



Calculation of MDG employment indicators: Tanzanian Example

Addis Ababa, 20-24 July 2009

Novati BUBERWA
NBS, Tanzania

Makiko MATSUMOTO
EMP/CEPOL, ILO Geneva

Indicator 1.4:

Growth rate of labour productivity

■ Labour productivity growth rate

$$= \frac{\text{labour productivity}_{\text{year}N} - \text{labour productivity}_{\text{year}N-1}}{\text{labour productivity}_{\text{year}N-1}} \times 100$$

- In the case of Tanzania, only **two data points** are available: 2000 and 2006
 - Annual growth rates cannot be directly estimated by applying the equation.
 - One solution: estimate “**compound annual growth rate (CAGR)**”

Indicator 1.4:

Growth rate of labour productivity

Labour productivity growth: Real GDP at 2001 prices

Year	(1) GDP	(2) Employed (15+)	(3)=(1)/(2) Labour productivity	% change in (3)	CAGR
2000	8,585,340	14,710,120	0.584		
2006	12,881,163	17,944,558	0.718	23.0	3.5

Note: Data source for GDP at 2001 prices: *The Economic Survey 2007*

Indicator 1.4: Growth rate of labour productivity

- Calculation of labour productivity growth rate over approximately **6-year period** (2000-2006):

$$\begin{aligned}
 &= 12881163 / 179445580 \\
 &= \frac{\text{labour productivity}_{2006} - \text{labour productivity}_{2000}}{\text{labour productivity}_{2000}} \times 100 \\
 &= 23.0\%
 \end{aligned}$$

Indicator 1.4:

Growth rate of labour productivity

- Calculation of **compound annual growth rate** of labour productivity over the 6-year period (2000-2006) :


$$= \left[\left(\frac{\text{labour productivity}_{2006}}{\text{labour productivity}_{2000}} \right)^{1/6} - 1 \right] \times 100 = 3.5$$

- **3.5%** annual growth rate of labour productivity

Indicator 1.4:

Growth rate of labour productivity

A comparative perspective:



Calculated from KILM 18 in the same way, using 2000 & 2005 data points (1980=100).

Indicator 1.5: Employment-to-population ratio

- Employment-to-population ratio in 2000 (TZ)

$$= \frac{\text{Total employment}}{\text{Working age population}} \times 100$$


$$= \underline{\underline{83.8\%}}$$



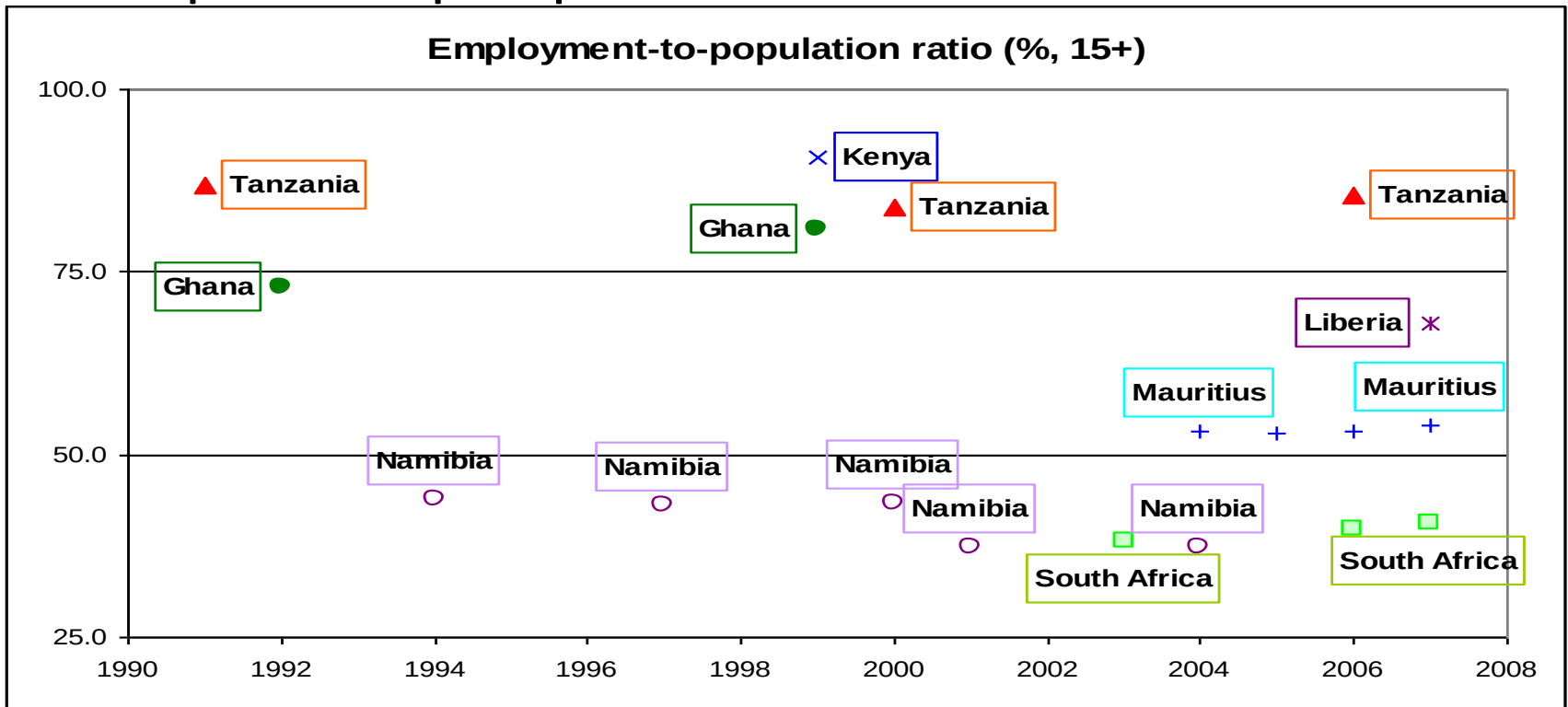
Indicator 1.5: Employment-to-population ratio

Employment-to-population ratio (15+)

Year	(1) Employed (15+)	(2) Population (15+)	(3)=(1)/(2)*100 EPR
2000	14,710,120	17,543,378	83.8
2006	17,944,558	21,003,960	85.4

Indicator 1.5: Employment-to-population ratio

A comparative perspective:

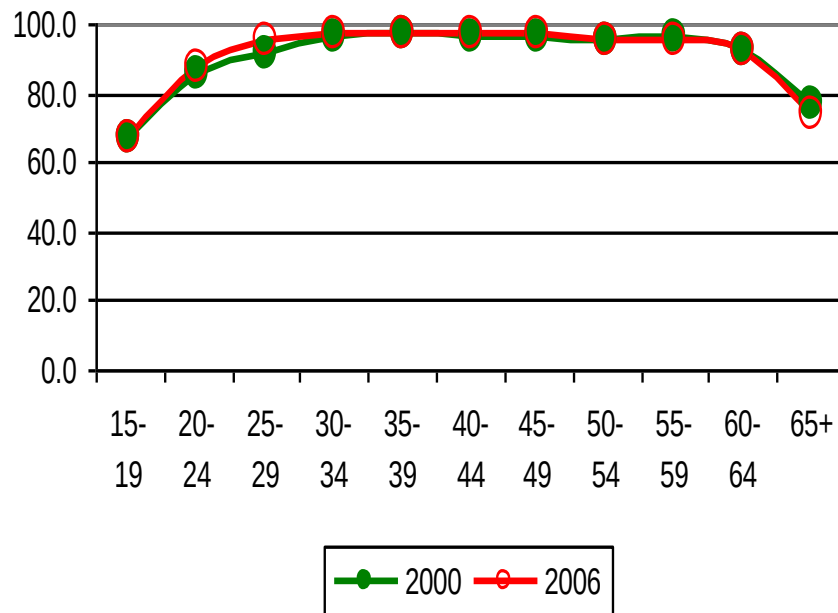


As reported in KILM2b, except for Tanzania 2000 and 2006.

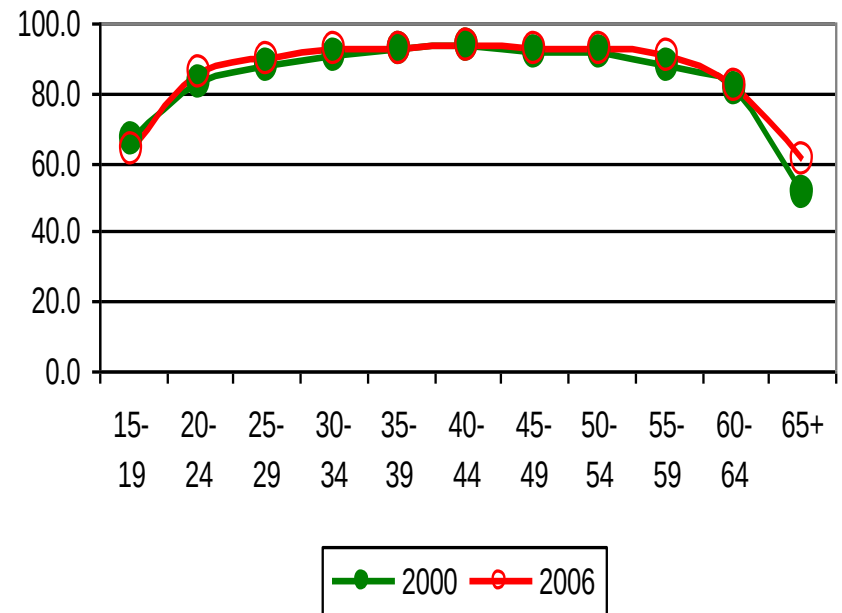
Indicator 1.5: Employment-to-population ratio

By age and sex:

Employment-to-population ratio: Male



Employment-to-population ratio: Female





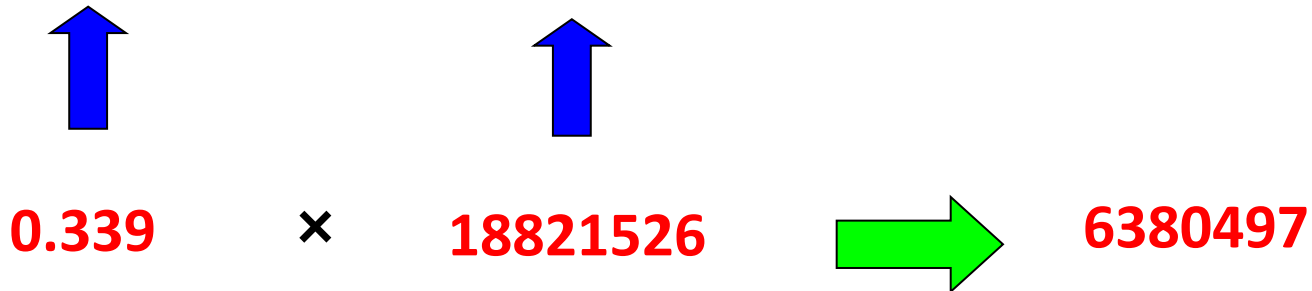
Indicator 1.6: Working poverty rate

- Proportion of employed people living below the poverty line (=working poverty rate)
- From macroeconomic data, estimation required 2 steps:
 - **Number** of working poor
 - **Share** of working poor in total employment

Indicator 1.6: Working poverty rate

- Number of working poor (TZ, 2006)

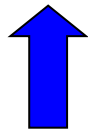
≈ poverty rate × labour force


$$0.339 \times 18821526 = 6380497$$

Indicator 1.6: Working poverty rate

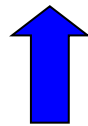
- Working poverty rate (TZ, 2006)

$\approx (\text{working poor} \div \text{total employment}) \times 100$



6380497

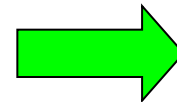
$\div$



17944558

$\times$

100



35.6

Indicator 1.6: Working poverty rate

Working poverty rate [preliminary macro estimation]

Year	(1) Poverty rates (%)	(2) Labour force (15+)	(3)=(1)*(2) Working poor	(4) Employed (15+)	(5)=(3)/(4) *100 WPR (%)
2000	0.357	15,490,730	5,530,191	14,710,120	37.6
2006	0.339	18.821,526	6,380,497	17,944,558	35.6

Indicator 1.7:

Vulnerable employment rate

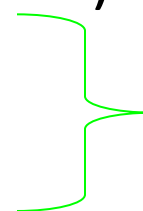
■ Vulnerable employment rate (TZ, 2006)

= # of own-account workers

+ # of contributing family workers

÷ total employment

× 100



15891290



17944558

88.6%

■ In the reported status of **main job**, # of own-account workers include:

☐ # of self-employed without employees in non-agricultural activities

☐ # of workers engaged in “own farm or shamba”



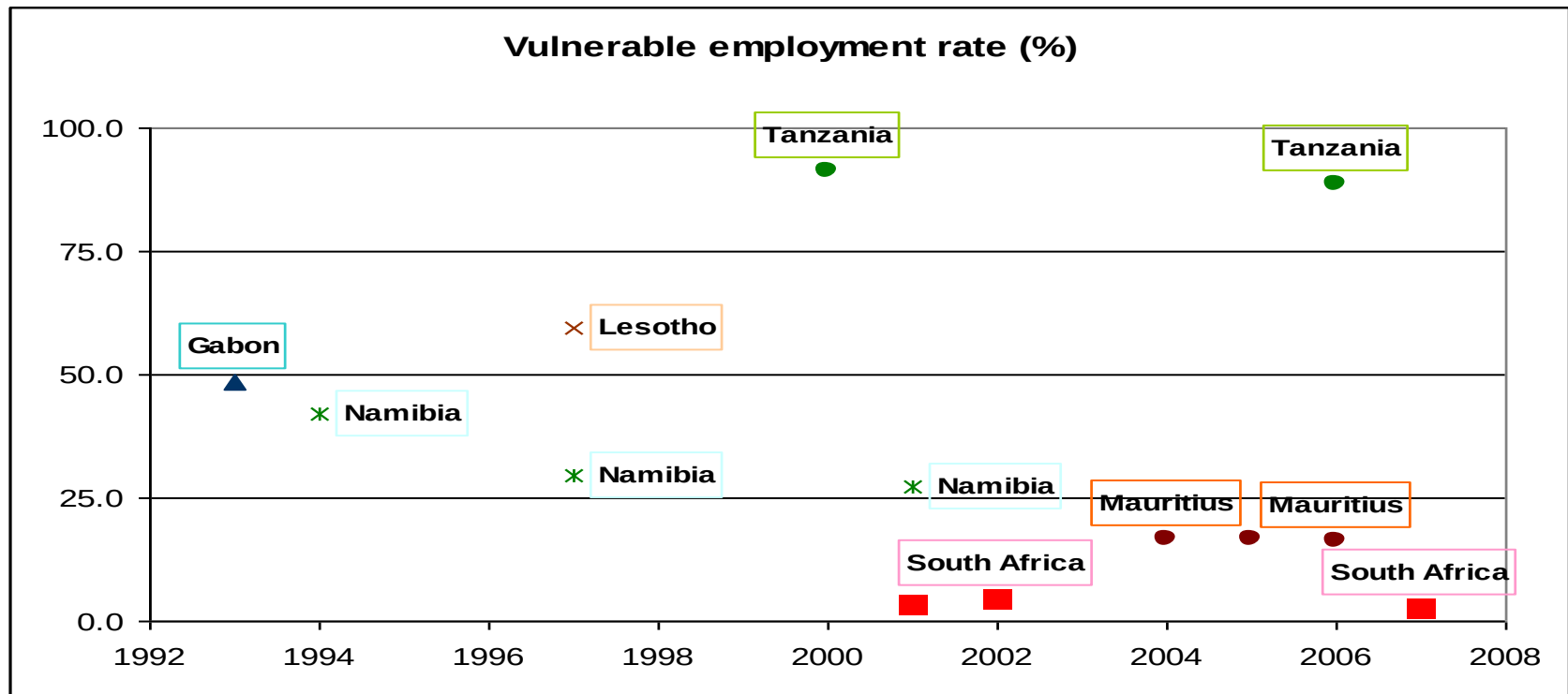
Indicator 1.7: Vulnerable employment rate

Vulnerable employment rate

Year	(1) Vulnerable employment (15+)	(2) Employed (15+)	(3)=(1)/(2)*100 VER (%)
2000	13,420,818	14,710,120	91.2
2006	15,891,290	17,944,558	88.6

Indicator 1.7: Vulnerable employment rate

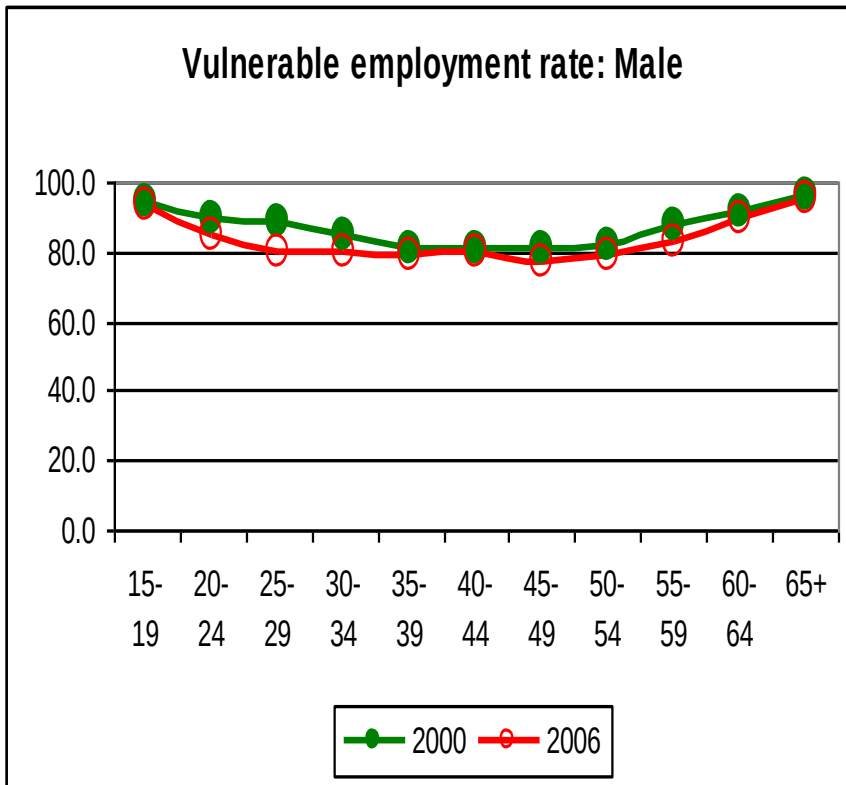
A comparative perspective:



Calculated from KILM3, except for Tanzania 2000 and 2006.

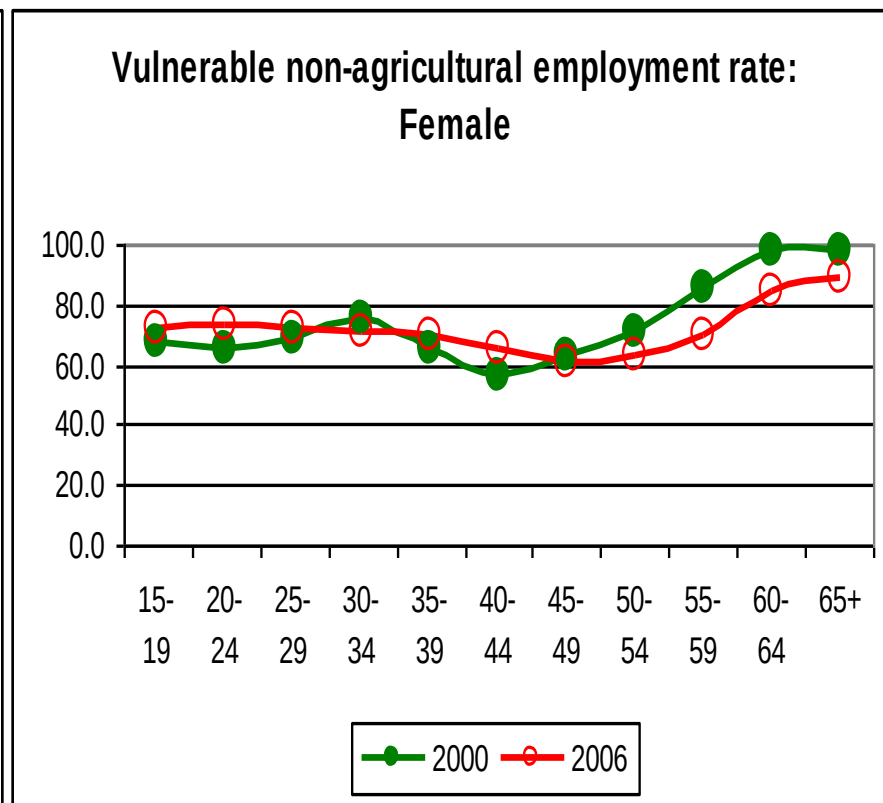
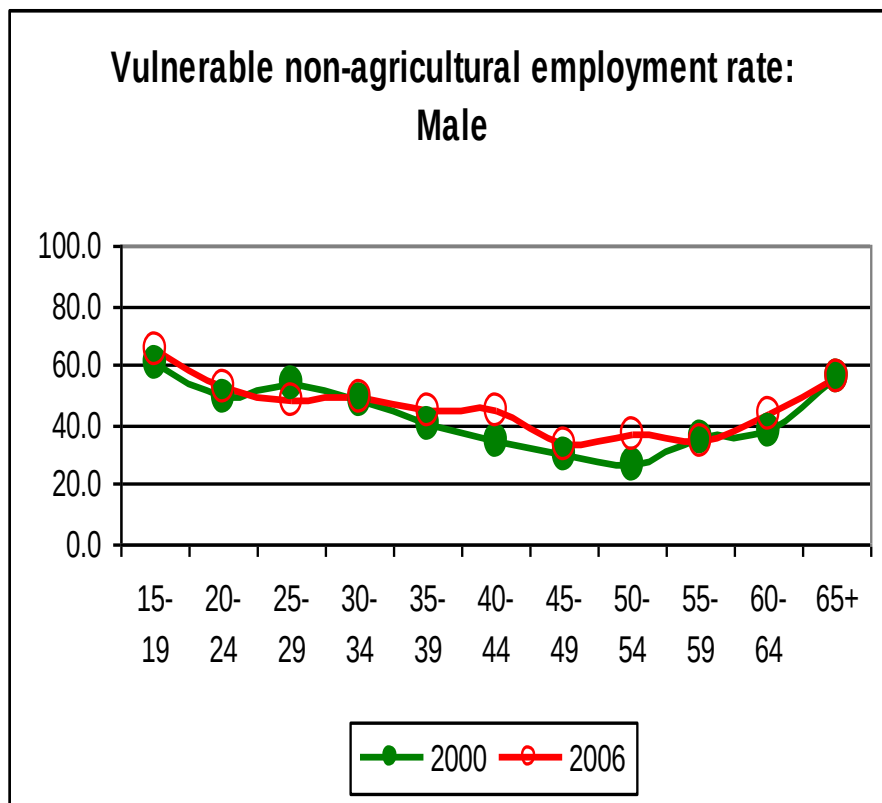
Indicator 1.7: Vulnerable employment rate

By sex and age:



Indicator 1.7: Vulnerable employment rate

Non-agricultural vulnerable employment rate:





THANK YOU.