

Some development possibility

Gabriella Szépszó

Regional Climate Modelling Group
Hungarian Meteorological Service



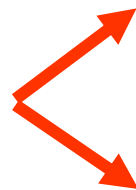
NAGiS bilateral event
8 November 2016

Key uncertainties in regional projections

1. Internal variability

2. Scenario uncertainty

3. Model uncertainty



- Global forcings coming from global climate models (GCM)
- Applied regional climate model (RCM)

Less is more?

- Stage 1:
 - 2 RCM simulations: ALADIN_ARP_A1B, RegCM_ECH_A1B → impact studies
 - Basic information only about model uncertainty
- Stage 2:
 - +2 RCM simulations: ALADIN_ARP_RPC8.5, RegCM_Had_RCP4.5
 - Already information about scenario uncertainty – but we cannot distinguish between the sources
- Based on a 2-member ensemble no real possibility to provide probabilistic data

Representative ensemble

- Main goal: to cover all the important uncertainty + to be able distinguish them
- It means minimum 8 members:
2 GCMs x 2 RCMs x 2 scenarios
- Question: do we need to use model run by our own? Or would it be enough to use only publicly available RCM results?
- Answer: yes and yes

Uncertainty information in impact studies

- Optimal: every impact study based on all the RCM simulations available in the NAGiS system
- NAGiS stage 1: most impact assessments based on a single model run (ALADIN_A1B)
- Step 2: impact studies using RegCM_A1B (A1B results should not be neglected)
- Step 3: impact assessments using ALADIN_RCP8.5, RegCM_RCP4.5
- Step 4: impact analysis using an extended ensemble

Cooperation of users and meteorologists

- Sporadically → result: some wrong interpretation of projections (e.g., observations for the past, projections for the future – neglected model bias)
- New RCM results in NAGiS: intervals instead of outputs of single models → no choice to select a single model by the users
- For some study it is not enough → contact with the data provider (meteorologists)

More complex information from NAGiS

- Combination of the data layers would be needed
- 1st step: predefined layer packages
- We should not be afraid of the users, but should have dialogue with them and educate them