Deliverable 6.4

First Progress Report

Grant Agreement nº: 956623

Project full title: Inventive forecasting tools for adapting water quality management to a new climate

Project acronym: inventWater

Type of deliverable: report

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1. General progress

1.1 Scientific progress and training events

The inventWater Early Stage Researchers (ESRs) are now progressing in their respective research programmes, in consultation with their supervisory teams which are drawn from at least two of the inventWater Beneficiaries. The ESRs started at dates between November 2021 and March 2022, and to date there are no peer-reviewed scientific outputs. All ESR participated in the virtual Welcome Retreat virtual meeting from 17th-21st January 2022, where initial planning for all the projects started. During the Welcome Retreat ESRs interacted with all supervisors, researchers and stakeholders with experience and diverse backgrounds on the topics related to inventWater. ESRs met for the first time, learn about each other and the general scope and the fundamentals of forecasting science, ecosystem services, and water quality issues. On the transferable skills side the focus was on communication in science, good scientific practice and data and time management. One of the main outcomes of the Welcome Retreat were the Carrer Development Plans of all projects. The second Training School of inventWater will be held in Ireland between 13th -17th June 2022 (see Appendix 1 for schedule)

Deviations to the original Workplan in Year 1 included a change of timing (to January 2017) and location (from an in-person meeting in Girona to a virtual meeting due to COVID restrictions) for the Welcome Retreat, agreed by the EU Project Officer. This change considered delays in starting dates for individual ESRs. These delays were related to visas and in one case to several unexpected circumstances during the recruitment process for ESR11: 2 additional rounds of shortlisting and interviews were needed for ESR11, because two selected candidates refused the offer to join the ITN. However, all ESRs were able to attend the Welcome Retreat (ESR11 did not have a signed contract at the time of the meeting, but she agreed to attend facilitated by the virtual format). All the presentations of this Training School were recorded, however, and are available for the whole network.

Most ESRs are already engaged in the local structured basic cross-cutting training offered by the respective doctoral schools. Finally, a selection of complementary online learning opportunities ('e-learning') available to ESRs covering transferable skills, innovative forecasting techniques, and application knowledge have been identified and included in a database available for the whole consortium. Such e-learning includes available courses, webinars, tutorials, and specific information pages on the Internet, and have been incorporated into CDPs considering the particular training needs of each ESR.

1.2 Deliverables and milestones

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Deliverable (D) or milestone (MS)	Due date (month)	Status
MS1 Kick-off meeting	1	Completed
D6.1 Consortium Agreement	2	Completed
D6.6 Supervisory Board of the network established	2	Completed
D5.1 Plan for Exploitation and Dissemination of Results	3	Completed
D5.2 Launch of social media presence (Twitter) and website (including blog)	3	Completed
D6.2 Data Management Plan (DMP)	6	Completed
D6.3 Recruitment report	11	Completed
D4.1 Final version of Career Development Plans	11	Completed
D4.2 Report on Network-wide training event 1	11	Completed
D5.3 ESRs blog entry on training activity 1	11	Completed
MS2 Recruitment process completed	11	Completed
D7.1 NEC - Requirement No. 1	12	Completed
D6.4 First progress report	13	Completed

Deviation from the original plan for deliverables was related to the same delays in recruitment process and visa applications. Deliverables 6.3, 4.1, 4.2, 5.3 were delayed, in agreement with the EU Project Officer, to January 2022. Additionally, the deliverable D4.3 “First bi-annual report on ESR training progress” was initially planned for February 2022, but it was delayed to April 2022 considering the late recruitment of researchers, in agreement with the EU Project Officer.

2. Recruitment strategy

In summary, there were reasonable delays in the recruitment process but no deviations from the original inventWater Recruitment Plan. See Deliverable 6.3 for a comprehensive description of the recruitment process.

2.1 Recruitment process

The Catalan Institute for Water Research (ICRA) acted as the coordinator of the inventWater recruitment process to ensure open, transparent, and merit-based recruitment. A common recruitment process was undertaken as follows:

1. Advertisements for all ESR positions were initially published via EURAXESS, the ICRA webpage, EGU, GEWEX, Jobatus, MetJobs, Nature Jobs, and UFZ webpage. Social media, (Twitter and LinkedIn) and personal e-mailing lists were also used.

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2. Applications were received to a centralized email address (inventwater-jobs@icra.cat) and applications collated into respective ESR positions. Applications for Wageningen University, University of Stirling and International Institute for Applied Systems Analysis were received by each institution by their application system, as the data protection procedures in those institutions did not allow for ICRA collecting applications for the ESR hosted in those institutions.
3. Each supervisory team reviewed applications for their respective positions and shortlisted applicants invited for interview using a common selection template. Following the interview, candidates were scored through a common protocol and the top performing candidate was offered the position. If the first selected candidate opted to turn down the offer, the second highest scoring candidate was offered the position. Once the position was accepted, all unselected candidates were informed of the situation.
4. If no candidates were considered suitable for interview, or if no selected candidates accepted the offered position, a second round of recruitment was undertaken, with additional advertisements placed via EURAXESS. For ESR11, a third round was necessary, again advertised via EURAXESS and the University of Stirling platform.

2.2 Selected candidates

Table 1 shows the list of the selected candidates after the recruitment process.

Project	Name (nationality)	Host institution	Gender	Starting date
ESR1	Anandita Agarwal (India)	AU (Denmark)	F	1 Oct 2021
ESR2	Ammanuel Bekele (Ethiopia)	RUB (Germany)	M	1 Oct 2021
ESR3	Maud Siebers (The Netherlands)	US (UK)	F	1 Oct 2021
ESR4	Ioan Sabin Taranu (Estonia)	VUB (Belgium)	M	1 Nov 2021
ESR5	Ilaria Micella (Italy)	WU (Netherlands)	F	15 Sep 2021
ESR6	Keerthana Suresh (India)	IIASA (Austria)	F	11 Oct 2021
ESR7	Ricardo Marroquin (Guatemala)	DkIT (Ireland)	M	1 Nov 2021
ESR8	Angela Pedregal (Bolivia)	ICRA (Spain)	F	1 Dec 2021
ESR9	Lipa Nkwalale (Bostwana)	UFZ (Germany)	M	1 Oct 2021
ESR10	Faluku Nakulopa (Uganda)	UFZ (Germany)	M	1 Oct 2021
ESR11	Mahtab Yaghouti (Iran)	US (UK)	F	28 Mar 2022
ESR12	Adrian Rinaldo (Norway)	UCC (Ireland)	M	1 Oct 2021
ESR13	Daniela Henry (Chile)	ICRA (Spain)	F	1 Dec 2021
ESR14	Annika Schlemm (Germany)	VUB (Belgium)	F	1 Oct 2021
ESR15	Floran Clopin (France)	WU (Netherlands)	M	1 Oct 2021

Table 1. Summary of selected candidates of inventWater.

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3. Career development plan for each recruited researcher

Each ESR has completed an individual career development plan which has been agreed and signed off by each ESR and their respective inventWater supervisory team. Career Development Plans (CDP) development was included as an agenda item at the Welcome Retreat, following a standardized template. These CDPs were created for at least the first year of the projects during the Welcome Retreat, but they also contain relevant information for the rest of the years. Since these are living documents, changes adjusting the plans according to the development of each project are expected in the future.

The CDPs contain:

1. Brief overview of research project and major accomplishments expected.
2. Long-term career objectives (5 years).
3. Short-term objectives (1-3 years).
4. Brief overview of progress, achievements, and performance.
5. Short-term objective during the training periods.
6. Initial analysis of training needs

The content includes expected competences acquired, research results, research Skills and techniques acquired, research management, communication skills, other professional training, anticipated networking opportunities, and other activities (community, etc.) with professional relevance.

See Deliverable 4.1 for further details.

4. Management of the project

4.1 Management, meetings, and involvement of researchers

The kick-off and Welcome Retreat meetings were held on 16th –17th March 2021 and 17th – 21st, both virtually, due to the COVID-19 restrictions in the different countries participating.

A dedicated Project Manager has been recruited and employed on inventWater from 1 st March 2021. ICRA Management meetings between the Project Manager and the ITN Coordinator are held on a weekly basis. Three Supervisory Board meetings have been held during Year 1, held remotely via video conferencing (16th March 2021, 10th September 2021, January 20th 2022). Agenda and minutes have been produced for the three SB meetings.

At the first Training School, ESRs were requested to nominate a representative to attend future inventWater SB meetings. This position will last for a 1-year period, with a new representative nominated at the end of each tenure.

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During the Welcome Retreat the ESRs met for the first time with the Training Coordinator and the Management Team. There will be bi-monthly on-line meetings with the ESRs to ensure progression, assist careers, and provide constructive feedback and direct intervention if necessary.

The Management Team have prepared a dedicated digital environment to host all kind of meetings in inventWater (from the Welcome Retreat to informal meetings), called Digital_Sau, in the GatherTown platform. https://app.gather.town/app/cbiCZdDDsznM7eBl/Digital_Sau

Multiples minor changes in the secondments have been suggested by the beneficiaries and communicated to the Project Officer, who asked for a detailed table with all the changes from the original plan. To date, two versions of the table have been sent updating all the changes.

All financial payments have been made by the coordinator as required under the grant agreement.

4.2 Identification of risks

Risk	Description of Risk	WP	Proposed mitigation measures	Status
R1	Delay in recruitment	6	Applying early and comprehensive dissemination of vacancies. Re-advertisement if necessary.	All ESRs were recruited. However, ESR11 was recruited some days beyond Year 1, because of delays in the recruitment, VISA application, and COVID restrictions.
R2	ESR dropping out	All	Employing motivated and independent students. Providing ESRs with research directions, good management practices, organised research environment and positive work ethos. Re-advertise and recruit new ESR.	No reported issues.
R3	Scientific Misconduct	All	Scientific Misconduct Strategy Detailed in Consortium Agreement	No reported issues.
R4	Recruitment Gender Imbalance	6	Recruitment strategy in place to ensure Gender Balance. Engage positive discrimination to ensure gender balance.	8 women and 7 men were recruited.
R5	ESR issues with supervisory team	1-4	Dealt with first by Supervisory Team. If not resolved, pass to the SB	No reported issues.

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R6	Inefficient communication within network. Unsatisfactory supervision	1-4	Promoting strong and effective formal and non-formal communication at all levels. Definition of strict co-supervision arrangements	No reported issues.
R7	Poor ESR progress	1-4	Progress Monitoring System in place. Regular meetings with team	All ESRs undertake a fortnightly reporting procedure in addition to regular meetings with the team. No reported issues.
R8	Training Event Unsatisfactory	4	All ESRs will provide an assessment of the success of each Training Event. Feedback will be used to address any ESR concerns and further develop	Feedback (through online survey form) from the Welcome Retreat was satisfactory and will be used to inform planning and content of first Training School.
R9	Inadequacy of research and training activities	4	Initial Analysis of Training Needs, annual implementation of Career development plan. Frequent status assessments, inventWater midterm review.	No reported issues.
R10	Low data quality or unavailable data	1-3	inventWater will use data from long established sites with established QA/QC procedures that have substantial archives available to the network. ISIMIP and Copernicus data are already available.	No reported issues.
R11	Too complex numerical analyses and modeling exercises	1-3	Supervisory team very experienced and aware of the challenges ahead. Extensive computing power in the network.	No reported issues.
R12	Mismatch between spatial and temporal scales in model chains	1-3	Modular structure of the workflows, with plenty of possibilities for averaging. Training activities including multiple models to know respective limits.	No reported issues.

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R13	Loss of leadership	6	In addition to the Coordinator, Martina Floerke (RUB) will serve as substitute leader. Both have permanent positions and network management experience.	No reported issues.

4.3 Ethical issues

Four of the non-EU Partner Organisations and Beneficiaries have signed an agreement to conduct research in accordance with EU principles and to carry out the inventWater project in accordance with the ethical standards and guidelines of the Horizon 2020 Programme. The legal services of one of the Partners did not provide a signed letter, but the Coordination Team of inventWater received assurance that it will carry out the Action in compliance with the ethical principles of the European Union and to carry out the Action in accordance with the ethical standards and guidelines of the Horizon 2020 programme. There are no reported ethical issues. See Deliverable 7.1 for further details.

5. Communication Activities

All the ESRs presented the initial plans of their project in two poster sessions during the Welcome Retreat, when they had the opportunity to communicate about their project and receive feedback from other experienced researchers and stakeholders. Additionally, they participated in a Thesis-in-3 activity, assisted by a professional on scientific communication, to introduce their projects in a direct, plain language.

One of the ESR (Ion Sabin Taranu) gave a talk as a part of the seminar “Jeudi Climat” at National Centre for Meteorological Research (CNRM) and actively participated and gave a presentation at EURO-CORDEX General Assembly. He is also currently a lead author on two publications, which will soon be submitted, these publications are related to the project but were started during his master thesis.

Other 2 ESRs led two presentations, showing some preliminary results that will be part of their PhD thesis, in (1) the Annual Meeting of the Irish Freshwater Sciences Association at the University College Dublin, and (2) NoWPaS 2022 workshop (International Workshop of PhDs and Post-doctoral Fellows on Anadromous Salmonids) at the Basque Country (France).

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Several ESR have been accepted to lead posters and presentations in the EGU meeting conference 2022.

The Twitter account of inventWater (@invent_water) has been active in the last year showing updates about the project. Also, two blogs have been produced based on the inputs of the projects, one of them led by the ESRs (https://inventwater.eu/news/)

inventWater ITN Coordinator, Rafael Marcé also presented information on the inventWater ITN at GLEON2021, as well as at the meetings of the COST action PROCLIAS and the ISIMIP Strategic meetings.

6. Impact of the Action

6.1 Impact on recruited researchers

Recruited researchers have relocated to the country of their host institutions (see Table 1 for ESR nationality and host institute locations). This has given them the opportunity to interact and benefit from a new research environment in a new country. The multinational, multi-discipline and diverse nature of the cohort of inventWater ESRs and the Supervisory Board group will act as a foundation for their future careers. The research of the students is at an early stage, but the invetWater Twitter account and invetWater blog on the website are gaining followers.

6.2 Impact on institutions

All of the Beneficiary and Partner Organisations are benefiting from participation in the inventWater ITN. This has forged new research collaborations and strengthened existing ones. The further academic interaction inherent in an ITN will also lead to new links between the relevant universities, that are already crystallizing in the preparation of new proposals (for instance, in the upcoming Water4ALL call).

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