



Deliverable 8.1

Risk and Quality Management Plan

Authors: Sander Houweling (VUA)
Date: 28/3/2025
Dissemination: Public
Work package: 8.1
Version: 2.0



Funded by
the European Union

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No. 101183460

Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them.

Investigating Methane for Climate Action (IM⁴CA)

Call: HORIZON-CL5-2024-D1-01

Topic: HORIZON-CL5-2022-D1-01-01

Type of action: HORIZON Research and Innovation Actions

Granting authority: European Climate, Infrastructure and Environment Executive Agency

Project starting date: 01/01/2025

Project end date: 31/12/2028

Project duration: 48 months

Contact: Prof. dr. ir. Sander Houweling, Coordinator
Vrije Universiteit Amsterdam, The Netherlands

Document history:

Version	Author(s)	Date	Changes
1	S. Houweling (VUA)	21/3/2025	First draft version
2	S. Houweling (VUA)	28/3/2025	Corrections based on UU review and feedback from the consortium

Internal review: IMAU Utrecht University (Thomas Röckmann)

Table of Contents

1	EXECUTIVE SUMMARY	4
2	DELIVERABLE OBJECTIVES	5
3	PROJECT QUALITY ASSURANCE.....	5
3.1	DELIVERABLE REPORTING PROCEDURE	5
3.2	MILESTONE REPORTING PROCEDURE	6
4	PROJECT QUALITY MEASUREMENT	7
5	WORK PACKAGE QUALITY MEASUREMENT	7
6	DELIVERABLE QUALITY ASSESSMENT	8
6.1	DOCUMENTATION GUIDELINES	8
6.2	RULES FOR FILE NAMING AND MANAGEMENT.....	8
6.3	INTERNAL REVIEW PROCEDURE	9
7	RISK MANAGEMENT.....	9
7.1	RISK MANAGEMENT PROCEDURE	9
7.2	RISK REGISTER.....	10
	ANNEX 1 LIST OF DELIVERABLES	11
	ANNEX 2 INTERNAL DELIVERABLE REVIEW TABLE	14
	ANNEX 3 LIST OF MILESTONES.....	16
	ANNEX 4 CRITICAL RISKS FOR IMPLEMENTATION	17
	ANNEX 5 RISK IDENTIFICATION FORM.....	18

1 Executive summary

The objective of this document is threefold. Firstly, the document sets out quality procedures for the production and delivery of technical reports. This stipulates a framework for co-authoring and reviewing technical reports to maximise the potential for high quality innovative results to emerge and be formalised and presented with full and timely participation of all responsible partners and completed in a consensual fashion.

Secondly, it presents a framework of quality metrics with appropriate interval-based measures of assessable performance that are developed specifically for each of the work packages within the IM⁴CA project. These are to be applied within the project for efficient and effective evaluation of the overall quality attained by the outputs from each work package.

The final part of the document then sets out the risk management procedures. It provides detailed guidance on the risk clarification, prioritization, rating, and management and provides the risk register. This will be maintained throughout the lifetime of the project.

2 Deliverable objectives

This deliverable defines procedures for reporting the results expected from each Work Package and its associated tasks within the IM⁴CA project in the form of deliverables and milestones. It sets out relevant quality criteria matching the nature of the outputs expected from each work package as a whole and identifies lower, mid, and upper ranges as measures of assessable performance that could be used as part of a framework of quality metrics to evaluate the overall quality of the outputs for the various work packages and their progress within the Avengers Project.

Furthermore, it provides the framework for risk monitoring and management, which includes the maintenance of a risk register that is made available through this deliverable.

3 Project quality assurance

3.1 Deliverable reporting procedure

The reporting of deliverables proceeds according to the agreed deliverable schedule of the grant agreement (GA), listed in Annex 1 for reference, with deliverable deadlines in months after the official start of the IM⁴CA project (1-1-2025). Delivery proceeds in the following steps:

- Step 1 (at the latest four weeks prior to GA submission deadline):

The lead beneficiary of the deliverable submits a first draft of the deliverable to the project coordinator (VUA), with the coordinators of the WP that the deliverable belongs to in CC: A reviewer will be assigned by the coordinator who will perform the internal review of the draft deliverable. This review is performed by the beneficiary listed in the internal deliverable review table (Annex 2), as agreed by the Executive Board on 26-3-2025, unless a suitable replacement is agreed by the coordinator and the WP leads at the time of first delivery.

- Step 2 (at the latest three weeks prior to GA submission deadline):

The internal reviewer reviews and returns the draft deliverable with comments to the main author, with the WP leads and coordinator in cc:

- Step 3 (at the latest two weeks prior to GA submission deadline):

The lead beneficiary updates the draft with comments from the first internal review and e-mails a second draft to the coordinator for a second review, with the WP leaders in cc: A second review will be performed by the beneficiary listed in the internal deliverable review table (Annex 2), as agreed by the Executive Board on 26-3-2025, unless a suitable replacement is agreed by the coordinator and the WP leads at the time of second delivery.

- Step 4 (at the latest one week prior to GA submission deadline):

The second internal reviewer reviews and returns the draft with comments to the main author, with the WP leaders and coordinator in CC:.

- Step 5 (at the latest 2 days prior to GA submission deadline):

The lead beneficiary e-mails the final version of the deliverable to the coordinator in Word and PDF format, with the WP leaders in CC: The coordinator checks the cover page for formal requirements/ data, and submits the final PDF version of the deliverable to the EC.

The lead beneficiary must ensure to update the table of contents and revision table on the cover page before e-mailing the deliverable for submission. The e-mail subject should read: "IM4CA: DX.X – ready for submission to EC" and be send with high priority. The file size of a single deliverable should remain within a maximum of 50 MB.

- Step 6 (after EC submission):

Once uploaded to the EC, the coordinator archives the submitted deliverable the Research Drive environment of the project and uploads those with dissemination level 'Public' to the IM⁴CA website.

3.2 Milestone reporting procedure

The reporting of milestones proceeds according to the agreed milestone schedule of the grant agreement (GA), listed in Table 3 for reference, with reporting deadlines in months after the official start of the IM⁴CA project (1-1-2025).

Once a milestone has been achieved, no later than the date indicated in the Grant Agreement, the lead beneficiary of the MS sends an e-mail to the coordinator, with the WP leads in CC:, stating that MS X has been completed and by which date. This e-mail should also indicate how the Milestone achievement can be verified as indicated in Table 3 under 'means of verification'.

The coordinator registers the MS as completed in the continuous reporting environment on the EC project portal in preparation for the periodic reporting. The subject of the e-mail should read: "IM4CA: MSX completed by DD.MM.YYYY" and be sent by the responsible beneficiary to the coordinator with high priority.

4 Project quality measurement

The following global metrics, defined as Key Performance Indicators (KPI's), have been defined to assess and evaluate the progress of the IM⁴CA project towards its objectives, as agreed in section 2.1.4 of the IM⁴CA proposal. Each KPI is specified at the level of Target, which the project beneficiaries aim to achieve, and Threshold, which should at least be achieved during the project.

Table 4.1 IM⁴CA Key Performance Indicators

KPI	Description	Target	Threshold
4.1	Number of IM ⁴ CA dataset downloads from the ICOS Carbon Portal	10 datasets/year	5 datasets/year
4.2	Number of citations in scientific publications	30 /year	10 /year
4.3	Number of attendees to IM ⁴ CA stakeholder meetings	50	25
4.4	Number of references to IM ⁴ CA datasets and publications in stakeholder reports	10 /year	5 /year
4.5	Number of references to IM ⁴ CA inputs to National Inventory Reports to the UNFCCC	5 /year	2 /year
4.6	Number of IPCC/UNEP/CCAC scenarios improved using IM ⁴ CA outcomes	5	3
4.7	Number of website visits	200 /year	100 /year
4.8	Number of news items that make use of IM ⁴ CA material or interviews with team members	10 /year	5 /year
4.9	Number of GMP assessments communicated to UNEP/CCAC	2 European 1 Global	2 European 1 Global

5 Work package quality measurement

The following quality metrics, defined as Key Performance Indicators (KPI's), have been selected to assess and evaluate progress of a work package towards its objectives. Each KPI is specified at the level of Target, which the project beneficiaries aim to achieve, and Threshold, which should at least be achieved in the indicated reporting period (X/Y in the table below refer to Target / Threshold).

Table 5.1 Work package key performance indicators

KPI definition	Unit of measure	M24	M48
Resources spent wrt the available total	Percentage of available PM resource	40/20	100/80
Partners representation at progress meetings	Percentage of total number of partners	90/50	90/50
Deliverables delivered to the EC in time	Percentage of due deliverables	100/80	100/80
Milestones reached on time	Percentage of due milestones	100/80	100/80
Scientific presentations	Number [#] of presentations	25/10	75/50
Scientific publications	Number [#] of publications	10/5	30/15
Official press communications	Number [#] of communications	5/2	15/5

[#]: Integrated over all WP's

6 Deliverable quality assessment

6.1 Documentation guidelines

The IM⁴CA coordinators, WP leaders, and document owner (i.e. the lead beneficiary) take editorial responsibility to ensure the highest quality and timely delivery of deliverables documenting the work proposed.

Accordingly, the document owner must,

- Create the index and assign the work
- Prepare a schedule for completing the work
- Change the version number of the document
- Distribute to respective partners a new version integrated with contributions and notify important issues that remain to be resolved
- Make comments and change the document structure as deemed appropriate

The person responsible for a section must,

- Draft the section following any guidelines provided by the document owner. It has to be done in time
- List partners who have contributed on the header page
- Communicate deadlines for successive iterations on the section contents to the partners
- Resolve all comments in the section (solving problems, filling in gaps, completing) to its pre-final stage and pass it to the document owner.

6.2 Rules for file naming and management

The document owner from the lead beneficiary produces a file complying with the following file name convention,

IM4CA_DX.X-Y-VZ.docx

with X.X the deliverable version number, Y a suitable label for the deliverable topic, and Z the version number.

Additional requirements for the document are listed below:

- 1) Do not change the file name structure, the name does not contain any spaces or “.”
- 2) The version number can be changed only by the document owner.
- 3) When a partner contributes, they append their acronym to the end of the file name. Partners can contribute to any version of the document, and should do so before the current version deadline expires.
- 4) The contribution is sent to the document owner, who takes care of its integration as appropriate.

6.3 Internal review procedure

To ensure that IM⁴CA deliverables are of the highest standard, an internal review procedure has been put in place as outlined in section 3.1. A reviewer, who has not directly contributed to the respective deliverable, will perform an independent review to ascertain the following aspects:

- Are the contents clear?
- Does the document comply with formatting standards?
- Are there any errors (spelling, technical, conceptual)?
- Does the document achieve the objectives of the planned work for the respective deliverable?
- Do the deliverable contents comply with scientific quality standards that apply to scientific publication

7 Risk Management

The objective of Risk Management Procedures outlined in this section is to provide the IM⁴CA team and stakeholders with the information necessary to develop effective risk handling strategies and plans. Hereafter whenever we refer to a risk, we refer to anything that may have an adverse impact on the success of the IM⁴CA project and compliance with its commitments to the funding agency.

The IM⁴CA team will use some, or all, of the risk management techniques set out below depending on the project actual needs and possibilities. Each of these techniques has specific advantages/disadvantages, yet often it is necessary to combine several techniques to ensure the best possible outcome depending on the situation, the context, the set of involved actors, and the specific risk being addressed.

7.1 Risk management procedure

Whenever a risk (or signals of its potential occurrence) is detected, the following steps are to be followed:

1. Notify risk occurrence or potential occurrence:
 - a. The actor who detects signs of an occurring or incipient risk informs the Project Manager (PM) and Work Package Leads (WPL).
 - b. If the actor, PM, and WPL agree that the risk management procedure is needed to mitigate the risk, the actor completes the Risk Identification form (as per the Annex 4) describing what was noticed, why it is considered either a potential or actual risk, and proposes useful solutions coming from previous experience or performed activities.
 - c. The actor sends the Risk Identification form to the Project Manager (PM) and Work Package Leads (WPL)

2. Clarify the risk:
 - a. The PM/WPL examine the Risk Identification form and proceed to clarify the current risk notice
 - b. The PM/WPL will determine the potential impacts and actors involved
 - c. Results of the clarification process should be noted as attachments to the Risk Identification form

3. Prioritise the risk:
 - a. The PM/WPL examine the results of the clarification process (reported in the Risk Identification form) and proceed to prioritise the identified risk
 - b. Results of the prioritization process should be noted in the attachments of the Risk Identification form

4. Assign the Risk management to a person or group:
 - a. The PM/WPL assigns the current risk handling to a specific person or a group within the IM⁴CA team
 - b. Results of the assignment process should be noted in the attachments of the Risk Identification form

5. Analyse the risk and develop a risk mitigation strategy:
 - a. The person / group assigned under 4a analyses the reported risks
 - b. Based on the evaluation of the risk, appropriate mitigation solutions are identified
 - c. A risk mitigation plan is made, noted in the Risk Identification form

6. Handle the risk and report on risk management:
 - a. The assigned responsible (under 4a) implements the risk mitigation plan with the help of involved actors
 - b. Results of the risk management process are reported in the Risk Identification form (this could happen once or several times depending on the time and effort required to perform recovery actions).
 - c. Depending on risk status evaluation the process is either re-iterated or closed.

7.2 Risk register

Annex 4 provides the risk register for the IM⁴CA project. This is to be considered a living document, to be updated continuously and as necessary during the lifetime of the project

Annex 1 List of Deliverables

Deliverable No	Deliverable Name	WP No	Lead Beneficiary	Type	Dissemination Level	Due Date (month)
D1.1	Readiness report on sensor fleet	WP1	5 - CEA	R — Document, report	PU - Public	12
D1.2	Readiness report on automated data processing	WP1	23 - UNIVIE	R — Document, report	PU - Public	12
D1.3	Campaign report, NL & FR	WP1	2 - UU	R — Document, report	PU - Public	36
D1.4	Campaign report, RO	WP1	12 - INCAS	R — Document, report	PU - Public	36
D1.5	Intermittency and time variability of emissions	WP1	5 - CEA	R — Document, report	PU - Public	42
D1.6	Local emission quantification using satellites	WP1	18 - SRON	R — Document, report	PU - Public	42
D2.1	Arctic landcover and CH4 emissions v2	WP2	10 - GFZ	DATA — data sets, microdata, etc	PU - Public	40
D2.2	Arctic CH4 linking in situ to satellites v2	WP2	9 - FMI	DATA — data sets, microdata, etc	PU - Public	40
D2.3	Arctic regional inverse modeling	WP2	15 - NILU	R — Document, report	PU - Public	42
D2.4	CH4 data assimilation development	WP2	22 - ULUND	R — Document, report	PU - Public	42
D2.5	Synthesis of Arctic CH4 emissions	WP2	9 - FMI	R — Document, report	PU - Public	44
D2.6	Arctic landcover and CH4 emissions v1	WP2	10 - GFZ	DATA — data sets, microdata, etc	SEN - Sensitive	36
D2.7	Arctic CH4 linking in situ to satellites v1	WP2	9 - FMI	DATA — data sets, microdata, etc	SEN - Sensitive	18
D3.1	Congo measurement sites and setup	WP3	4 - BIRA	R — Document, report	PU - Public	18

D3.2	In situ CH ₄ measurements in Congo	WP3	21 - ULEEDS	DATA — data sets, microdata, etc	PU - Public	36
D3.3	Total column measurements in Congo	WP3	20 - UBREMEN	DATA — data sets, microdata, etc	PU - Public	36
D3.4	Process modelling of CH ₄ from tropical wetlands	WP3	22 - ULUND	R — Document, report	PU - Public	36
D3.5	Synthesis of Tropical wetland emissions	WP3	21 - ULEEDS	R — Document, report	PU - Public	42
D4.1	High-resolution EU methane emission inventory	WP4	19 - TNO	DATA — data sets, microdata, etc	PU - Public	24
D4.2	ICOS extension with methane isotopes	WP4	14 - MPI	DATA — data sets, microdata, etc	PU - Public	36
D4.3	Options for Eastern European CH ₄ monitoring	WP4	3 - AGH	R — Document, report	PU - Public	36
D4.4	Synthesis of European emission trends v2	WP4	23 - UNIVIE	R — Document, report	PU - Public	42
D4.5	Synthesis of European emission trends v1	WP4	9 - FMI	DATA — data sets, microdata, etc	SEN - Sensitive	18
D5.1	Measurements and modeling of the pre-industrial to industrial CH ₄ rise v2	WP5	15 - NILU	DATA — data sets, microdata, etc	PU - Public	36
D5.2	Trends and variations in the OH sink	WP5	14 - MPI	DATA — data sets, microdata, etc	PU - Public	24
D5.3	The use of satellites for estimating global CH ₄ emissions	WP5	1 - VUA	R — Document, report	PU - Public	36
D5.4	Synthesis of global CH ₄ emissions	WP5	24 - UVSQ	DATA — data sets, microdata, etc	PU - Public	42
D5.5	Measurements and modeling of the pre- industrial to industrial CH ₄ rise v1	WP5	15 - NILU	R — Document, report	SEN - Sensitive	18
D6.1	Initial CH ₄ Baseline and mitigation scenarios	WP6	11 - IIASA	DATA — data sets, microdata, etc	PU - Public	12

D6.2	Sectorial emission improvements from IM4CA campaigns	WP6	19 - TNO	DATA — data sets, microdata, etc	PU - Public	36
D6.3	Final CH4 Baseline and mitigation scenarios	WP6	11 - IIASA	DATA — data sets, microdata, etc	PU - Public	36
D6.4	Global impacts assessment of future CH4	WP6	14 - MPI	R — Document, report	PU - Public	45
D7.1	EU and Global CH4 visualization tools at ICOS CP	WP7	22 - ULUND	DATA — data sets, microdata, etc	PU - Public	46
D7.2	Synthesis of Global and European methane emissions	WP7	1 - VUA	R — Document, report	PU - Public	48
D7.3	Mid-term report on progress towards the GMP goals	WP7	11 - IIASA	R — Document, report	PU - Public	24
D7.4	Final report on progress towards the GMP goals	WP7	11 - IIASA	R — Document, report	PU - Public	48
D7.5	IM4CA contributions to international programs v1	WP7	1 - VUA	R — Document, report	PU - Public	18
D7.6	IM4CA contributions to international programs v2	WP7	1 - VUA	R — Document, report	PU - Public	36
D7.7	IM4CA contributions to international programs v3	WP7	1 - VUA	R — Document, report	PU - Public	48
D8.1	Risk and quality management plan	WP8	1 - VUA	R — Document, report	PU - Public	3
D8.2	Project website	WP8	1 - VUA	DEC — Websites, patent filings, videos, etc	PU - Public	3
D8.3	Data management plan v1	WP8	1 - VUA	DMP — Data Management Plan	PU - Public	6
D8.4	Dissemination, exploitation, and communication plan v1	WP8	1 - VUA	R — Document, report	PU - Public	6
D8.5	Data management plan v2	WP8	1 - VUA	DMP — Data Management Plan	PU - Public	18
D8.6	Data management plan v3	WP8	1 - VUA	DMP — Data Management Plan	PU - Public	36

D8.7	Data management plan v4	WP8	1 - VUA	DMP — Data Management Plan	PU - Public	48
D8.8	Dissemination, exploitation, and communication plan v2	WP8	1 - VUA	R — Document, report	PU - Public	18
D8.9	Dissemination, exploitation, and communication plan v3	WP8	1 - VUA	R — Document, report	PU - Public	36
D8.10	Dissemination, exploitation, and communication plan v4	WP8	1 - VUA	R — Document, report	PU - Public	48

Annex 2 Internal deliverable review table

Deliverable No	Deliverable Name	WP No	Lead Beneficiary	Due Date (month)	Review 1	Review 2
D1.1	Readiness report on sensor fleet	WP1	5 - CEA	12	UU	VUA
D1.2	Readiness report on automated data processing	WP1	23 - UNIVIE	12	UU	VUA
D1.3	Campaign report, NL & FR	WP1	2 - UU	36	CEA	VUA
D1.4	Campaign report, RO	WP1	12 - INCAS	36	CEA	VUA
D1.5	Intermittency and time variability of emissions	WP1	5 - CEA	42	UU	VUA
D1.6	Local emission quantification using satellites	WP1	18 - SRON	42	CEA	UU
D2.1	Arctic landcover and CH4 emissions v2	WP2	10 - GFZ	40	FMI	VUA
D2.2	Arctic CH4 linking in situ to satellites v2	WP2	9 - FMI	40	GFZ	VUA
D2.3	Arctic regional inverse modeling	WP2	15 - NILU	42	FMI	VUA
D2.4	CH4 data assimilation development	WP2	22 - ULUND	42	FMI	VUA
D2.5	Synthesis of Arctic CH4 emissions	WP2	9 - FMI	44	UU	VUA
D2.6	Arctic landcover and CH4 emissions v1	WP2	10 - GFZ	36	FMI	VUA
D2.7	Arctic CH4 linking in situ to satellites v1	WP2	9 - FMI	18	GFZ	VUA
D3.1	Congo measurement sites and setup	WP3	4 - BIRA	18	UBREMEN	VUA
D3.2	In situ CH4 measurements in Congo	WP3	21 - ULEEDS	36	UBREMEN	VUA
D3.3	Total column measurements in Congo	WP3	20 - UBREMEN	36	ULEEDS	VUA
D3.4	Process modelling of CH4 from tropical wetlands	WP3	22 - ULUND	36	ULEEDS	VUA

D3.5	Synthesis of Tropical wetland emissions	WP3	21 - ULEEDS	42	UU	VUA
D4.1	High-resolution EU methane emission inventory	WP4	19 - TNO	24	UNIVIE	VUA
D4.2	ICOS extension with methane isotopes	WP4	14 - MPI	36	TNO	VUA
D4.3	Options for Eastern European CH ₄ monitoring	WP4	3 - AGH	36	UNVIE	VUA
D4.4	Synthesis of European emission trends v2	WP4	23 - UNIVIE	42	IIASA	VUA
D4.5	Synthesis of European emission trends v1	WP4	9 - FMI	18	UNIVIE	VUA
D5.1	Measurements and modeling of the pre-industrial to industrial CH ₄ rise v2	WP5	15 - NILU	36	UVSQ	VUA
D5.2	Trends and variations in the OH sink	WP5	14 - MPI	24	NILU	VUA
D5.3	The use of satellites for estimating global CH ₄ emissions	WP5	1 - VUA	36	NILU	UU
D5.4	Synthesis of global CH ₄ emissions	WP5	24 - UVSQ	42	MPI-C	VUA
D5.5	Measurements and modeling of the pre- industrial to industrial CH ₄ rise v1	WP5	15 - NILU	18	UVSQ	VUA
D6.1	Initial CH ₄ Baseline and mitigation scenarios	WP6	11 - IIASA	12	MPI	VUA
D6.2	Sectorial emission improvements from IM ⁴ CA campaigns	WP6	19 - TNO	36	IIASA	VUA
D6.3	Final CH ₄ Baseline and mitigation scenarios	WP6	11 - IIASA	36	MPI	VUA
D6.4	Global impacts assessment of future CH ₄	WP6	14 - MPI	45	IIASA	VUA
D7.1	EU and Global CH ₄ visualization tools at ICOS CP	WP7	22 - ULUND	46	ECMWF	VUA
D7.2	Synthesis of Global and European methane emissions	WP7	1 - VUA	48	ECMWF	UU
D7.3	Mid-term report on progress towards the GMP goals	WP7	11 - IIASA	24	ECMWF	VUA
D7.4	Final report on progress towards the GMP goals	WP7	11 - IIASA	48	ECMWF	VUA

Annex 3 List of Milestones

Milestone No	Milestone Name	WP No	Lead Beneficiary	Means of Verification	Due Date (month)
1	Project initiated	WP8	1 - VUA	Minutes of KO meeting	1
2	First IM4CA stakeholder meeting	WP7	1 - VUA	Minutes of meeting	12
3	General Assembly 1	WP8	1 - VUA	Minutes of meeting	12
4	First dataset of EU methane emissions	WP4	19 - TNO	Dataset at ICOS-CP	17
5	First EU campaigns datasets	WP1	2 - UU	Dataset at ICOS-CP	19
6	First Arctic campaigns dataset	WP2	10 - GFZ	Dataset at ICOS-CP	21
7	First long-term CH ₄ simulation	WP5	15 - NILU	Dataset at ICOS-CP	24
8	First Congo measurements dataset	WP3	21 - ULEEDS	Dataset at ICOS-CP	25
9	Second EU campaign dataset	WP1	2 - UU	Dataset at ICOS-CP	31
10	Second Arctic campaign dataset	WP2	10 - GFZ	Dataset at ICOS-CP	33
11	First future scenario calculations ready	WP6	14 - MPI	Dataset at ICOS-CP	35
12	Second IM4CA stakeholder meeting	WP7	1 - VUA	Minutes of meeting	42
13	Effective emission mitigation workshop	WP7	11 - IIASA	Minutes of meeting	46
14	General Assembly 2	WP8	1 - VUA	Minutes of meeting	24
15	General Assembly 3	WP8	1 - VUA	Minutes of meeting	36
16	General Assembly 4 / Final project event	WP8	1 - VUA	Minutes of meeting	48

Annex 4 Critical risks for implementation

Risk number	Description	WP No(s)	Proposed Mitigation Measures
1	Delays in the recruitment of personnel (Likelihood M; Severity L).	WP1-WP8	Monitoring by the executive board, experienced staff take over or find temporary solutions within their organization.
2	Personnel leaving the consortium (Likelihood L, Severity M).	WP1-WP8	Monitoring by the executive board, temporary replacement by other personnel. All WPs have co-leads to minimize this risk at organizational level.
3	Partners unable to deliver (Likelihood L, Severity H).	WP1-WP8	Monitoring by the executive board. Amendments in partner specific sections of the GA
4	Delays in the delivery of newly purchased instrumentation (Likelihood H, Severity L).	WP1-WP3	Monitoring by WP leads, the project planning has sufficient buffers to accommodate delays and prevent serious impacts.
5	Logistical problems in performing campaigns according to schedule (Likelihood H, Severity L).	WP1-WP3	Monitoring by WP leads, local arrangements have been made in the proposal phase, flexibility has been built in to avoid serious problems.
6	Persistent cloud cover preventing co-located surface and satellite measurements of local CH ₄ emissions (Likelihood M, Severity L).	WP1	Locations and seasons are chosen that optimize the prospects for clear sky conditions. The time windows of campaigns have the redundancy needed to wait for suitable weather.
7	Escalation of the Ukraine-Russian war in the black sea, interfering with our planned measurement cruises (Likelihood L, Severity L).	WP1	Chances that Romanian territory will be affected are very small. In worse case we will have to shift resources to additional measurements over land.
8	Political instability in Congo putting personnel at risk (Likelihood L, Severity M).	WP3	Relocation of our planned campaigns to another location in Congo.
9	Risk of sensor failure (Likelihood H, Severity L)	WP1-WP3	This will inevitably happen once in a while. It is part of our planned activities to fix the reasons for failure as soon as possible

Annex 5 Risk Identification Form

Risk Identification Form	
Date:	WP:
Originator(s):	
Have you experienced any problem or risk when dealing with the activities involved in this WP during this period? Yes / No	
If yes, please describe and rank them below:	
In your opinion, is any of these problems or risks hard enough so that the success of the project can be in danger? Yes / No	
Do you have any suggestion to avoid or tackle the problems and risks expressed above? Yes / No	
If yes, please describe them below:	
Classification Probability of occurrence H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> Significance of impact H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/> Overall rating H <input type="checkbox"/> M <input type="checkbox"/> L <input type="checkbox"/>	Date _____ _____ _____
Status:	Date:
Assigned to:	
Handling Procedure? Yes / No	
Notification sent to:	
	PM Yes / No
	WPL Yes / No
	Stakeholders Yes / No
Annexes:	