Datenbankfelder

Änderungen in den Erklärtexten sind gelb gefärbt.

Überschriften sind grau gefärbt.

Variablen sind als Stickpunkte aufgelistet.

MODELNAME (Überschrift)

Short model description (als Text unter Modelname)

Contact person

Basic information

- Sector
  "The sector to which this information pertains. Some models may have further entries for other sectors."
- Region
  "Region for which model produces results"
- Contact person
  "The scientists responsible for performing the simulations for this sector"
- Simulation round
  "The ISIMIP simulation round for which these model details are relevant"
- Model version
  "The model version with which the simulations were run"
- Reference paper: main reference
  "The single paper that should be cited when referring to simulation output from this model"
- Reference paper: other references
  "Other papers describing aspects of this model"

Resolution

- Spatial aggregation
- Spatial resolution
  "The spatial resolution at which the ISIMIP simulations were run, if on a regular grid. Data was provided on a 0.5°x0.5° grid"
- Temporal resolution of input data: climate variables
  "ISIMIP data was provided in daily time steps"
- Temporal resolution of input data: CO2
  "ISIMIP data was provided in annual time steps"
- Temporal resolution of input data: land use/land cover
  "ISIMIP data was provided in annual time steps"
- Temporal resolution of input data: soil
  "ISIMIP data was fixed over time"

Input Data

- Climate data sets used
  "The climate-input data sets used in this simulation round"

- Climate variables
  "Including variables that were derived from those provided in the ISIMIP input data set"
- Socio-economic input variables
  "Including resolution where relevant"
- Soil dataset
  "HWSD or GSWP3 were provided"
- Additional input data sets
  "Data sets used to drive the model that were not provided by ISIMIP"

Exceptions to Protocol

- Exceptions
  "Any settings prescribed by the ISIMIP protocol that were overruled when runing the model"

Spin-up

- Was a spin-up performed?
  "'No' indicates the simulations were run starting in the first reporting year 1971"
- Spin-up design
  "Including the length of the spin up, the CO_2 concentration used, and any deviations from the spin-up procedure defined in the protocol"

Natural Vegetation

- Natural vegetation partition
  "How areas covered by different types of natural vegetation are partitioned"
- Natural vegetation dynamics
  "Description of how natural vegetation is simulated dynamically where relevant"
- Natural vegetation cover dataset
  "Dataset used if natural vegetation cover is prescribed"

Management & Adaptation Measures

- Management
  "Specific management and autonomous adaptation measures applied. E.g. varying sowing dates in crop models, dbh-related harvesting in forest models."

Extreme Events

- Key challenges
  "Key challenges for this model in reproducing impacts of extreme events"

Additional Comments

- Additional comments
  "Anything else necessary to reproduce and/or understand the simulation output"

Water

Technological Progress

- Technological progress
  "Does the model account for GDP changes and technological progress? If so, how are these integrated into the runs?"

Soil

- Soil layers
  "How many soil layers are used? Which qualities do they have?"

Water Use

- Water-use types
  <mark>"Which types of water use are included in the model?"</mark>
- Water-use sectors
  "For the global-water-model varsoc and pressoc runs, which water sectors were included? E.g. irrigation, domestic, manufacturing, electricity, livestock."

Routing

- Runoff routing
  "How is runoff routed?"
- Routing data
  "Which routing data are used?"

Land Use

- Land-use change effects
  "Which land-use change effects are included?"

Dams & Reservoirs

- Dam and reservoir implementation
  "Describe how dams and reservoirs are implemented"

Calibration

- Was the model calibrated?
- Which years were used for calibration?
- Which dataset was used for calibration?
  "E.g. WFD, GSWP3"
- How many catchments were calibrated?

Land Use

- Is CO2 fertilisation accounted for?
- How is vegetation represented?

Methods

- Potential evapotraspiration
- Snow melt

Biomes/Forestry

Model output specifications

- Output format
  "Is output (e.g. PFT cover) written out per grid-cell area or per land and water area within a grid cell, or land only?"
- Output per PFT?
  "Is output per PFT per unit area of that PFT, i.e. requiring weighting by the fractional coverage

of each PFT to get the gridbox average?"

- Considerations
Things to consider when calculating basic variables such as GPP, NPP, RA, RH from the model."

Key model processes

Please provide yes/no and a short description how the process is included

- Dynamic vegetation
- Nitrogen limitation
- CO2 effects
- Light interception
- Light utilization
"photosynthesis, RUE- approach?"
- Phenology
- Water stress
- Heat stress
- Evapo-transpiration approach
- Differences in rooting depth
"Including how it changes"
- Root distribution over depth
- Permafrost
- Closed energy balance
- Coupling/feedback between soil moisture and surface temperature
- Latent heat
- Sensible heat

Causes of mortality in vegetation models

"Describe briefly how the process is described in this model and in which way it is climate dependent."

- Age
- Fire
- Drought
- Insects
- Storm
- Stochastic random disturbance
- Other
- Remarks

NBP components

"Indicate whether the model includes the processes, and how the model accounts for the fluxes, i.e. what is the fate of the biomass? E.g. directly to atmsphere or let it go to other pool"

- Fire
"Indicate whether the model includes fire, and how the model accounts for the fluxes, i.e. what is the fate of the biomass? E.g. directly to atmsphere or let it go to other pool"

- Land-use change
"Indicate whether the model includes land-use change (e.g. deforestation harvest and other

land-use changes), and how the model accounts for the fluxes, i.e. what is the fate of the biomass? e.g. directly to atmsphere or let it go to other pool"

- Harvest

"Indicate whether the model includes harvest, and how the model accounts for the fluxes, i.e. what is the fate of the biomass? E.g. directly to atmsphere or let it go to other pool. 1: crops, 2: harvest from forest management, 3: harvest from grassland management."

- Other processes
- Comments

Plant Functional Types (PFTs)

- List of PFTs
  "Provide a list of PFTs using the folllowing format: [pft1_long_name] ([pft1_short_name]); [pft2_long_name] ([pft2_short_name]). Include long name in brackets if no short name is available."
- Comments

Marine Ecosystems & Fisheries

- Defining features
- Spatial scale
- Spatial resolution
- Temporal scale
- Temporal resolution
- Taxonomic scope
- Vertical resolution
- Spatial dispersal included
- Is FishBase used for mass-length conversion?

Agriculture

Key input and Management

"Provide a yes/no answer and a short description of how the process is included"

- Crops
- Land cover
- Planting date decision
- Planting density
- Crop cultivars
- Fertilizer application
- Irrigation
- Crop residue
- Initial soil water
- Initial soil nitrate and ammonia
- Initial soil C and OM
- Initial crop residue

Key model processes

- Lead area development
  "Methods for model calibration and validation"

- Light interception
  "Methods for model calibration and validation"

- Light utilization
  "Methods for model calibration and validation"

- Yield formation
  "Methods for model calibration and validation"

- Crop phenology
  "Methods for model calibration and validation"

- Root distribution over depth
  "Methods for model calibration and validation"

- Stresses involved
  "Methods for model calibration and validation"

- Type of water stress
  "Methods for model calibration and validation"

- Type of heat stress
  "Methods for model calibration and validation"

- Water dynamics
  "Methods for model calibration and validation"

- Evapo-transpiration
  "Methods for model calibration and validation"

- Soil CN modeling
  "Methods for model calibration and validation"

- CO2 Effects
  "Methods for model calibration and validation"

Methods for model calibration and validation

- Parameters, number and description
- Calibrated values
- Output variable and dataset for calibration validation
- Spatial scale of calibration/validation
- Temporal scale of calibration/validation
- Criteria for evaluation (validation)

Energy

Model & method characteristics

- Model type
- Temporal extent
- Temporal resolution
- Data format for input

Impact Types

- Energy demand (heating & cooling)
- Temperature effects on thermal power
- Weather effects on renewables
- Water scarcity impacts
- Other (agriculture, infrastructure, adaptation)

Output

- Energy demand (heating & cooling)
- Energy supply
- Water scarcity
- Economics
- Other (agriculture, infrastructure, adaptation)

Further information

- Variables not directly from GCMs
  "How are these calculated (including equations)?"
- Response function of energy demand to HDD/CDD
  "Including equations where appropriate"
- Definition and calculation of variable potential and load factor
  "Are these endogenous or exogenous to the model?"
- Biomass types
  "1st generation, 2nd generation, residues…"
- Maximum potential assumption
  "Which information source is used?"
- Bioenergy supply costs
  "Include information on the functional forms and the data sources for deriving the supply curves"
- Socio-economic input
  "Are SSP storylines implemented, or just GDP and population scenarios?"