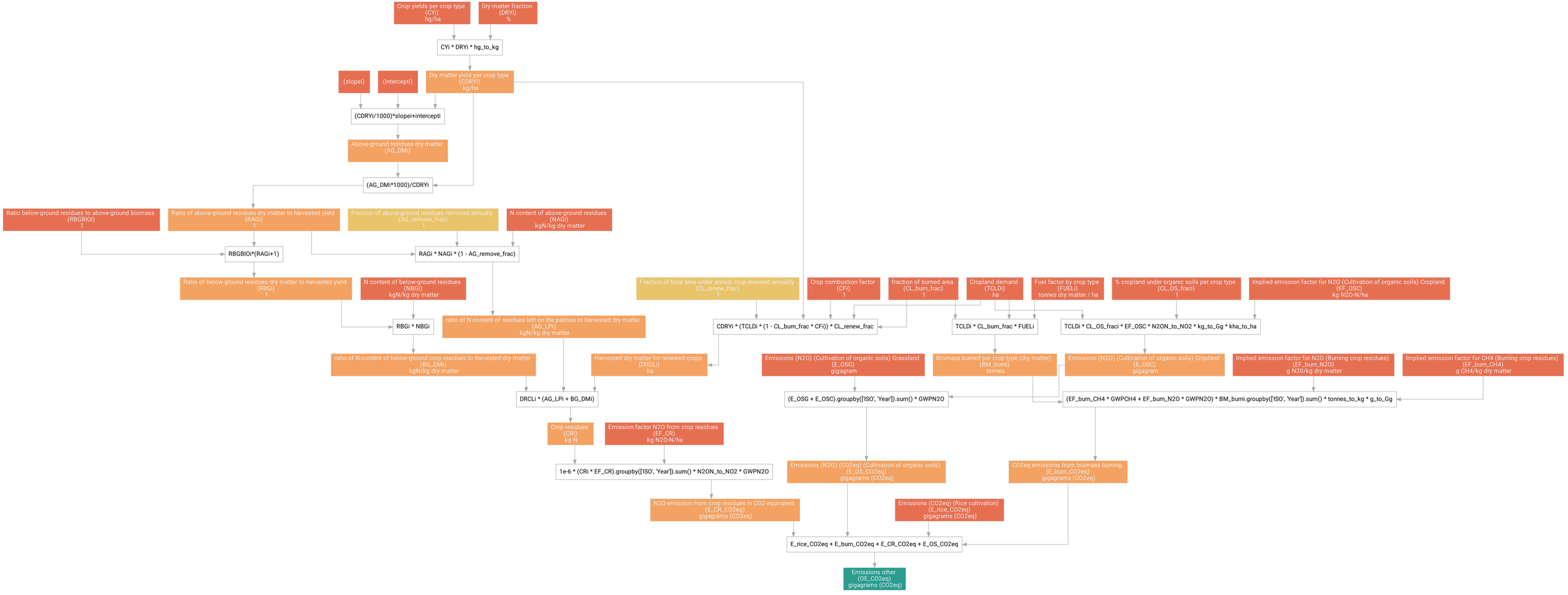
Crop yields per crop type (CYi) hg/ha
Dry matter fraction (DRYi) %
CYi * DRYi * hg_to_kg
(slopei)
(intercepti)
Dry matter yield per crop type (CDRYi) kg/ha
(CDRYi/1000)*slopei+intercepti
Above-ground residues dry matter (AG_DMi)
(AG_DMi*1000)/CDRYi
Ratio below-ground residues to above-ground biomass (RBGBIOi) 1
Ratio of above-ground residues dry matter to harvested yield (RAGi) 1
Fraction of above-ground residues removed annually (AG_remove_frac) 1
N content of above-ground residues (NAGi) kgN/kg dry matter
RBGBIOi*(RAGi+1)
RAGi * NAGi * (1 - AG_remove_frac)
Ratio of below-ground residues dry matter to harvested yield (RBGi) 1
N content of below-ground residues (NBGi) kgN/kg dry matter
Fraction of total area under annual crop renewed annually (CL_renew_frac) 1
Crop combustion factor (CFi) 1
fraction of burned area (CL_burn_frac) 1
Cropland demand (TCLDi) ha
Fuel factor by crop type (FUELi) tonnes dry matter / ha
% cropland under organic soils per crop type (CL_OS_fraci) 1
Implied emission factor for N2O (Cultivation of organic soils) Cropland (EF_OSC) kg N2O-N/ha
RBGi * NBGi
ratio of N-content of residues left on the pasture to harvested dry matter (AG_LPi) kgN/kg dry matter
CDRYi * (TCLDi * (1 - CL_burn_frac * CFi)) * CL_renew_frac
TCLDi * CL_burn_frac * FUELi
TCLDi * CL_OS_fraci * EF_OSC * N2ON_to_NO2 * kg_to_Gg * kha_to_ha
ratio of N-content of below-ground crop residues to harvested dry matter (BG_DMi) kgN/kg dry matter
Harvested dry matter for renewed crops (DRCLi) ha
Emissions (N2O) (Cultivation of organic soils) Grassland (E_OSG) gigagram
Biomass burned per crop type (dry matter) (BM_burni) tonnes
Emissions (N2O) (Cultivation of organic soils) Cropland (E_OSC) gigagram
Implied emission factor for N2O (Burning crop residues) (EF_burn_N2O) g N2O/kg dry matter
Implied emission factor for CH4 (Burning crop residues) (EF_burn_CH4) g CH4/kg dry matter
DRCLi * (AG_LPi + BG_DMi)
(E_OSG + E_OSC).groupby(['ISO', 'Year']).sum() * GWPN2O
(EF_burn_CH4 * GWPCH4 + EF_burn_N2O * GWPN2O) * BM_burni.groupby(['ISO', 'Year']).sum() * tonnes_to_kg * g_to_Gg
Crop residues (CRi) kg N
Emission factor N2O from crop residues (EF_CR) kg N2O-N/ha
1e-6 * (CRi * EF_CR).groupby(['ISO', 'Year']).sum() * N2ON_to_NO2 * GWPN2O
Emissions (N2O) (CO2eq) (Cultivation of organic soils) (E_OS_CO2eq) gigagrams (CO2eq)
CO2eq emissions from biomass burning (E_burn_CO2eq) gigagrams (CO2eq)
N2O emission from crop residues in CO2-equivalent (E_CR_CO2eq) gigagrams (CO2eq)
Emissions (CO2eq) (Rice cultivation) (E_rice_CO2eq) gigagrams (CO2eq)
E_rice_CO2eq + E_burn_CO2eq + E_CR_CO2eq + E_OS_CO2eq
Emissions other (OE_CO2eq) gigagrams (CO2eq)