

Regional Climate Impact Model Chains analysed in the Inn Regional Report

Climate model chain #	Climate impact model chain #	Model chain					Time frame		Project Partner
		Name / Abbrev.	Global Model (GCM)	Regional Model (RCM)	Downscaling / Bias-Corr.	Impact model	Refer.	Future	
1	-	REM_uba	ECHAM5 r1	REMO UBA	DD	-		2021-2050 2071-2100	LfU
2	-	REM_ubv	ECHAM5 r1	REMO UBA	BC (UBA)	-		2021-2050 2071-2100	
3	1	REM_uba_b	ECHAM5 r1	REMO UBA	BC (BfG)	WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
4	2	REM_bfg_b	ECHAM5 r2	REMO BfG		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
5	3	REM_ens_b	ECHAM5 r3	REMO ENSEMB		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
6	4	CLM_hd_b	HadleyCM3Q0	CCLM-ETH		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
7	5	CLM_eh_b	ECHAM5 r1	CLM-Consortial		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
8	6	CLM_eh2_b	ECHAM5 r2	CLM-Consortial		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
9	-	Sin_eh4	ECH.4r+SINTEX	CCLM (AdaptAlp)	DD	-	1971 - 2000	2021-2050 2071-2100	
10	-	WET09_ec	ECHAM5 r1	WETTREG 2009	SD – atmospheric conditions	-		2021-2050 2071-2100	
11	7	WET09_hd	HADGEM2-A0	WETTREG 2009		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
12	-	WET09_cn	CNRMCM3.3	WETTREG 2009		-		2021-2050 2071-2100	
13	8	WET10_eh	ECHAM5	WETTREG 2010		WaSiM,Inn,d,1km ²		2021-2050 2071-2100	
14	-	GLO_ipc	GLOWA trend 1	GLOWA IPCC reg.	SD - weather generator	-		2021-2050	
15	9	GLO_rem	GLOWA trend 2	GLOWA REMOrg.		WaSiM,Inn,d,1km ²		2021-2050	
16	-	GLO_mm5	GLOWA trend 3	GLOWA MM5 reg.		-		2021-2050	
17	10	GLO_ft	GLOWA trend 4	GLOWA Fortschr.		WaSiM,Inn,d,1km ²		2021-2050	
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18	11	CNRM-RM4.5	ARPEGE	ALADIN45	DC	COSERO, Inn, m, HRU	1971 - 2000	2021-2050	BfG
19	12	DMI-ARPEGE	ARPEGE	HIRHAM5				2021-2050 2071-2100	
20	13	METNO-BCM	BCM	HIRHAM				2021-2050	
21	14	SMHIRCA-BCM	BCM	RCA				2021-2050	
22	15	OURANOS	CGCM3	CRCM				2021-2050	
23	16	DMI-ECHAM5	ECHAM5 r3	HIRHAM5				2021-2050 2071-2100	
24	17	KNMI	ECHAM5 r3	RACMO				2021-2050 2071-2100	
25	18	SMHIRCA-ECH	ECHAM5 r3	RCA				2021-2050 2071-2100	
26	19	IC TP	ECHAM5 r3	REGCM				2021-2050 2071-2100	
27	20	MPI	ECHAM5 r3	REMO				2021-2050 2071-2100	
28	21	ETHZ	HADCM3Q0	CLM				2021-2050 2071-2100	
29	22	METO	HADCM3Q0	HADRM3Q0				2021-2050 2071-2100	
30	23	METNO-HAD	HADCM3Q0	HIRHAM				2021-2050	
31	24	UCLM	HADCM3Q0	PROMES				2021-2050	
32	25	METO-Q16	HADCM3Q16	HADRM3Q16				2021-2050 2071-2100	
33	26	C4IRCA3	HADCM3Q16	RCA3				2021-2050 2071-2100	
34	27	METO-Q3	HADCM3Q3	HADRM3Q3				2021-2050 2071-2100	
35	28	SMHIRCA-HAD	HADCM3Q3	RCA				2021-2050 2071-2100	
36	29	GKSS	IPSL	CCLM48				2021-2050	
37	30	KNMI50km	MIROC	RACMO	2021-2050 2071-2100				
38	31	DMI-BCM	BCM	HIRHAM5	2021-2050 2071-2100				
39	32	CNRM-RM51	ARPEGE_RM51	ALADIN	1950-2100				

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40	33	ETHZ_HadCM3Q0_CLM	HadCM3Q0	CLM	DC	PREVAH-WSL, Engadin, d, 200 m ²	1980 - 2009	1921-2050 2070 - 2099	BAFU
41	34	HC_HadCM3Q0_HadRM3Q0	HadCM3Q0	HadRM3Q0					
42	35	SMHI_HadCM3Q3_RCA	HadCM3Q3	RCA					
43	36	DMI_ECHAM_HIRHAM	ECHAM5 r	HIRHAM					
44	37	KNMI_ECHAM_RACMO	ECHAM5 r	RACMO					
45	38	ICTP_ECHAM_REGCM	ECHAM5 r	REGCM					
46	39	MPI_ECHAM_REMO	ECHAM5 r	REMO					
47	40	SMHI_ECHAM_RCA	ECHAM5 r	RCA					
48	41	CNRM_ARPEGE_ALADIN	ARPEGE	ALADIN45					
49	42	SMHI_BCM_RCA	BCM	RCA					
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50	43	-	ECH.5r+SINTEX	CCLM (AdaptAlp)	DD	RUSLE, Alpine Inn, 6-h, 90 m ²	1985-2005	2011-2035	MATTM

Explanation of column headings

Climate Model Chain: 50 model chains that were analysed in the WP4 Regional Report on the Inn River basin

Climate Impact Model Chain: 43 model chains which were used as input for an impact model

Model Chain (the parts of each model chain):

- Global Model (GCM): the Global Climate Model
- Regional Model (RCM): the Regional Climate Model
- Downscaling / Bias-Corr.: the applied further downscaling method, Bias-Correction method or “variation” of the climate projection:
 - 1) Dynamical Downscaling (DD): SRES>GCM>Dynamic RCM> Impact Model (Note: no bias correction applied!)
 - 2) Bias Correction (BC): SRES>GCM>Dynamic RCM>Bias Correction>Impact Model (Note: institution that performed the bias correction (e.g. BfG) is named)
 - 3) Delta Change (DC): SRES>GCM>RCM>Climate Signal>Delta Change Method>Impact Model
 - 4) Statistical Downscaling (SC): SRES>GCM>Statistical RCM>Impact Model (Note: differentiation between two types of statistical downscaling: atmospheric conditions and weather generator)

Impact Model: 3 water balance models and 1 soil erosion model that were applied in the Inn River basin

Time frame: The analysed time slices:

- Refer.: Reference time frame
- Future: future time frames for analyse of changes

Project partner: AdaptAlp project partners that contributed to the impact analyses in the Inn River basin