International Institute for Applied Systems Analysis
IIASA www.iiasa.ac.at

science for global insight

GGIG for GLOBIOM

Baseline analysis and comparison with FAO statistics

Baseline analysis

GDX files available for your analysis

- Baseline_ggig.gdx
  - Gives you the baseline for the 37 GLOBIOM regions from the GLOBIOM development branch.
  - Colombia not separated out here, sorry!

- Bogota_FABLE_GLOBIOM_Yearly.ggig.gdx
  - Gives you the GLOBIOM data that is linearly interpolated between 2000-2030
- Parameters:
  - **output_ggig** → direct GLOBIOM output by 37 region, **output_cr_ggig** → GLOBIOM output at the 0.5 degree resolution, **output_ag_ggig** → GLOBIOM output by aggregated item and region, **output_ag_reg_ggig** → GLOBIOM output by aggregated region, **output_ag_item_ggig** → output by aggregated item
- Bogota_FABLE_FAO_ggig.gdx
  - Gives you the FAOSTAT between 1990-2016
- Parameters:
  - **output_ggig, output_ag_ggig, output_ag_reg_ggig**

Commonly used parameters for baseline analysis

Supply side

- Evolution of
  - Area (AREA)
  - Production (PROD)
  - Productivity (YILD, irrigated and rainfed)

Environment

- Evolution of
  - Land cover (LAND)
  - Emissions (EMIS)

Demand side

- Evolution of
  - Consumption (CONS, FOOD, FEED, OTHU, CALO)

Market

- Evolution of
  - Trade (EXPO,IMPO,NETT)
  - Prices (XPRP)

At the spatially explicit level within the country

At the country/region level

Output parameters and which can be compared to FAOSTAT

VAR_ID	VAR_UNIT	Can compare with FAOSTAT?
Anim	1000 TLU	
LAND	1000 Ha	X
Area	1000 Ha	X
Prod	1000 t	X
Prod	1000 t dm	
Prod	1000 m3	
Prod	PJ	
Feed	1000 t	X
Feed	1000 t dm	
food	1000 t	X
food	1000 t dm	
POPT	Mln pers	
XPRP	USD 2000 per ton	X
XPRP	USD 2000 per m3	
XPRP	USD 2000 per GJ	
YILM	fm t/ha	
YILM	dm t/ha	
OTHU	1000 t	X
OTHU	1000 t dm	
OTHU	1000 m3	
OTHU	PJ	
IMPO	1000 t	X
IMPO	1000 t dm	
IMPO	1000 m3	X
EXPO	1000 t	X
EXPO	1000 t dm	
EXPO	1000 m3	X
EMIS	Mt CO2eq/yr	X
CONS	1000 t	X
CONS	1000 t dm	
CONS	1000 m3	
CONS	PJ	
NETT	1000 t	
NETT	1000 t dm	
NETT	1000 m3	

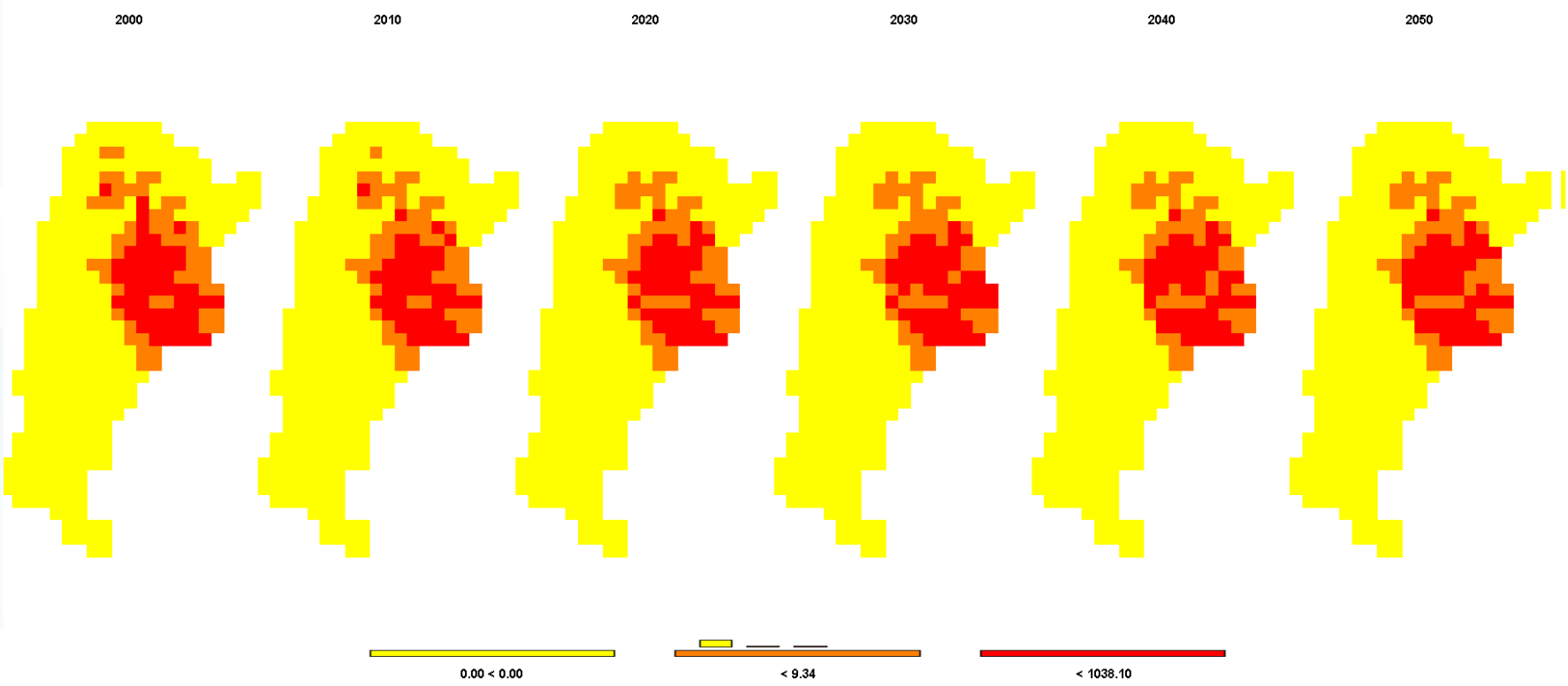
VAR_ID	VAR_UNIT	Can compare with FAOSTAT?
NTMS	Percent	
GDPT	Bn USD 2005	
XPRI	USD 2000 per ton	
XPRI	USD 2000 per m3	
XPRI	USD 2000 per GJ	
XCPI	USD 2000 per 1000 kcal	
ARRF	1000 Ha	
ARIR	1000 Ha	
HARV	1000 Ha	
LRNT	USD 2000 per ha	
YILD	fm t/ha	X
YILD	dm t/ha	
YIRF	fm t/ha	
YIRF	dm t/ha	
YIIR	fm t/ha	
YIIR	dm t/ha	
YEXO	fm t/ha	
YEXO	dm t/ha	
LYLD	kg protein/ha	
LYXO	kg protein/ha	
FEEF	kg protein/t dm feed	
FEXO	kg protein/t dm feed	
ANFD	1000 t dm	
BIOU	1000 t	
BIOU	1000 t dm	
FRTN	1000 t	
FRTN	1000 t dm	
FRTP	1000 t	
FRTP	1000 t dm	
WATR	km3	
CALO	kcal/cap/d	X
CALT	kcal/cap/d	
ECH4	Mt CO2eq/yr	
EN2O	Mt CO2eq/yr	
ENCO	Mt CO2eq/yr	

Baseline comparison

Examples for Argentina (ArgentinaReg)

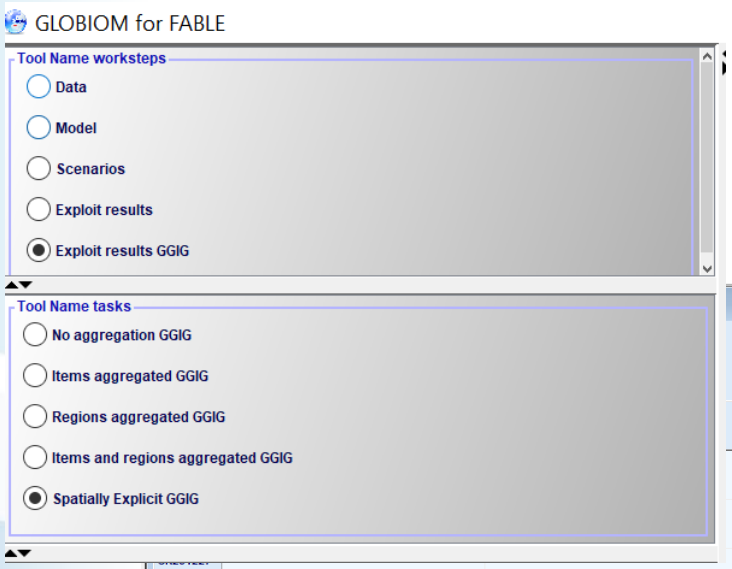
Supply side analysis
area, production and productivity spatially

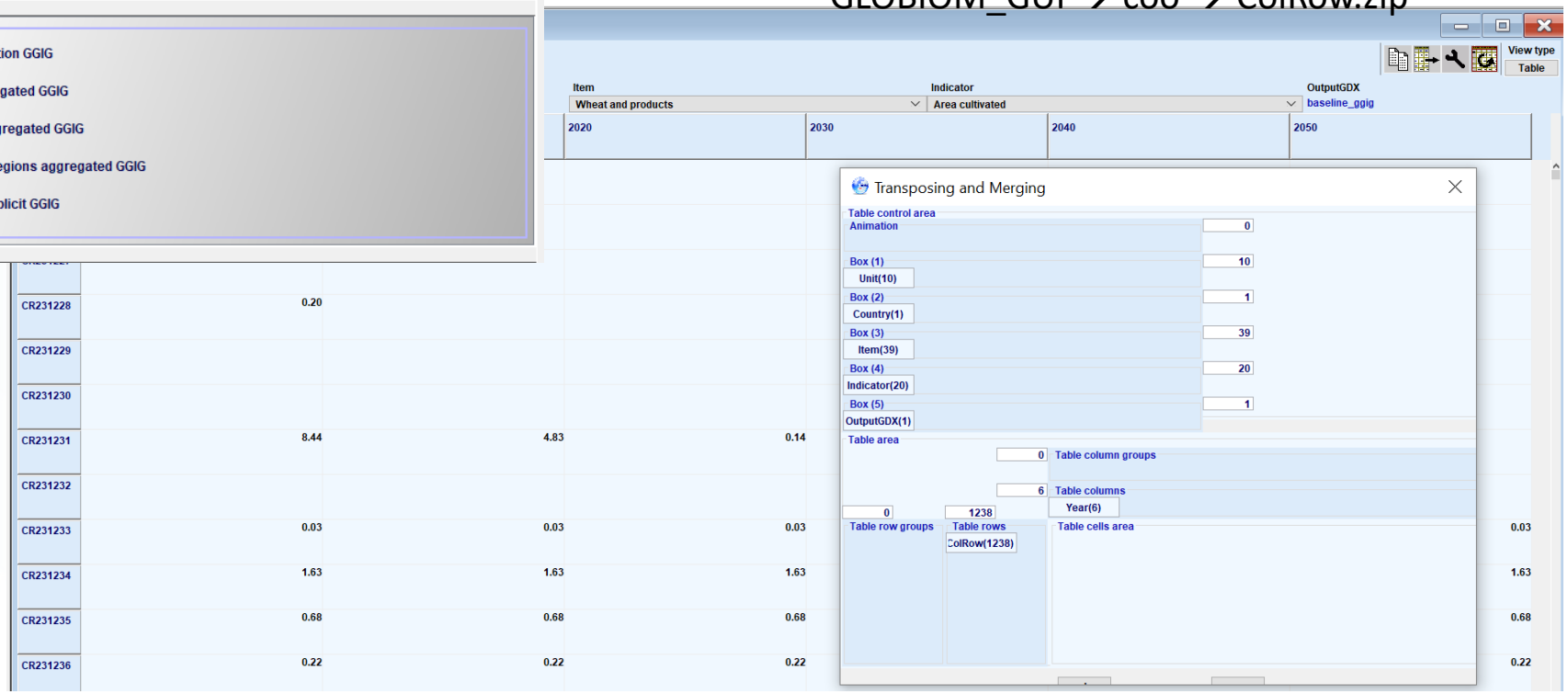
Production of wheat in 1000 t



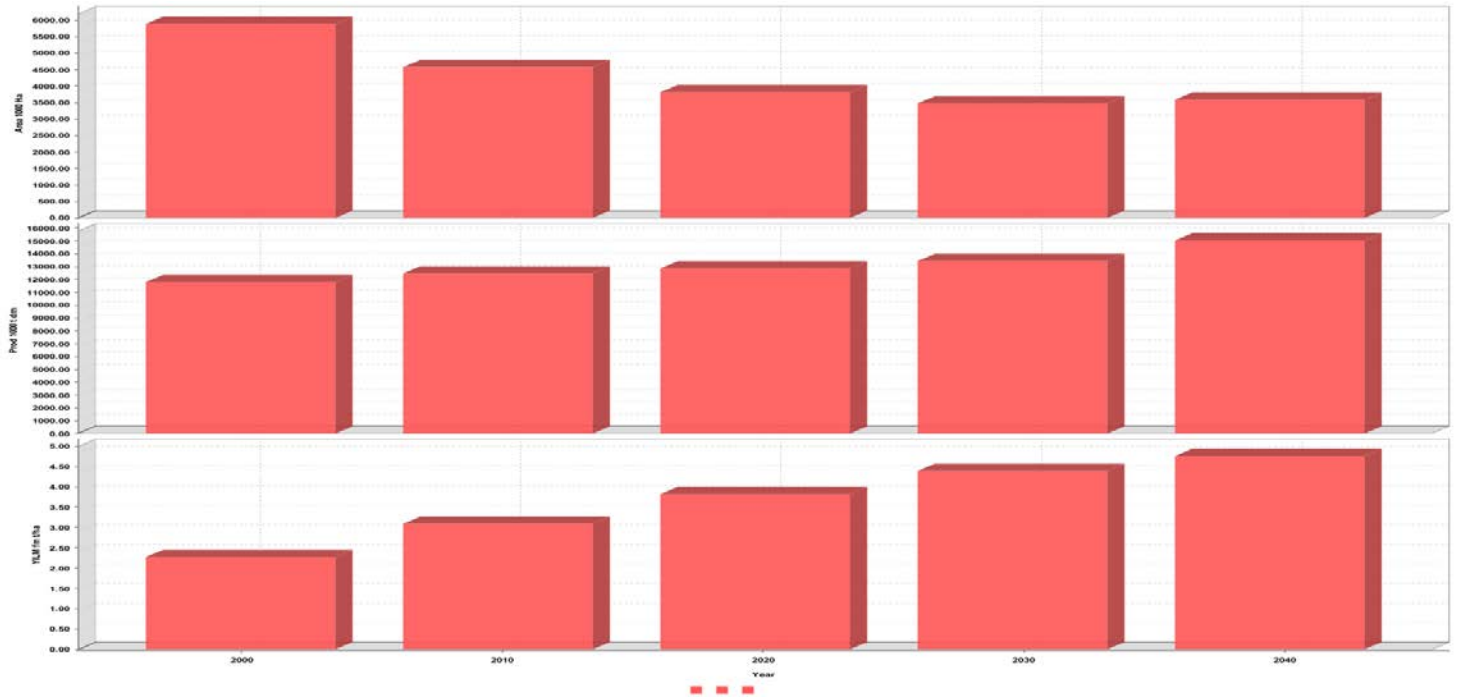
How to get there?

1. Click Exploit results GGIG in left-side panel
2. Click Spatially Explicit GGIG in left-side panel
3. Load in Baseline_ggig.gdx (standard one has ArgentinaReg) and click show results
4. Right click pivot table and organize sets: Colrow in table rows, year in table columns
5. Select item with unit you want to display
6. Select in view type map. If asked, select shapefile in: GLOBIOM_GUI → coo → ColRow.zip





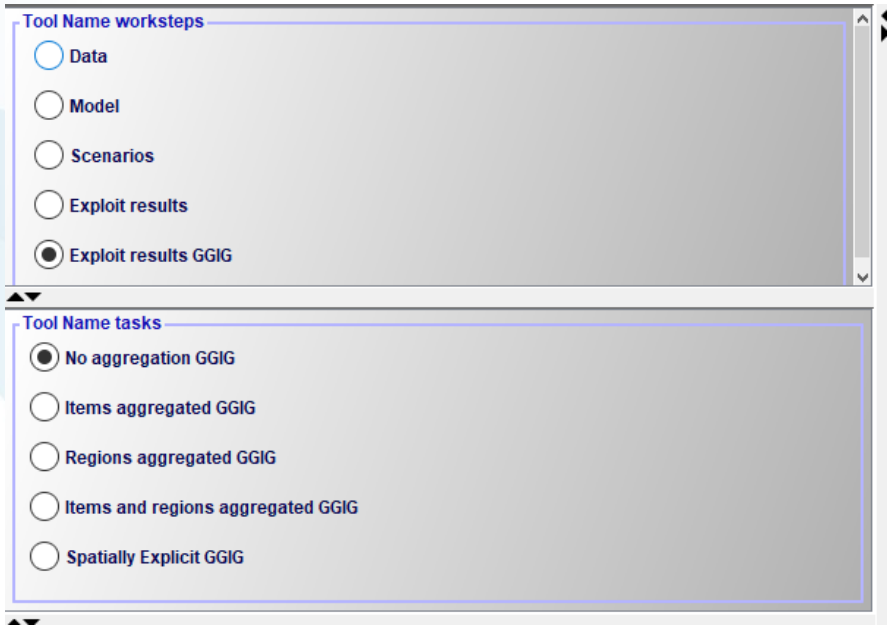
Supply side analysis
area, production and productivity nationally

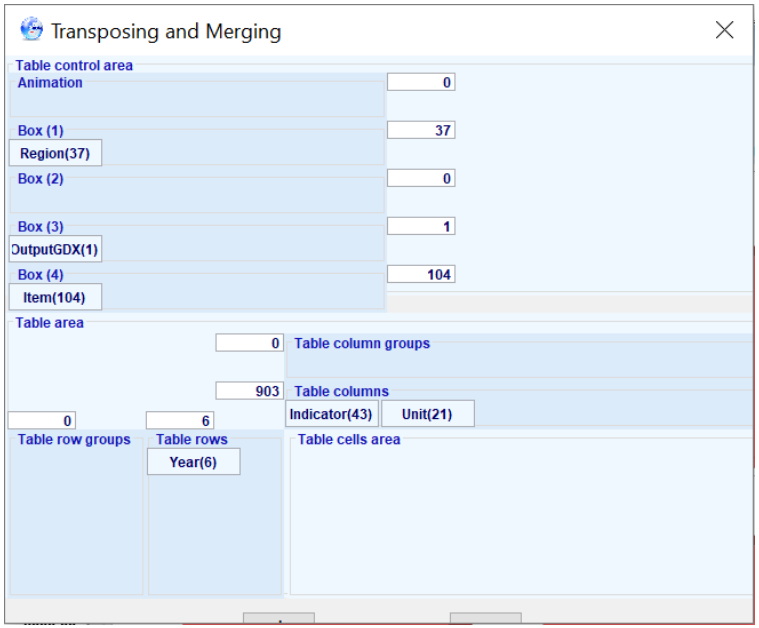


Analysis of wheat production, area and yield evolution. Area goes down, yield goes up, production remains about the same.

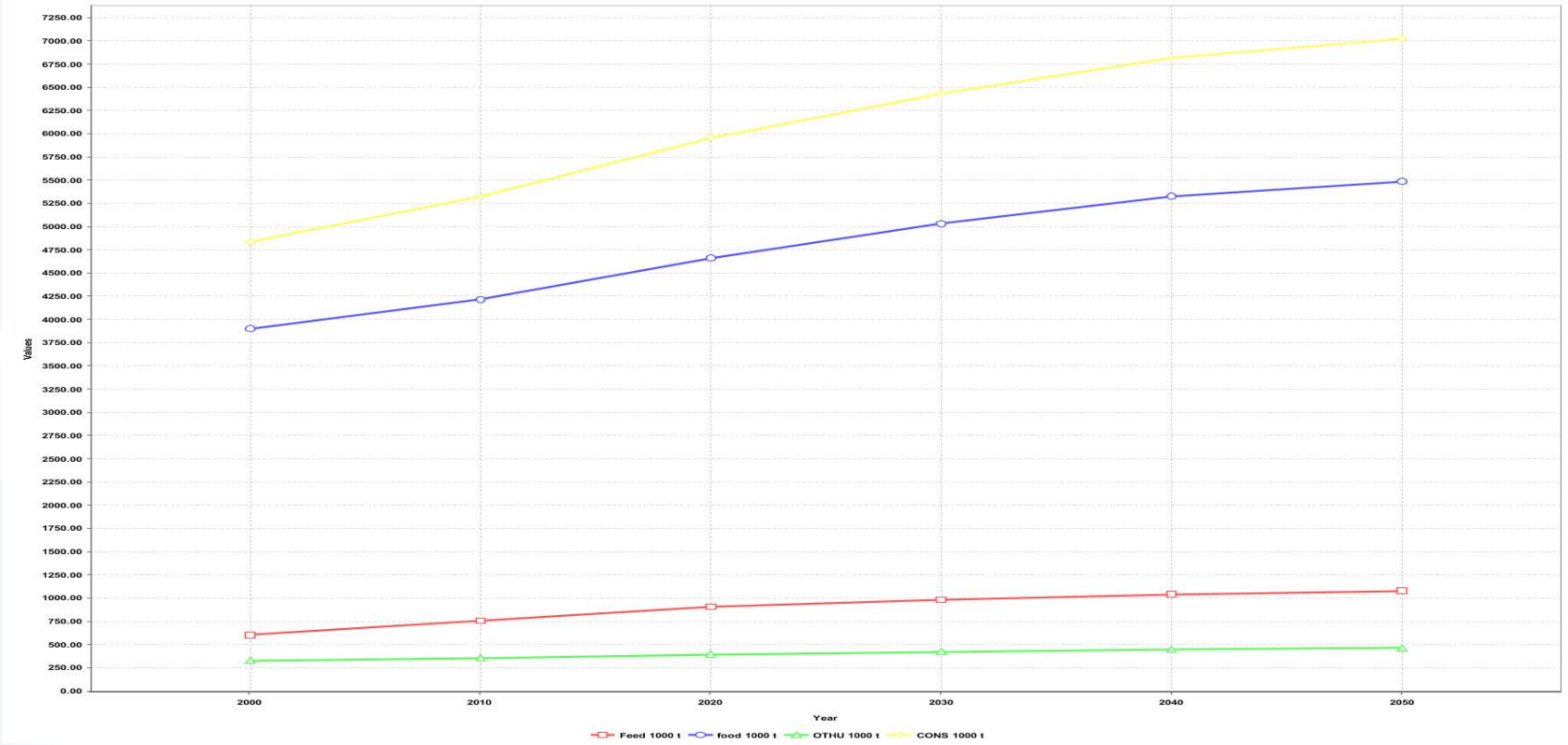
How to get there?

1. Click Exploit results GGIG in left-side panel
2. Click No aggregation GGIG in left-side panel
3. Load in Baseline_ggig.gdx and click show results
4. Right click pivot table and organize sets: Year in table rows, indicator and units in table columns
5. Right-click anywhere in graph, go to selection → columns → select items you want to show
6. Select region and item



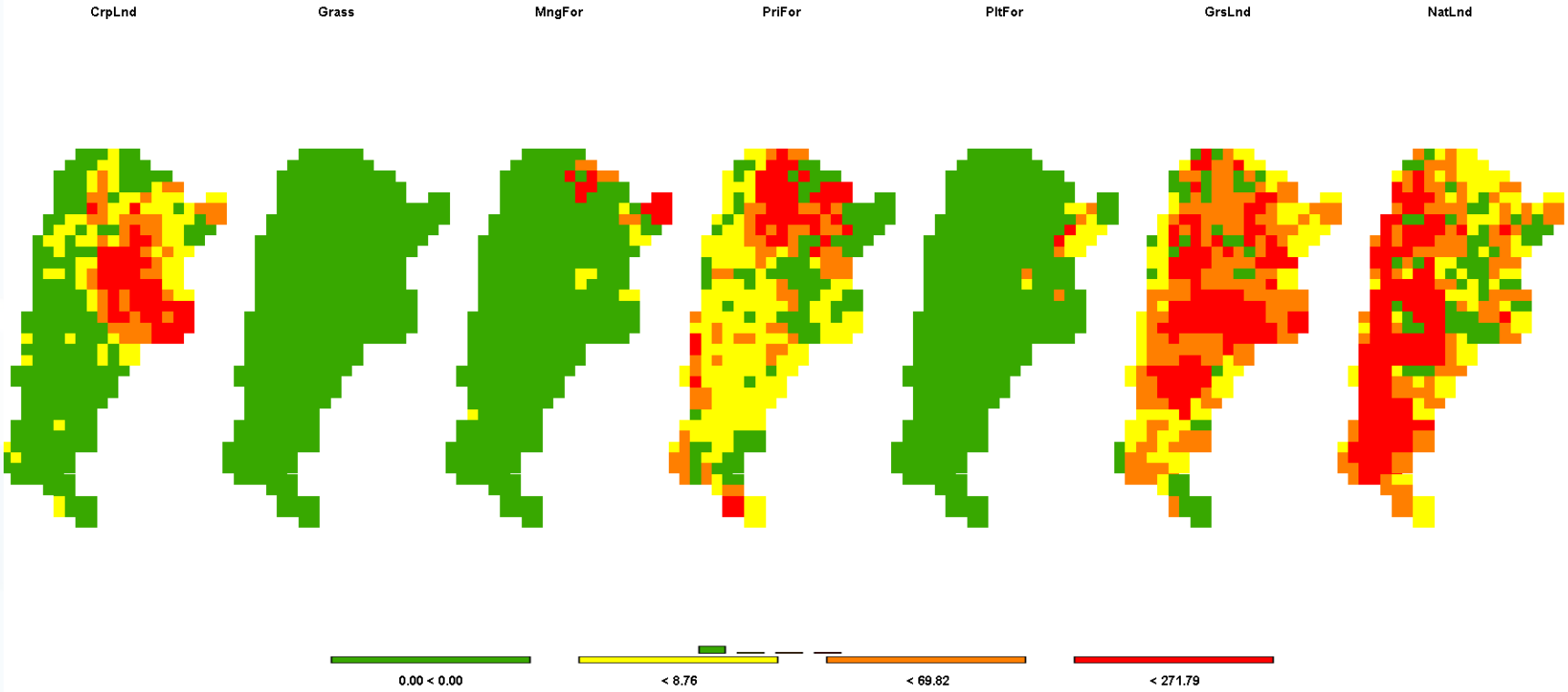


Demand side analysis
Food, feed, othu for wheat



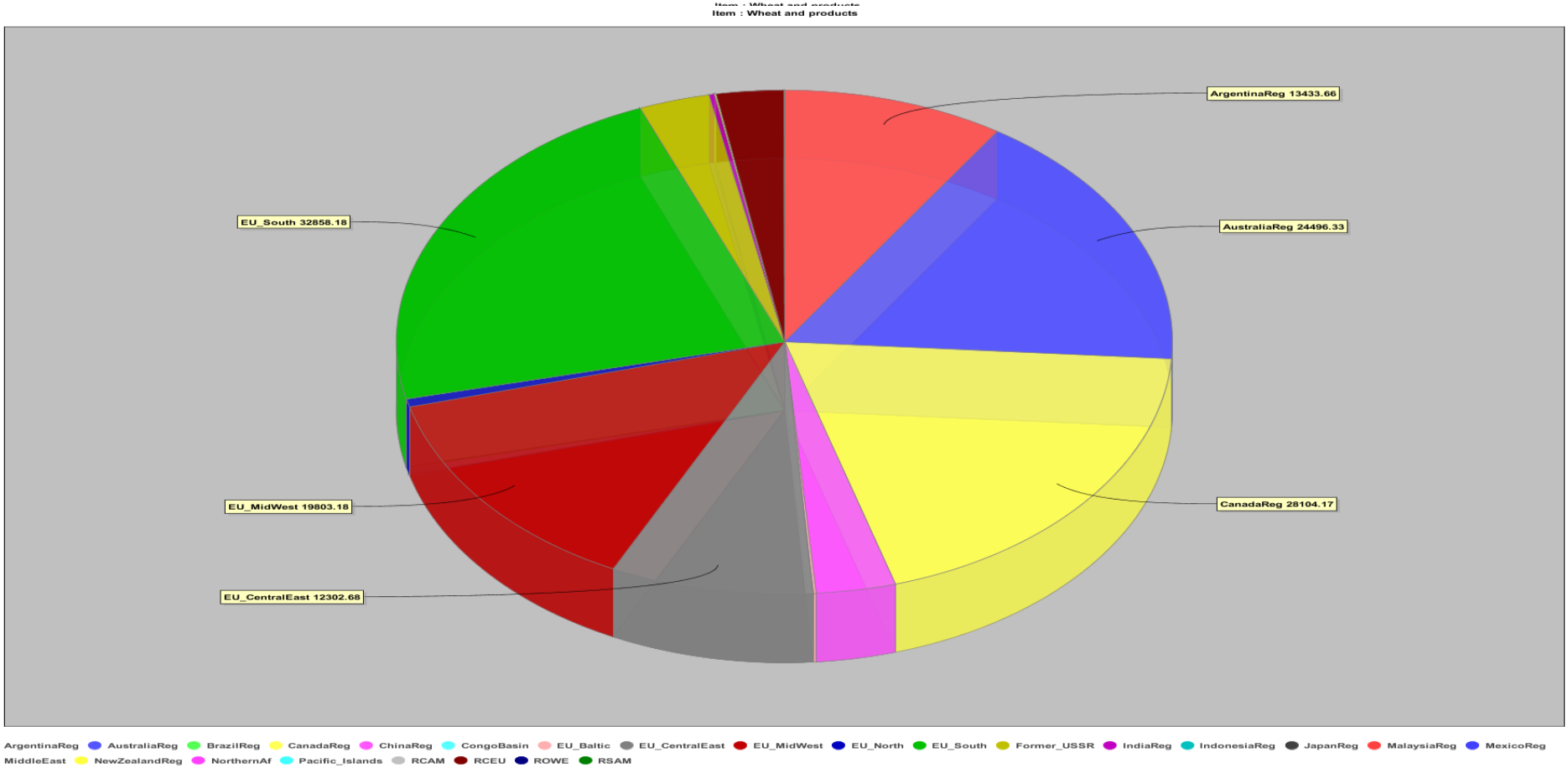
Analysis of wheat food, feed, other use and total consumption

Environment
Land cover and emissions



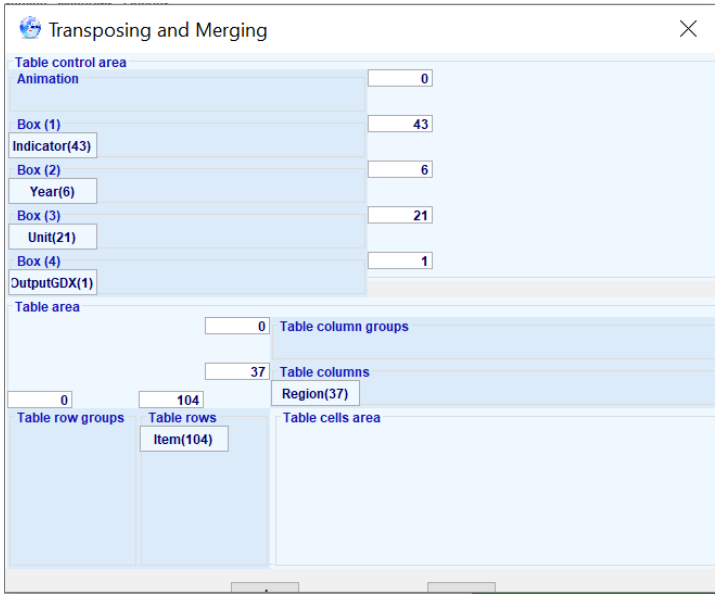
Land cover by class by year
(See slide 8 on how to get there in the GUI)

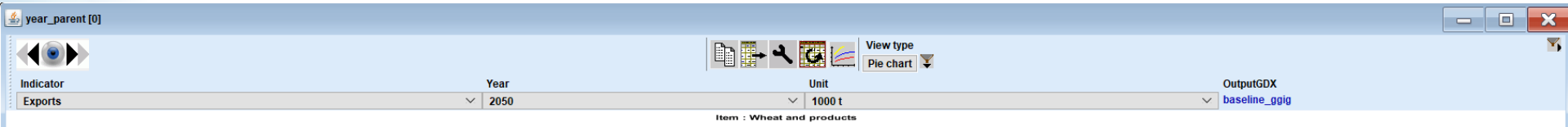
Trade
Exports of wheat by region



How to get there?

1. Click Exploit results GGIG in left-side panel
2. Click No aggregation GGIG in left-side panel
3. Load in Baseline_ggig.gdx and click show results
4. Right click pivot table and organize sets: Items in table rows, Region in table columns
5. Select Export as indicator, year for the year, 1000 t for the unit

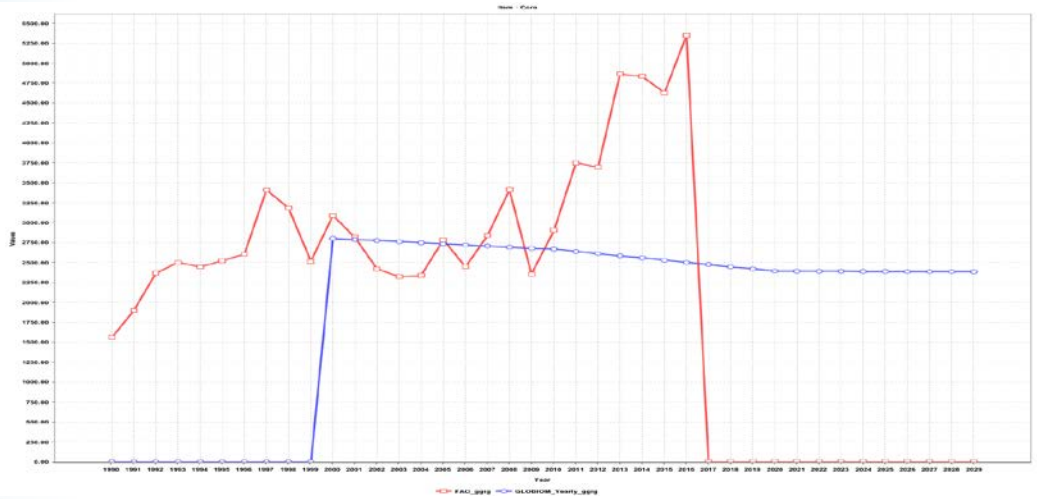




Now try yourself ☺

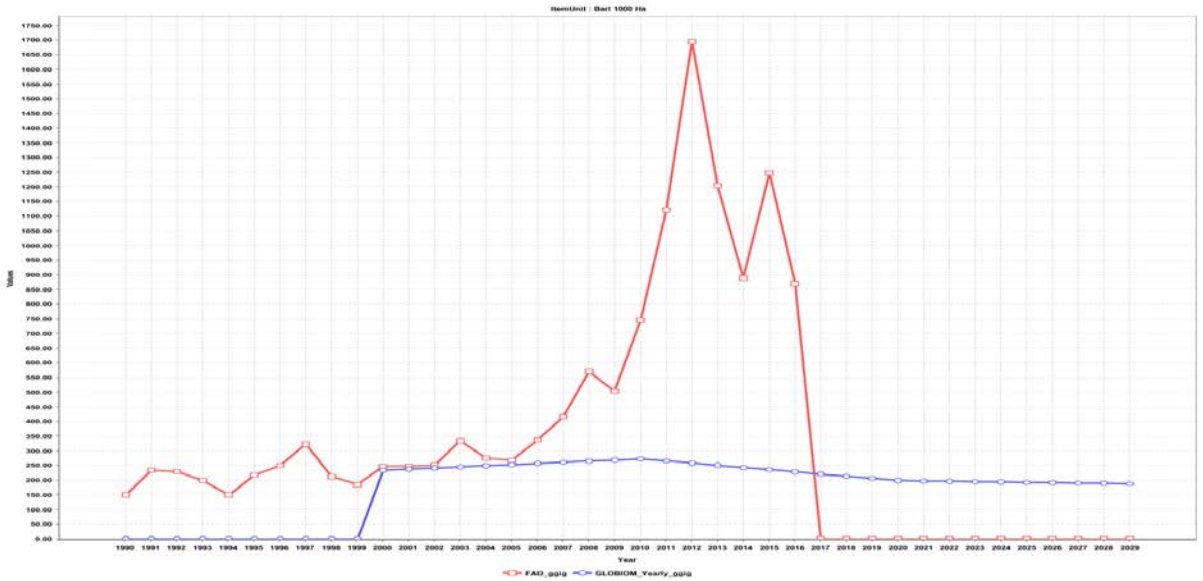
Comparison with FAOSTAT

Supply: Area change compared to FAOSTAT

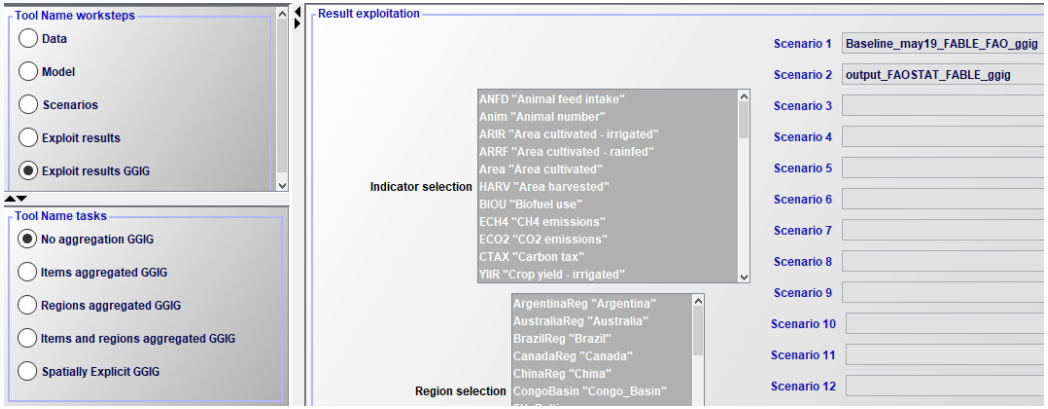


Wheat

Barley

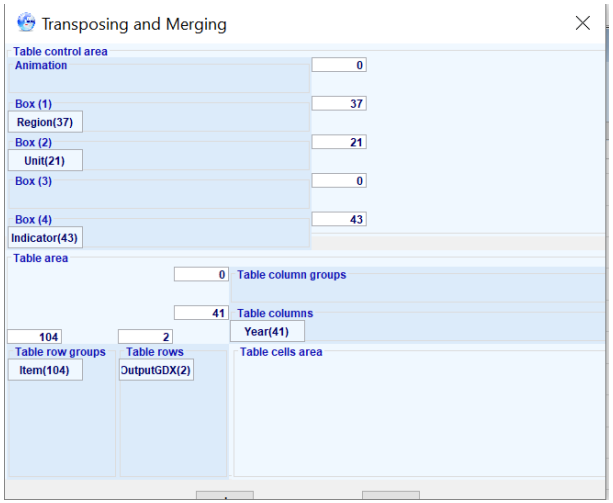


How to get there?

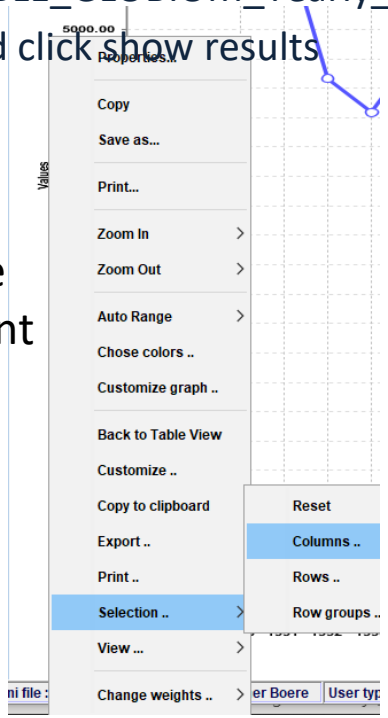


1. Click Exploit results GGIG in left-side panel
2. Click No aggregation GGIG in left-side panel
3. Load in Bogota_FABLE_FAO_ggig in scenarios1 and Bogota_FABLE_GLOBIOM_Yearly_ggig and click show results

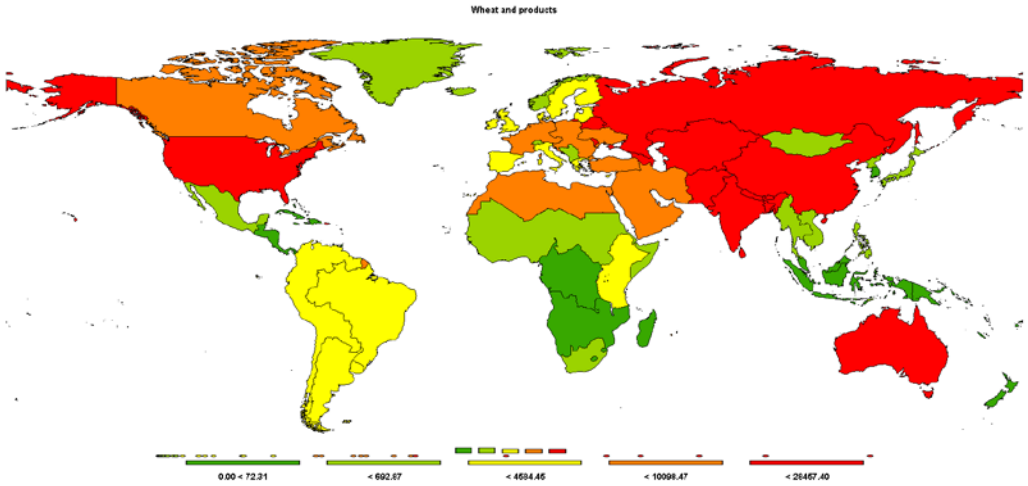
4. Right click pivot table and organize sets: Items in table row groups, outputgdx in table rows, year in table columns
5. Select your region, unit and indicator on top of the graph



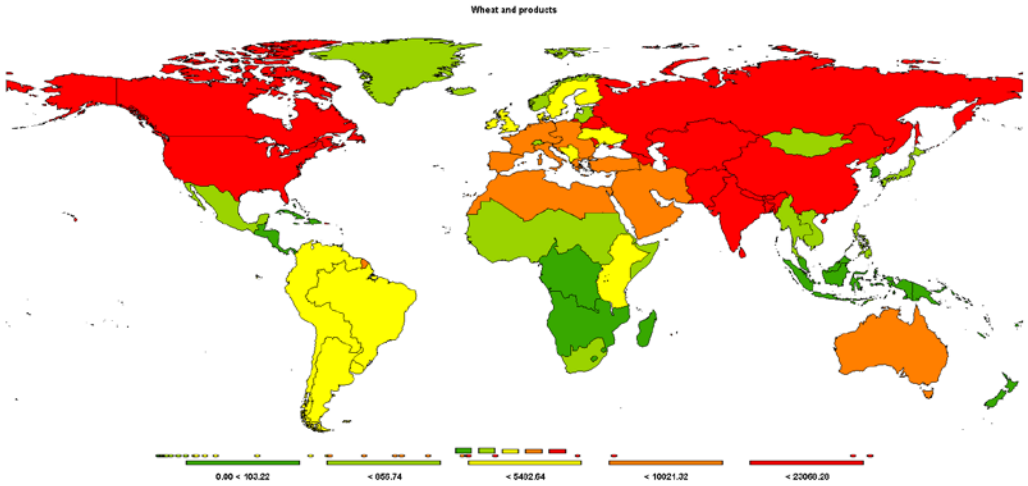
6. Select the years you want to see: selection → columns



Area cultivated for wheat in 2010



FAOstat

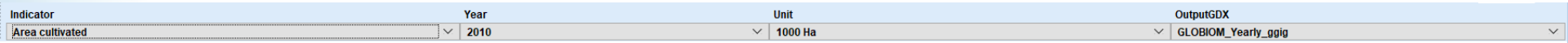


GLOBIOM

How to get there?

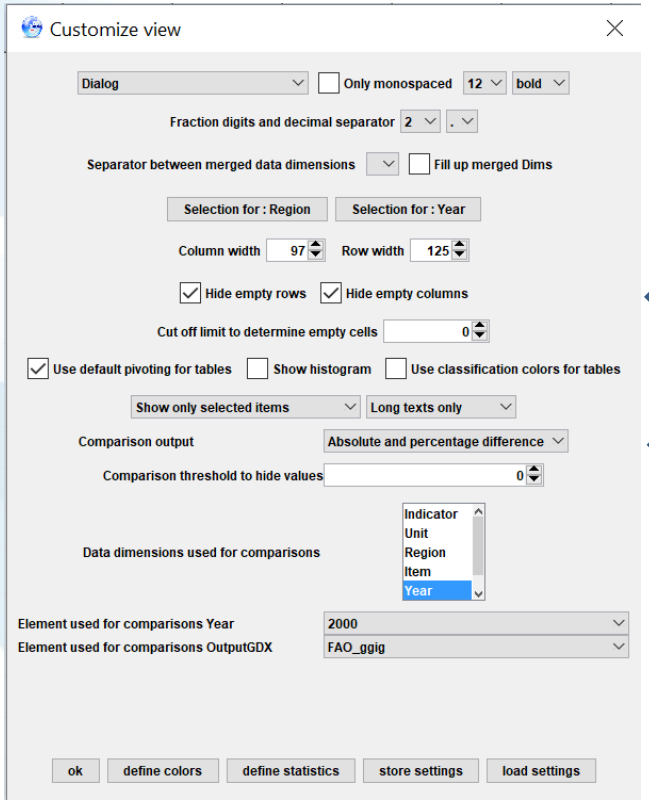
1. Click Exploit results GGIG in left-side panel
2. Click No aggregation GGIG in left-side panel
3. Load in Bogota_FABLE_FAO_ggig in scenarios1 and Bogota_FABLE_GLOBIOM_Yearly_ggig and click show results
4. Select regions in the rows, item in the columns of the table.

	Wheat and products
Argentina	4931.56
Australia	9819.66
Brazil	1846.87
Canada	10922.38
China	23060.73
Congo_Basin	6.57
EU_Baltic	609.90
EU_CentralEast	7642.28



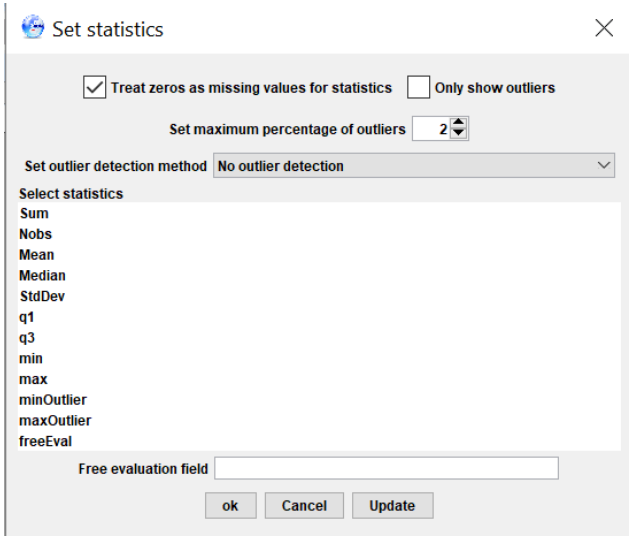
5. Select indicator, year, unit and .gdx file

Additional features that you might want to try



Hide empty rows and columns

Absolute and percentage output



Define statistics