management**
 - **Turkish Statistical Institute**
 - **Local level governmental institutions**
 - **NGOs and private sector - with focus on the key sectors of buildings, transport, waste and agriculture**
-

Project Consortium



Consortium Leader - Human Dynamics, is a leading provider of premium public sector consulting services

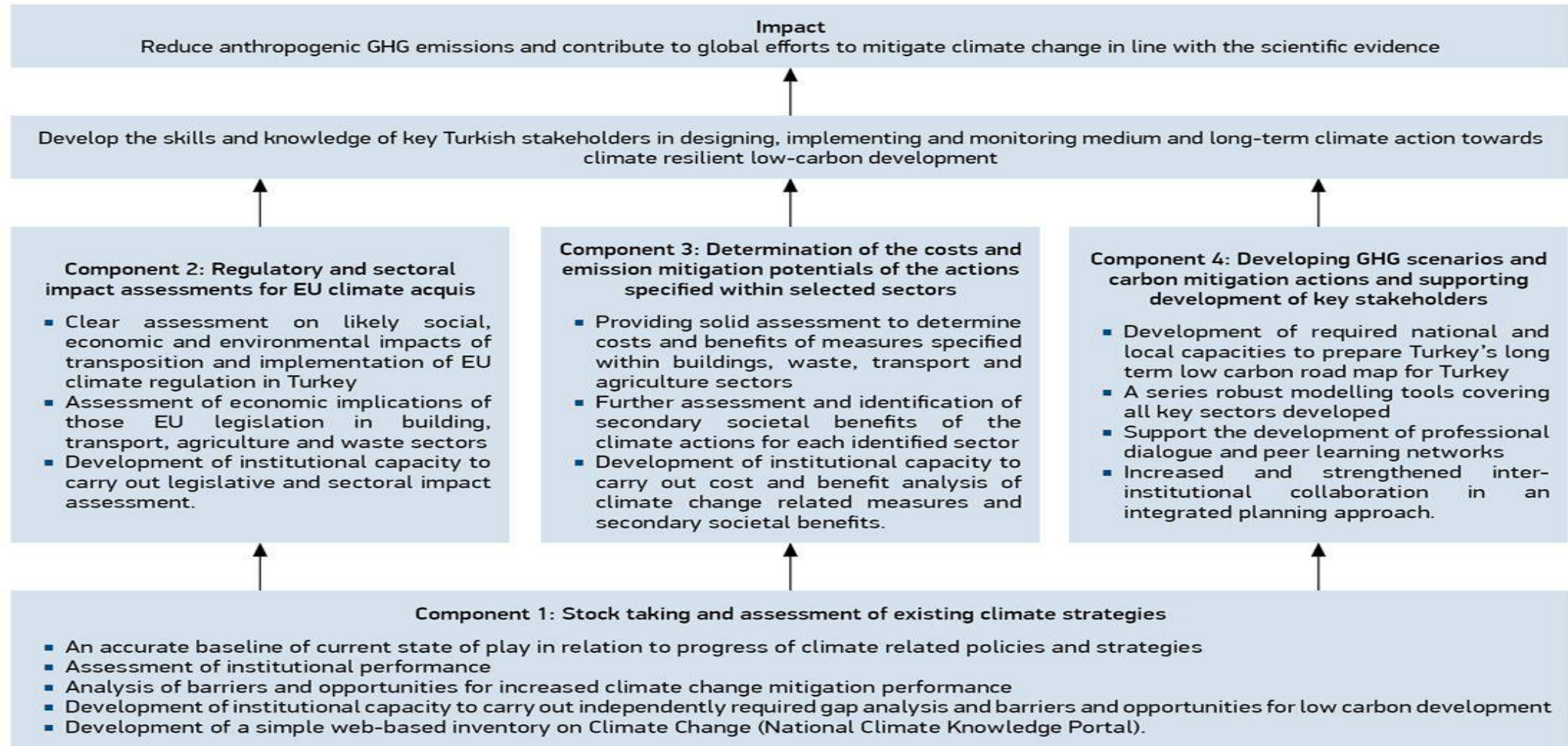


The Regional Environmental Centre for Central and Eastern Europe (REC) is an international organisation with a mission to assist in addressing environmental issues



Agriconsulting Europe S.A. (AESAs), is a leading international development consulting firm that has been in operation since 1994.

Expected results



Component 1: *Stock taking and assessment of existing climate strategies (1)*

ACTIVITY, REPORT	CONTENT
<p>Activity 1.1.1 Review and analysis of the status of the climate related strategies policies, plans, and legislation (Status Report, 105 p.)</p>	<ul style="list-style-type: none"> ▪ Introduction ▪ GHG Emission for Turkey: Trends and Projections ▪ Setting Macroeconomic Outlook for Predefined Term (2053) ▪ Review of Existing Turkish Legal and Political Framework on Climate Action and Low Carbon Development ▪ Conclusions, Recommendations and Inputs for Further Analysis
<p>Activity 1.1.2 Identification of the sectoral development policies intended to meet the GHG emissions reduction targets (Demand Status Report, 91 p.)</p>	<ul style="list-style-type: none"> ▪ Introduction ▪ Development Policies and GHG Emission Reduction Targets in Buildings Sector ▪ Development Policies and GHG Emission Reduction Targets in Waste Sector ▪ Development Policies and GHG Emission Reduction Targets in Transportation Sector ▪ Development Policies and GHG Emission Reduction Targets in Agriculture Sector ▪ Conclusions and Recommendations
<p>Activity 1.2 Legislative and institutional gap analysis to improve low carbon development and climate change mitigation performance (Gap Analysis Report, 133 p.)</p>	<ul style="list-style-type: none"> ▪ Introduction ▪ Legal Framework for Low Carbon Development ▪ Political and Legislative Gap Analysis ▪ Governance and Institutional Framework for Low Carbon Development ▪ Conclusions and Recommendations

Component 1: *Stock taking and assessment of existing climate strategies (2)*

<p>Activity 1.3 Identification and analysis of the political, financial, institutional and technological barriers and opportunities for low carbon development (Barriers and Opportunities Report, 143 p.)</p>	<ul style="list-style-type: none">▪ Introduction▪ Analysis of Cross-cutting Barriers and Opportunities in Turkey▪ Analysis of Barriers and Opportunities in Buildings Sector▪ Analysis of Barriers and Opportunities in Waste Sector▪ Analysis of Barriers and Opportunities in Transportation Sector▪ Analysis of Barriers and Opportunities in Agriculture Sector▪ Conclusions and Recommendations
<p>Activity 1.1-1.3 Four summarised and collated reports (Consolidated Baseline Report, 161 p.)</p>	<ul style="list-style-type: none">▪ Executive Summary▪ Introduction▪ Status Report – Review of Existing Strategies Related to Climate Change▪ Demand Status Report - Review of the Sectoral Development Objectives and Policies in Relation to GHG Emission Reduction Commitments for Agriculture, Buildings, Transport, and Waste Sectors▪ Gap Analysis Report – Identification and Assessment of the Political, Legislative, Institutional and Governance Gaps towards LCD▪ Barriers and Opportunities Report – Identifying and Analysing the Problems, Lock-ins and Solutions towards LCD▪ Conclusion

The reports can be downloaded from the project's website:
<http://www.lowcarbonturkey.org/technical-reports/>

Component 2: *Regulatory and sectoral impact assessments for EU climate acquis*

2.1 Four Regulatory Impact Assessment Reports (RIAs) for the EU climate acquis (Emission Trading, Effort Sharing Decision, Carbon Capture and Storage, and Fuel Quality Directives) to be transposed into the national legislation. Assessments will identify and describe the problems to be addressed, establish objectives, formulate policy options and assess the impacts of this options

2.2 Sectoral Impact Assessment Reports (Building, Transport, Waste and Agriculture) – to analyse positive and negative impacts of the EU climate acquis on sectoral competitiveness, access to markets, public procurement, etc.

Component 3: Determination of the costs and emission mitigation potentials of the actions specified within the buildings, waste, transport and agriculture sectors of the NCCAP and other policy documents

3.1 Assess the GHG emission mitigation potentials of at least ten actions in the focus sectors (buildings, waste, transport and agriculture) of the project

3.2 Assess the financial costs and benefits of the actions analysed in activity 3.1

3.3 Identify and analyse other potential positive and negative non-financial societal gains and losses of the analysed mitigation actions

Component 4: *Developing GHG scenarios and carbon mitigation actions and supporting development of key stakeholders*

4.1 Carry out GHG scenario modelling for focus sectors of the project

4.2 Identify carbon mitigation activities entailing significant benefits to Turkey with a perspective to reconcile climate, growth, and energy security in the selected sectors

4.3 Capacity building for key stakeholders (training, coaching and mentoring services, study visits)

Strategic principles of the Project implementation

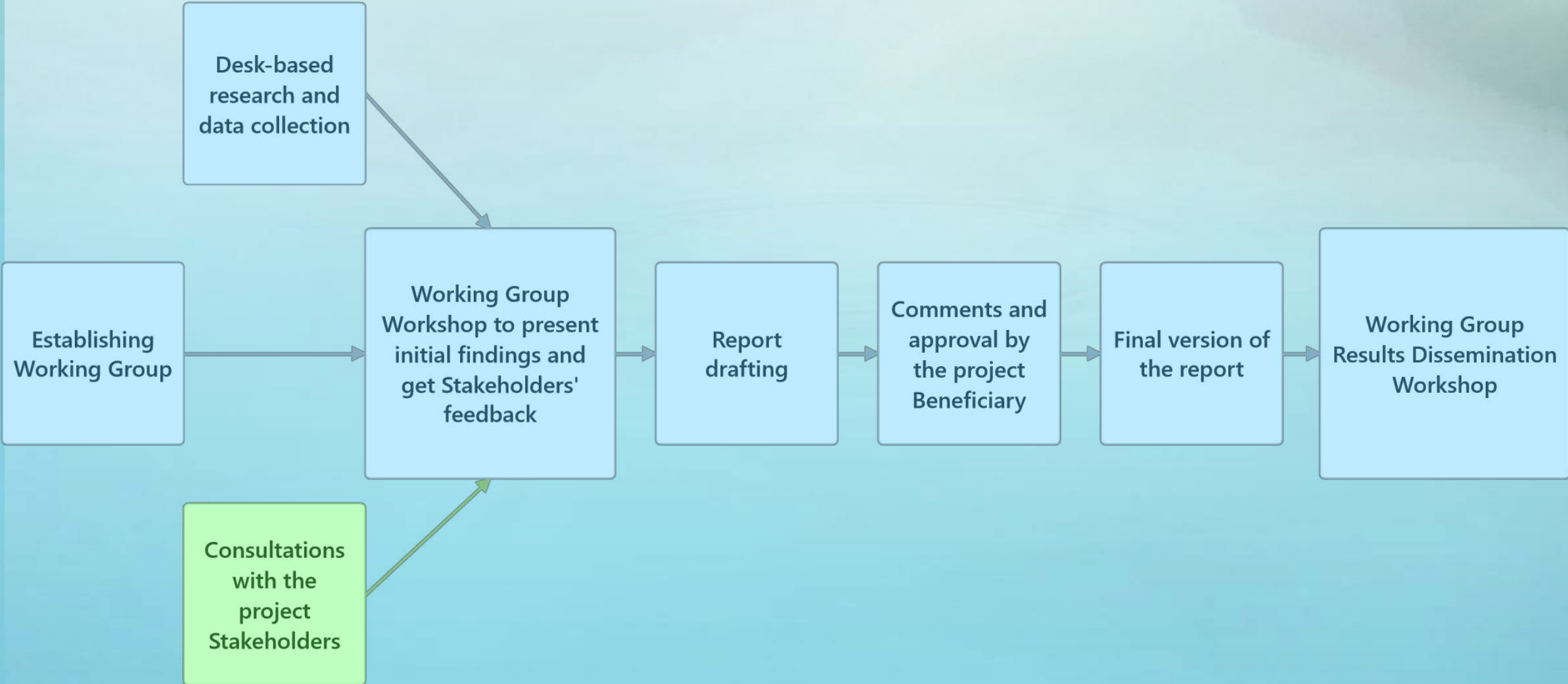
Principle 1: Results-orientated, solution-driven approach

Principle 2: Promoting dialogue and collaboration with relevant stakeholders from the public, private and non-governmental sector

Principle 3: Deep understanding of the sectoral and local situation

Principle 4: Prioritizing capacity development

Participatory approach to policy & strategy analysis



Component 3: identification and selection of the actions for GHG mitigation potentials and costs assessment

Phase
1

- Preliminary sectoral GHG mitigation actions screening and evaluation

Phase
2

- Consultations with the project stakeholders

Phase
3

- Selection of the actions (at least 10) for GHG mitigation potentials and costs assessment

Criteria for GHG mitigation actions selection

- Belong to four project target sectors - transport, buildings, agriculture and waste
- Included in NCCAP and/or other governmental strategic documents
- Cost effectiveness
- High potential for GHG emission reduction
- Other non-financial societal criteria – social, economic, environmental, etc.

Sectoral GHG emissions in 1990 and 2016

Economic Sector	GHG Emissions (kt CO ₂ -eq)		GHG Emissions in total (%)	
	1990	2016	1990	2016
Transport Sector	26968.90	81841.20	12.8	16.5
Buildings Sector	27215.062	56837.303	12.9	11.5
Agriculture Sector	42402.30	56485.70	20.1	11.4
Waste Sector	11090.59	16181.19	5.3	3.3

Agriculture sector: actions suggested based on preliminary screening

Sub-sector	Suggested actions for Agriculture sector	Selection Criteria		
		Including in National Climate Change Action Plan (NCCAP)	Cost Effectiveness (EUR/tCO ₂)	Mitigation Potential
Enteric Fermentation	Using nitrate-based feed additives in the diet and/or fat supplementation to reduce enteric CH ₄		69-508 (EUR/tCO ₂) (for fat supplementation)*	?
	Breeding to reduce enteric CH ₄ with higher productivity		0 to 4576 (EUR/tCO ₂)*	?
Manure Management	Reduce the N content in the diet of dairy cattle to decrease N ₂ O in manure		-11.6 EUR/animal/yr**	0.12 tCO ₂ e/animal/yr**
	Centralised (big farm) level Anaerobic digestion (biogas)	√	0 to 153 (EUR/tCO ₂)*	75-93% reduction*
	Covering slurry stores and install flares		10,075 EUR/farm/year**	170 tCO ₂ e/farm/yr**
	Improve pasture quality and extend the grazing period	√	?	?
Agricultural Soils	Adjust fertiliser application rates to realistic yield targets		-8.7 EUR/ha/year	0.22 tCO ₂ e/ha/yr**
	Make better use of organic fertiliser	√	-11.6 EUR/ha/year	0.16 tCO ₂ e/ha/yr**
	Adjust application dates to crop requirements		-22.7 EUR/ha/year	0.23 tCO ₂ e/ha/yr**
	Nitrification Inhibitors		9.2 to 1903 (EUR/tCO ₂)*	0.3 tCO ₂ e/ha/yr
	Cover crops and crop rotation during the post-harvest period	√	41 to 178 (EUR/tCO ₂) (for cover crops)* 18 to 189 (EUR/tCO ₂) (for crop rotation)*	0.49 to 1.75 tCO ₂ e/ha/yr (for cover crops)* 0.17 to 1.02 (for crop rotation)*
Fuel Combustion	Reduce tillage, no tillage	√	?	?
	Increasing solar-powered irrigation systems		?	?

Abatement cost and potential values are taken from,

* Cost-Effectiveness of Greenhouse Gas Mitigation Measures for Agriculture, A literature review, OECD, 2015"

** Identifying cost competitive greenhouse gas mitigation potential of French agriculture, 2017

Data Needs-Agriculture Sector

Data needs for enteric fermentation and manure management	Possible data source
Number of Livestock by categories (head)	TurkStat_
Technical mitigation options (%); <ul style="list-style-type: none">• Feeding practices (e.g. more concentrates, adding certain oils or oilseeds to the diet, improving pasture quality, etc)• Specific agents: specific agents and dietary additives to reduces CH4 emisisions (Ionophores, vaccines, etc.)• Breeding: increasing productivity through breeding and better management practices (reduction in the number of replacement heifers)	MoAF
Production of milk, meat (tons of products per yr)	MoAF
Mean Annual Temperature °C	DG Meteorology

Data Needs-Agriculture Sector

Data needs for rice cultivation	Possible data source
Cultivation period	
Water regime during cultivation period;	Ministry of Agriculture and Forestry (MoAF), TurkStat_National GHG inventory
Water regime before the cultivation period;	MoAF
Organic amendment type (straw, compost, farmyard manure, green manure, etc.)	MoAF
Yield (t/ha-yr)	MoAF
Area (ha)	MoAF

Data Needs-Agriculture Sector

Data needs for agricultural inputs	Possible data source
Lime application (amount applied per year)	MoAF
Fertilizers (amount applied per year) ; (urea, other N-fertilizers, sewage, compost, other fertilezes	MoAF
Pesticides application (amount applied per year)	MoAF

Data Needs-Agriculture Sector

Data needs for agriculture sector	Possible data source
Current machinery including tractors, and other equipments <ul style="list-style-type: none">• number of agricultural machinery and types• Average usage per annum• average specific fuel consumptions,• vehicles emission standars (EURO 3,4,5,6 etc.)	TurkStat MoAF
Future technology characterization	MoAF?
Political baseline projections (mechanisation targets, size of producers etc.)	MoAF ?
Demand (production) projections	?
Agronomic and animal husbandry supply chain information for each product considered and change of projections. (e.g. Lime application, Fertilizers (urea, other N-fertilizers, sewage, compost, other fertilezers), Pesticides applications)	?



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Thank you for your attention!

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