



The Brain drain

The effect of migration in the sending countries

-The human capital -

**Economics of Migration in Europe
Lesson 10**

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- Population is an asset for development?
- Always?
- When?

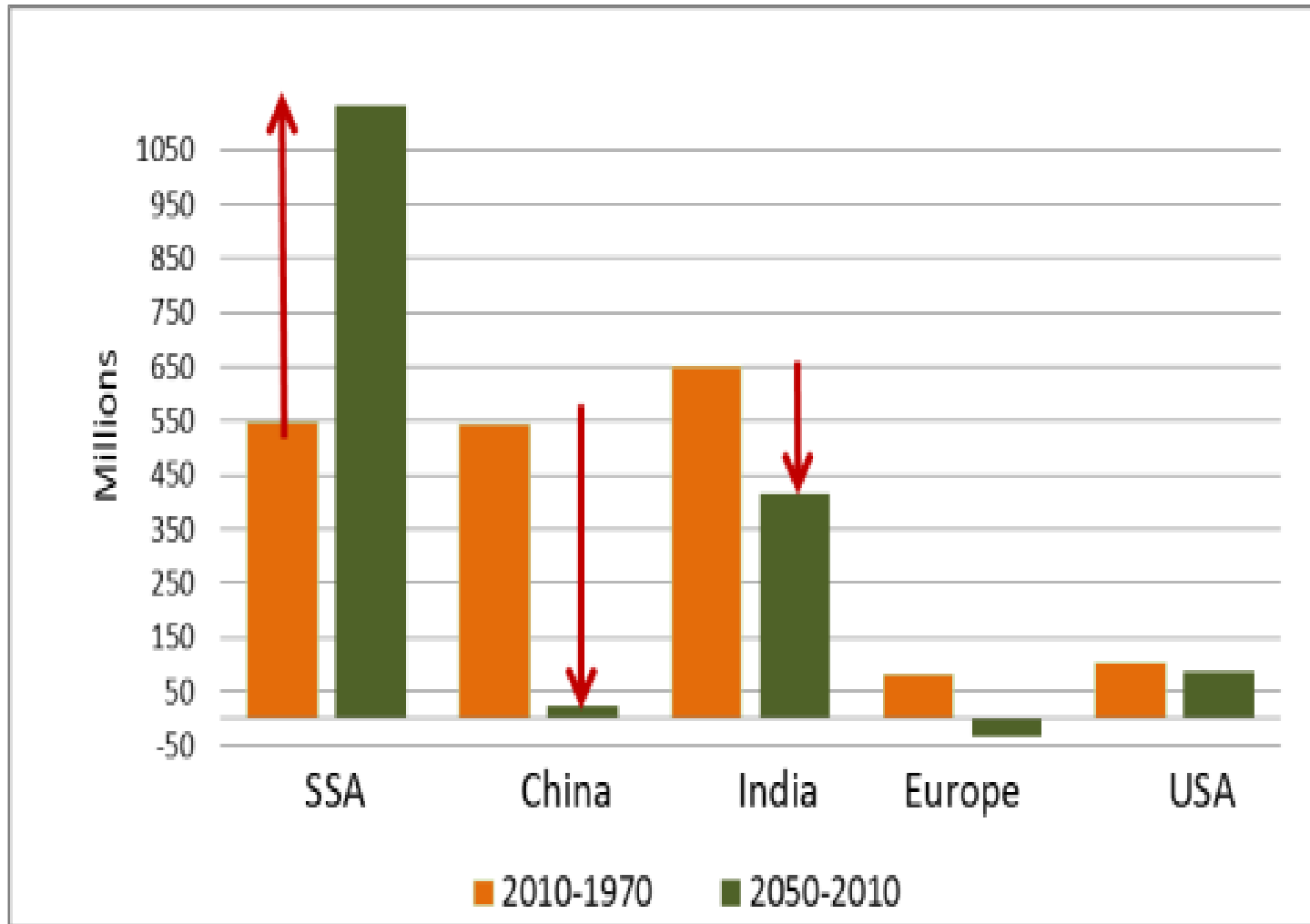
Relationship between population and resources:

- Capital, land
- GOVERNANCE

Migration in Europe

MigrEU Jean Monnet Module

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The Relationship between Economic Development and Population Growth Rate for Developing Nations

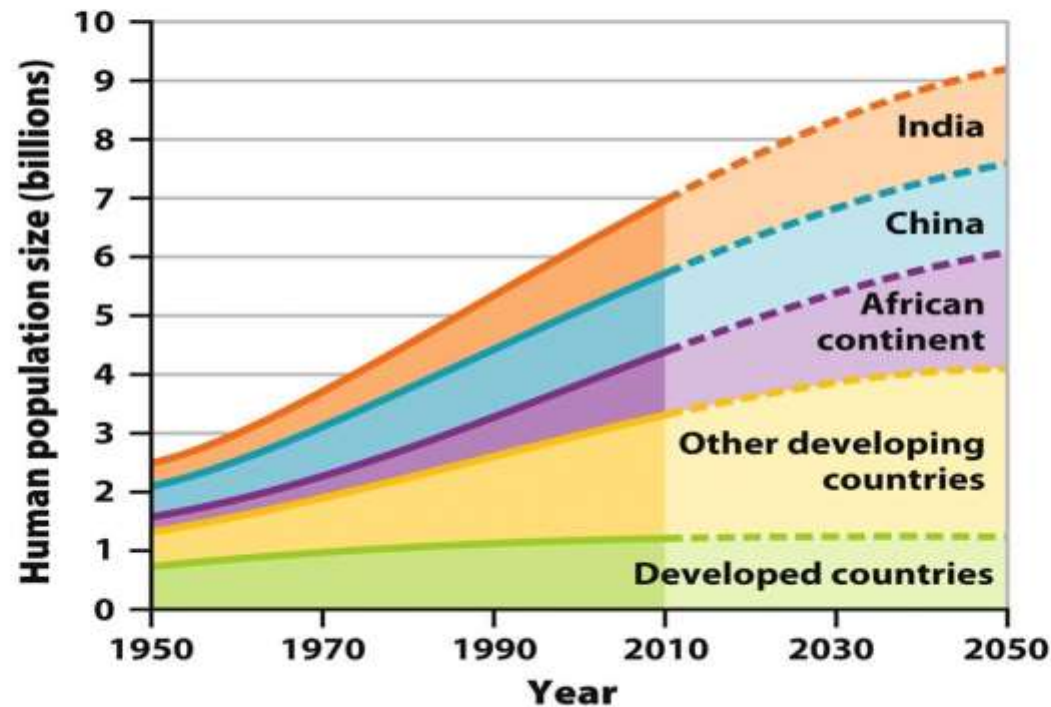
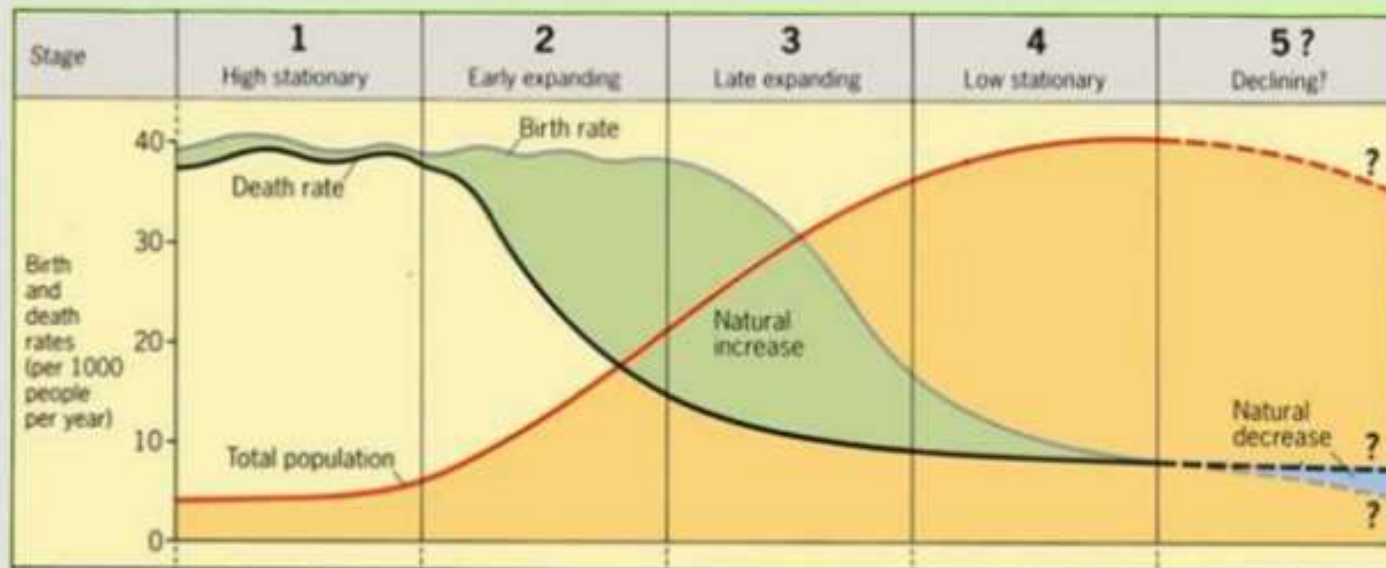


Figure 7.14
Environmental Science
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DEMOGRAPHIC TRANSITION MODEL

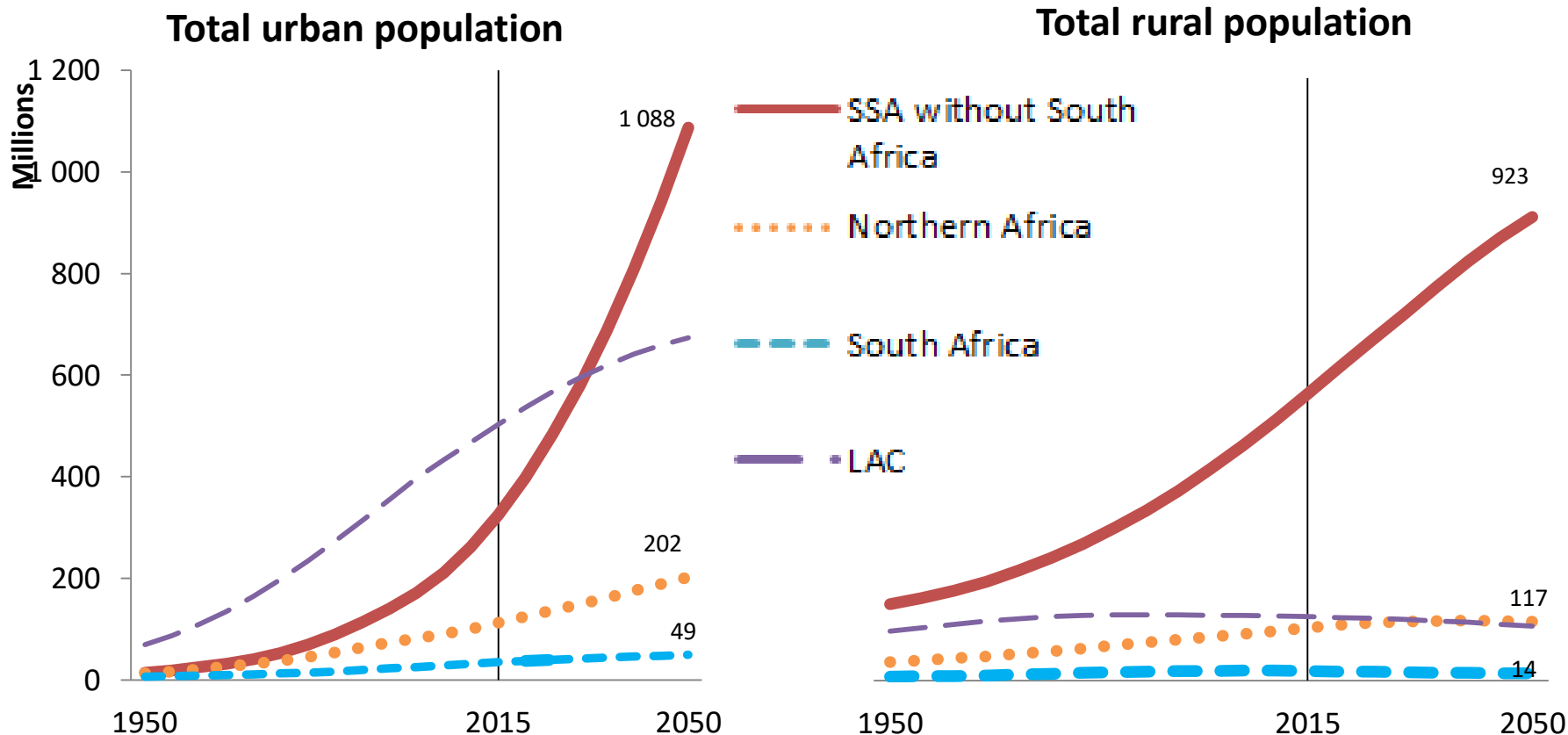


DTM shows **population change over time,**

how birth rate and death rate affect the total population of a country



Urban and rural population growth



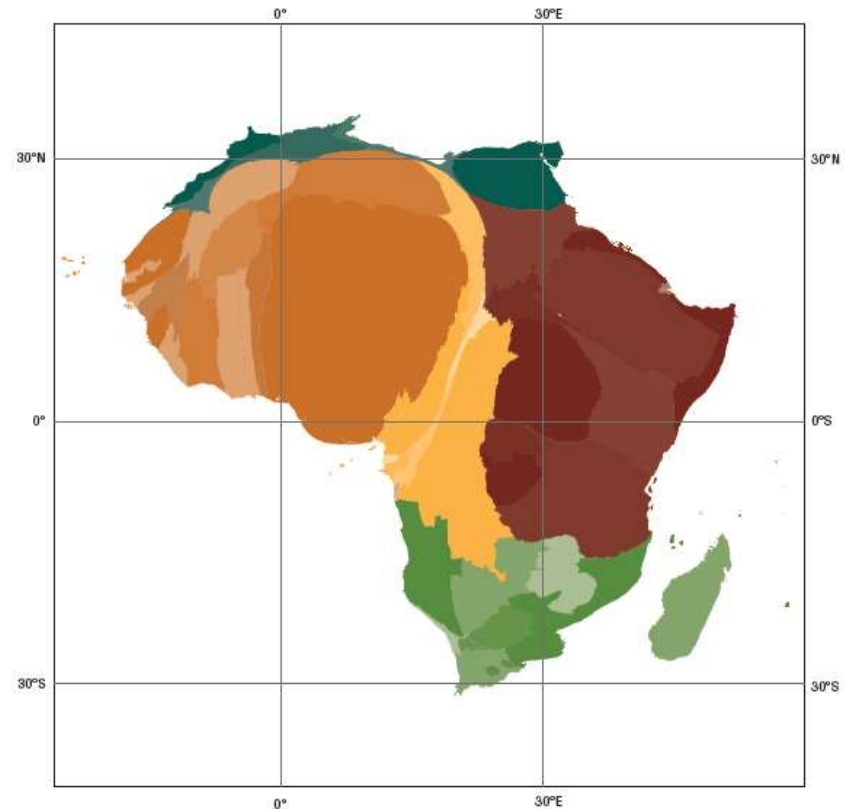
Source: WUP 2014, authors' calculations



Africa's population growth: from 2015 to 2050

Between 2015 and 2050, population in

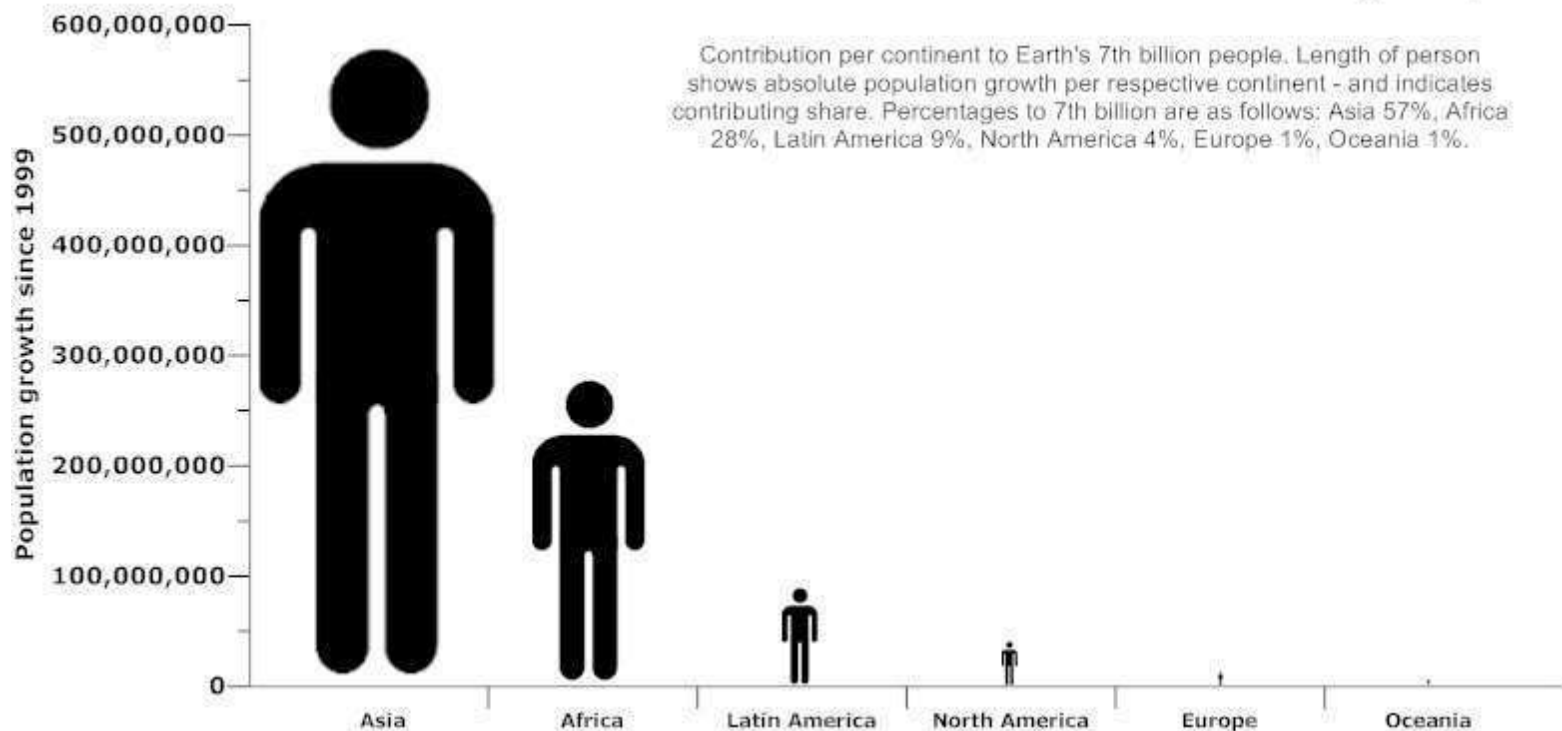
- West Africa will grow by 133% (465 million)
- East Africa will grow by 120% (475 million)



Source: World Population Prospects, 2012
Medium Fertility Scenario
Cirad Cartography Unit



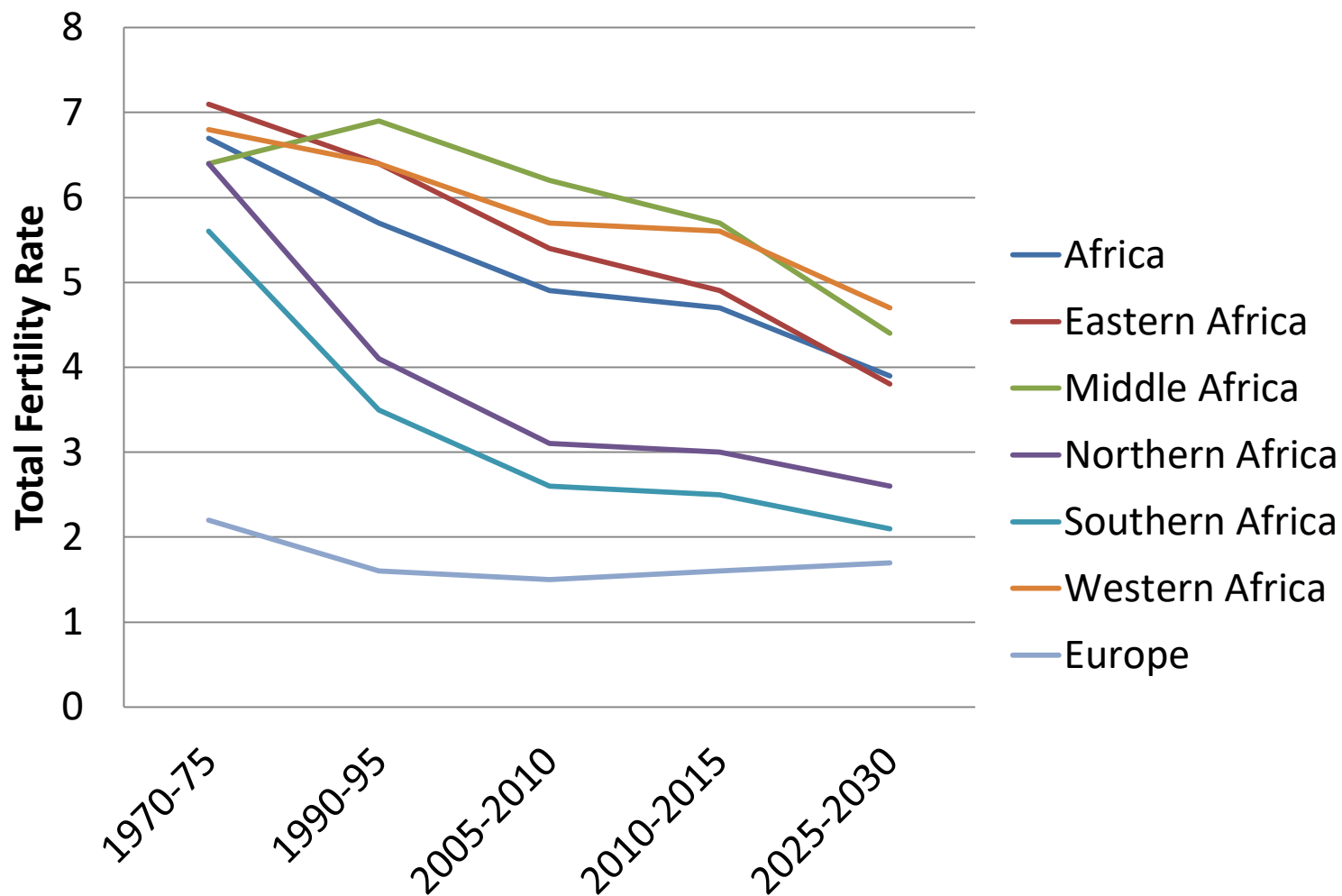
From 6 billion to 7 billion people



Data: UN World Population Prospects 2010 Rev. | Infographic: Bitscience.org

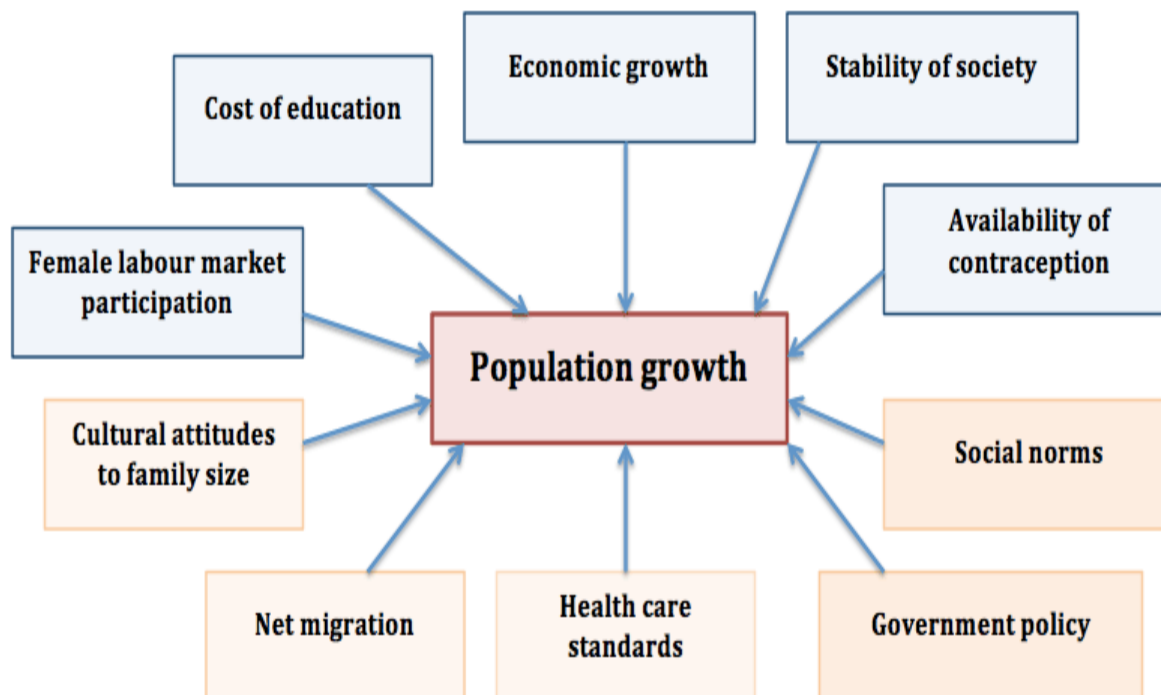


Trends in the Total Fertility Rate, UN Projections





Factors influencing Population growth

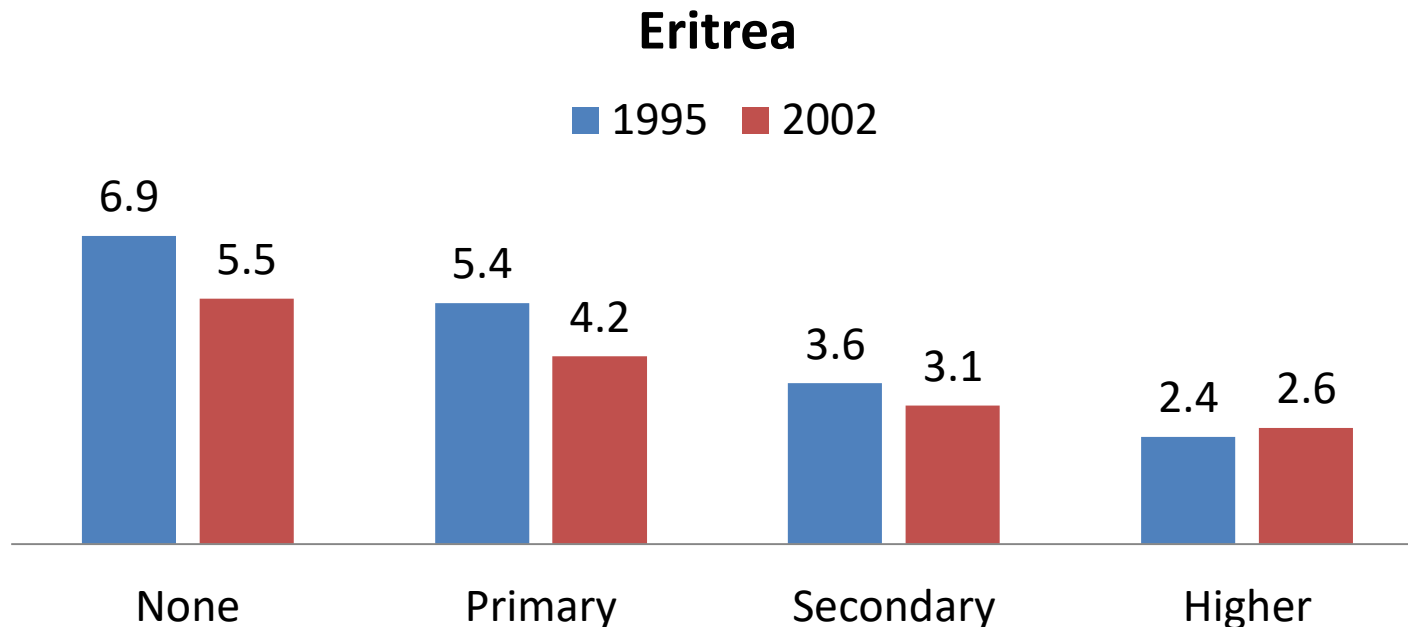


www.economicshelp.org



Fertility rate and education

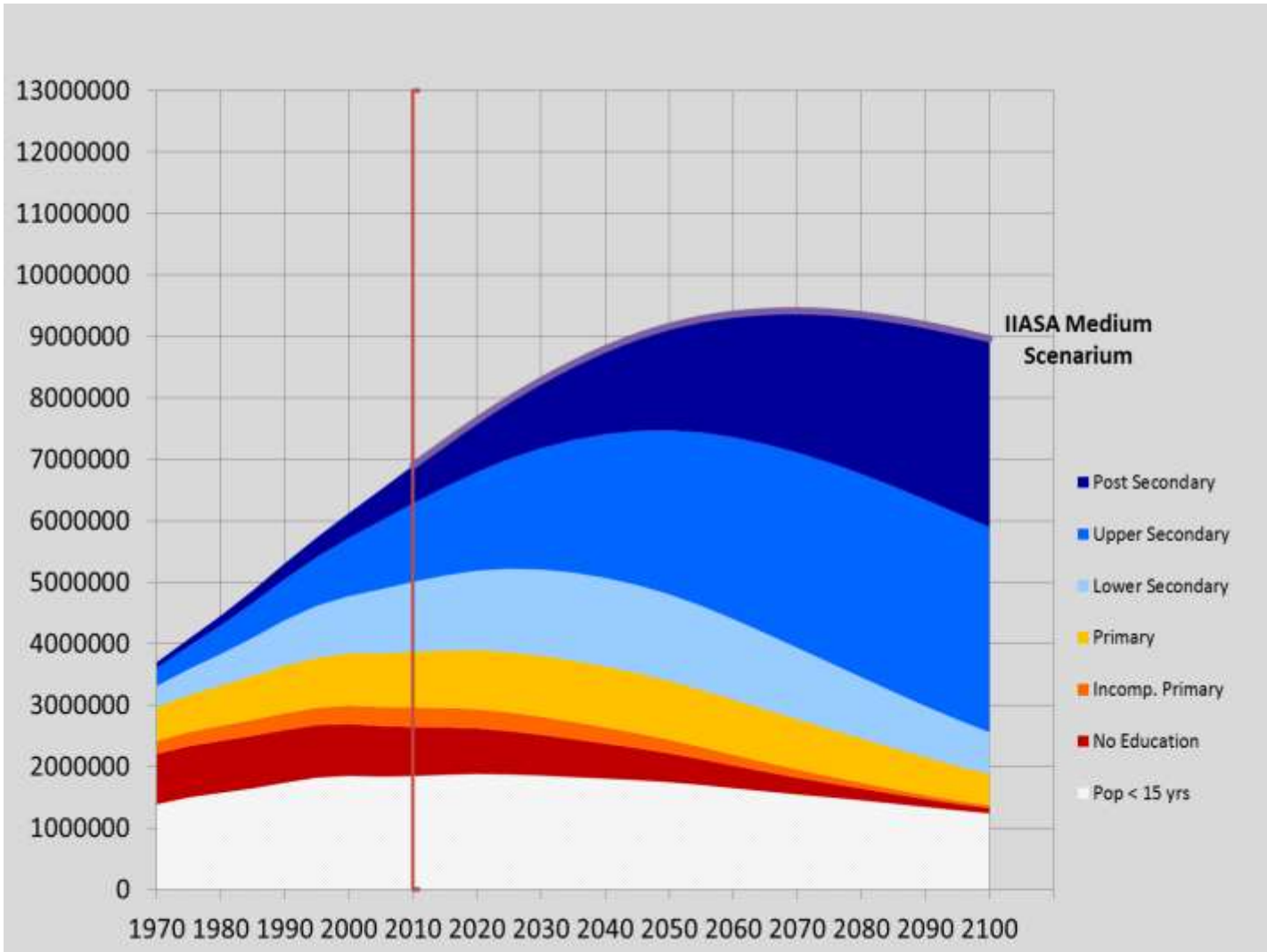
Women with more than secondary education tend to have fertility rates that are closer to replacement levels



Migration in Europe

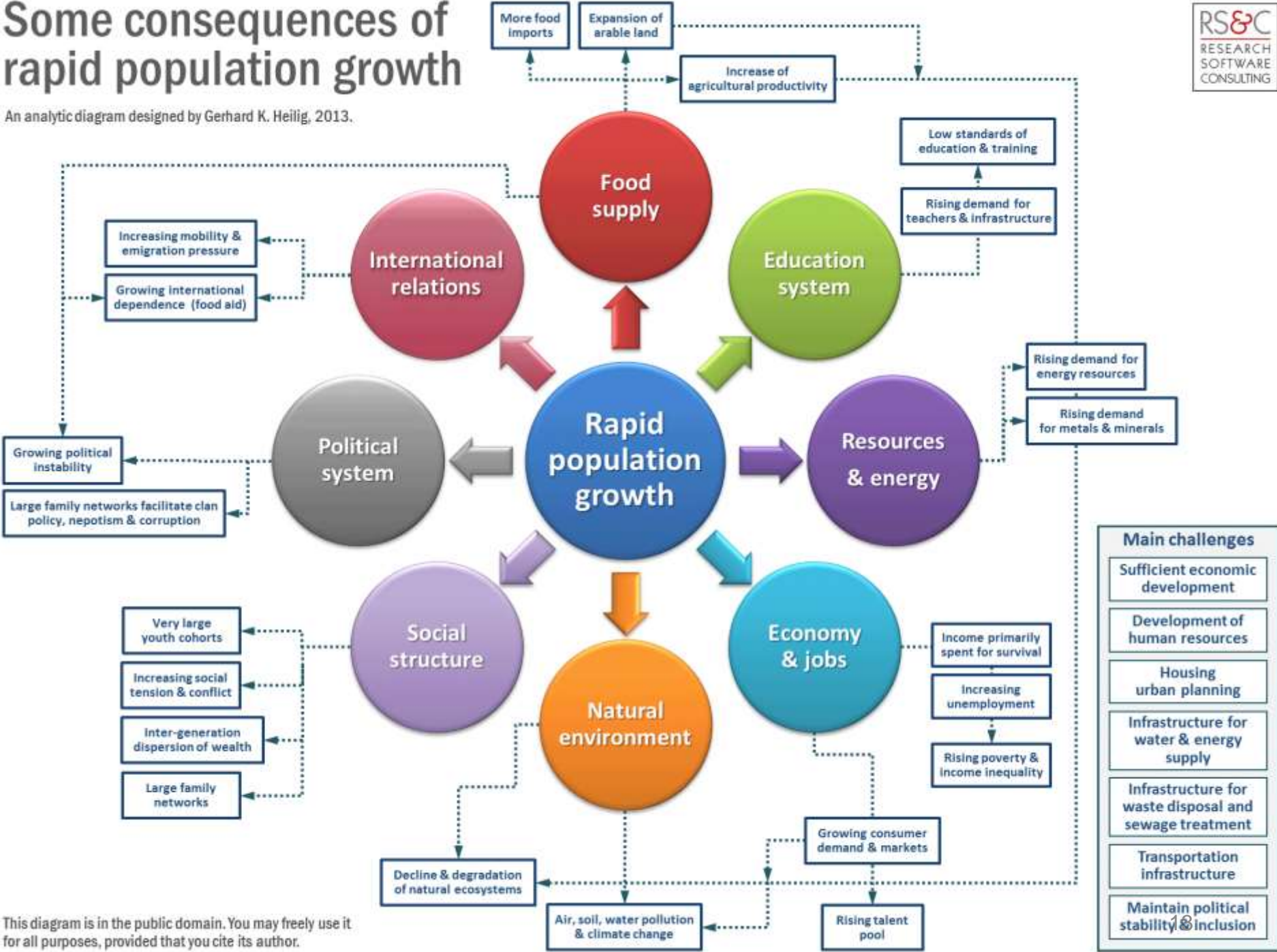
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Some consequences of rapid population growth

An analytic diagram designed by Gerhard K. Heilig, 2013.



This diagram is in the public domain. You may freely use it for all purposes, provided that you cite its author.

Migration in Europe

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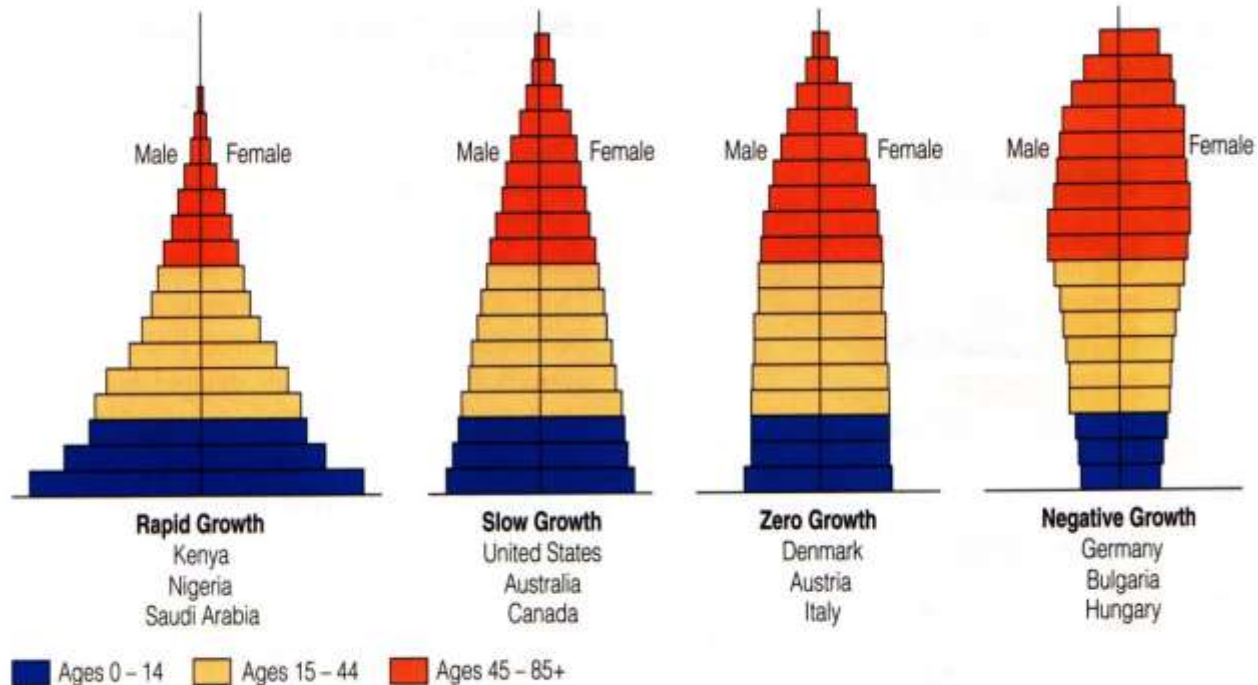


Figure 01 Population age structure diagrams for countries with rapid, slow, zero, and negative population growth rates. (Data from Population Reference Bureau)



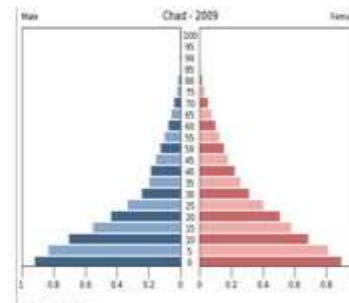
5. Rapid Population Growth

Problems:

- Farms becoming smaller
- Destruction of natural environment
- Land losing fertility due to overuse
- Rapid urban growth – poor housing
- High unemployment – crime rate increases
- Schools and hospitals overcrowded.

Solutions:

1. One Child Policy (China)
2. Family planning/sex education
3. Free contraception (Indonesia)
4. Equal education for women
5. Cash incentives for small families
6. Voluntary sterilisation (India)





The debate on brain drain is complex

→ Short run

→ Long run



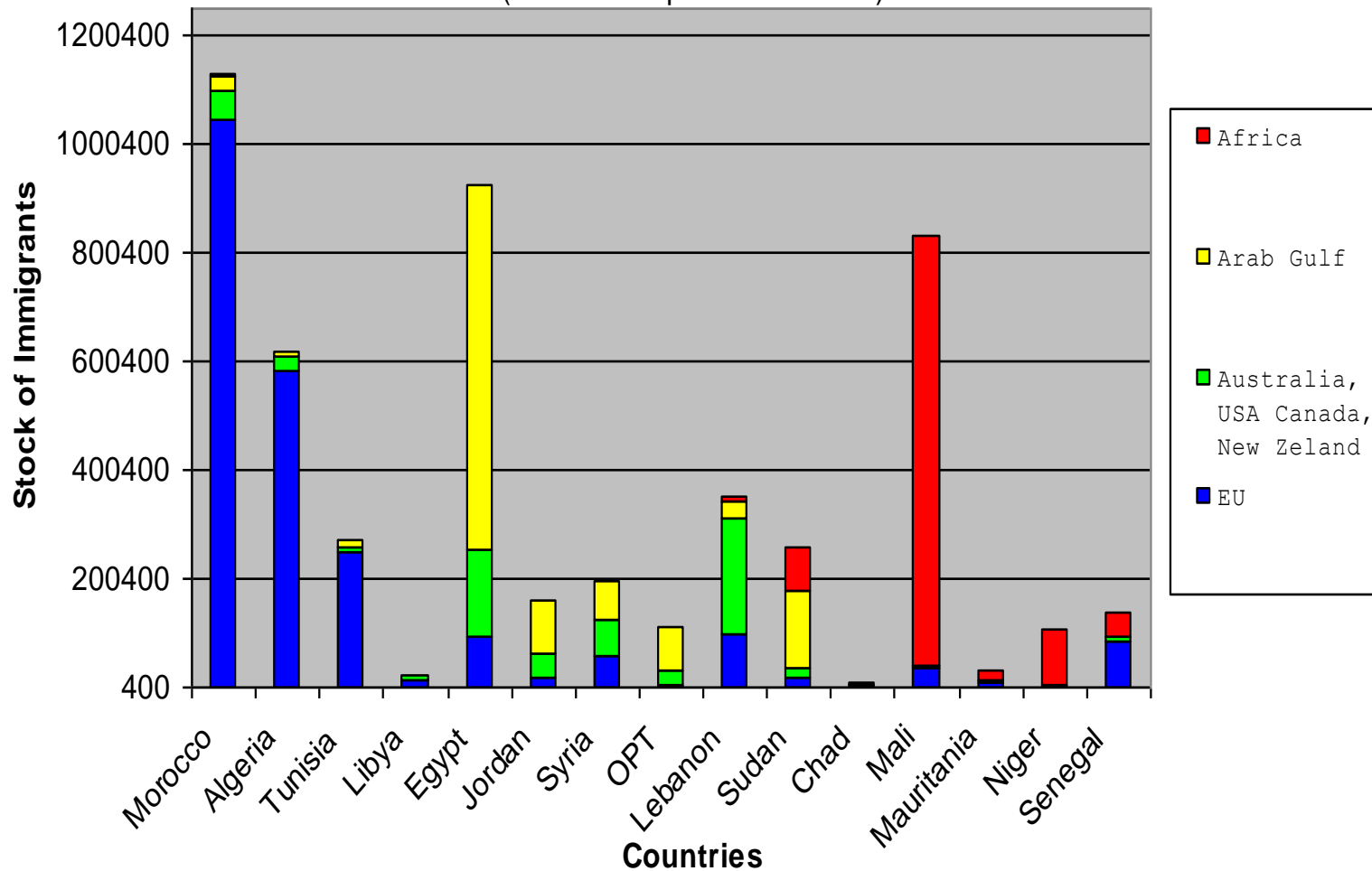
Stylized facts on Skilled migration

- Few OECD countries gain, most OECD countries lose HS individuals
- Only US, CA and AUS are net gainers
Inflows of HS > outflows of HS
- The EU countries losers (Exceptions BE, LX, SWI, NOR)



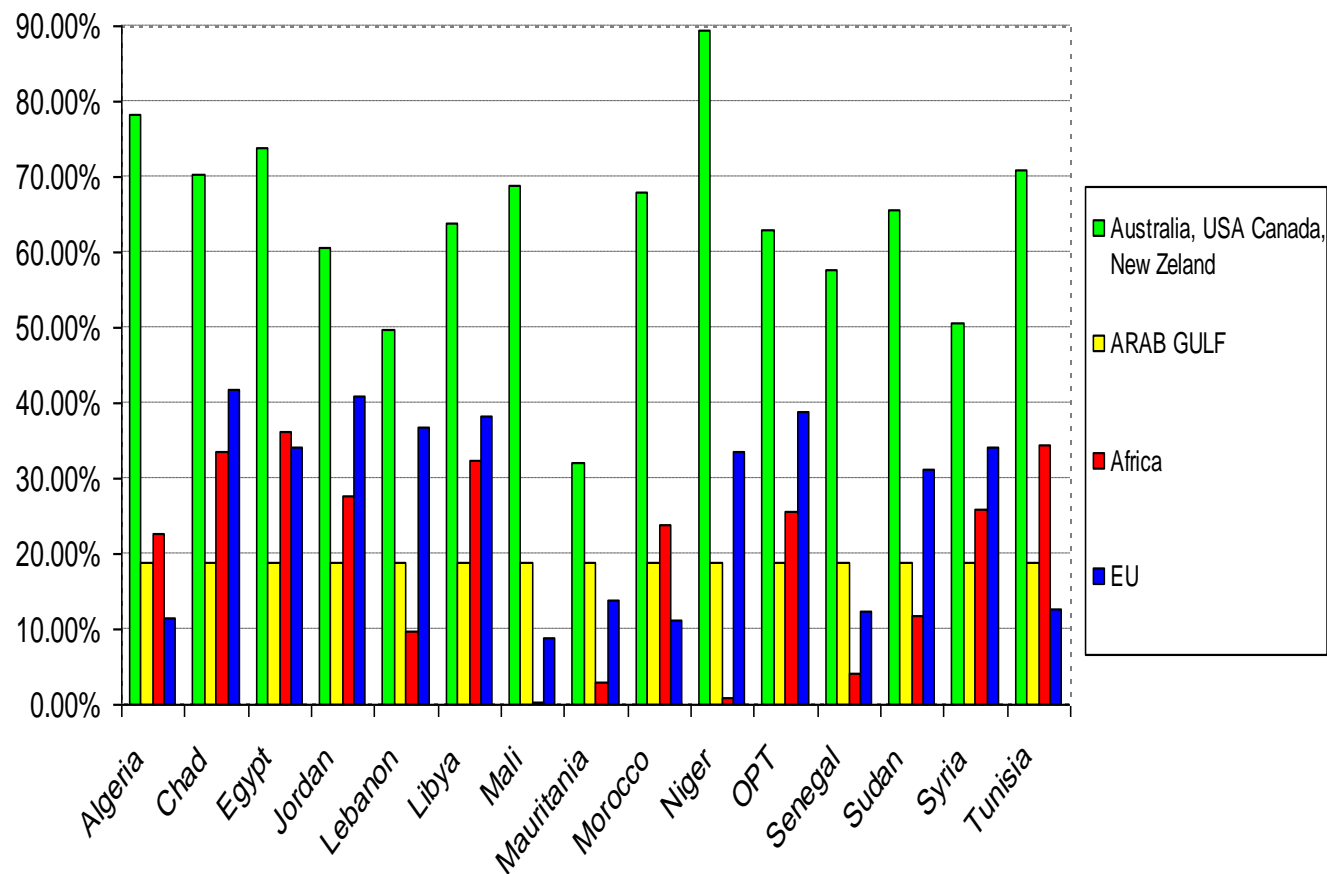
Stock of migrants by origin country in main destination areas in 2000

(Source: Doquier & Marfouk)





Share of highly skilled migrants by country of origin to main destination areas in 2000
(Source: Docquier & Marfook)





**Immigrants are even more concentrated
at the top of skill distribution**



Figure 2

Share of Foreign born employment by schooling group, 2000

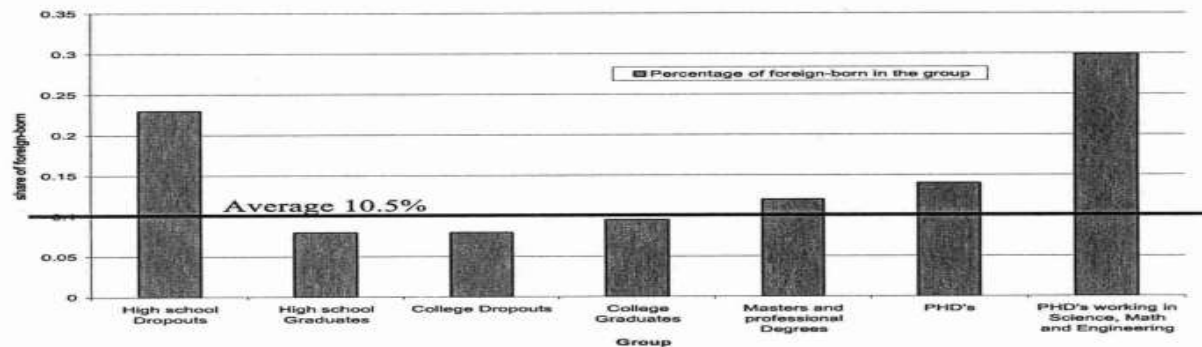
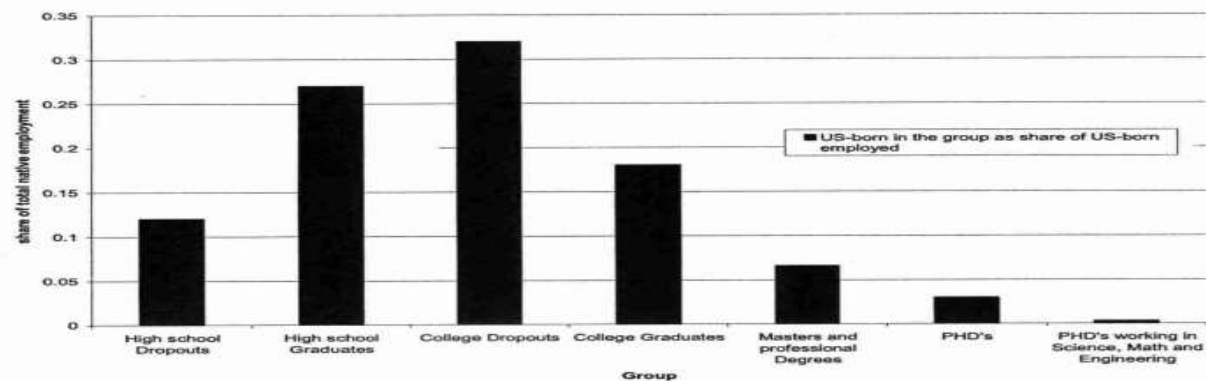


Figure 3

Distribution of US-born employed by schooling group, 2000





Why HS Migrants are mainly going to USA, Canada, Australia and New Zealand?

- **Legislation** Migration policy-point system
- Economic structure of destination countries- **HS jobs available**
- **Wage premium-**
- USA High wage 5 times low wage (France and Netherland 2.9, Demark and Switzerland 2.7; Belgium and Sweden 2.4);
- **Education system**
- **Language**



Both destination and sending countries are in search of skills for similar reasons



Brain drain and brain gain

The link between migration and growth in sending countries is however quite complex.

First, if the best will live the country, total human capital will decline (*implying a lower growth path, less foreign direct investment and remittances are not enough to compensate for it*).

Second, migrants may return home after having acquired a set of productive skills with a beneficial impact on the growth prospects of their home country.



Finally, the policy bias in host countries toward skilled flows may not necessarily penalize sending countries. As argued most recently by Stark (1999, 2001), the incentive to acquire skills may be strengthened by the prospect of being able to migrate.

Even in the presence of a brain drain, therefore, the **average education level of those left behind in the home country may be higher than otherwise** and this will induce a higher growth path and attract foreign investment.



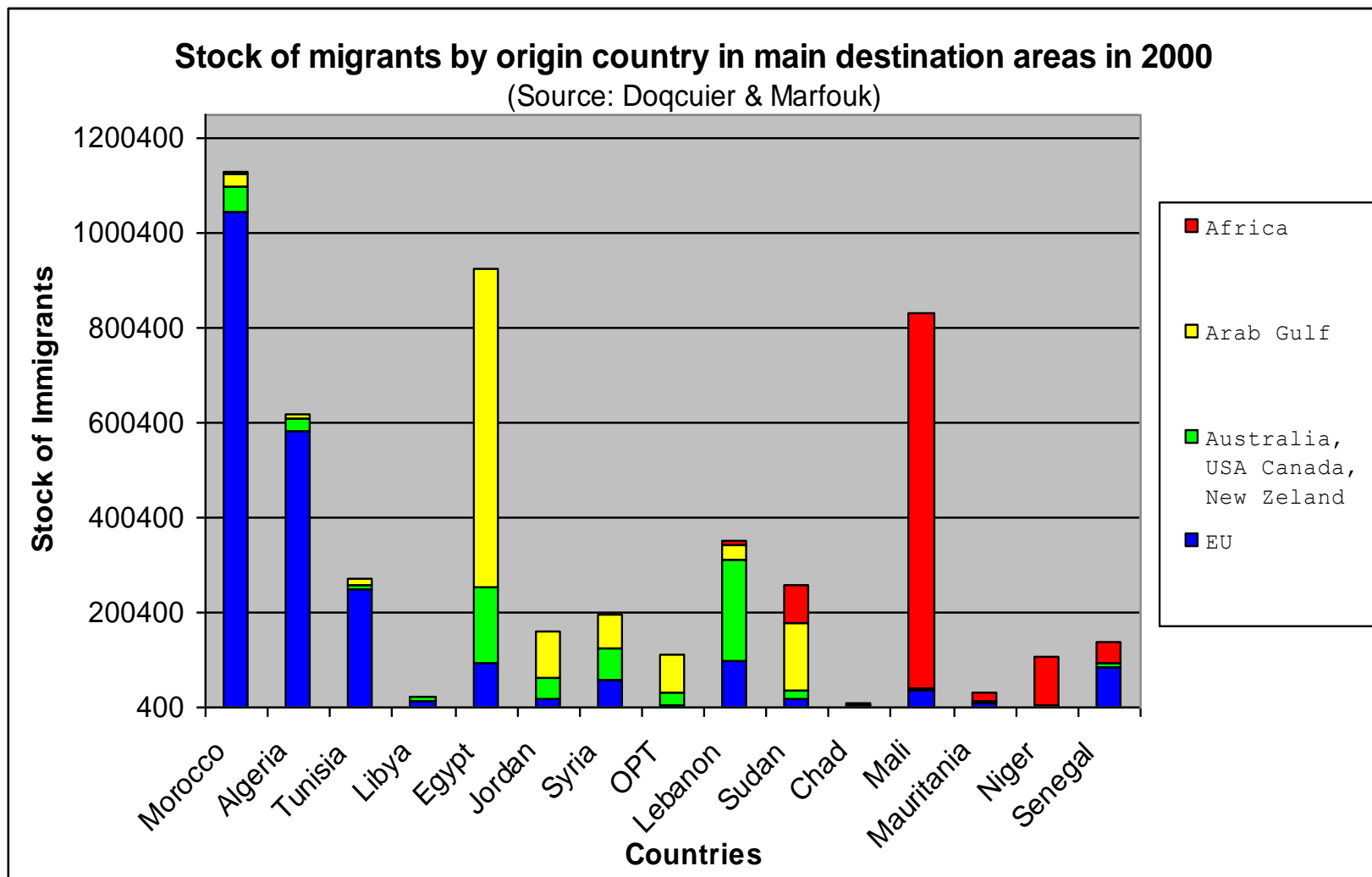
In this “revisionist” approach to the analysis of the brain drain, skilled migration may turn into a “brain gain” even if no account is taken of the potentially positive effects on the home country of remittances and return migration



A case study on High skilled migration

From the MENA and SSA and few Eastern
Countries

*Destination



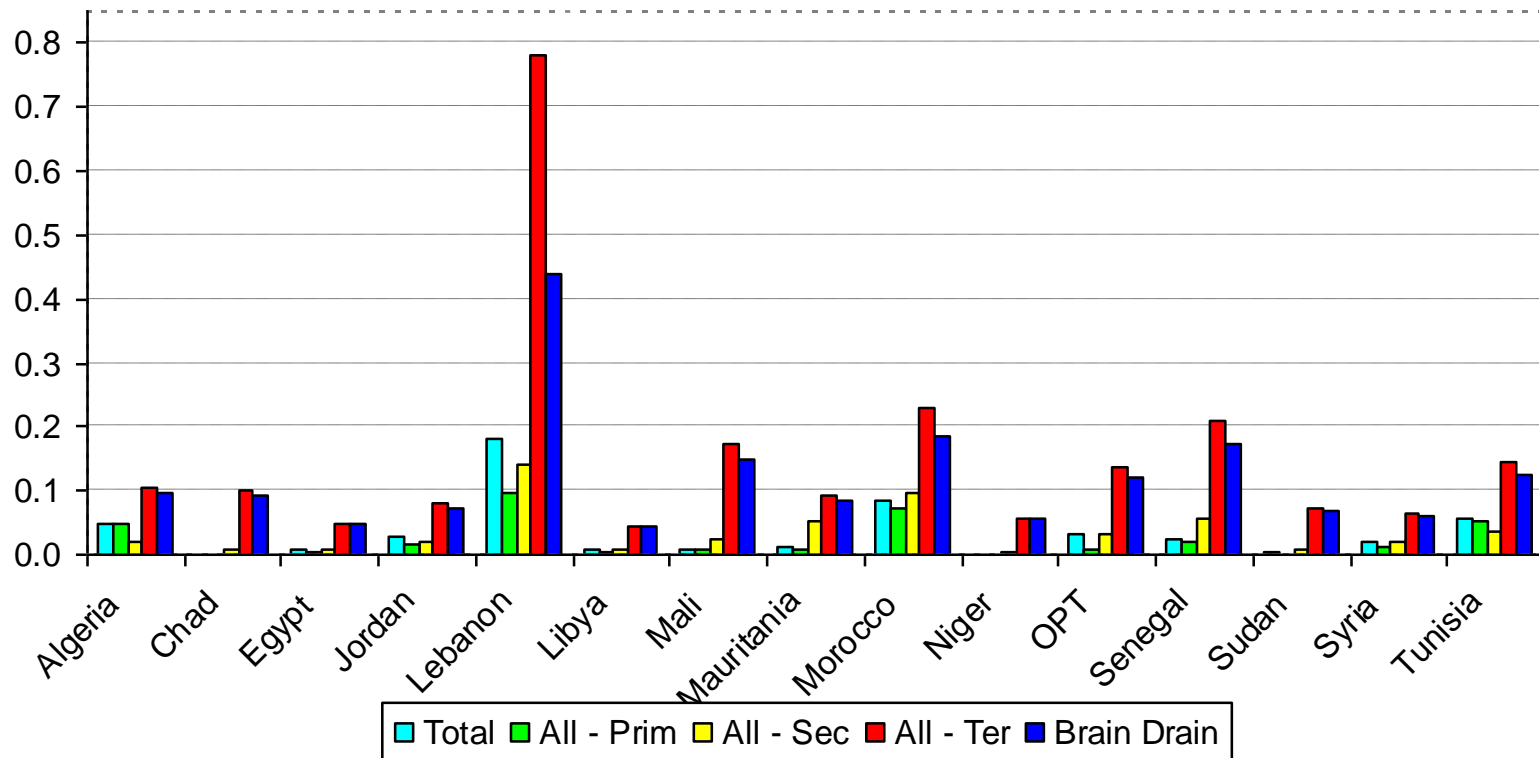


How many?

- The number
- And the measure of Brain drain
- Share of HSM of total HS (at home and abroad)



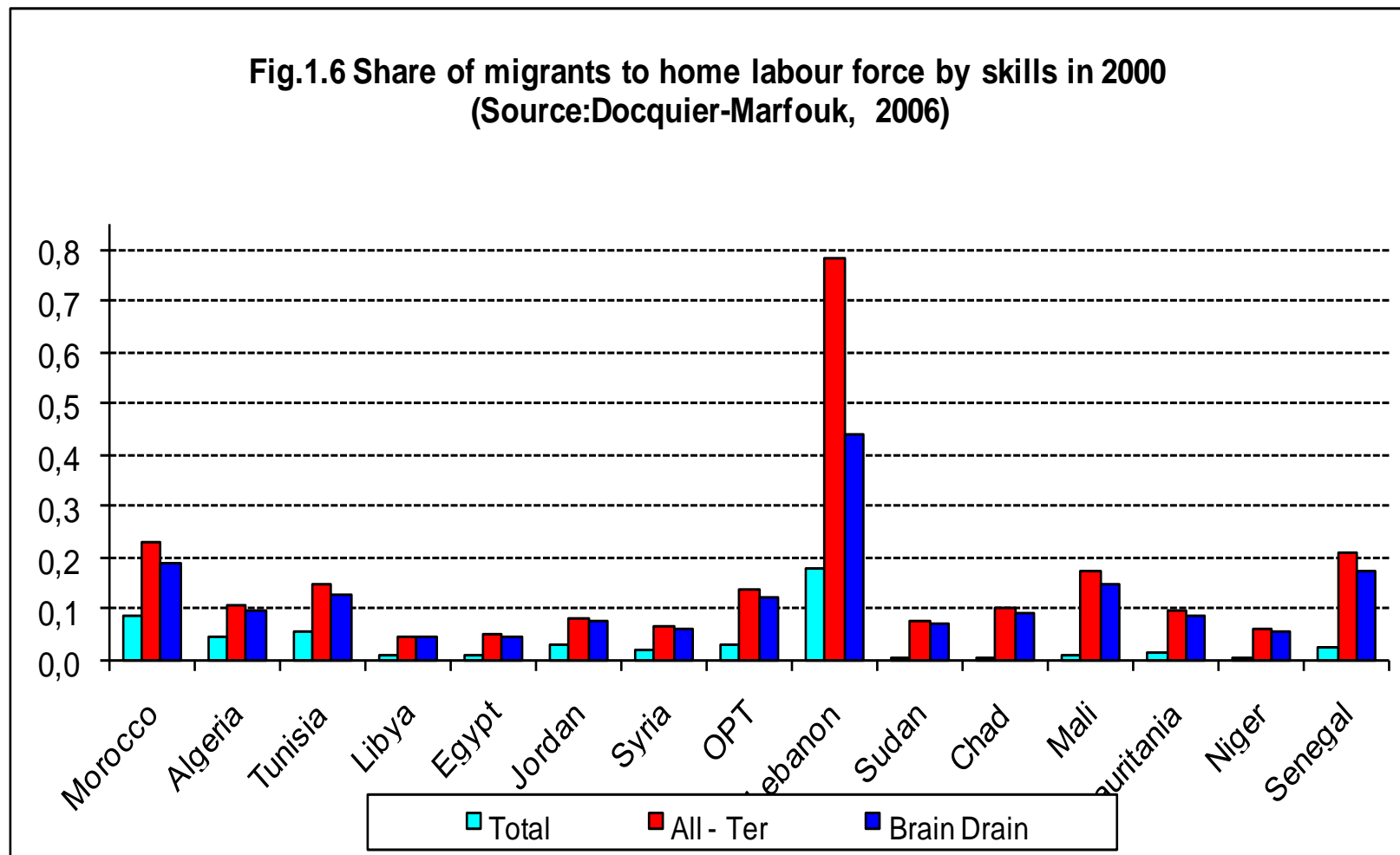
**Fig.4.2 Share of migrants to home labour force by skills
around 2000
(Source: Doqquier & Marfouk)**





Brain drain

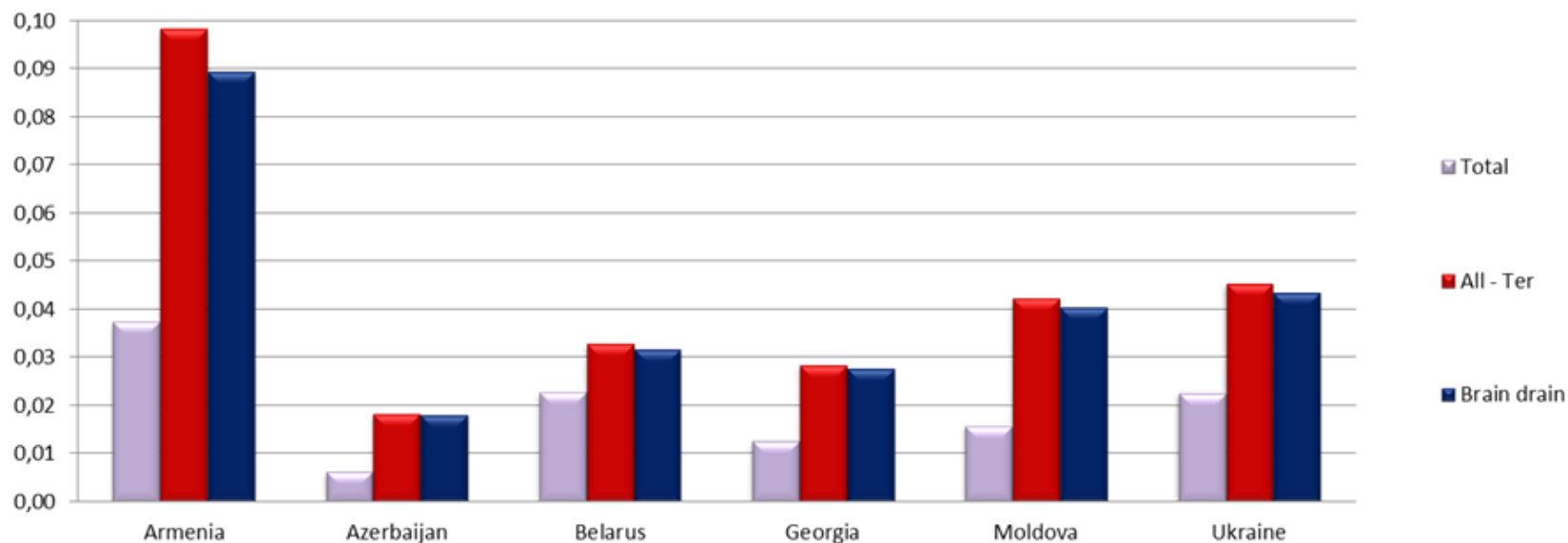
Fig.1.6 Share of migrants to home labour force by skills in 2000
(Source:Docquier-Marfouk, 2006)





Share of migrants to home labour force by skills around 2000

(Source: Doquier & Marfouk)

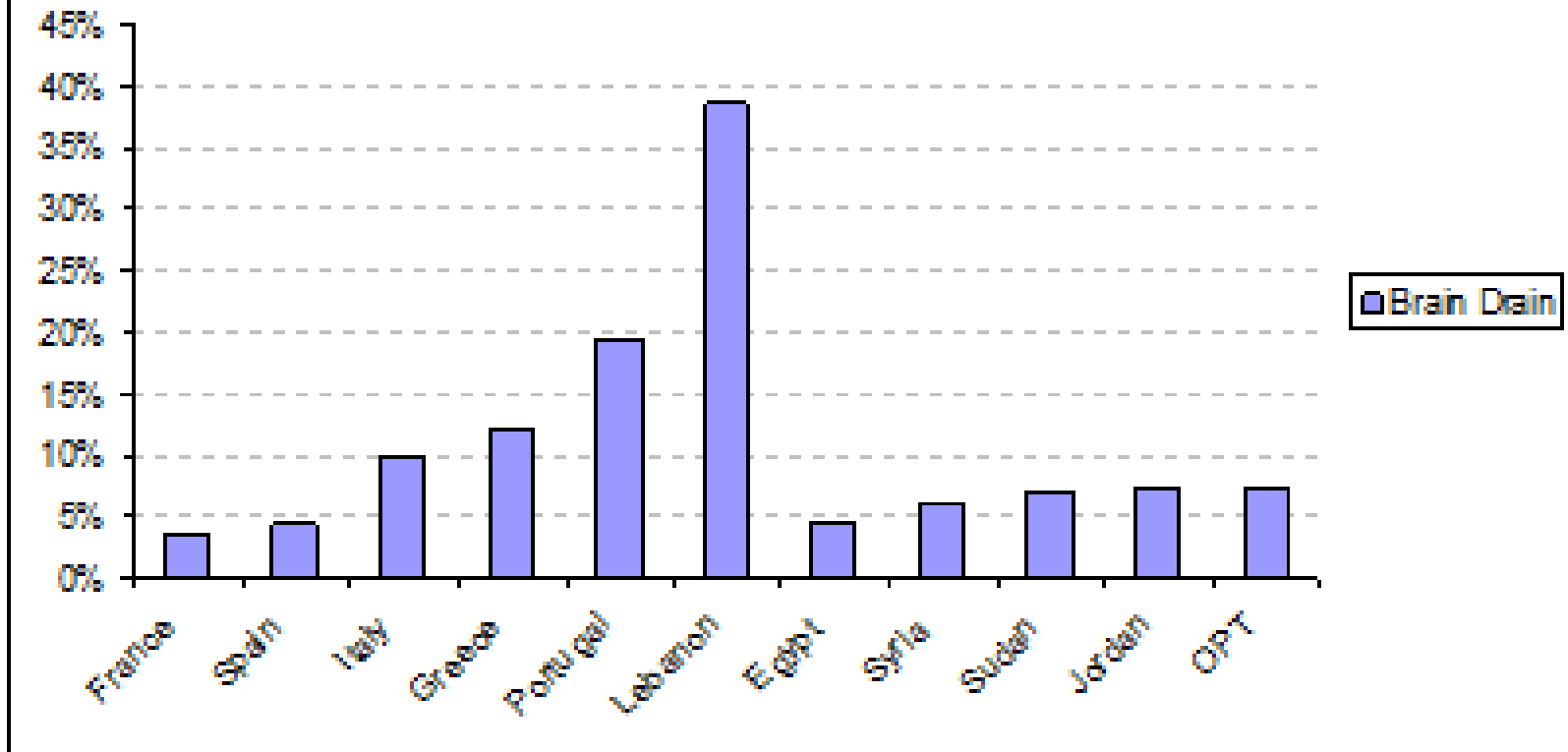




Is it Brain waste taking place only among third-country nationals?



The Brain Drain in South Europe and Some Middle East Countries
in 2000 (Source: Docquier-Marfouk)





Why HS migration takes place?

1. Demand side
2. Supply side
3. Mismatch between Supply and Demand (HS supply > HS Demand)
(quality of education & social versus hard sciences)

On the Supply side: Economic reasons

- A) Unemployment among HS
- B) Reduction of real income per capita (Moldova)
- C) Large informal sector (60% in Egypt, 77-87% Mauritania)
- D) Decline in the size of public sector (Egypt, Morocco)
- E) Low return on tertiary education (Egypt)

On the Supply side: Political reasons

- Political instability in Palestine, Lebanon, Sudan, Jourdan



Questions

Is it the educational policy appropriate?



Over-education & Over-occupation

Migrants in:

- 3 level of education: low, medium and high
- level of job-skill: low, medium, high



Table 6.1 Distribution of occupation/education level to EU27

| <i>occupation level</i> | | | | <i>education level</i> | | | |
|-------------------------|--------------|--------------|--------------|------------------------|--------------|--------------|--------------|
| COUNTRIES | Low | Intermediate | High | COUNTRIES | Low | Intermediate | High |
| ALGERIA | 35.46 | 26.28 | 38.26 | ALGERIA | 38.69 | 36.23 | 25.09 |
| CHAd | 20.28 | 25.34 | 54.38 | CHAd | 16.47 | 33.8 | 49.72 |
| EGYPT | 31.32 | 23.97 | 44.7 | EGYPT | 23.56 | 36.69 | 39.75 |
| JORDAN | 16.47 | 19.57 | 63.96 | JORDAN | 13.1 | 27.82 | 59.08 |
| LEBANON | 22.36 | 23.95 | 53.69 | LEBANON | 23.35 | 30.48 | 46.16 |
| LYBIA | 27.33 | 26.43 | 46.24 | LYBIA | 40.87 | 36.61 | 22.52 |
| MALI | 63.14 | 19.38 | 17.47 | MALI | 70.45 | 16.98 | 12.56 |
| MAURITANI | 64.18 | 19.35 | 16.47 | MAURITANI | 69.37 | 16.16 | 14.46 |
| MOROCCO | 52.79 | 22.94 | 24.27 | MOROCCO | 58.39 | 24.17 | 17.44 |
| NIGER | 32.28 | 18.25 | 49.47 | NIGER | 21.61 | 36.31 | 42.08 |
| PSE | 19.28 | 19.46 | 61.26 | PSE | 17.24 | 23.13 | 59.63 |
| SENEGAL | 61.89 | 14.79 | 23.32 | SENEGAL | 65.85 | 18.77 | 15.38 |
| SUDAN | 21.3 | 23.13 | 55.58 | SUDAN | 14.6 | 27.32 | 58.09 |
| SYRIA | 36.26 | 20.12 | 43.62 | SYRIA | 30.3 | 30.19 | 39.51 |
| TUNISIA | 48.17 | 17.07 | 34.76 | TUNISIA | 47.87 | 32.36 | 19.76 |
| Mean | 36.83 | 21.34 | 41.83 | Mean | 36.78 | 28.47 | 34.75 |

Source: Database on Immigrants in OECD countries (DIOC), around year 2000



Table 6.2 Distribution of occupation/education level to US, Australia, NZ and CANADA

| <i>occupation level</i> | | | | <i>education level</i> | | | |
|-------------------------|-------|--------------|-------|------------------------|-------|--------------|-------|
| COUNTRIES | Low | Intermediate | High | COUNTRIES | Low | Intermediate | High |
| ALGERIA | 19.97 | 30.65 | 49.37 | ALGERIA | 6.79 | 28.36 | 64.85 |
| CHA d | 37.29 | 27.85 | 34.87 | CHA d | 4.84 | 38.5 | 56.66 |
| EGYPT | 15.34 | 30.84 | 53.82 | EGYPT | 6.19 | 24.61 | 69.2 |
| JORDAN | 21.56 | 43.53 | 34.91 | JORDAN | 12.67 | 39.23 | 48.11 |
| LEBANON | 25.34 | 32.01 | 42.64 | LEBANON | 21.2 | 35.14 | 43.66 |
| LYBIA | 20.92 | 31.96 | 47.12 | LYBIA | 7.01 | 35.51 | 57.47 |
| MALI | 27.19 | 41.81 | 31.01 | MALI | 22.53 | 34.22 | 43.25 |
| MAURITANI | 41.51 | 37.54 | 20.95 | MAURITANI | 35.78 | 27.75 | 36.47 |
| MOROCCO | 18.73 | 37.8 | 43.47 | MOROCCO | 9.59 | 37.33 | 53.08 |
| NIGER | 26.69 | 45.43 | 27.89 | NIGER | 18.44 | 37.18 | 44.38 |
| PSE | 20.18 | 22.39 | 57.44 | PSE | 13.94 | 29.3 | 56.76 |
| SENEGAL | 24.9 | 42.44 | 32.67 | SENEGAL | 17.11 | 35.98 | 46.91 |
| SUDAN | 36.75 | 33.81 | 29.44 | SUDAN | 12.98 | 38.2 | 48.82 |
| SYRIA | 25.93 | 33.93 | 40.14 | SYRIA | 19.62 | 33.65 | 46.72 |
| TUNISIA | 17.33 | 28.56 | 54.1 | TUNISIA | 7.46 | 27.23 | 65.32 |
| Mean | 25.31 | 34.70 | 39.99 | Mean | 14.41 | 33.48 | 52.11 |

Source: Database on Immigrants in OECD countries (DIOC), around year 2000



Table 1.4 Over-education and over-occupation rates by country of origin to main destinations

| EU27 destinations | | | | | | | US, Australia, NZ and Canada | | | | | | |
|---------------------|-----------------|-------|----------|----------------|--------|-------------|------------------------------|-----------------|-------|----------|----------------|-------|-------------|
| Countries of Origin | Over-occupation | | Matching | Over-education | | | COUNTRIES Of origin | Over-occupation | | Matching | Over-education | | |
| | Strong | Light | | Light | Strong | | | Strong | Light | | Strong | | |
| | -2 | -1 | 0 | 1 | 2 | all | | -2 | -1 | 0 | 1 | 2 | all |
| ALGERIA | 6,3 | 22,64 | 53,91 | 15,49 | 1,65 | 516.759 | ALGERIA | 0,78 | 10,17 | 57,03 | 23,68 | 8,33 | 15.936 |
| CHAD | 3,5 | 17,74 | 58,22 | 16,96 | 3,58 | 2.683 | CHAD | 0 | 8,47 | 40,92 | 38,5 | 12,11 | 413 |
| EGYPT | 3,61 | 19,52 | 53,14 | 18,62 | 5,1 | 56.667 | EGYPT | 1,32 | 9,16 | 60,17 | 22,54 | 6,81 | 99.050 |
| JORDAN | 2,38 | 14,22 | 67,53 | 12,97 | 2,91 | 5.051 | JORDAN | 1,51 | 13,19 | 53,31 | 25,72 | 6,27 | 30.059 |
| LEBANON | 3,31 | 16,45 | 63,42 | 14,38 | 2,44 | 35.346 | LEBANON | 3,9 | 16,08 | 54,83 | 21,28 | 3,91 | 122.545 |
| LIBYA | 7,34 | 32,36 | 51,58 | 7,88 | 0,83 | 21.323 | LIBIA | 0,79 | 11,36 | 56,53 | 25,43 | 5,9 | 7.492 |
| MALI | 6,31 | 16,09 | 64,02 | 10,69 | 2,89 | 23.052 | MALI | 0,7 | 18,3 | 51,86 | 21,69 | 7,45 | 2.148 |
| MAURITANIA | 5,57 | 14,35 | 65,36 | 11,13 | 3,58 | 7.059 | MAURITANIA | 0,61 | 15,52 | 54,28 | 21,18 | 8,41 | 1.308 |
| MOROCCO | 4,4 | 19,63 | 61,82 | 12,33 | 1,82 | 600.215 | MOROCCO | 1,49 | 13,2 | 55,92 | 23,91 | 5,48 | 39.599 |
| NIGER | 4,21 | 14,47 | 58,25 | 19,82 | 3,25 | 1.140 | NIGER | | 12,44 | 55,32 | 27,29 | 4,95 | 667 |
| PSE | 3,24 | 13,69 | 67,03 | 11,98 | 4,05 | 2.220 | PSE | 5,56 | 15,78 | 52,81 | 19,83 | 6,02 | 3.257 |
| SENEGAL | 6,14 | 14,86 | 66,09 | 10,65 | 2,26 | 57.356 | SENEGAL | 1,28 | 14,04 | 51,64 | 27,47 | 5,58 | 7.423 |
| SUDAN | 2,69 | 13,13 | 62,91 | 15,8 | 5,47 | 6.031 | SUDAN | 0,73 | 10,81 | 45,2 | 31,04 | 12,22 | 13.586 |
| SYRIA | 3,67 | 13,84 | 61,32 | 17,31 | 3,86 | 19.409 | SYRIA | 2,21 | 14,11 | 57,34 | 21,14 | 5,2 | 36.888 |
| TUNISIA | 7,2 | 20,42 | 54 | 16,73 | 1,66 | 127.355 | TUNISIA | 1,26 | 9,53 | 61,91 | 21,46 | 5,84 | 6.813 |
| Mean | 4,66 | 17,56 | 60,57 | 14,18 | 3,02 | 1.481.666 | Mean | 1,58 | 12,81 | 53,94 | 24,81 | 6,97 | 387.184 |
| NATIVES | 4.70 | 25.09 | 51.55 | 17.17 | 1.48 | 152.719.891 | NATIVES | 1.41 | 16.43 | 53.09 | 26.21 | 2.87 | 131.704.748 |

Note: Matching if education holds the same rank as occupation, Overeducation "strong" if education is two ranks above occupation rank, Overeducation "light" if education is one rank above occupation rank, Overoccupation "strong" if occupation is two ranks above education, Overoccupation "light" if occupation is one rank above education.

Source: Database on Immigrants in OECD countries (DIOC), around year 2000



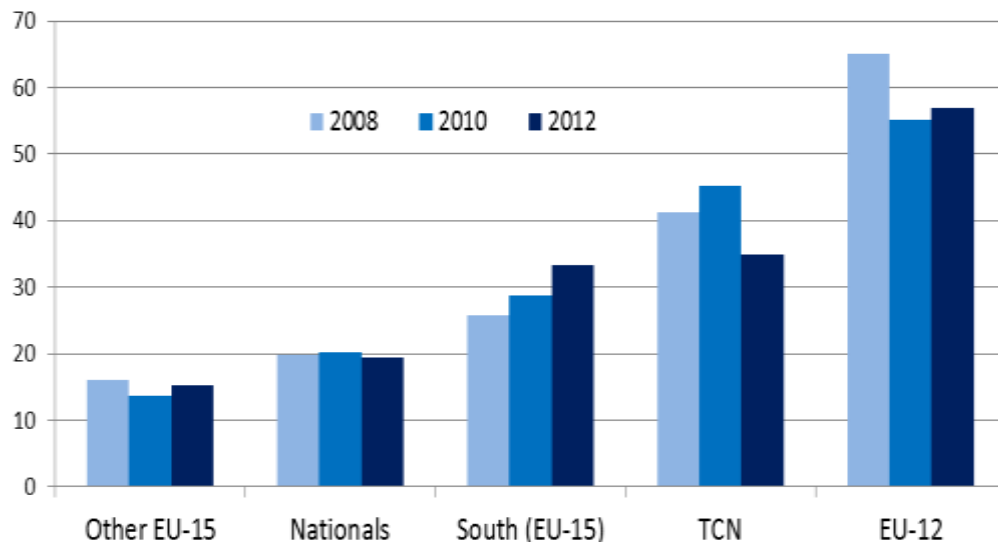
Paradox

- The American dream seems reversed,
- In Europe uneducated migrants can more easily upgrade



Recent trends in intra-EU mobility

- 3/5 of Southern movers are highly educated (vs 1/5 among unemployed in South)
- increase in over-qualification
- though highest rate is among EU-12 movers (>T.C.N.) with more than 50%

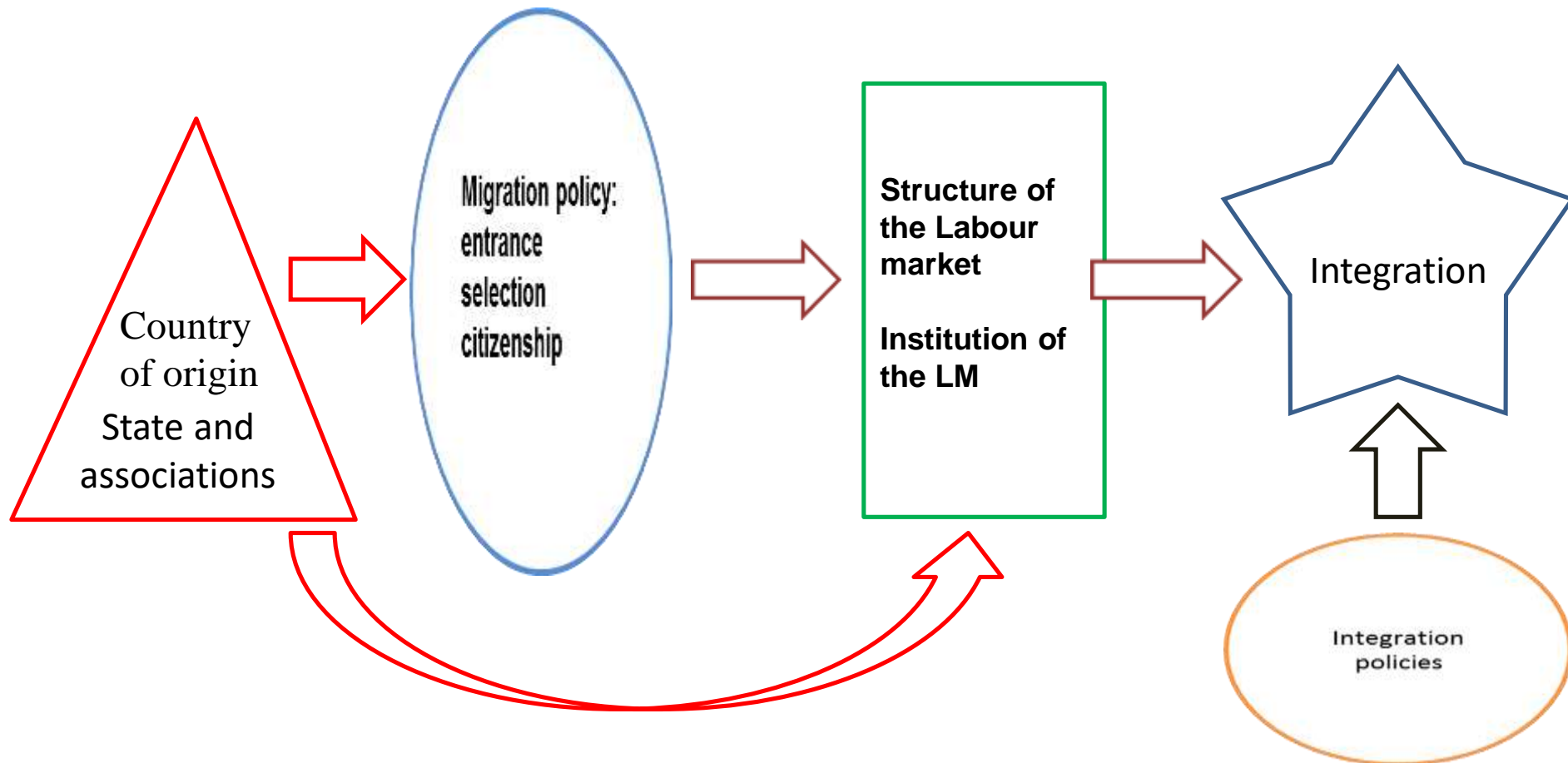


Over-qualification rate among recently established foreigners by group of nationality (in % of all highly educated in employment)

Source: Eurostat, LFS and DG EMPL calculations.



Integration pattern



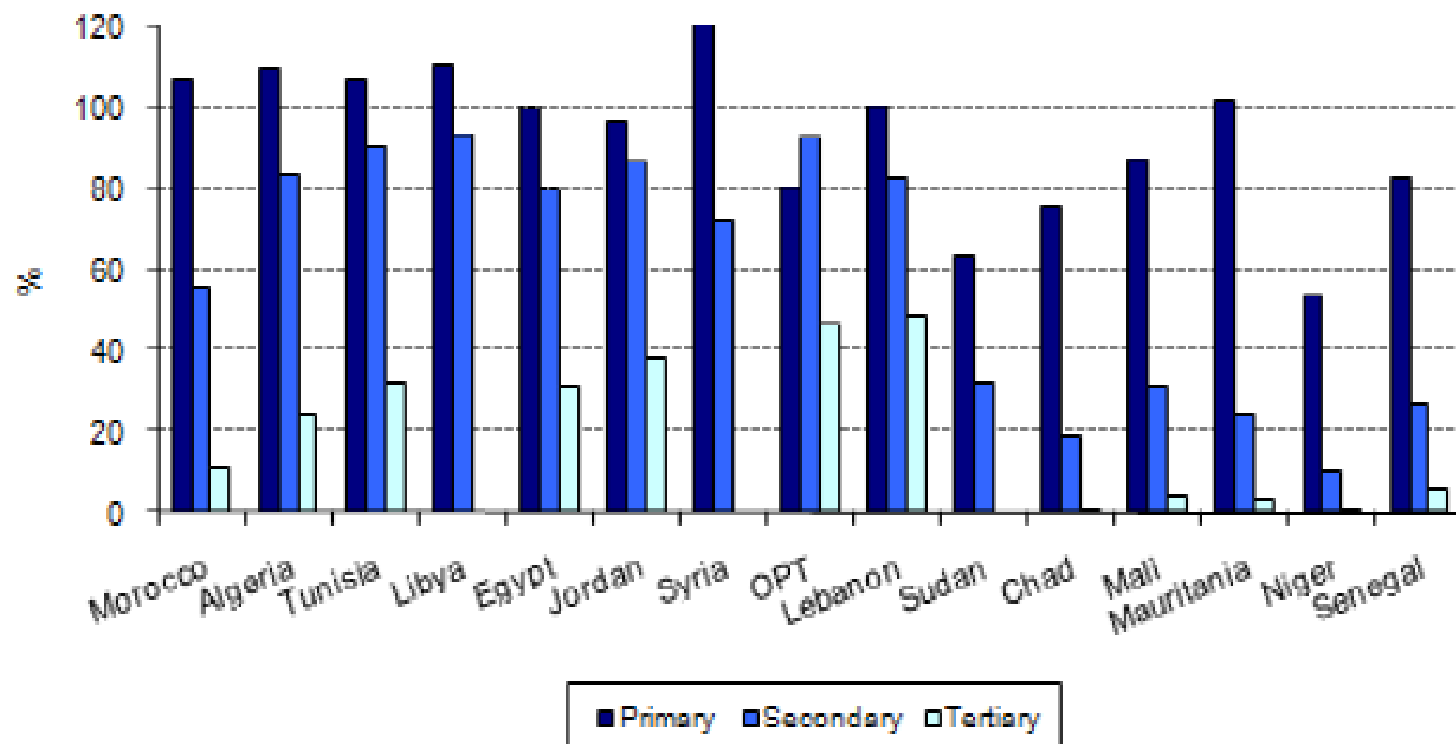


Differences in EDUCATION among countries in:

1. Tertiary education
2. Quality of education
3. Investment in public/private education
4. Public expenditure

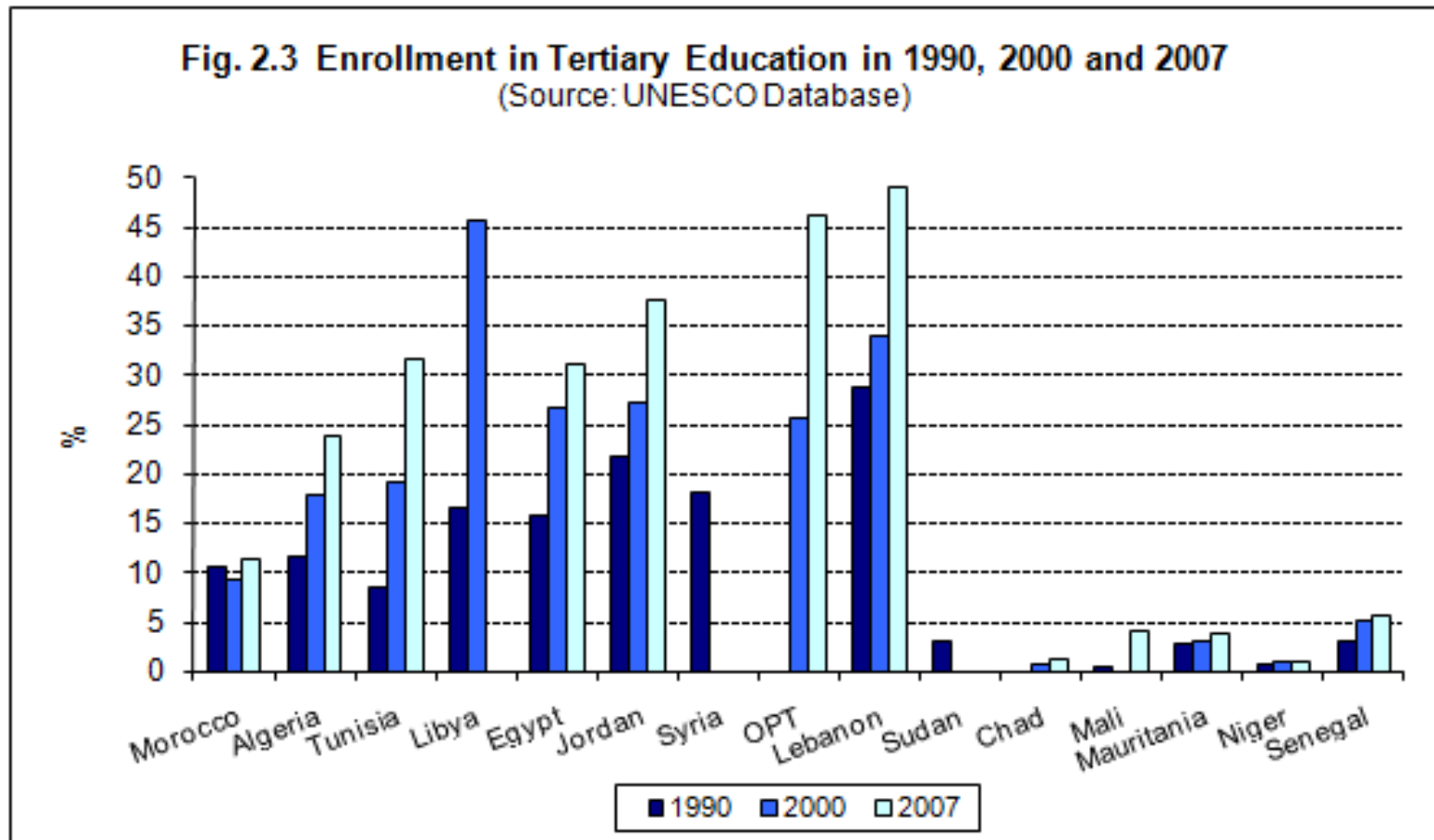


Fig. 2.1 Enrollment in Primary, Secondary and Tertiary education in 2007
(Source: UNESCO Database)





Tertiary Education





Increase in the supply of the highly skilled

- But not in the demand of highly skilled
- Quality of the education
- Field of education **Social sciences and Humanities and Education dominate the Hard Science and Engineering (66% in Egypt, 65% in Lebanon, 74% in Palestine, 54% in Jordan)**



Table 6.1: Estimated critical shortages of doctors, nurses and midwives, by region, 2000/01 and 2010/11

| WHO region | Total | With critical shortages | | Percentage of foreign-born medical professionals in OECD countries in the total estimated critical shortage | |
|---|-------|-------------------------|---------|---|---------|
| | | 2000/01 | 2010/11 | 2000/01 | 2010/11 |
| Africa | 46 | 36 | 31 | 7% | 13% |
| Americas | 35 | 5 | 5 | 71% | 74% |
| South-East Asia | 11 | 6 | 7 | 8% | 27% |
| Eastern Mediterranean | 21 | 7 | 6 | 10% | 17% |
| Western Pacific | 27 | 3 | 5 | 11% | 15% |
| Total number of countries with critical shortages | 140 | 57 | 54 | | |

Source: OECD (2015)