

## 13 Terrestrial Biodiversity

### 13.1 Experiments

**Table 34:** provides an overview of all experiments to be run in the terrestrial-biodiversity sector in ISIMIP2a.

**Table 34:** Experiment summary for terrestrial-biodiversity models.

	Climate Data	Scenario	Human influences, land use (LU)	Other settings (sens-scenario)	# runs
Historical runs	EWEMBI	hist	nat	no CO2	1

### 13.2 Sector-specific input

**Table 35:** Biodiversity-specific input data used for building our models.

Dataset	Description	More info	Dates	Scale	Variables included
EWEMBI	Bioclimatic variables	30-year monthly means of minimum temperature (tasmin), maximum temperature (tasmax) and total precipitation (pr) were calculated and used to derive 19 bioclimatic variables; see (Hijmans, Cameron, Parra, Jones, & Jarvis, 2005)	<b>30-yr averages of 1980 - 2009 (1995)</b>	global, 0.5° (EWEMBI)	Bio4 (temperature seasonality), Bio5 (max temperature of warmest month), Bio12 (annual precipitation) and Bio15 (precipitation seasonality), Bio18 (precipitation of warmest quarter) and Bio19 (precipitation of coldest quarter)

### 13.3 Output data

**Table 36:** Output variables to be reported by terrestrial-biodiversity sector models.

Variable (long name)	Variable name	Units (NetCDF format)	Frequency	Comment
<b>Essential outputs</b>				
<b>Species probability of occurrence</b>				
Amphibian species probability of occurrence	<b>amphibianprob</b>	Probability of occurrence per cell <sup>1</sup>	30-year period centered around 1995 (1980 - 2009)	Results from individual SDMs assuming no dispersal. <sup>2</sup>
Terrestrial bird species probability of occurrence	<b>birdprob</b>			
Terrestrial mammal species probability of occurrence	<b>mammalprob</b>			
<b>Summed probability of occurrence</b>				
Amphibian summed probability of occurrence	<b>amphibiansumprob</b>	Summed probability of occurrence per cell <sup>1</sup>	30-year period centered around 1995 (1980 - 2009)	Aggregated results from individual SDMs assuming no dispersal. <sup>2</sup>
Terrestrial bird summed probability of occurrence	<b>birdsumprob</b>			
Terrestrial mammal summed probability of occurrence	<b>mammalsumprob</b>			
<b>Endemic summed probability of occurrence</b>				
Summed probability of endemic amphibian species <sup>3</sup>	<b>endamphibiansumprob</b>	Summed probability of occurrence per cell <sup>1</sup>	30-year period centered around 1995 (1980 - 2009)	Aggregated results from individual SDMs assuming no dispersal. <sup>2</sup>
Summed probability of endemic terrestrial bird species <sup>3</sup>	<b>endbirdsumprob</b>			
Summed probability of endemic terrestrial mammal species <sup>3</sup>	<b>endmammalsumprob</b>			
<b>Threatened summed probability of occurrence</b>				
Summed probability of threatened amphibian species <sup>4</sup>	<b>thramphibiansumprob</b>	Summed probability of occurrence per cell <sup>1</sup>	30-year period centered around	Aggregated results from individual SDMs assuming

Summed probability of threatened terrestrial bird species <sup>4</sup>	<b>thrbirdsumprob</b>		1995 (1980 - 2009)	no dispersal. <sup>2</sup>
Summed probability of threatened terrestrial mammal species <sup>4</sup>	<b>thrmammalsumprob</b>			
<b>Species richness</b>				
Amphibian species richness	<b>amphibiansr</b>	Estimated number of species (species richness) per cell	30-year period centered around 1995 (1980 - 2009)	Results from macroecological richness models
Terrestrial bird species richness	<b>birdsr</b>			
Terrestrial mammal species richness	<b>mammalsr</b>			

<sup>1</sup> For the Maximum Entropy (MaxEnt) model algorithm the output is not probability, but habitat suitability/relative occurrence probability. Values also range between 0 and 1.

<sup>2</sup> No dispersal assumes that species can only be present where they are actually present according to the IUCN and BirdLife range maps.

<sup>3</sup> Endemic (range-restricted) species are the smallest ranging 15% of all species.

<sup>4</sup> Threatened species are all species that are either (i) critically endangered, (ii) endangered or (iii) vulnerable according to their IUCN red list status.

## 15 References

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