

Standardized Baselines for Projects in Rice Cultivation

Practitioners Workshop on CDM Standards

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Development of AMS-III.AU

== Title: Methane emission reduction by adjusted water management practice in rice cultivation

- == First CDM methodology that addresses emissions from soil/plants
- == Submission of first draft in December 2009, approved at EB60
- == Several rounds of consultation between PP and SSC WG since then
- == Various improvements, broadening of applicability

AMS-III.AU contributes to

- == aim to expand mitigation activities to agricultural sector
- == aim to facilitate access to CDM, at limited transaction costs
- == knowledge about methane emissions from rice
- == mitigate vulnerability of rice farming by spreading knowledge on modern cultivation practices (as such includes an adaptation element)

Case: Transplanted → Direct Seeded Rice

- == Reduced emissions due to reduced flooding of rice fields
- == Host country: Indonesia
- == Managing Entity: Bayer CropScience
- == Programme includes provision of seeder and training
- == Co-benefits
 - Water saving
 - Potential for higher yield
 - Shorter cultivation period
 - Enhanced stress resistance of rice plants



Key Element: Methane Measurement Guidance

- == Background: no standards, no up-to-date guidance available
- == Approach: literature research by experts from IRRI
- == Determines conditions for design and process of field measurement
- == Aim: reliable and representative emission data, cost effective and manageable approach
- == Includes guidance on
 - Chamber design
 - Sampling
 - Laboratory analysis
 - Calculation
- ➔ Precondition for everything:
involvement of experienced staff



Baseline Approach

- = Measurement of methane flux with chamber method
- = Consideration of main methane influencing factors (water regime, organic amendments, soil characteristics) → if necessary, stratification of fields

Nr.	Parameter	Type ¹	Values/Categories	Source/Method ²
1	Water regime – on-season ³	Dynamic	Continuously flooded	Baseline: Farmer's information Project: Monitoring
			Single Drainage	
			Multiple Drainage	
2	Water regime – pre-season	Dynamic	Flooded	Baseline: Farmer's information Project: Monitoring
			Short drainage (<180d)	
			Long drainage (>180d)	
3	Organic Amendment	Dynamic	Straw on-season ⁵	Baseline: Farmer's information Project: Monitoring
			Green manure	
			Straw off-season ⁵	
			Farm yard manure	
			Compost	
			No organic amendment	
4	Soil pH	Static	< 4.5	ISRIC-WISE soil property database ⁶ or national data
			4.5 – 5.5	
			> 5.5	
5	Soil Organic Carbon	Static	< 1%	ISRIC-WISE soil property database ⁶ or national data
			1 – 3 %	
			> 3%	
6	Climate	Static	[AEZ] ⁷	Rice Almanac, HarvestChoice ⁷

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4	Soil pH	Static	< 4.5 4.5 – 5.5 > 5.5	ISRIC-WISE soil property database ⁶ or national data
5	Soil Organic Carbon	Static	< 1% 1 – 3 % > 3%	ISRIC-WISE soil property database ⁶ or national data
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How would rice projects benefit from standardization?

- = AMS III.AU monitoring of baseline emissions for a group of fields:
 - Set up 3 reference fields, cultivated according to the determined “baseline” cultivation method
 - At least once a week, three different air samples are taken from each reference field
 - Air samples (in syringes) are immediately to be taken to a laboratory for analysis
 - ➔ staff, chambers, transport, laboratory capacity has to be organized and paid
 - ➔ Standard baseline EFs can help to reduce project specific costs
- = However: project emissions still have to be measured

Relevant issues and their appraisal in rice cultivation (I)

Issue	Relevance in rice cultivation method
Scope of development	Suitable scopes: <ul style="list-style-type: none"> • Baseline scenario identification • Baseline emissions calculation • Additionality demonstration
Mandatory or optional	Leaving an option to develop project specific factors could serve as incentive to improve the data base
Procedural requirements	<ul style="list-style-type: none"> • Bottom-up or Top-down • Involvement of national authorities necessary <ul style="list-style-type: none"> • Regional perspective on BL parameters • Environmental aspects • Possible input from UNFCCC reporting • Involvement of agricultural institutions
Priorities	Agriculture as priority area (Cancun statements)
Access of underrepresented regions to CDM	Agriculture is underrepresented sector

Relevant issues and their appraisal in rice cultivation (II)

Issue	Relevance in rice cultivation method
Level of aggregation	Aggregation along the key "methane influencing factors" → might imply a set of e.g. BL EFs or focus on most important baseline cultivation practice
Data quality, availability, collection and confidentiality	<ul style="list-style-type: none"> • Some data available, mostly from scientific work and UNFCCC reporting • Relevant effort necessary to improve data base
Financing of development	<ul style="list-style-type: none"> • Funds from developed country financing available? • When project participants contribute (e.g. measurements), provide for incentives: <ul style="list-style-type: none"> • E.g. fast approval, retroactive crediting • Simple revision of monitoring plan as soon as a "standard factor" is established
Accounting for developments over time	Necessary in all scopes

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