



<http://bugis.lboro.ac.uk/>

 @resilientBuGIS

 : Resilient BuGIS

# Blue-Green Infrastructure in Semarang

ISSUE 2

APRIL 2018

## BuGIS completes year 1!

### *Inside this issue:*

- ◆ Welcome to the second issue (p. 2)
- ◆ A growing team (p. 3)
- ◆ BuGIS research forces join in Semarang (p. 3)
- ◆ BuGIS holds focus group discussions (p. 4)
- ◆ BuGIS researchers immersed in action and... water (p. 5)
- ◆ "Blue, Green or Turquoise" Seminar (p. 6)
- ◆ BuGIS 2nd workshop (p. 6)
- ◆ UnDip first year progress report (p. 7)
- ◆ UnDip academic in LU (p. 7)
- ◆ BuGIS Team members (p. 7)



**B**uGIS stands for Blue-Green Infrastructure in Semarang, Indonesia. It is a project that aims to increase the flood resilience of Semarang city by integrating Blue Green Infrastructure (BGI) concepts into urban development planning. The project is a collaborative effort between Loughborough University (LU) and Universitas Diponegoro (UnDip) and is jointly funded by the British Council and Ministry of Research, Technology and Higher Education of the Republic of Indonesia, through the Newton Institutional Links/KLN-INSINAS scheme. The project commenced in April 2017 in Semarang. This second issue of the BuGIS newsletter includes the project activities that took place between October 2017 and April 2018.

## Welcome to the second issue of BuGIS newsletter!



**B**uGIS project has continued to progress in the second half of its first year. Here are a few key developments:

- The first four months of this year, the BuGIS team undertook data collection in three communities in Karangayu, Trimulyo and Gunung Pati, including interviews and a questionnaire survey. These were complemented by two workshops with community representatives and policymakers. Majority of the data has been collected and the analysis is on-going.
- I am pleased to report that a team from BuGIS has secured a grant from NERC, DFID and ESRC to undertake a research project entitled “Financial planning for natural disasters: the case of flooding risk in Central Java (FloodFinJava)”. The partnership has expanded to include Universitas Negeri Surakarta (UNS) Sebelas Maret (Surakarta, Indonesia) and School of Business and Economic and Department of Geography (Loughborough University). Building on BuGIS, the project is intended to contribute to developing flood resilience and capacity at local level, and represents our effort to sustain the BuGIS partnership.
- Nafsika Drosou started as a Research Associate in November 2017. She has done a sterling job to support data collection undertaken by three researchers in UnDip. Dr Ferry Hermawan is currently visiting LU to assist analysis of data and publication writing. Two-way capacity building, including the collaboration of researchers, will be an important outcome of the BuGIS project.
- A proposal was submitted in February 2018 to a joint call by Indonesia’s Ministry of Research, Technology and Higher Education (Ristekdikti) and the UK’s NERC and ESRC on the Understanding of the Impacts of Hydrometeorological Hazards. This represents a continuation of our effort to expand and include additional researchers from LU and UnDip.

The next stage of the project will centre on the dissemination of BuGIS findings to communities and policy makers. This represents a new challenge for the BuGIS Team, but for the time being I wish to thank all the team members for their continuing support. Also, I wish to extend my thanks to support provided by the project partners, who have made this progress possible. The progress so far has provided a sound platform for exciting future work. I look forward to reporting this in the next issue. Last but not least, I wish to thank Nafsika for her contribution to the project and for compiling this newsletter!

Should you have any comments, feedback and possible contributions to BuGIS, please do not hesitate to contact us!

*Dr Robby Soetanto  
UK Principal Investigator  
Loughborough University  
R.Soetanto@lboro.ac.uk*

## A Growing team

In November 2017, BuGIS welcomed Nafsika Drosou who joined the team as a Research Associate based in Loughborough University. Nafsika holds a BSc Civil Engineering degree from the University of the Philippines, as well as MSc and MRes degrees from Loughborough University on the design and simulation of low carbon buildings and energy in the built environment respectively. In terms of research, Nafsika has previously explored sewage and drainage of reclaimed areas in Manila, Philippines. More recently her work has investigated school buildings. She is currently a PhD candidate in Loughborough University in the area of daylighting assessment.



*BuGIS Research Associate Nafsika Drosou*

## BuGIS research forces join in Semarang



*BuGIS researchers Januarta and Nafsika visiting Trimulyo district local authorities*

After two months of collaborating through numerous emails and skype meetings, the BuGIS team of researchers met in person for the first time on 15 January, 2018. LU Research Associate Nafsika Drosou worked closely with UnDip academics and researchers in Semarang for the rest of January and February. During her stay, she worked from the UnDip BuGIS office and coordinated the data collection activities. Moreover, Nafsika visited the case study areas and was able to experience first hand the effect of tidal flood in Trimulyo district. Her visit was not all work; new friendships were formed, as well as an appreciation of Central Javanese food and culture. The hosts graciously organized a BuGIS researcher day out visiting a UNESCO World Heritage Site, Borobudur, the world's largest Buddhist temple.



*BuGIS researchers at work in UnDip*



*BuGIS Team members at Borobudur UNESCO World Heritage Site*

## BuGIS holds focus group discussions

As part of gaining a better understanding of the case study communities and local policies relevant to flood risk management, BuGIS held a series of focus group discussions. The first two took place on 18 January 2018. They involved a mix of participants, with community group representatives and government authorities. Each discussion was facilitated by BuGIS members, and led by Dr Robby Soetanto and Dr Jati Hatmoko. The third and fourth focus group discussions were held on 1 March 2018 in the presence of the complete BuGIS Team. This time the participants were a mix of officials from different government departments such as urban planning, public works and disaster management. In all occasions the discussions were lively and the participants were eager to share their knowledge and participate in exercises designed by BuGIS academics to stimulate and focus their contribution.



*Dr Robby Soetanto facilitating the 1st focus group discussion*



*Dr Ksenia Chmutina and Dr Lee Boshier with participants*



*Dr Wido Tyas and Dr Jati Hatmoko facilitating the 4th focus group discussion*



*BuGIS academics and researchers with participants of the 1st and 2nd focus group discussions*

## BuGIS researchers immersed in action and... water

The period between October 2017 and April 2018 focused on data collection. Three areas of Semarang were used as case studies. Two of these were Karangayu and Trimulyo, which are prone to flooding. The third area was one that is located uphill in Semarang and seldom experiences floods, Gunung Pati. UnDip researchers Januarta Kusmayanti, Sheila Nabila and Emir Putra visited these locations multiple times to conduct interviews, questionnaire surveys and connect with community representatives.

Heavy rainfall toward the end of the rainy season resulted in the researchers experiencing first hand the flood conditions they were investigating. Reaching the flooded case study communities meant travelling in their personal scooter motorcycles (a very popular mode of transport in Indonesia) through heavily flooded highways and roads, as well as navigating the residential sections of the case studies with their feet immersed in water.



Road conditions on the way to collect data with an indication of the water level height.

Besides the difficult conditions of work, data collection was completed and the researchers gained an appreciation of particular case study issues in connection to flooding.



BuGIS researcher Januarta with participants of the questionnaire survey affected by the February 2018 Semarang floods.

Left: enjoying a dry moment on a participant's porch beside sandbags placed to keep water out of the house

Right: reaching a participant severely affected by flood waters (although the children seem to be making the most of it).

## “Blue, Green or Turquoise” Seminar



*Dr Widodo Tyas and Dr Ksenia Chmutina during the Q&A session*

On 27 February 2018, a seminar took place with a presentation of Dr. Ksenia Chmutina, that was entitled “Blue, Green or Turquoise: Pathways toward Sustainable and Resilient Built Environment”. The seminar was organized and hosted by the Faculty of Engineering, Universitas Diponegoro, and chaired by Dr Widodo P Tyas. The seminar was open to the academic community and public. During a lively Q&A session, the numerous urban planning and civil engineering students in the audience took advantage of the opportunity to ask Dr Chmutina questions about how to move toward a future where both sustainability and resilience are considered in the development of the built environment.



*Dr Ksenia Chmutina presenting*

## BuGIS 2nd Academic Workshop

Both Loughborough University and Universitas Diponegoro BuGIS team members came together in Semarang from 27 February to 2 March 2018 for the second BuGIS workshop. After ten months of regular bi-weekly Skype meetings and numerous emails, the complete BuGIS Team of academics and researchers met in the same physical space. In a series of meetings they evaluated the data that was collected in previous months, decided on the analysis methods and designed the dissemination strategy of key BuGIS findings.



*BuGIS academics and researchers meeting in Semarang after 10 months*

## UnDip first year progress

The first-year report of the BuGIS project was submitted by the Universitas Diponegoro Team to the Ministry of Research, Technology and Higher Education of the Republic of Indonesia on 7 December 2017. The report was presented by Dr. Ferry Hermawan at the annual National Level dissemination event that took place in Grand Zuri-BSD City located at the outskirts of Jakarta.

The contents of the presentation included the communication with project partners and research activities in preparation for the field survey. During the presentation, reviewers from the Ministry provided positive comments regarding the topic and activities relevant to the case study areas. Based on this report, in February 2018 funding for the second year of BuGIS was approved by the Ministry.

## UnDip academic in LU



Dr Ferry Hermawan in the LU campus



Collaborating with Nafsika Drosou on data analysis

Developing the capacity building component of BuGIS further and following the Semarang visit of LU researcher Nafsika Drosou, Dr. Ferry Hermawan joined the LU team in the UK between 16 April and May 15 2018. The scope of this visit is to collaborate in the analysis of data collected in Semarang over the previous months.

## BuGIS Team

### *Academics*

Dr Lee Boshier (LU)

Dr Ksenia Chmutina (LU)

Dr Jati Utomo Dwi Hatmoko  
(UnDip)

Dr Ferry Hermawan (UnDip)

Dr Robby Soetanto (LU)

Dr Wido P Tyas (UnDip)

### *Project Partners*

Mr Agung Budi Margono (House  
of Representative Semarang)

Mr Purnomo Dwi Sasongko  
(Regional Development  
Agency/ BAPPEDA)

Dr Wiwandari Handayani  
(UnDip)

Dr Hanifa M. Denny (UnDip &  
DP2K)

Mr Dimas Agung (PDAM Tirta  
Moedal)

Mr Yudiarso Setiawan (Association  
of Property Developers)

### *Research Associate & Newsletter Editor*

Ms Nafsika Drosou (LU)

### *Research Assistants*

Ms Januarta Dwi Kusmayanti  
(UnDip)

Ms Sheila Nabila (UnDip)

Mr Emir Hartri Putra (UnDip)