

# Co-benefits Cooperation in the Agricultural Sector in Indonesia

## Issues concerning the agricultural industry of Indonesia

- Indonesia is one of the biggest producers of palm oil in the world, and the amount of production has been increasing since 1990.
- Through the process of producing palm oil products, liquid waste containing a high level of organic substances is discharged, resulting in the emission of greenhouse gas (methane gas), bad odor, and the deterioration of water quality in the surrounding environment. Thus, environmental pollution control measures are required.
- From the viewpoint of reduction of greenhouse gas emissions and the environmental pollution control measures, it is necessary to effectively use biomass resources, including palms, etc., which are generated during the process of producing palm oil products.

## Purpose of the project

- To contribute to the enhancement of Indonesia's environmental measures and policies through promotion of co-benefit environmental pollution control measures. Specifically, this is achieved by implementing life cycle assessment (LCA) to reduce environmental load in Indonesia's palm oil industry and considering the way to make effective use of biomass resources.

## Activities (LCA)

### FY2011

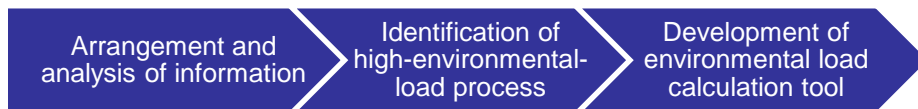
- Arrangement and analysis of existing information, inventory check, and calculation of the amount of environmental load

### FY2012

- Identification of production process that generates great environmental load, and proposal of co-benefit environmental improvement measures

### FY2013

- Development of environmental load calculation tool, and creation of LCA manual



## Activities (biomass)

### FY2011

- Arrangement and analysis of existing information, arrangement of issues, and formulation of effective use plan

### FY2012

- Consideration of technologies for effective use of biomass resources, and collection and analysis of information on use promotion method

### FY2013

- Consideration of co-benefit biomass use promotion method



Continuity of relation to the palm oil production

On palm cultivation process

Note: Please input the amount for each stage of plantation, "seedling", "1st year", "2nd year", "3rd year" and "4 to 20th year".

Quantities related to the "MPP/CT" of all palm cultivation process

	Seedling	1st year	2nd year	3rd year	4 to 20th year
How much fertilizer are (and not applied) in a year for each stage of plantation? Please input the amount by types of fertilizers (kg/ha).					
AN: Ammonium nitrate					
SPK: Superphosphate					
MAP: Monoammonium phosphate					
Urea					
AN: Ammonium nitrate	3,330	3,330	3,330	3,330	3,330
SPK: Superphosphate					
MAP: Monoammonium phosphate					
Urea					
How much pesticide are (and not applied) in a year for each stage of plantation? Please input the amount by "herbicide per ha", "insecticide per ha" and "fungicide per ha".					
Herbicide	273	273	273	273	273
SPK: Superphosphate	3,330	3,330	3,330	3,330	3,330
MAP: Monoammonium phosphate					
Urea					
SPK: Superphosphate	3,330	3,330	3,330	3,330	3,330
MAP: Monoammonium phosphate					
Urea					
How much diesel oil are (and not used) in a year for each stage of plantation? Please input the amount by activities.					
Herbicide	100	100	100	100	100
SPK: Superphosphate					
MAP: Monoammonium phosphate					
Urea					
SPK: Superphosphate	100	100	100	100	100
MAP: Monoammonium phosphate					
Urea					
How much diesel oil are (and not used) in a year for each stage of plantation? Please input the amount by activities.					
Herbicide	100	100	100	100	100
SPK: Superphosphate					
MAP: Monoammonium phosphate					
Urea					
SPK: Superphosphate	100	100	100	100	100
MAP: Monoammonium phosphate					
Urea					
How much diesel oil are (and not used) in a year for each stage of plantation? Please input the amount by activities.					
Herbicide	100	100	100	100	100
SPK: Superphosphate					
MAP: Monoammonium phosphate					
Urea					
SPK: Superphosphate	100	100	100	100	100
MAP: Monoammonium phosphate					
Urea					
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SPK: Superphosphate					
MAP: Monoammonium phosphate					
Urea					
SPK: Superphosphate	100	100	100	100	100
MAP: Monoammonium phosphate					
Urea					

(Left) Environmental load calculation tool  
(Bottom) Workshop scene

