



COST Action 19139

Process-Based Models for Climate Impact Attribution across Sectors (PROCLIAS)

WG.4: COMMUNICATION AND DISSEMINATION OF CLIMATE IMPACTS

Report

on the activity of the Task Group 4.2: Stakeholder mapping

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1. INTRODUCTION

This document summarizes the main activities carried out by the Task Group (TG) 4.2, part of the Working Group (WG) 4 on *Communication and Dissemination of Climate Impacts*, which is one of the four working groups organized within the COST Action (CA) 19139 entitled *Process-Based Models for Climate Impact Attribution across Sectors* (PROCLIAS) (<https://proclias.eu/>; <https://proclias.eu/working-groups/>).

Created in 2021, the TG 4.2 was dedicated to the *Stakeholder mapping*. The major objectives of this TG, as originally set out and displayed on the Action website (<https://proclias.eu/working-groups/wg4/tg4-2/>), were to identify and map existing contacts within the PROCLIAS network, covering all participating countries, and to establish a network of stakeholders interested in the PROCLIAS Action outputs, to be regularly informed with update information on the on-going work under the Action as well as on opportunities for engagement.

This report presents the relevant activities carried out in the period 2021 – 2024 and their results/outputs.

2. COLLECTING INFORMATION ON POTENTIAL STAKEHOLDERS AND DATABASE CREATION

A basic step for the stakeholder mapping was to identify in every country participating to PROCLIAS Action, potential stakeholders which could be interested in being informed/engaged about/in PROCLIAS Action scientific outputs and activities. To this end a questionnaire was created, to be addressed to the PROCLIAS members. Based on the information collected with the questionnaire, a database was created that was subsequently processed.

2.1. Design and distribution of a questionnaire for identification of potential stakeholders interested in the PROCLIAS Action activities and outputs

The questionnaire included 9 questions designed by the members of the working group TG 4.2. They aimed at obtaining information on the potential stakeholders and their characteristics: category (organization type), geographical/spatial scale, sector/topic of interest, desired type of engagement etc.

The questions (Q) are summarized below and presented in detail in Annex 1:

Q1 - 4. Identification questions: name, institution and its location (city and country), e-mail

Q5. What kind of organizations are particularly interesting for you to cooperate with under PROCLIAS? (8 options)

Q6. What geographical/spatial scale focus would be of interest for you work? (5 options)

Q7. Which sector(s) or wider topical focus is particularly interesting for you? (17 options)

Q8. What type of engagement would you like to have with stakeholders? (5 options)

Q9. Could you share relevant stakeholders that you have worked with or could be interested in working with?

Based on the information collected through the questionnaire, it was intended to create a database with the identified stakeholders and their specific data, in order to be contacted and periodically informed on ongoing project activities, outputs as well as engagement opportunities (e.g. through a regular newsletter).

The on-line form of the questionnaire was sent to the PROCLIAS members, on June 30, 2021 with deadline on July 31, 2021 and it was accessible at the link: <https://www.surveymonkey.de/r/PROCLIAS>.

2.2.Database creation

The information collected based on the questionnaire was centralized in a database in Excel format, only for internal use. The data were subsequently processed and mapped (graphic and cartographic representations), as presented in the next section (3).

3. DATABASE PROCESSING: MAPPING AND ANALYZING THE RESULTS

In the following, we present the results of the database processing.

Number of respondents and the countries they belong to

The questionnaire was filled by 30 respondents, PROCLIAS members belonging to 18 countries (Fig. 1). It is worth noting that at the time of the launch of the questionnaire, there were 33 countries involved in the Action. One respondent was originally from Japan, which was not a member of PROCLIAS at the time.

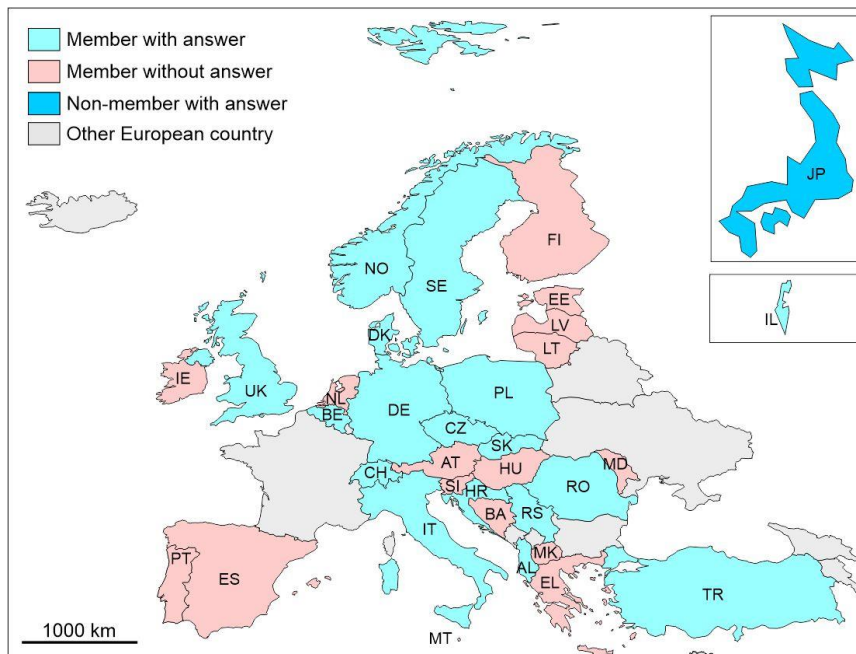
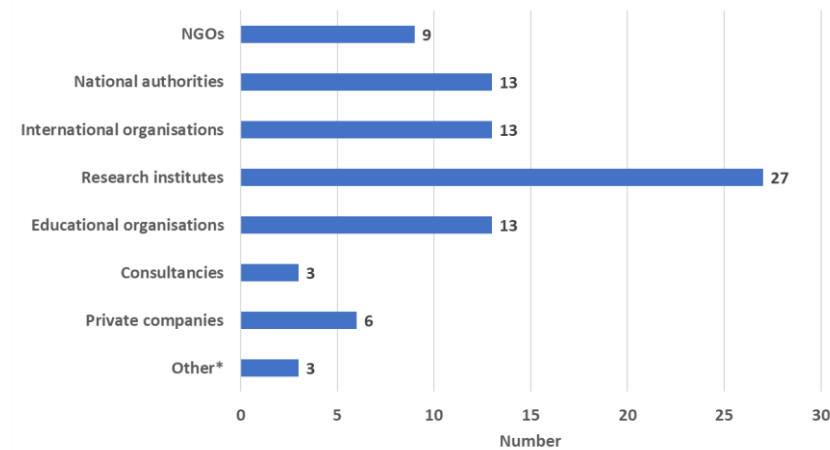


Figure 1. Geographical distribution of the countries involved in PROCLIAS Action (in 2021) and of the respondents

Stakeholder categories/types

The responses to the question 5 (*What kind of organizations are particularly interesting for you to cooperate with under PROCLIAS?*) allowed us to identify the types of stakeholders that are of interest to the PROCLIAS members. As the Figure 2 shows, the most responses indicate research institution (27) followed at a fairly large distance by national authorities (13), international organizations (13) and educational organizations (13).

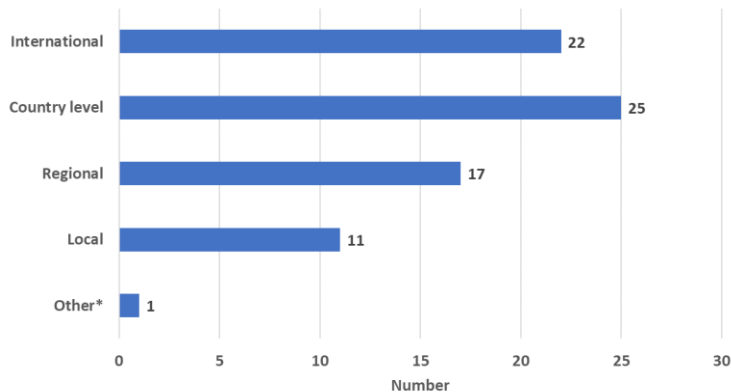


*Other: Cantonal authorities, professional associations, freelance experts

Figure. 2. Stakeholder categories. Answers to the Question 5: *What kind of organizations are particularly interesting for you to cooperate with under PROCLIAS?*

Geographical/spatial scale

Regarding the spatial scale of the potential stakeholders, based on the responses to the Question 6 (*What geographical/spatial scale focus would be of interest for you work?*) it was found that the major interest of the PROCLIAS members is to collaborate with stakeholders at the national level (27 responses), followed by the international level (22 responses), while the interest for the local level is lower (11 responses) (Fig. 3).

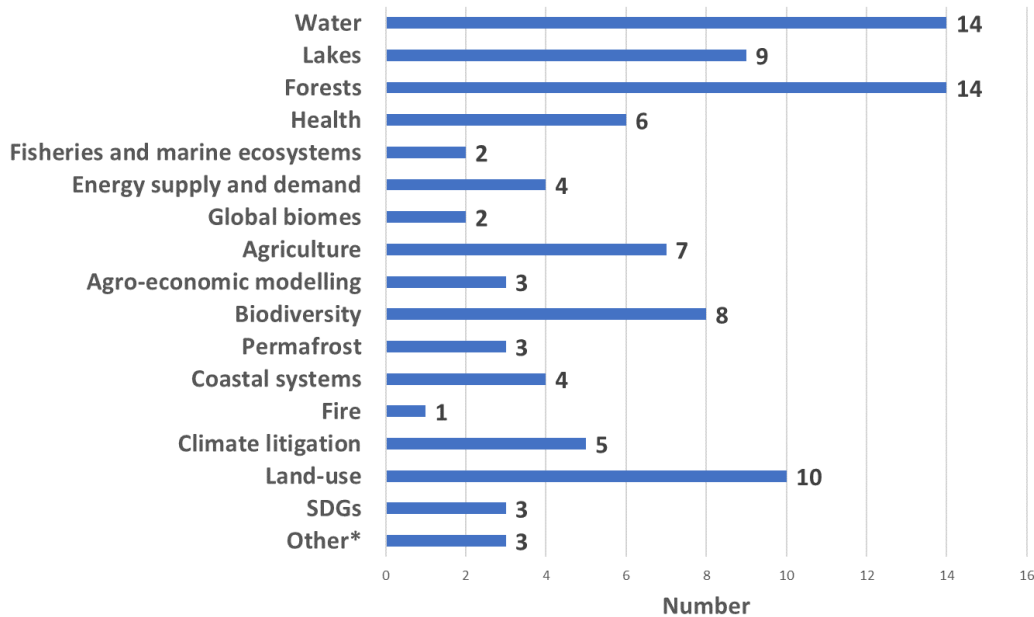


*Other: specific sector

Figure. 3. Spatial scale of the potential stakeholders. Answers to the Question 6: *What geographical/spatial scale focus would be of interest for you work?*

Sectors of interest

The responses to the Question 7 (*Which sector(s) or wider topical focus is particularly interesting for you?*) showed that the sectors/fields with the greatest interest of PROCLIAS members to collaborate with stakeholders are those concerning water and forests (each with 14 answers), followed by land-use (10), lakes (9) and biodiversity (8). The least interest is shown to stakeholders from the fields of fire (1 response), fisheries and marine ecosystems (2) and global biomes (2) (Fig. 4).

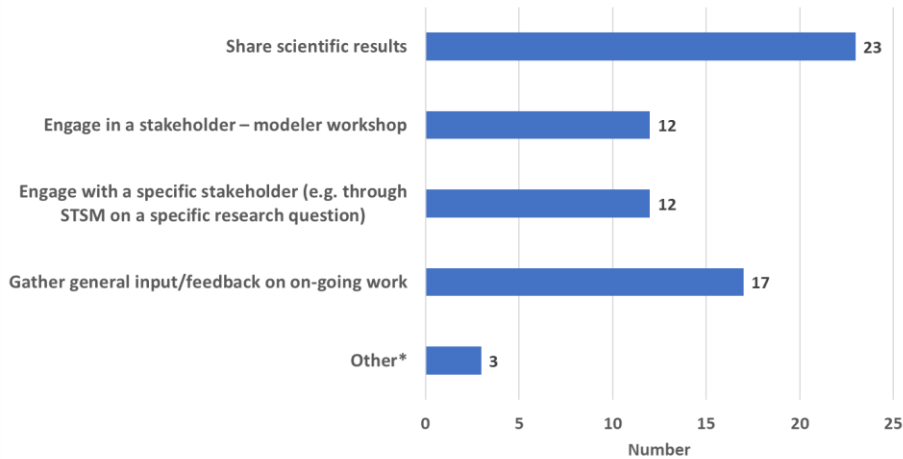


*Other: wood sector, industrial sector, transport planning

Figure. 4. Sectors/fields of interest. Answers to the Question 7: *Which sector(s) or wider topical focus is particularly interesting for you?*

Type of engagement

Most of the responses of the PROCLIAS members to the Question 8 (*What type of engagement would you like to have with stakeholders?*) showed their interest for sharing the scientific results (23 answers) and for gathering general input/feedback on on-going work (17) (Fig. 5).



*Other: publications, develop climate adaptation strategies

Figure. 5. Type of engagement. Answers to the Question 8: *What type of engagement would you like to have with stakeholders?*

List of stakeholders

The last question (9) required to the PROCLIAS members to share relevant stakeholders that they have worked with or could be interested in working with, by providing contact data (names, email addresses and the name of the institute the person works). This question should have allowed us to make a list of with potential stakeholders to be contacted in order to be informed/engaged about/in PROCLIAS Action scientific outputs and activities.

Only 8 persons answered to this question, from 7 countries (Czech Republic, Denmark, Germany, Israel, Romania, Serbia, Turkey) but very few concrete recommendations were provided, many without contact details.

We have thus encountered the difficulty of having individual data allowing to contact persons/potential stakeholders and thus, we did not manage to create a list and network of stakeholders to be engaged in PROCLIAS Action, as we initially intended. A possible explanation would be the lack of clarity of the questionnaire regarding the General Data Protection Regulation (GDPR), as well as the quite small number of respondents.

The results of the questionnaire-based data processing were presented at the Cross-sectoral ISIMIP and PROCLIAS Workshop, on 16-19 May 2022, in Potsdam (Germany), as an oral plenary (virtual) communication (see Section 5).

4. PROPOSALS FOR A NEW DATABASE AND FOR MAPPING THE INFORMATION

Because of the problems encountered with the identification of the stakeholders based on the questionnaire addressed to the PROCLIAS members in 2021, in subsequent discussions within TG 4.2, the issue of restoring the database on potential stakeholders was raised. Therefore, during the workshop *Best practices on addressing typical climate impact stakeholders*, organized within the WG4 on 12 -13 October 2023 at Vrije Universiteit Brussels (VUB), a new database and methods for mapping the information were proposed to the participants.

4.1. A database from Google form

In order to collect updated information on potential stakeholders interested in PROCLIAS Action, a new database, as **Excel file on Google Drive**, was proposed to be discussed by the participants to the workshop in Brussel.

This database may be accessible to the PROCLIAS members, which can fill directly in the Excel file on Google Drive. To comply with the GDPR, no concrete contact data are required, but only the name of the institution (potential stakeholders) and some additional data/characteristics.

The form includes 2 parts:

Part 1: *Information on the institution the PROCLIAS member is affiliated to:*

- Geographical position/Location (City and country)
- Profile (E.g., research institute, educational/academic institution, international organization, national authority, regional/local authority, NGOs, private company, consulting company, other – to be mentioned)
- Spatial scale (E.g., international, country scale, regional/cantonal, local, other – to be mentioned, no collaboration)
- Sector/Field (E.g., water, lakes, forests, health, fisheries and marine ecosystems, energy supply and demand, global biomes, agriculture, agro-economic modelling, biodiversity, permafrost, coastal systems, fire, climate litigation, land-use, industrial, SDGs, other – to be mentioned, no collaboration)

Part 2: *Information on the partner / collaborator institution (stakeholder) on topics related to climate impact attribution /climate impact assessment*

- Geographical position/Location (City and country)
- Profile (E.g., research institute, educational/academic institution, international organization, national authority, regional/local authority, NGOs, private company, consulting company, other – to be mentioned)
- Spatial scale (E.g., international, country scale, regional/cantonal, local, other – to be mentioned, no collaboration)
- Sector/Field (E.g., water, lakes, forests, health, fisheries and marine ecosystems, energy supply and demand, global biomes, agriculture, agro-economic modelling, biodiversity, permafrost, coastal systems, fire, climate litigation, land-use, industrial, SDGs, other – to be mentioned, no collaboration)
- Type of relation/Engagement (E.g., sharing/exchanging results/knowledge/information, involvement in joint projects, engagement in joint activities (please nominate them), meetings (workshops, conferences), internships/trainings, other – to be mentioned)
- Example of engagement (E.g., the name of a common programme/project as future case study of best practices regarding stakeholder engagement)

The database creation was tested by the participants to the workshop and further discussed.

4.2. Database processing: proposals for mapping the information

During the workshop in Brussels (12-13 October 2023) 17 answers/lines with information were filled in the proposed database by participants from different countries (Albania, Belgium, Germany, Italy, Lithuania, Republic of Moldova, Romania, Turkey and United Kingdom). Some of the answers were irrelevant, because the respondents did not complete the entire questionnaire (i.e., information on their partners) and we could not create a network between the features of their organisations and those of their collaborators.

The participants named as type of relation/engagement: involvement in joint projects, internships, trainings for students, sharing data, sharing results. The examples of engagement were: H2020 collaboration, Interreg projects.

Based on the information collected in the new database, examples of possible methods to process and analyze the information on stakeholders were presented to the participants, such as stakeholders' network and a holistic model of stakeholders. The social network analysis allows us to understand the relations between stakeholders. The holistic model integrates and correlates the results from the network in order to show the most relevant stakeholders of the network.

4.2.1. Network of stakeholders

Figures 6 - 9 show some of the outputs of the processing of the database created at the workshop in Brussels. In terms of profile, the research institutes are the most important stakeholders in terms of number of various partners. Yet, the strongest relations are between academic institutions and national authorities. In terms of sector/field, a large variety of domains are represented. The most important as number of connections are water, land use and climate. In terms of geographical position, participants such as those in Belgium, Germany, and Italy declared to work at various levels (global, other country, regional) while participants from Lithuania, Moldova, Romania, and Turkey declared to work with partners/stakeholders at national level.

4.2.2. Holistic model of stakeholders

The holistic model correlates the number of institutions PROCLIAS members to their degree (number of different partners). Based on the new database created during the workshop in Brussels, the Figures 6 and 9 show that research institute and academic institutions are the concerned influencers of the climate impact domain. Meanwhile, NGOs and policy institutions are the least integrated in the network, therefore unconcerned lurkers.

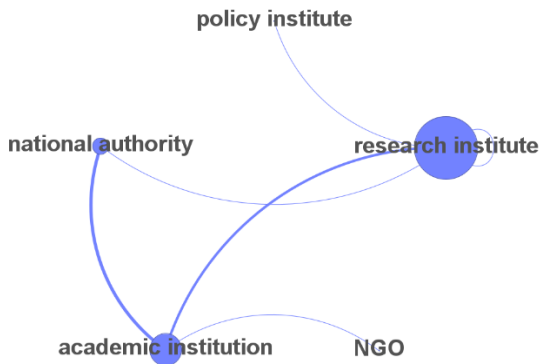


Figure 6. Results of the new database processing: profile of stakeholders – network approach (16 answers)

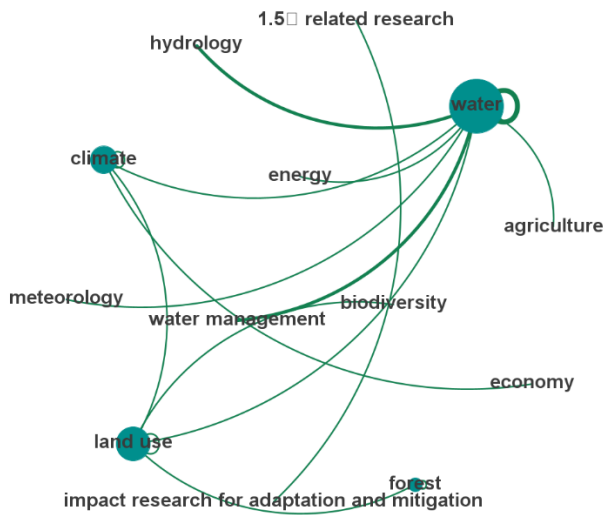


Figure 7. Results of the new database processing: domains/fields – network approach (10 answers)

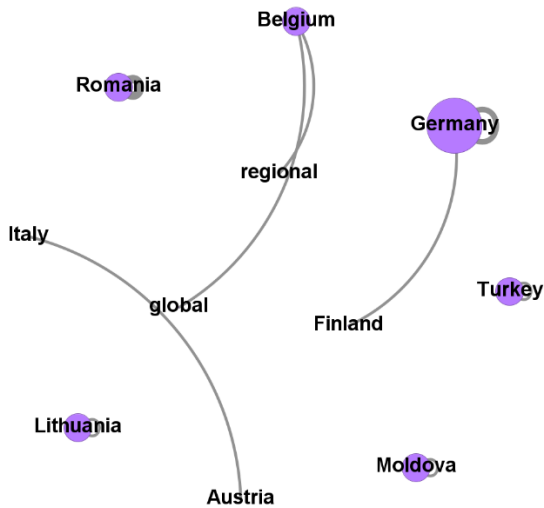


Figure 8. Results of the new database processing: geographical position – network approach (12 answers)

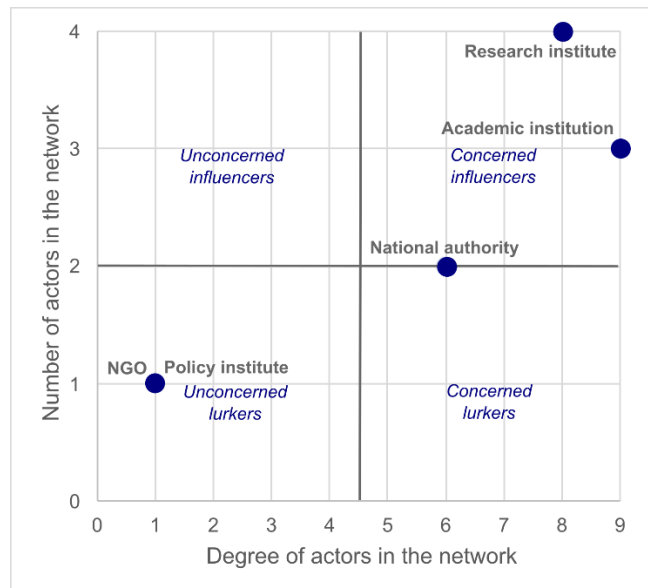


Figure 9. Holistic model of stakeholders based on the answers in Figure 6

The questionnaire could be addressed on a larger number of PROCLIAS members in order to have an overall picture of stakeholders related somehow to the project and its topics/objectives. After discussions within the workshop in Brussels, it was considered that, since the PROCLIAS Action

is in its last year, the time is too short to be able to create a large database (with information from all the PROCLIAS current members) and make use of the collected information.

5. PARTICIPATION WITH COMMUNICATIONS/INTERVENTIONS IN WORKSHOPS AND MEETINGS ORGANIZED WITHIN PROCLIAS ACTION

During the period of the PROCLIAS action, the members of the TG4.2 participated with oral communications and interventions in workshops organized within PROCLIAS Action, as follows:

- **Cross-sectoral ISIMIP and PROCLIAS Workshop**, 16-19 May 2022, Potsdam (Germany): plenary (virtual) communication titled *TG4.2 Stakeholder mapping: Current and Expected Outcomes*, authors: Liliana Zaharia¹, Gabriela Ioana-Toroimac¹, Inga Menke² and Gabriela-Adina Moroşanu³ (1 - University of Bucharest; 2 - Climate Analytics, Berlin; 3 - Romanian Academy, Institute of Geography, Bucharest)
- **Cross-sectoral ISIMIP and PROCLIAS Workshop**, 5 – 8 June, 2023, Praga (hybrid format): participation to discussion within WG4 dedicated session.
- **WG4 Paper writing Workshop - Best practices on addressing typical climate impact stakeholders**, 12 -13 October 2023, Vrije Universiteit Brussels: communication and discussion of the survey/database of stakeholders in the PROCLIAS project, authors/chairs Liliana Zaharia and Gabriela Ioana-Toroimac (University of Bucharest).
- **Working Group (WG) 4 synthesis and paper writing Workshop**, 12 -13 September 2024, International Institute for Applied Systems Analysis (IIASA), Vienna (Austria): presentation of the communication entitled *Drought policy actions in Romania: attribution, barriers, recommendations*, authored by Gabriela Ioana-Toroimac and Dana Constantin (University of Bucharest), and participation in the discussions during the workshop.

The members of the TG4.2 also participated at several virtual meetings dedicated to the activities within the WG4 and TG4.2 on: 5 March, 2021; 22 March, 2022 and 11 July, 2023.

5. CONTRIBUTION TO SCIENTIFIC PUBLICATIONS OF THE PROCLIAS ACTION

Several members of TG4.2 contributed as co-authors to the paper *Stakeholder engagement for inclusive climate impact attribution studies (2024)*, authored by: Nkwasa A, I Menke, L Murken, L Zaharia, G Ioana-Toroimac, L Müller, M Michetti, M Asaduzzaman, G-A Morosanu, MT Nakkazi, V Akstinas, A Agramont Akiyama, K Gregor, N Basaran, A Kumar, V Shiko, H Tekin, E Vaculovschi, PV Biçer, CPO Reyer and A van Griensven.

The paper is under review by the journal *Environmental Research: Climate*.

7. DISSEMINATION OF INFORMATION RELATED TO THE PROCLIAS ACTION

TG4.2 leaders/members contributed to the dissemination and popularization regarding the PROCLIAS Action in different ways and contexts.

➤ **Participation of the TG 4.2 members with communications at international conferences**

Zaharia Liliana, Bîrsan Marius-Victor, Ioana-Toroimac Gabriela, Moroşanu Gabriela-Adina, 2020, *PROCLIAS – a challenging COST Action: an overview*, Conference *Re-shaping territories, environment and societies: new challenges* (ReTES), Bucharest, November 20th – 21th, 2020 (oral presentation) http://geoconference.geo.unibuc.ro/wp-content/uploads/2020/11/Programme_final-2.pdf (Web-Conference)

➤ **The 36th Conference of the International Association of Climatology (IAC), Bucharest, 3 – 7 July 2023: participation of Professor Simon Gosling, leader of the WG3 - *Climate change extremes: attribution, projections and impacts* within PROCLIAS Action, as a keynote speaker¹**

Prof. Gosling presented in the opening plenary session of the IAC Conference in Bucharest, issues related to the activities carried out within the PROCLIAS COST Action in the communication entitled *Climate Change Extremes: Attribution, Projections and Impacts* (Fig. 10) (https://aic2023.geo.unibuc.ro/wp-content/uploads/2023/06/AIC2023_programme.pdf).



Figure 10. The first slide of the communication presented by prof. Simon GOSLING in the opening plenary session of the 36th Conference of the International Association of Climatology (IAC), Bucharest, 3 – 7 July, 2023

¹ The leaders of the TG4.2 (Zaharia Liliana and Ioana-Toroimac Gabriela) were responsible of the Organizing Committee of the conference (<https://aic2023.geo.unibuc.ro/en/>) and for inviting professor Simon Gosling.

In order to share information on the COST PROCLIAS Action, a flyer was distributed to the IAC Conference participants (Annex 2).

- **Dissemination to the members of the Romanian network of scientists involved in researches on climate changes and impacts, of updated information on the activities carried out within the PROCLIAS Action (e.g. workshops/webinars, short-term scientific missions etc.)**

Every year during the period of the PROCLIAS COST Action, the leaders of the TG 4.2. periodically shared to the national network of scientists interested in topics related to those of the PROCLIAS Action, information received from the leaders of the Action, regarding the various activities carried out within it.

8. CONCLUSIONS

This report summarized the relevant activities and outputs of the Task Group (TG) 4.2, focused on the *Stakeholder mapping*. This TG acted under the Working Group (WG) 4 on *Communication and Dissemination of Climate Impacts*, one of the four working groups organized within the COST Action (CA) 19139 entitled *Process-Based Models for Climate Impact Attribution across Sectors* (PROCLIAS).

The activities presented in this report were carried out in the period 2021 – 2024 and they had as primary major objective to identify and map the potential stakeholders interested in the PROCLIAS Action activities and outputs.

A base step to achieve these objectives was to collect information on potential stakeholders, in order to create a database with them and their characteristics to be processed and mapped. Consequently, a first activity was the design of a questionnaire for identification of potential stakeholders (**Section 2.1**). The on-line form of the questionnaire was sent to the PROCLIAS members on June 30, 2021 with deadline on July 31, 2021. It was filled by 30 respondents belonging to 18 countries (from 33 countries involved in the Action, at the time). Based on the answers received, a first database with information on potential stakeholders was created (**Section 2.2**). This information was subsequently processed in graphic and cartographic form, and the results were presented in the Cross-sectoral ISIMIP and PROCLIAS Workshop, on 16-19 May 2022, in Potsdam (Germany), as an oral plenary (virtual) communication (**Section 3**).

Based on the information collected, it initially aimed to establish a network of stakeholders interested in the PROCLIAS Action outputs, to be regularly informed with update information on the on-going work under the Action, as well as on opportunities for engagement. Unfortunately, we have encountered the difficulty of having individual data allowing to contact directly persons/potential stakeholders and thus, we were not able to create a list and network of stakeholders to be informed on/engaged in PROCLIAS Action. The causes of this situation can be related to the lack of clarity of the questionnaire on the General Data Protection Regulation (GDPR), as well as to the low number of the PROCLIAS members who filled the questionnaire.

To achieve our goal of creating and mapping a network of potential stakeholders interested in PROCLIAS Action, a new database was proposed, based on information collected through an Excel form in Google Drive, addressed to the PROCLIAS current members (much more numerous than in 2021). To comply with the GDPR, no concrete contact data are required, but only institutional information. This new database was tested and discussed by the participants to the WG4 workshop in Brussels (12-13 October 2023) (**Section 4; 4.1**). 17 answers/lines with information were filled in this database by participants to the workshop, belonging to 9 countries. Based on the information collected in the new database, examples of possible methods to process and analyze the information on stakeholders were presented to the participants, such as stakeholders' network and a holistic model of stakeholders (**Section 4.2**). The questionnaire could be addressed on a larger number of PROCLIAS members in order to have an overall picture of potential stakeholders interested in the Action. After discussions within the workshop in Brussels, it was considered that, since the PROCLIAS Action is in its last year, the time is too short to be able to create a large database (with information from all the PROCLIAS current members) and make use of the collected information.

Since the new database did not contain contact details of the stakeholders, it did not allow contacting them, but only aimed to present some methodological aspects of mapping the information on the stakeholders.

Apart from the activities mentioned above consisting in the collection of data regarding the stakeholders and their mapping, there were other activities carried out within TG42, such as: participation with communications/interventions in workshops and meetings organized within PROCLIAS Action (**Section 5**), contribution to a scientific paper (**Section 6**) and Dissemination of information related to the PROCLIAS Action (**Section 7**).

Even if not all the originally set objectives of the TG4.2 were fully achieved, we still consider that the activities carried out within this TG have made some valuable contributions to the PROCLIAS Action, through the information provided regarding the participants in this Action and their network of stakeholders/collaborators on specific PROCLIAS Action topics, as well as through some methodological aspects of processing/mapping the information on the stakeholders.

ACKNOWLEDGEMENTS

The leaders of the TG4.2. are grateful to all those who supported them in carrying out the activities within this TG. Special thanks are directed to Christopher Reyer (the chair of the PROCLIAS COST Action), Albert Nkwasa (the leader of the WG4), and Inga Menke (who had an important role in the design and distribution of the first questionnaire).

Annex 1: Questionnaire for stakeholder mapping

(accessible at <https://www.surveymonkey.de/r/PROCLIAS>)

Questionnaire for stakeholder mapping - PROCLIAS internal

*** 1. Your name**

2. Your institution

3. Where is your institution based (city and country)?

*** 4. Your email address**

5. What kind of organisations are particularly interesting for you to cooperate with under PROCLIAS? (you can check multiple options)

NGOs

National authorities

International organisations (e.g. UN bodies)

Research institutes

Educational organisations

Consultancies

Private companies

Other (please specify)

6. What geographical/spatial scale focus would be of interest for you work? (you can check multiple options)

- International (global, continental)
- Country level
- Regional (e.g. states, administrative regions within a country)
- Local
- Other (please specify)

7. Which sector(s) or wider topical focus is particularly interesting for you? (you can check multiple options)

- Water
- Lakes
- Forests
- Health
- Fisheries and marine ecosystems
- Energy supply and demand
- Global biomes (modelling the distribution of large-scale ecosystems)
- Agriculture
- Agro-economic modelling
- Biodiversity
- Permafrost
- Coastal systems
- Fire
- Climate litigation
- Land-use
- SDGs
- Other (please specify)

8. What type of engagement would you like to have with stakeholders?

- Share scientific results
- Engage in a stakeholder – modeler workshop
- Engage with a specific stakeholder e.g. through STSM on a specific research question
- Gather general input/feedback on on-going work
- Other (please specify)

9. Could you share relevant stakeholders that you have worked with or could be interested in working with? Please share **names, email addresses** and the name of the **institute** the person works in by email with **Inga.menke@climateanalytics.org** - please **write stakeholders PROCLIAS in the subject**. You can share as many contacts as you think are relevant.

Thank you!

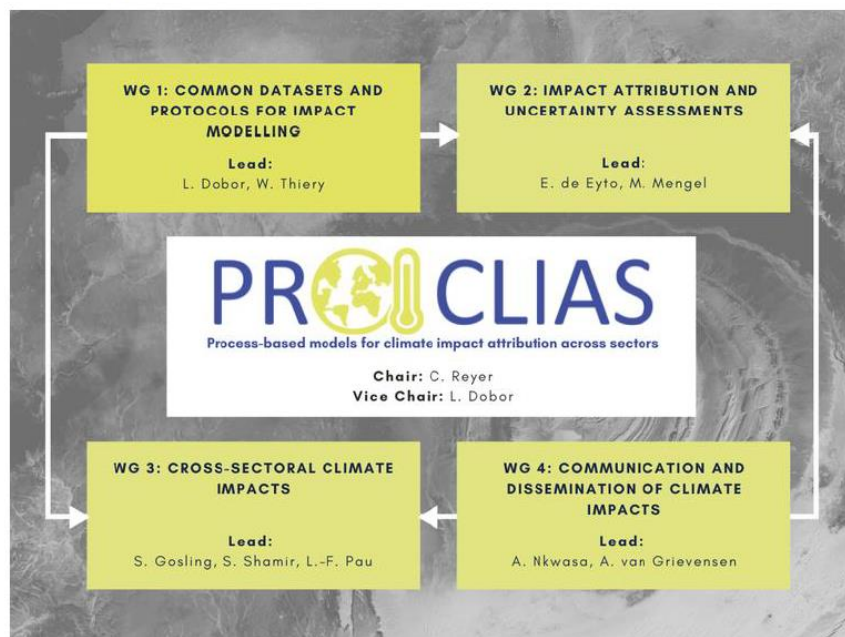
Note on data privacy: the answers will be used within the PROCLIAS COST Action only. The data collected through this survey will be retained for the duration of the COST Action before being definitely deleted. You have the right to access, view and edit your data even after having submitted the survey. You can opt out of the survey at any time and you can ask us to delete your personal data.

Annex 2. Flyer on the COST PROCLIAS Action, distributed to the participants to the 36th Conference of the International Association of Climatology (IAC), July 3 – 7, 2023, Bucharest

***Process-based models for climate impact attribution
across sectors***

PROCLIAS, Cost Action 19139

Many complex process-based models are available to project future climate impacts. Yet, the current climate impact research community is fragmented, modeling mostly individual systems. This lack of coordination amongst impact modelers as well as insufficient awareness about impact attribution methods hampers important scientific and political progress and more coordination and networking is urgently needed. Therefore and in close cooperation with ISIMIP, PROCLIAS aims to develop common protocols, harmonized datasets and a joint understanding of how to conduct cross-sectoral, multi-model climate impact studies at regional and global scales allowing for attribution of impacts of recent climatic changes and robust projections of future climate impacts. The COST Action will do so by focusing on key interactions of climate impacts across sectors, their accumulated effect, especially of extreme events, the attribution of impacts to climate change and the quantification of uncertainties.



To join Working Groups of interest, apply here: <https://www.cost.eu/actions/CA19139/>

<https://proclias.eu/>

Contact: proclias@pik-potsdam.de