

SIXTH FRAMEWORK PROGRAMME PRIORITY: ERA-NET

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

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SSA CIRCLE

Climate Impact Research Coordination for a Larger Europe

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**Report on the scientific programme contents of those
programmes represented in CIRCLE**

REPORT ON SCIENTIFIC CONTENT

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1 preface

The examination of the scientific programme contents is the scope of this report. For the SSA stage of CIRCLE it is agreed only to examine the so far partaking programmes into this report. But during the workshop in Stockholm it became possible to integrate already foreseen new programmes (like e.g. ANKE and NWO-NL) into this examination. The benefit is that these new programmes come into the ERA-NET initiative right from the start.

To make this report as vivid as possible, the information on the scientific content is given in two different depths:

1. For getting an overview, we created two graphic landscapes where the given position and the greyscale of the ruby pins gives information on the approach of the programmes (integrative/transdisciplinary versus disciplinary) as well as on their orientation (policy or science). A second landscape maps the contents with respect to impacts versus adaptation measures and natural systems versus human systems. The legends for the ruby pins give helps to understand the mapping of the correspondent programme.
2. For getting a deeper understanding of the scientific programme contents, a matrix was prepared which shows the whole range of research fields for climate impacts and adaptation. The crosses for each “CIRCLE-programme” show their distinct key topics within this field.

Together with the report on programme management aspects (deliverable 1.3.1) this report gives solid hints on answering the question of which programmes might have common ideas and which programmes might be suitable for project clustering or the preparation of joint calls among each other.

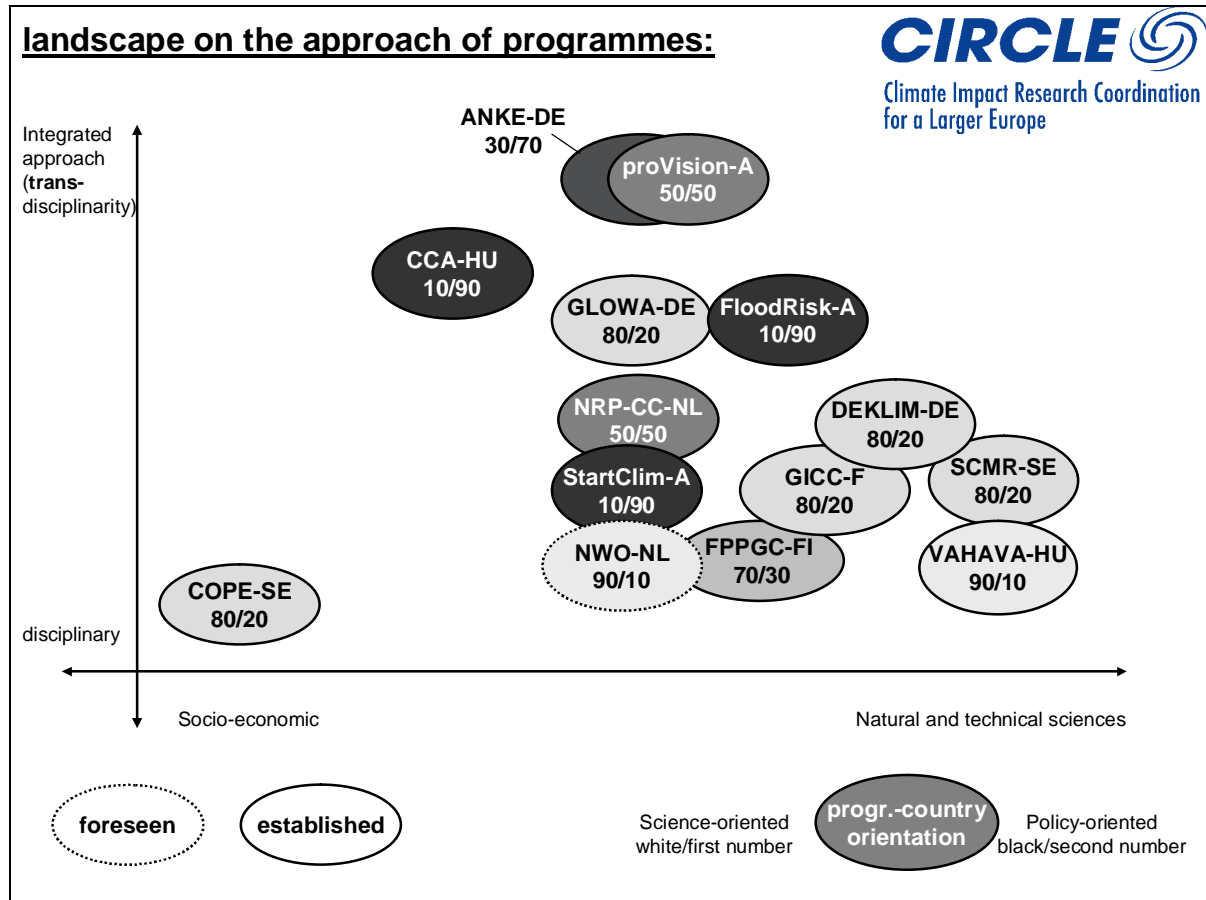
2 definitions of mapping categories

The listed definitions were made to avoid misunderstandings in the interpretation of the following landscaping of the “CIRCLE-programmes”.

- 4 Science/Policy-oriented: gives orientations how research questions are defined, research is communicated and results are implemented.
- 8 in contrast: Policy relevance applies in a more general sense to all research programmes in the field of climate change

- 4 An integrated approach involves transdisciplinarity, which means the co-operation of a variety of scientific and non-scientific actors in projects and programmes.
- 4 Human systems are dominated by human influence and management (e.g. agriculture, forestry, physical planning, health, spatial planning)
- 4 Natural systems are minimal or indirectly influenced by human activities
- 4 Adaptation measures imply active coping strategies
- 4 Impacts refer to any changes on human and natural systems related to climate change

3 mapping of the programmes



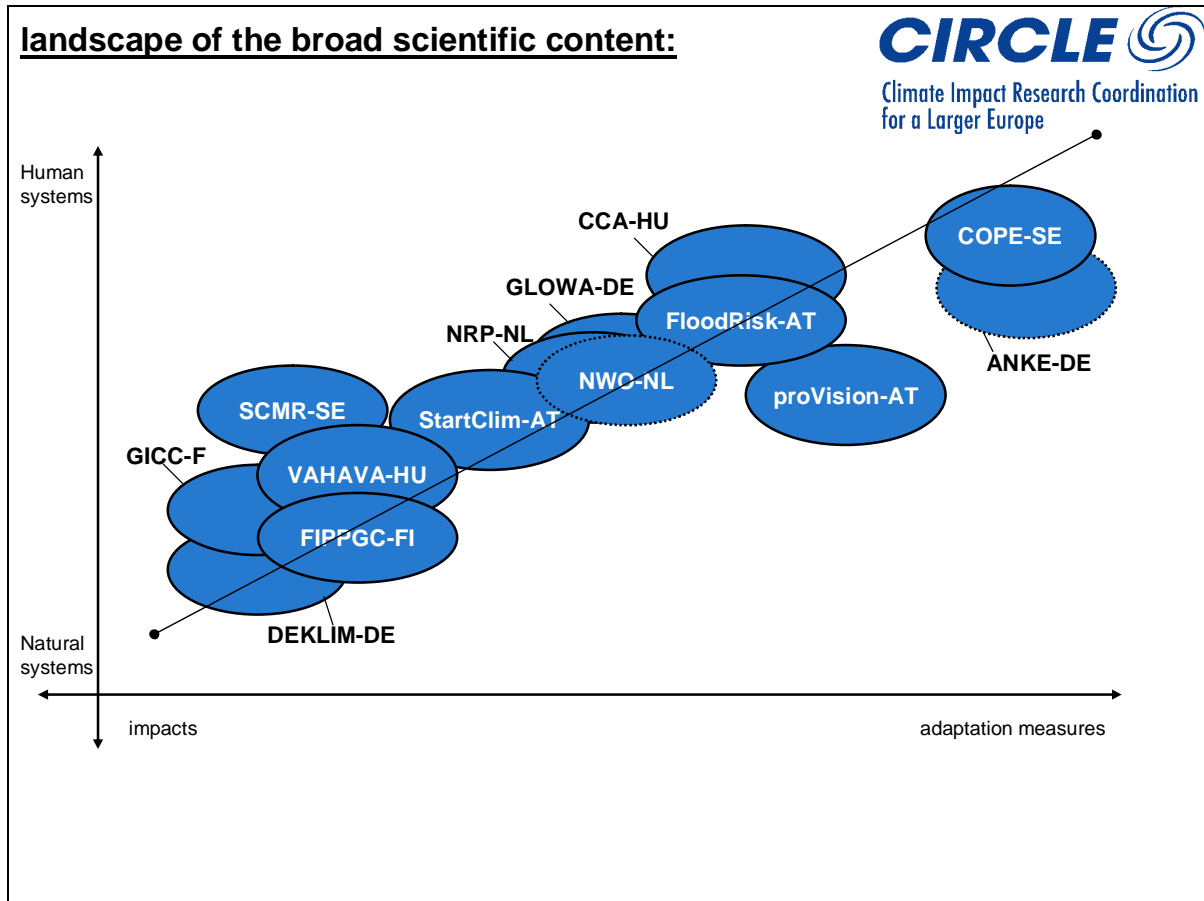
NOTE:

- 4 For some of the programmes (like GICC) a divided ruby pin would have made sense to show the different orientation and position of the various sub-programmes or thematic areas. This was avoided here with respect to the readability. So, the ruby pins always show some averaging with respect to their position and the greyscale.

Results:

- 4 The “CIRCLE-programmes” show some significant cluster. It can be stated that there is no programme which has to be excluded from the preparation of joint activities right from the start, since there is a strong “neighbouring” of the clusters.
- 4 Also the programmes which are a bit further away from the significant clusters have parts which are suitable for joint activities. Also programmes which are far from the clusters (like COPE) might have great benefits from joint activities since they have possibly complementary parts or structures with the other programmes.
- 4 There is a trend for most of the programmes which have a focus on natural/technical sciences as well as on socioeconomic sciences for being rather integrated and transdisciplinary. Most of these transdisciplinary programmes are more policy-oriented than the more natural and technical science focussed programmes.

landscape of the broad scientific content:



Results:

- 4 The positions of the ruby pins show a significant correlation which is shown by the black line. “CIRCLE-programmes” with a focus on climate impacts tend to have a stronger attention on natural systems than on human systems.
- 4 “CIRCLE-programmes” with focus on adaptation measures are – logically – more oriented towards human systems.
- 4 There is no programme with a complete focus on impacts from climate change on the human system. This might be explainable by still to high uncertainty for projects which deal with impacts on the human system exclusively.
- 4 The gap of no programmes being placed in the lower right corner is easy to explain: Almost no adaptation measures target at solely the natural systems. Adaptation is always made with respect to the human i.e. the socioeconomic system.

4 legends for landscapes

4.1 DEKLIM-D: Deutsches Klimaforschungsprogramm

DEKLIM has been set up to support the National Climate Protection Programme and the Federal Government's Sustainability Strategy in order to secure the life basis for coming generations and to ensure a sustainable development. It was started as part of the BMBF (German Federal Ministry of Education and Research) framework programme "Research for the Environment". DEKLIM has the following key objectives: Improving the understanding of the climate system including anthropogenic influences, reducing uncertainties in analysis and forecasting, developing and deriving strategies for dealing with climate change

DEKLIM's 37 joint projects are clustered in four major research areas, namely

- 4 Palaeoclimate Research
- 4 Climate Variability and Predictability
- 4 Regional Process Studies in the Baltic Sea Area
- 4 Climate Impact Research

A variety of projects on climate system and climate impact research belongs to DEKLIM. Some of them deal with both aspects. The programme started in 2001 and is running through 2006. Further information can be found under <http://www.deklim.de>.

4.2 GLOWA-D: Global Change in the Hydrological Cycle

"Global Change in the Hydrological Cycle" (GLOWA) was started in 2000 to develop and to realize strategies for sustainable and future-oriented water management at regional level while taking into account global environmental changes and the socioeconomic framework conditions. Like DEKLIM, it is part of the previous BMBF framework programme "Research for the Environment". Its scientific core themes are:

- 4 natural variability of precipitation, variations caused by human activities and their effect on the hydrological cycle,
- 4 interactions between the hydrological cycle, the biosphere and land use,
- 4 water availability and conflicting water uses.

Five large cluster projects are funded over a period of nine years, each with three phases of three years. More information can be found under <http://www.glowa.org>.

4.3 ANKE-D: Adaptation to Climate Trends and Extreme Weather

ANKE ("Adaptation to Climate Trends and Extreme Weather") is a new programme of the comprehensive BMBF-approach "Research for Climate Protection and Protection from Climate Impacts" announced in November 2004. It is part of BMBF's framework programme "Research for Sustainability". Since it was just recently announced ANKE is in the stage of designing proposals and work on the evaluation procedure. Users and stakeholders will have highest priority in designing the ANKE projects and networks. First projects will start in 2005. The duration of the programme will probably be until 2008. More information can be found in the background paper under http://pt-uf.pt-dlr.de/274_282.htm.

4.4 GICC-F: Gestion et Impacts du Changement Climatique

GICC is the key national research programme about “climate change impacts and management”. It is financed by the French “Ministry of Ecology and Sustainable Development” (MEDD). It is multidisciplinary by nature. The mission of GICC is to promote and develop French scientific research on identifying national ‘Impacts of Climate Change’ and associated physical mechanisms. The main objective, downstream, is to provide sound scientific arguments in order to participate in the tuning of adaptive tools and techniques. This will allow policy and decision makers from the public sector to optimize strategies for prevention and mitigation of those impacts. GICC has been active since 1999 and issues a yearly call for research proposal.

The programme is managed by a national Steering Committee that includes the most important stakeholders. The SC relies upon an international advisory Scientific council that assists it in defining the scientific content of the programme and its yearly evolution, evaluating the scientific merits of the proposal, as well as the evaluation of mid-term and final reports of selected projects. It also may assist the SC in defining outreach activities, and especially raising awareness of decision and policy makers. For practical reasons, the Steering Committee is limited to francophone countries since French is the official language, but this is not a prerequisite. The ERA-NERT CIRCLE framework is considered as a unique opportunity to open GICC to European co-operation.

The "80-20" figure for the distribution between "science-oriented" and "policy-oriented" means that the projects are selected and conducted from a purely scientific point of view, even though the questions under consideration have been initially defined by policy-makers and stakeholders and even though projects leaders are due to report, when the projects have come to an end, to the same policy-makers and stakeholders during a specially-organized seminar.

4.5 NWO-NL

The mission of NWO (the National Science Foundation of the Netherlands) is to enhance the quality of the scientific research in the Netherlands. NWO is carrying out several climate oriented or climate related research programmes, like Climate Variability; Water; Vulnerability, Adaptation & Mitigation (VAM). These programmes all belong to the NWO theme System Earth. Project selection and quality control is carried out by Programme Commissions.

NWO addresses the fundamental scientific research questions of the NRP-CC. The projects are science-oriented. Some are in the field of natural sciences (like the ones in the Climate Variability programme), others are more in the field of social/socio-economic sciences (like projects in the VAM-programme). The projects are mainly of a uni-disciplinary nature.

See for details: <http://www.nwo.nl>.

4.6 NRP-CC-NL: Netherlands Research Programme on Climate Change

Part of the NRP-budget has been earmarked for fundamental research and is accommodated by the NWO. Another part is directly supervised and carried out by the NRP-CC itself. The objectives of this sub-programme, Scientific Assessment and Policy Analysis, are:

- 4 Collection and evaluation of relevant scientific information for policy development and decision-making in the field of climate change;
- 4 Analysis of resolutions and decisions in the framework of international climate negotiations and their implications.

This sub-programme is concerned with analyses and assessments intended for a balanced evaluation of the state of the art for underpinning policy choices. Hence, the projects are highly policy-oriented but also partly addressing scientific questions, coming up from debates on controversial scientific issues. These analyses and assessment activities are carried out in periods of several months to about a year. The projects are in the field of natural sciences as well as social sciences. The projects are sometimes transdisciplinary and sometimes mono-disciplinary.

4.7 FIPPGC-FI: The Finnish Project Programme for Global Change

The Finnish Project Programme for Global Change gathers together current climate change research in Finland.

Objectives of the Programme are 1) integrating and networking of the present research on global change in Finland, 2) increasing the knowledge on global change and 3) increasing the participation of Finnish researchers in international research programmes and increasing the exchange and mobility of researchers.

The Finnish Project Programme for Global Change consists of individual research projects and teams, as well as larger consortia, which, in turn, include several institutions. The scope of the programme extends from atmospheric physics to plant physiology, boreal forest and lake ecology, and socio-economical adaptation strategies. The projects and consortia that are incorporated in the programme have acknowledged the need for a framework programme at national level and their interest for wider European cooperation. They are financed by the Finnish government (Academy of Finland, TEKES, ministries, governmental institutes, universities). All of the teams are of high scientific quality. Two Centres of Excellence of the Academy of Finland ('Physics, Chemistry and Biology of Atmospheric Composition and Climate Change' and 'Centre of Excellence for Forest Ecology and Management'), and the Nordic Centre of Excellence Programme in the field of global change research are represented in the programme.

4.8 SCMR-SE: Swedish Climate Modelling Resource

Swedish Climate Modelling Resource (SCMR) is a national initiative in 2003-2005 on a climate modelling research resource that contributes to climate change and climate impact studies on national levels and on an international level. SCMR is a direct follow-up of SWECLIM, the Swedish Regional Climate Modelling Programme, 1996-2003. SCMR builds on advanced coupled atmosphere-land surface-ocean-sea ice regional climate modelling. Model and data studies and analyses are conducted on the climate system itself, but also on impact study topics, typically in collaboration with other research initiatives. Thus, SCMR should be seen as a platform and facilitator for specific projects, offering a resource that no typical single national project could create and maintain by itself. Currently, SCMR provides for very active impact study activities on hydrological impacts of climate change as and on impacts on forestry. Research communication is very central in SCMR, ranging from lectures and publications to active dialogue with stakeholders. SCMR is funded by the Swedish Environmental Protection Agency, the Swedish Energy Agency, the Foundation for Strategic Environmental Research (Mistra) and the Swedish Meteorological and Hydrological Institute.

4.9 COPE-SE: Communication, Organisation, Policy Instruments, Efficiency

COPE was set up as research on ways of achieving the Swedish Objective of 'Limited Influence on Climate'. The program addresses Communication, Organisation, Policy Instruments, Efficiency (COPE). It was started by the Government's Environmental Research Board and it is running from 2001 through 2005. <http://www.cope.org.gu.se>. Some of the projects and several of the aspects are also relevant for the adaptation discussions. The programme includes four different disciplines, economics, law, political science, and psychology. The COPE program strives to broaden the scientific understanding of the complex socio-economic, cultural, political, and technological structures and processes surrounding the issue of climate change, and contribute to theoretical and methodological progress in cross-disciplinary social science research on multi-level phenomena.

The COPE program comprises six major projects:

1. Towards an Effective and Legitimate Organisation of Climate Strategy Governance
2. The Economics and Psychology of Policy Instruments
3. Policy Selection – Political Feasibility and Economic Efficiency
4. Designing legal structures and instruments for sustainable climate policy
5. The Diffusion of Wind Power in the European Union: A Legal and Economic Analysis
6. Science and Opinion Formation on Climate Change: Legitimacy, Effectiveness, and Innovation

A seventh major project has been added addressing authority.

The program is funded by grants from the Swedish Environmental Protection Agency (all projects except 4, which is funded by the Energy Agency).

4.10 CCA-HU: Climate Change Action

This program is a part of the Second Hungarian Environmental Program (2003-2008). It is more technology related transdisciplinary programme. The key topics are connected to the international obligations of Hungary. Therefore, the programme has scientific base, but strictly connected to policy, particularly to the international connections. Other funds can partly support project within the CCA. The leading organization is the Ministry for Environment and Water, what matches the leading role of this ministry in the Environmental Programme.

4.11 VAHAVA-HU

(The abbreviation came from Hungarian: klímaváltozás-hatások-válaszok, what means climate change – impacts – responses.) The basis of the programme is an agreement for three years between the Ministry for Environment and Water (MEW) and the Hungarian Academy of Sciences (HAS), where MEW finances and HAS manages the programme. The key problems of the programme are from the natural sciences. This programme collects not only the works carried out in its frame, but new results made in other projects. Therefore, this programme has a rather collecting role from a wide area of natural sciences.

4.12 proVIsion-A: Provision for Nature and Society

proVIsion is part of the Austrian initiative for research on Sustainable Development (FORNE) with emphasis on „provision for nature and society“ and a specific focus on global change. Calls for proposal are organised around 7 key questions and relevant sub-questions, which have been formulated by scientific and non-scientific stakeholders in a 9-months participation process during the programme design. Projects must have a strictly transdisciplinary approach in project design, methodologies and implementation; disciplinary projects are not funded. The programme is based on scientific value, but strongly policy-oriented. It is designed for a 10-year period (2004-2013) and is jointly managed by the Austrian Ministry of Science, Education and Culture and the Austrian Federal Environment Agency. Further details under <http://www.umweltbundesamt.at/provision/>.

4.13 StartClim-A: Start Project Climate Change

StartClim is a quite small and flexible programme which is funded by various stakeholders – private as well as public. Since the funding is allocated by on a year-by-year basis and reacting flexible on the funding organisations demand, it is very policy-oriented. A small international scientific advisory board makes sure that it keeps sound scientific quality. The budget per project and the close stakeholder orientation allows only a certain degree of transdisciplinarity. StartClim integrates socio-economic research as well as natural sciences.

StartClim is managed jointly by the University for Agriculture in Vienna and the Austrian Federal Environment Agency.

4.14 FloodRisk-A: Analysis of 2002 Flooding

FloodRisk was settled as an Austrian programme for analysing the floods of August 2002. Within FloodRisk the various stakeholders in ministries, regional and local authorities came together in various projects. The transdisciplinarity is quite high though and the policy-orientation is very high as well, since the needs for adaptation measures in the field of flood protection are the main driving force for FloodRisk. The focus of FloodRisk is more on technical and natural sciences, although socio-economic research like risk transfer mechanisms play an important role. FloodRisk is managed jointly by the Austrian Federal Environment Agency and the University for Agriculture in Vienna.

5 matrix results

5.1 impacts, adaptive capacity and vulnerability assessment

programme	socioeconomic topics	regional modelling	development improvement of GCMs	soil degradation	water ecosystems
DEKLIM-D	x	x	x		x
GLOWA-D	x	x	x	x	x
ANKE-D	x	x		x	x
GICC-F	x	x			x
NWO-NL	x	x	x		x
NRP-CC-NL	x				
proVision-A	x	x			
StartClim-A	x	x			
FloodRisk-A	x				x
FIPPGC-FI	x				x
SCMR-SE		x			
COPE-SE	x				
vahava-HU			x	x	x
CCA-HU	x				

programme	vegetation shifts	natural disasters	aerosols and UV radiation	adaptive capacity	vulnerability assessment
DEKLIM-D	x	x			x
GLOWA-D	x	x		x	x
ANKE-D	x	x		x	x
GICC-F	x	x		x	x
NWO-NL	x	x	x	x	x
NRP-CC-NL				x	x
proVision-A	x	x		x	x
StartClim-A		x			
FloodRisk-A		x			
FIPPGC-FI	x			x	x
SCMR-SE	x	x			x
COPE-SE					
vahava-HU	x				
CCA-HU				x	

5.2 adaptation measures

programme	risk transfer mechanisms	agriculture and forestry	tourism	health
DEKLIM-D		x		
GLOWA-D		x	x	x
ANKE-D	x	x	x	x
GICC-F		x		x
NWO-NL		x		
NRP-CC-NL				
proVision-A	x			
StartClim-A	x	x		x
FloodRisk-A	x			x
FIPPGC-FI		x	x	x
SCMR-SE		x		
COPE-SE				
vahava-HU		x		x
CCA-HU				

programme	nature preservation	water management	construction and building	infrastructure
DEKLIM-D	x	x		
GLOWA-D	x	x	x	x
ANKE-D	x	x	x	x
GICC-F	x	x		
NWO-NL	x	x		
NRP-CC-NL				
proVision-A	x			
StartClim-A		x		
FloodRisk-A		x	x	x
FIPPGC-FI	x		x	x
SCMR-SE		x		x
COPE-SE				
vahava-HU		x		
CCA-HU	x			x

5.3 geographic focus

programme	litoral/coastal	mountains	lowlands	marine
DEKLIM-D	x		x	x
GLOWA-D				
ANKE-D	x	x	x	
GICC-F	x	x	x	x
NWO-NL	x		x	x
NRP-CC-NL				
proVision-A		x	x	
StartClim-A		x	x	
FloodRisk-A		x	x	
FIPPGC-FI	x			
SCMR-SE	x	x	x	x
COPE-SE				
vahava-HU			x	
CCA-HU			x	

programme	specialised on main river catchments	sea ice and glaciers (kryosphere)	peatlands and boreal forests	forest ecosystems
DEKLIM-D		x		
GLOWA-D	x			
ANKE-D				
GICC-F				
NWO-NL		x		x
NRP-CC-NL				
proVision-A				
StartClim-A				
FloodRisk-A	x			
FIPPGC-FI		x	x	x
SCMR-SE		x		
COPE-SE				
vahava-HU				
CCA-HU				