



BINGO

a better future under
CLIMATE CHANGE

BRINGING INNOVATION TO ONGOING
WATER MANAGEMENT

D7.7

First version of the Exploitation Plan

June 2017

www.projectbingo.eu



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Horizon 2020 Societal challenge 5:
Climate action, environment, resource
efficiency and raw materials

BINGO

Bringing INnovation to onGOing water management – A better future under climate change

Grant Agreement n° 641739, Research and Innovation Action

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Short Summary of results (<250 words)

Deliverable 7.7 – First version of the Exploitation Plan has been developed by SPI within Task 7.7 of WP7 – Dissemination, Communication and Exploitation. This Exploitation Plan is grounded on the added value and data generated by the project to ensure maximum benefit from it. The Exploitation Plan contains a strategy for the exploitation of the project outputs and results, which is focused on concrete tools and activities to reach the target audiences in order to ensure that the project outputs and results are used in further activities. In addition, the Exploitation Plans contains the next steps that are foreseen to be implemented in order to ensure the exploitation of the project results during and after its life cycle. In this context, a Final Exploitation Plan will be developed on Month 40 (D7.8).

Evidence of accomplishment

Report

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1. INTRODUCTION

This document is developed as part of the BINGO (Bringing INnovation to onGOing water management – a better future under climate change) project, which has received funding from the European Union's Horizon 2020 Research and Innovation programme, under the Grant Agreement number 641739. The **First version of the Exploitation Plan** represents Deliverable 7.7 of Work Package 7 (WP7) – Dissemination, communication and exploitation.

WP7 is focused on Dissemination, communication and exploitation and has three main objectives: (i) to disseminate and communicate project related information to the different target groups; (ii) to ensure that the results of the project are exploited and have a lasting impact in Europe; and (iii) to empower stakeholders to take up the project results. The specific objectives of this WP are to:

- Develop and update a Dissemination and Communication Plan, which will ensure an effective communication within and outside the project;
- Develop dissemination and communication materials and tools;
- Organize workshops to disseminate and communicate the project results and activities;
- Contribute to long term and sustainable engagement of stakeholders, maximizing the impact of the project;
- Create synergies with other projects and initiatives, contributing to an effective use of resources;
- Ensure an effective exploitation of the project results.

This document is public and aims to provide a first plan of the exploitation activities of BINGO (D7.7 First Version of the Exploitation Plan), at the midterm of the project. A final version (D7.8 Final Exploitation Plan) will be provided in M40.

The First Version of the Exploitation Plan details BINGO's exploitation potential and how end users/ problem owners can benefit from the final results of the project.

After the Introduction, this document is organized in the following sections: **2.** Exploitation Strategy; **3.** Action Plan; **4.** Next Steps.

2. OVERALL EXPLOITATION STRATEGY

2.1 Exploitation Approach

Dissemination vs Exploitation

The concept of exploitation differs from the concept of dissemination, although an effective exploitation strategy should include both dissemination and exploitation activities. In this regard, it is crucial to understand the concepts of dissemination and exploitation.¹

Dissemination is the public disclosure of the results by any appropriate means (other than resulting from protecting or exploiting the results), including by scientific publications in any medium.

Exploitation is the utilisation of results in further research activities other than those covered by the action concerned, or in developing, creating and marketing a product or process, or in creating and providing a service, or in standardisation activities.

Even though exploitation and dissemination are different concepts, an exploitation strategy is intrinsically linked to the development of dissemination activities. Thus, while dissemination is related to making the results of the project visible, the exploitation is responsible for guaranteeing the use of the project results in other activities during and after its implementation.

BINGO's exploitation strategy is focused on exploiting and spreading the project results so they can be used in diverse contexts and situations by relevant stakeholders, who will turn the project results into research activities and promote them to local, regional, national or international stakeholders. Thus, the main aim of BINGO exploitation strategy is to spread the project outputs and results to the relevant stakeholders so that the knowledge that is generated by the project has a long run impact beyond the research sites and can be used in different activities and circumstances.

In this context, BINGO has developed an initial set of activities and tools to ensure an effective exploitation of the results during and after its implementation for the sustainability of the project. These tools and activities will allow the project target audiences to benefit from the project knowledge, which can lead to the development of different research activities.

¹ http://ec.europa.eu/research/participants/portal/desktop/en/support/reference_terms.html

The main objectives of BINGO exploitation plan are to:

- Define and implement a set of tools and activities to exploit the project results;
- Guarantee that the project results last even after the project ends;
- Inform the target stakeholders about the project developments and foster the creation of synergies;
- Ensure the project results are uptaken into technical rules, guidelines and standards that facilitate different levels of exploitation;
- Encourage the target stakeholders to provide inputs regarding the project outcomes and results;
- Guarantee open access to BINGO scientific publications and research data;
- Ensure that the project developments are communicated to the target audiences regularly through the project dissemination activities.

Figure 1 shows the structure of the BINGO exploitation thematic framework. Taking this thematic framework into account, the Exploitation Plan is structured as follows:

- Section 2.2 presents the **Target Audiences** of the Exploitation Strategy;
- Section 2.3 presents the **Expected Impacts** of the BINGO project;
- Section 2.4 shows the project **Exploitable Results** according to the work plan;
- Chapter 3 introduces the exploitation **Action Plan**;
- Section 3.1 lists the **Dissemination Tools** which will support the Exploitation;
- Section 3.2 describes the **General Exploitation Activities** of the project;
- Section 3.2 lists the **Individual Exploitation Activities** of each partner; and
- Chapter 4 presents the **Next Steps** which will be put into action towards the development of the Final Exploitation Plan.

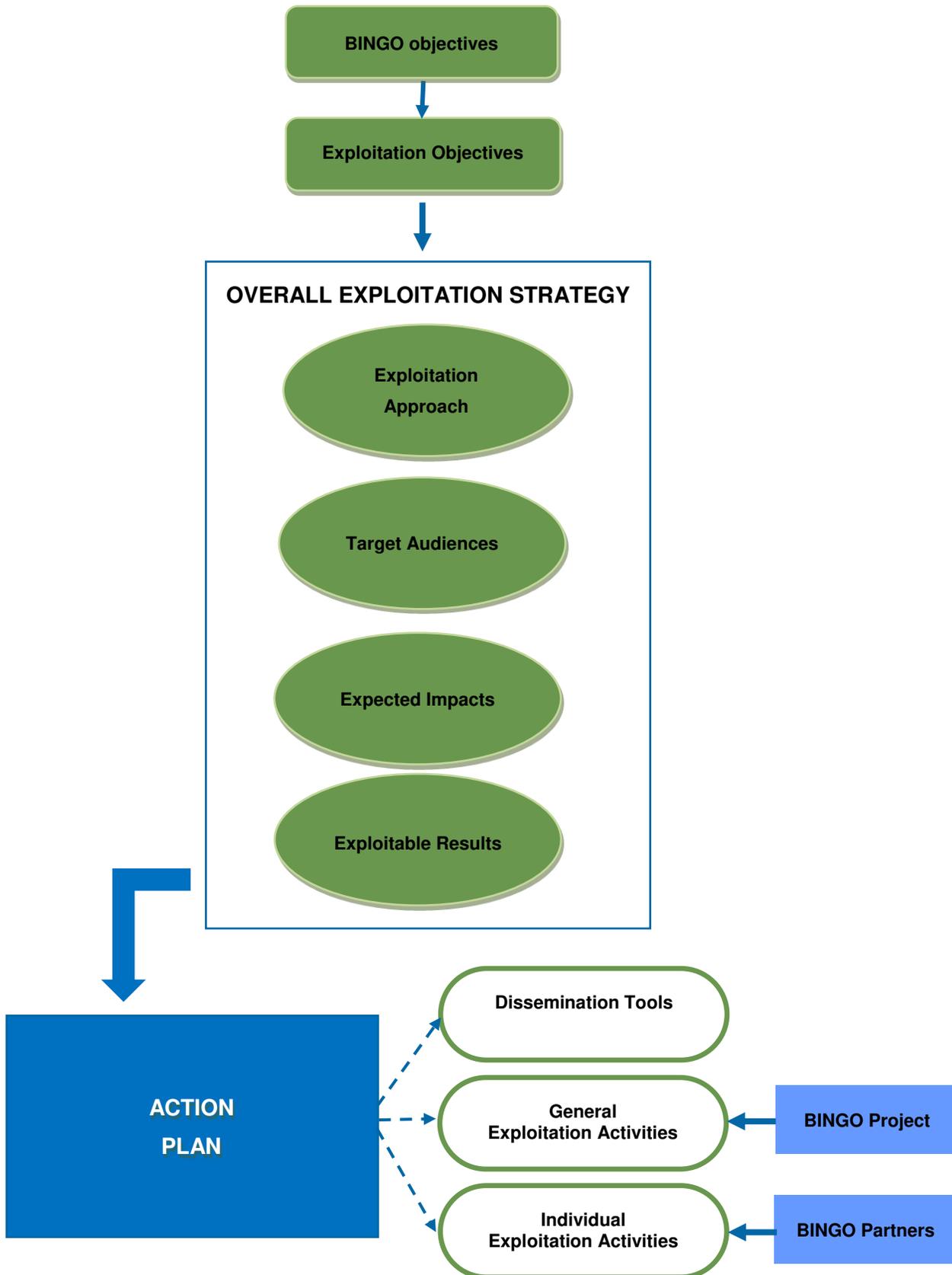


Figure 1. Thematic Framework

2.2 Target Audiences

The exploitation target audiences are entities or individuals that can benefit from the project results. In order to guarantee the sustainability of the project and an effective exploitation of the knowledge produced, BINGO has selected the following target audiences (also used in the Updated Dissemination Plan):

Table 1. BINGO Target Groups

Target Groups	Profile
Scientific community	Universities, research institutions, technology providers, consultants; Multidisciplinary context for a wide range of professionals; Critical assessment of deliverables
Water professionals - Technical staff	Control all technical aspects of urban water systems other than management; Technical training to be expected; Close profile to the scientific community (e.g. irrigation water use association managers, urban and landscape planners)
Water professionals - Decision makers	Responsible for planning and leading the work of a group of individuals; Technical knowledge expected; Close profile to policy makers (e.g. water suppliers, trade and industrial organizations)
Policy makers (Mainly local authorities)	National and local governments - municipalities, Environment and Agriculture Ministries, Administrative staff, European committees, Community Leaders, Water Authorities, and planning institutions; No technical training expected
Water and Environment Organisations, SMEs and NGOs	Any organization with an interest in the project, regardless of their amount of technical knowledge on the subject; Different needs depending on its nature
Agriculture Professionals	All types of professionals related to the field of agriculture (e.g. agriculture specialists, local farmers, livestock producers)
Society at large	General public in particular of BINGO case study areas: all types of audiences and different levels of education, including next generation (e.g. students); No technical formation expected

The private sector (Water professionals - Technical staff and Water and Environment Organisations and SME's) plays a very important role in the exploitation of the project results. Therefore, it is essential to develop strong links with these actors.

The identification of the exploitation target audiences allows an easier transfer of the project outcomes and results and the definition of more focused common and individual exploitation tools and activities. In this context, the exploitation tools and activities take into consideration the real needs and expectations of the abovementioned target audiences in order to guarantee that the project results are exploited and can have different uses considering its characteristics.

To reach the different stakeholders, BINGO has developed common and individual exploitation strategies, focused in the target groups' specificities and the project results.

2.3 Expected Impacts

BINGO is expected to generate different types of data predictable to generate positive impacts to the target audiences described in the previous section. It aims to have a significant impact on the water sector and on water-related sectors across Europe. The project is expected to provide decision-makers in charge for managing water systems with better and detailed knowledge of their water cycle under future climate of the next decade and with a portfolio of specifically selected and evaluated adaptation measures that are based on latest results from national, European and international research. To achieve this impact a set of tools and measures will be developed with the twofold objective to:

- Deliver co-produced solutions ready for implementation and tailored to the specific needs of the six BINGO research sites;
- Deliver approaches and methodologies with transferability potential to other sites in Europe and beyond, in order to have maximum impact.

BINGO aims to achieve this impact by providing co-produced knowledge from actionable research developed in six representative research sites across Europe's climate regions and by actively involving both decision-makers responsible for managing the water cycle at these research sites and relevant stakeholders and multiplier organisations of the water sector and related-sectors, who can guarantee a rapid uptake and implementation of BINGO results.

The following table provides an overview on how BINGO will contribute to accomplish the expected impacts under the Water-2a-2014 topic.

Table 2. Expected impacts and BINGO contribution

Expected Impacts	BINGO Contribution
<p>“More efficient management of water resources in Europe due to better knowledge of the water cycle under the future climate”</p>	<p>Improved prediction of future climate, including extremes and, in particular, of droughts (deliverables of WP2).</p> <p>Co-production of better prediction tools for impact assessment of climate change on water resources, and evaluation of future changes in quantity and quality of water resources (deliverables of WP3 and WP4).</p> <p>Adaptation/integrated management strategies, tailored to the local-scale, validated and based on natural and socio-economic constraints (deliverables of WP5).</p> <p>Effective dissemination and exploitation (based on an exploitation strategy) ensuring that the provided measures are transferred to end users (output WP6 and WP7).</p>
<p>“Contribution to management planning across the EU in support of European policies”</p>	<p>Co-production of a portfolio of management practices and adaptation strategies with potential to be applied to similar conditions across EU (output WP5).</p> <p>Development and strengthening of the transferability of management practices/adaptation measures through the demonstrations to other EU sites within similar climatic regions (output WP5).</p> <p>Building of a shared awareness and shared perceptions between researchers and stakeholders around challenges in order to support a knowledge alliance and “actionable” solutions and scenarios (output WP6 and WP7).</p> <p>Improved management planning in support of EU policy and regulations (e.g. EU Climate Change Adaptation Strategy; EU Water Framework Directive; EU Floods Directive; EU Biodiversity Strategy 2020; Blueprint to Safeguard Europe's Waters; EU2020 Strategy-“Innovation Union” and “Resource-efficient Europe”).</p>
<p>“Contribution in the longer-term to the development of reliable climate services in relation to the water cycle”</p>	<p>Development of better regional prediction approaches for extreme events and climate change for the EU (deliverables of WP2 and WP3).</p> <p>Development of better, more reliable and integrated methodologies for climate change and extreme events impact assessment (deliverables of WP3 and WP4).</p> <p>Co-production of a portfolio of management/adaptation measures to cope with climate change and extreme events (output WP5).</p> <p>Better prediction capacities for extreme events and climate change, as well as the future use of the new management measures will also contribute to the emergence of new climate related services in the market. Such services will be a crucial support for policy-makers to cope with climate change and extreme events. Through the development of new climate-related services, the future application of BINGO results will enable the creation of new jobs in this area.</p>

In addition, the following dimensions of sustainability are expected to be impacted by BINGO: Social, Environmental, Economic, Policy/Governance and Assets/Infrastructure.

➤ **Social Impact: public health and well-being, nutrition and regional development.**

Droughts and floods can have robust adverse effects on public health, either by shortage in drinking water supply or for crop production or by spread of water-borne diseases due to failure in sanitation. Therefore, the results generated by BINGO are of general interest to the society and are expected to have a positive impact on it. For instance, there will be relevant outcomes from the case studies in Cyprus, Portugal and Spain with a great potential of use by many other Mediterranean countries. Thus, specific dissemination and exploitation measures will be implemented to approach target audiences in other countries and other initiatives that can benefit from BINGO outcomes.

The international contacts of the PAB members and the Supporting Organisations Cluster will also facilitate the exploitation of the project results to a wider audience.

➤ **Social impact: social justice, vulnerability and affordability**

The climate change impacts are expected to be felt in a more intense way by the population that is more vulnerable, such as poor, elderly, uneducated and disabled people. In this context, the climate change impacts are greatly influenced by how exposed and sensitive the population and its adaptive capacity are. Therefore, the societies that are more vulnerable are also expected to be more affected by the impacts of climate change and least prepared for its negative consequences.

In this context, it is important to identify the most vulnerable regions, sectors and groups, and promote the exploitation of cost-effective adaptation measures in these areas to ensure that they are ready to deal with the climate change consequences. Hence, BINGO is addressing this issue by giving a special focus on the economic, societal and policy implications (including matters of affordability and social justice) of possible measures throughout the whole sequence of tasks in WP5, ending with recommendations for implementing the best transition path for each site, and also with a set of recommendations that can be applicable in other regions with similar challenges. These recommendations will, therefore, be exploited to the target audiences in order to ensure that they can have a positive impact in the most vulnerable regions.

➤ **Environmental Impact**

Droughts and floods have a shocking impact on ecosystems. Different factors such as insufficient water resources management, climate change and weather extremes have led to depletion, overexploitation or pollution of water resources, with consequences such as ecosystem decline, seawater intrusion in aquifers or generally impaired water quality with adverse effects on aquatic biota. In this context, the data generated by BINGO is expected to contribute to easing the environmental impact of climate change and weather extreme events by providing a better understanding and prediction of future climate and weather conditions. The data generated by the project will be exploited to the different target audiences and is expected to create impacts on different water-dependent sectors.

➤ **Economic Impact**

Droughts are a major threat to economic development since they degrade the living conditions of the populations affected by them, damage agriculture production and jeopardize the food security. In parallel, floods also have devastating impacts on land use, supply and transport infrastructure properties, and public health which in turn has economic implications to productivity. Therefore, the exploitation of results is crucial to enable better prediction, prevention, mitigation and management of droughts and floods.

➤ **Governance and Policy Impact**

BINGO is expected to have an impact on good governance in the water sector, by enabling better decisions based on the data generated by the project. Thus, the exploitation of more reliable data about the specific climate and hydrological conditions for the research sites, as well as a portfolio of validated and demonstrated adaptation measure is expected to lead to better governance regarding climate change.

In this context, BINGO will provide support to decision-makers at local and regional level to better address policy and governance issues to cope with the expected impacts of climate change and extreme events, using the Water Governance Council's three-layer model as framework to address and elaborate policy and governance issues. With regard to existing policies, BINGO is in line with the main objectives of the EU2020 strategy, and particular supportive of the initiatives "Innovation Union" and "Resource-efficient Europe". Furthermore, BINGO will account for the needs of water-relevant EU policies such as the Water Framework Directive and the "EU Biodiversity Strategy 2020".

➤ **Assets/Infrastructure Impact**

Weather extreme events can also have a negative impact on infrastructures (e.g. transport, supply, sanitation, power). Such infrastructures are often huge public assets, essential for human wellbeing, sustainability and economic development. The exploitation of a more detailed and specific knowledge on how certain infrastructures in the research site areas are at risk by climate change and weather extremes, as well as the exploitation of measures to mitigate these risks can lead to a better understanding of how stakeholders can deal with the negative impacts caused by climate change on infrastructures.

2.4 Exploitable Results

BINGO generates different types of exploitable results, which are tangible or intangible outputs, such as data, knowledge and information.



Figure 2. BINGO Work Plan

The exploitable results produced by BINGO address the specific needs of the different target audiences and have a competitive advantage over the knowledge that currently exists. They are of great relevance to cities all across Europe and beyond, and have a significant exploitation potential.

The project results derive from activities from different work packages.

The following table presents BINGO’s exploitable results, explains how these address a certain need and why they have a comparative advantage over the already existing knowledge. The associated deliverables have been identified as well. The table was developed in agreement with the WP leaders to ensure that the exploitable results are implemented in accordance to the BINGO activities.

Table 3. BINGO Exploitable Results

BINGO exploitable result	Addressed need	Competitive advantage	Associated Deliverable
Method for downscaling IPCC and corresponding data for local use, 10 km scale	Prediction of available water resources in future for normal situations and extreme events (droughts)	More exact downscaling	D2.2 Data downscaled to 12km/daily, Europe for the period 2015-2024 D2.5 Ensembles for present climate extremal episodes downscaled to 7km/ 6h (3- 1km/ 1h); maps of return levels for Cyprus research site
Method for downscaling IPCC and corresponding data for local use, 1 km scale	Prediction of expected storm water runoff in future in normal situations and extreme events (flash floods)	More exact downscaling	D2.3 Definition of extremal patterns, test episode downscaled to 7km/6h (3-1km/1h) for all research sites D2.7 Ensembles for decadal predictions extremal episodes downscaled to 1km/1h for Cyprus research site (M18)
New hydrological algorithms	Scientists, model developers need field work- based enhanced knowledge to improve models	More realistic and reliable climate impact predictions.	D3.5 Improved model applications/ descriptions to the six research sites based on field data
More than 20 hydrological models implemented at the six sites	Tools to help solving future water problems, also beyond the time span of BINGO	Stakeholder and scientist can use the models to deal not only with climate change induced problems	D3.3 Calibrated water resources models for past conditions at the six research sites
Land-use and water use scenarios available	Site owners can prepare themselves for the impact of socio-demographic change	Stakeholder and scientist can use the framework developed in BINGO to predict changes outside the scope of BINGO	D3.2 Land use future scenarios prepared for the six research sites D3.4 Model results for water and land use scenarios at the six research sites completed and analysed
Improved reservoir management, drinking water abstraction management, flood forecasting, stormwater management	Need for considering new climate extreme patterns with respect to climate change	Better prevent infrastructure damages, water shortage	D3.6 Optimized water resources models to support management strategies at the six research sites

BINGO exploitable result	Addressed need	Competitive advantage	Associated Deliverable
Advanced sewage management during extreme events	Combined sewer overflows are a major source of urban, riverine and coastal pollution	Municipalities, communities provide healthier environment for citizens, e.g. for bathing, for water supply facilities	D4.2 Relevant hazards, risk sources and factors for each key sector the six research sites
Prerequisites for adjusted drinking water production technology	Changes in water quantity and quality patterns due to climate change extreme events require updated water treatment processes	Water suppliers can immediately react to changes in water quality	D5.1 Portfolio of risk management and adaptation strategies for the six research sites in BINGO D5.3 Report on economic and societal impacts of the proposed measures
Design criteria for reservoirs	Using the methods for prediction of water inflow to practical design of reservoirs (e.g. methods that will be applied at the research sites of NO, DE and PT).	More precise information about inflow under various circumstances	D5.5 Complete report on the assessment of the current situation and recommendations for improvement at the research sites using the three layer framework
Design criteria for urban drainage infrastructure	Using the methods for prediction of normal precipitation and flash floods to practical design of urban drainage infrastructure	More precise information about urban drainage and floods under various circumstances	D5.5 Complete report on the assessment of the current situation and recommendations for improvement at the research sites using the three layer framework
Method for risk management	Application of risk management to cope with impact of climate change (supply and drainage)	New application	D5.1 Portfolio of risk management and adaptation strategies for the six research sites in BINGO D4.2 Relevant hazards, risk sources and factors for each key sector the six research sites D4.3 Likelihood and consequences of each extreme weather event at the six research sites D4.4 Estimated level of risk of each event and each scenario at the six research sites

BINGO exploitable result	Addressed need	Competitive advantage	Associated Deliverable
Preparedness plans for water resources	Improved knowledge on use of weather forecast and climate statistics to address expected water shortage available in coming short and medium period	More precise scenarios of resource situation in short (i.e. 2 weeks) and medium time (1-2 years) horizon	<p>D5.5 Complete report on the assessment of the current situation and recommendations for improvement at the research sites using the three layer framework</p> <p>D5.6 Report on exploitation of adaptation strategies to extreme weather events (beyond the research sites)</p>
Preparedness plans for flood events	Improved knowledge on use of climate statistics to address expected flash floods in coming medium and long-term period	More precise information to support the development of preparedness plans	<p>D5.6 Report on exploitation of adaptation strategies to extreme weather events (beyond the research sites)</p>
Methodologies on Communities of Practice and stakeholder engagement	Lessons learned from the CoPs, including methods, best practices, critical reflexions, differences of interactions and local contexts, benefits and added value	New knowledge which can be applied in further research activities and structured methodologies	<p>D6.3 Interim report from communication outcome from the six research sites</p> <p>D6.4 Final report from communication outcome from the six research sites</p>
Methods and guidelines to create well functioning CoPs	Increased knowledge of how to create well functioning and truly collaborative CoPs in coproduction of research	Getting the most out of the stakeholder collaborations and enhancing co-production in the CoPs	<p>D6.5 Guidelines designed to create, feed and enhance “win-win” collaborations between researchers and stakeholders</p>

3. ACTION PLAN

The information generated by BINGO plays an important role on climate adaptation since it will provide practical knowledge and tools to end users, water managers, decision and policy makers affected by climate change. This data will enable the target audiences to better manage all climate projections and develop complementary research activities.

In this context, BINGO has defined a set of tools and activities that will be developed during the project implementation with the main to exploit the project results.

As described in Figure 1, this section details a common and individual strategy to exploit BINGO's results, and includes: **i)** dissemination tools to support exploitation activities; **ii)** general exploitation activities, focused on the particularities of the knowledge generated; and **iii)** individual exploitation activities, focused on the role that each partner can play to exploit the results.

3.1 Dissemination Tools

BINGO has defined a set of dissemination tools (for the disclosure of results) that will be carried out in a close relation with the exploitation activities. This common strategy is crucial to guarantee that the benefits of the project will endure beyond its lifetime. In this context, the partners will use these dissemination tools along with the defined exploitation activities to exploit the results and reach out to the different target audiences.

In this respect, the following tools have been defined as the most suitable for the dissemination and further exploitation of BINGO results:

- 1. Project website:** www.projectbingo.eu
- 2. Dissemination materials:** Development of posters, roll ups and brochures that emphasize the project and its results.
- 3. Project news:** Development of press releases that focus on the project developments and outcomes and disseminate them through mailing lists and relevant media channels. Radio and TV channels are also adopted.
- 4. Online dissemination:** BINGO results will be exploited through several resources which are made available in the project website (section "Deliverables") and in the newsletters (section dedicated to the "project outputs").

- BINGO Newsletter No. 1: <http://www.projectbingo.eu/newsletters/newsletter1/>
- BINGO Newsletter No. 2: <http://www.projectbingo.eu/newsletters/newsletter2/>
- BINGO Newsletter No. 3: <http://www.projectbingo.eu/newsletters/newsletter3/>
- BINGO Newsletter No. 4: <http://www.projectbingo.eu/newsletters/newsletter4/>

Further newsletters and resources will be developed and uploaded throughout the project's lifetime.

5. Social media dissemination: The results of the project will be exploited through its social media accounts in Facebook and Twitter and in its LinkedIn group.

- BINGO Facebook Page: <https://www.facebook.com/projectbingo.eu/>
- BINGO Twitter Account: https://twitter.com/eu_bingo
- BINGO YouTube Account: <https://www.youtube.com/channel/UC3sCquq-gkvauD9LVbUJoWw>
- BINGO LinkedIn Group: <https://www.linkedin.com/groups/8551302>

6. Video dissemination: BINGO has developed a set of short videos with testimonials from end users of each BINGO research site. These videos can be used as exploitation tools and are available in the section "Videos" of the project website and in its YouTube account.

In addition, the project has a [5 minutes animated video](#), explaining the main objectives and outcomes of the project.



Figure 3. Screen shots of the BINGO Animated Video

Additional audiovisual materials will be developed presenting the BINGO deliverables and methodologies, bringing the outputs closer to the target audiences, from water and agriculture professionals to the general public.

- 7. Scientific articles:** The development of articles in scientific journals and posters by the BINGO partners focused on the results will allow their exploitation to the scientific community.

In this context, BINGO takes part in the H2020 initiative of Open Access to Scientific Publications and Research Data, and have agreed on a Data Management Plan (D1.5). Hence, the project gives free online access to all scientific publications developed in the scope of the project for any user, as well as the right to access and reuse digital research data, optimizing the impact of the knowledge generated by BINGO.

The BINGO outcomes and results can also be easily downloaded on the section “Deliverables” and “Publications” of the project website.

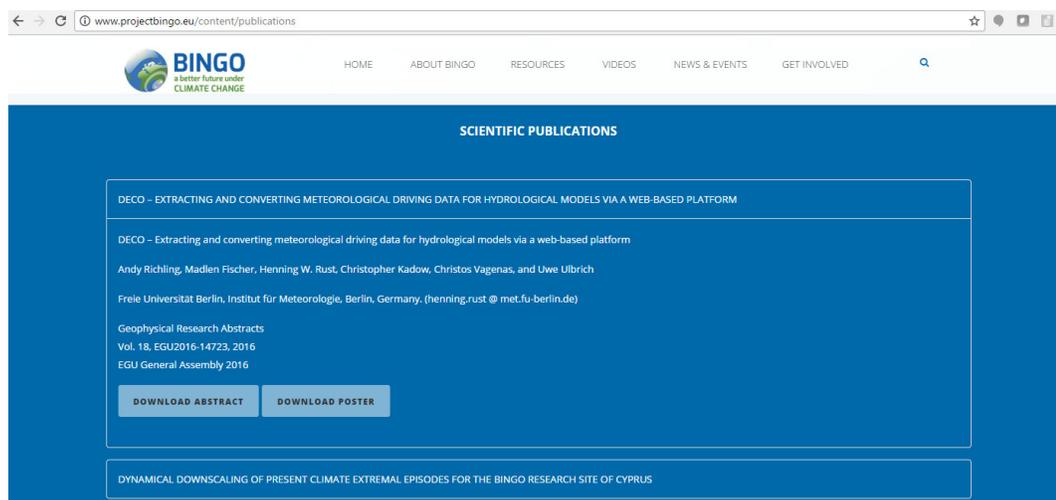


Figure 4. Screen shot of the project website - Publications

- 8. Policy briefs:** The development of policy briefs by the BINGO partners will be crucial to disseminate the project outcomes and results to policy makers in order to turn them into priorities of the political agenda regarding water management and climate change. The publications will be short, concise, and will present the BINGO relevant findings in an engaging and convincing manner.

3.2 General Exploitation Activities

The main goal of BINGO exploitation strategy is to ensure the sustainability of the project results and to enable the target audiences to have access to the project results. Thus, BINGO results are expected to enable the end users to deal with relevant scenarios with regard to climate, extreme events, water quality and quantity changes including droughts and floods.

The exploitation of the results is expected to occur in different dimensions, namely through the development of general exploitation activities. In this respect, the following general exploitation activities have been identified as key activities for the effective exploitation of the project outcomes:

➤ **To provide high quality BINGO products:**

BINGO has and will continue to provide high quality deliverables developed from across the seven WPs, which are subject to an internal quality procedure, and which will have a significant impact on the water sector and water-dependent sectors in Europe and beyond. In total, 53 deliverables will be provided, of which 29 will be public and easily accessible by (and disseminated to) interested stakeholders. In addition, partners will accomplish a list of 31 milestones, which will facilitate the monitoring process of the project and consequent successful achievement of its objectives.

➤ **To establish synergies with relevant initiatives:**

BINGO has started to develop synergies and will continue to join forces with other projects and initiatives related with the project at a national, European and international levels. For this purpose, BINGO has put in place a systematic scan of other H2020 projects and initiatives that share the same goals. A specific Task in the Work Programme – Task 7.4, led by KWR, oversees these activities. A concrete strategy to put into action and maximise the impact of these collaborations will be developed. It is essential to continue addressing initiatives in order to create synergies and exploit the project results among relevant stakeholders in the water and climate adaptation fields. Among the initiatives to address, the following are considered to be relevant ones – several are already in collaboration with BINGO:

Table 4. Synergies with other initiatives

Initiative/Project	Purpose
Aqua Research Collaboration (ARC)	The mission of ARC is to catalyse the transition towards enhanced and more sustainable watercycle system services in Europe.
IMproving PRedictions and management of hydrological Extremes (IMPRES)	IMPRES is designed to support the reduction of Europe's vulnerability to extreme hydrological events through improved understanding of the intensity and frequency of future disrupting features that may be very different from today's reality.
Portuguese Water Partnership (PWP)	The Portuguese Water Partnership is a network of organizations that aim to develop synergies and maximize potential for the development of the water sector in the world, promoting the construction and consolidation of alliances and partnerships between national institutions and all nations engaged in sustainable water use and enhancement of water resources.
PLatform for Climate Adaptation and Risk reDuction (PLACARD)	PLACARD is a Horizon 2020 Coordination and Support Action that seeks to support the coordination of Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) for coherent, mutually reinforcing and pragmatic planning and action.
EIP Water (European Innovation Partnerships)	The EIP Water facilitates the development of innovative solutions to address major European and global water challenges. At the same time, the EIP Water supports the creation of market opportunities for these innovations, both inside and outside of Europe.
RESCCUE H2020 Project	RESCCUE aims to provide practical and innovative models and tools to end-users facing climate change challenges to build more resilient cities.
Bridging the gap for Innovations in Disaster Resilience (BRIGAID)	BRIGAID is an H2020 project with the ambition to provide structural, ongoing support for innovation clusters: offering solutions for climate adaptation by developing an innovative mix of methods and tools, to become a standard for climate adaptation innovations.

➤ **To guarantee the sustainability of the Community of Practice (CoP):**

The CoP enables a mutual knowledge share process leads to the creation of more adequate approaches and solutions and allows for the dissemination and exploitation of BINGO outcomes and results. Thus, it is crucial to stimulate the share of research and fields of knowledge among the CoP in order to ensure the exploitation of the project results. The sustainability of the CoP will be achieved through the following measures:

1. Continuous participation of the CoP members in the project workshops and engagement in the development of the BINGO solutions;

2. Active communication with the CoP members in between the implementation of workshops through Basecamp – online collaboration platform, and other communication channels (depending on local context and preferences);
3. Regular and efficient internal communication between the BINGO partnership through Basecamp and face to face meetings, so that all partners are up-to-date on the project developments, outcomes and results, thus reflecting this knowledge and dynamics on the CoPs of each research site;
4. Mobilization and involvement of further potential end-users (beyond the research sites) in the CoPs.

➤ **To address competent Climate Centres in Europe:**

The project will address competent Climate Centres in Europe, inform them about BINGO and the WP2 results, and discuss the potential of joining exploitation initiatives and of including them in the working group's debates.

➤ **To ensure quick uptake of BINGO results through a relevant set of tools:**

BINGO will develop technical rules, guidelines and standards for the water sector, through relevant members of the CoPs (WP5 and WP6 activities). As mentioned above, the CoPs include companies that are keen to be engaged in the project and to take advantage of its outcomes. In addition, the project will define guidelines to create, feed and enhance “win-win” collaborations between the BINGO researchers and the target audiences regarding the exploitation of the results.

D5.4 “Report on the assessment of the current governance situation and recommendations for improvement at the research sites using the three layer framework” gives an overview of the current state of water governance regarding climate change at the six BINGO research sites. This assessment will be used to make further suggestions for improvement of water governance at the research sites. Finally, a plan for a concerted action of WP5 and WP6, leading to D5.6 “Report on exploitation of adaptation strategies to extreme weather events (beyond the research sites)” will be produced.

➤ **To ensure uptake of results through industrial /commercial involvement:**

BINGO will involve industrial/commercial stakeholders from different European locations in order to promote the take-over of the outcomes of the project, thus ensuring exploitation of BINGO's results. For this purpose, the project will establish the right links to the market interested in the data and the tools developed by BINGO (such as the Open Access Library and the project website). It is relevant to note that the project partnership comprises private companies (utilities service and sectorial focused), which are committed to actively participate in the exploitation.

➤ **To present BINGO and its outcomes in conferences and events:**

The project partners attend on a regular basis relevant national and international scientific conferences, thematic events and workshops, in which they disseminate the project outputs through their presentations, posters, and use of dissemination materials. A plan for research attendance to specialized international conferences such as ICUD 2018, 2020, LESAM 2017, WWC 2018, ECCA 2017 has been included in the BINGO Dissemination and Communication Plan (confidential to the partnership, although participation in the events is reported in the project website, newsletters and social networks).

In addition to the presentation of the project activities and results, the partners will make use of these specialised events to establish collaboration opportunities and network connections with their peers and further target audiences.

➤ **To organise specific dissemination activities:**

Within Task 7.3 – Dissemination Activities, BINGO will organise six dissemination events in Month 40, one in each research site, in order to ensure that the BINGO messages are communicated to the local stakeholders, maximising the outreach of BINGO results. These events will form part of the CoP workshops' strategy, organised in collaboration with WP5 and WP6, and will correspond to the "Transfer" dimension of the CoP: Local and national seminars workshop with the outcomes of BINGO.

➤ **To foster the support from the Project Advisory Board (PAB) in the dissemination and exploitation of the project results:**

The BINGO PAB comprises a high-level international panel of experts from different areas of knowledge that will provide an additional form of quality control, advice, and validation of the vision, global impact and outreach of the project. In this context, the PAB members can act as ambassadors and dissemination/exploitation hubs of the BINGO project. For instance, BINGO's PAB member Mariza Cabral has founded a company specialized in the hydrologic effects of global change (Hydrology Futures, LLC), for which the project results will be of most relevance. Other PAB members have also privileged access to industrial organisations, to which the results will be disseminated.

➤ **To develop and disseminate success stories based on the research sites:**

Based on the outcomes of the activities conducted in the 6 research sites, BINGO will develop success stories in simple, professional and attractive communication formats. These success stories will demonstrate convincing results of the BINGO project, and disseminate to enlarged audiences how the research sites improved through the application of the project outputs.

➤ **To ensure the effective dissemination of results during the Final Conference:**

The BINGO Final Conference (Task 7.3 – Dissemination Activities) will be organised in 2019, in the framework of the European Climate Change and Adaptation Conference (ECCA - <http://ecca2017.eu/conference/>). ECCA is a specialized international conference that aims to inspire and enable people to work together to discover and deliver positive climate adaptation solutions that can strengthen society, revitalise local economies and enhance the environment.

In 2019, BINGO will be involved in the organisation of the fourth edition of ECCA, which will be an excellent platform to disseminate and exploit the project results to some of the key stakeholders in the field of climate change and adaptation. The conference will take place in Lisbon, Portugal – city of LNEC (BINGO coordinator). This event will bring together relevant stakeholders that may be interested in making use of BINGO's results.

3.3 Individual Exploitation Activities

Considering that BINGO exploitable results address precise needs of the different stakeholders, there will be defined an individual strategy and activities according to the profile of each partner.

In this context, each partner has developed a detailed exploitation strategy and that contains a plan on how they intend to exploit the knowledge from this project. Each of the individual exploitation plans is integrated into the overall exploitation plan, taking into account the particular strategy and market positioning of those partners involved. All the partners are committed to the exploitation of the project results beyond its closing date in order to ensure the sustainability of the results.

The dissemination and exploitation measures proposed above aim to serve as general guidelines for the partners' individual role in the exploitation of the project results:

- To guarantee the overall continuity and sustainability of the BINGO results;
- To promote the successful transfer of the BINGO results to the target audiences, ensuring their support and promotion;
- To use the available dissemination materials and online tools to disseminate and exploit the project outcomes and results;
- To attend specialized international conferences and disseminate the project outcomes and results.

The table below presents the individual strategy and activities that each of the partners has defined in order to exploit BINGO outcomes and results:

Table 5. Individual Exploitation Activities

Partner	Role in the Exploitation of project results
LNEC	<p>LNEC's team is disseminating BINGO and will continue to disseminate the BINGO outcomes and coming results through its extremely worldwide network of organizations, through scientific and technical events, some already in the agenda, and all other opportunities that may arise in the course of the team's activities.</p> <p>LNEC, a worldwide Hub for innovation since 70 years, has a huge network of national and international connections at different levels, including research, industry, mayors, regional agencies, ministries and decision makers, given to its expertise in the domains of water and the environment. As H2020 BINGO's Coordinator, LNEC is keeping strong links to current ongoing H2020 projects such as PLACARD and IMPREX. LNEC is also a partner in H2020 RESCUE,</p>

dealing with making Cities more Resilient to Climate Change. LNEC is one of the founding members of ARC (Aqua Research Collaboration) that among other objectives aims at supporting the implementation of knowledge, and supporting capacity building related to the watercycle uses. BINGO is also one of the anchor projects organizing the ECCA 2019, in Lisbon (together with PLACARD and RESCUE), that will take place in Lisboa, 28-1 May 2019. It represents then a great opportunity to organize the BINGO final International conference within ECCA2019. The BINGO final results and market outreach will be, we do believe, extremely spread out through the ECCA community. In this direction LNEC is already working hard to get the best opportunities for BINGO results to be known by scientists, technical community, decision makers and the business sector, as well as students and the global society. In the meantime, a roadmap of special and critical events during 2017-2018 are being selected, to prepared the way to ECCA 2019. Some examples include the ICUD 2017, Prague, September 2017, the EIP on Water Conference, Porto, September 2017, the World Water Forum, Brasilia, Brasil, March 2018, The Adaptation Futures Conference, Cape Town, June 2018, the launching of LIS- Water- The International Centre for Public Policies and Regulation on Water.

KWR

The research carried out within project BINGO plays an important role for **KWR** Water, as it fully connects with the research agenda followed by the institute. As the Dutch research institute for the drinking water sector, KWR's collaboration with the Dutch water companies (the institute's shareholders) has resulted in a powerful knowledge base, an extensive collective memory of more than 60 years for the drinking water sector, and a wide international network of partner organizations, platforms and collaborators. KWR is not only involved in drinking water related research but also in the entire water cycle, with research branched out in the circular economy through the intrinsic role that water plays in this concept (e.g. research on indirect water reuse solutions, resource and energy recovery, emerging contaminants, etc.). Considering the impact of climate change in all economic sectors and the importance of creating a truly circular economy, KWR combines interdisciplinary water research to address cross-border as well as local issues related to water management.

With its central role in the Dutch and international water sector, and work on publications such as the Urban Water Atlas for Europe (published by the EC in April 2017, [LINK](#) to EC press release), KWR is positioned as an international expert organization in the field of climate change, adaptation strategies and resilience; as such, the results of the BINGO project will be implemented and further developed in international settings. Through collaborative knowledge exchange platforms, such as Watershare (an initiative of KWR currently joined by 18 research partners globally), the institute will jointly further develop web-based tools, easily accessible worldwide, built upon databases and results developed throughout BINGO. This will not only ensure that the results of the BINGO project are disseminated but also fully exploited, with worldwide applications. The results of the project modeling activities will serve to support national or local projects connected with the Veluwe research site, and also as a standard for replication of methods used and results interpretation for international collaborations.

IWW

The BINGO results are of great value for **IWW** Water Centre in Germany. They are the starting point for further research on how climate change will affect water resources and society in the near future, more specifically for the

next 10-20 years. Especially the hydrological model application developed in BINGO will be used to answer further research questions and build on the scenarios created in BINGO. With the help of the BINGO results we hope to be able to create new solutions that are balancing climate change effects versus effects driven by socio-economic/demographic change.

IWW Water Centre is one of the leading water research institutes in Europe and a prominent member of the international research community. In its research branch, IWW is a private, not-for-profit company affiliated with the University of Duisburg-Essen. Founded in 1986, IWW presently employs more than 100 full-time employees at three locations with the headquarter in Mülheim an der Ruhr in Germany. The 20 shareholders of IWW are mainly from the water-supply and wastewater industry. Main fields of activity are water resources management, water technology, water networks, water quality analysis, applied microbiology, water economics and management. We will use our broad network to inform end users and stakeholders about the BINGO results by using our website and publications. We are also part of a very active Community of Practice (CoP) that already has shown great interest in BINGO results.

The research process and results derived from BINGO project is providing **Aquatec** reinforcement in our know-how in the advanced management of urban drainage systems. One of the core activities of Aquatec is to transform the traditional urban drainage management of our cities into an advanced one on the basis of knowledge and applied R+D+i. Accordingly, the mission of the R+D+i in Aquatec is to develop and lead research lines in the field of urban drainage with immediate utility for the stakeholders (smart and efficient management of infrastructures, reduction of impacts in receiving waters, advanced flooding management, climate change adaptation and resilience, etc.) and with particular vocation in applied R+D+i.

Specifically, the advanced research and results derived from BINGO project will increase the know-how of Aquatec in providing advanced solutions for the adaptation of urban drainage systems of cities to climate change, examples of such advanced tools developed in BINGO project (Badalona case-study) include: the 1D/2D sewer model capable of evaluating the effects derived from flooding episodes both inside the sewers and on the surface of the cities; the sewer sediment transport model and the CSOs continuous measurement campaign that will allow us to estimate, thanks also to the development and calibration of a marine model, the effects of combined sewers overflows into receiving waters; flood risk assessment to evaluate impacts on people's safety, goods and properties of cities and environmental risk assessment to evaluate impacts on public health, tourism and other urban activities.

Partial results of the project, especially the ones derived from the Community of Practice, one of the pillars of BINGO's project to locally promote the interaction of BINGO researchers and the stakeholders or potential users of the results, have been already disseminated, with the main focus of promoting the started research activities in the case study of Badalona in particular, and in the whole BINGO project in general. Likewise, all the results of the project will be disseminated as they are generated throughout our common tools and channels of dissemination: company's website (replicated by other local and national websites), social media, local and national newspapers, radio and TV bulletins, technical and/or scientific publications, participation in conferences and workshops, etc.

Additionally, since Aquatec belongs to Suez (www.suez.com), company with

AQUATEC

	<p>more than 150 years of experience in the water and waste sectors with presence in the 5 continents, the worldwide dissemination and exploitation of results derived from BINGO project is guaranteed, both at commercial level (since most of the results developed by Aquatec in BINGO project will be in a higher TRL to be directly exploited as technological solutions), and at research level, by following some of the open research questions left beyond the project. Finally Aquatec is also member of AEAS and EUREAU so that both at Spanish and European level the results of BINGO project will be disseminated throughout their extensive network of water sector's experts.</p>
NTNU	<p>NTNU is widely dissemination BINGO both nationally and internationally, through conference participations, publications, and presentations. The research carried out in the BINGO project has opened connections and network opportunities locally and internationally. The dissemination has been strengthening on a national level through additional funding opportunities enabling national networks for dissemination. The exploitation of the dissemination activities has enabled NTNU to contribute to strengthen its position as a key national knowledge provider for climate adaptation research. NTNU has linked BINGO with the nationally funded Klima 2050 center for research-based innovations to form a very strong team. Some examples of conferences and presentations include the ICUD 2017, Prague, September 2017, the Cities of the Future Conference – Embrace the Water in Gothenburg, June 2017, and LESAM in Trondheim, June 2017.</p> <p>Direct use of the results from BINGO are contributing to INXCES, JPI waterworks funded project, Klima 2050, ExndBingo (national dissemination network project), and the Stop-IT H2020 project. and as input to other H2020 initiatives. Adaptation to climate change and the impact of climate change in all economic sectors is at the core of the NTNU interdisciplinary water research to address climate adaptation issues in water management. Exploitation of the BINGO results will influence national guidelines and relevant adaptation practices. It will contribute to new teaching material and research opportunities. It will lead to direct applicable methods for the urban water sector to address the issues of adaptation and building resilience.</p>
InterSus	<p>InterSus will mainly disseminate BINGO's results and activities through its well-established network of contacts and partners, which are located on the national level (e.g. in Germany and Greece), the regional level (the whole EU) and world-wide (mainly sub-Saharan Africa, East Asia). We will proactively share experiences and results within the consortia we partner with in our national and international consultancy projects (e.g. for the German environment administrations and various DGs of the European Commission). Additionally, we will disseminate BINGO and its results in the bodies and events in which we participate, as the European CIS process and other policy-oriented bodies/processes.</p> <p>In addition, InterSus will make use of the project results in its own research activities in the field of climate change and adaptation, for example: the development of an online tool for screening measures in the water sector with regard to their suitability for climate change adaptation (funded by the German Federal Environment Agency) and GOVRISK, a research project funded by the Norwegian research fund that takes a deep look into local climate adaptation action in municipalities in Germany, Sweden and Norway.</p>
FUB	<p>The medium and high resolution simulations driven with MiKlip decadal predictions by FUB will be provided back to the MiKlip community to augment</p>

	<p>the simulations made there and thus extend their data basis for further research.</p> <p>The development of a stochastic weather generator provides a basis for further projects with water management authorities (like the Wupperverband) to address a variety of questions where physically and spatially consistent precipitation fields are to be generated in a controlled fashion.</p> <p>Spatial IDF curves will be of interest for other water related projects and for the German weather service as a provider of precipitation related hazard probabilities to communities. Currently, these are also part of another HORIZON2020 proposal.</p> <p>The approach of identification of extremal episodes will be used in forthcoming project proposals on the understanding of the occurrence of meteorological extremes.</p>
SPI	<p>SPI will widely disseminate BINGO and its results through its vast worldwide network of partners, strengthened by its presence and offices in Portugal, Spain, China, USA and a permanent representation in Brussels, as well as its strong activity in Angola, South America and South East Asia. SPI will also proactively disseminate BINGO and its results in national, European and International events in which SPI regularly participates. Along the years SPI has participated in a large number of international projects, such as Horizon 2020, FP7 and Erasmus Plus, in which developed dissemination activities and was responsible for the communication and exploitation of results. In this context, SPI large network of contacts and experience in dissemination activities will be its main contribution to an effective exploitation).</p> <p>In addition, SPI will make use of the project results in the following research activities: LIS-Water – an initiative of LNEC to create in Portugal an international Centre of Excellence for leading edge R&I on water services and related water resources with a high impact on public policies, management and regulation in Portugal, Europe and worldwide); and Urban GreenUP - H2020 project aimed at obtaining a tailored methodology to support the co-development of Renaturing Urban Plans focused on climate change mitigation and adaptation and efficient water management, and to assist in the implementation of Nature-Based Solutions in an effective way.</p>
CYI	<p>The BINGO research has improved the capacity of The Cyprus Institute to dynamically downscale climate change projections over Cyprus at high temporal and spatial resolution. The BINGO project is also improving our understanding of hydrological processes and water resources of the Troodos Mountains, which cover nearly 60% of Cyprus. The BINGO results are the starting point for further research on the impacts of climate change on water resources and society. An example is the INNOMED project (ERANET WaterWorks2015, Water and FACCE JPI), launched in June 2016, which aims to apply advanced modelling tools to promote a holistic approach to water resources management, with a special focus on irrigated agriculture and forests.</p> <p>The Cyprus Institute is a non-profit research and educational institution with a strong scientific and technological orientation, founded in 2005. The Energy, Environment and Water Research Center (EEWRC) of the Institute, which was launched in 2007, is involved in various European and national funded projects related to water and natural resource management, environmental observations, and climate change modelling, impact assessments and</p>

adaptation. EEWRC cooperates with various government organizations (e.g., Water Development Department, Department of Agriculture, Department of Forests, and Geological Survey Department) and local enterprises on water, climate and environmental research. We will disseminate BINGO results in national and international events in which Cyl regularly participates. The broad local and international network of the Cyl will be used to further disseminate BINGO results through our scientific publications and newsletters.

IACO

IACO LTD is directly involved in providing consultancy services to Water Management Authorities and in participating in research activities related to the issues investigated under BINGO. Downscaled and Short-term Climate Change Scenarios could a) be further applied to other areas, to explore localized problems and draft local adaptation strategies, b) applied in other sectors such as energy efficiency, crop production, town planning etc, and c) be further investigated in order to increase confidence limits in projected scenarios or to design more efficient adaptation measures.

IACO will pursue this better understanding of the Hydrological / Hydraulic processes under Climate Change scenarios, since it is a Water Resources Engineering and Management SME, and will seek new opportunities to expand the knowledge basis gained within BINGO in more research areas in order to identify impacts and innovative adaptation strategies applicable in other catchments as well.

IACO, as part of its role in capacity building of water managers and water end users, it will transfer all knowledge gained within BINGO to representatives of all water sectors such as Agricultural, Industry, Tourism Organizations, Water Boards etc, by better informing them about trends and problems associated with climate change, and the links to water supply and flood management. IACO will be in a position to provide them with the proper tools to adjust to the new status of water regimes under Climate Change. As a result of its participation in other projects, IACO will continue to provide relevant information through its website and social accounts on developments of aspects related to BINGO.

IACO ideas on new research projects and solutions built on BINGO results could be the following:

- Testing the applicability of the proposed adaptation strategies proposed within BINGO in order to be further exploited, optimized and demonstrated;
- Research into more water efficient irrigation and other crop farming techniques to reduce demand and supply needs;
- Research on enhanced flood protection strategies by upgrading the existing ones either through new natural based solutions, or by upgrading designs or operation of existing ones to accommodate the additional flood hazard resulting from the changing rainfall/runoff mechanism as a result to climate change.

EPAL

EPAL is responsible to provide water and sanitation services to more than 1 third of the Portuguese mainland population, managing a huge and complex set of vast systems and its assets.

Between 2010 and 2013, EPAL conducted a study designated Adaptaclima – EPAL - Adapting urban water cycle to climate change scenarios” which aimed at providing the company with a strategy to adapt to climate changes in the medium and long term. Accomplished with the collaboration of several universities, this study, besides having been subject of several news in the

media, has been widely referred in Portugal and even abroad (European Investment Bank asked for a presentation of the project at its Office in Brussels) and, moreover, led the way to a cooperation between EPAL, relevant stakeholders and Portuguese Water Resources authorities. Also EPAL is a member of several national and international professional organizations, and in this context, the Company will put Bingo and its outcomes amongst the experiences to share with other entities, considering that some of the expected tasks outcomes will provide real useable management solutions to the problems posed by both challenging and interconnected subjects – water cycle and climate change.

EPAL is projecting to move forward to a holistic strategic risk management approach, in which climate change threats will be a subject of most relevance. Yet, the scenarios that have been developed in “Adaptaclima – EPAL” fail on getting the most relevant predictions in an appropriate time scale according to the current planning cycle. Thus, the company is looking forward to check what the decadal climate scenarios, fitting to the significant regional level, will bring of novel and how will it affect its planning framework, hence reducing the uncertainty about the actual risks arising in the medium term. Furthermore, the company expects to determine which are the most relevant and adequate adaptation strategies to be applied to its business case, in the planning period, according to (Bingo) validated cost benefit analysis tools.

The collaborative approach and the establishing of a Community of Practice supported by the project holds a “two way” benefit: on one hand, the company learns about the needs, expectations and the complex framework of interests concerning the other “basin stakeholders”, developing knowledge and awareness on the environment in which a water supplier has to operate; and, on the other hand, the company is given the opportunity to raise the other stakeholders’ awareness about its own needs and expectations, creating a fertile field for comprehensive agreements. In this perspective, the project is seen by the company as a relevant and profitable communication forum itself.

CIMLT

CIMLT, as an organization that represents 11 municipalities of the Tagus basin, has the most interest in the final results that will outcome the BINGO project. We hope the results will lead our technical crews to develop the best strategic options and help our political decision-makers in terms of Territorial planning - urban and regional. The sectors covered the BINGO results may be very comprehensive for our municipalities: from interest in the drinking water sector, to water reuse solutions, the soil occupation that is most sustainable, to civil protection strategies.

Our municipalities have an economy that is strongly based on the agriculture activity and agro-food industry, so we are very certain that the BINGO research will be very valuable for these end users.

We are certain that the participation in the project, will be very useful for developing ideas for new projects, also climate change related, such as Forest sustainability, the potential of Biodiversity and managing the increasing numbers of forest fires.

Ajuntament de Badalona

As a Municipality, **Ajuntament de Badalona**’s main objective is to improve the quality of life of its citizens. Besides the management of the public services our first aim is to explore new opportunities for solving structural problems and looking forward to prepare the city for the future challenges like global warming. In the context of the Bingo project the results will be used to elaborate the adaptation strategy plans of Badalona, helping to draw projects

	<p>to improve the urban drainage systems, design new retention tanks, etc. On the other hand, the results of the project will be useful for new research projects in order to control the discharges into the sea and monitoring the evolution of the water quality.</p> <p>The municipality of Badalona has different channels for informing end users about the results. Different ordinary commissions are used to inform the managers of the different public services about the project. Local medias like Television, Radio and the municipality webpage are being informed about the BINGO events and significant advances. The workshops where stakeholders and potential users are represented, and finally, the environmental citizen's commission: "The Forum de Medi ambient", this commission was implemented after 1992 as a result of the Earth summit of Rio de Janeiro.</p>
Aigües de Barcelona	<p>Although Aigües de Barcelona (from now on AB) has a restricted scope, which is the metropolitan area of Barcelona, the company belongs to SUEZ, a large group with presence in many countries. We permanently interact with many companies of the group, by communicating news, events and projects by different means. As far as BINGO project is concerned, we inform by publishing on our website and iagua technical magazine any event that takes place such as workshops or annual meetings. The further the project goes, the more we intend to inform about results and achievements. By this way, end-users and society in general can be informed not only about what the project is about but also about its results and conclusions.</p> <p>Ever since AB changed into a Public Private Partnership back in 2013, its awareness about climate change has grown. As a water supply company, the main concern relating climate change used to be how droughts occurred and which effects they had on water reservoirs. Considering that AB is now managing the whole water cycle, progressive increasing sea level or events such as floods have gained importance as they affect directly sewerage, sanitation and WWTP management, fields which were not dealt with directly by the company in the past. Moreover, the company's Innovation Department is playing a key role in such a transformation, as they strengthen the need of focusing far beyond supplying water only.</p> <p>Considering that the BINGO project intends to provide, from the six research sites, general tools and knowledge about climate change, in the long term these results will be useful for future challenges regardless of its location. In the short term, AB is also participating with Aquatec in LIFE Effidrain project, whose main goal is dealing with an integrated real-time control (RTC) strategy of urban drainage networks (UDN) and wastewater treatment plants (WWTP), studying, among others, the same Badalona BINGO case study scope. Both projects, in some way, complement each other and BINGO results are expected to be useful.</p>
Vitens	<p>For Vitens the Veluwe area is an important groundwater source for the production of drinking water. About half of the drinking water Vitens supplies, originates from the Veluwe or comparable areas. Climate change will influence the amount of water Vitens can withdraw from the Veluwe. On average the expectations are positive as the net recharge of groundwater is expected to increase. On the other hand however, the length and intensity of dry periods is also expected to increase, which can put significant constraints on the availability of groundwater during dry periods when also the demand for drinking is high.</p> <p>The BINGO project generates a dialog between stakeholders about how to</p>

deal with the Veluwe water balance with respect to climate change. These discussions are 'model based' which means that the impact of climate change and scenario's to handle this are analyzed by groundwater models. The expectation is that the working strategy which is developed in BINGO can be transformed to other areas. As such BINGO contributes to stakeholder management practices at Vitens.

For the **Wupper Association**, BINGO project is in line with several executed research projects which have dealt with the changing of hydrological and social systems, communicating risks, and adapting their water and catchment management in suitable ways. Examples of projects at national and international level are DayWater (2006), WASKlim (2009), REISE (2009), and IMRA (2011). Wupper Association has to continuously seek current and possible development on account of its responsibility for water management within the Wupper catchment and the consequent investments and maintenance of big plants and structures. BINGO results will be followed up by research on long-term observations and derived conclusions for the future as well as establishment and improvement of risk communications structures. Current follow up projects which will make use of BINGO results are TASK (2017-2019) and WateXr (2017-2020). Remaining outlined questions will lead to next research and new approaches to deal with uncertainties in short and long-term range.

Wupper Association has close cooperation not only with other water boards, authorities, and agencies at regional, national, and international level but also with universities, research institutes, and the German Meteorological Service (Deutscher Wetterdienst - DWD), encouraging experience exchange. The Wupper Association actively partakes in national and international associations like VDI, DWA, and BWK (responsible for national technical guidelines), HKC, IAHS, and EGU among others. Founded as a corporation under public law in 1930, Wupper Association provides sustainable watershed management for the community members (cities, municipalities, water suppliers, and trade and industrial organizations). Consequently, Wupper Association has always had very close contact to end users, relevant stakeholders, and decision makers. Within these structures and network, all outcomes of former projects were successfully disseminated to relevant stakeholders. The Wupper Association participates regularly on several national conferences each year, e.g., Tag der Hydrologie (Day of Hydrology) and Wasserbaukolloquium (Hydraulic Engineering Colloquium), where experts from all the country present the latest state of research as well as current research projects. In this context, BINGO previous results were presented at Tag der Hydrologie 2017 (held in Trier) and Dresden Wasserbaukolloquium 2017. At international level, BINGO foregoing outcomes have been presented at EMS 2016 (European Meteorological Society, held in Trieste, Italy) and EGU 2017 (European Geosciences Union, held in Wien, Austria). This year, further results will be presented at EMS 2017, in Dublin, Ireland. BINGO results will be also communicated through internal magazines, Wupper Association Website, press releases, and national and international publications and workshops. As a result, Wupper Association will contribute to an effective and successful exploitation on account of continuous interaction and collaboration with its many partners and contact network.

Wupperverband

DGDAR

There may not be another activity more dependent on climate such as agriculture. Irrigated agriculture in particular, which requires considerable amounts of money to build infrastructures for retaining, transporting and

	<p>distributing water, is highly dependent on reliable information in order to make the right decision concerning the feasibility of the investments.</p> <p>DGADR, as Portuguese Authority for Irrigation, is directly responsible for the approval of the investment plans for new irrigation schemes or the modernization of the existing ones. Bingo results especially those related with precipitation are definitely a major tool in the assessment of the projects subject to DGADR appreciation or, even in a higher level, in the definition of the portuguese agriculture policy and strategy for adaptation to climate change.</p>
AMB	<p>At the metropolitan level, BINGO results will be very useful for AMB to deep in flood knowledge and extrapolate results to other municipalities. Scarcity is also an increasing problem and BINGO will show the opportunity to know other countries solutions and the possibility to adapt to the Mediterranean problem.</p>
ProGLD	<p>BINGO research plays an important role in de major policies of the central and provincial government into implementing sustainable drinking water resources until 2040. It also has a part in the total research initiatives concerning the research site Veluwe. Drinking water Company Vitens, Water board Vallei en Veluwe, KWR water research, Provincie Gelderland, Deltares and other Dutch consultancies work together on the knowledge base of the groundwater system of the Veluwe research site. Through our Community of Practice end user outside of the research community are well aware of the BINGO research results.</p> <p>In the Delta program freshwater which runs from 2016-2021 research on actual evapotranspiration is disseminated. New projects are started. Important data form BINGO and these other projects help develop new up to date models on agricultural production and effects of climate change on natural vegetation in the Netherlands. Structural planning of research questions in this program is important. The experience of BINGO helps our provincial government to play a better role in this planning process. Because of the experience with BINGO the provincial government seeks more cooperation with Wageningen University and Research.</p>
BERGEN K	<p>The City of Bergen will use results and research from the BINGO project to strengthen the city's work in climate adaptation and stakeholder engagement. Work done in the project will be of great importance in decision making and choosing solutions for storm water systems that reduce overflow from the combined sewer system to the fjord. Through the cooperation with NTNU, scientific partners and the whole BINGO family we learn and develop new ideas and ways of working towards our goal to secure a climate proof city with good water quality in the fjords close to the city center. We will use what we have learned through competence building from BINGO in other similar projects in our city.</p> <p>Cooperation with the Bjerknnes center is strengthened through BINGO and HORDAKLIM which is another climate research project we are engaged in. Bergen is also partner in an EU-Interreg project called Begin (Blue Green Infrastructure through social Innovation), which started up this year (http://northsearegion.eu/begin/).</p> <p>BINGO has given us new contact points in The Research Council of Norway who have organized national conferences where BINGO has been presented. The project will promote use of Blue-Green solutions in storm water</p>

management in general city planning and development.

In the BINGO project we try to engage stakeholders to collect data and observe the runoff from rainwater and flooding. This is to raise awareness and interest in rainwater and storm water handling. We believe this also can help property owners and people who live in the area to protect their own property and houses against flooding and damages from storm water.

We intend to inform end users and others of the results and the work carried out in BINGO on a local, regional, national and Nordic level. On the local level we use Facebook and our web site to inform the public. Being a part of BINGO will prepare the city for cooperation in future projects which will be useful and necessary in our further work on climate adaptation and other water related issues.

4. NEXT STEPS

The exploitation strategy aims to ensure that the outcomes and results of the project are exploited during and after its life cycle. It is crucial that the strategy is adapted to the different stages and developments of BINGO, and that as the project develops and the results are delivered, there is a stronger focus in the development of exploitation tools and activities.

The Final Version of the Exploitation Plan will be provided in M40 of the project. The present chapter aims to present an overview of the activities that will be developed until then towards its delivery.

➤ **Discussion of the Exploitation Strategy**

The exploitation strategy will be discussed internally between the consortium members – first at WP Leaders level, and afterwards at all partners level.

A dedicated session about the Exploitation Strategy of BINGO will take place in the BINGO 3rd Year Progress Meeting, to allow for face-to-face and dynamic interactions about the subject and assess how BINGO outcomes can be transferred beyond the BINGO sites.

- a. The final exploitation plan will be developed taking into account the recommendations elaborated for each research site, as well as those developed to contribute to the management planning across the EU (WP5).
- b. WP6 will support the development of tools and procedures that will allow researchers and end users to collaborate beyond the project duration.

➤ **Definition of Key Performance Indicators (KPIs):**

BINGO will define Key Performance Indicators to measure the effectiveness of the exploitation of the project results. The KPIs will allow for the development of measurable objectives that are truly focused on the different types of data generated by the project. The KPIs will be provided and discussed on the 3rd Year Progress Meeting with all partners, and confirmed with the Project Advisory Board.

➤ **Explore complementary funding opportunities**

Further possible sources of regional/national/European funding opportunities which may ensure the sustainability of the Research and Innovation activities of BINGO will be identified. Exploring and activating complementary funding and investment sources will give a further boost to the solutions developed by BINGO, optimising the impact of the project and ensuring the exploitation of the project outcomes.

➤ **Development of a List of Actions**

A list of concrete actions will be developed for the Exploitation Activities to be implemented in the project. These actions will include the following information:

- Title of activity
- Scope
- Who can implement the activity
- Budget
- Possible funding source (if applicable)
- Description
- Implementation period

All of the abovementioned strategies (not excluding further possibilities) will be presented in the Final Exploitation Plan (D7.8), which will be provided in M40 of the project.