"NAture Insurance value: Assessment and Demonstration"

NAIAD

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Glinščica demo

1st STAKEHOLDER WORKSHOP REPORT

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1 Edition information

Tableau 1: Versions

VERSION	EDITION DATE	MODIFICATION	WRITTEN BY	CONTROLLED BY
1	24-NOV-17	FIRST EDITION	P.PENGAL	R: GIORDANO

2 Summary

The first stakeholder workshop in the Glinščica demo was held at the City Hall of the Municipality of Ljubljana on 21st November 2017. In a series of presentations and interactive sessions, representatives of national institutions and local communities identified the main goals and suggested the most important solutions for flood risk management in the Glinščica cathcment. Several barriers to implementation of these measures were also identified during the discussion which will be further elaborated in the following steps of the NAIAD project.

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4 Introduction

The Stakeholder workshop in Slovenia was organized ON 21ST November 2017 as the next step of implementing stakeholder risk perception modelling in WP3, led by IRSA (R. Giordano). The stakeholders in Glinščica demo were first approached and introduced to the NAIAD project during the semi structured interviews performed in spring 2017, when they were also made aware of this planned workshop. Altogether, 14 interviews were performed with experts, representatives of local communities, civil societies and national institutions. The interview reports served as the input for development of individual and overall Fuzzy Cognitive Models which served as the basis for the workshop.

The workshop was organized in cooperation among 4 NAIAD partners with differing roles:

- **ISKRIVA** was responsible for organization and presentation of the NAIAD project,
- **Municipality of Ljubljana** (associated strategic partner) made their meeting room available,
- **IRSA** provided instructions, materials and expert support and
- **REVIVO** prepared the materials and presentations and led the discussions and group work.

The preparations started about 5 months prior to the workshop. The first outline of the workshop was drafted during the bilateral meeting in Bari in June 2017, where also the individual stakeholder FCM were presented and discussed. It was decided that the workshop should be organized in autumn and that its main goals will be to validate the model, to identify the main issues and to develop a list of solutions according to the stakeholders' value system. In the following months a series of skype meetings was organized between WP3 and Glinščica demo team to detail the contents and course of the WS.

5 Workshop structure

A first structure of the workshop was suggested by IRSA and was later adapted to the specifics of the Glinščica demo.

Objective: The first stakeholders' WS in the Glinščica demo aims at gathering stakeholders' perception of the role of NBS in reducing the water-related risks within the case study. At the end of the WS we would like to get the following results:

I. List of the most suitable NBS according to the stakeholders' problem understanding;
II. Possible interaction of NBS with the grey solutions;
III. Main expected impacts → initial identification of co-benefits.

Phases: In order to achieve the above mentioned goals, the following activities need to be carried out:

1. First interactive phase: Identification of the most pressing water-related issues to be addressed.

Description: Participants will be provided with tables (A4 sheet) describing the main issues to be addressed in flood risk management, i.e. elements of vulnerability and flood impacts. The participants will be required to score (1-5) these elements. This ranking should represent the stakeholders' priority of interventions. That is, the basic question is: "On which elements do you think that intervention should be priority focused in order to reduce the risks?" Individual inputs are required at this stage. Participants will have 15 min. to produce the individual score. Moderator will collect individual inputs and put the scores in the Excel sheet. The aggregation of the individual inputs will allow us to identify the most important elements. Moderator will write the 5 most important elements on some post-it. These represent the goals to be achieved through the implementation of the risk management strategies (goal of the second phase).

Materials required:

a) IRSA will provide the tables showing the main water-related risks: impacts and vulnerability. Glinščica demo team will translate them to Slovenian and print the necessary number to be distributed to stakeholders during the WS.
b) IRSA will prepare Excel sheet for the common ranking.

2. Second interactive phase: Identification of the most suitable NBS and interaction with the grey solutions. Group discussion

Description: This phase aims at collecting the stakeholders understanding about the potential NBS to be implemented in the demo in order to assess the main issues. The moderator will put the 5 main goals to be achieved on the A2 sheet, to be put on the table. Participants need to keep in mind what are the main goals to be achieved through the implementation of risk management measures.
Participants will be provided with the NBS catalogue and maps showing the scenarios (potential impacts). Group discussion will be fostered (5-8 persons per group). Using the NBS catalogue, participants will be required to identify the 5 most suitable NBS for the Ljubljana demo, according to their opinion. They need to agree upon those measures. After that, for each of the identified solution, the moderator will ask "do you think that tis NBS will be effective enough? Do you want to pick a grey solution, from the catalogue, that need to be implemented in order to enhance the NBS effectiveness?". At the end of this phase, we will have 5 most suitable NBS connected with usable grey solutions.

Materials required:
a) Simple-to-be-used NBS catalogue,
b) Grey solutions catalogue (solutions already implemented in the demo),
c) NBS impacts scenario (physical model).

3. Links connecting NBS solutions, grey solutions and issues to be addressed (group discussion)

Participants will be required to describe the expected impacts due to implementation of the NBS/grey solutions. They will be required to explain on which priority of intervention (see point 1) the identified integrated solutions could have an impact. This phase can be facilitated using an A2 sheet, showing both the identified solutions (post-it) and the priority of intervention. Participants will be required to draw links connecting solutions and issues. Links polarity and strength will be discussed. At the end of this phase, a simple FCM showing the connections between solutions and issues will be developed.

Materials required:
a) A2 sheet to be used for drawing connections
b) Post-it with the key issues (point 1)
c) Post-it with the key solutions (point 2)
d) Pens, tape

It was decided to have the workshop in Slovenian language to encourage interaction between stakeholders. The first invitations were sent out one month prior to the set date of the workshop as a request to save the date. After 10 days, a first reminder was sent with the final agenda and the last reminder was sent one week before the workshop with additional materials - the NBS and grey solutions catalogues.
To present the NAIAD project, the common **presentation** available at the ISP under WP9 was adapted by ISKRIVA to better align to the goals of this WS. The **presentation of risk modelling** was prepared by WP3 leader and sent to Glinščica demo team for translation to Slovenian language. In addition, the IRSA team prepared the **worksheets and the GIS based scenarios** of NBS implementation in the Glinščica catchement. The worksheets were translated and printed to be handed out to the stakeholders during the workshop and the scenarios were included in the **presentation of the NBS and grey solutions** which was prepared by the Glinščica demo team on the basis of the **proposed NBS list** that was developed in cooperation among IRSTEA (WP2), IRSA (WP3) and the Glinščica demo team.
To complete the preparations for the workshop, IRSA team arrived to Slovenia on Monday morning, which allowed us to review the agenda and finalize the necessary materials and align the contents as well as detail the interactive parts of the workshop, their aims and expected results. In addition, the Fuzzy Cognitive Map (model) prepared by IRSA from the results of the interviews was validated by the

Glinščica demo team to ensure the interview reports were interpreted correctly and that the results reflect the actual state as close as possible.
The agenda as was sent with the invitations is available in Slovenian language in Annex I. However, the English translation of the topics is provided here for convenience:

I. Presentation of NAIAD project and the NBS concept (Zdravko, ISKRIVA)
II. Presentation of the first stage of the stakeholder risk perception modelling (Raffaele, IRSA & Polona, REVIVO)
III. Interactive scenario development with stakeholders: ranking of identified issues in Glinščica (moderator: Polona, REVIVO)
IV. Presentation of NBS and grey solutions catalogues (very short description, photo, pros/cons) and the results of scenarios for implementation of individual proposed NBS measures (Blaž, REVIVO)
V. Group interaction: listing and ranking the solutions in line with the 5 goals identified during the first interactive phase (moderator: Polona, REVIVO)

5.1 STAKEHOLDER RESPONSE RATE

In total, 224 invitations have been sent out (Table 1).

Table 1 : Overview of invited stakeholders.

Institution type	Department	N° of contacts
Municipalities	Mayors	45
	Spatial planning	86
	Departments for investments (or similar)	32
Regional agencies	Regional development agencies	21
Governmental institutions	Environmental agency	9
	Geological Survey of Slovenia	3
	Geodetic Institute	2
	Contacts from interviews	14
Private institution	Institute for water	2
NGO	Environmental conservation (Lutra, Ekokrog,…)	7
University of Ljubljana	Faculty for engineering,	3
	Mails opened	**165**
	Mails not opened	**59**
	Total	**224**

We received 12 responses of which 5 rejected participation or excused their presence due to other pre-planned obligations, 7 confirmed attendance and we received no answer from 207 invitees. Finally, only 4 stakeholders participated to the workshop, 2 from Municipality of Ljubljana and one from each, the National Institute for Nature Conservation and the Slovenian Water Agency. The participants were very positive and supportive, offering numerous examples of interactions and issues that they encounter during their work.

In line with the results of the interviews, the low attendance rate to the workshop confirms the results of the interviews which suggest that the lack of institutional cooperation is one of the main barriers to flood risk management in Slovenia.

6 Results

Following the *NAIAD project* and the *Risk perception modelling* presentations, the two interactive sessions requiring direct involvement of stakeholders were implemented: the Scoring of issues and Defining solutions. These two sessions were followed by a concluding session where results of the workshop and next steps requiring stakeholder engagement were presented.

6.1 Scoring of issues

The results of the interviews performed in the Glinščica demo resulted in a list of issues that need to be addressed in order to support the flood risk management in the Ljubljana urban area. Two categories of issues have been identified: the **vulnerability** issues and the **flood impact** issues. Therefore, in the first interactive part of the workshop we asked the stakeholders to score the elements according to their rank of importance. To this end, worksheets were prepared in advance and distributed among the stakeholders.

The results were then joined and a list of the following **5 most important issues** emerged for the Glinščica catchment from the stakeholders' point of view:

1. Flood plain occupation
2. State of the ecosystem
3. Lack of public funding
4. Community safety
5. Watercourse speed

These 5 issues were then restructured into **5 main goals** of flood risk management in the Glinščica catchment and served as the starting point for the group discussion in the next step.

1. Maintain flood plain occupation (do not increase)
2. Improve the state of ecosystem
3. Increase public funding
4. Increase community safety
5. Decrease watercourse speed

Since decreasing flood plain occupation through relocation is only seen as a last resort in scarcely populated areas, maintaining the current levels of urbanization of the flood plains is regarded as one of the most important measures in flood risk management. However, the stakeholders note that while the policy/legislation is already in force, the enforcement system is ineffective.

6.2 Defining solutions

The second part of the interactive work with the stakeholders was preceded by the presentation of **NBS and grey solutions catalogues** with several **scenario examples** of the effects of individual measures on flood risk.

For this exercise, the stakeholders received **printed versions** of the previously presented NBS and grey solutions catalogues together with the results of scenarios. They were then asked to select the solutions that would help reach the 5 main goals identified in the previous step and describe to which of these goals the implementation of NBS/grey solutions would attribute. Once the list from all stakeholders was harmonized, they were asked to score the suggested solutions according to their rank of importance. A list of the **5 most important solutions** according to stakeholder perception emerged that will be used in the next steps of the NAIAD development process:

1. Dry retention areas (upstream of urbanized areas)
2. Re-meandering of the stream (including revegetation)
3. Opening of the flood plains (upstream of urbanized areas)
4. Widening of the stream channel (restoration in the urbanized areas, including revegetation)
5. Wet retention areas

The stakeholders mostly selected NBS solutions with a general notice that the location of these measures is of utmost importance and that they should be considered in harmony with each other, since some of them might actually increase flooding. The stakeholders recognized that the selected measures simultaneously tackle 4 of the main goals in the Glinščica catchment.

It was suggested by the stakeholders that the dry retention areas should be built in the spaces upstream of the built-up areas and the same holds true for the opening of the flood plains. The stakeholders explained that flood risk management measures have been planned for the Glinščica catchment since the 2010 floods and that one of the dry retention areas has already been built.

Re-meandering has somewhat contradictory expected impact on the 5 main goals according to the stakeholders. Re-meandering will greatly improve the state of ecosystem and slow the water flow, but should be implemented within the opened-up flood plain or within a dry retention area, because it might increase the risk of flooding by slowing the flow and hence will not attribute to community safety.

Widening of the stream channel was suggested for the stretch of the Glinščica within the urbanized areas, where buildings and other infrastructure prevent other restoration measures. The concrete lining should be removed and the more natural two-level channel restored to maintain the ecological flow in the lower, smaller channel during low flows, but to allow the larger volumes during flood events to be discharged efficiently.

As the last suggested measure, wet retention areas were seen as the least effective in flood risk management, but as an important factor for improving the state of ecosystem and addition to the green areas of the city.

7 Conclusions and next steps

In conclusion, the main results of the workshop were summarized by the moderator and future steps of the stakeholder engagement presented. The proposed measures will be used to develop scenarios from three different perspectives:

- fuzzy cognitive map will enable integration of the different perspectives and indicate the perceived and actual interaction among variables,
- hydrological modelling will unveil the impact of measures on flood hazard and
- economic valuation will demonstrate the financial consequences of potential implementation.

The stakeholders will be approached for another round of individual interaction during spring of 2018 to discuss and validate the models developed by the NAIAD team until then. The next workshop will be organized in autumn 2018 with the aim to identify the barriers to implementation together with the stakeholders.

Finally, some of the barriers to food risk management not only in Gliinščica catchment, but also in all of Slovenia, emerged during the discussion. These were mainly institutional rejection of proposed measures, opposition from land owners supported by the Ministry of agriculture, lack of public funding and lack of enforcement.

The lack of public funding was recognized by the stakeholders as one of the main issues in flood risk management throughout Slovenia. It was put forward that the 2010 and 2014 floods were the main reason for the fast planning and implementation of the current flood risk management activities in the Municipality of Ljubljana. However, the measures to achieve the increase in public funding were not the aim of this workshop and were not further discussed.