SIXTH FRAMEWORK PROGRAMME PRIORITY: ERA-NET

Coordination of National and Regional Activities (ERA-NET scheme)

Proposal/Contract no.: 026058

CIRCLE CA

Climate Impact Research Coordination for a Larger Europe

Title

Deliverable III b-1 & III b-2

Protocol of CIRCLE project clustering methodology, including annexed minutes of meetings with project managers

&

Annotated list of nationally funded projects clustered by CIRCLE

Nature: Report

Dissemination Level: Public

Work package leader: Partner 5 (DLR)

Task leader: Partner 5 (DLR)

Editor:

Annette Münzenberg & Stephanie Janssen

Contributing Authors:

With contribution of all CIRCLE partners

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Contents

1 Introduction and background

The objective of CIRCLE's task III.b "A posteriori clustering of selected research projects" is to design a procedure for installing cross-border collaboration on the basis of existing research activities, specifically in research projects, in terms of CIRCLE's topics climate impact and adaptation. This activity contributes to the joint and collaborative actions of CIRCLE and provides a useful tool in terms of making international research cooperation happen. In doing so, it is an essential contribution to the portfolio of CIRCLE's workpackage CONNECT, which is strategically located on the interface between assessment and performing. Moreover, it may even serve as a useful method in terms of a scoping for urgent research needs. In this context, existing activities may be the nucleus of a continuative research debate or they may enrich research topics which have been assessed elsewhere with expert know-how.

In summary, the a posteriori clustering has the following main goals:

- Provide a "taste" of cross-border collaboration
- Support the interlinkage between projects across borders
- Assess topics which can be developed further if the potential exists

The clustering itself is a major task of WP 3 (GROUP), whose responsibility is to initiate, perform and maintain the cross-border cooperation. GROUP up to now is following the regional approach, taking into account the spatial scale and clustering activities like in the Mediterranean Area, the Nordic countries and the Mountainous Area. However, an extension to sectoral and pan-European topics is desirable in future activities of GROUP. This task may provide first scoping activities here.

Preliminary work on the topic of project clustering has already been performed in the SSA phase of CIRCLE. Here, information on research projects in the CIRCLE relevant national programmes were assessed, two exemplary topics

1. Climate Change in the Mediterranean Region (MED)
2. Active Stakeholder Dialogue (ASD)

were derived and a scientific dialogue took place for each of these topics in two workshops. During the CIRCLE SSA phase, this procedure served as a prototype and for gaining experience for actions during the CIRCLE CA phase. However, the MED group of CIRCLE has its roots in this activity during the CIRCLE SSA phase and has been successfully developed further including the performance of a joint call initiated and funded by CIRCLE partners and observers.

2 Method and Procedure

The project clustering activities are meant to be based on already existing projects. It explicitly addresses the project level, with projects having a specified research topic, a project coordinator and a respective work plan. The philosophy behind it is to get very quickly into a discussion about scientific contents on climate impact and adaptation, finding out about major open questions and research gaps or just supporting the scientific dialogue across borders. The project clustering as it was designed here does not address the programme level. The programme level provides the strategic frame for the projects funded under the programme, however, also from a pragmatic point of view, to perform cross-border collaboration the project level is the right choice.

2.1 General Approaches

To start this process and to draft an efficient procedure from the methodological point of view, two ways are possible.

1. As a **top-down** approach, a topic with high relevance is announced and as a result, expertise from existing activities in e.g. CIRCLE's programmes (projects and alike) is combined. A topic of high relevance mostly reflects a certain pressure due to serious circumstances like e.g. natural disasters or due to a specific need of a scientific dialogue. To assess the relevant projects/activities which could contribute to the topic and answer the science question, either a respective data base (a concept of this will be described in detail in a related report on Deliverable III b-3) could be utilized or the CIRCLE partners could be contacted directly. The first choice would postulate a data base that is always up to date. The second choice would probably result in a rather targeted procedure. Once the relevant activities have been assessed, an appropriate framework has to be designed to pave the way for an efficient science process. This has been performed as prototype under task III.b, but for operational circumstances it would be the duty of WP3 and the GROUP approach.
2. For a **bottom-up** approach, information of running activities has to be assessed and synthesized in a first step. It has to be examined
    - which projects (ideally still running) are around on which topics
    - the demand and willingness to join, discuss and work together on certain topics.

    The feedback has to be evaluated and the potentially most successful topics have to be derived. A tool for an evaluation could again be a data base where, utilizing certain keys, respective topics can be filtered.

Both approaches are generally aligned and matched with research trends on the national and even the international scale.

2.2 First steps of project clustering

Both approaches have been examined in CIRCLE's task III.b. For investigating the potentially most successful topics for a project clustering activity, two activities have been performed as start-up of the procedure and as a first experiment of task III b[1].

- **bottom-up approach**: Assessment of the information of the projects funded under the national programmes as documented in the latest versions of the Extended Country Report (ECR)[2]
- **top-down approach**: E-mail request to CIRCLE partners on suitable projects and topics

From this information and a matching with the suggestions of the advisory board of CIRCLE, the following relevant sectors we face in climate impact and adaptation have been derived:

- Climate change and agriculture
- Climate change and land use (erosion, soil, …)
- Climate change and forestry
- Climate change and water management
- Climate change and health
- Climate change and the city
- Climate change and tourism
- Climate change and finances
- Climate change and energy
- Climate change and society (education, capacity building, gender, …)
- Climate change and coastal zones
- Climate change and river catchments (floods, water supply, …)
- Tools for adaptation: science-user interface in climate modelling and scenarios development
- Tools for adaptation: Decision support systems (DSS)
- Tools for adaptation: Active stakeholder dialogue
- Tools for adaptation: Extreme events and risk management

The topics are not new and rather obvious. In addition, from this information it was not possible to filter out the most urgent topics to be discussed on the international level in a clustering activity[3]. Therefore, to get into more detail and for the identification of the most successful topics for a project clustering activity with a certain dynamics in it, an inquiry has been developed and distributed among the CIRCLE partners. The feedback has been evaluated and topics have been chosen for a potential a posteriori clustering, being potentially successful in terms of an efficient science process as well as being of high relevance in the framework of CIRCLE's topics. However, this approach was not completely satisfactory, especially in terms of making the project

[1] Note: The procedure has been developed much further during the activities of project clustering!

[2] See Del. I a-1 Extended Country Report

[3] A classification by regions has been left out because this is nowadays covered by WP 3 (it was part of the clustering activity during the CIRCLE SSA, the MED group is a result from this activity, see above)

clustering an operative tool for CIRCLE. Therefore, the procedure has been developed further. The result will be shown below.

2.3 A next step: The CIRCLE data base

To really get up-to-date information at every stage of evaluation on topics to be discussed, elaborated or even funded in CIRCLE, it was finally decided to develop a CIRCLE data base on projects funded under the national programmes of the CIRCLE partners and observers or even transnational projects funded by CIRCLE partners and observers within CIRCLE. A data base should have the following general qualities to be of universal use: It should be

- helpful, efficient and easy to maintain
- simple in terms of updates
- fast for the access to key information

To meet technical standards, it should in addition

- be CERIF compliant (European storing standard)
- provide a Web entry of data
- allow multiple upload / entry of data
- contain a search option

The structure of the data base and its classification scheme has been developed in several steps. The classification scheme was designed to only compile very basic information of projects. There are two reasons for that:

1. To finally decide on a project cluster and a resulting activity, a more detailed assessment has to be performed which is not suitable to be surveyed via a data base alone. The basic information leads to details of the respective activities/projects, which are necessary to judge about their suitability for a substantial contribution to the science process.
2. The psychological barrier is much smaller for filling out and updating a very short and very targeted scheme.

It has to be noted that even with the best data base possible, a data base is only of value if it is kept up-to-date.

The development of the classification scheme and the data base itself is described in the report for Deliverable III b-3. The following categories have been implemented in the data base structure:

Sectors

- Agriculture
- Built environment
- City
- Coastal activities
- Energy
- Finances
- Forestry
- Health
- Land use (erosion, soil, …)
- Natural resources
- Nature conservation
- Society (education, capacity building, gender, …)
- Tourism
- Transport
- Water management

Tools

- Active stakeholder dialogue
- Cost benefit assessment
- Decision support systems (DSS)
- Extreme events and risk management
- Modelling: global
- Modelling: regional
- Observation / Monitoring
- Science-user interface in climate modelling and scenarios development

Zones

- Coastal zones
- Developing countries
- Lowlands
- Mountains
- Oceanic zones
- River catchments (flood, water supply, …)
- Sea ice / glaciers
- Small islands

Project-wise data has been assessed and compiled according to these categories, together with further basic information (e.g. respective programmes, contact coordinates, websites). For details on structure and content of the data base please refer to Deliverable III b-3.

3 Assessment of the data base content

After putting the data base into use, the CIRCLE partners and observers had been asked to submit their respective data into it. In doing so, CIRCLE partners have been requested to make their choice which projects to include in the data base according to the following criteria:

- Project with contribution to climate impact and adaptation research
- Project funded under national programmes or national activities from countries of the CIRCLE partners or by CIRCLE itself (e.g. projects from the MED call)
- Projects still ongoing or at maximum ended recently

In addition, the strategic component in terms of a successful clustering also had to be accounted for. This means, that it was left to the responsibility of the respective person feeding the data base (normally identical to the funder or funding agency) which projects should be considered and kept in the data base and which ones perhaps were marginal in terms of CIRCLE's topic climate impact and adaptation.

However, one always has to keep in mind that the data base serves as a tool to initiate and/or feed a clustering process. It cannot serve as an only source for a comprehensive and strategic clustering process or even beyond. This part has to be performed via strategic steps assessing and synthesising the context, even the political and scientific one, in much more detail.

The following paragraph gives an overview of the present state of the data base's content.

The data base contains 231 projects from 16 countries (as of 30.09.2009). These countries are: Austria, Belgium, Finland, France, Germany, Hungary, Ireland, Israel, Italy, Norway, Poland, Portugal, Spain, Sweden, The Netherlands and the UK.

The diagram below illustrates the quantity of projects belonging to the different countries (Fig. 1). It can be seen that most projects can be dedicated to France (25,54%), The Netherlands (22,51%), Germany (14,29%), and Austria (10,39%). The multi-national projects include all projects of the MED call (see activities of Work Package GROUP). For that reason they are not related to one single country but are considered separately.

102 projects are ongoing (44,16%) and 129 are closed (55,84%). The distribution of ongoing and closed projects between the countries is shown in Fig. 2.

Note that this data base does not claim to be exhaustive and does not include all projects of the countries which deal with climate adaptation. In this stage, CIRCLE partner have been asked to include their most relevant national projects on climate impact and adaptation research.

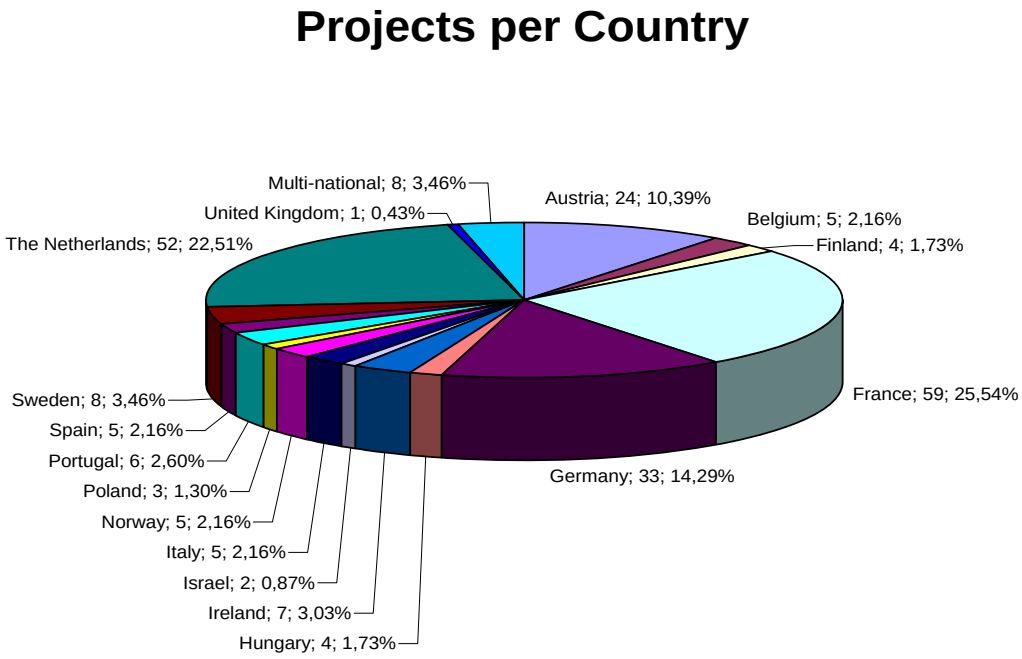


Fig. 1 Distribution of the projects in the database between the countries (number, percentages)

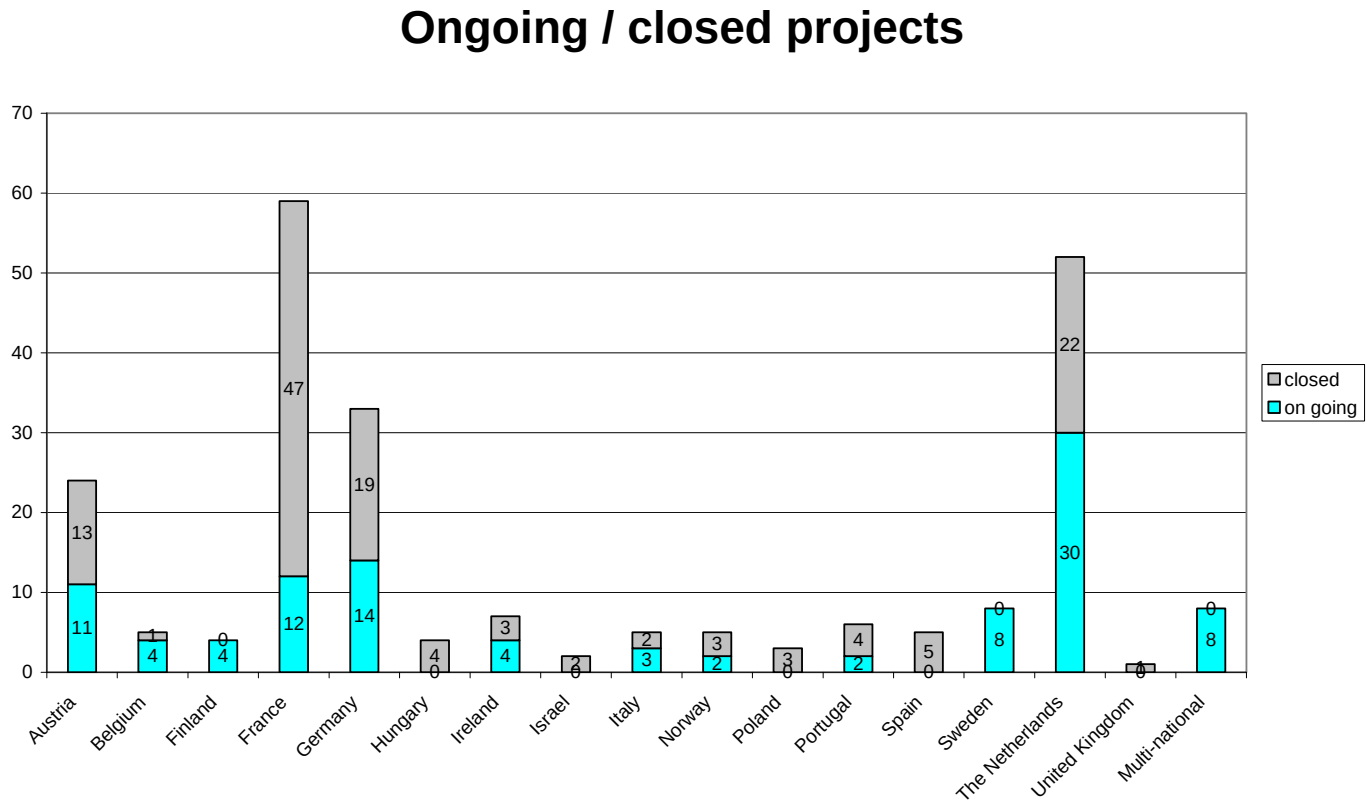


Fig. 2 Distribution of ongoing and closed projects, country-wise

In the **sectors** (Fig. 3), most of the projects belong to the sector “water management” (23,38%) followed by the sector “agriculture” (19,48%). The sectors “city”, “finances” and “natural resources” show low values below 6%. Only a few projects are addressed to the sector “transport” (3,9%). All other sectors show values between 6 and 13%.

The most commonly used **tools** (Fig. 4) in all research projects of the data base are “active stakeholder dialogue” (27,71%) and “regional modelling” (23,81%). The lowest values reach the tools “cost benefit assessment” (6%) and “science-user interface in climate modelling and scenarios development” (7,79%).

According to the data from the data base climate change affects in particular “coastal zones” (9,96%) and “river catchments” (9,09%). These zones seem to be the most important **zones** for adaptation research (Fig. 4). No research projects about adaptation concerning “sea ice and glaciers” can be found in the data base yet.

Note that multiple choices are possible. Moreover, this status is a snapshot and therefore no common conclusions can be derived.

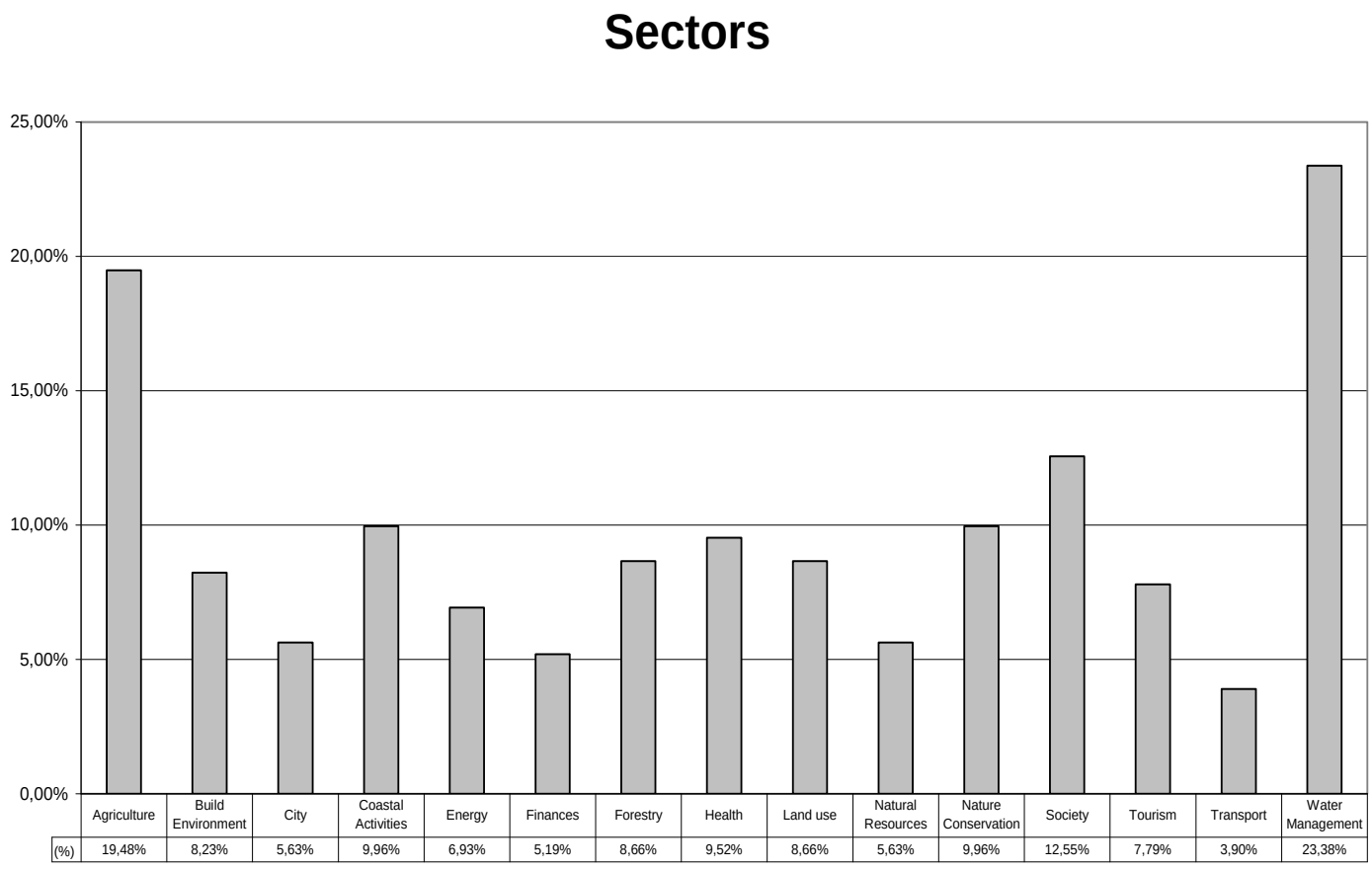
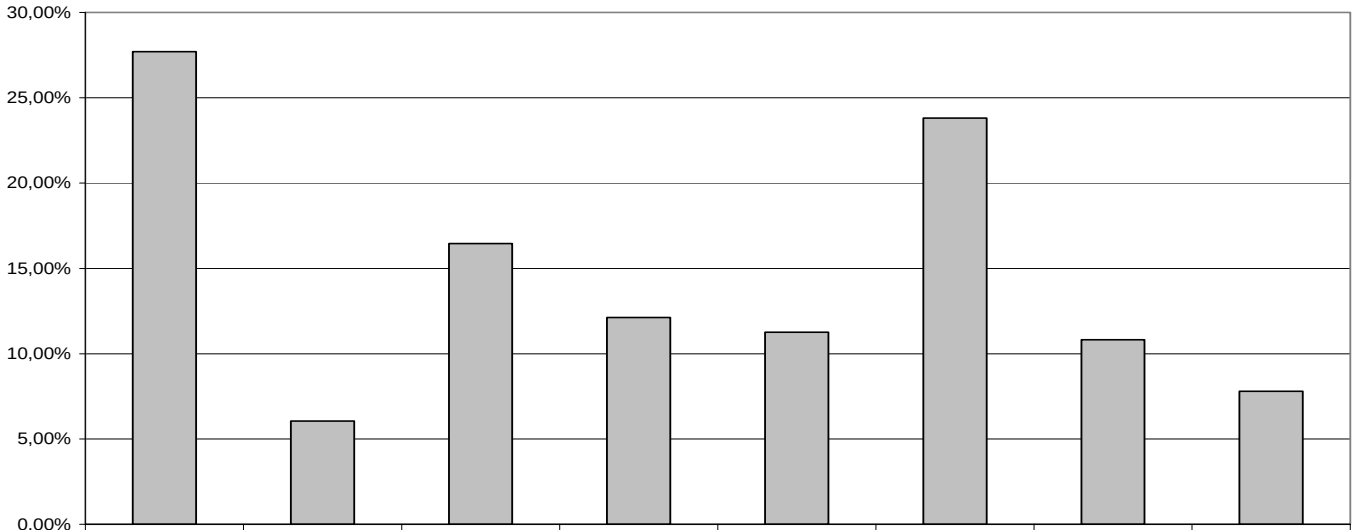


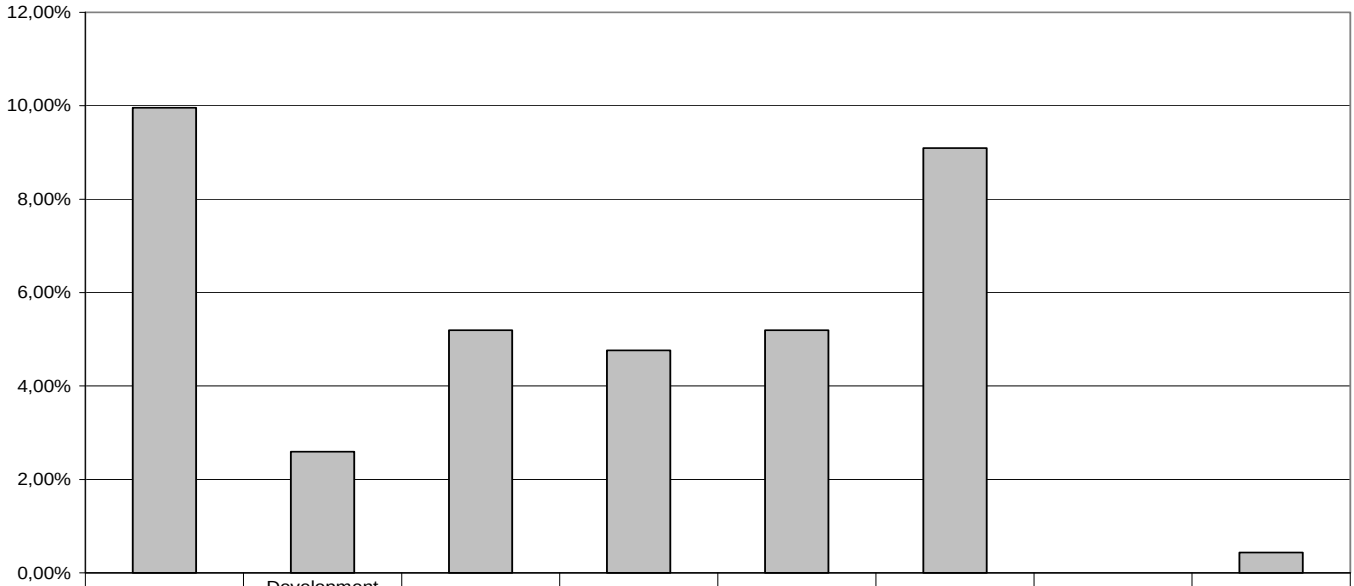
Fig. 3 Distribution of projects according to sectors

Tools



	Active Stakeholder Dialogue	Costs Benefits Assessment	Decision Support Systems	Extreme Events and Risk Mangement	Modelling: global	Modelling: regional	Observation / Monitoring	Science-user Interface in Climate Modelling
(%)	27,71%	6,06%	16,45%	12,12%	11,26%	23,81%	10,82%	7,79%

Zones



	Coastal Zones	Development Countries	Lowlands	Mountains	Oceanic Zones	River Catchments	Sea Ice / Glaciers	Small Islands
(%)	9,96%	2,60%	5,19%	4,76%	5,19%	9,09%	0%	0,43%

Fig. 4 Distribution of projects according to tools and zones

Sector Agriculture

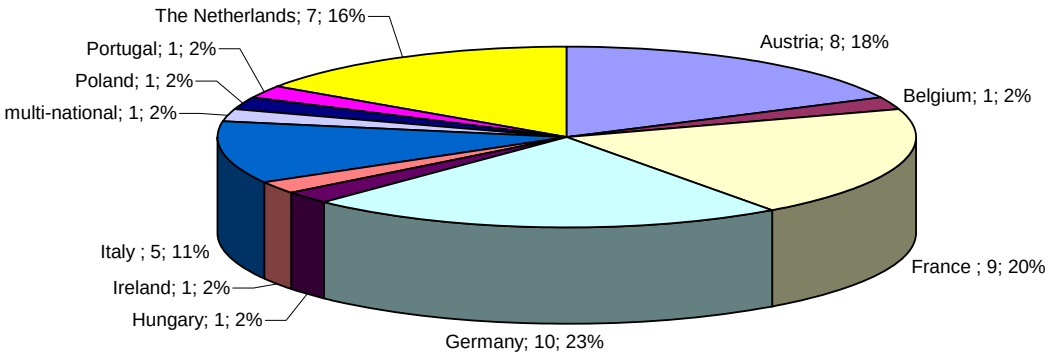


Fig. 5 Country-wise distribution of projects in the sector of agriculture

The Fig 5 and 6 show in an exemplary manner the country-wise distribution of the projects within the sectors agriculture and water management. The agricultural sector contains 45 research projects in 10 countries and the water management sector 54 projects in 13 countries. All countries with projects in the agricultural sector are from south and central Europe. There are no research projects from Northern countries (i.e. Scandinavian countries) for adaptation strategies in agriculture, again, according to the present content of the data base. In the future, a more elaborated data base and a larger sample may lead to more significant results also in terms of the effects of climate change in different regions of Europe.

By contrast, in the sector of water management countries from north and south Europe are represented. For an interpretation of this result the same conclusion applies as for the sector “agriculture”, namely, that the sample of the data base is still too small to derive general conclusions.

As said before, a data base is only as good as its maintenance. Therefore, if the data base is going to play a major role in any future work of CIRCLE, a modus operandi for a regular update of the data from the CIRCLE partners has to be implemented and ensured.

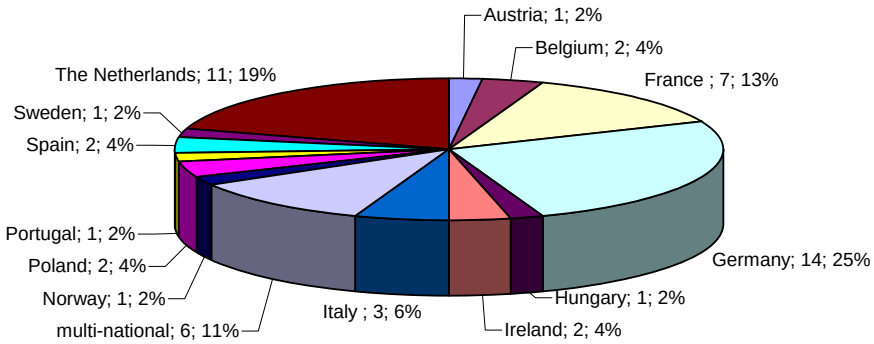


Fig. 6 Distribution of countries in the sector of water management

4 Performing project clustering

Two case studies of project clustering have been performed in CIRCLE's lifetime, with the following topics:

- Design and Use of Decision Support Systems
- Cost – Benefit in Adapting to Climate Change

The topics have been derived compiling information and experiences from funding routine on the day-to-day basis, utilizing an intensive data base search as well as observing the policy and science context in terms of climate impact and adaptation. The information of the synthesis process has been circulated stepwise among the CIRCLE partners until the final decision on the topic of the clustering event had been taken. Then participants have been invited and a respective topical workshop has been performed.

Workshop outline and procedure

Both workshops were oriented along three main questions which were introduced already together with the invitation. These questions were then discussed in depth, with the discussion block being the main item on the workshop agenda. The results were documented on-line to ensure a maximum agreement for a "take-home" message. The workshops were completed by (mainly) short presentations with contributions to the respective topic from the invited participants. Abstracts were provided for every contribution and for every participant. The presentations of the participants were sent around to the participants after the workshop as well.

The following paragraphs comprise an overview on main items of both workshops. The results from the discussions ("take-home" messages) can be found in Appendix I a and II a to this Deliverable.

4.1 Topic 1 "Design and Use of Decision Support Systems"

Date: July 16th, 2009

Location: Bonn, Germany, German Aerospace Center, Project Management Agency, Environment, Culture, Sustainability

Workshop concept, invitation

Decision Support Systems (DSS) are a commonly used software tool in climate impact and adaptation research. They are often developed by scientists in order to provide interdisciplinary scientific knowledge for practitioners and application. However, for a successful application of DSS, it is essential to maintain an intensive dialogue with the potential future users throughout the design of the system and beyond. The workshop aims to discuss solutions for an optimal layout of this dialogue and the implementation of the results into the system, as well as to secure that the system will be used operationally.

The following questions will be addressed and discussed in the workshop:

- *At which point is a DSS a DSS? Criteria and standards*
- *Which role and relevance do DSS' have in climate impact and adaptation research and application? Importance and acceptance*
- *Which best practices can be suggested to ensure professional and operational use of DSS? User involvement and user friendly implementation*

Agenda

10:00	Welcome address
	Martin Rieland, DLR
10:15	Aim and program of the workshop
	Annette Münzenberg, DLR
10:30	Tour de table
10:45	Short presentations of present project representatives on DSS, Part I
	ADAPT (Walter Hecq, Belgium)
	DSS climate change – energy (Elisabeth Jäger, Austria)
	CLIMWAT (Ana Buxo, Portugal)
	DSS-WuK (Robert Nuske, Germany)
	Moderation: Stephanie Janssen, DLR
11:30	Coffee break
11:45	Short presentations of present project representatives on DSS, Part II
	CLIMATOOLS (Annika Carlsson-Kanyama, Sweden)
	LandCaRe 2020 (Barbara Köstner, Germany)
	COM 15 (Jacob Klaas Star, The Netherlands)
	CLIMAR (Annemie Volckaert, Belgium)
	WATERKNOW (Diego Marazza, Italy)
	Moderation: Stephanie Janssen, DLR
13:00	Light lunch
14:00	Criteria and standards for DSS
	Moderation: Annette Münzenberg, DLR
14:45	Importance and acceptance of DSS in climate impact and adaptation
	Moderation: Stephanie Janssen, DLR
15:30	Coffee break
16:00	Best practice for DSS and implementation for operational use
	Moderation: Annette Münzenberg, DLR
16:45	Wrap-up of workshop
	Moderation: Annette Münzenberg, DLR
17:00	End of workshop

Participants

Benini, Lorenzo	WATERKNOW	Italy
Buxo, Ana	CLIMWAT	Portugal
Carlsson-Kanyama, Annika	CLIMATOOLS	Sweden
Hecq, Walter	ADAPT	Belgium
Janssen, Stephanie	CIRCLE	Germany
Jäger, Elisabeth	DSS climate – energy	Austria
Köstner, Barbara	LandCaRe 2020	Germany
Marazza, Diego	WATERKNOW	Italy
Münzenberg, Annette	CIRCLE	Germany
Nuske, Robert	DSS-WuK	Germany
Rieland, Martin	CIRCLE	Germany
Star, Jacob Klaas	COM 15	The Netherlands
Thiele, Jan	DSS-WuK	Germany
Vanderperren, Els	CLIMAR	Belgium
Volckaert, Annemie	CLIMAR	Belgium

For details on the contents of the participating projects (workshop abstracts) please refer to Appendix I a of this Deliverable.

Minutes, “Take-home” message

Please refer to Appendix I b of this Deliverable.

4.2 Topic 2 "Cost – Benefit in Adapting to Climate Change"

Date: September 24th, 2009

Location: Bonn, Germany, German Aerospace Center, Project Management Agency, Environment, Culture, Sustainability

Workshop concept, invitation

Whereas in climate protection impacts and costs are comparable obvious to be understood and measures can be taken rather directly, the target dimension for adaptation is not so clear. In many case the open question is to specify towards what to adapt.

One way of getting more concrete here is to determine the costs on adaptation in contrast to the costs if adaptation would not be performed. These activities result in a term called "cost benefit". This workshop is aimed towards a more concrete understanding on this topic.

The following questions will be addressed and discussed in the workshop:

- *Ways to quantify costs and benefits under adaptation to climate change*
- *Which role and relevance do cost benefit analyses have in "real life"? Importance and acceptance*
- *Which best practices can be suggested for the performance of cost benefit analyses in the context of climate change adaptation?*

Agenda

10:00	Welcome address ***Martin Rieland, DLR***
10:15	Aim and program of the workshop ***Annette Münzenberg, DLR***
10:30	Tour de table
10:45	Key note: The role of cost benefit studies in research on climate adaptation, the example of Zuidplaspolder hotspot ***Hasse Goosen, Alterra (Wageningen UR)***
11:15	Coffee break
11:30	Short presentations of present project representatives on cost benefit TOLERATE (Adriaan Perrels, Finland) CC-TAME (Naomi Pena, Austria) ADAPT (Walter Hecq, Belgium) LandCaRe 2020 (Horst Gömann, Germany) ***Moderation: Stephanie Janssen, DLR***
12:15	Additional short presentations on cost benefit activities Climate proofing the Netherlands (Arjan Ruijs, The Netherlands) Cost and Benefits of Adaptation - A bottom-up study in the context of the German Adaptation Strategy (Clemens Haße, Germany) ***Moderation: Stephanie Janssen, DLR***
13:00	Light lunch
14:00	Quantification of cost benefit in climate change adaptation ***Moderation: Markus Leitner, UBA Vienna***
14:45	Importance and acceptance of cost benefit in the real world ***Moderation: Stephanie Janssen, DLR***
15:30	Coffee break
16:00	Best practice examples for cost benefit analyses ***Moderation: Annette Münzenberg, DLR***
16:45	Wrap-up of workshop ***Moderation: Annette Münzenberg, DLR***
17:00	End of workshop

Participants

Gömann, Horst	LandCaRe 2020	Germany
Goosen, Hasse	Zuidplaspolder Hotspot	The Netherlands
Haße, Clemens		Germany
Hecq, Walter	ADAPT	Belgium
Janssen, Stephanie	CIRCLE	Germany
Leitner, Markus	CIRCLE	Austria
Martin, Daniel	CIRCLE	France
Münzenberg, Annette	CIRCLE	Germany
Pena, Naomi	CC - TAME	Austria
Perrels, Adriaan	TOLERATE	Finland
Rieland, Martin	CIRCLE	Germany
Ruijs, Arjan		The Netherlands
Szalai, Sándor	CIRCLE	Hungary

For details on the contents of the participating projects (workshop abstracts) please refer to Appendix II a of this Deliverable.

Minutes, “Take-home” message

Please refer to Appendix II b of this Deliverable.

5 Future perspectives

The described approaches to CIRCLE project clustering have been quite successful. The two workshops took place with rather intense and lively discussions on the respective topic. Even if a possible follow-up is not on the agenda at the moment, the results of the workshop showed the potential for further development of the activity in cross-border collaboration or even in developing up-to-date research topics. This could be subject to respective activities in the CIRCLE-2 phase, especially within the GROUP approach.

What also became obvious while the workshop was held was that for future activities even more care should be taken on the collocation of the participants and especially on contributions via respective key note speeches. Depending on the overall goal of the workshop a provocative component to the discussion could be of high value to extract results even more targeted.

For future activities on the field of project clustering, a methodology has been developed and can be applied. In the sense of a scoping process, project clustering is still an issue for itself. For the operational use and already clustered projects these activities may serve as nuclei for active groups in and to be followed by the GROUP approach.