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Overview of capacity development activities: objectives and modelling framework

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Inception and first training workshop on "Strengthening Macro-Micro Modelling Capacities to Assess Development Support Measures and Strategies in Uganda", Entebbe, 18 October, 2011.

Outline presentation

1. UN-DESA capacity development (CD) activities
2. Integrated modelling framework
3. Past and on-going CD activities in Uganda
4. Why new CD activities in Uganda?
5. Project implementation
6. This workshop

UN-DESA's capacity development (CD) activities

- Focus on training and advising policy-makers in developing countries to enhance their analytical capacities in:
    - designing coherent macroeconomic, social and environmental policies and strategies;
    - enabling LDCs make the most adequate use of benefits derived from the LDC category;
    - reducing vulnerability to volatility in the global economy.
- Training in the use of analytical and training tools, fundamentally for modelling, tailored to country needs.
- http://www.un.org/en/development/desa/policy/capacity/index.shtml

CD activities on MDG-financing strategies

- Most widely implemented so far
- MDGs: Millennium Development Goals, agreed upon in the 2000 Millennium Declaration of the UN
  - MDG 1: Eradicate extreme poverty
  - MDG 2: Achieve universal primary education
  - MDG 3: Promote gender equality and empower women
  - MDG 4: Reduce child mortality
  - MDG 5: Improve maternal health
  - MDG 6: Combat HIV/AIDS, malaria and other diseases
  - MDG 7: Ensure environmental sustainability
  - MDG 8: Development of a global partnership for development

Key questions addressed

- What does it take to achieve the MDGs?
    - What are MDG determinants?
    - How would MDG achievement influence other aspects of economic and social development?
- Do we know how much it will cost and can we afford achieving the goals on time?
- What policy options do we have in financing the MDG strategy? What are the trade offs when:
    - scaling up aid or borrowing abroad?
    - enhancing domestic resource mobilization?
    - reallocate government spending across sectors?

What methodology?

- Public spending policies targeting the MDGs and their financing mechanisms have strong effects throughout the economy.

- These feed back on the MDG indicators through markets for labour, goods, services, and foreign exchange.

- Therefore, an economy-wide framework to assess MDG strategies is necessary, as a complement to sectoral studies (education, health, etc.).
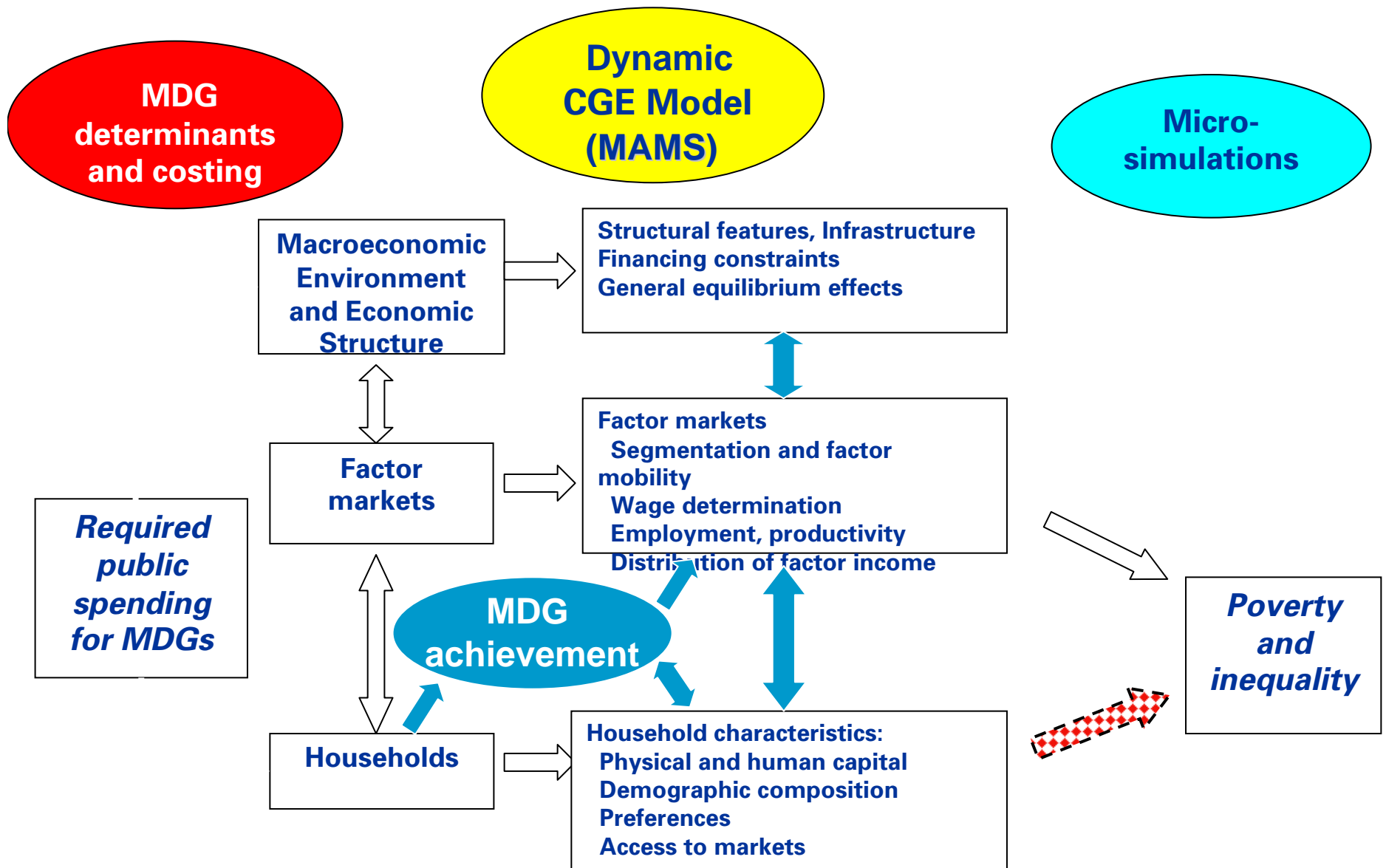
Some alternative approaches

- Elasticities approaches – RPC-Brasilia and others
  - Too aggregate, constant elasticities, past trends need not be predictor of future
- UN Millennium Project: Needs Assessments
  - Partial analysis, some costing estimates seem unrealistic, linear projections
- Integrated macro framework (RCC-Colombo): MDG costing plus macro model
  - Useful macro framework but no real feedback mechanisms, no supply constraints, fixed prices, no dynamic effects

UN-DESA's integrated framework

- **MAMS:** *Maquette* for **MDG** **S**imulations.
  - Economy-wide (dynamic-recursive CGE) model to analyze MDG financing strategies in different countries.
  - Dynamic MDG module, with MDG determinants
- **Sector analysis of MDG determinants and of interventions** needed to achieve MDGs in education, health, water and sanitation
  - Microeconomic analysis of determinants of access to schooling, child and maternal mortality, etc.
  - Cost-effectiveness analysis
- **Microsimulation approach**
  - Translate labour market outcomes of CGE simulations into impact on poverty and income distribution at household level using micro datasets

Macro-micro linkages

MDG determinants and costing

Dynamic CGE Model (MAMS)

Micro-simulations

Macroeconomic Environment and Economic Structure

Structural features, Infrastructure
Financing constraints
General equilibrium effects

Required public spending for MDGs

Factor markets

Factor markets
  Segmentation and factor mobility
  Wage determination
  Employment, productivity
  Distribution of factor income

MDG achievement

Households

Household characteristics:
Physical and human capital
Demographic composition
Preferences
Access to markets

Poverty and inequality

Framework extensively applied

- UN-DESA/UNDP RLAC/World Bank application in 19 Latin America and the Caribbean countries, with support from UN-ECLAC and IADB
  - Lessons learned to improve integrated modelling framework
  - Publication with Palgrave
- Follow-up applications:
  - UN-DESA/UNDP RBAS/World Bank covered five Arab States (Egypt, Jordan, Morocco, Tunisia and Yemen)
  - UN-DESA/UNDP COs covered three countries in Asia (Uzbekistan, Kyrgyzstan and Philippines)
  - UN-DESA/UNDP COs/World Bank covered three African countries (Senegal, South Africa and Uganda)
  - Publication forthcoming
  - Lessons learned on how to strengthen capacities in developing countries in support policymaking

MDG determinants

- **What is needed to get all children in school and make them complete all grades?**
    - Build more school infrastructure?
    - Improve quality of other school inputs (teachers, textbook supplies)?
    - Increase access to school by improved household income and demand subsidies?
    - All of the above?
- **What is needed to reduce child mortality?**
    - Better nutrition?
    - Expansion of immunization programs?
    - Improving maternal-child health facilities?
    - Better education?
    - All of the above?
- **Are there synergies across the MDGs?**
- **What is the direct cost of interventions to achieve MDGs?**
- **Are there diminishing marginal returns to the inputs?**

MAMS: economy-wide framework

- Developed by the World Bank.
- Some refinements and extensions made through UN-DESA's capacity development projects.
- Most features are familiar from standard open-economy, dynamic-recursive CGE models.
- Dynamic MDG block
    - Typically covers a number of MDGs (see next slide)
    - Feeds back on labour market, prices, etc.
- Flexible in classification of commodities, production sectors, labour categories, institutions.
- Assess trade-offs of alternative financing strategies and accounts for synergies during MDG achievement

Features Common to Most CGE Models

- Computable ➔ solvable numerically
- General ➔ economy-wide
- Equilibrium ➔
    - agents have found optimal solutions subject to constraints
    - quantities demanded = quantities supplied
    - macroeconomic account balance
- Producers use factors and intermediates as inputs.
- Imperfect transformability/substitutability in foreign trade.
- Dynamic-recursive ➔ the solution in any time period depends on current and past periods, not the future.
- A "real" model: only relative prices matter; no modeling of inflation.

MDGs in MAMS

- MDG targets for 2015 (from 1990 base year):
  - MDG 2: (almost) 100% primary school completion
    - Gender inequality (MDG 3) in education access?
  - MDG 4: Reduce child mortality by two-thirds
  - MDG 5: Reduce maternal mortality by three-quarters
  - MDG 7w: Halve proportion of people without access to drinking water
  - MDG 7s: Halve proportion of people without access to basic sanitation

Determinants of MDG outcomes in MAMS

MDG	Service per capita or student	Consumption per capita	Wage incentives	Public infrastructure	Other MDGs
2–Primary schooling	X	X	X	X	4
4-Under-five mortality	X	X		X	7a,7b
5-Maternal mortality	X	X		X	7a,7b
7a-Water	X	X		X	
7b-Sanitation	X	X		X	

MAMS scenarios

- Base (business-as-usual) scenario:
  - Plausible benchmark for comparisons
  - GDP growth calibrated to trend from last 5-15 years;
  - Balanced and sustainable evolution of macro aggregates (private and government consumption and investment; foreign and domestic debt stocks; tax revenues from different taxes; foreign grant aid …); unchanged (base-year) GDP shares often good starting point.
- Alternative (counter-factual) scenarios, involving:
  - Changes in one or more exogenous policy tools or parameters beyond government control (e.g. aid, world prices, productivity);
  - Fixing the evolution of one or more policy targets (a health MDG); flex one or more policy tools (government health services).
    - **MDG scenarios**: targeting imposed under alternative financing options

Microsimulation approach

- MDG 1: Monetary poverty is endogenous to overall economy-wide interactions
- MAMS/CGE: too aggregate household categories (insufficient detail of income/consumption distribution)
- Microsimulations:
  - Use full household survey data
  - Impose counterfactual factor market outcomes from MAMS/CGE simulations on full distribution
    - So far mostly through labour market outcomes
    - Extensions to include non-labour incomes
  - Generate new income/consumption distribution
  - Calculate poverty and distribution outcomes
- "Top-down" approach: no feedback to CGE

Application in Uganda

- Previous project: "Realizing the Millennium Development Goals through socially inclusive macroeconomic policies (2006–2011)"
  - http://www.un.org/en/development/desa/policy/capacity/projects_mdgs.shtml#projects_mdgs
- With support from UNDP Uganda
- Uganda team:
  - John Mary Matovu and Evarist Twimukye, Economic Policy Research Center (EPRC)
  - Albert Musisi, Ministry of Finance, Planning and Economic Development
  - Sebastian Levine (UNDP)

CD activities for Uganda team

- 4–6 November 2009—Inception regional workshop in Entebbe
- 10–13 May 2010—Second regional training workshop in Pretoria, South Africa
- 11 September 2010—Final country meeting in Kampala, Uganda
- On-going technical backstopping throughout project by coordinating team (UN-DESA, World Bank, international consultant)
- Elaboration of country report, book chapter and other outputs

Key findings and recommendations

- New structural reforms needed to meet the MDGs.
  - Scaled up public expenditure for key productive sectors and social sectors.
  - At least 12% of GDP will be needed to achieve the MDGs.
- Reliance of foreign aid given the limited scope for domestic resource mobilization and how this would impact on the economy
- But only temporarily:
  - reforms to enhance tax collection and efficiency in public service delivery
  - frontload some of the future oil revenues (e.g. by borrowing abroad using oil as collateral) if the resources are properly invested and possible 'Dutch Disease' effects avoided.

Other, on-going activities for Uganda

- UN-DESA project: "Graduation strategies for Least Developed Countries in Asia and Africa" (2008–2011)
  - http://www.un.org/en/development/desa/policy/capacity/projects_ldcs.shtml
  - Aims at improving the capacity of LDCs to access and benefit from the special support measures adopted by the international development community.
  - Tools to assess the likely impact of graduation and assist in designing post-graduation developing strategies.
- 10–11 February 2010—Pilot draft survey to provide first hand experience to an EGM and possible insights where the surveys would need to be revised (Geneva, WTO Secretariat)
- 28-29 June and 11-12 August 2011—Inputs to training and peer review workshops on trade-related international support measures for LDC WTO Members (Geneva).

Still, key questions remain unanswered…

- Will reform policies recommended in previous MDG analysis be feasible if:
    - there is a global economic crisis?
    - Uganda faces external adversities (high food and energy prices, drops in export demand or declines in worker remittances)?
    - oil revenues do not start to flow as expected?
- Will it help if potential development impacts of existing international support measures to LDCs are maximized to accelerate progress towards development goals?
    - enhanced official development assistance (ODA)
    - preferential access to foreign markets
    - special treatment regarding WTO obligations

…and, there is still scope to strengthen analytical capacities to:

- Assess support measures and strategies that contribute to achievement of development goals
- Design strategies to anticipate and respond to global economic crises and other external adversities to avoid future setbacks in human development
- More in general, create confidence among policymakers to design policies and/or request financial support from the international community to support development
- If the MDGs and/or graduation from the LDC category were deemed unattainable, assess different development strategies and estimate further resource requirements associated to them under different scenarios.

UN-DESA's response to existing CD needs

- New CD activities will be implemented, under the umbrella of:
  - UN-DESA CD projects
    - "Strengthening Macroeconomic and Social Policy Coherence through Integrated Macro-Micro Modelling"
    - "Graduation strategies for Least Developed Countries in Asia and Africa"
  - UNDP's Country Programme Action Plan (CPAC) in Uganda.
- These will build on the accumulated work of previous MDG project and on-going activities on support measures.
- Technical support for strengthening analytical capacities of a "technical unit" formed by national experts, under the leadership of the Ministry of Finance Planning and Economic Development.

Modelling framework revisited, refined and institutionalized

- Primary objective is to institutionalise the use of this framework
  - We train and provide technical support, Ugandans become owners of the tools, update them, and put them to work
- Refinements:
  - Updating of dataset and expansion of sectors/products (to assess preferential access to foreign markets and include oil?)
  - Fine-tuning of key elasticities and other data?
  - MDG 6 on combating HIV/AIDS, malaria and other diseases?
  - More user friendly: use of Excel-based interfaces like ISIM-MAMS (created by the World Bank)
- Intensive training to ensure that the "technical unit" :
  - becomes acquainted with framework and its "maintenance"
  - uses simulation results to guide policymakers in different fields

Project implementation in ten steps ("What" and "Who")

1. **Scoping mission and first workshop**
   - UN-DESA, UNDP, "technical unit" (and "data team")
2. **Consolidation of "technical unit" (final arrangements)**
   - UNDP and MFPED
3. **Disaggregation of Social Accounting Matrix, updating and improvement of existing dataset**
   - UN-DESA's international consultant and "data team"
   - Re-estimation of key elasticities? By "technical unit" or an international/national consultant?

MVS(

MVSC10   I would add more detail on how country teams are ideally expected to be formed, work and organize themselves.

Important is to highlight that there should be a team leader and that country-team members must have some specific qualifications.

 Make explicit the point that we expect the "right" people to be participating in the workshops.

All of this can be brought up in light of the experience for LAC and the Arab countries.

Marco Sanchez, 14/08/2008

Project implementation in ten steps ("What" and "Who")

4. **Calibration of MAMS for Uganda with new dataset**
   - UN-DESA (including international consultant)

5. **First intensive training: MAMS (and ISIM-MAMS), updating of data set, initial runs of scenarios**
   - UN-DESA, UNDP and "technical unit"

6. **Final fine-tuning of MAMS for Uganda**
   - UN-DESA, assisted by technical unit

7. **Second intensive training workshop: policy assessments through scenario simulations in MAMS and microsimulations (in STATA)**
   - UN-DESA, UNDP and "technical unit"

Project implementation in ten steps ("What" and "Who")

8. **Implementation of policy simulations and elaboration of policy notes/briefs in selected areas**

    - "technical unit", with support from UN-DESA

9. **Final workshop: presentation/discussion of policy notes/briefs, definition of follow-up steps for maintenance of modelling tools, uses to support policymaking, and engagement of policy makers in a dialogue.**

    - UN-DESA, UNDP, "technical unit" and **high-level policymakers**

10. **Policy dialogues; presentations that provide inputs for decision making, and identification of new demands for policy simulations that are deemed useful by the Government.**

    - "Technical unit" (with support from UNDP and UN-DESA?)

Objectives of scoping mission and first workshop

- Present and discuss the key policy questions to be addressed through the capacity building activities.

- Explain and confirm agreement on the institutional arrangements under which capacity building activities will be undertaken.

- Describe the integrated macro and micro modelling framework.

- Present results of recently completed projects on MDG financing strategies and real-time simulation results as an introduction to the application of the modelling framework.

- Review key aspects of international support measures that will be relevant to consider as part of the application of the methodology.

- Take stock of data availability and agree on future data collection.

- Agree on a timeline.

Programme: main sessions

- Hands on sessions to work with data
- Overview of capacity development activities: objectives and modelling framework
- Assessing Development Strategies to achieve the MDGs in Uganda
- Global Crisis and Prospects for Achieving the MDGs: evidence for developing countries
- International support measures to LDCs: what are they?
- Opportunities to maximize the development impact of support measures in Uganda

Programme: main sessions (cont.)

- Overview of MAMS

- The SAM: What is it? How is it adapted for MAMS?

- Sector analysis of MDG determinants

- MAMS data set: an overview

- Microsimulation approach

- ISIM-MAMS interface: an introduction and real-time simulations

- Summary of workshop and discussion of next steps