## Berliner Schriften zur Agrar- und Umweltökonomik

herausgegeben von Dieter Kirschke, Martin Odening, Harald von Witzke Humboldt-Universität zu Berlin

Band 9

## Kamal Elmahdi

## Regional Integration and the WTO Agreements:

Effects of the Common Market for Eastern and Southern Africa (COMESA) on Bilateral Agricultural Trade Flows and Welfare for Sudan

> Shaker Verlag Aachen 2005

## **Table of Contents**

Acl	knowl	ledgem	ents	i	
Table of Contents				iii	
List of Tables				vii	
Lis	t of F	igures		xi	
Abbreviations Summary					
					Zus
1	Introduction				
	1.1	Proble	em setting	1	
	1.2	Objec	tives of the Study	4	
	1.3	Organ	nization of the Study	5	
2	Reg	ionalis	m and the World Trade Organization (WTO)		
-	Agreements				
	2.1	Introd	ntroductory remarks		
	2.2	.2 Theory of regional economic integration			
		2.2.1	Concept of regional trade agreements	8	
		2.2.2	Welfare impact of regional economic integration	9	
		2.2.3	Old and new regionalism	13	
	2.3	2.3 The World Trade Organization			
		2.3.1	Background	14	
		2.3.2	World Trade Organization functions	16	
	2.4	2.4 Regional trade agreements and the World Trade			
		Organ	nization rules	17	
		2.4.1	Scope of regional trade agreements	18	
		2.4.2	Motivations and effects of RTAs in the context of the multilateral trading system	19	

	2.5	The Common Market for Eastern and Southern Africa				
		2.5.1	Overvie	w of regional integration in Africa	21	
			2.5.1.1	Background	2	
			2.5.1.2	Costs and risks of implementation of regional trade schemes in Africa	23	
		2.5.2	Overvier Southern	w of the Common Market for Eastern and a Africa	2:	
			2.5.2.1	Formation of the Common Market for Eastern and Southern Africa	25	
			2.5.2.2	Objectives of the Common Market for Eastern and Southern Africa	2:	
			2.5.2.3	Economic trends in the Common Market for Eastern and Southern Africa	20	
			2.5.2.4	The COMESA free trade area	30	
3	Sud	lan's A	gricultur	al Trade	33	
	3.1	Overv	riew		33	
		3.1.1	Agricult	ural export products	3′	
		3.1.2	Agricult	ural import products	40	
	3.2	3.2 Direction of Sudan's foreign trade .				
		3.2.1	Exports		4	
		3.2.2	Imports		42	
	3.3.	Foreign trade performance		42		
	3.4	Agricultural policies				
	3.5		and the Cern Africa	Common Market for Eastern and	40	
4	A Bilateral Trade Flow Model for Sudan					
	4.1	Choic	e of an ap	propriate modeling approach for Sudan	49	
	4.2	2 Overview of the trade simulation model				
	4.3	The a	lgebraic sr	pecification of the trade flow model for Sudan	50	

		4.3.1	Supply system	56	
		4.3.2	Demand system	57	
		4.3.3	Price determination	58	
			4.3.3.1 Domestic import and export prices	58	
			4.3.3.2 Domestic market-clearing prices	59	
			4.3.3.3 Price indices	59	
	4.4	Marke	et closure	60	
	4.5	Imple	elementation of trade policy instruments		
		4.5.1	Import tariffs	61	
		4.5.2	Export taxes	64	
	4.6	6 Welfare analysis			
		4.6.1	Producer surplus	66	
		4.6.2	Consumer surplus	68	
		4.6.3	Government revenues	70	
		4.6.4	Net economic welfare	70	
	4.7	4.7 Revealed comparative advantage			
	4.8	Data base and calibration of the model for the base year (1999)			
		4.8.1	Data base	72	
		4.8.2	Calibration and solving the model .	77	
5	Effects of Different Trade Liberalization Policy Scenarios on Sudan's Agricultural Markets				
	5.1	Trade	Policy scenarios	79	
		5.1.1	Free trade area scenario (S1 FTA)	79	
		5.1.2	Customs union scenario (S2 CU)	80	
		5.1.3	Nondiscriminatory trade liberalization scenario (S3 LIB)	81	
	5.2	Market simulation results			
		5.2.1	Impact on prices	82	
		5.2.2	Impact on production and consumption	84	
		5.2.3	Impact on bilateral trade flows	85	
		5.2.4	Summary of the market simulation results	88	

	5.3	Econo	omic welfare simulation results	89
		5.3.1	Impact on producer and consumer welfare	90
		5.3.2	Impact on government revenues	- 91
		5.3.3	Impact on net economic welfare	91
		5.3.4	Summary of the economic welfare simulation results	91
	5.4	Impac	et on the revealed comparative advantage	92
	5.5	Sensitivity analysis		
		5.5.1	Constant elasticity of transformation (CET) parameter (S1 FTA)	93
		5.5.2	Constant elasticity of substitution (CES) parameter (S1 FTA)	95
		5.5.3	Supply price elasticity parameter (S1 FTA)	97
		5.5.4	Demand price elasticity parameter (S1 FTA)	98
		5.5.5	Summary of the sensitivity analysis	100
6	Cor	Conclusions		101
Bib	liogr	aphy		107
<b>Ap</b> ]	pendi	ices		113
	App	endix 1	1: Data base under the baseline scenario (1999)	113
	App	endix 2	2: Simulation results	118