

OUTCOME AND CURRENT STATUS OF MOEJ STUDIES ON CO-BENEFITS PROJECTS -DEMONSTRATING TANGIBLE CO- BENEFITS PROJECTS-

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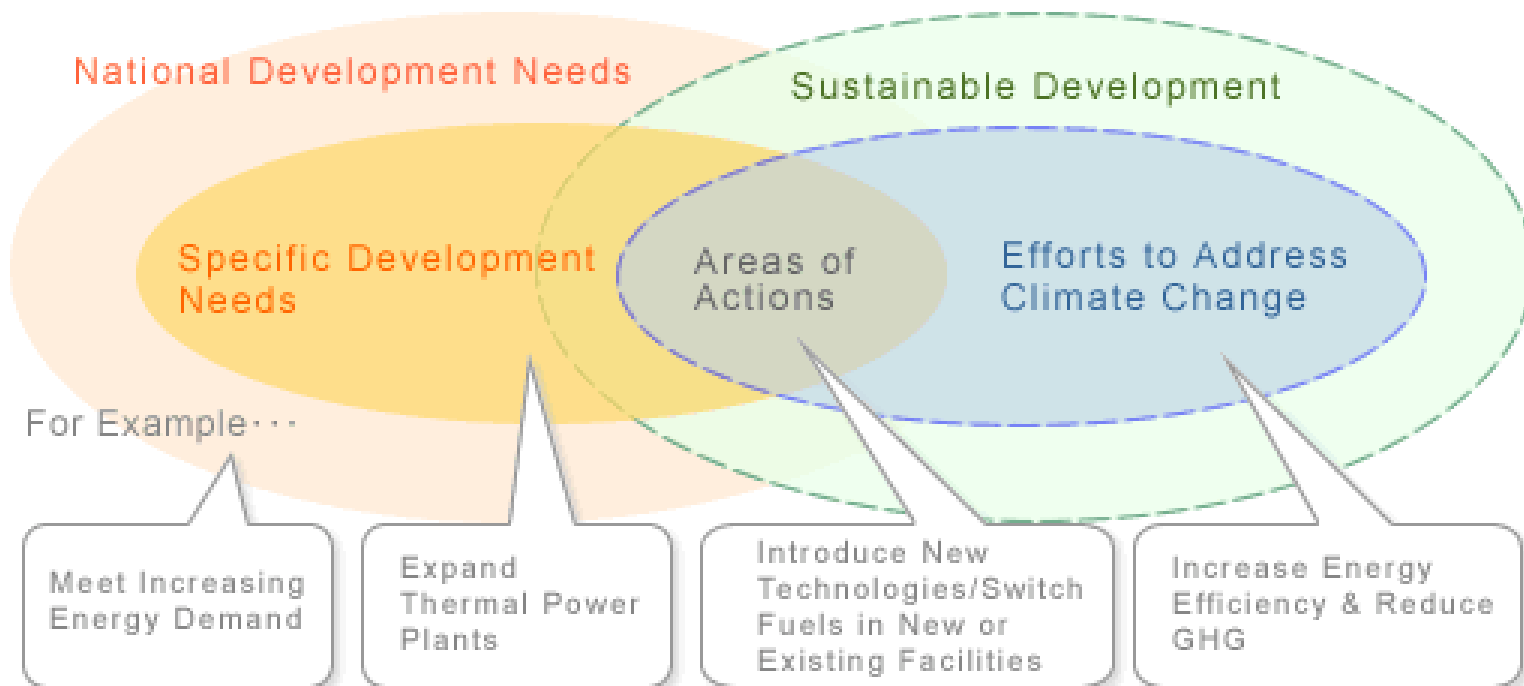
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CO-BENEFITS APPROACH

Promoting development offers a great potential to address greenhouse gas reduction



POTENTIAL ACTION AREA THROUGH CO-BENEFITS

Meeting Development and GHG Reduction Potentials with Co-benefits Interfaces
Alignment with Indonesia's National & Local Development Goals

Development Needs (Focused Areas)	Project Example	Development Benefits	Climate Change
Meeting Energy Demand	Power Plant Construction	Meeting larger Power Demand	GHG Mitigation (GHG Emission Reduction)
Economic Infrastructure (Urban Transport, Port facilities)	Mass-transit system	Better Mobility & Economic Efficiency	
Environmental Protection	MSW Processing facility	Higher processing capacity	
Production Sector with higher technologies	Renew/maintenance of Facility	Higher productivity	
Agriculture/ Rural Development	New Farming Facilities	Higher productivity Increase Income	
Less Geographical Gap in Development Level	Rural electrification	Improved life quality	

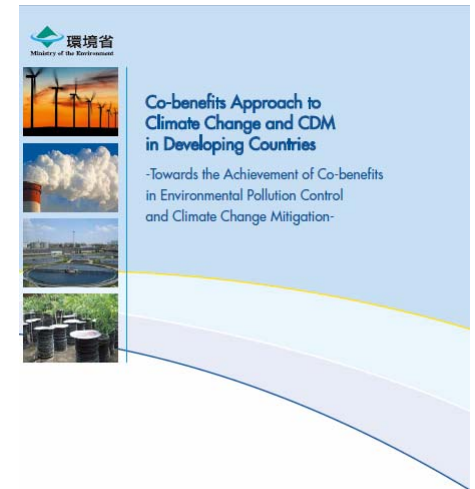
MSW: Municipal Solid Waste

Environmental Benefits as part of Developmental Co-benefits

Co-benefits Action Area	Project Examples	Environmental Improvement Benefits	Climate Mitigation Benefits
Air Quality Management	Improvement of combustion efficiency	Air pollutant (SO _x , NO _x , and dust) reduction	CO ₂ Reduction
	Waste heat recovery		
	Fuel Switching		
	Transport		
Wastewater Treatment	Prevention of methane emission from sludge	Improvement of water quality	CH ₄ Reduction
	Utilization of biomass residue for energy		
Waste Management	Segregating & composting of municipal solid waste	Proper treatment of waste	CH ₄ Reduction
	Utilization of biomass waste as energy	Reduction of waste amount	

MOEJ STUDIES

○ Study Panel on Co-benefits Approach (2006-)

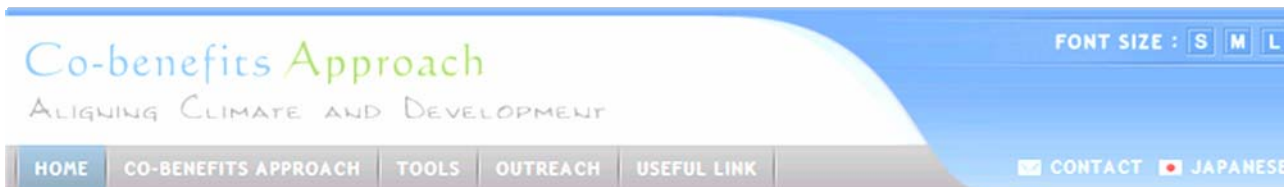


Co-benefits Approach to Climate Change and CDM in Developing Countries

-Towards the Achievement of Co-benefits in Environmental Pollution Control and Climate Change Mitigation-

Overseas Environmental Cooperation Center, Japan

December 2008



Development is a priority matter for developing countries. To address climate change effectively, it is vital to align climate and development policies.

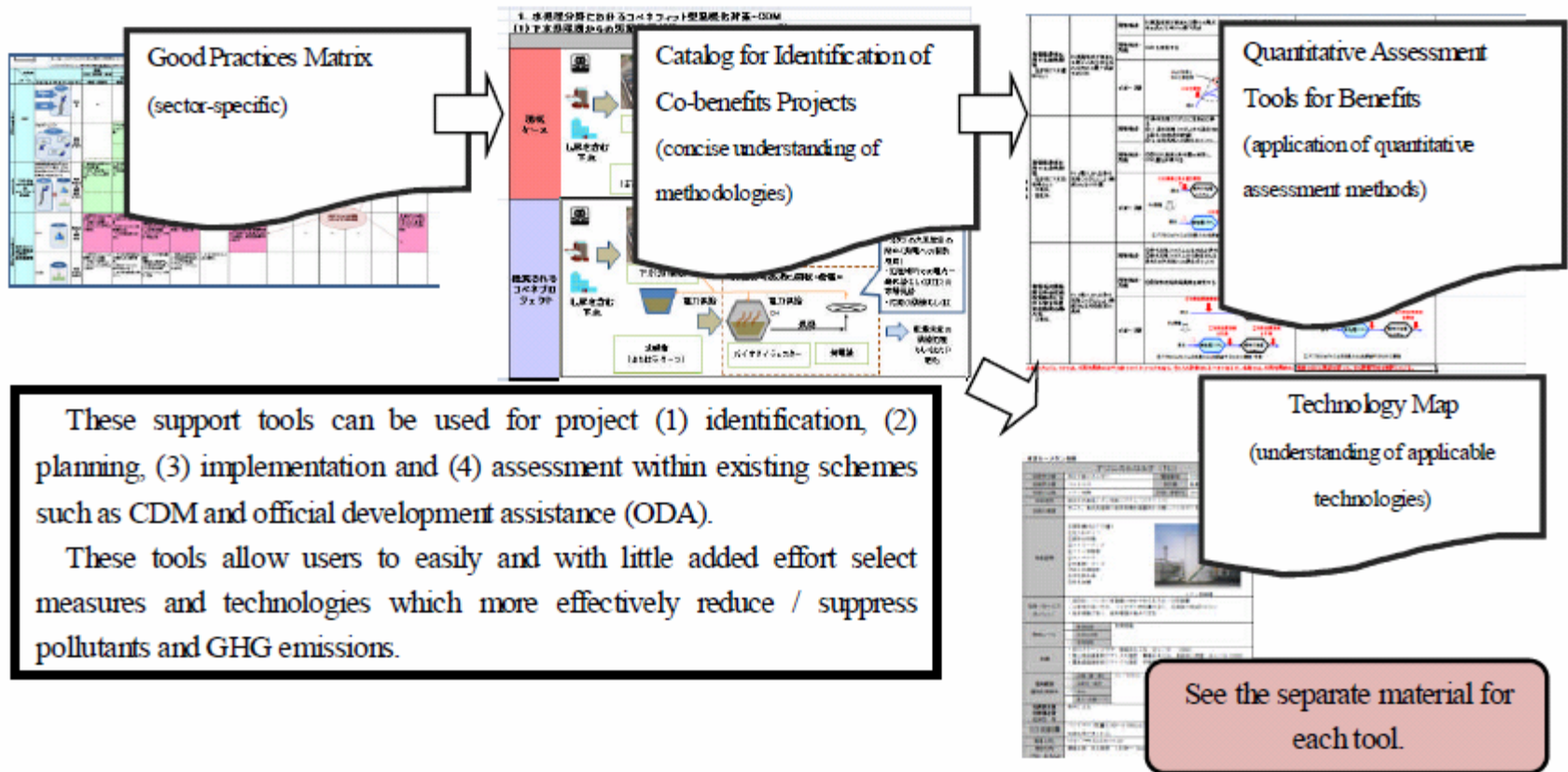
The **Co-benefits Approach** means integrated efforts to address climate change mitigation concerns, while meeting development needs in developing countries.

The **Co-benefits Approach** helps developing countries increase their ownership while engaging in efforts to address climate change, by introducing measures to achieve tangible

Highlight

December 1, 2008
 Report "Co-benefits Approach to Climate Change and CDM in Developing Countries -Towards the

SUPPORT TOOLS



Support policy makers and executing agencies for development and implementation of co-benefits projects

GOOD PRACTICE MATRIX

1. Co-benefits climate change mitigation measures and CDM in the water quality management

This matrix classifies examples of outstanding activities involving integrated improvement measures for water quality improvement and climate change mitigation (good practice) by countermeasure and scheme in order to gain an overview of such activities. Using the matrix, we shall seek to identify areas in which priority approaches are required. It is expected that each example of countermeasures appearing in the matrix will serve as a reference, in combination with the "catalog for identification of Co-benefits Projects" and "evaluation tools for calculation of co-benefit," and be applied to project identification and planning. Good practices refer to projects or other undertakings (including program-type approaches, such as implementation of a policy or master plan) that have a direct effect in improving water quality. Good practices target regions that were polluted prior to project implementation and/or regions that are expected to become polluted in the future. Criteria for selecting a good practice are "the project demonstrates effects that exceed certain levels in terms of both improvement of problems associated with air pollution, water pollution and waste management and reduction of greenhouse gases (GHG); it is stably implemented; and it is matched to regional conditions and needs"

- o **Blue text** : Currently not implemented projects to be planned and implemented in the future
- o **Green** : Projects/programs that can be studied as co-benefits climate change measures or CDM
- o **Red** : Currently implemented projects to be continued into the future
- o Underlined part : click the underlined part in the matrix to see quick reference of each project

		GHG reduction is main objective		Hybrid	Goal other than GHG reduction is main objective	
		CDM		Hybrid-based approaches to CDM and other measures	Traditional ODA Development projects by developing countries themselves Policy measures, etc.	
		CDM	Program CDM	Combination of private business-led CDM (including PoA) and other funds (especially ODA and other public funds)	ODA	Other
Non-point source	Rivers, irrigation canals and...					Central government Local government Public sector, etc.
						*Recovery of sludge from river bottoms (methane control) *Recovery and use of methane from sludge recovered from river bottoms
						*Construction of sewage treatment plants and recovery of...
						*Construction of sewage treatment plants and recovery of...

Typical cases of co-benefits projects by sectors and emission sources

- Water quality management
- Air quality management
- Waste management

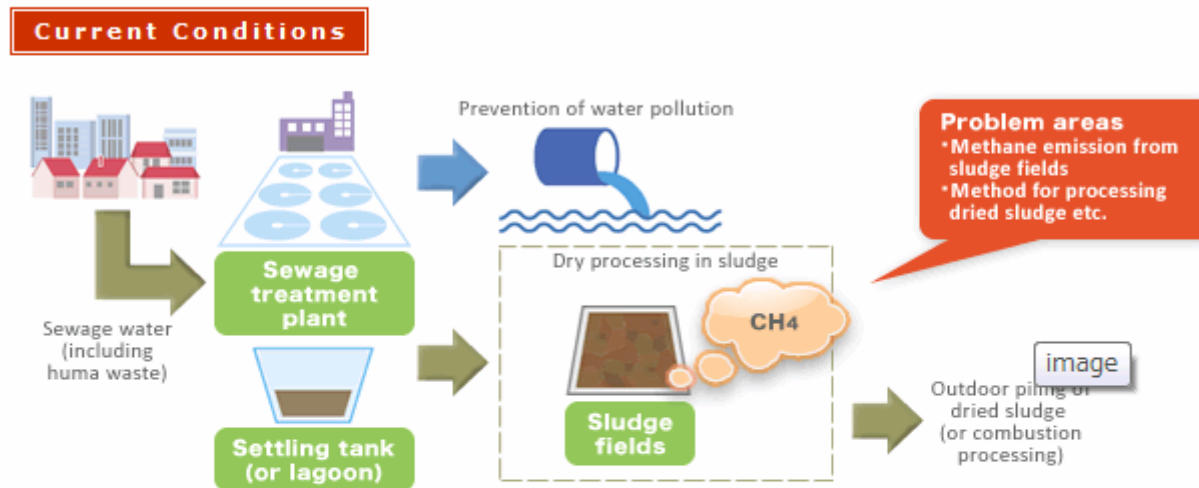
GOOD PRACTICE MATRIX

Non-point source	Rivers, irrigation canals, lakes and marshes	Central government, local government	-	-	<ul style="list-style-type: none"> plans, etc. Reduced contaminated water through collection of pollution from river bottoms (methane control) 	<ul style="list-style-type: none"> Recovery and use of methane from sludge recovered from river bottoms 	<ul style="list-style-type: none"> Recovery and use of methane from sludge recovered from river bottoms
Related to daily living	Sewage management (domestic wastewater, human waste)	Central government, local government	-	<ul style="list-style-type: none"> Biogas production Energy conservation in treatment facilities Aerobic biological treatment Volume reduction and recycling 	<ul style="list-style-type: none"> Construction of sewage treatment plants and recovery of sludge methane Energy conservation in treatment facilities Aerobic biological treatment Volume reduction and recycling 	<ul style="list-style-type: none"> Construction of sewage treatment plants and recovery & use of sludge methane Recovery and use of methane from sludge Energy conservation in treatment facilities 	<ul style="list-style-type: none"> Construction of sewage treatment plants and recovery & use of sludge methane Recovery and use of methane from sludge Energy conservation in treatment facilities
	Comprehensive measures for sewage management	Central government, local government	-	<ul style="list-style-type: none"> Biogas production Introduction of watershed contamination measures that apply PoA 	<ul style="list-style-type: none"> Biogas production Introduction of watershed contamination measures that apply PoA 	<ul style="list-style-type: none"> Biogas production Introduction of watershed contamination measures based on establishment of charges, etc. Assistance in formulation and implementation of master plans 	<ul style="list-style-type: none"> Total pollutant load control for BOD/COD, etc. Reduction of wastewater through introduction of economic measures based on establishment of charges, etc. Formulation and implementation of master plans
	General industrial wastewater management	Central government, local government	-	<ul style="list-style-type: none"> Introduction of factory wastewater treatment measures that apply PoA Aerobic biological treatment 	<ul style="list-style-type: none"> Formulation of master plans, etc. Aerobic biological treatment 	<ul style="list-style-type: none"> Assistance in establishment of laws and measures, such as water contamination laws Assistance in introduction and implementation of total pollutant load control for BOD/COD, etc. 	<ul style="list-style-type: none"> Reduction of wastewater through introduction of economic measures based on establishment of charges, etc. Formulation of master plans, etc.
	Paper	Private	Private	<ul style="list-style-type: none"> Processing of pulp residue and recovery and use of methane 	<ul style="list-style-type: none"> Introduction of factory wastewater measures that apply PoA Processing of pulp residue and recovery and use of methane 	<ul style="list-style-type: none"> Recovery of black liquor and replacement of fossil fuels 	<ul style="list-style-type: none"> Recovery of methane from pulp residue

CATALOG FOR IDENTIFICATION OF CO-BENEFITS PROJECT

1.Co-benefits climate change mitigation measures and CDM in the water quality management

1.Measure for processing of sludge from sewage treatment plants



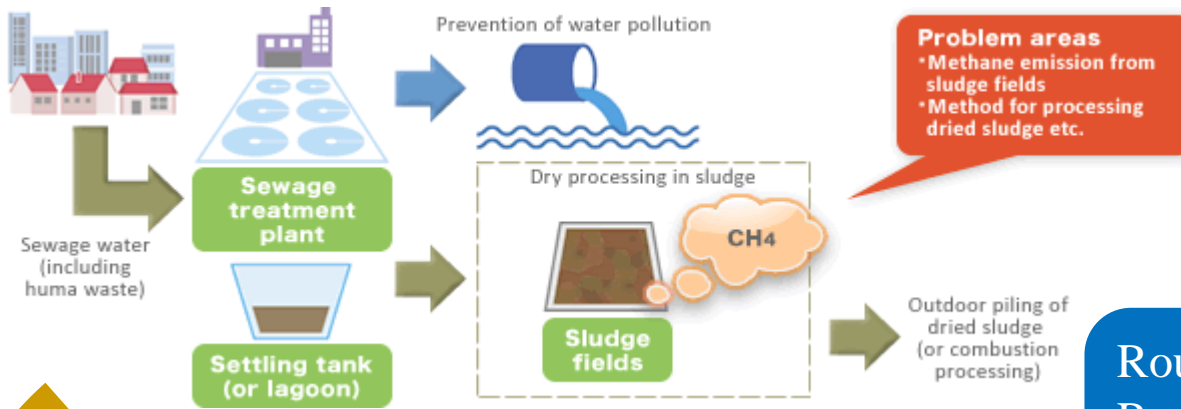
< Current treatment method >

- Sewage treatment is conducted using a settling tank (or lagoon) in the sewage treatment plant.
- Large quantities of sludge are produced in sewage treatment.
- Produced sludge is stored in sludge fields (sludge pits) for drying/volume reduction.
- Dried/reduced sludge is piled outdoors or undergoes combustion processing.

✓ Check list

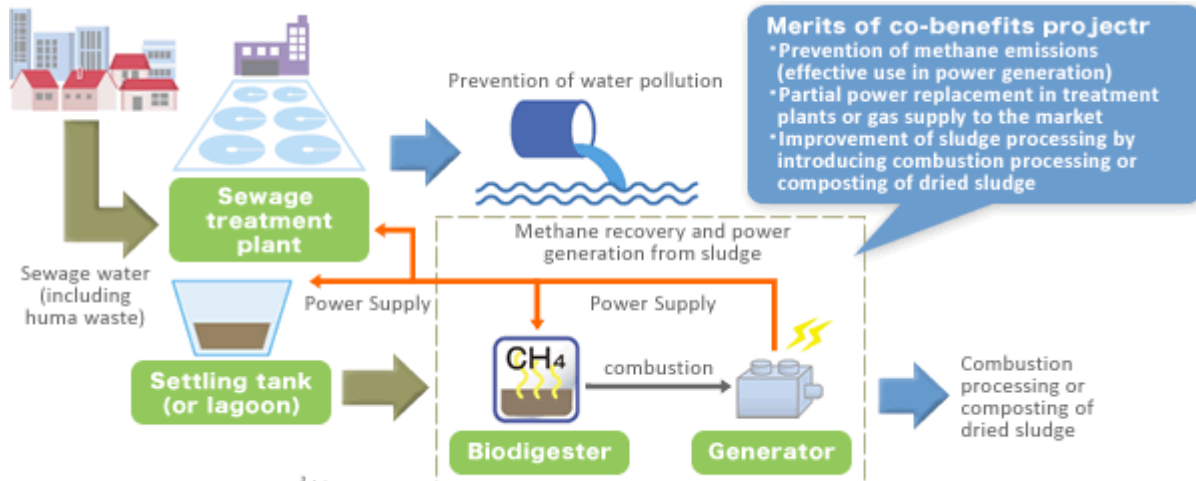
- Basic sewage treatment facilities are installed.
- No particular measures are taken for methane emitted from sludge fields.
- No financial plans exist for installation of methane recovery and use facilities.

Current Conditions



Rough calculation of GHG Reduction & Environmental Pollution Control Benefits

Suggested Co-benefits Project



Wastewater amount 150,000m³/day
GHG emissions reduction 72,743tCO₂e/year

IDENTIFICATION OF AREAS FOR MORE INTENSIVE ACTIONS

<p>1. Co-benefits climate change mitigation measures and CO₂e in the water quality management</p> <p>Measures to methane emission avoidance and recovery & utilization by wastewater process replacement from livestock farm</p> <p>Current Conditions</p> <p>Problem areas</p> <ul style="list-style-type: none"> Methane emissions from lagoon Water pollution caused by discharge of wastewater treated in lagoons Generation of sludge <p>Current treatment method</p> <ul style="list-style-type: none"> Processing in lagoons or settling tanks is conducted in wastewater treatment Methane is generated in wastewater treatment lagoons Wastewater treated in lagoons is released Sludge is produced in wastewater treatment <p>Check list</p> <ul style="list-style-type: none"> Number of animals is constant and stable No particular measures are taken for methane emitted from lagoons No financial plans exist for installation of methane recovery and use facilities Energy used within the stalls comes from fossil fuels <p>Suggested Co-benefits Project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Control of methane emissions into the atmosphere Improvement of bad odor Partial substitution of power used in livestock facility and surrounding area Improvement of wastewater quality and reduction of sludge <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages <p>New treatment methods</p> <ul style="list-style-type: none"> Existing facilities and ancillary facilities continue to be used as is Produced livestock manure undergo anaerobic fermentation in a biogas plant; methane is recovered and used to generate power Energy obtained from generation is used to substitute power from the grid, etc. <p>New facilities, etc., to be introduced through the co-benefits project</p> <ul style="list-style-type: none"> Biogas plant, generator, etc. <p>Example of past success</p> <ul style="list-style-type: none"> Methane Recovery and Utilization CO₂e Project at Utsunomiya Suisan Farm in Hama Prefecture 	<p>Quality management</p> <p>Merits of co-benefits project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages 	<p>Waste management</p> <p>Merits of co-benefits project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages 	<p>Waste management</p> <p>Merits of co-benefits project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages 	<p>Quality management</p> <p>Merits of co-benefits project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages 	<p>Quality management</p> <p>Merits of co-benefits project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages 	<p>Quality management</p> <p>Merits of co-benefits project</p> <p>Merits of co-benefits project</p> <ul style="list-style-type: none"> Improvement regarding disposal of residue Prevention of methane emissions into the atmosphere Substitution of fossil fuel-based power and power supply to neighboring villages
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OTHER SUPPORT TOOLS

- Quantified Co-benefits Evaluation Methods Manual
 - Reduction of environmental pollution (water pollution substances) and GHG are calculated ex ante
 - Useful reference for project designing and development (GHG reduction and environmental pollution control will be both addressed at the same time)

- Technology Map
 - Available technology for GHG reduction and environmental pollution control
 - General flows of process and basic figure of GHG reduction amount

ACTIONS FOR PUTTING CO-BENEFITS FORWARD

- Increasing awareness amongst stakeholders
- Support for capacity development
- Utilization and customization of support tools
- Demonstrating via Co-benefits model projects
- Expanded investment related to co-benefits projects
- Spreading of environmental pollution control technology amongst developing countries
- Creation of a cooperative framework through intergovernmental dialogues
- Systemization of implementation by international frameworks and development cooperation agencies

THANK YOU

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