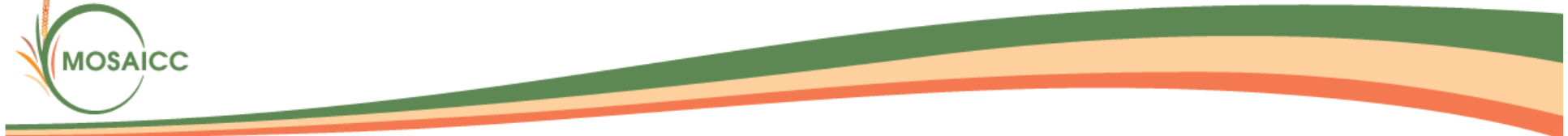




Introduction au MOSAICC-DCGE

Lecture 2

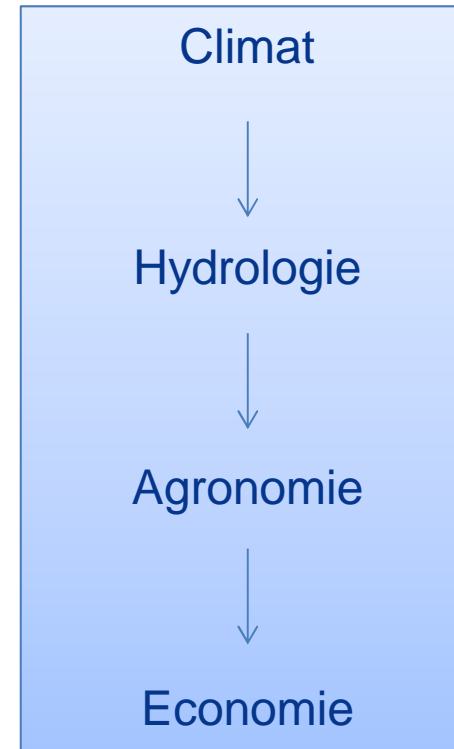
Onno Kuik



Le système FAO-MOSAICC : vue générale

- Boîte d'outil intégrée
- Support d'aide à la décision en adaptation aux changements climatiques
- Système ouvert
- Hébergé par des institutions nationales
- Sessions de formation pour développer des capacités

MODELES



Le système FAO-MOSAICC : outils

Domain	Aim	Models	Developer
Climate	Preparation of climate projection for crop and hydrological modeling	Statistical downscaling Spatial interpolation Potential evapotranspiration Planting date and growing season	Santander Met. Group, University of Cantabria (ES) AURELHY, University of Mons (BE) JRC-IES (IT)
Hydrology	Simulating water flow accumulation in river catchments	STREAM precipitation-run-off model	Water Insight (NL)
Crops	Generating crop yield projections	AgroMetShell Aquacrop	FAO-NRC FAO-NRL
Economy	Modeling the impact of changing yields on economy	CGE	IVM, VU University (NL)



Le système FAO-MOSAICC : flux de données

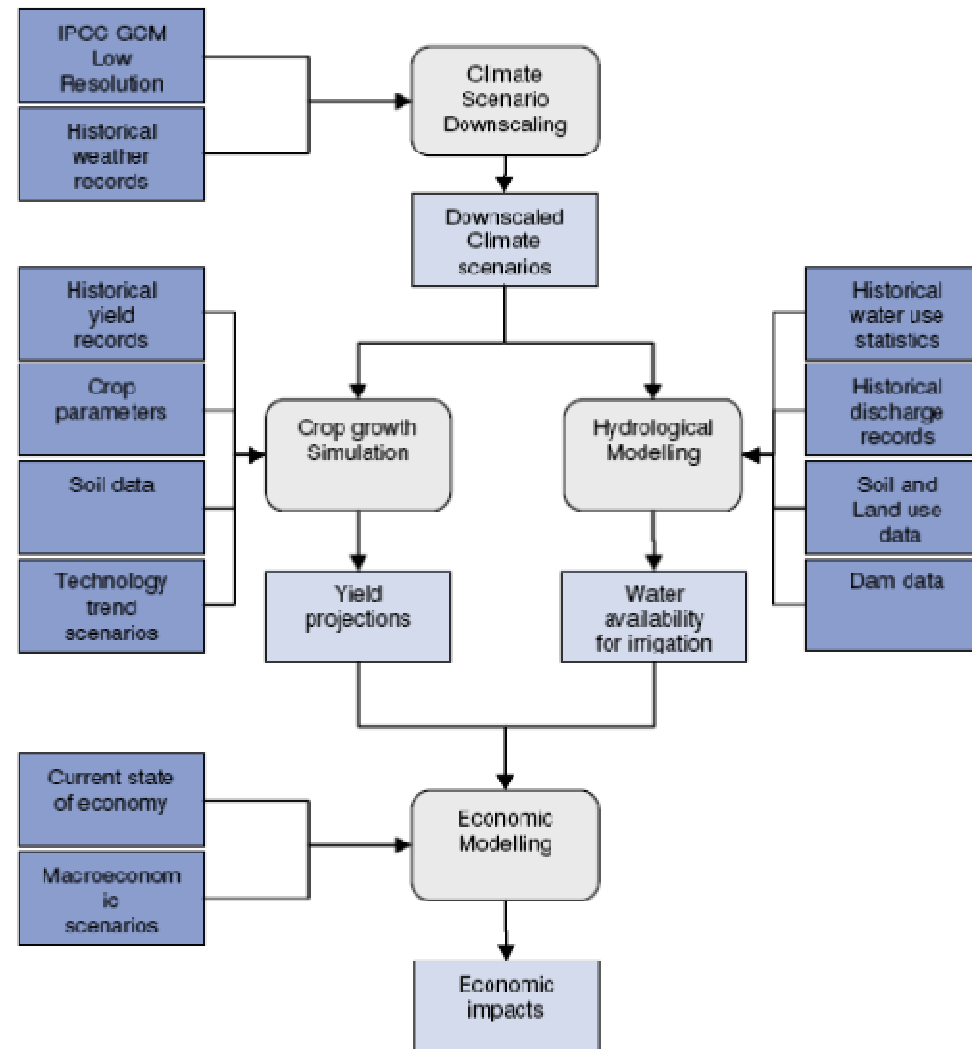
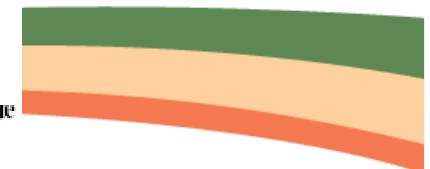
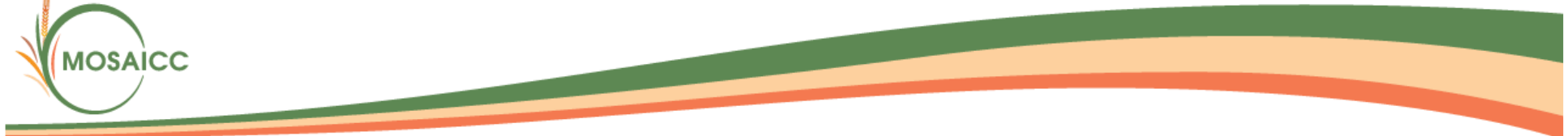


Figure 1. Overall flow of data with basic inputs in dark blue and produced data in light blue

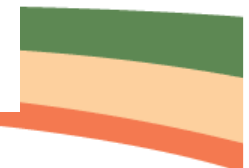
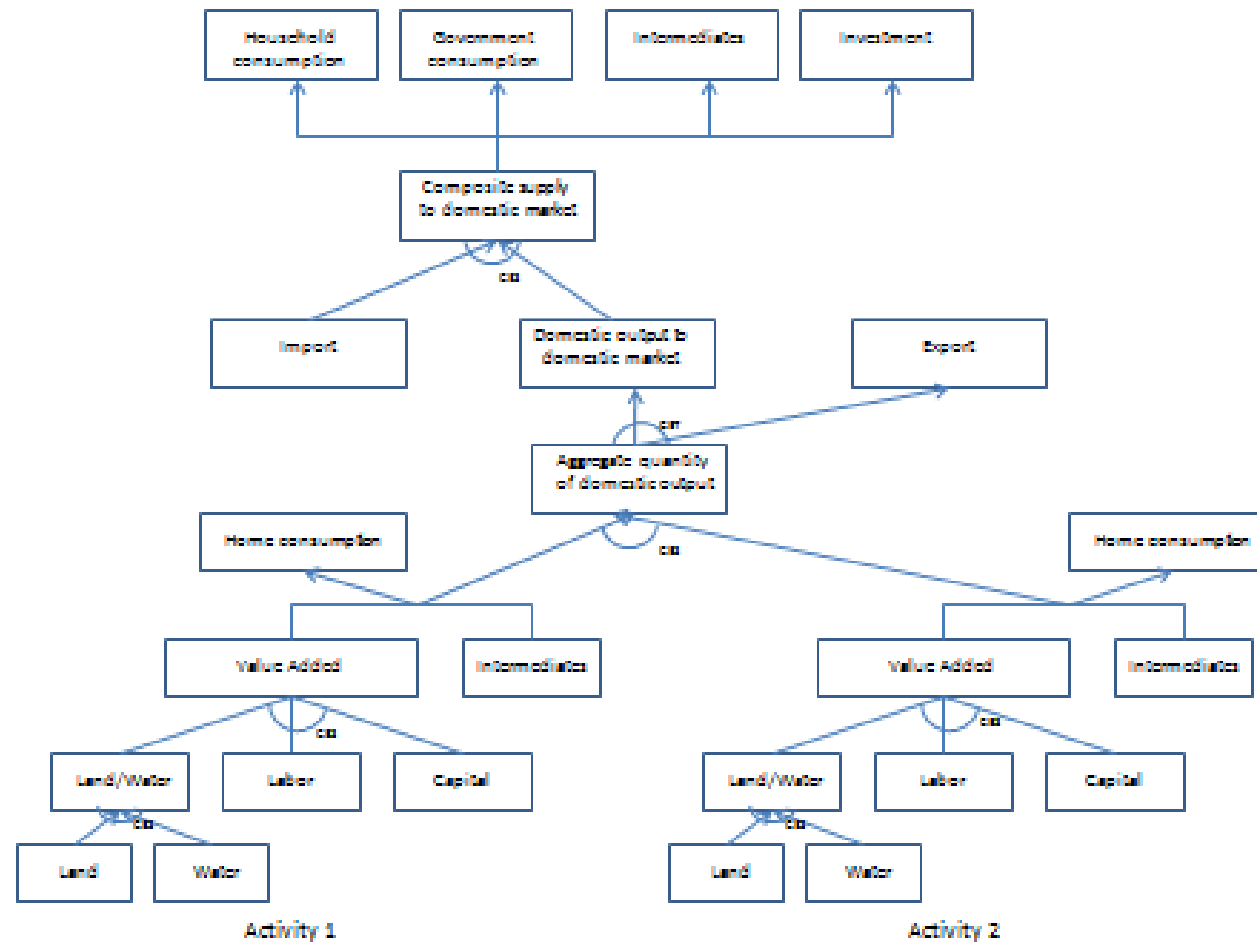


Le système FAO-MOSAICC : modèle économique

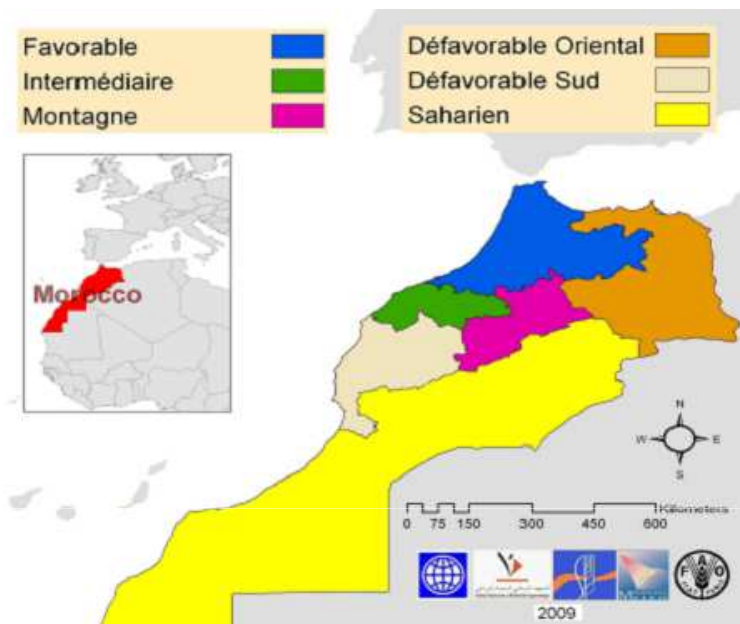
- MEGC dynamique pour un pays unique (Lofgren et al. 2002; Thurlow 2004)
- DYNARE/GNU Octave (logiciels libres et multiplateforme)
- Flexible en donnée d'entrée (secteurs, ménages, régions)
- Flexible en résolution temporelle
- Calibration semi-automatique



Le système FAO-MOSAICC : modèle économique



FAO-MOSAICC DCGE MODEL: application illustrative basée sur des données marocaines

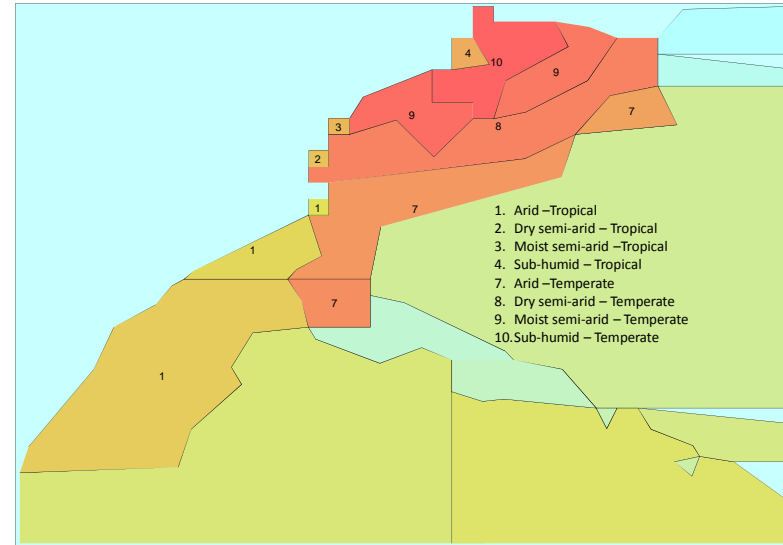
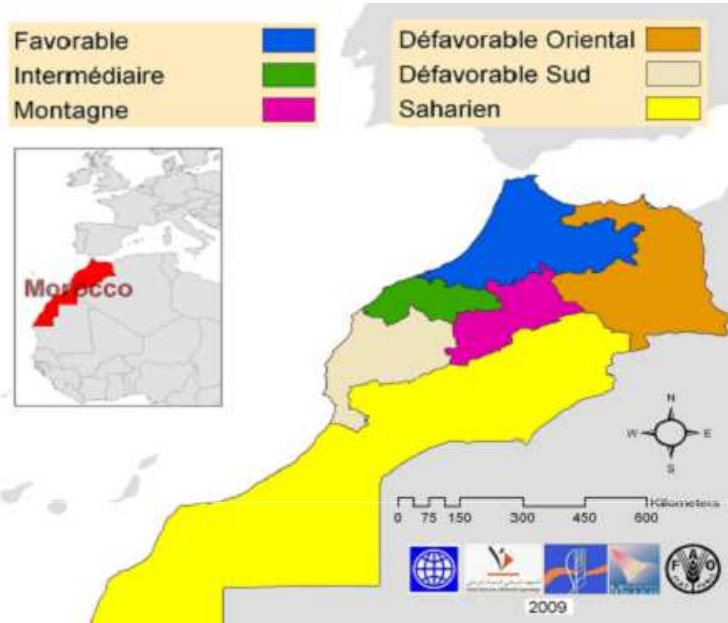


Percent change in average yield (WITHOUT tech trend; CO2 fertilization) for the year 2030 under scenario A2.

	Favorable	Inter-médiaire	Montagne	Devaf Oriental	Devaf Sud	Sahara
Barley	-1	-4	-7	-13	-5	-6
Durum Wheat	-5	-4	-8	-6	-6	-2
Soft wheat irrigated	2	1	0	-1	2	2
Soft wheat rainfed	-5	-4	-3	-7	0	-11
Olive irrigated	-10	-5	2	-999	-999	3
Olive rainfed	-7	-6	-5	12	2	-999
Tomato	4	2	3	3	3	4
Sugar beet irrigated	3	0	0	-1	0	0
Sugar beet rainfed	0	0	-16	0	0	0
Sugar cane	3	-999	2	-999	-999	-999

Source: FAO-World Bank study

FAO-MOSAICC DCGE MODEL: données GTAP-AEZ



FAO-WB

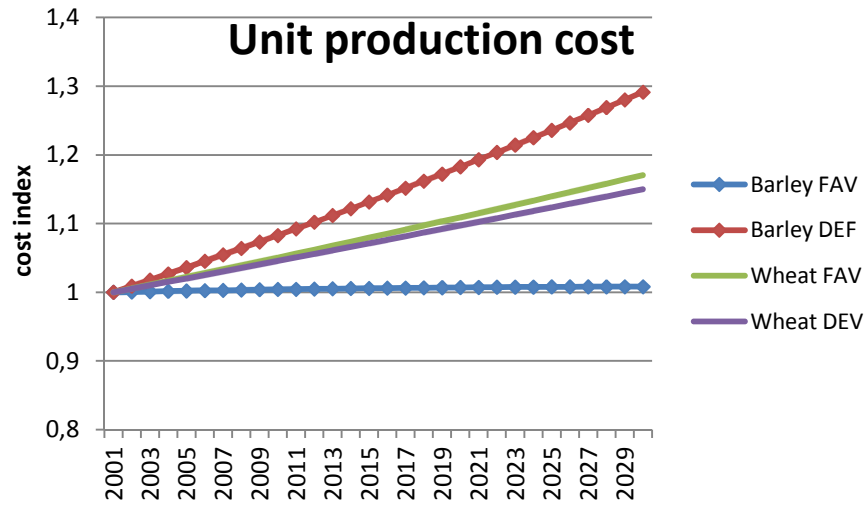
	FAV	DEF
BARLEY	-1	-6
WHEAT	-5	-4
OLIVE	-7	2
TOMATO	4	3
SUGAR	1	0

GTAP-AEZ

FAO-MOSAICC DCGE MODEL: spécifications utilisées dans les simulations

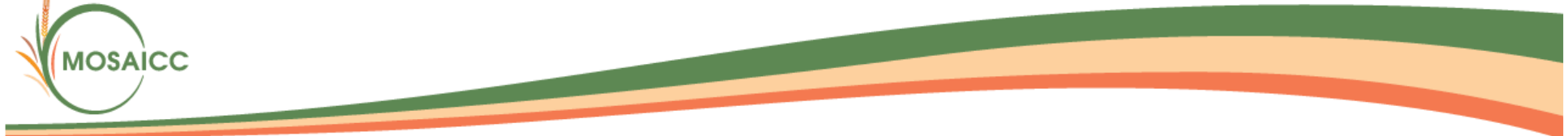
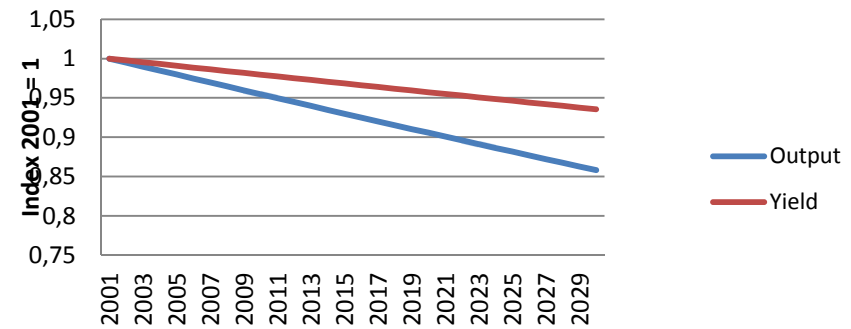
Set	No. of elements	Elements
Traded goods (import and domestic)	8	Barley, Wheat, Olives, Tomatoes, Sugar, Other Agriculture, Food, Mining & Manufactures & Services
Production activities	12	Barley_Fav, Barley_Def, Wheat_Fav, Wheat_Def, Olivies_Fav, Olives_Dev, Tomatoes_Fav, Tomatoes_Dev, Sugar, Other Agriculture, Food, Mining & Manufactures & Services
Production factors	3	Labor, Capital, Land
Institutions	3	Private Household, Government, Rest-of-World

FAO-MOSAICC DCGE MODEL: couts et sorties



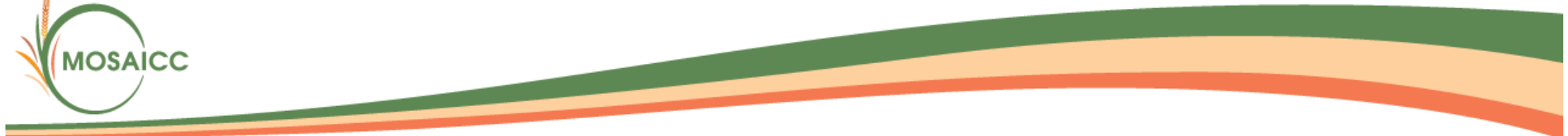
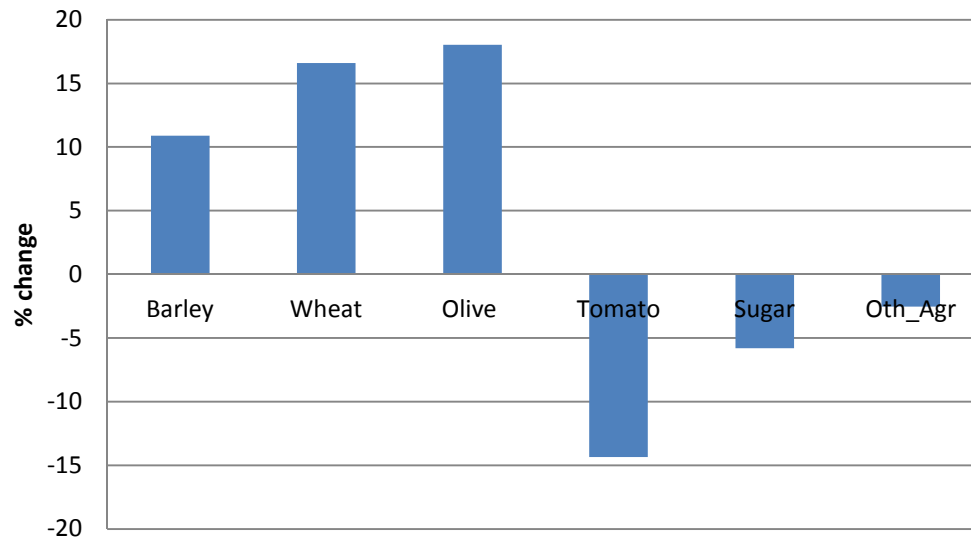
	FAV	DEF
BARLEY	-1	-6
WHEAT	-5	-4
OLIVE	-7	2
TOMATO	4	3
SUGAR	1	0

Output and yield effects barley in DEF



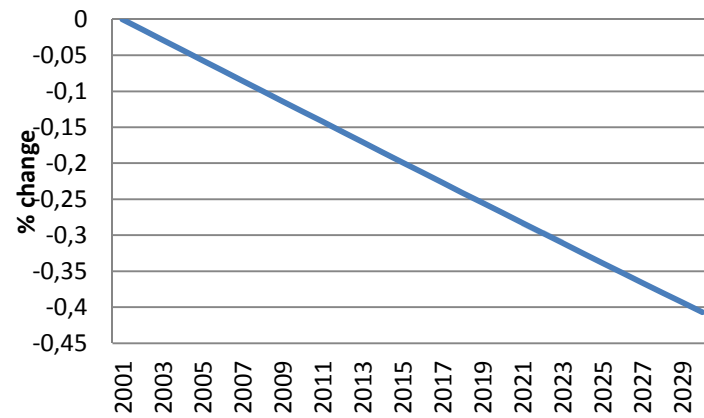
FAO-MOSAICC DCGE MODEL: coûts unitaires

Change in unit cost by 2030

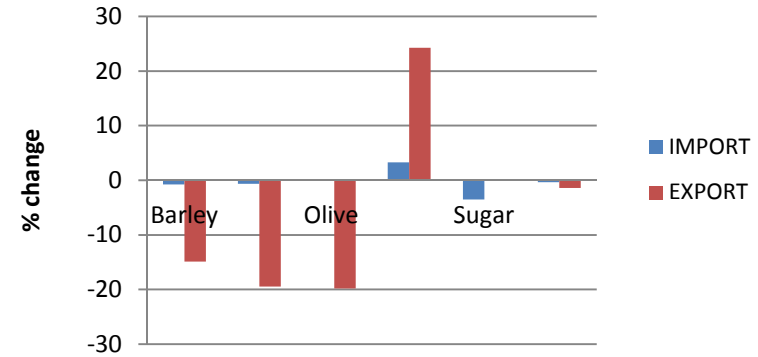


FAO-MOSAICC DCGE MODEL: indicateurs macro-economiques

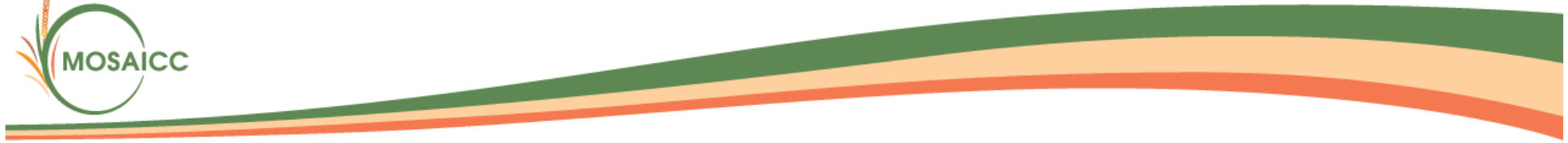
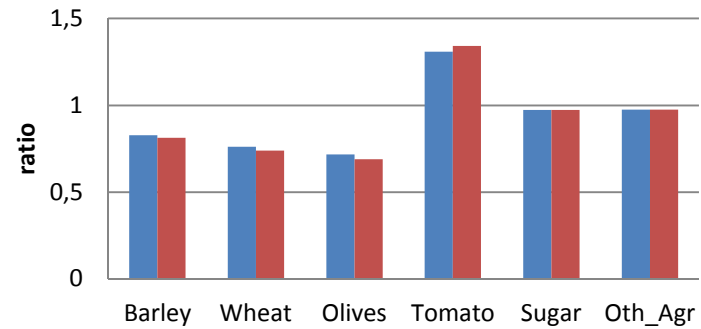
GDP (% change from BAU)



Import/Export changes



Self-sufficiency ratio



FAO-MOSAICC DCGE MODEL

- Questions?

