

WORKSHOP DOCUMENTATION

Compensation Mechanisms for Flood Storage

15./16. October 2018, Salzburg/AT

COST Action – CA16209
Natural Flood Retention on Private Land (LAND4FLOOD)



IMPRINT:

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Flood storage is an effective but also land intensive approach for alleviating flood risk. Governance approaches are needed to balance costs and benefits by involving both the providers and the beneficiaries of flood retention services.

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The workshop explored the issue of compensation for flood storage based on two flood retention projects in the municipalities Altenmarkt im Pongau and Mittersill. Workshop participants engaged with local actors and visited the flood storage sites.

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The case-based exploration of flood storage compensation in Salzburg contributed to a better understanding of the opportunities and limitations of implementing flood storage solutions on private land.

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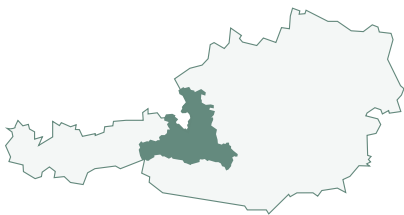
Workshop Documentation



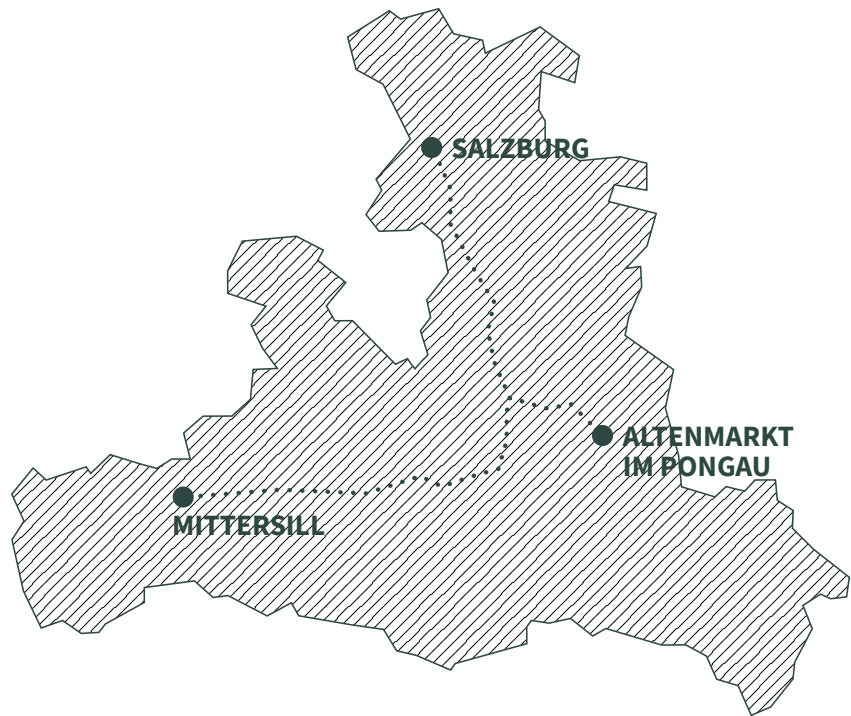
WORKSHOP PROGRAM

>> site visits in Salzburg <<

The two-day regional workshop in Salzburg from Monday, October 15th to Tuesday, October 16th consisted of workshop sessions and two site visits in Altenmarkt im Pongau and Mittersill, where the workshop participants engaged in stakeholder dialogues with local actors and visited flood storage sites to learn more about the implementation of flood compensation mechanisms.



province of Salzburg, © Spanlang



case studies/site visits, © Spanlang

MONDAY - OCTOBER 15th

Salzburg

- 9⁰⁰-9³⁰ Workshop kick-off (workshop introduction, programme overview)
- 9³⁰-10⁰⁰ Flood storage project – Altenmarkt
- 10⁰⁰-11⁰⁰ Flood management in Salzburg

Altenmarkt im Pongau

- 13³⁰-15⁰⁰ Altenmarkt municipality, stakeholder dialogue
- Site visit: river widening, retention basin
- Bus transfer to Mittersill

TUESDAY - OCTOBER 16th

Mittersill

- 9⁰⁰-9³⁰ Introduction: flood storage project – Mittersill
- 9³⁰-12³⁰ Workshop with participants
- 13³⁰-16⁰⁰ Mittersill municipality, stakeholder dialogue
- Site visit: retention basin
- 16⁰⁰ Transfer to Salzburg

COMPENSATION FOR FLOOD STORAGE

>> Why does it matter? <<

PROBLEM SETTING

Flood retention plays an increasingly prominent role in the portfolio of flood risk management strategies. As mandated by the EU Floods Directive (2007/60/EC) flood risk management shall promote the “improvement of water retention as well as the controlled flooding of certain areas in the case of a flood event” (Art. 7). The most effective way to influence flood waves is controlled flood storage using retention basins or by means of polders, i.e. the lateral diversion of flood water.

Controlled flood storage, however, is land intensive and requires open, usually agricultural land. As this land is (often) privately owned, the accommodation of floods infringes on existing property and land use rights, including

crop type, agricultural cultivation methods or options for land development. The providers of flood retention services thus bear the costs, while vulnerable areas (usually settlements) benefit in the form of reduced flood risk and new opportunities for urban development in former floodplains.

Implementing controlled flood storage requires financial mechanisms to compensate costs and foregone benefits. Usually, upstream landowners are compensated through tax-based, public funding. Following the beneficiary principle, risk governance approaches may be used to involve downstream beneficiaries of flood retention services in financial compensation schemes.

MOTIVATION AND AIMS OF THE WORKSHOP

The purpose of this regional COST workshop was to explore different approaches for compensating flood retention services on private land. In the course of interactive workshop sessions and two site visits in Salzburg (Austria) the participants examined different governance approaches and financial mechanisms to distribute the costs and benefits between the providers and the beneficiaries of flood storage.

Building a better understanding of flood storage compensation demands i) bridging disciplinary fields, ii) facilitating the exchange between science and policy, and iii) interacting with local stakeholders. In this vein, the regional workshop brought together nineteen participants with a wide range of disciplinary backgrounds, including hydraulic engineering, spatial planning, agronomy, law and economics. About half of the participants were researchers, while the other half included practitioners. In the course of two stakeholder dialogues the participants had the chance to engage with local stakeholders, including representatives of municipal authorities, landowners and other actors involved in the implementation of the flood compensation schemes.



river Enns Altenmarkt, © Schindelegger

CASE STUDIES OF FLOOD STORAGE

>> site visits and stakeholder dialogue <<

INTRODUCTION

The workshop explored the issue of compensation for flood storage by the example of two flood storage projects in alpine municipalities (Altenmarkt im Pongau and Mittersill) in the Province of Salzburg. In both cases, agricultural land was dedicated for controlled flood storage to alleviate the flood risk for downstream settlement areas.

In the case studies the workshop explored the opportunities and constraints of distributing the costs and benefits between the providers and beneficiaries of flood storage. Workshop participants engaged with municipal authorities and local actors (including landowners) to learn more about the political and administrative process of organising upstream-downstream compensation schemes.

CASE STUDY I (ALTENMARKT)



Inhabitants:
4.200



Recent flood events:
1965, 1966



Flood protection:
storage basin
(380.000 m³), linear
measures, river widening



Costs:
10 Mio. €



Financing:
federal: 84 %
municipality, water
cooperative: 16 %



Beneficiary
contributions:
individual benefit of the
risk reduction

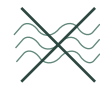
CASE STUDY II (MITTERSILL)



Inhabitants:
5.500



Recent flood events:
1985, 2002, 2005



Flood protection:
storage basin
(1.700.000 m³), linear
measures



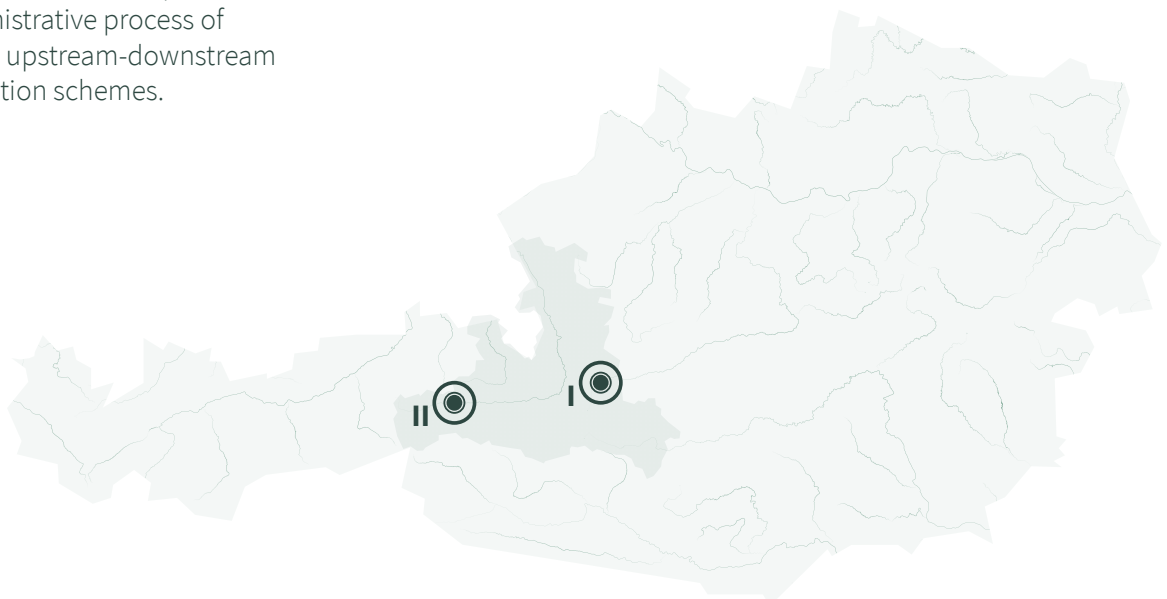
Costs:
12,5 Mio. €



Financing:
federal: 82 %
water association: 15 %
municipality: 3%



Beneficiary
contributions:
Added value capture
from rezoning



site locations, © Spanlang



© Schindelegger

CASE STUDY I - ALTENMARKT IM PONGAU

The municipality of Altenmarkt (4.200 inhabitants) is located in the upper reach of the river Enns in the Austrian province of Salzburg. The municipality hasn't been struck by severe floods in a long time, but analysis and simulations of a hundred years flood event (63-80 m³/s) showed large scale flooding in residential areas. Debris delivered by feeding river plays an essential role in the developed scenarios.

Responsible authorities and especially the municipality of Altenmarkt struggled to come up with a project. The discussions started around 2004 and by 2016 all technical measures had been implemented.

The actual construction of the measures started in 2013. The total investment was about € 10 Mio. financed by the federal state (84%) and the municipality (16%).

The municipality founded a water cooperative according to the possibilities of the Austrian Water Act with by now around 1.200 members benefiting from the planned protection measures. The benefiting people had to contribute financially according to their individual benefit calculated by an expert advice.

The water cooperative integrated all benefiting landowners based on their location in the 100-years flood zone. The one's that not join voluntarily were forced by the

legal possibility of compulsory membership. The cooperative did finally contribute € 864.000,- to the initial construction costs. The technical measures are now owned by the cooperative and are maintained by annual fees paid by the beneficiaries. The future development, possible due to the technical project, was not considered in the calculation of initial contributions.



*stakeholder dialogue, Altenmarkt,
© Hartmann*



river widening, © Ungvári



inflow retention basin, © Ungvári



CASE STUDY II - MITTERSILL

Mittersill is an alpine municipality (5.400 inhabitants) located in the upper reach of the river Salzach in the Austrian province Salzburg. The municipality's low-lying areas were repeatedly affected by floods (i.a. 1931, 1966, 1985 and 2002). In the aftermath of another large flood event in July 2005 a flood protection scheme, featuring a horizontal "dam" and a flood storage area with a retention capacity of 1.7 Mio m³, was implemented to protect the municipality's settlement areas. The protective measure generates a classic upstream-downstream situation in flood risk management: upstream open (agricultural) land is dedicated as a flood storage area to provide flood protection for vulnerable (settlement) areas downstream. To compensate agricultural landowners for flood-related damages, land value depreciation and reduced crop yields a compensation scheme was set up involving i.a. financial contributions by downstream beneficiaries.

In the stakeholder dialogue workshop participants engaged with the following municipal and local actors to learn about the implementation of the flood protection and compensation scheme in Mittersill: vice-mayor, technician of the flood storage basin, commander of the municipal fire brigade as well as landowners who provided and benefited from the flood storage project.

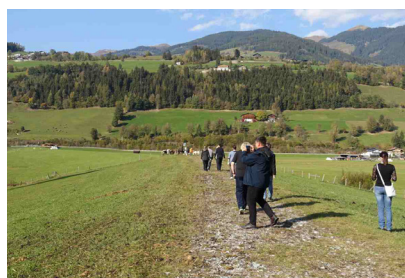
The workshop participants received first-hand accounts of the 2005 flood event and the (negotiation) process leading up the flood storage project. The municipal actors highlighted the need to act quickly in response to the 2005 floods and to implement the flood protection scheme. In comparison to the case in Altenmarkt im Pongau, it had therefore not been possible to set up a cooperative involving the providers and the beneficiaries of the flood storage project due to time constraints. Instead, the municipality separately negotiated a compensation scheme

with the affected upstream and downstream parties.

The representative of the upstream landowners reported that the current compensation scheme is the result of lengthy negotiation process among the more than sixty landowners affected by the flood storage project. The landowners had only agreed to provide their agricultural land for flood storage, if a number of conditions were met, including the assessment of current land and property values as a basis for determining flood losses, as well as reducing the incline of the horizontal time to allow mechanical cultivation. The representative of the downstream beneficiaries, on the other hand, demonstrated that agricultural landowners benefitted from re-zoning agricultural land into building land and, therefore generally supported beneficiary contributions to the compensation fund by means of land value capture.



*stakeholder dialogue, Mittersill,
© Schindelegger*



horizontal dam, © Schindelegger



retention basin, © Schindelegger

LESSONS LEARNED AND NEXT STEPS

LESSONS LEARNED

The regional workshop offered a chance for the participants to visit and explore two specific flood storage projects and engage with local actors, who had a stake or were involved in the negotiation and implementation of compensation mechanisms.

As many of the workshop participants have specific experiences on compensation issues as researchers, practitioners or policy actors, the workshop provided valuable input for their own professional work in the respective disciplinary fields and countries.

Summing up, a few take away messages by the workshop participants are highlighted:

>> “Risk-based cost allocation can work”: Although in the two cases “federal money pays for the bigger part” of flood storage compensation, they illustrate that “innovative schemes are possible in flood risk management” and that it is an option, to involve those benefiting from flood retention services. By differentiating specific costs and benefits a

“win-win situation is possible”. As “everybody gives and takes” in such compensation schemes, “bringing residents on board” is critical to develop a “regional consensus”. In this regard, however, “heavy instruments” (expropriation, compulsory membership in a cooperative)” are sometimes necessary “to push potential cooperation”.

>> “It takes time to come up with complex solutions”: Developing flood storage compensation based on the involvement of the providers and the beneficiaries of flood retention services is a lengthy, costly and cumbersome process. Notwithstanding it is important “to not simplify the cost distribution”. How “stakeholder involvement and communication” with those affected is organised is of “critical importance”. In this vein, “transparency”, “respect” and “plurality/inclusiveness” are guiding principles to maintain a culture of “dialogue between municipal authorities and [affected stakeholders]. Public authorities specifically have

to ensure that the process does not endanger the “social capital and the cohesion”, which form are a “perquisite” for future cooperation within the municipality.

>> “Scale and context matters”: Finally, the cases also showed that context and scale are important factors in developing and organising flood storage compensation. Local conditions (concerning flood risk, land use, crop type, etc.) demand locally attuned solutions and local support, which is considered to play a leading role to “trigger change (...) effectively”. In this regard “scale matters”, because it depends which types of actors are involved, or to which extent “downstream effects are considered”. An increase in the number of affected parties “makes a transparent communication difficult” and may overburden the available “resources (financial, staff, expertise, ...)”.

NEXT STEPS

The collaborative exploration of specific case studies and the interaction with local stakeholders showed that “researching within LAND4FLOOD is inspiring and fun”. In the course of the workshop, the participants developed ideas for further research and policy cooperation. These include plans to set up Short Term Scientific Missions (STSMs), to develop joint research proposals or to conduct comparative research on similar cases of flood storage.

In addition to this workshop documentation the following two specific outputs from the COST workshop are being developed:

>> Policy Paper: Based on the regional workshop a policy paper on the theme of compensation for flood storage is being developed in coordination with the International Water Resources Association (IWRA).

>> Book Project: The workshop formed the kick-off for a book project that aims to explore different models of regulating, organising and compensating flood storage. The book project intends to present and juxtapose different experiences from across the COST Action.



retention basin, Altenmarkt © Ungvári

ANNEX – LIST OF PARTICIPANTS

>> linking academia, policy and practice <<

The workshop involved 19 members of the COST Action from academia, policy and practice. They engaged with 10 other local stakeholders in case studies.

NAME	SURNAME	COUNTRY	AFFILIATION	ROLE
Alterman	Rachelle	IL	Technion - Israel Institute of Technology	Research
De La Sala	Safira	IL	Technion - Israel Institute of Technology	Research
Deregibus	Ignacio	FR	International Water Ressources Association (IWRA)	Policy
Gaugitsch	Roland	AT	Austrian Institute for Spatial Planning (ÖIR)	Practice
Gutman	Jenia	IL	Israeli Ministry of Agriculture and Rural Development	Policy
Hartmann	Thomas	NL	Wageningen University & Research (WUR)	Research
Kis	András	HU	Regional Centre for Energy Policy Research (REKK)	Policy/Research
Kujanova	Katerina	CZ	Nature Conservation Agency	Practice
Liu	Wei	AT	International Institute for Applied Systems Analysis (IIASA)	Policy/Research
Löschner	Lukas	AT	University of Natural Resources and Life Sciences Vienna (BOKU)	Research (Organiser)
Macháč	Jan	CZ	Univerzita J. E. Purkyně (UJEP)	Research
Polydorides	Polys	CY	Lakatamia Municipality	Practice
Právetz	Tamás	HU	Middle Tisza District Water Directorate	Policy
Schindelegger	Arthur	AT	Vienna University of Technology (TU Wien)	Research (Organiser)
Štusej	Janez	SLO	Chamber of Agriculture and Forestry of Slovenia (CAFS)	Practice
Toumazis	Antonis	CY	Dion. Toumazis & Associates	Practice
Ungvári	Gábor	HU	Regional Centre for Energy Policy Research (REKK)	Policy/Research
Vogt	Riku Reinhard	GER	HochwasserKompetenzCentrum (HKC)	Practice
Zupanc	Vesna	SLO	University of Ljubljana	Research
Pichler	Felix	AUT	head of the municipal office	Stakeholder Altenmarkt
Schitter	Harald	AUT	treasurer of the flood protection cooperative	Stakeholder Altenmarkt
Staiger	Martin	AUT	head of the municipality's financial administration	Stakeholder Altenmarkt
Weiss	Georg	AUT	commander of the municipal fire brigade	Stakeholder Altenmarkt
Lackner	Theresia	AUT	home owner and downstream beneficiary of the flood storage project	Stakeholder Altenmarkt
Rauch	Gerald	AUT	vice-mayor	Stakeholder Mittersill
Maurer	Markus	AUT	technician of the flood storage basin	Stakeholder Mittersill
Rauchenbacher	Roland	AUT	commander of the municipal fire brigade	Stakeholder Mittersill
Altenberger	Georg	AUT	farmer and land owner in the flood storage area	Stakeholder Mittersill
Ronacher	Anton	AUT	farmer and land owner in the protected area	Stakeholder Mittersill



Further information: www.land4flood.eu