

BEVOLKINGSGROEI IN AFRIKA: KANSEN EN UITDAGINGEN



INLEIDEND COLLEGE T.B.V. OPLEIDING BEGINNEND DIPLOMATEN
INSTITUUT CLINGENDAEL, 5 JUNI 2018

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- **Themes**
- **Population growth: determinants and measures**
- **Population and development growth: World, Africa**
- **Understanding population growth: focus on use of fertility models**
- **Population and development in Africa: opportunities and challenges**

- **Population growth: determinants and measures**

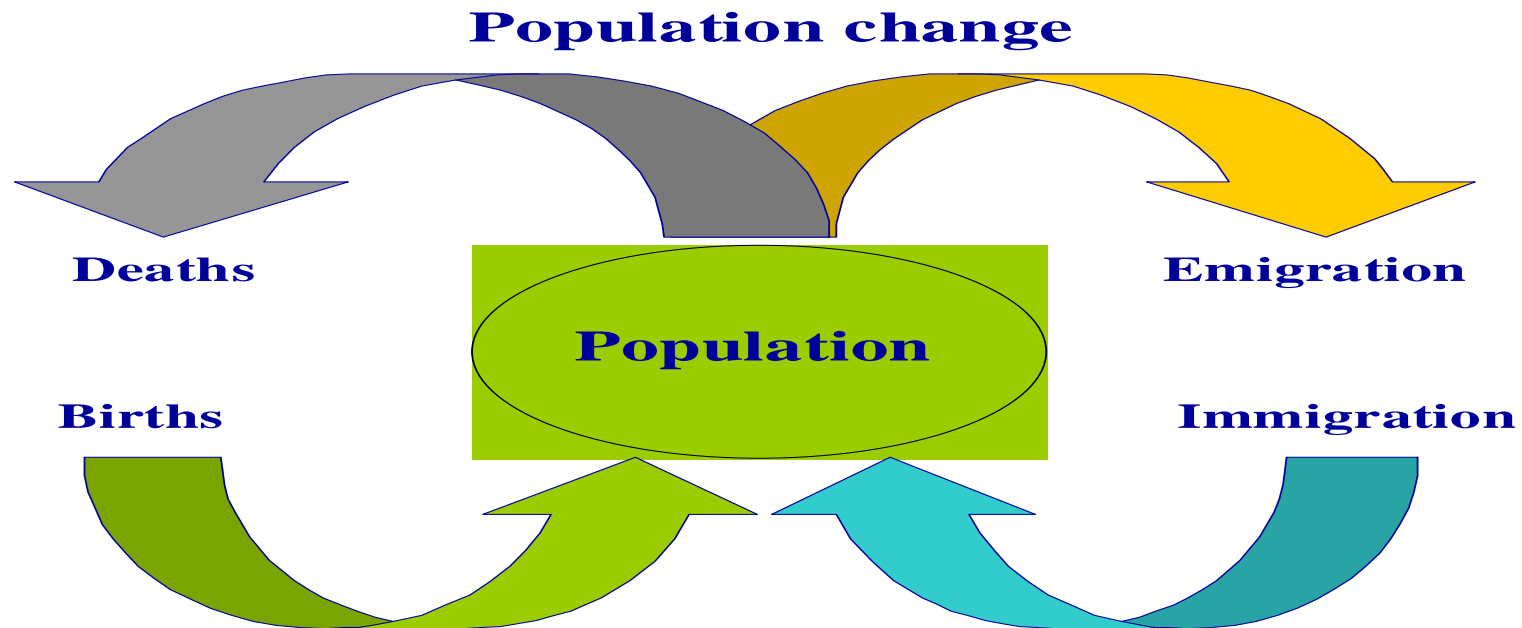
Determinants

Fertility, Mortality and Migration determine the size and age-structure of a population.

Demographic Balancing Equation:

$$P(\text{next year}) = P(\text{base year}) + (\text{Births} - \text{Deaths}) + (\text{Immigrants} - \text{Emigrants})$$

$$P(\text{next year}) = P(\text{base year}) + \text{Natural Increase} + \text{Net Migration}$$



Measures

1. *Growth of population size (e.g. de facto or de jure numbers of persons, see: census reports)*
2. *The exponential population growth rate (%)*
3. *Doubling time (for interpretation or rate)*

$P_t = P_0 \times e^{(r \times t)}$	$t = \ln(2)/r$
<u>Population growth rate (r)</u>	<u>Doubling time (t)</u>
1%	70
2%	34
3%	23
4%	17

- Population growth in the world and in Africa

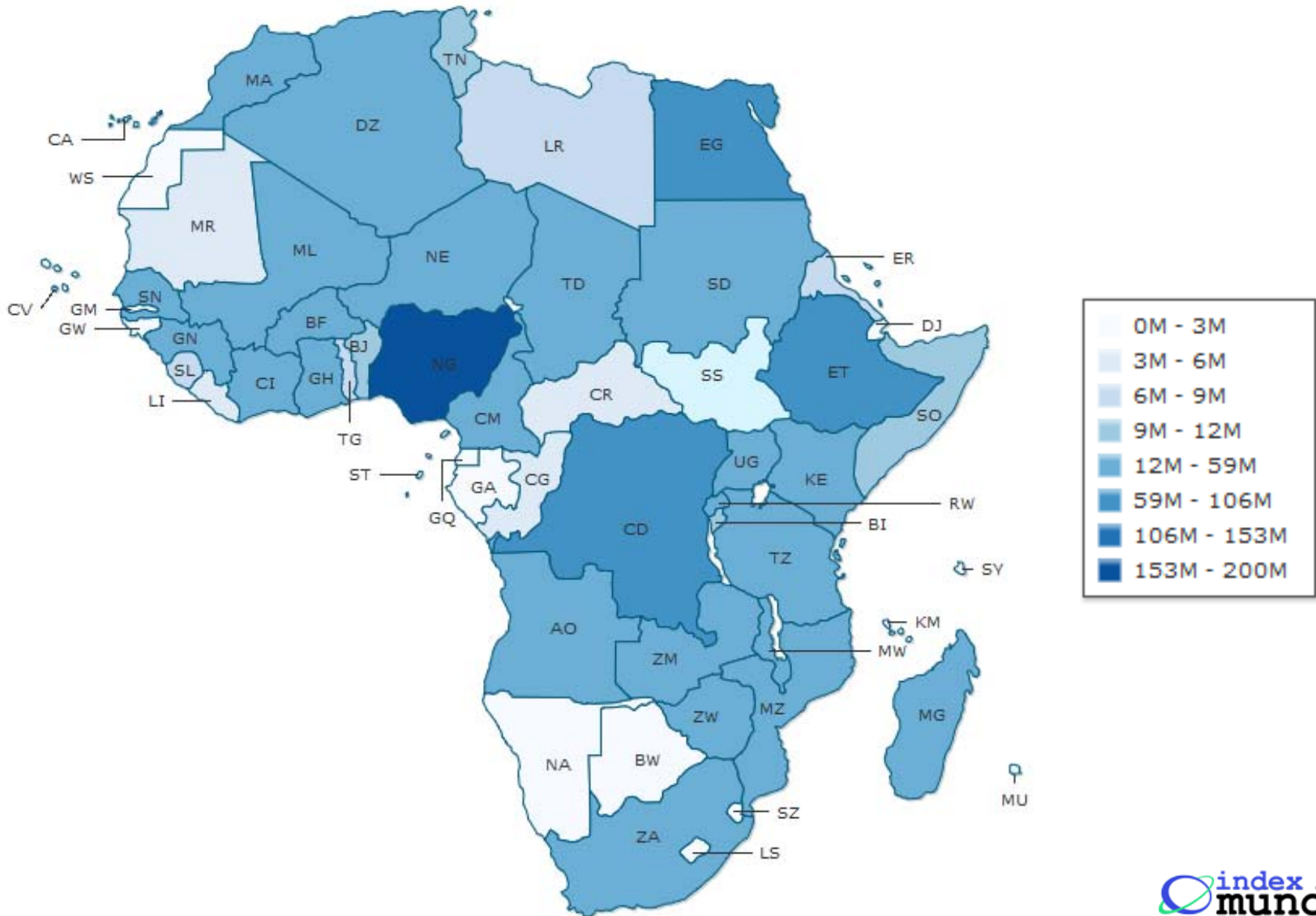
The World Population Growth real-time clock



Population size: 20 largest countries in the world (2017)

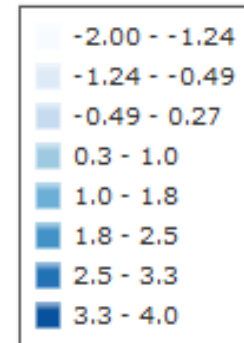
Country	Population
China	1,379,302,784
India	1,281,935,872
United States	326,625,792
Indonesia	260,580,736
Brazil	207,353,392
Pakistan	204,924,864
→ Nigeria	190,632,256
Bangladesh	157,826,576
Russia	142,257,520
Japan	126,451,400
Mexico	124,574,792
→ Ethiopia	105,350,016
Philippines	104,256,080
→ Egypt	97,041,072
Vietnam	96,160,160
→ Congo, Democratic Republic of the	83,301,152
Iran	82,021,568
Turkey	80,845,216
Germany	80,594,016
Thailand	68,414,136

Population size of African countries (2017). From 477 million (1980) to 1.2 billion (2016)

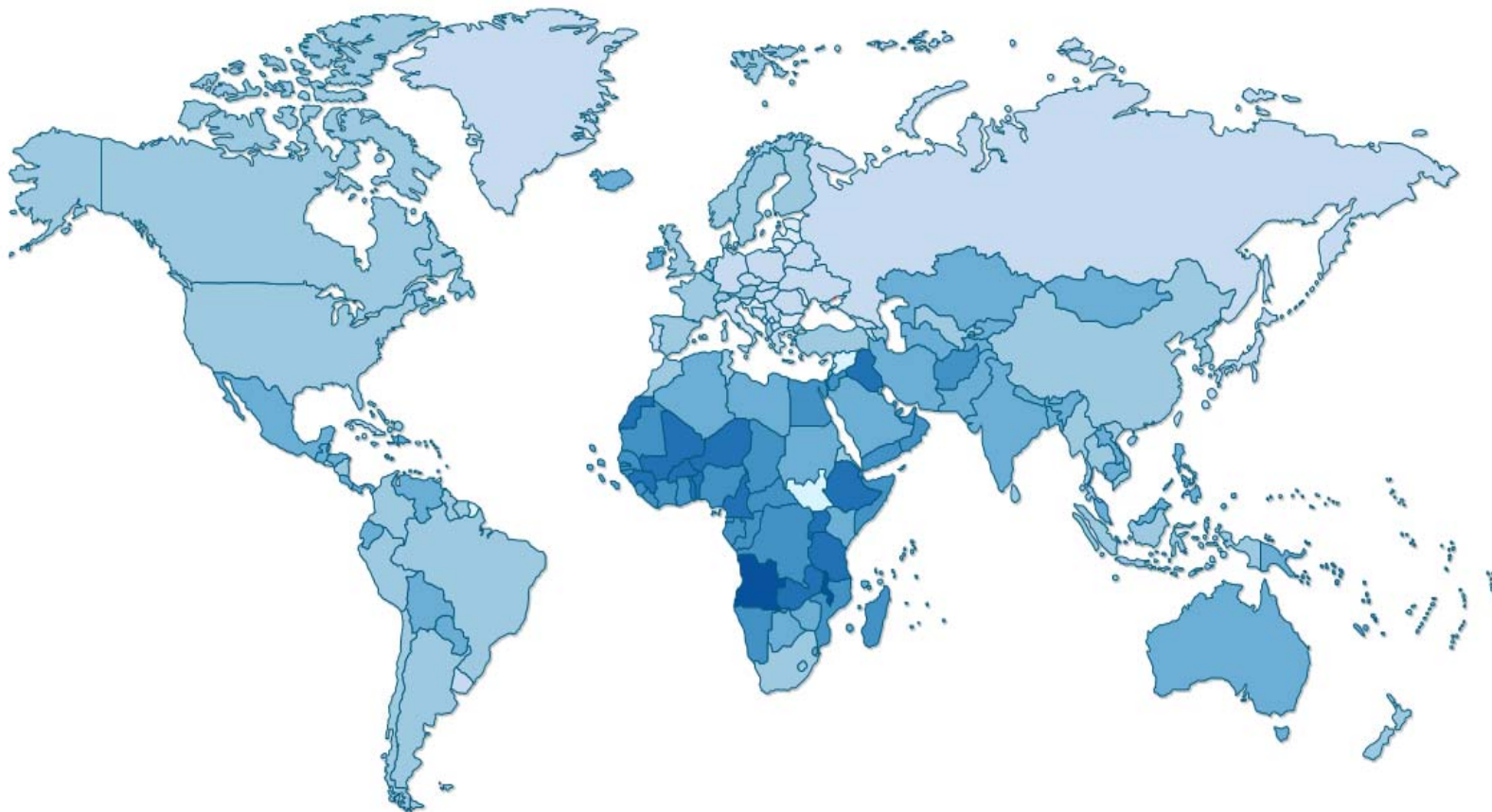


Annual *growth rate* (%) of population size (2017)

(Africa: high fertility main factor high population growth)



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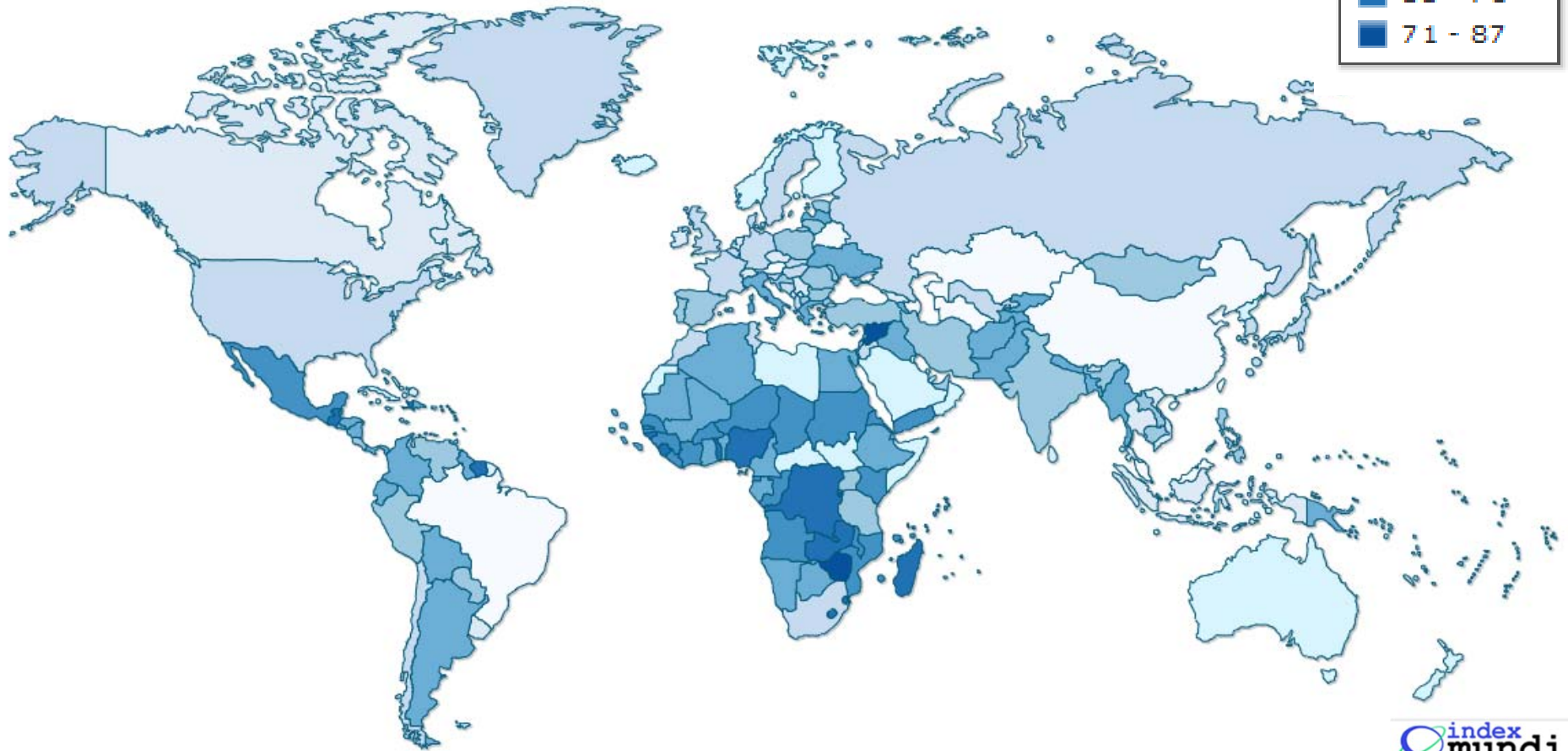
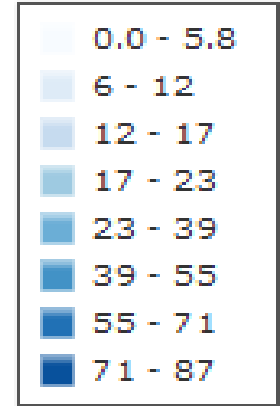


Total Fertility Rate (TFR) in Sub-Saharan Africa, by Country Income Level

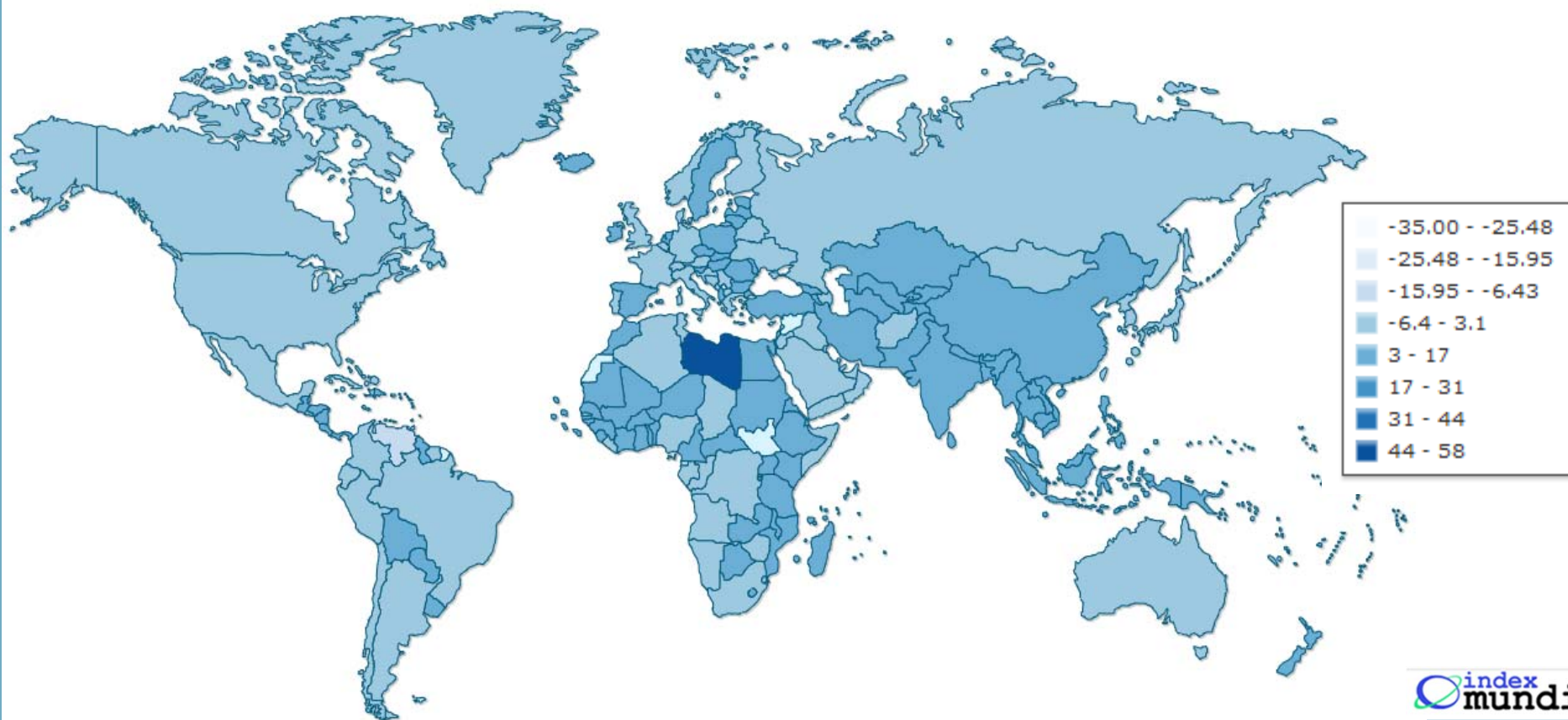
GDP per capita (quintile)	Total fertility rate (births per woman)						
	1–1.99	2–2.99	3–3.99	4–4.99	5–5.99	6–6.99	7+
1 Lowest				Central African Republic Eritrea Liberia	Guinea Malawi Mozambique	Burundi Congo, Dem. Rep. Somalia	Niger
2				Comoros Ethiopia Guinea-Bissau Madagascar Rwanda Sierra Leone Sudan Togo	Burkina Faso Gambia, The Uganda		
3			Lesotho Zimbabwe	Benin Cameroon Kenya Senegal	South Sudan Tanzania	Chad Mali	
4		Cabo Verde	Djibouti Ghana	Côte d'Ivoire Mauritania São Tomé and Príncipe	Congo, Rep. Zambia	Nigeria	
5 Highest	Mauritius	Botswana Seychelles South Africa	Namibia Swaziland	Equatorial Guinea Gabon	Angola		

(World Bank, 2012)

Population (%) falling below (national) poverty lines is high.



But, since 2005, economic (GDP) growth rates (%) have been rising.....

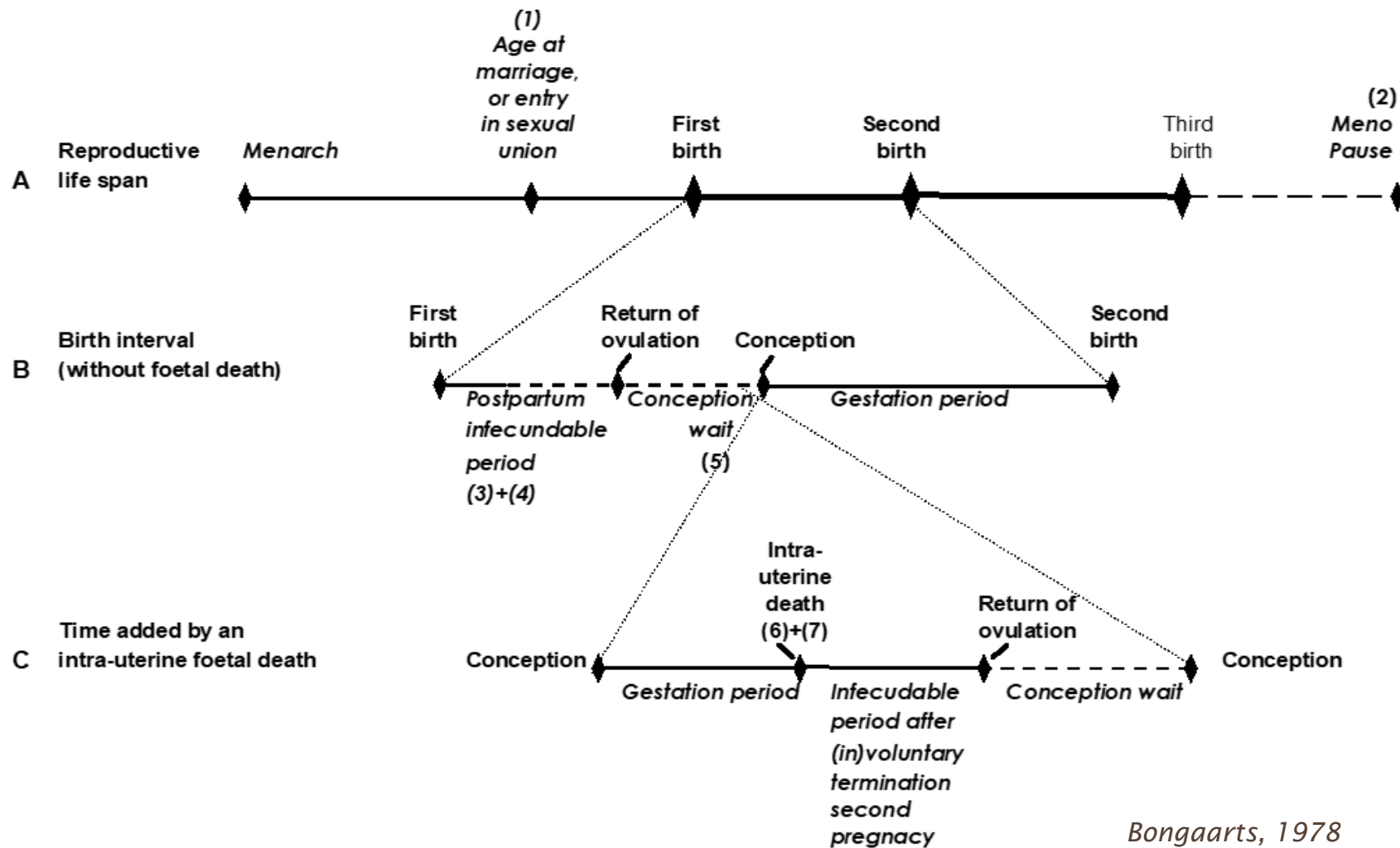


General 'population and development' conclusion:

- *Slowly decreasing **high fertility rates**+ modestly declining infant & child mortality rates imply **rapid population growth***
- *Rapid population growth leads to young population age-structures and rising working-age populations (15-64, notably 15-34 y.o.)*
- ***demographic dividend? Not yet** (=favoural ratio between potential workers and dependent persons (<15, >65 y.o.)*
- *Formal sector labour market cannot absorb rapid increase in **supply of potential workers** resulting from population growth*
- *Excess supply of potential workers leads to **rise of (youth) unemployment**, rise of informal sector low pay/productivity employment, rise of **pressure to emigrate**.*
- *FDI, number of enterprises and jobs rises. However, **worker productivity and pay low; growth non-inclusive; competitiveness of export low; export markets restrictions; poor infrastructures.***

- Understanding population growth: focus on the use of fertility models

1. How to identify relevant determinants of fertility? This is how....



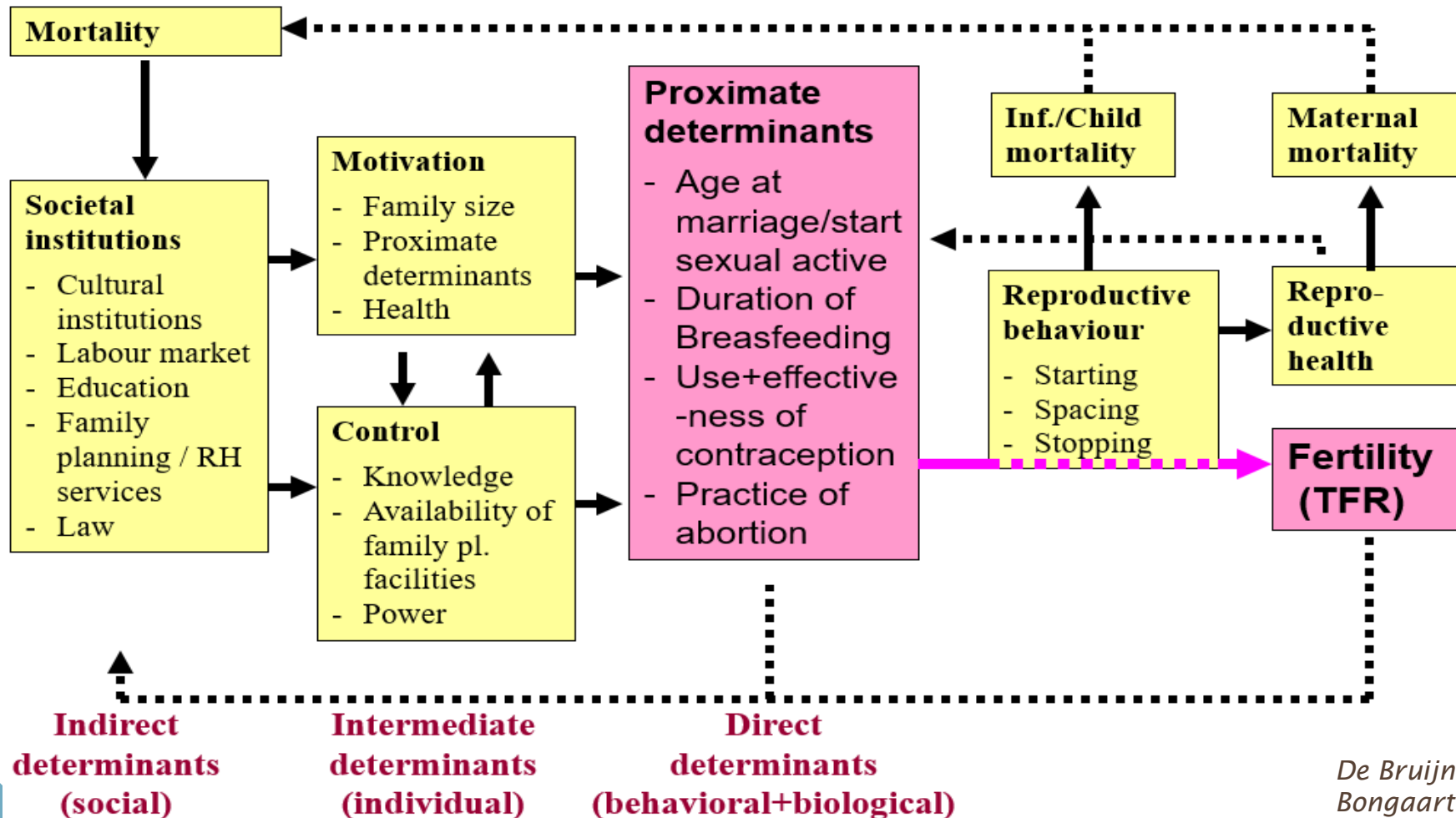
2. Which determinants are really important (+) for understanding differences in fertility rates between countries, population groups, etc.?

Empirical studies found that determinants marked with (-) do not really vary much between any population group. So focus on the ones marked (+)

1. (+) Age at marriage or starting age of exposure to sexual intercourse. (show slide prop. marriage vis a vis prop sexual active)
2. (-) Onset of permanent sterility (i.e. Menopause)
3. (+) Duration of postpartum infertile period (PPI) (breastfeeding behaviour, i.e. frequency+intensity)
4. (-) Natural infertile period (monthly probability of conception (i.e. risk of becoming pregnant) in the absence of contraception)
5. (+) Contraceptive use and use/method effectiveness
6. (+) Prevalence of induced abortion
7. (-) Prevalence of spontaneous intrauterine mortality:

3. Which are relevant underlying factors?

A model of fertility



- **Population and development in Africa: opportunities and challenges**

Opportunities ('kansen')

- *Exploitation of increased interest of foreign investors (FDI).* FDI has been rising contributing to economic growth, can be vehicle for introducing economic and social reforms, contributing to inclusive growth and jobs.
- *Exploitation of increased levels of education of the population.*
- *Exploitation of high unmet need of family planning.* Indicates interest in smaller family size norms(See fertility model for clues).
- *Exploitation of access to internet technology and information.* ICT sector development.

Challenges ('uitdagingen')

- Improve institutional and physical infrastructural to attract more foreign and national investors, raise trust and combat corruption.
- Identify, produce (and export) high-quality and competitive products
- Access to foreign export markets.
- Removing barriers to gender equality, increase decision-making power, education of women (also has fertility reducing effect)
- *Fine-tuning of education curricula to demands of labour markets.*
- Reduction of ethnic/tribal strife/clashes/discrimination
- Reduction of youth unemployment and increase of number of quality jobs.

Dank voor uw aandacht.