

Public Comments and its Response Policy on the draft AWD-JCM Methodology

As of 25 June

No.	Issue	Comment	Reflection to the meth.	Response by the EC
General/Overarching Issues				
G/O-1	Word's definition	What does the "programmatic project" mean which is not allowed in JCM.	Not reflect	
G/O-2	Citing the draft methodology	Where can we find a copy of the current draft methodology to request for further comments from people who couldn't make it to today's webinar?	Not reflect	These persons can contact to "maff_JCMTML@maff.go.jp", as indicated by the Secretariat indicated and request for the copy of this methodology and its appendices. Furthermore, this public hearing was conducted by the EC to seek a wide range of views and the public comments process will be conducted by the JCM Joint Committee later, which is another opportunity for posting comments, showing these materials.
G/O-3	Style of description as a technical document	It is noticeable from the text that the authors have a profound knowledge of the subject of GHG mitigation in rice production, but are not necessarily familiar with the "legal" style of technical writing required for a mitigation methodology. The text contains many ambiguities that can be interpreted in one way or the other. Just to give one simple example: "Measurement frequency: Once in 3 years" could easily be interpreted as having a single sampling day within a 3-year interval. Given the future use of this methodology as the legal basis for carbon certification, such ambiguities are prone to creating conflicts that could jeopardize the implementation of the entire carbon scheme.	To be reflected	The Expert Committee will review all documents to remove ambiguities that may cause misunderstanding. The description of frequency of measurement is to be adjusted.
G/O-4	Style of description as a technical document	The various descriptions of activities are difficult to comprehend without supplementary illustrations, e.g. flow charts. In particular, the sequencing of annual measurements in both the methodology draft as well as Appendix 1 is effectively unworkable in its present form (see below). Moreover, the text has some formal deficiencies, e.g. some footnotes (asterisks) are shown without corresponding asterisks placed in the text which contradicts the commonly accepted rules of technical writing. It does not help that the text has many typos – some of them even in the chapter titles (CH4 missions, N2O missions) – so the document looks in totality more like an internal draft as opposed to one that was released to the public.	To be reflected	As you pointed out, all documents will be reviewed and compromised by the Expert Committee.
G/O-5	Regulatory framework	I did not find any information on the regulatory framework in which this methodology is incorporated. Admittedly the Gold Standard rice methodology does not mention this either, but it should be noted that the methodology is inherently linked to other documents of Gold Standard that clearly define the following issues that remain unclear to me in the JCM approach: a) Will there be any project audits? If yes, how often will the audits be conducted? b) Who will act as VVB (Verification and Validation Body)? c) Do the projects need any form of ex-ante proposal comparable to a PDD (Project Design Document)? If yes, who will assess them for the project registration? d) What about stakeholder consultations?	Not reflect	JCM guidelines and other bilateral documents include such general information. Thus in JCM's each methodology is supposed to describe these information. Just for your convenience, the answers are shown as follows. a) If audits mentioned in the public comment is intended to be on-site visits, the JCM Guidelines for Validation and Verification stipulate the Third-Party Entities (TPEs) are required to conduct an on-site visit(s) at least for the first verification. Frequency of verification is not described in any guidelines as it is decided by project participants. b) VVBs, officially named as Third-Party Entities (TPEs) under the JCM, are designated in line with the JCM Guidelines for Designation as a Third-Party Entity. c) Yes, a project design document (PDD) is required prior to the registration of a proposed project and is evaluated by a TPE and the secretariat of the Joint Committee. d) For the proposed project, the PDD is put under a global public input process of 30 days which will be announced on the JCM website, and local stakeholder consultations are conducted for each project, which then are evaluated at the time of validation.
G/O-6	Future applicability of new methods	If I understand it correctly, the methodology only allows one GHG measurement technique, namely manual sampling followed by GC analysis. I find this unnecessarily restrictive given the possible technological progress over a time frame of 10 years. Already now, the direct sample transfer from a chamber to a laser-based instrument provides much higher accuracy than manual sampling plus GC analysis. Admittedly, those laser-based instruments are quite expensive, but the overall costs have to be seen against the backdrop of investing in a new GC lab (see comment above) as well as the labor requirement and user-friendliness of either system.	△	The offline usage of a stationary-type laser spectroscope as a gas concentration analyzer has been mentioned in the methodology. Regarding the usage of a portable laser spectroscope connected online to multiple chambers, the Secretariat assumes that project participants will need to prepare several instruments to meet the required sampling conditions (see the time of day and the manual operation features in Table A-2). However, the Secretariat will add the description of the possibility of its usage in the near future in Appendix A.
G/O-7	Need for sophisticating the methodology	The incumbent draft needs thorough editing before it becomes a workable document for the intended purpose. Ideally, the editing should be done by someone who combines good skills in technical writing with an in-depth comprehension of the comparable rice methodologies that were used as references for this text.	To be reflected	As you pointed out, all documents will be reviewed and compromised in detail by Executive Committee.
G/O-8	Methodological Structure	<ul style="list-style-type: none"> For data and parameters that need to be monitored, Faeger suggest a chapter on how to monitor the data and parameters, similar to the "I. Data and parameters fixed ex ante" chapter in the draft. Faeger are aware that in the current draft, monitoring information on data and parameters that require monitoring is scattered throughout the calculation chapter, Appendix C chapter, etc., and that there is no chapter that collectively describes the data and parameters. Therefore, we feel that some data and parameters are not described or are difficult to find in the methodology, such as monitoring methods, frequencies, and data to be referenced as evidence. In major registry methodologies such as J-Credit, Gold Standard, VCS, etc., there is a single chapter that brings together data and parameter monitoring information as well as explanations in the Calculations chapter and the Appendix chapter. (Example) *J-Credit AG-005 Methodology, 「6. モニタリング方法」(p4~) <https://japancredit.go.jp/pdf/methodology/AG-005_v3.0.pdf> *Gold Standard Rice methodology, 「4. Monitoring methodology」(p26~) <https://globalgoals.goldstandard.org/437-luf-agr-methane-emission-reduction-awm-practice-in-rice/> It would be easier to use if there is a chapter that summarizes data and parameters, data source, monitoring frequency, QA/QC procedures, etc. in a manner similar to the J-Credit and Gold Standard methodologies described above. 	To be reflected	Monitoring parameters will be listed in a separate sheet as Excel form, which will be prepared after this draft is finalized this draft before its submission to JCM Joint Committee.
G/O-9	Project period	Is there an envisaged project implementation period for the methodology? (something like 10 years in GS)	Not reflect	The duration of this methodology is not explicitly stated. This is because it is the EC's policy to review this methodology as needed, taking into account developments in international and technological trends. JCM rules and guidelines are under review in those partner countries that signed bilateral documents prior to the adoption of the Paris Agreement. Newly adopted JCM rules and guidelines in other partner countries state that each JCM project selects the crediting period which is either a fixed period of 10 years, or a renewable period of five (5) years which may be renewed twice at the maximum.

G/O-10	Monitoring method's applicability in Philippines	Regarding sampling and analysis, the chamber method and gas chromatography used in this proposed methodology would require many numbers of samples and incur high sample analysis costs – particularly in developing countries. Furthermore, we imagine that there are not enough engineers who have the necessary measurement skills nor analyzers and these shortages could be a barrier to expanding JCM projects in countries such as the Philippines. Regarding the method of sample analysis of gas concentrations, since the analyzer based on absorptimeters are already on the market, we would appreciate it if you could consider the adoption of such absorptimeter analyzers and launching a project to quickly train engineers in the future.	To be reflected	It would be appreciated if you could understand that it is the EC's policy to develop a transparent and reliable methodology that ensures scientific evidence at this stage, and that the methodology could be updated in the future with widely accepted innovative technologies. The EC welcomes investment in the accreditation of AWD projects in the Philippines to be based on the methodology in the future. See the G/O-6's response to the similar question.																																																																																								
A. Title of the methodology																																																																																												
A-1																																																																																												
B. Terms and definitions																																																																																												
B-1	Water level moiting	In my experience, the emission of methane gas is greatly reduced even at a water level does not reach -15cm. In tropical regions, the water level quickly drops to -15cm within 7-10 days after irrigation due to evaporation under high temperature. However, rainfall is high and frequent. At some point, the water level is below the soil surface but does not yet reach -15cm, then the rains come and the field is flooded again. In my opinion, the a total of 10 days consisting of at least 3 consecutive days is therefore not realistic in rainy season. It can be reduced to a total of 5-7 days made up of at least 2 consecutive days.	Not reflected	The Expert Committee agrees with your experience but it understands that shallow drainage does not always achieve sufficient CH4 emission reductions. The Expert Committee also understands that it is difficult to achieve the -15 cm threshold in wet seasons. However, the Expert Committee has not found any scientific papers that integrate the effect of shallow drainage on CH4 emission reductions. Therefore, at this stage, the Expert Committee has to be conservative when deciding on the definition of drainage in this methodology at present. In addition, as this methodology allows the usage of the IPCC's SFw as a calculation method, the Secretariat has to consider the consistency with the SFw's CH4 emission reduction. The Expert Committee would revise the methodology if the evidence could be confirmed in the future.																																																																																								
B-2	Water level moiting	*- If there is a large project area, how should appropriate and reliable water level and GHG emissions be measured? - What is the maximum size of area per observation well? For example, can we have one observation well per 10 ha? In this case, it means one water level record for 10 ha per 3 days.	Not reflected	1. The Expert Committee does not specify the requirement for the size of a stratum. 2. Regarding the monitoring method of water level, please see appendix C. "In addition to remote sensing, other improved methods to monitor water level could be considered to be applied when the independent experts approve those by reviewing the submitted base data in advance."																																																																																								
B-3	Water management	The water management practice stipulates a draw-down of the soil water to -15 cm. To what extent did the authors consult with practitioners from the Philippines about this threshold? Given that the emissions will be measured anyway – why should that be a pre-requisite?	Not reflected	The Expert Committee confirms that the safe AWD works well and is recognized in the Philippines. The water level is measured in all project fields, whereas the CH4 emission is measured only in the 3 representative project fields. Therefore, the Expert Committee considers that setting a water level threshold is useful to ensure CH4 emission reduction in all project fields.																																																																																								
B-4	Definition of drainage	The definition of rdainage is notably restrictive and overly conservative. Additionally, claiming for multiple drainage will be extremely challenging considering that it can only be demonstrated or substantiated using geotagged photos of when water level is 15cm below soil. As such, there may be an underestimation of the actual emission reduction schieved by the project. <u>Recommendations:</u> Change the threshold for defining draining event from 15cm below soil to 10-15cm below soil. Additionally, the second definition of drainage (at least 10 days of water below soil surface) must accommodate for both single and multiple drainage. For example, multiple drainage may be claimed when there are at least 15 days of water below soil surface. <u>Explanations:</u> a. The Philippine Rice Research Institute (PhilRice) and International Rice Research Institute (IRRI) have recommended that -15cm is the safe drainage level which will not cause yeild decline. The methodology considered this (maximum) level to define a rdainage event, particularly for multiple drainage. However, emission reduction still exists even if drainage is not 15cm below the soil surface. In such condition (e.g. at 10cm below soil surface ore less), aerobic condition is achieved halting or discontinuing CH4 production in the !"dry" layer. Therefore, drainage is not confined to acieving drying events of just 15cm below the soil surface but also when a certain layer or thickness of soil is devoid of moisture where oxygen can get into for oxidation. The draining process may be discontinued when a crop management practice has to be done e.g. application of fertilizer that requires a water depth that will control N2O emission. b. The methodology currently permits only one approach for substantial evidence for multiple drainage events, namely, through the capture of geotagged photos when water levels reach at least -15cm. This renders the timing of capturing these geotagged photos exceptionally critical to fulfill the criteria for multiple drainage events. Given the variability in soil percolation rates across different fields, this necessitates almost daily monitoring to capture instances when water reaches -15cm. This is less of a problem for small-scale projects covering only a few hectares. However, such requirements pose significant logistical challenges for project developers of large-scale projects. c. There may be significant underestimation of emission reduction when fields have indeed implemented multiple drainage, but farmers just missed to record and take photo when water level is -15cm. The other definition of drainage which allows for periods of at least 3-day consecutive days that water is below soil for a total of 10 days does not apply for multiple drainage. In such a case, they can only potentially qualify for single drainage. On top of this, an uncertainty reduction is applied which further reduces the emission reduction that be claimed for. d. We have conducted a pilot project on implementing Alternate Wetting and Drying (AWD) in the Philippines. Applying the current definition of drainage to the results of our pilot project, only 58% of the lots can potentially meet any of the definition (42% for multiple drainage and 16% for single drainage). If the first definition of drainage is modified from -15cm to -10cm, we expect the number of lots that can qualify for a drainage to increase from 58% to 68% (50% for multiple drainage and 18% for single drainage). Kindly note that this assessment does not yet consider geotagged photos since none were taken during our pilot project. The logistical complexity of taking geotagged photos can further decrease the number of lots that can meet definition of drainage.	Not reflected	As you have recognized, an MRV methodology should be developed conservatively. If one compares between the observed data in a certain area with the requirements of the methodology, the requirements may seem too stringent (and vice versa). As mentioned in the response to the comment B-1 , more scientific evidence is needed to revise this methodology.																																																																																								
B-5	Definition of drainage	About the definitions of "Drainage", "Single Drainage" and "Multiple Drainage", could you clarify how the non flooding days are counted except for the day when the water reaches 15 cm? e.g. Is the combination of the following cases admitted as Multiple Drainage"? · 1 time when 15 cm is achieved (=D10) · Total 10 days of 0- 15cm(=D1-5+D16-21 (orange cells)) <table border="1" data-bbox="608 1696 1795 1843"> <thead> <tr> <th>Day</th> <th>D1</th> <th>D2</th> <th>D3</th> <th>D4</th> <th>D5</th> <th>D6</th> <th>D7</th> <th>D8</th> <th>D9</th> <th>D10</th> <th>D11</th> <th>D12</th> <th>D13</th> <th>D14</th> <th>D15</th> <th>D16</th> <th>D17</th> <th>D18</th> <th>D19</th> <th>D20</th> <th>D21</th> </tr> </thead> <tbody> <tr> <td>Level</td> <td>-5</td> <td>-8</td> <td>-9</td> <td>-10</td> <td>-6</td> <td>2</td> <td>3</td> <td>-5</td> <td>-10</td> <td>-15</td> <td>-10</td> <td>-5</td> <td>3</td> <td>7</td> <td>5</td> <td>0</td> <td>-3</td> <td>-5</td> <td>-8</td> <td>-6</td> <td>-8</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="3">Rainfall</td> <td></td> <td></td> <td colspan="3">Rainfall</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td colspan="3">Rainfall</td> </tr> <tr> <td>Photo</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table> We would like you to clarify that · is D1-5 (non-flooding period before reaching -15cm) counted as part of the total 10 days rule? · is D8, 9, 11 and 12 (the days before and after reaching -15 cm) counted as part of the total 10 days rule?	Day	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21	Level	-5	-8	-9	-10	-6	2	3	-5	-10	-15	-10	-5	3	7	5	0	-3	-5	-8	-6	-8							Rainfall					Rainfall								Rainfall			Photo	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	To be reflected	The counting of non-flooded days stops when the water level reaches 15 cm below the soil surface. After the end, the counting of the number of days for which the water level falls below 0 cm does not start until the water is re-flooded. This point will be added and clearly stated in Appendix C.
Day	D1	D2	D3	D4	D5	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D17	D18	D19	D20	D21																																																																							
Level	-5	-8	-9	-10	-6	2	3	-5	-10	-15	-10	-5	3	7	5	0	-3	-5	-8	-6	-8																																																																							
						Rainfall					Rainfall								Rainfall																																																																									
Photo	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X																																																																							

C. Summary of the methodology				
C-1				
D. Eligibility criteria				
D-1	Logbooks and photos with geotags	Will logbooks and geotagged photos be required for each individual lot?	Not reflect	Yes, but please see appendix C referred "In addition to remote sensing, other improved methods to monitor water level could be considered to be applied when the independent experts approve those by reviewing the submitted base data in advance."
D-2	No precipitation data	When using rainfall data in lieu of photos, is there a threshold for defining "no precipitation"?	Not reflect	It is difficult to define a specific threshold, because the acceptable amount of rainfall that does not raise water levels to above 0 cm depends on the situation. Therefore, the Expert Committee conservatively defines "no rainfall" as 0 mm/d in this methodology. There may be a room to revise the methodology as integrated knowledge accumulates in the future.
D-3	Frequency of water level records	How often should the farmer/project developer record water level in the logbook?	(3日に一度は必須とほしない。確認済)	The Expert Committee recommends logging once every 3 days. This is a precautionary option in case the water level does not reach -15 cm. In addition, logging once every 3 days is useful to avoid excessive drought conditions while aiming to reach -15 cm.
D-4	Irrigation after the drainage	<p>Since crop yield will be evaluated between reference and project fields, the condition in Eligibility Criterion 2 to irrigate within 2 days after drainage may not be necessary.</p> <p><u>Recommendation:</u> In eligibility criterion 2, modify the condition "To maintain yield, an irrigation is carried out within 2 days after the completion of the drainage" to "There must be no significant rice yield reduction."</p> <p><u>Explanation:</u> We recognize the importance of ensuring that there is no yield decline due to change in water management. Crop yield will be measured in reference and project fields where direct GHG measurement will be implemented. As such, there may be no need for a strict requirement of a period to re-irrigate the fields. If there is yield decline, the project fields in the stratum will be ineligible.</p>	To be reflected	The Expert Committee recognises that yield reduction is difficult to define precisely. Therefore it is stipulated that project developers are responsible for not irrigating within two days of the completion of drainage and that irrigation will only be considered to have taken place if it can be objectively demonstrated that there is no yield reduction. The methodology will be revised on the basis of the points raised in the comments, i.e. if sufficient evidence of no yield reduction can be provided, the project may meet the eligibility criteria.
D-5	Irrigation after the drainage	<p>We recommend removing the condition of irrigating the fields within 2 days after drainage. But, in case this will still be required, we have the following questions.</p> <p>i. If a field is not irrigated within two days but reference field does not suffer yield decline, will the fields still be eligible?</p> <p>ii. What is the expected proof to meet this condition? Will it still be only geotagged photos?</p>	To be reflected	Please see the above (D5).
D-6	Assessing water management practice past two years	In assessing water management practices over the past two years, what sampling methods can be employed to substantiate whether historical practices align with continuous flooding or single drainage? This consideration is particularly pertinent given the specific definition of drainage and the high likelihood that farmers may not have maintained records of water levels in their fields during this period.	Not reflect	The field history of water management in the last two years can be confirmed by surveys which have been conducted in the Philippines, in addition to the interviews, Please see Appendix C.
D-7	Assessing water management practice past two years	Can fields in pilot projects be excluded from the two-year baseline assessment? We have conducted a pilot project on implementing AWD during the 2024 dry season (October to March 2024) in the Philippines in order to assess the feasibility of a large-scale project. We will include the fields covered by the pilot to our official project to be registered under JCM.	To be reflected	Yes, but with regard to the field(s) used for the experiment prior to the start of the projects, the Expert Committee asks project developers to provide a 2-year history of water management prior to the experiment.
D-8	Size of the project	We intend to cover a large area for our project, around 30,000 hectares in the next 2 years. We have identified our target project region where specific project fields are located. For example, we will cover 15,000 hectares in the first year, and add the other 15,000 hectares in the second year. Is this allowed for a single project?	Not reflect	<p>The JCM does not define a "Programmatic project", which is a project where multiple reduction and removal activities satisfying certain additional requirements are combined as a single project and additional activities can be added at any time, is not defined, as allowed under J-Credit Scheme.</p> <p>There are 2 ways to implement the proposed project as described in the comment. 1) Determine all the project area and have validation for the entire area at the time of validation, or 2) Have 2 separate validation assessments for the 1st year and 2nd year. In other words, the project participants can treat those 2 project areas as 2 separate projects. In case 1), verification for credit issuance can be implemented separately by year by year depending on the actual area of cultivation.</p>
D-9	Irrigation after the drainage	<p>According to the criterion 2, it states that "to maintain yield, an irrigation is carried out within 2 days after the completion of the drainage", but could you please reconsider irrigation within two days as a recommended condition, not a requirement?</p> <p>Or, could you consider changing the content like "However, this does not apply if it can be confirmed that the yield has not decreased." while keeping irrigation within two days as a requirement?</p> <p>Reason;</p> <p>① Depending on the irrigation schedule provided by NIA (National Irrigation Administration), there is a concern that irrigation water will not arrive within two days of completion of drainage.</p> <p>② Although this condition is described as "to maintain yield", it is not clear whether it will necessarily affect yield, and also the yield data to be submitted separately can guarantee that yield has not decreased</p>	To be reflected	The Expert Committee will revise the relevant eligibility criteria as delays in water supply may occur in the Philippines. However, it should be noted that if the rice yield in project fields is significantly lower than in reference fields, no carbon credits will be generated, even if the water supply is limited.
E. Emission Sources and GHG types				
E-1				

F. Establishment and calculation of reference emissions				
F-1	Stratification	Apart from soil type which is considered in stratification, what about soil texture?	To be reflected	The Expert Committee does not consider soil texture as a stratification parameter to avoid complication , although it may vary within the same soil type. However, the requirements regarding environment to select the representative fields will be added in Appendix C.
F-2	Stratification	Any further guide or minimum requirement on the size of stratified field, or just following IPCC guidelines?	Not reflect	There is no limit to the size of the project area. However, if a large area is claimed as a single stratum, the Expert Committee will carefully review its validity from a number of perspectives.
F-3	Stratification	Regarding low rate of straw amendment, may I ask what you mean by "high stumps"?	Not reflect	The methodology refers to the 30-40cm height stubble left after harvesting by a drum-threshing combine harvester.
F-4	Stratification	Is the majority of soil type in the Philippines is categorized as "others"? Roughly how much % of the fields' area is categorized as "others"?	Not reflect	Yes. please see authorized soil classification maps for details.
F-5	Stratification (table 1)	<p>1. The actual CH₄ measurement of 3 plots x 2 chambers x 3 gas samples per time for each stratification is very tough, so could you consider simplifying the stratification conditions?</p> <p>Reason; Currently, the number of gas measurement equipment and facilities in the Philippines are not abundant, and there is a high possibility that they will not be able to handle with the required number of gas sample measurements. Especially, we expect to simplify the "organic amendment type" in particular. ① If multiple type of organic amendment is used, only the main organic amendment with the highest amount is considered to stratify. ② The amount of organic amendment is not be considered to stratify.</p> <p>2. In order to clarify, please elaborate on the following conditions. For example, when multiple organic amendment are used, should the stratification be divided only by the one with the highest applied amount, or by the combination of multiple types? Also, we would appreciate it if you could specify whether the stratification is divided when the amount of organic amendment is different (e.g. Is the stratification different for 5 kg and 10 kg of same organic amendment?)</p>	To be reflected	Despite the situation in the Philippines where the gas measurement equipment and facilities are not sufficient, lowering the stratification requirements cannot be considered desirably from the point of view of ensuring credibility. However, it is acceptable for the project participants to select the most conservative stratum among the applied strata from the point of view of ensuring conservatism, which will be reflected in the methodology. Similarly, if there is insufficient information, then the most conservative stratum should be applied.
F-6	Stratification (table 1)	<p>① Does stratification apply not only to CH₄ measurements but also to N₂O measurements?</p> <p>② What is "Flooded" for "Water regime pre season"? (We understand that "short drainage" refers to a field for double cropping, and "long drainage" refers to a field for single cropping. Are they correct?)</p> <p>③ Are there thresholds for the "low rate" and "high rate" for "Application rate for straw amendment"? (Is it correct to understand that the fields which all the rice straws is incorporated is "High", and the others are " ")</p>	Not reflect	<p>1. Yes. That's right.</p> <p>2. The Expert Committee uses the IPCC's definition although it may not reflect the actual situation in the Philippines.</p> <p>3. No numerical threshold. It depends on the harvesting method and the subsequent straw management practice.</p>
G. Calculation of Project Emissions				
G-1	Calculation of EFs for direct measurement	In the case of direct measurement, how is the representative value of the measured methane emission factor determined? Is it a simple average? Are there any protocols regarding the time of day, weather conditions, etc. In which the measurements are taken?	Not reflect	Yes. Please see Appendix A for detailed protocol.
H. Calculation of Emissions Reductions				
H-1				
I. Data and Parameters Fixed ex ante				
I-1				
Monitoring spreadsheet				
MS-1				
Appendix A				
ApA-1	Certified technicians for GHG measurement	What is the process for certifying the technician that will supervise GHG measurement?	Not reflect	See ApA-9 for the detail. Please contact maff_JCMTML@maff.go.jp in advance. The independent researchers from EC members such as JIRCAS and NARO are envisaged, and the Expert Committee considers requesting the cooperation of such researchers on the basis of external requests.

ApA-2	Scope of certified technicians	Technicians are to be replaced certified as well as gas samplers before gas sampling?	To be reflected	It is necessary for project developers to appoint technicians and to obtain the consent from the independent experts prior to the field monitoring. For the clarification, the EC will revise the description in Appendix A.
ApA-3	Gas chromatographs	- Currently, there are no Gas Chromatographs (GC), in the Philippines that provide services for gas analysis. Is there any support to project proponents on this aspect? GC is quite expensive. - There are service providers but too expensive, about 400 pesos per sample. They are private organization.	Not reflect	The Expert Committee recognizes that the current resources for gas analysis are limited to meet all the requirements. However, the Expert Committee expects that this issue will be solved commercially in the near future.
ApA-4	Gas storing period	How long can gas samples be stored before performing the test/GC?	Not reflect	It depends on the material of the container. It must be checked by a leak test before the measurement.
ApA-5	Cylinder type of chambers	Regarding cylindrical chambers, it was indicated that it can only be used in direct seeded systems. In Philippines' transplanting is majority.	Not reflect	The Expert Committee also understands that transplanting system is predominant in the Philippines.
ApA-6	Independent expert	Who will be the independent experts in this case? Who will be appointed as the independent expert?	Not reflect	The details of the independent experts are under consideration but the Expert Committee assumes that they are researchers from JIRCAS and NARO, who are members of the Expert Committee.
ApA-7	Manual operation	To ensure consistency of gas sampling between the project fields and reference fields, gas samples must be taken in both fields at the same time and on the same day. However, the project area and the reference area are often far apart. It is therefore difficult for one person to take samples for the project field and the reference field at the same time. It is therefore possible that one person is assigned to take samples for one field throughout the season.	Not reflect	The Expert Committee does not assume a large distance between representative reference fields and representative project fields, as this may cause differences in environmental and agronomic practices. If the distance is large, several chamber operators have to work simultaneously.
ApA-8	Capacity of gas chromatographs in Philippines	How did you assess the quantitative capacity of the gas chromatography labs in the Philippines? Based on the very strict requirement of three sites per stratum, we can expect thousands of vials to be analyzed every year for only one project. Where should this be done?	Not reflect	As mentioned in the response to the comment Ap A-3, this issue should be solved by project participants.
ApA-9	Certification of technician and operators	i. What are the criteria for certifying technicians and operators? ii. What are the requirements for certifying a technician? iii. What is the certification process for technicians and operators? iv. Should technicians and operators be certified or approved prior to conducting sampling activities? v. Should a film or video be provided for each individual operator?	Not reflect	1.The operator of the chamber should have the comparable skill for gentle chamber operation to that of the certified technician. The Expert Committee does not approve the operators and they should be trained by the certified technician. 2. The technicians' skill will be evaluated by the independent experts by reviewing the submitted film for gentle chamber operation so as not to disturb soil GHG emissions. The project participants may repeat this process until they can obtain consents from the independent experts. It may be useful to have more than one certified technician on a project. 3-5. Please see the above.
ApA-10	Chamber design	i. May we clarify the rationale for not allowing use of cylinder-shaped chambers in transplanted systems? Previous experiments and studies on GHG in rice cultivation in the Philippines used the cylinder-shaped chambers in transplanted rice. If it is indeed not allowed to be used, kindly provide detailed diagram showing specifications of the rectangular chamber. ii. For accessories, draft methodology states that no heavy battery to operate the fan is to be placed on top of the chamber. However, this is an observed practice in previous experiments and studies on GHG in rice cultivation to help "seal" the chamber and the base. In other instances where water sealing is practiced, researchers even add a block of brick. Kindly advise the rationale for prohibiting this practice.	To be reflected	Soil GHG emissions occur not only through the rice plants but also through the soil surface/water surface. Therefore, the Expert Committee needs to consider the planting density and the chamber base area. Please see the referred guidelines for details. The Expert Committee does not provide the chamber design drawing, because it depends on the different planting densities and the skill of the fabricator. The Expert Committee has provided the guidelines to minimize the artificial disturbance. However, as you suggested, a minimum weight is useful to avoid the chamber falling down in bad weather conditions. The Expert Committee will therefore amend Appendix A. For tips, the degree of the disturbance can be estimated from the difference in CH4 concentration between the atmospheric ambient and the first gas sample after chamber closure.
ApA-11	Gas sampling	i. We note that at least 3 samples will be taken for each chamber per sampling event. However, in instances where one of the three is an "outlier", there will only be two points that will determine the slope. What are the guidelines to be used for such instances?	to be reflected	The Expert Committee has established the advisory system by the independent experts to certify technicians in order to avoid artificial interference with chamber measurements and to assess the quality of gas chromatographs and their operators. On the other hand, gas ebullition cannot be avoided as a natural phenomenon that can violate the linearity of the CH4 concentration increase over time. It should be noted that these phenomena should not be regarded as outliers.

ApA-12	Laboratory analysis	<p>i. What is the maximum permissible duration for storing a gas sample in a vial prior to its analysis or submission for gas chromatography to ensure it is not contaminated? Could this be for as long as the vial is in "positive pressure"?</p> <p>ii. May we request for a list of institutions in the Philippines with gas chromatographs that are available for use by project developers?</p>	Not reflect	<p>As mentioned in the response to the comment ApA-5, this should be tested by project participants before the monitoring. Generally, researchers enclose gas sample as positive pressure in a fixed-volume container (e.g., glass vial). We do not have the list.</p>
Appendix B				
ApB-2				
Appendix C				
ApC-1	Period of the same agronomic history	<p>We can select the fields that have similar soil conditions and soil properties and that have had the same irrigation and fertilization for >=5 years. However, it is difficult to select the paired fields that have grown the same varieties for >= 5 years. This is because farmers often use different varieties in the field. I think 2-3 years, they experience the same 4-6 harvest seasons. The requirement >= 5 years is not realistic. Therefore, the requirement >= 5 years is not realistic. Therefore, the requirement "Each of the 3 paired fields should have the same agronomic history for >= 5 years" should be replaced by 2-3 years.</p>	To be reflected (to appendix)	<p>This issue may occur especially when project participants select the representative reference and project fields from different farmers with a long distance between them. The Expert Committee did not assume this case, because in this case the difference in environment and agronomic practice between the representative reference and project fields may occur. Project participants should prepare the required representative fields including the rice variety.</p>
ApC-2	Rationale for direct measure interval (table C-2)	<p>- As for the suggested approach of sequencing a 10-year project as shown in Table C2, it should be noted that the interchange of measurement years and years with calculated emissions is not embedded into any of the existing rice methodologies. Those methodologies either require direct measurements on a year-to-year basis or allow the use of country-specific Tier 2 Emission Factors (the latter is only applicable to small-scale projects). In contrast, the presented JCM approach encompasses a projection of annual GHG emissions derived from on-site measurements into the preceding years. While this approach seems scientifically sound, the novelty as well as its underlying logic has to be explained more explicitly.</p> <p>- I tried to understand the logic of the annual sequencing using the examples listed in Table C2 by translating the given information into a chart as shown below (YB = "Before" in the table). However, I simply could not see any common denominator in the patterns of Ex. 1 and Ex. 2. In part, this may be caused by the missing explanations of Meas(in) and Meas(out), so the rationale for those eluded me.</p>	To be reflected	<p>Thank you for the understanding. The EC will add explanation for our logic in Appendix C.</p>
ApC-3	Rice yield sampling	<ul style="list-style-type: none"> Faeger suggests a method of setting the total area of implementation in each field, or a percentage of the field area. We are concerned that only 1m x 2m for each field may not be sufficient scientific evidence. We consider that this method is likely to lead to arbitrary site selection being implemented Faeger has conducted its analysis in accordance with international standards, including IRR1, with five 1m x 1m sites (5m2 in total) when the field area is less than 1 ha and five 1m x 2m sites (10m2 in total) when the field area is between 1 and 2 ha. Faeger proposes an alternative to conduct a total of three plots in each stratum, based on the measurement levels described above Yield sampling inevitably causes the damage to the rice in the field, which is a psychological burden for farmers in regions where machine harvesting is more common, and we would like to reduce this burden as much as possible In considering the above, a total of three fields in each stratum can be matched with the actual measurement fields, making it easier to persuade farmers. 	Not reflect	<p>Although the Expert Committee understands that such a detailed sampling method is common in crop science, the methodology takes into account the convenience of the project participants and the current method is accepted in soil science and environmental science. The Expert Committee recognizes that we cannot completely eliminate arbitrariness even by increasing the number of sampling points.</p> <p>As for the second comment, the Expert Committee are also proposing that the number of replication for each stratum is 3 (fields).</p>
ApC-4	Submission of rainfall data	<ul style="list-style-type: none"> There is a possibility that the records from the nearest weather station may only be used as reference material, as there are many cases of isolated rainfall at limited areas, especially in South East Asia, and even records from the nearest weather station may not reflect the actual situation. If the above rainfall data is to be requested, we understand that a plan for dealing with cases where the records do not reflect the actual situation is also required. 	Not reflect	<p>This issue depends on the spatial scale and the topographical complexity of the project area. The Expert Committee recommends selecting an appropriate meteorological station that is representative of the project area. However, if it does not exist, a weather station for scientific purposes should be prepared by yourself.</p> <p>The Expert Committee welcomes your idea for a practical substitute, if available.</p>
ApC-5	Monitoring methods to prove that the water level is below -15 cm	<ul style="list-style-type: none"> Faeger suggests adding a method to provide indirect proof of -15 cm as well as direct -15 cm or less photography only. We believe that it is not practical to take photographs to prove -15 cm in all areas when implemented on a large scale. Especially in some areas in the Philippines, where groundwater is used for rice, and in these areas pumps are installed every 1 - 2 ha. In such cases, the need to install and photograph PVCs with holes every 1-2 ha would place a heavy burden on local manufacturers, as they would need to prepare 10,000 PVCs with holes on 10,000 ha. It is considered possible to indirectly prove the achievement of -15 cm by taking the following steps: <ul style="list-style-type: none"> (i) confirming in advance that the field has equivalent drainage properties, (ii) confirming the days to reach -15 cm at one of these locations, and (iii) observing negative water levels for the above days at the other fields, In the above method, it is considered realistic to assume that the group unit is an error of one day before or after When using the above indirect proof, it is also acceptable for Faeger to increase the Ud value as follows: <ul style="list-style-type: none"> UdDM value (Once within 3 years) : (direct proof) 0.05 → (indirect proof) 0.10 UdDM value (Once every 4 to 5 years) : (direct proof) 0.10 → (indirect proof) 0.15 UdEF value (Once every 5 years) : (direct proof) 0.15 → (indirect proof) 0.20 	Not reflect	<p>As mentioned in Appendix C "In addition to remote sensing, other improved methods to monitor water level could be considered to be applied when the independent experts approve those by reviewing the submitted base data in advance.", project participants can use a scientifically sound alternative method of water level monitoring. The Expert Committee does not judge the validity of the proposed method without scientific evidence.</p>

ApC-6	Monitoring process	<p>The monitoring protocol, particularly taking geotagged photos taken at very specific intervals for each individual lot, presents notable challenges to the feasibility of implementing large-scale projects. Considering that changing water management by farmers is already challenging, the current monitoring protocol adds another barrier for project development.</p> <p><u>Recommendation:</u> Allow for representative sample fields to be monitored and create guidelines for determining these fields. As a minimum requirement, each lot of a farmer must have one logbook. Additionally, one geotagged photo must be taken per turnout service area, which is the most basic unit of an irrigation system in the Philippines, rather than per lot. Digital devices that record water level may be used to replace geotagged photos as evidence of water level.</p> <p><u>Explanation:</u> The monitoring protocol did not prescribe the maximum area for each observation well and logbook. As such, the maximum area that one logbook represents is unclear. However, it was mentioned during the webinar that each farm must have one logbook and a set of geotagged photos throughout the cropping season. In the Philippines, average farm size around 1.5 hectares.¹ This means that for a project covering 30,000 hectares, there are 20,000 lots, thus 20,000 logbooks will be maintained and approximately 400,000 photos must be taken per season². If geotagged photos are to be taken every 3 days, this means that around 6,700 photos must be taken each day. This presents significant logistical complexity in mobilizing personnel to take photos and storage of said photos.</p> <p>Most farmers do not have personal smartphones nor access to smartphones, thus cannot take geotagged photos. Some of the farmers that have smartphones are afraid losing or damaging them while taking photos in the field. As such, project developers would limit the project to those who have access to smartphones or hire a large workforce. Both cases negatively impact the potential GHG mitigation benefit and the financial and practical feasibility of the project.</p>	Not reflect	A logbook is required for each paddy, as the methodology requires monitoring of water levels in each paddy. All arrangements to meet the requirements, including capacity development, should be adequately designed by the project participants.
ApC-7	Monitoring Intervals	<p>Measurements during the first three years will present significant financial challenges to project development especially when carbon credits are the only source of funds for the project.</p> <p><u>Recommendation:</u> Change the frequency of direct measurement to at least once every 3 years. Project developers may increase the frequency at their own discretion.</p> <p><u>Explanation:</u> The initial years of the project pose considerable financial hurdles. Our project relies on carbon credits as the main revenue source. However, there is a delay in generating these credits as they need to undergo validation and verification processes, further prolonging the time to revenue realization and hindering scalability for increased revenue generation. On the other hand, in the early years of the project, the project developer bears a significant amount of investment in building a local project team, training personnel, engaging with farmers, and stakeholder engagement.</p> <p>Additionally, there is very limited infrastructure available in the Philippines to conduct gas chromatography. Compressing the direct measurement to the first three years will put significant strain on this infrastructure especially considering that there are a few similar projects already ongoing in the Philippines.</p> <p>We recognize the importance of direct measurement over time as it allows for credible quantifica</p>	Not reflect	The Expert Committee mentions the importance of 3-year initial GHG measurements for project participants in Appendix C and is trying to develop the methodology to be suitable for a long-term (10-year) use.
ApC-8	Selection of representative fields in each stratum	<p>i. What is the minimum size of a representative fields?</p> <p>ii. What are the parameters required in establishing that paired fields have same agronomic history?</p>	Not reflect	<p>1. The methodology does not mention any requirement for the size of the field if it is an actual, typical one.</p> <p>2. It is judged from simple parameters, including location, logbook and local experts' comment, if it is managed by a single farmer. It is also judged from various parameters, including hearing to local people concerned in addition to the above, if it is managed by several farmers and/or located remotely.</p>
ApC-9	Water level monitoring	<p>i. During the webinar it was mentioned that water level is required to be recorded in a logbook once every 3 days, however this is not indicated in the methodology. Will this be reflected in the methodology?</p> <p>ii. Does the "logbook" only refer to sheets of paper with handwritten entries or can it also refer to devices that record water level?</p> <p>iii. Rainfall intensity have different effect on the water level in farm fields. Even if it rains, water in the fields may not necessarily go beyond soil surface if the rainfall amount is low. Is there a threshold of rainfall amount that can be allowed to justify that water in the field is still below soil surface?</p>	Not reflect	<p>1. As mentioned in the response to the comment D-4, the Expert Committee recommends logging once every 3 days.</p> <p>2. Both handwritten and digital logbooks are acceptable. However, it also requires to submit the underlying data (e.g., calibration method) for the latter.</p> <p>3. Please see the response to the comment D-2.</p>
ApC-10	Use of remote sensing	<p>i. What is the procedure for demonstrating accuracy and reliability when using remote sensing? What does "in advance" mean? This is not specified in Appendix A as mentioned in the methodology.</p> <p>ii. Who are the independent experts that can evaluate accuracy and reliability of remote sensing technologies?</p> <p>iii. Can remote sensing, if proven accurate and reliable, be used instead of geotagged photos particularly for Case II and III in Table C-1 of Appendix C?</p> <p>iv. Can project developers use a combination of geotagged photos (proving Case I and IV) and remote sensing (proving Case II or III)?</p>	To be relected (to appendix A)	<p>I. First of all, it is necessary to contact the Ministry of Agriculture, Forestry and Fisheries of Japan as the contact point of the Expert Committee. An explanation to this effect will be added to Appendix A for clarity.</p> <p>II. The Independent experts will be appointed by the Ministry of Agriculture, Forestry and Fisheries of Japan with the approval of the Expert Committee.</p> <p>III. At present it is envisaged that the remote sensing's photos will be used as an alternative to the photos in Cases II and III, which show that the water level is below the surface, but the details will need to be determined by the independent experts.</p> <p>IV. At the moment it is envisaged that the -15cm photos (Cases I and IV) could be combined with the -15cm photos, but the details need to be determined by the independent experts.</p>
ApC-11	Water level monitoring	<p>① At the webinar on 6/7 (Fri), there was an explanation that the photos for water level monitoring are necessary for every observation well. We assume that it is very difficult to take photos in every field, so could you please reconsider it? it?(e.g. By the stratification for gas measurement, or by groups with the same water management, etc.)</p> <p>② Could you please specify which area of measurement station you mean by on site weather station and the nearest metrological station for daily rainfall data measurement?</p> <p>③ Could you please specify the submission method and format of water measurement data?</p> <p>④ Could you please describe detailed information and reference example for the conditions for the on site weather station where the project participants measures precipitation by themselves? 3_JCM_Appendix_C_Monitoring_public hearing.pdf</p>	Not reflect	<p>1. The methodology requires project participants to submit the results for all project fields. However, the other improved methods are acceptable as mentioned in Appendix C "In addition to remote sensing, other improved methods to monitor water level could be considered to be applied when the independent experts approve those by reviewing the submitted base data in advance."</p> <p>2. It is difficult at present to predict the applicability of the individual methods without scientific background data.</p> <p>3. EC will provide an Excel format for the required parameters later.</p> <p>4. It should be located near the center of the whole project area if there is no difference in topography. If there is some heterogeneity within the project area, the dominant area should be selected as the settlement site.</p>