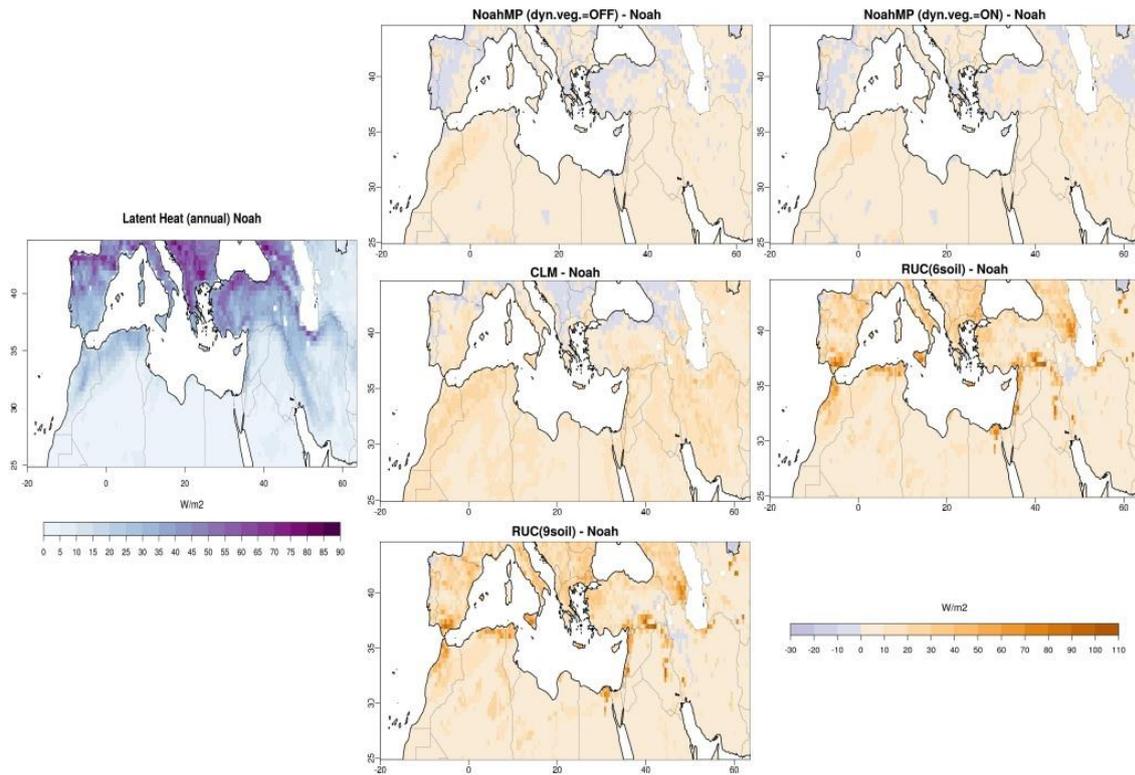
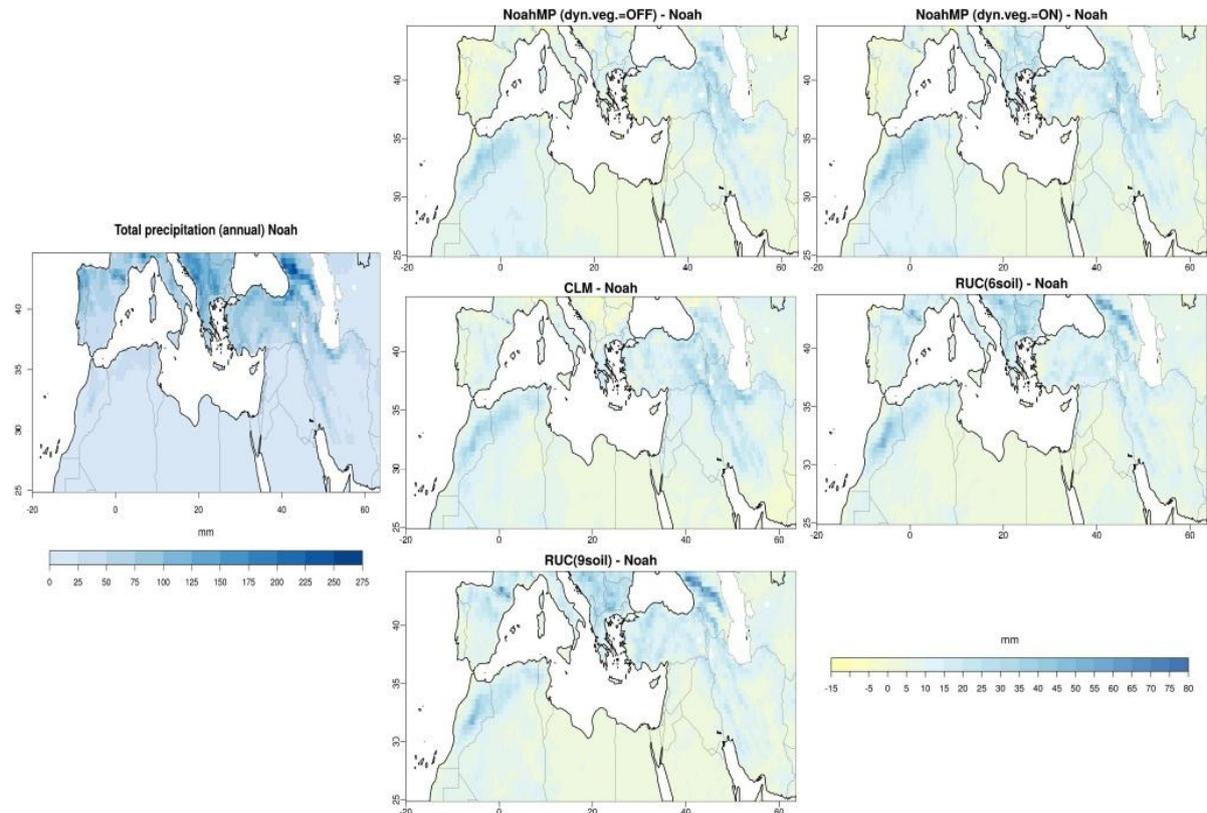


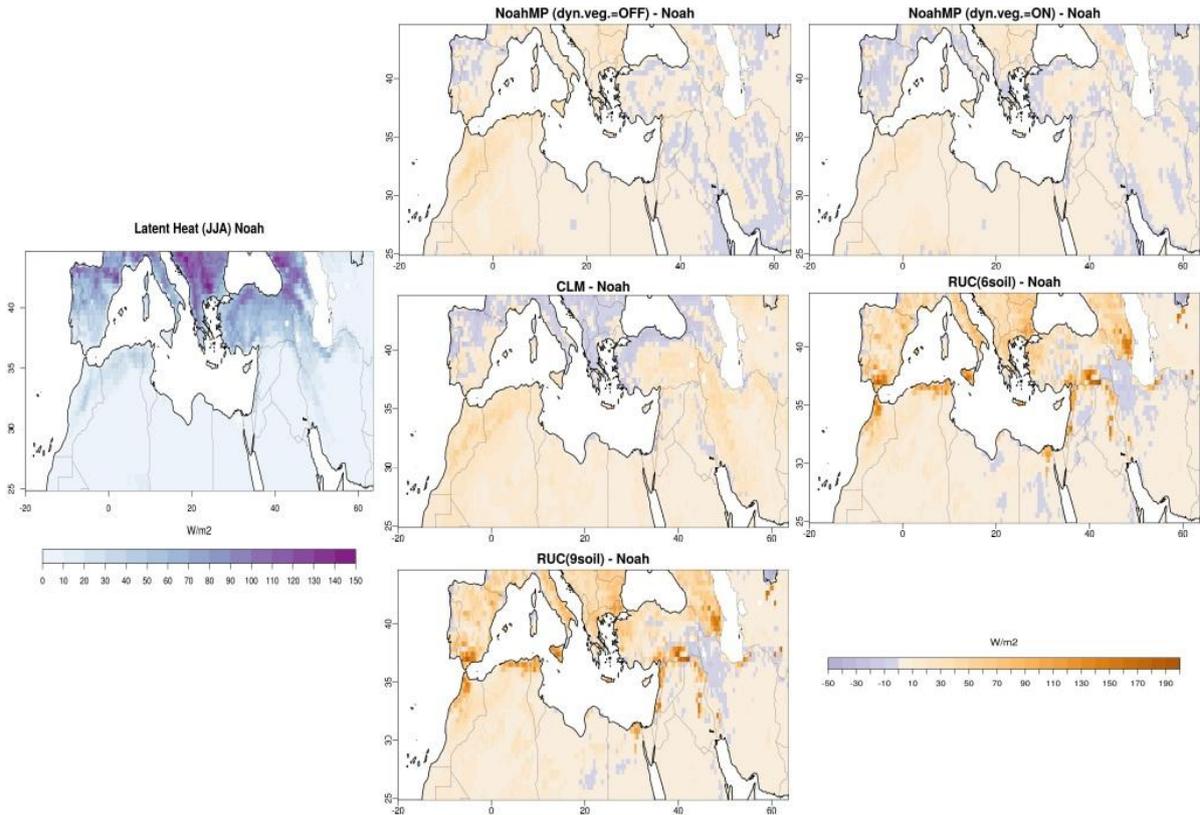
Supplementary Material



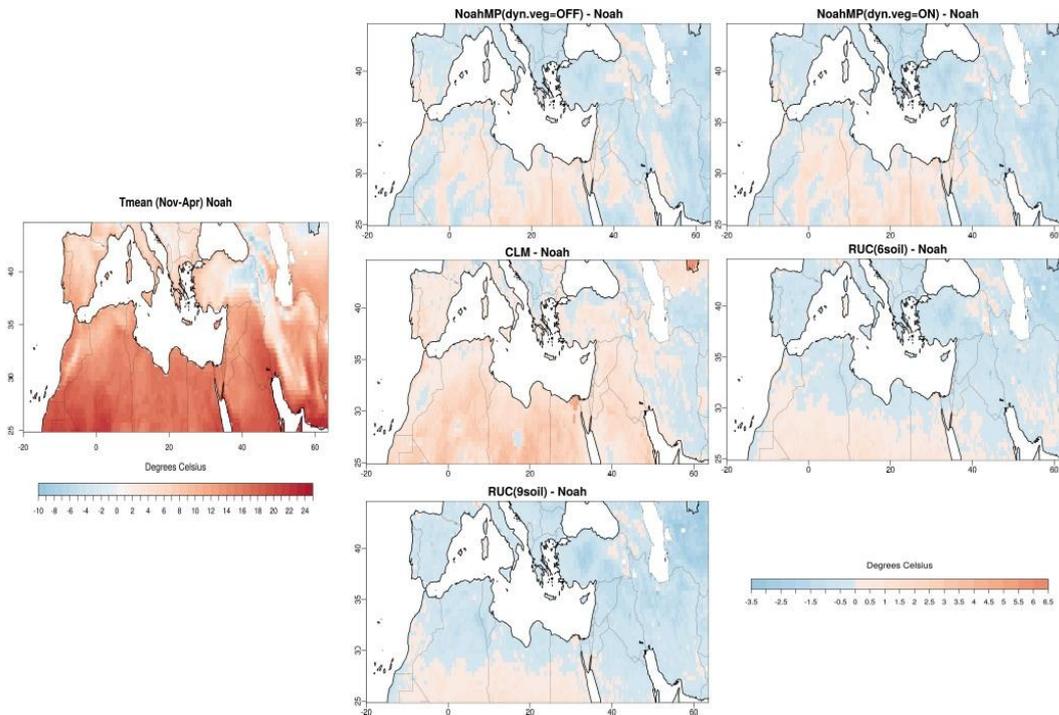
**Figure S1.** Annual latent heat flux (LH) averaged for Dec. 2000 – Nov. 2010 by Noah (on the right-hand side) and the differences of LH by NoahMP dyn. Veg.= OFF & ON, CLM and RUC 6 and 9 soil layers from Noah.



**Figure S2.** Annual total precipitation (prcp) averaged for Dec. 2000 – Nov. 2010 by Noah (on the right-hand side) and the differences of prcp by NoahMP dyn. Veg.= OFF & ON, CLM and RUC 6 and 9 soil layers from Noah.



**Figure S3.** Latent heat flux (LH) for summer period (JJA) averaged for 2000-2010 by Noah (on the right-hand side) and the differences of LH by NoahMP dyn. Veg.= OFF & ON, CLM and RUC 6 and 9 soil layers from Noah.



**Figure S4.** Mean Temperature for the growing period of 1<sup>st</sup> November - 30<sup>th</sup> April averaged for 2000-2010 by Noah (on the right-hand side) and the differences of Tmean by NoahMP dyn. Veg.= OFF & ON, CLM and RUC 6 and 9 soil layers from Noah.