



## **The link between land use and flood risk assessment in urban areas**

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Densification of urban areas rises a concern for increased pluvial flooding. Flood risk in urban areas might rise under impact of land use changes. Urbanisation involves conversion of natural areas to impermeable areas giving lower infiltration rates and increased runoff. When high-intense rainfall excess the capacity of the drainage system in a city, high runoff causes pluvial flooding in low-laying areas. In the present study, a long time series (20 years) of geo-referenced flood claims from property owners has been collected and analysed in detail to assess flood risk under impact of land use changes in urban areas. The flood claim data come from property owners with flood insurance that covers property loss from overland flooding, groundwater intrusion through basement walls, as well as flooding from the drainage system, and are used as a proxy for flood severity. The spatial relationships between land use change and flood occurrences in different urban areas were analysed. Special emphasis were put on how nature-based solutions and blue-green infrastructure relates to flood risk. The relationships defined by a statistical method explaining the tendencies where the land use change contributes to flood risk changes and others engaged factors.