Minutes of the First RainGain National Observers Group Meeting (Belgium)

Prepared by Laurens Cas Decloedt, Patrick Willems (KU Leuven) and Johan Van Assel (Aquafin)

Date: Wednesday 18th April 2012, from 11:30 to 17:30

Venue: Arenberg Castle, room 00.A045 EUPOCO-LOKAAL, Kasteelpark Arenberg 1, 3001 Heverlee (Leuven), Belgium

Purpose of the meeting:

- To introduce the RainGain project to a group of national observers comprising specialists, practitioners, academics and local and central government policy-makers
- To discuss the observers' expectations from the RainGain project, regarding potential improvements in modelling, forecasting and management of urban pluvial flooding
- To give the observers the possibility of getting involved in the RainGain project

Present:

First name	Name	Organisation	Country
Berthold	Meers	Flemish Environment Agency (VMM) – Section Leuven	BE
Niels	Van Steenbergen	Flanders Hydraulics Research division of Ministry of Public Works & KU Leuven	BE
Steven	Smets	International Marine and dredging Consultants (IMDC)	BE
Toon	Goormans	International Marine and dredging Consultants (IMDC)	BE
Christophe	Claeys	Umbrella Organisation of Flemish Cities and Municipalities (VVSG) – Interrio	BE
Peter	Huygaerts	Ministry of Internal Affairs – Disaster Management Unit Province Vlaams-Brabant	BE

First name	Name	Organisation	Country
Joël	Vanherle	Ministry of Internal Affairs – Disaster Management Unit Province Vlaams-Brabant	BE
Rolf	De Bruyn	Province of Flemish-Brabant – Section Rivers	BE
Guy	Verbuyst	AquaFlanders	BE
Marc	Buysse	AquaFlanders	BE
Kris	Cauwenberghs	Flemish Environment Agency (VMM) – Section Operational Water Management	BE
Ward	Voet	Flemish Environment Agency (VMM) – Section Operational Water Management	BE
Els	Stoops	Drinking water company Pidpa	BE
Mieke	Pessemier	Water company Aquafin	BE
Riet	Smits	Water company Aquafin	BE
Marjolein	Weemaes	Water company Aquafin	BE
Mieke	Van Dorpe	Water company Aquafin	BE
Stefan	Kroll	Water company Aquafin	BE
Veronique	Charlier	City of Leuven – Section spatial planning	BE
Sofie	Van Belleghem	Province of Limburg – Section Rivers	BE
Maarten	Deschamps	Flanders Hydraulics Research division of Ministry of Public Works & Hydrologic Information Center (HIC)	BE
Christian	Legros	BelgAqua	BE
Catherine	De Raedt	Water company Aquafin	BE
Ingeborg	Barrez	Flemish Environment Agency (VMM) – Section Ecological control & Coordination Commission Integrated Water Management	BE
Joost	Dewelde	Flemish Environment Agency (VMM) – Section Operational Water Management	BE
Laurens Cas	Decloedt	KU Leuven	BE
Patrick	Willems	KU Leuven	BE
Marie-Claire	Ten Veldhuis	TU Delft	NL
Johan	Van Assel	Water company Aquafin	BE

Programme - First RainGain National Observers Group meeting (Belgium)

11:30 – 12:30 Optional : visit to Leuven X-band radar (Provinciehuis Leuven)

12:30 – 14:00 Sandwich lunch

14:00 – 17:00 Afternoon workshop (chair : Johan Van Assel, Aquafin):

14:00 – 14:30 General overview RainGain project

: Marie-Claire ten Veldhuis (project coordinator TU Delft)

14:30 – 15:00 Summary outcomes international project workshop of 16 April

: Patrick Willems (KU Leuven)

15:00 – 16:30 Role and expectations of the NOG

: Johan Van Assel (Aquafin)

+ discussion

+ presentations by two NOG members:

Presentation Flemish Environment Agency (VMM) – Section Operational Water Management

Presentation Flanders Hydraulics Research (Ministry of Mobility and Public Works)

16:30 – 17:00 Planning future activities and discussion

17:00 Closure

Minutes - First RainGain National Observers Group meeting (Belgium)

1. Visit to the Leuven radar

This visit prior to the workshop was optional, and was attended by 18 NOG members. Johan Van Assel (Aquafin) and Laurens Cas Decloedt (KU Leuven) have shown to the NOG members the radar site on the roof of the main building of the Province of Flemish Brabant at Leuven. Next to the radar also the data processing process was explained and demonstrated.

2. Opening afternoon workshop

Opening and welcome by Johan Van Assel (Aquafin)

3. General overview RainGain project

Marie-Claire ten Veldhuis, overall coordinator of the RainGain project, presented a general overview of the RainGain project, why the project was initiated, its objectives, its expected outcomes, its work packages, its partners and the four pilot sites. Also the role of the NOG was summarized.

4. Summary outcomes international project workshop of 16 April

Patrick Willems (KU Leuven, RainGain WP2 leader and organizer of the International RainGain workshop of 16 April at Leuven) presented the main outcomes of that International Workshop. He gave a brief explanation of the working principles of the radar technologies used within the RainGain project, and the different technical challenges. He also explained that an interesting link can be made with another project funded by the Belgian Science Policy Office (BelSPO): the PLURISK project. This project focuses on interdisciplinary risk quantification of pluvial floods in urban areas, and will consider next to the flood hazard and the economic/material damage cost also the social and ecological consequences of the urban floods. It will make use of the RainGain results for the Leuven case, and will benefit from the RainGain developments to implement and test the risk quantification methodologies for two other case studies. The members of the NOG were requested to propose two other case studies. AquaFlanders and the VVSG announced that they would contact the members of their organizations (urban drainage management units for AquaFlanders, and cities/communities for VVSG) about this request. The participants asked about the boundary conditions for being selected as case study. Patrick Willems explained that the case studies preferably should be interesting from an urban flood risk and management perspective, should have received recent urban floods, should have good data on the spatial extent and consequences of these inundations, and that a sewer system model should be available for use by the project partners. It moreover would be beneficial if the urban flood managers of the study case areas

would be willing to revise their urban flood management and control strategies based on the outcomes of the project and/or are willing to implement the RainGain real-time pluvial flood forecasting system.

It was agreed that the RainGain NOG members will be part of the Follow-up Committee of the PLURISK project and that bi-annual meetings will be organized (every 6 months): one annual meeting with main focus on the RainGain project and one annual meeting with main focus on the PLURISK project.

5. Introduction of the RainGain Leuven case

Johan Van Assel presented the Leuven case. He gave an overview of the specific characteristics of the sewer network of the city of Leuven as well as the Herent-Wilsele-Wijgmaal subnetwork that will act as pilot case in the project. He also elaborated on the different project activities and actions, as well as the long term goals. He explained that one of these long term goals is the Real Time Control (RTC) of the entire Leuven area in order to use the available storage capacity in the system in the most optimal way; hence to reduce future urban flood risks. Also the implementation of warning mechanisms to signal potential flooding (up until street level) was announced.

6. Role and expectations of the NOG

Johan Van Assel opened the discussion by introducing the role and expectations of the NOG, in the view of the project partners, and asked the participants to express their expectations and/or formulate suggestions. Several questions, suggestions and remarks were raised by the NOG members:

- The suggestion was made that one of the purposes could be the optimization of sewer networks. The RainGain partners confirmed that this is indeed one of the goals of the project.
- The exact locations of the urban inundations should be examined and stored. The current maps of recent floods in Flanders (the so-called ROG maps) mainly focus on river floods and should be extended to include also the locations prone to pluvial flooding.
- The Flemish authorities are currently setting up a system that will try to capture the main flood statistics and characteristics with the help of the local people through photos, measurements, testimonies…

- The size and lifetime of a convective rain cell can be very limited: few kilometers in size and a lifetime of less than half an hour. These rain cells can decay after being spotted by the radar at the 15km range or arise without being properly predicted by the radar. This makes prediction of local flooding very difficult.
- Question is also whether a time period of about half an hour to an hour is sufficient to warn local crisis managers or the public. The RainGain team clarified that half an hour was reported sufficient by UK National Observer Group members during their meeting in February in London. They will bring the Belgian flood crisis management experts in contact with their colleagues of the UK to exchange information on this issue. The RainGain team also clarified that the uncertainty on the timing and exact location of the pluvial flooding depends on the scope of the prediction. The closer to the event, the more precise the prediction will be.
- The Brussels region is suggested as a potential partner with interest in urban pluvial flood prediction and management. The RainGain team will get in contact with flood managers of this region and will invite them for the future NOG meetings.
- The coupling of pluvial and river flood forecasting models would be a strong advantage. The river flood forecasting systems in Belgium are currently developed by the Flemish Environment Agency (VMM) for the non-navigable rivers of 1st category in Flanders and by Flanders Hydraulics (WL) for the navigable waterways. (These two agencies also presented their current estimation algorithms later during the meeting. The operational forecasting system of the VMM already makes advantage of the use of C-band radar information. The WL is currently investigating the additional benefits of using radar information.)
- It was requested why the region of Leuven Nord (pilot area of Herent-Wilsele-Wijgmaal) was selected as pilot case. The RainGain team explained that the area has a stable sewer system: the major collector works have been finished, there is the potential that the response of the network can be estimated in an accurate way.
- It was clarified that the coupling to damage estimates (not only economical, but also social and environmental) will be made within the nationally funded BelSPO project PLURISK (which was explained by Patrick Willems) and is thus not part of the RainGain project goals.
- It was confirmed by the NOG members that the integration of the sewer model with DEM based surface modeling of inundations for the city of Leuven, which is within the scope of the RainGain project, would surely give an added value to the project.

- The project would benefit from the existing GIS information of the city of Leuven. Contacts with the city of Leuven have been made to assure this transfer of data and knowledge.
- The NOG members would prefer the design of an overall method (applicable everywhere), opposed to the use of specific pilot sites for which methods are defined. The RainGain team clarified that the project will produce documents and guidelines for possible implementation for other locations and sites. The project thus is not confined to the pilot sites and locations (which are rather used to experiment and build up knowledge and expertise concerning different approaches and methods). Among the RainGain partners, the aim is to discuss about methods and results and learn from the expertise of each other. The final aim is to come up with overall methods and guidelines that are generally applicable, but these methods are first tested in the pilot sites. At the end of the project, all cities and municipalities in NW Europe would benefit from the results of the project. It would be good if at the end of the RainGain project several cities and municipalities would have taken initiatives to improve their urban flood management plans and/or taken steps in the direction of improved flood warning and control, making use of the outcomes of the RainGain project.
- The use of the region-wide available C-band radar data, after applying downscaling, as will be developed in WP2 of the project, would already be useful input in support of urban flood warning, management and control. The additional step of two-dimensional urban surface flood forecasting would be feasible on the short term only for the larger cities. The project can consider the option to provide for the other cities and municipalities a simpler warning/forecasting system that is mainly based on the fine scale rainfall forecast. If the project at the end would provide support to all cities and municipalities with such pluvial forecast, this would by a great step.

At the end of that discussion, two NOG members representing the Flemish Environment Agency (VMM) – Section Operational Water Management and the Flanders Hydraulics Research division of the Ministry of Mobility and Public Works, were invited to present their experiences with the use of (the regional C-band) radar data on the basis of their real-time river flood forecasting activities.

Joost Dewelde presented on behalf of the Flemish Environment Agency (VMM) – Section Operational Water Management the real-time river flood forecasting system of the VMM for the non-navigable rivers of first category in Flanders. He explained that they currently made use of the national composite radar data of the Royal Meteorological Institute of Belgium (RMI).

These are based on the C-band radars of Zaventem, Wideumont and of the nearby C-band radars in France and The Netherlands. By means of the HYDREX system, radar extrapolations are being made to support the real-time river flood forecasting for a few hours in advance. These are combined with the longer term forecasts by the Aladin system of the RMI (next two days). Mr. Dewelde explained that a new C-band radar of RMI will be operational along the Belgian coast at Jabbeke within a few months, and that an additional C-band radar will be installed at Houthalen-Helchteren, in the eastern part of Belgium, in 2013.

Niels Van Steenbergen presented on behalf of the Flanders Hydraulics Research division of the Ministry of Mobility and Public Works. He explained that Flanders Hydraulics Research does not make use of radar data yet for their real-time river flood forecasts along the larger navigable rivers in Flanders. He demonstrated that some first tests are currently being made on the added value of such radar data, but that the results are somehow disappointing, probably because of the large size of their river basins. He clarified that the added value might be much larger for the pluvial flood applications considered in RainGain.

7. Planning future activities and closure

Johan Van Assel (Aquafin) concluded the meeting by showing the short term activities and planning of the RainGain project. He thanked the participants for their very active and enthousiastic participation to the workshop and announced that first results will be presented during the next NOG meeting.

Attached

- Announcement and programme of the workshop
- List of participants + signatures

RAINGAIN National Observer Group meeting
Leuven, 18 April 2012

Programma

11:30 – 12:30 Optioneel : bezoek X-band radar Aquafin
(Provinciehuis Leuven, d.i. in de buurt van station Leuven)

Plaats van samenkomst om 11u30 : inkomhal Provinciehuis

12:30 – 14:00 Broodjeslunch

Locatie van lunch en namiddagbijeenkomst :
Arenbergkasteel Heverlee, Kasteelpark Arenberg 1, 3001 Heverlee
00.A045 EUPOCO-LOKAAL (zie plan in bijlage)

14:00 – 17:00 Namiddagbijeenkomst
(chair : Johan Van Assel, Aquafin):

14:00 – 14:30 Algemeen overzicht RainGain-project
: Marie-Claire ten Veldhuis (projectcoördinator TU Delft)

14:30 – 15:00 Samenvattende resultaten projectworkshop van 16-17 april
: Patrick Willems (KU Leuven)

15:00 – 16:30 Rol en verwachtingen NOG : Johan Van Assel (Aquafin)
+ discussie
+ presentaties van enkele NOG-leden:

Presentatie VMM – Afdeling Operationeel Waterbeheer
Presentatie Waterbouwkundig Laboratorium

16:30 – 17:00 Planning toekomstige activiteiten en discussie

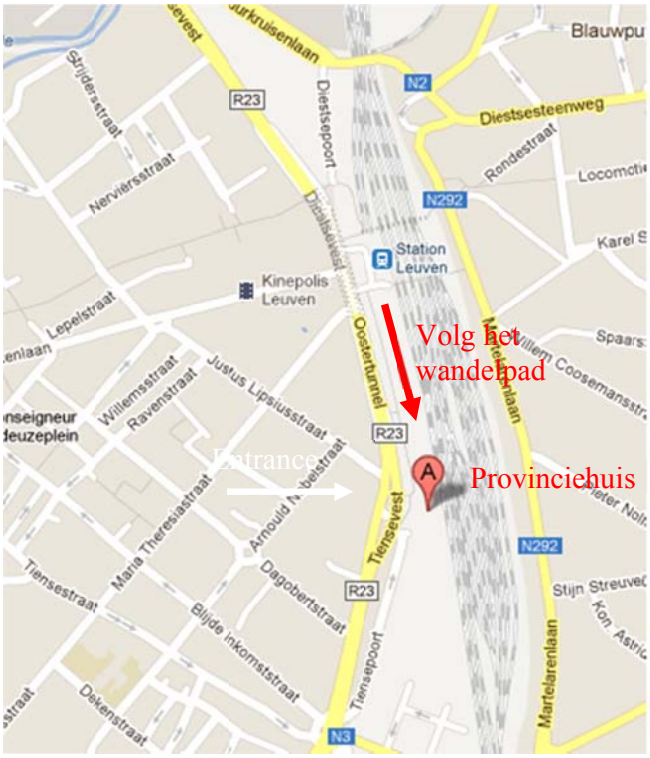
17:00 Afsluiting

Meer info over het RainGain-project : www.raingain.eu

RAINGAIN Radarbezoek (Optioneel), Leuven, 18 April 2012

Locatie

Provinciehuis Leuven: wij komen samen in de inkomhal om 11u30
(Adres: Provinciehuis Vlaams-Brabant, Provincieplein 1, 3010 Leuven)



Het Provinciehuis ligt op wandelafstand van het station van Leuven. Volg het wandelpad aangeduid op de kaart met de rode pijl. Zie hierboven ook een foto van het Provinciehuis.

Met de wagen: Volg de 'Tiensevest' in Leuven tot het Provinciehuis. Parking 'De Bond' aan het station van Leuven is op wandelafstand gelegen.

RAINGAIN National Observer Group meeting
Leuven, 18 April 2012

Locatie broodjeslunch (vanaf 12u30) en namiddagbijeenkomst (14u)

Arenbergkasteel KAST M00.A045 EUPOCO-LOKAAL
(Adres: Arenbergkasteel, Kasteelpark Arenberg 1, 3001 HEVERLEE)

Routebeschrijving:

De RAINGAIN National Observer Group bijeenkomst zal doorgaan in het Arenbergkasteel te Heverlee. Neem de hoofdingang van het kasteel (bruine poort) en daarna rechts achteraan op de binnenkoer de ingang (zie rode markering op de kaart).

Met de wagen: Via de Celestijnenlaan (via de rode pijl binnenrijden richting de parking P). Eventueel kan ook bij de 'Oude molen' geparkeerd worden (P2).

Met het openbaar vervoer is het Arenbergkasteel gemakkelijk bereikbaar via buslijn 2 'Heverlee Campus'. Deze rijdt om de 10 minuten vanaf het station van Leuven. Neem hiervoor de halte 'Kantien' (B1) of 'Campus Arenberg II' (B2).

Deelnemers aan het radarbezoek om 11u30 worden na het radarbezoek met de bus naar het Arenbergkasteel gebracht.

INTERREG IVB

RAINGAIN National Observer Group meeting, Leuven, 18 April 2012

First Name	Name	Function	Company	Country	Signature
Berthold	Meers		VMM	B	
Niels	Van Steenbergen		KUL WL	B	
Steven	Smets		IMDC	B	
Koen	Goormans		IMDC	B	
Christophe	Cloeys		VUSG Interkio	B	
Petra	HUYGAERTS	FOD Binnenlandse Zaken Noodplanning Vlaams-Brabant		B	
Joël	Vankerkom	FOD Binnenlandse Zaken Dienst Noodplanning Vl-Brabant		B	
Rolf	De Bleser	Prov. W. Brab	waterlopen	B	
Guy	Overbergh	Coördinator overleggroep beleid	Aqua Flanders	B	
MARC	Bruyere	Directeur	Aqua Flanders	B	
KRIS	Cauwenbergh	Directeur	VMM	B	
WARD	VOET		VMM	B	
Patrick	Willems		KU Leuven	B	
Johan	Van Assel		Aquafin	B	

INTERREG IVB

RAINGAIN National Observer Group meeting, Leuven, 18 April 2012

First Name	Name	Function	Company	Country	Signature
Els	Stoops	Verantwoordelijke	Dienst	B	
Riet	Smits		Aquafin	Be	
Stefan	Kroll		Aquafin	Be	
Marjolein	Weemaes	R&D coordinator	Aquafin	Be	
Mieke	Van Dorpe		Aquafin	BE	
Mieke	Pessemier		Aqualin	BE	
Veronique	Charlier		Stad Leuven	Be	
Stijn	Van Bellegem		Provincie Limburg	B	
Maarten	Deschamps	Verantwoordelijke Waterspelingen	CVL HIC	B	
Christian	Legros	Directeur	Belgaqua	B	
Katherine	De Raedt		Aquafin	B	
Ingeborg	Borrez		VMM	B	
Joost	Dewelde	hydrologe	VMM-AOW	B	
Laurens Cos	Decloedt	PhD researcher	KU Leuven	B	

NOG

RAINGAIN ~~Partners~~ radar visit, Leuven, 18 April 2012

	First Name	Name	Function	Company	Country	Signature
✓	Kris	Cauwenberghs	verantw. Dienst Hoogwaterbeheer	VMM-AOW	Belgie	
✓	Veronique	Charlier	Directeur Ruimtelijke ontwikkeling	Stad Leuven	"	
✓	Catherine	De Raedt		Aquafin	"	
✓	Marc	Buysse		Aqua Flanders	"	
✓	Guy	Verbuyst		"	"	
	Azdine	Laanait		Vivaqua	"	
✓	Els	Stoops		Pidpa	"	
✓	Sofie	Van Bellegem		Prov. Limburg	"	
✓	Christian	Legros		Belg Aqua	"	
✓	Johan	Van Assel		Aquafin.	"	
✓	Cas	Declaedt		Ku Leuven	"	
✓	Steven	Smets		IMDC.	"	
✓	Toon	Goormans		IMDC.	"	
✓	Maarten	Desloovere		WL-HIC.	B	
✓	Wout	Voet		VMM.	B	
	~~Veronique~~	~~Charlier~~				