

# Joint EEE-CEEPA First Training of Trainers Workshop

5-16 December 2005

ICTP, Trieste, Italy

**Miramare-Trieste**

## Aims and scope of the course

Computable general equilibrium (or CGE) models are multi-sector numerical models based on concepts usually associated with Walrasian general equilibrium theory. They are designed for quantitative analyses of resource allocation problem and related policy issues in a national, multi-national or global economy. Major fields of application include international trade regimes, major tax reforms, and the economic impact of technological change. In addition CGE models have been fruitfully used for analyses of environmental and natural resource problems and policies. The common feature of the CGE model applications is that the impact of expected changes in exogenous conditions in one sector of the economy has repercussions in other sectors of the economy, including changes in relative prices.

This teaching workshop provides an introduction to computable general equilibrium (CGE) models for the analysis of environmental and resource policies. It has grown out of the recognition of the growing importance of economywide modelling techniques in research, academic and policy circles in Africa. The course will develop step-by-step environmental CGE models that can be used in the scientific and policy debate for the economic assessment of such policy initiatives. The course will have many "hands-on" exercises in CGE modelling. By the end of the course, each participant should be able to design, implement, solve and interpret the results of small static CGE models. Participants will also present a brief project using the modelling tools learnt during the course.

The workshop is intended for people in the scientific and business community (universities, research centers, consulting companies) as well as people in administration (ministries) that are drawn from eastern, central and southern Africa.

## Course directors and teaching staff

The course directors are Professor Rashid Hassan, University of Pretoria and Dr Ramos Mabugu, University of Pretoria. The teaching staff consists of Dr Rob Dellink, Wageningen University, The Netherlands, Dr Margaret Chitiga, University of Pretoria, Professor Karl-Göran Mäler, The Beijer Institute at the Royal Academy of Sciences in Stockholm and Professor Sir Partha Dasgupta, Cambridge University, United Kingdom

## TENTATIVE PROGRAMME

### *Monday December 5*

Time	Topic	Teacher/Instructor	Type
8.30-10.30*	Registration, administration formalities		
930-1030	Welcome address	Hassan, Maler, Dasgupta and ICTP staff	
10.30-10.45*	Coffee break		
1045-1100	Introduction to the course	R. Mabugu	
1100 -1245	Introduction to IO and SAM Tables and Analysis	R. Hassan	Lecture/Practical
1245-1400	Lunch		
1400-1600	Introduction to GAMS	R. Mabugu, M. Chitiga	Lecture/Practical
16.00-16.15*	Coffee break		
1615-1815	GAMS Exercises	M. Chitiga	Practical

### *Tuesday December 6*

Time	Topic	Teacher/Instructor	Type
08.30-10.30*	General equilibrium analysis	K.-G. Mäler	Lecture
10.30-10.45*	Coffee Break		
10.45-12.45*	Social Capital	P. Dasgupta	Lecture
12.45-14.00*	Lunch		
14.00-16.00*	Capital Theory and Resources	P. Dasgupta	Lecture
16-00-16.15*	Coffee break		
16.15-18.15	Accounting Matrices and Data for the Course, GAMS (cont.d)	R. Dellink M. Chitiga	Lecture/Practical

### *Wednesday December 7*

Time	Topic	Teacher/Instructor	Type
08.30-10.30	A simple CGE model	R. Dellink	Lecture
10.30-10.45*	Coffee break		
10.45-12.45	Implementation of simple model in GAMS	R. Dellink M. Chitiga	Practical
12.45-14.00*	Lunch		
14.00-16.00*	Valuation of Coastal Habitats Sustaining Place Fisheries	S. Lerda	Lecture
16.00-16.15*	Coffee break		
16.15-18.15	CGE Model with	R. Dellink	Lecture

	environmental features		
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### **Thursday December 8**

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
08.30-10.30	Implementation of environmental CGE in GAMS	R. Dellink M. Chitiga	Practical
10.30-10.45*	Coffee break		
10.45-12.45	Specifying an open economy model	R. Dellink	Lecture
12.45-14.00*	Lunch		
14.00-16.00	Implementation of open economy model in GAMS	M. Chitiga R. Dellink	Practical
16.00-16.15*	Coffee break		
16.15-18.15	Specifying an energy-economy model	R. Dellink	Lecture

### **Friday December 9**

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
08.30-10.30	Implementation of energy economy model in GAMS	M. Chitiga R. Dellink	Practical
10.30-10.45*	Coffee break		
10.45-12.45	Project work: Model specification	R. Dellink M. Chitiga	Project
12.45-14.00*	Lunch		
14.00-16.00	Project work: GAMS code	R. Dellink, M. Chitiga	Project
16.00-16.15*	Coffee break		
16.15-18.15	Project work: GAMS code	R. Dellink	Project

### **Saturday December 10**

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
Afternoon	Independent Project Work		Project

## ***Monday December 12***

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
08.30-10.30	Integrated Assessment Models	R. Dellink	Lecture
10.30-10.45*	Coffee break		
10.45-12.45	Specifying an Integrated Assessment model in GAMS	R. Dellink, M. Chitiga	Practical
12.45-14.00*	Lunch		
14.00-16.00	Project meetings and supervision	R. Dellink, Mabugu, Hassan	Project
16.00-16.15*	Coffee break		
16.15-18.15	Project meetings and supervision	R. Dellink, Hassan, Mabugu	Project

## ***Tuesday December 13***

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
08.30-10.30	Technological change and other recent issues in CGE modelling	R. Dellink, Hassan, Mabugu, K.-G. Maler?	Discussion
10.30-10.45*	Coffee break		
10.45-12.15	Project meetings and supervision	R. Dellink	Project
12.15-13.30*	Lunch		
Afternoon	Independent project work		Project

## ***Wednesday December 14***

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
08.30-10.30	Introduction to modelling poverty in CGE models	M. Chitiga	Lecture/Practical
10.30-10.45*	Coffee break		
10.45-12.45	Independent project work		Project
12.45-14.00*	Lunch		
14.00-16.00	Independent project work		Project
16.00-16.15*	Coffee break		
16.15-18.15	Independent project work		Project

### **Thursday December 15**

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
Morning	Preparation of reports	R. Mabugu, R. Hassan	Project
Afternoon	Independent project work		Project

### **Friday December 16**

<b>Time</b>	<b>Topic</b>	<b>Teacher/Instructor</b>	<b>Type</b>
All day	Presentation of reports (ppt)	R. Mabugu-R. Hassan M. Chitiga,	Presentations

\* *Joint MENANEE-CEEPA sessions*