

CLIMATE CHANGE IMPACT ON HYDROLOGICAL EXTREMES

Flood adaptation strategy in Poland and Norway

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Flood adaptation process

6.11.2007

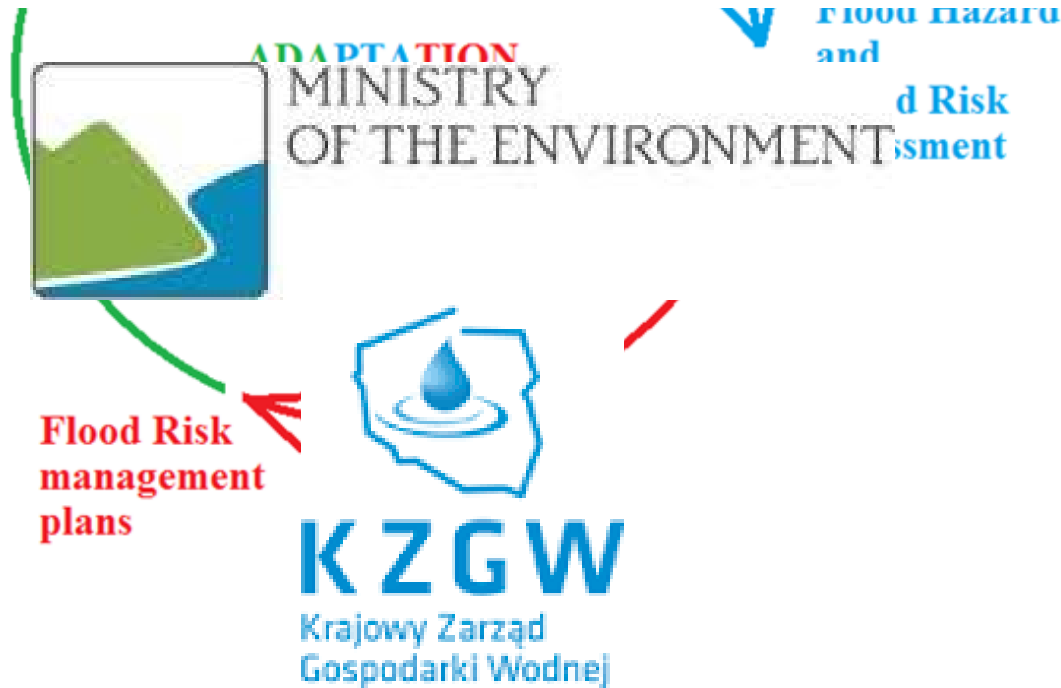
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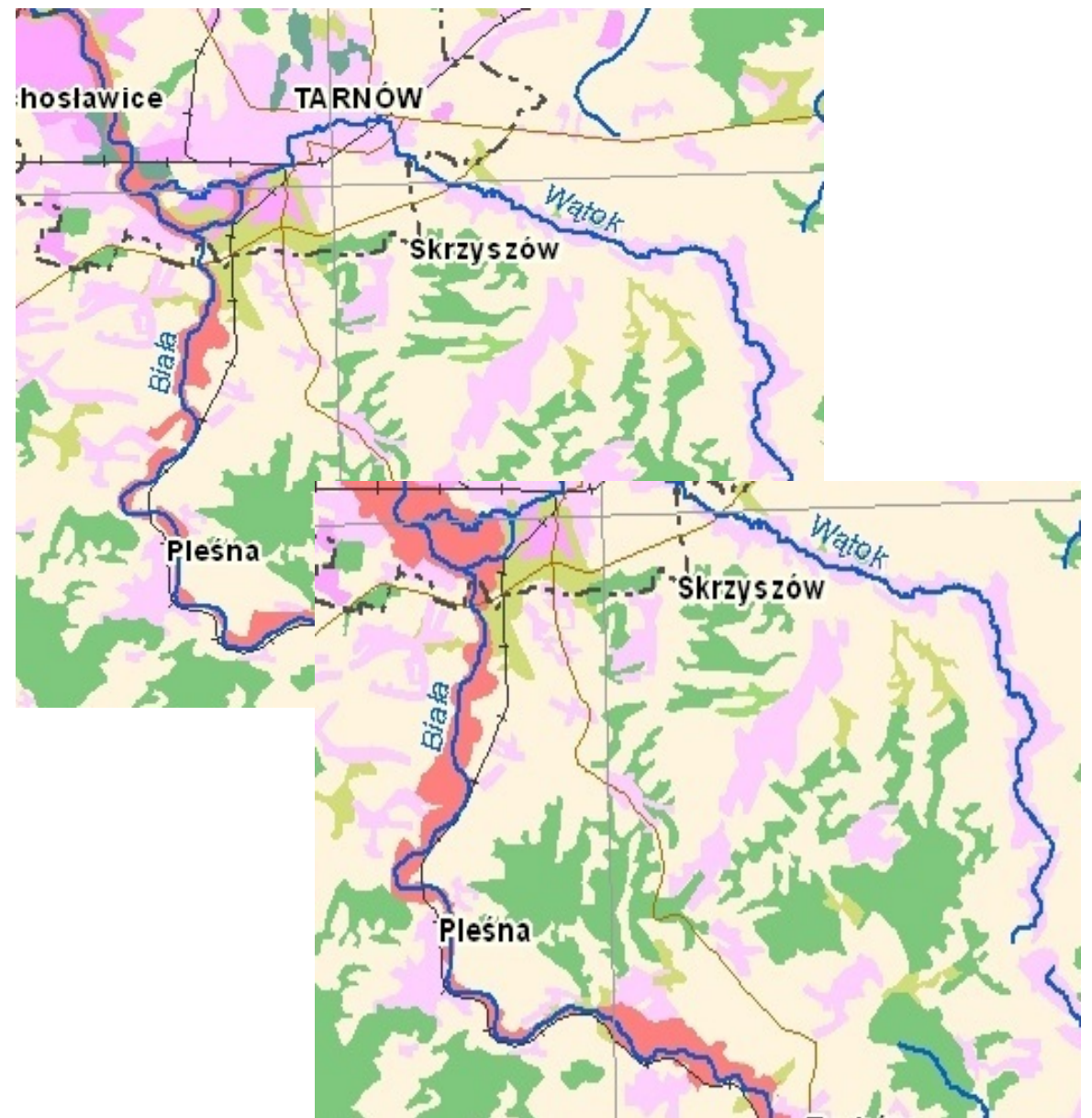
DIRECTIVE 2007/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL
of 23 October 2007
on the assessment and management of flood risks
(Text with EEA relevance)



Preliminary flood risk assessment

* the significant floods which have occurred in the past

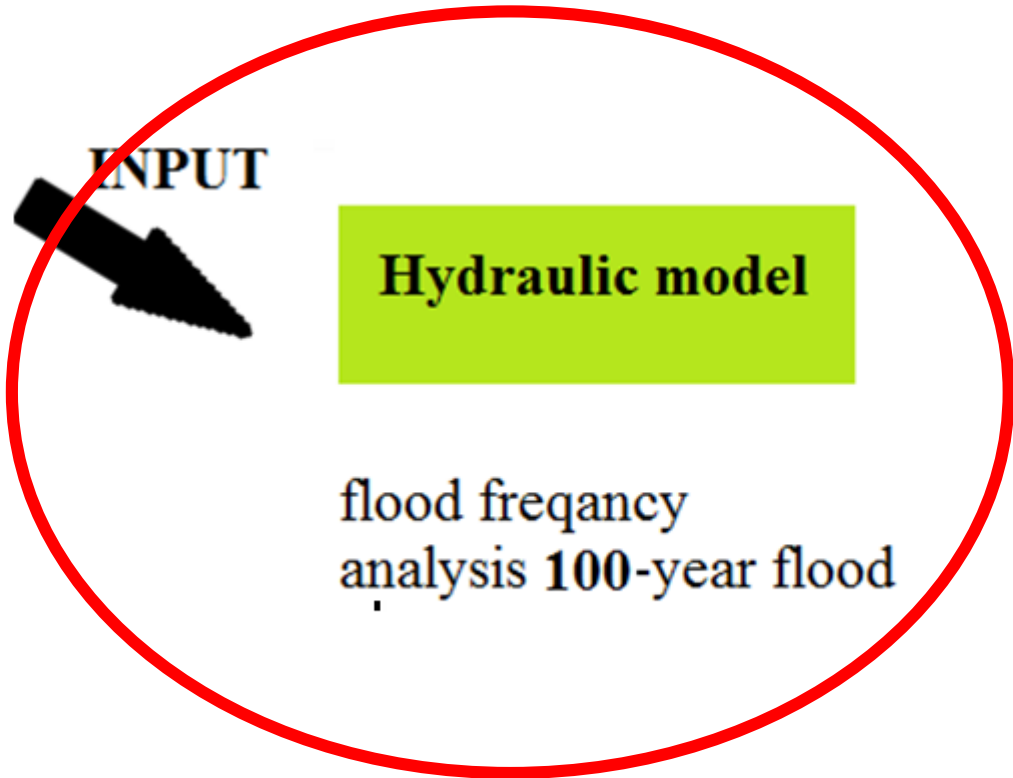
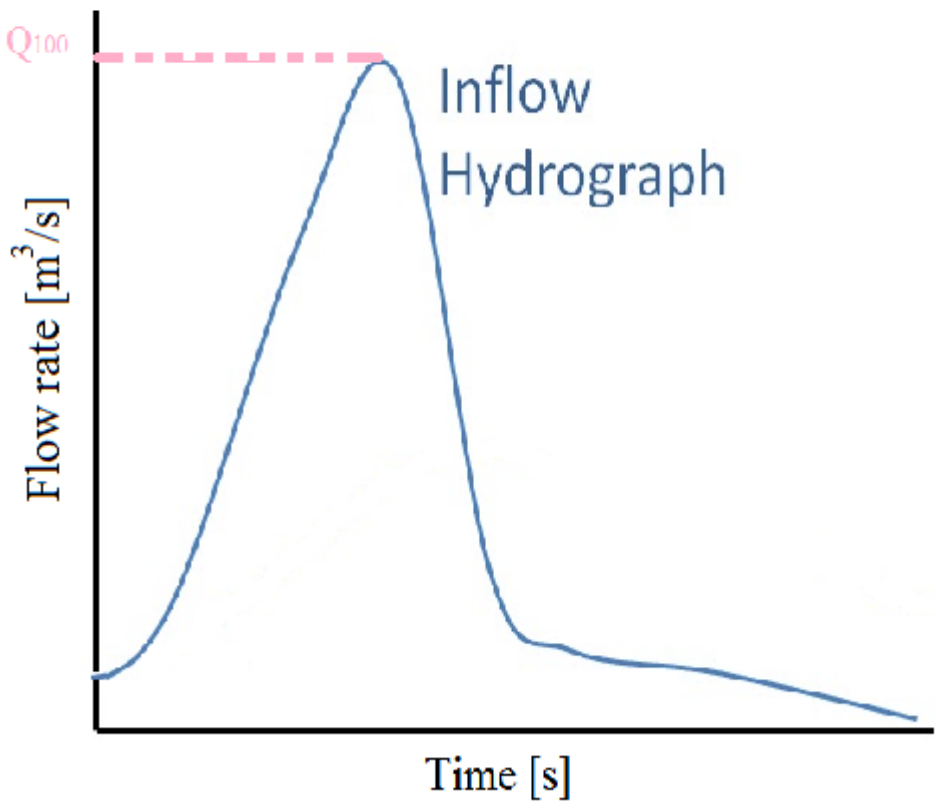
* area where significant adverse consequences of similar future events might be expected



Flood hazard and flood risk assessment


Observed precipitation and temperature data


Hydrological model




Flood hazard and flood risk assessment (dept and extent of innundated area Q1)

Legend Flood hazard map

 **72,56** maximum water surface elevation

 **75,15** elevation of flood embankment crown

 **50** river kilometer

 flood hazard area

 river network

 surface water

 embankment

The depth of water in [m]

 $h \leq 0,5$

 $0,5 < h \leq 2,0$

 $2,0 < h \leq 4,0$

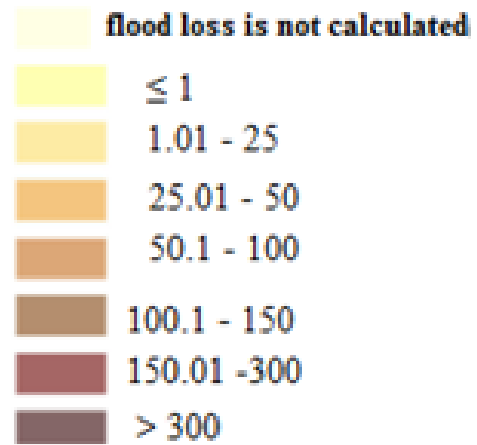
 $h > 4,0$



Flood hazard and flood risk assesment Q1

Legend flood risk

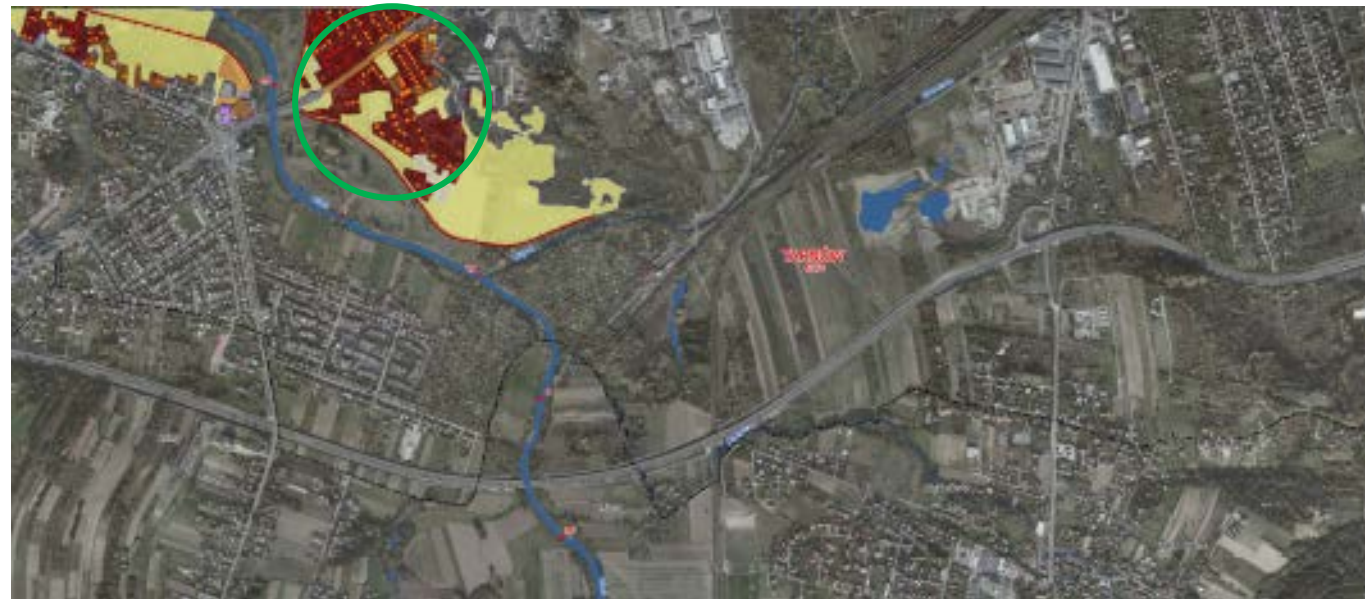
potential flood loss in PLN/m²



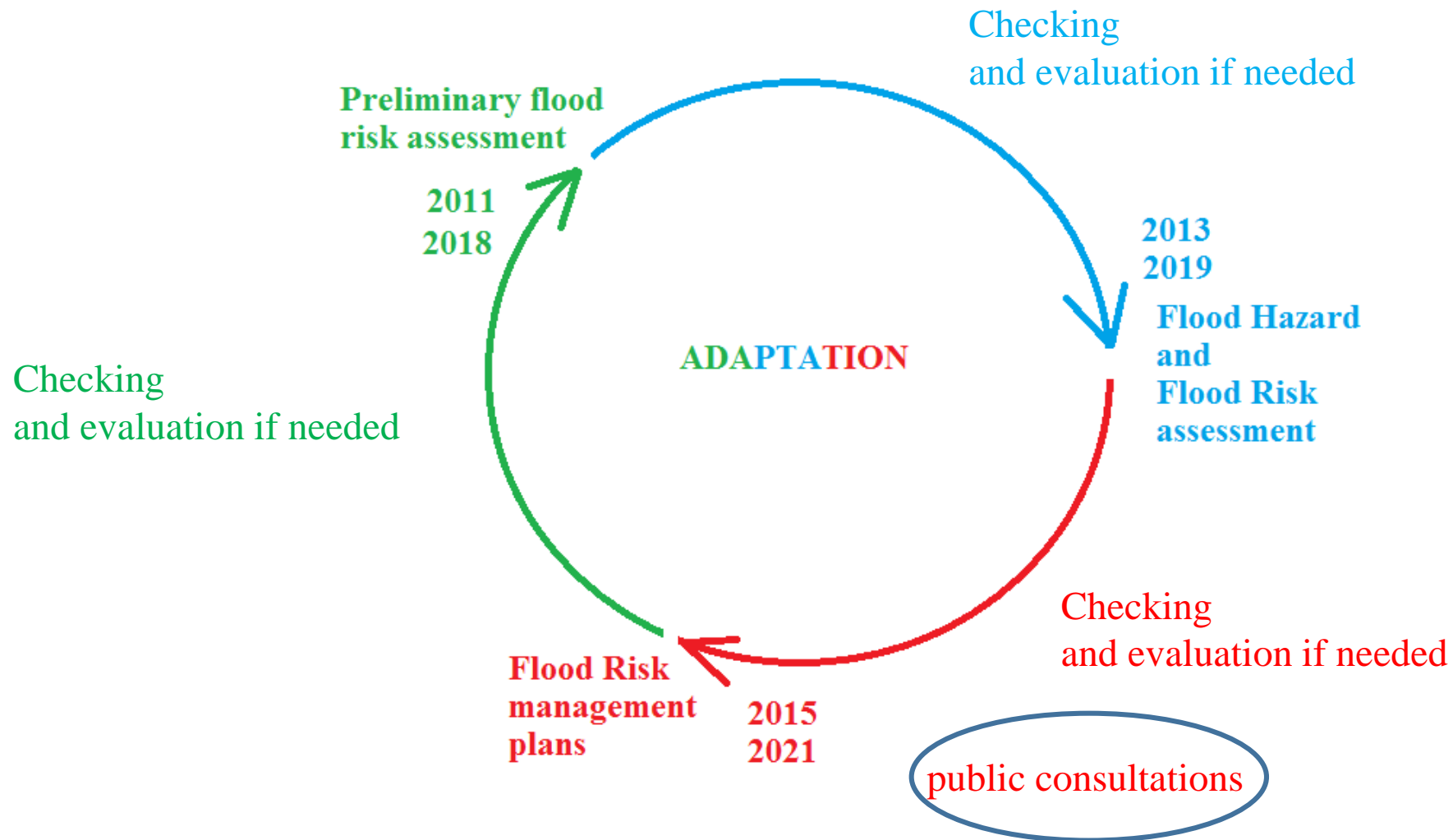
housing in inunded area
- depth in [m]

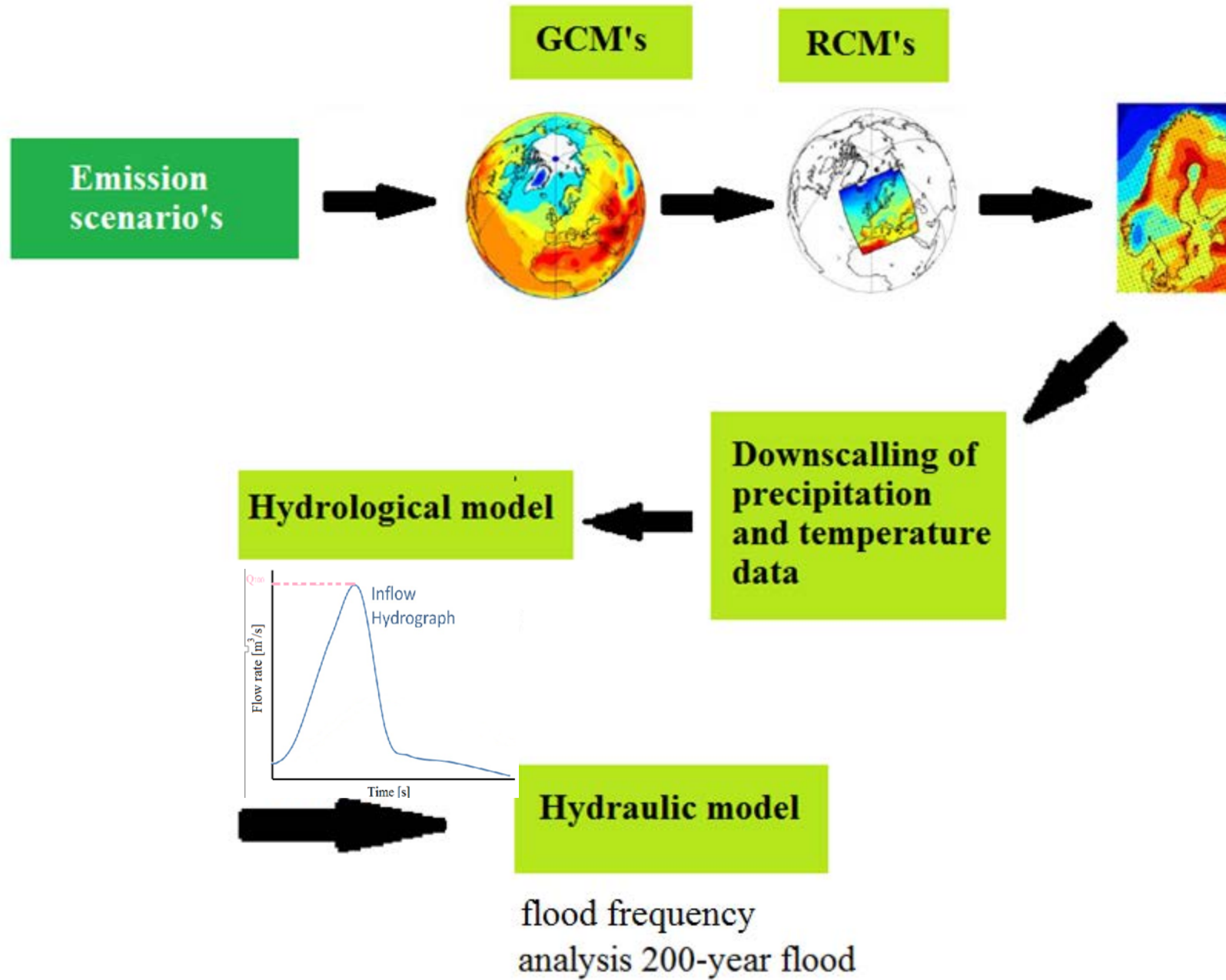


building of social meaning
- depth in [m]



Flood adaptation process

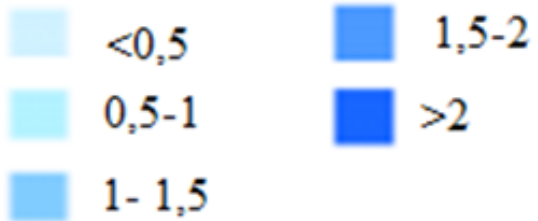




Flood hazard and flood risk assessment

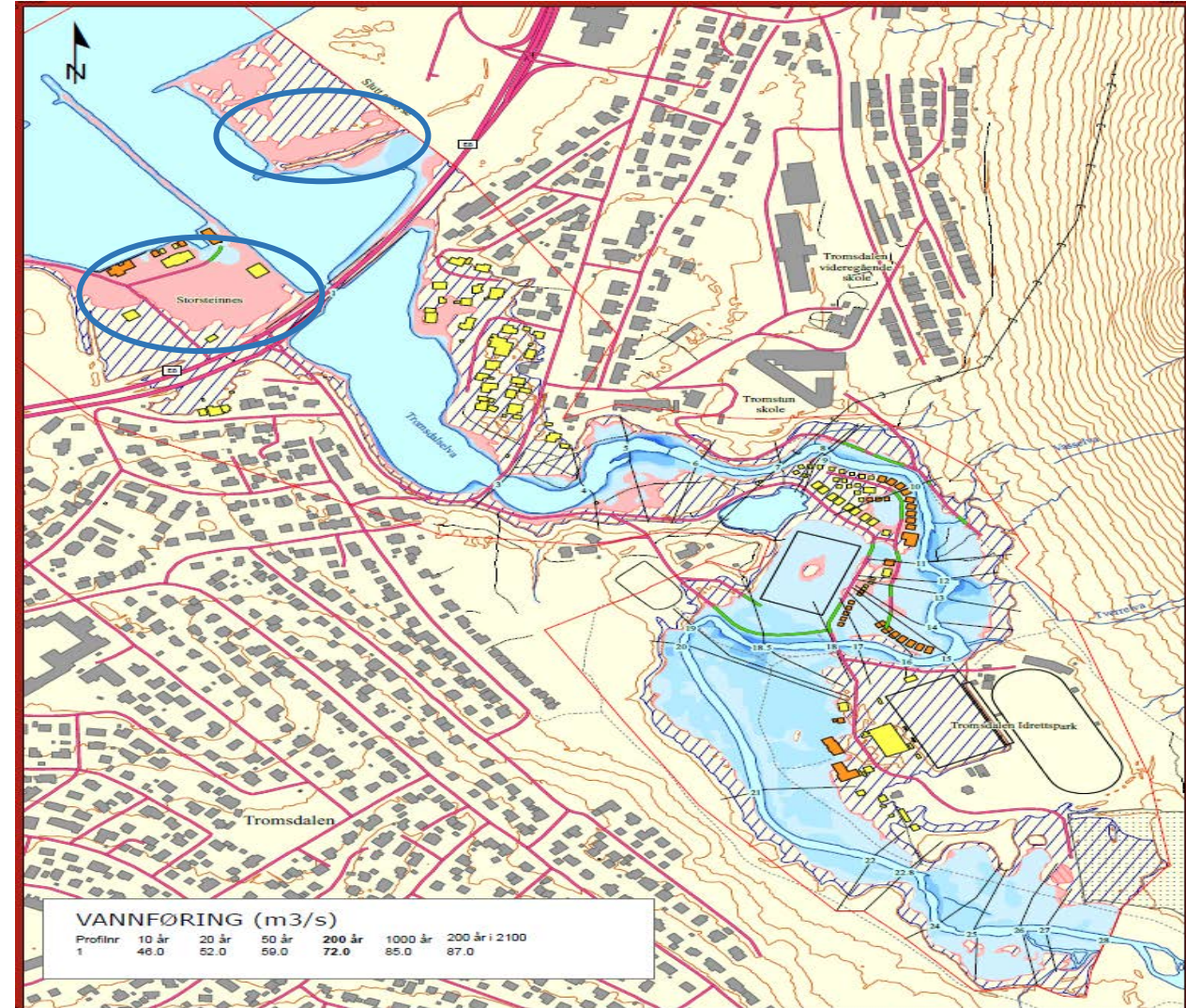
Legend

present 200-year flood depth [m]



Climate change in year 2100

■ flooded area while 200- year flood in year 2100



An example of flood inundation map with probability of flood occurrence 0,5%, in Norway, for the City of Tromsdalen

Summary

- Flood hazard and flood risk maps are important information instrument in rising the social aweness of flood risk.
- Adaptation to floods is a process which has to be repeated periodically due to economic and climate changes.
- The Norwegian approach of including climate change into flood adaptation process might be a good guideline to apply in Poland in next flood adaptation cycle.

Thank you for the attention



MINISTER ZDROWIA OSTRZEGA PRZED kwejk.pl

Sources:

- Flood hazard and flood risk maps <http://geoportal.kzgw.gov.pl/imap/>
- Water Management Regional Boards map : <http://www.kzgw.gov.pl/>
- Water regions map : <http://www.powodz.gov.pl/>