Costs and Benefits of Insurance against Flood – Case Study of Wisloka River Basin in Poland

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Research goal

- There is a need to find better insurance system against floods in Poland.

- An application of Cost-Benefit Analysis was designed to compare the existing and proposed insurance schemes.
Outline

1. Flood Risk in Poland and the Case Study Region
2. Insurance against Floods (status quo and concepts)
3. Methods used to Assess Insurance Schemes
4. Outcomes of methods implementation
5. Concluding remarks
4110 km² -> 1.3% area of PL
1.6% of PL flood losses
Basin focus analysis
(61 municipalities)

Drainage basin of Wisloka River
Flood Risk in Poland

Direct Economic Losses as share of GDP

- Non-reimbursed losses
- State aid
- Insured losses
FLOOD INSURANCE IN PL - Status Quo

INSURANCE AGAINST NATURAL DISASTERS DAMAGES

voluntary insurance

mandatory insurance of buildings in agricultural households „against fire and allied perils”, including flood
PROPERTY (voluntary) insurance: number of insurance contracts

AGRICULTURE (mandatory) insurance: number of insurance contracts

- After transformation
- Before transformation
DIAGNOSIS OF FLOOD INSURANCE IN PL

- Low market penetration level
- Low level of financial support for the victims
  - Victims lack the financial security and help
  - Lack of capital for investments
    - Premium do not depend on the level of risk
      - No financial incentive to protect the property
      - No financial incentive discouraging building-up in the flood prone areas
- High expenses from state budget in case of flood expected
  - Lack of investments in flood protection measures

FEATURES OF PROPOSED INSURANCE SCHEME

- private (households, businesses) and public sector property assigned to the flood risk zones

- premium is mandatory and risk-based (incentive for reducing risk exposure),

- insurance of indirect losses is optional,

- reinsurance is provided but not from the state budget
METODOLOGY TO COMPARE INSURANCE

Identification of costs and benefits

Defininition of costs & benefits categories

Assigning cost and benefits for all stakeholders

Proposal of calculation method

Available data

Flood area of certain probability

Land use types

Loss indicators per area

Historical data about losses

Examples of Land Use Types
- Crop land
- Meadows and Pastures
- Industry and Commerce zones
- Build-up area
- Arable land other than crops
- Area 2000x2000

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OUTCOMES - Scenarios

BCR: HIGH RISK

BCR: LOW RISK

BCR: GOVERNMENT

BCR: INSURERS
CONCLUSIONS FROM EMPIRICAL RESEARCH

- Decline in the state budget expenditures for the recovery payments
- Capital investments
- Premium collection
- Financial means in mandatory flood insurance system
- Quick transfer of financial means to flood victims
- Implementation of mandatory flood insurance
- Decline in poverty
- Decline in state budget expenses
- Public property recovery possibility
- Min. of indirect losses
- Risk-based premium
- Increased social awareness about the thread
- Means for financing flood measures investments
- Discouragement to invest in flood prone areas
- Min. of direct losses
- Motivation for taking the protection measures
CONCLUDING REMARKS

- The performance of CBA in Wisloka River basin gave indications for the level of costs and benefits for different SHs.
- Application of cost calculation methods and data collection strategies were tested.
- The mandatory flood insurance system although have some benefits is probably not the best insurance option for Poland.
- Options for further research:
  
  test of other insurance schemes by means of this method (and with the use of complimentary analysis) in order to find the best insurance solution for Poland.
Thank You!

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