

6° CLAC

Sexto Congreso Latinoamericano de Clusters



Changes in the world economy and the future challenges for clusters

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Four families of factors will influence the future of clusters

Demography

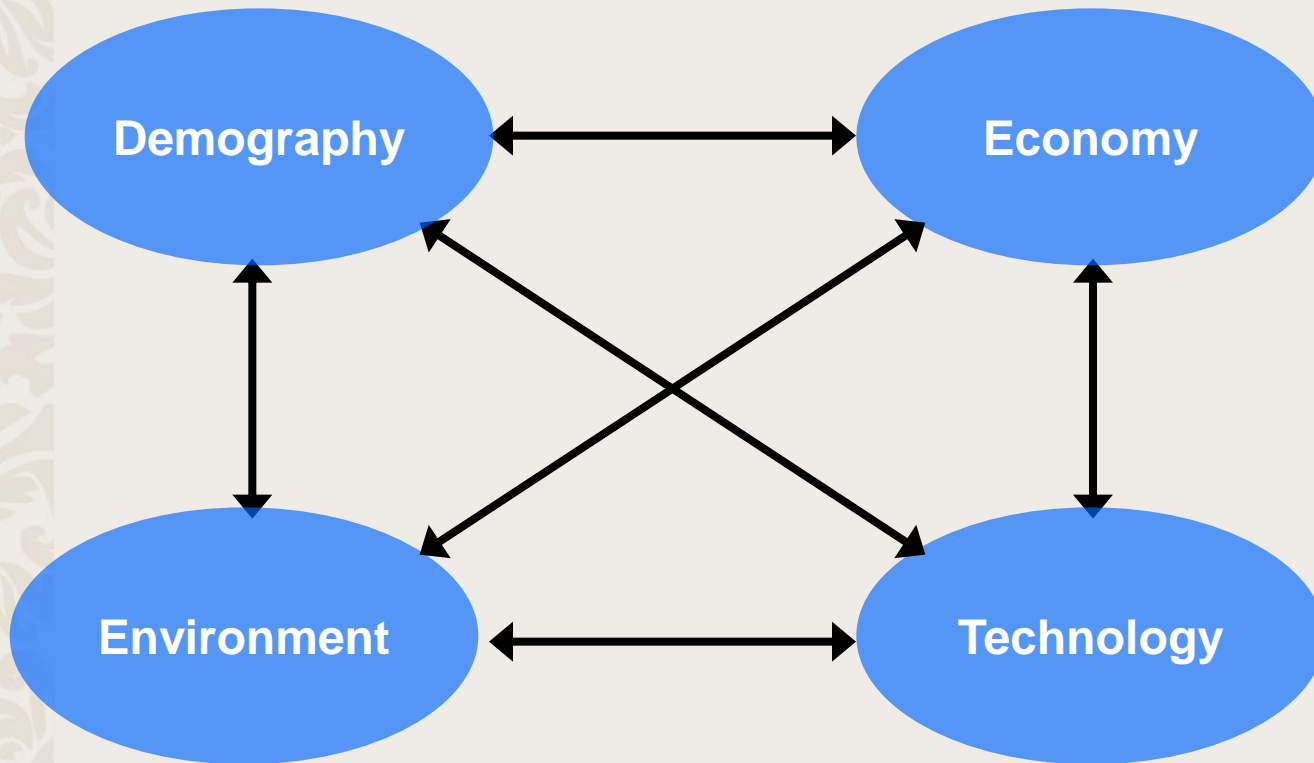
Economy

Environment

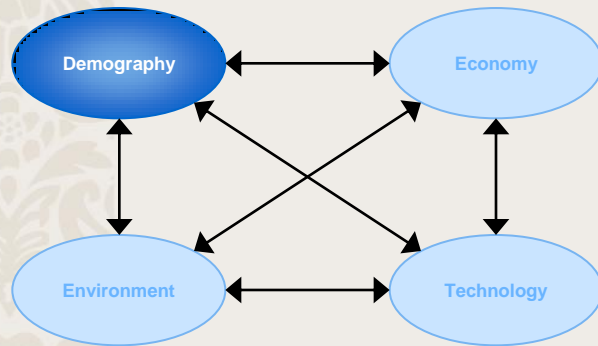
Technology



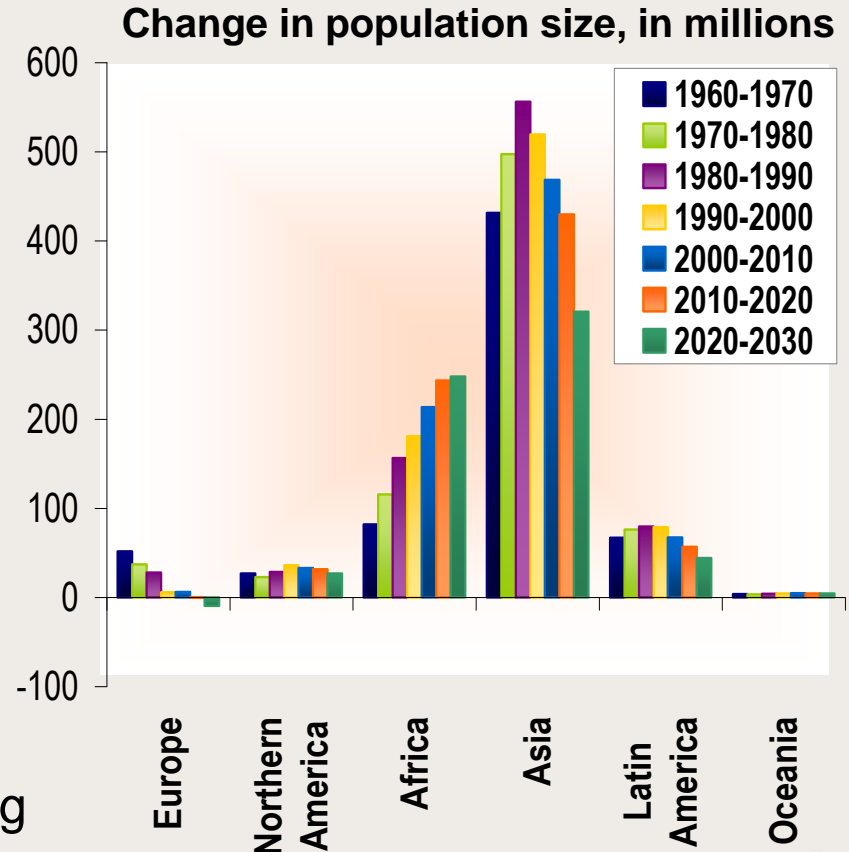
These four families of factors are interdependent



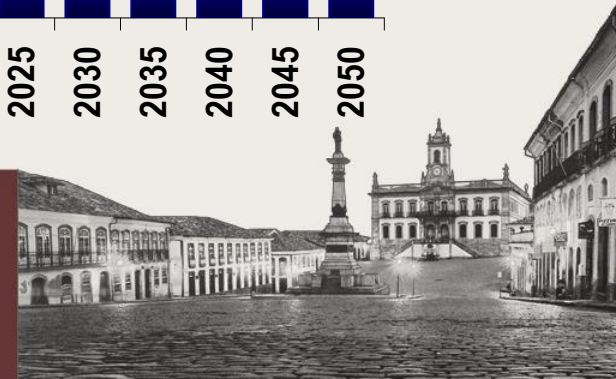
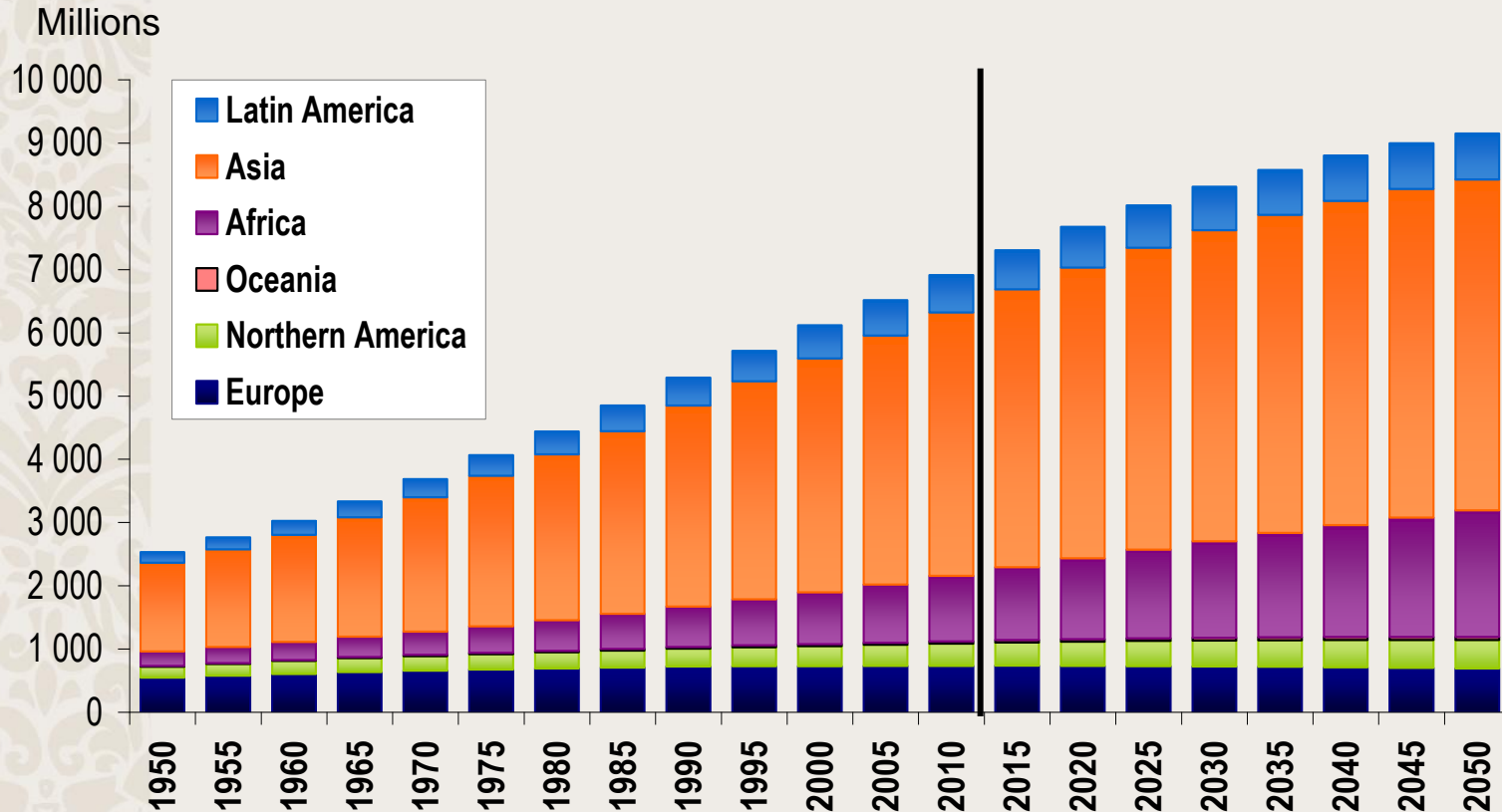
1. Demography, not only the economy, will change the way businesses operate



- Demographic growth is highly variable across regions
- Average household size is decreasing rapidly
- Megapoles are multiplying
- Society and consumers are ageing

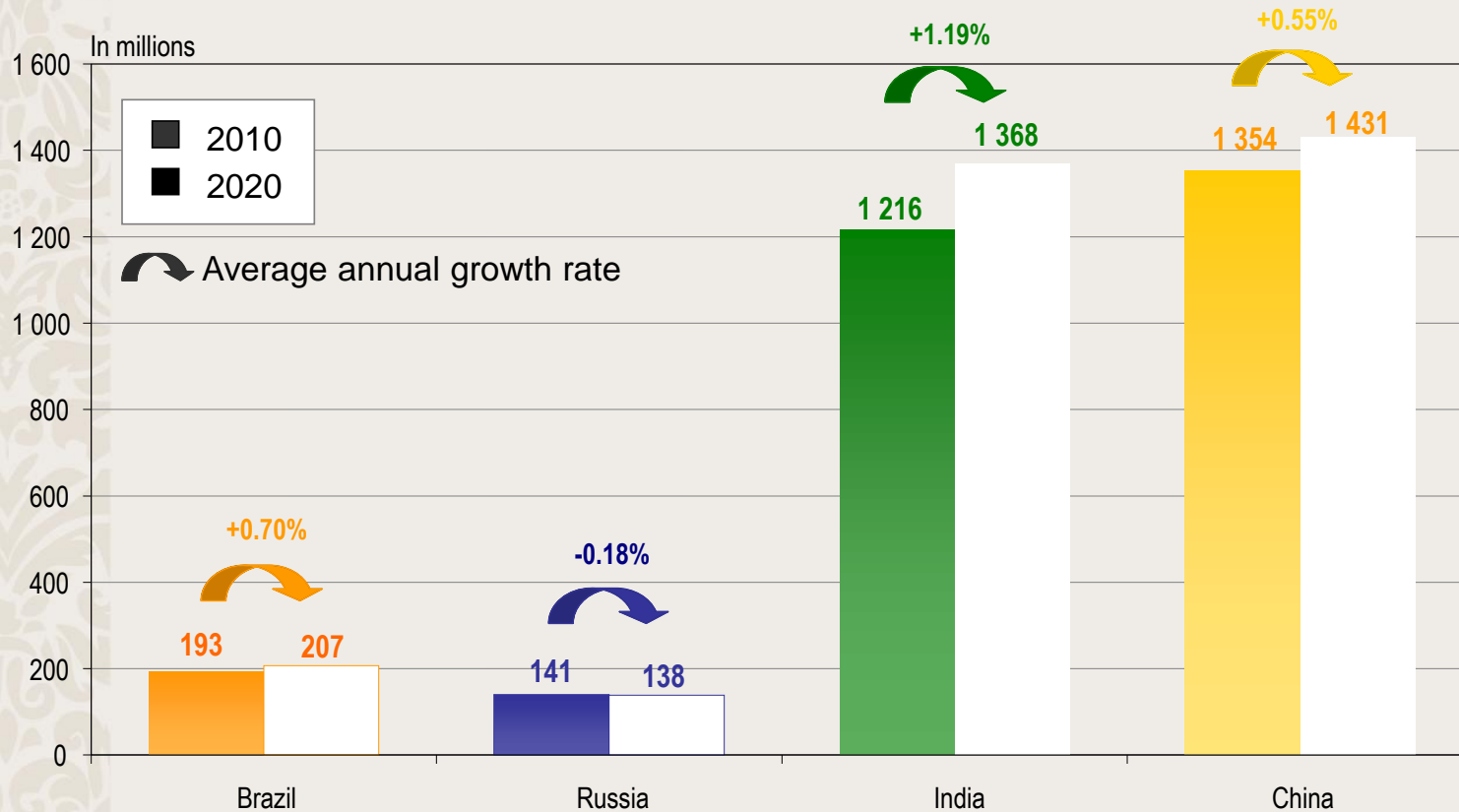


By 2050, North America and Europe will only represent 12,5% of the world's population (down from 17% in 2000)



Population growth rates vary significantly across countries

Projected growth in population between 2010 and 2020



Source: BIPE, based on IBGE, GKS and the UN



Consequence for clusters ?

- Based on population size, Asia and Africa are the most promising markets for the future
- Latin America does not seem so promising ... at first sight

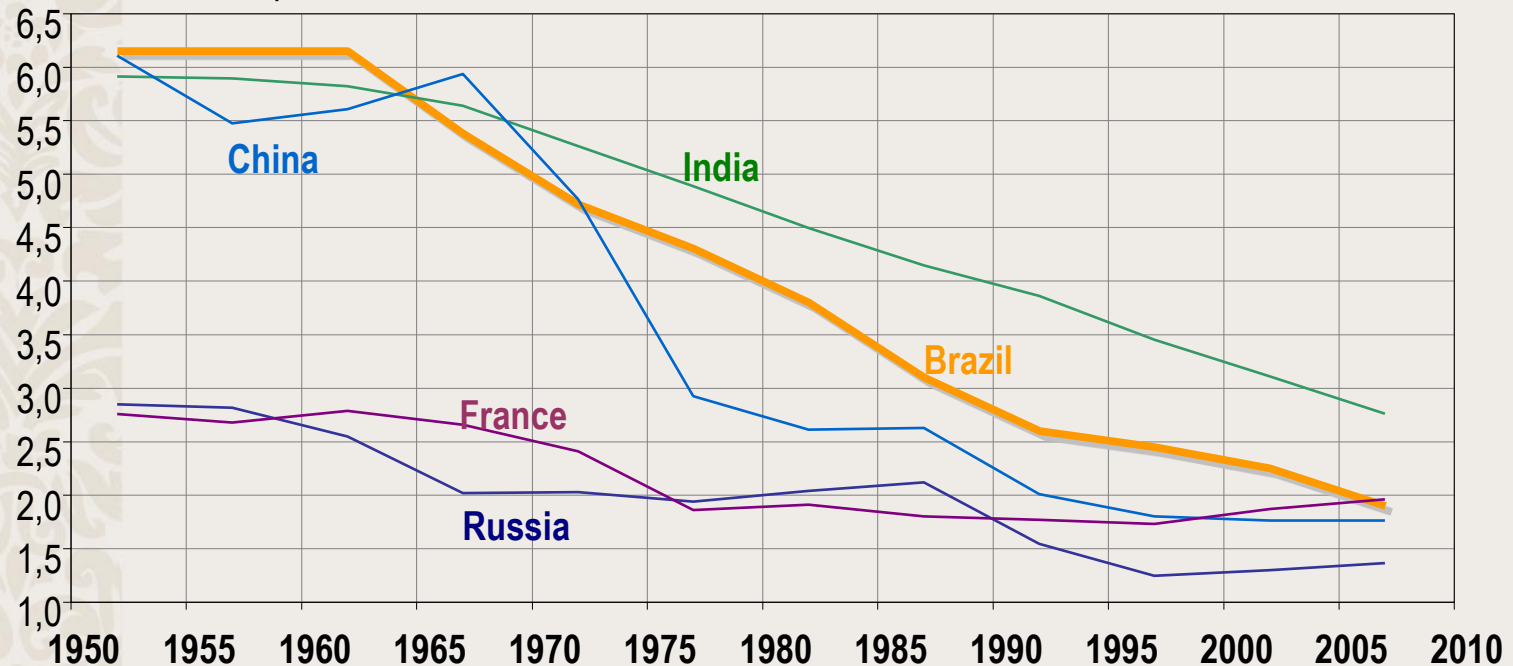


Average household size is falling also: the number of households continues to rise everywhere

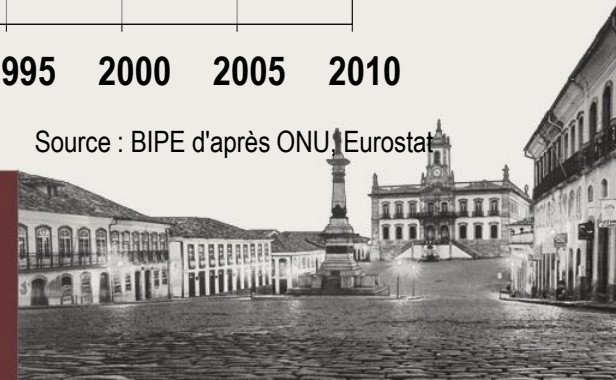
==> Three implications

Trend in the fertility rate in the main four emerging economies

Number of children per woman

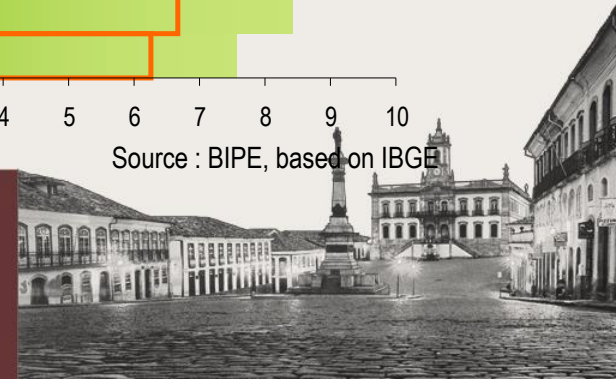
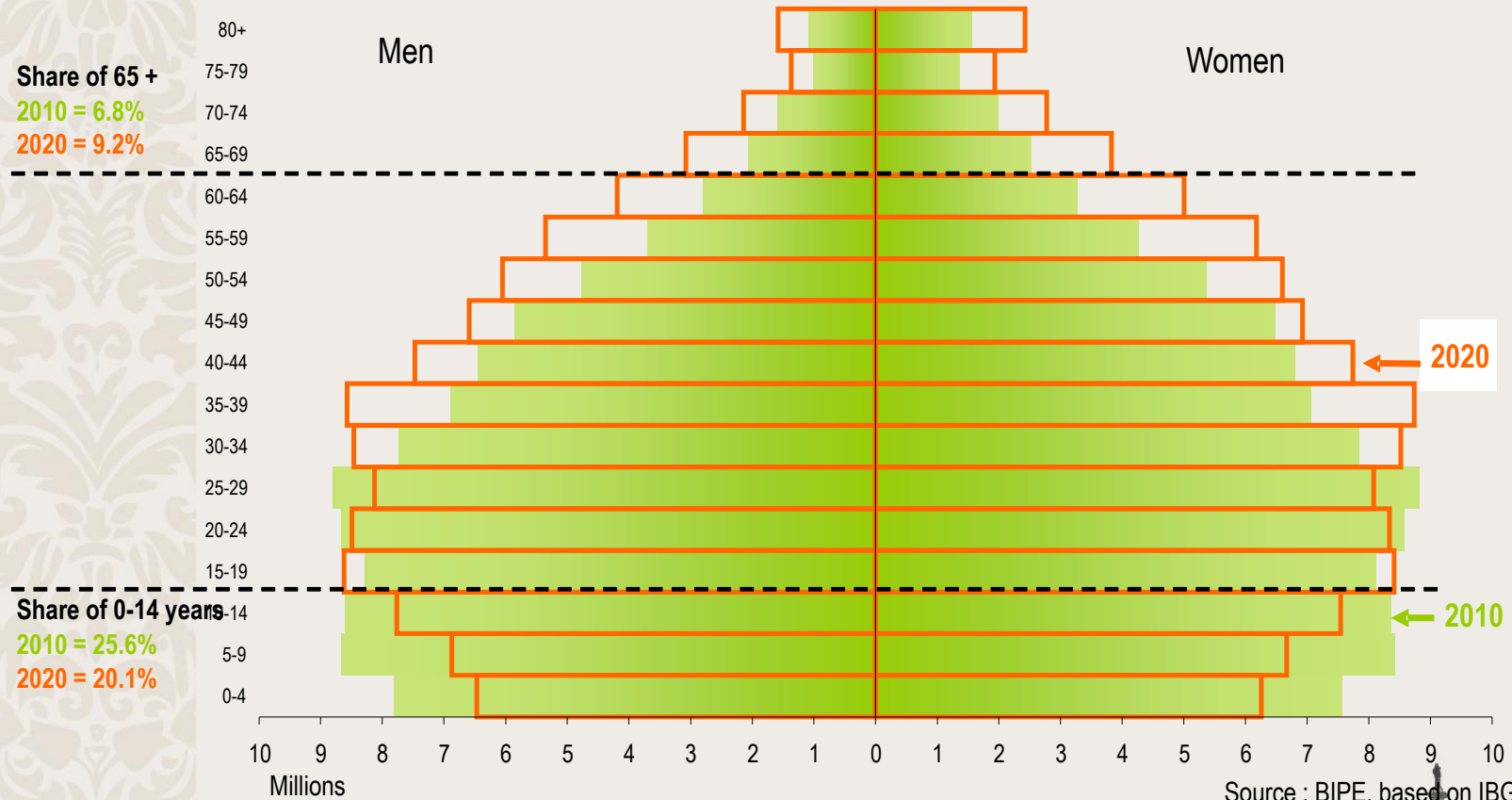


Source : BIPE d'après ONU, Eurostat



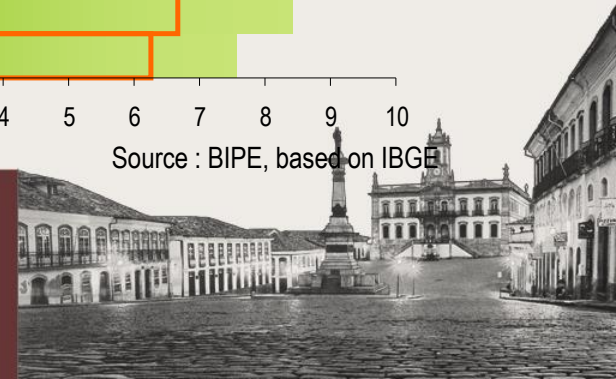
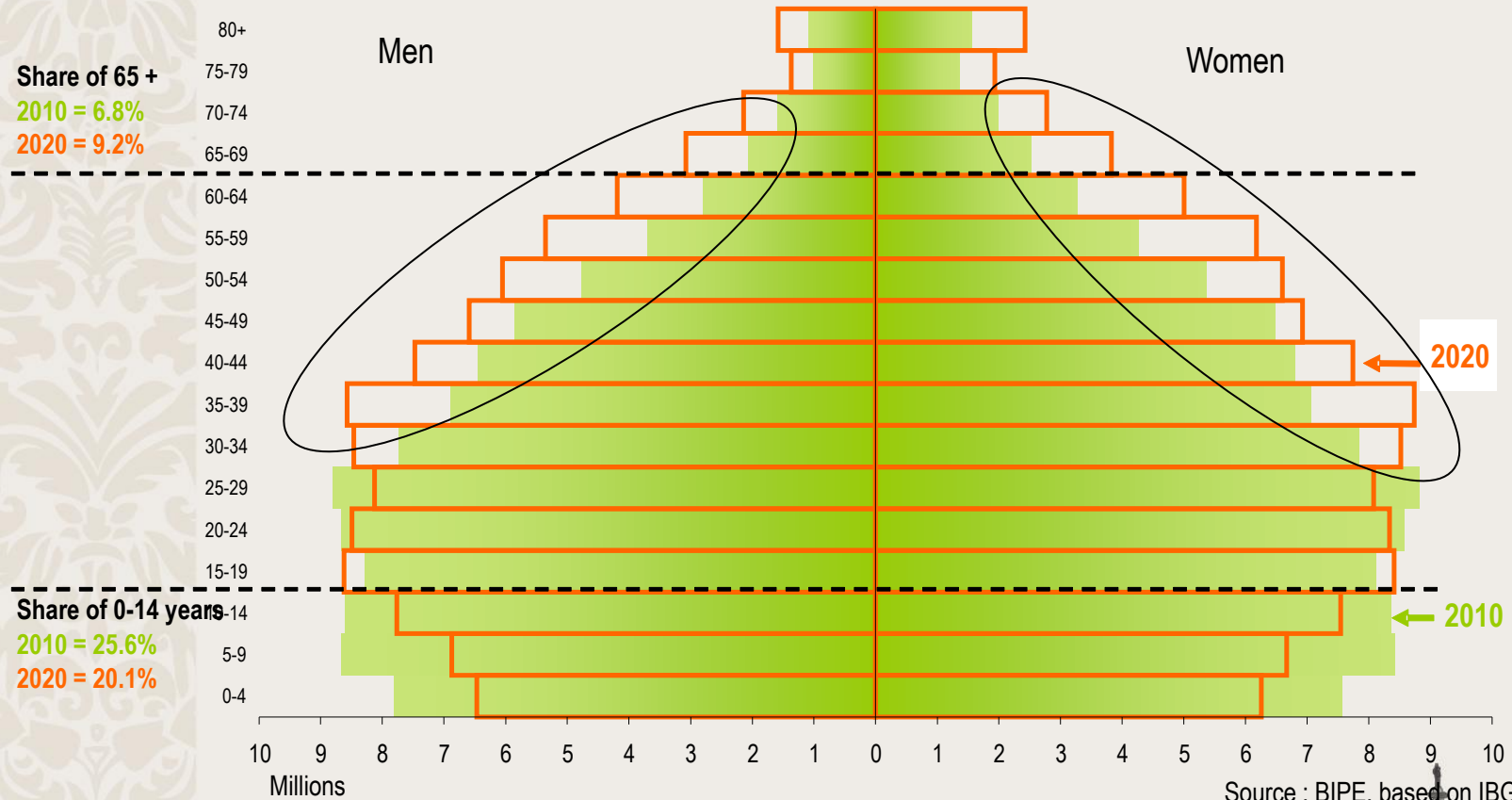
1. The decline in fertility leads to **population ageing**, hence creates demand for new services

Brazil : Population per age and gender



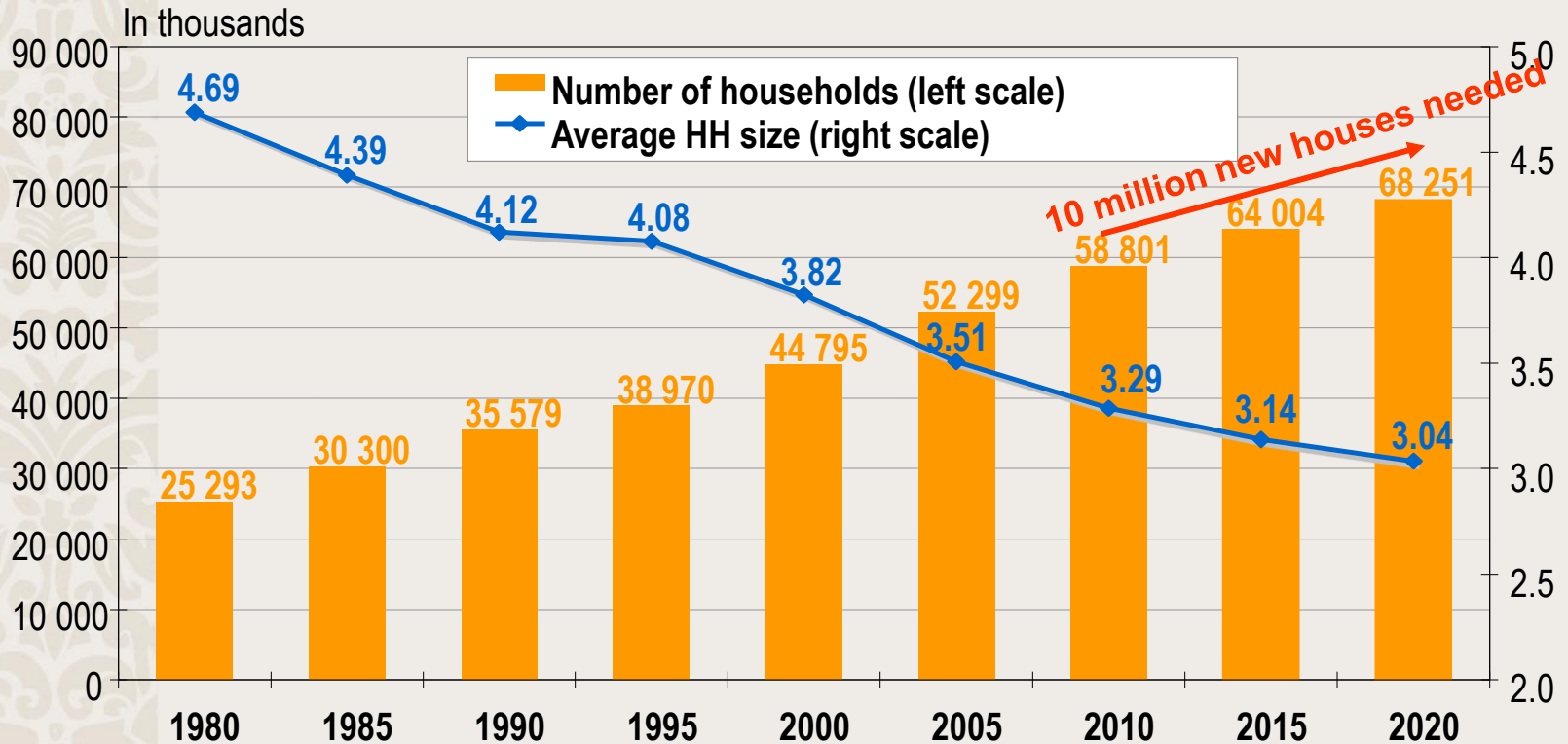
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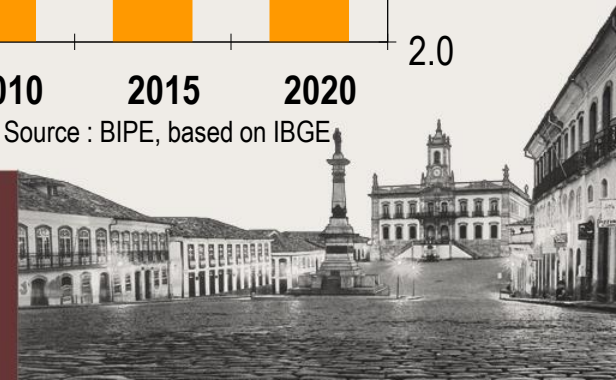


2. Not only will the number of households continue to rise, they also become smaller: this has major implications for construction & housing

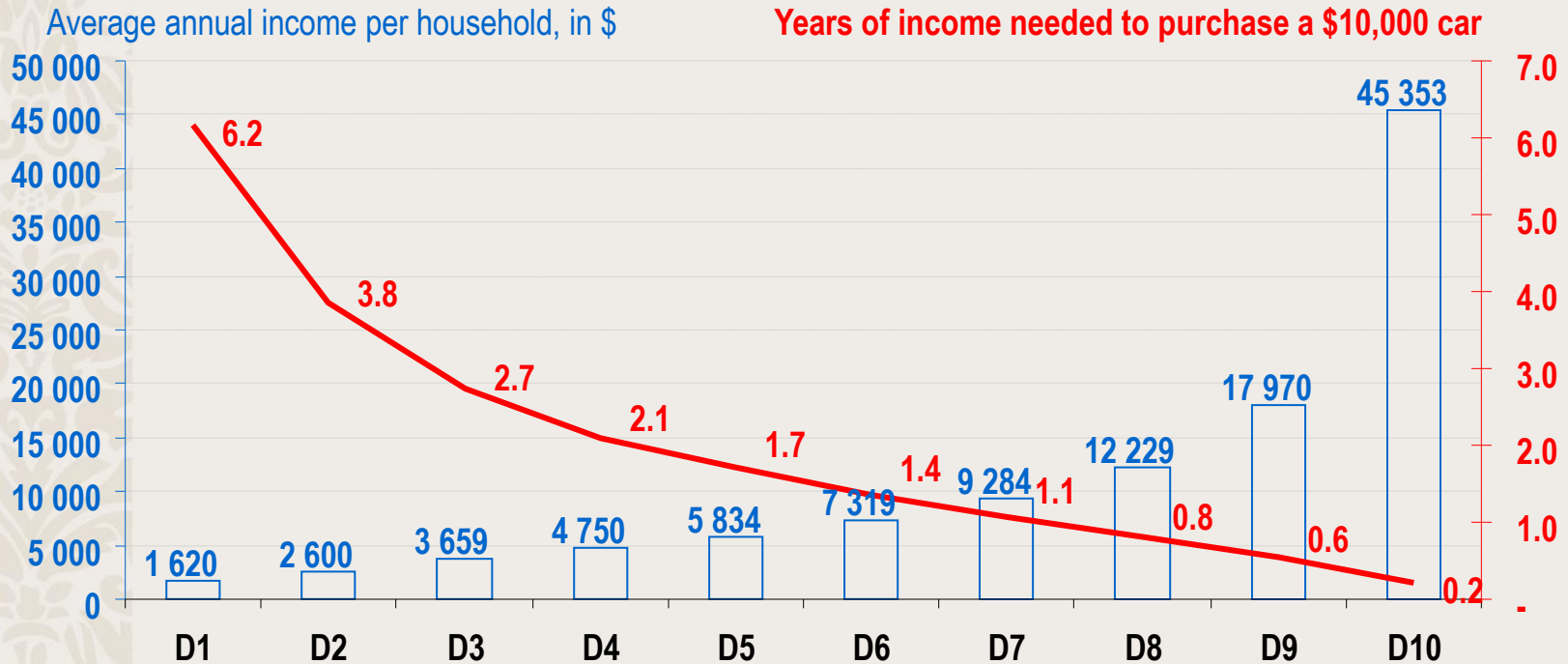
Brazil : Trend in the number and average size of households



Source : BIPE, based on IBGE



3. With income growth, durable goods will become affordable for a growing number of households



Sources : IBGE, traitements BIPE

- For the 10% wealthiest households, a \$ 10,000 car represents 0.2 years of income
- For the 10% poorest households, the purchase of a \$ 10,000 car represents 6.2 years of income
- **For the average brazilian household, the effort rate is approximately 0.9 years**
- It will continue to fall as relative car prices fall and incomes grow



Consequences of these demographic changes for clusters

- One will see two-speed world markets:
 - In the mature (and richer) economies, the era of « mass consumption », linked to the equipment needs of ever increasing number of households, is coming to an end
 - Implications for auto industry, household appliances, furniture, etc.
 - Many emerging countries still post interesting potential markets for (exportable) goods
 - Same as above
- Services markets will grow rapidly, both in the developed and in the emerging world
 - Services to (ageing) households in the mature economies
 - Services linked to businesses, infrastructure investments, operation and maintenance and logistics everywhere



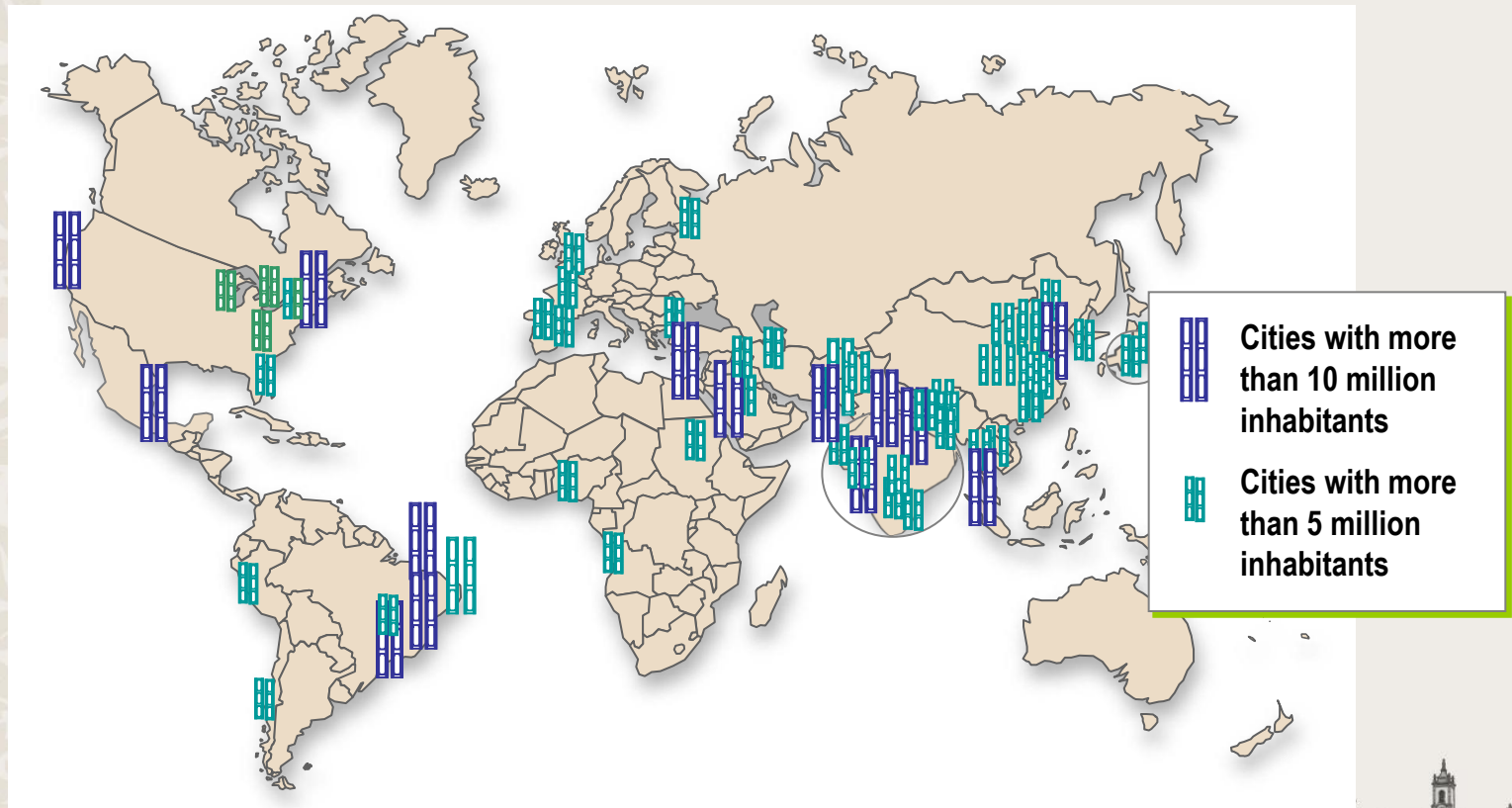
Other consequences of the demographic developments

- Ageing in Europe and several Asian economies – including Japan and China - hence a **reduction in the population of working age**, unless migration flows break from past trends
- **Strong rise in demand for food products**, concentrated in certain regions that do not all have a high agricultural growth potential – or whose potential will be curtailed by climate change
- **Strong rise in energy consumption**
 - For heating and cooking
 - For lighting
 - For transportation
- Ever increasing demand for **clean water**



Finally, urbanisation leads to the emergence of « megapoles », leading to specific problems that have to be dealt with

By 2020, 60 cities will have more than 5 million inhabitants, and 13 will have more than 10 million

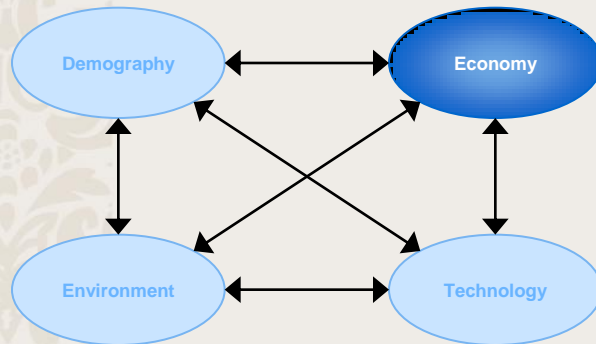


Consequence for clusters ?

- Localized pressures on resources
 - Water, clean air, space (living & parking), ...
- New challenges to be met
 - Where to locate (cost of land, need for space)
 - How to organise the logistics
 - How to limit negative externalities such as pollution, waste water emissions, noise
- New market opportunities
 - Urbanisation creates isolation
 - Market opportunities for new services to consumers

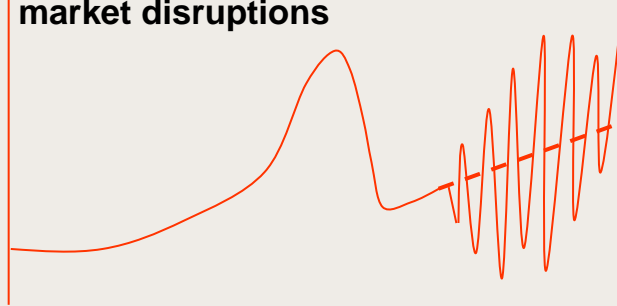


2. On the economic front, the recent crisis will have long lasting effects on the world economy



- **Volatility is back, and is there to stay ...**
 - Prices, demand, employment needs, etc.

Business cycles will be deeper, creating market disruptions

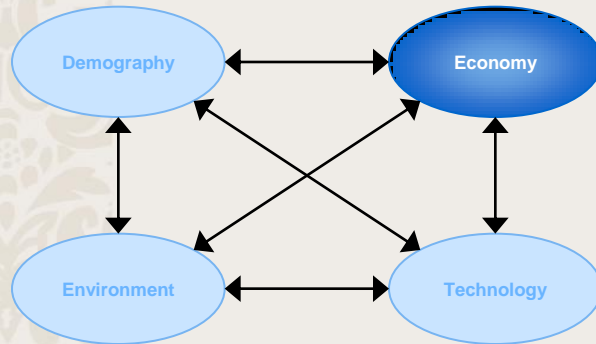


Why volatility ?

- **A result of:**
 - The massive externalisation strategies
 - Production / delivery volumes must be adjusted at short notice
 - Example: several daily deliveries of automotive components
 - Zero stock policies
 - Reduce costs but:
 - Start production once orders are received ... and paid for!
 - Creates delays in adjustment of supply chain upstream / causes tensions and pressures on SMEs
 - The strategies of dominant players on resources markets
 - Example: China's acquisition of mines, oil fields, etc. to secure future deliveries
 - Dual markets will emerge, characterized by different prices depending on the client ...
 - Reduced government' capacity to offset turnarounds in business cycles



2. On the economic front, the recent crisis will have long lasting effects on the world economy

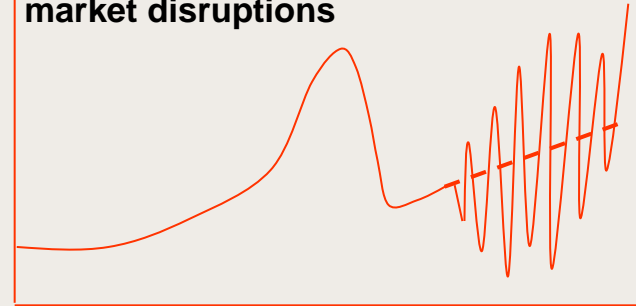


- **Risk aversion / difficult access to financing for SMEs**
- **Continued strong competition**
- **Reduced role of government**

- **Volatility leads to:**

- **Diversification strategies of companies**
- **Emphasis on flexibility**
- **Risks of bubbles**

Business cycles will be deeper, creating market disruptions

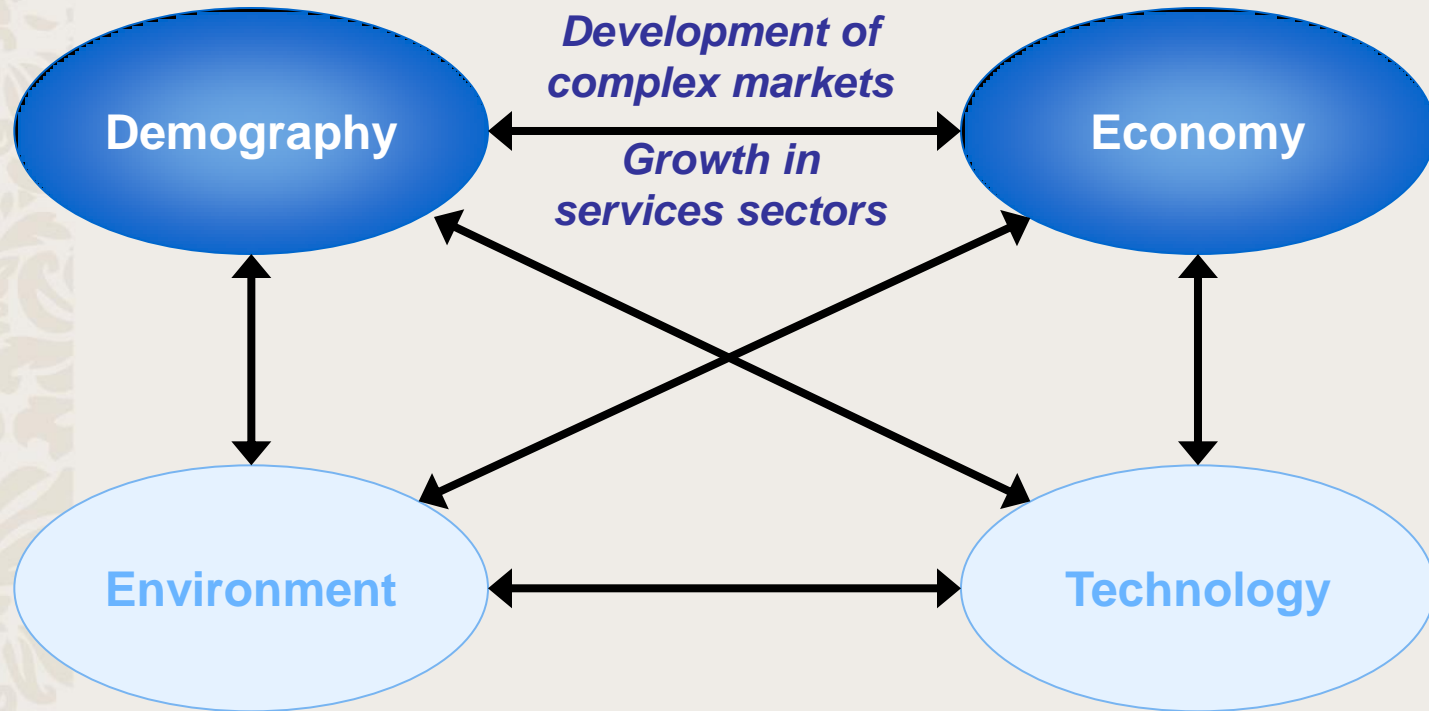


Consequences for clusters ?

- Increased competition, downward pressures on prices / costs
- New business models, new company strategies
 - Getting others to pay (example: public transport financed by publicity and telecom operators ...)
 - Emergence of complex markets, differentiated by end user or by function rather than by product
 - Car ownership is not a goal: the goal is to move around ...
 - Price differentiation across consumer categories
 - « You choose, you pay »
- New markets / new activities / new cluster frontiers
 - Example: car manufacturer generating revenue from deconstruction rather than sale of new automotive vehicles



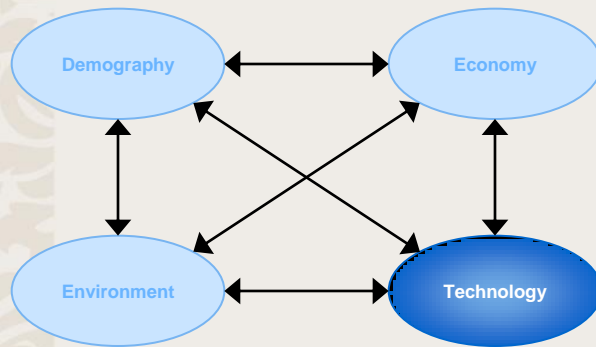
Demographic developments also impact the economy



→ In addition to the above, there will be growing opposition between mature / growing markets



3. On the technology front, several breakthrough innovations could change the way we work, produce and consume



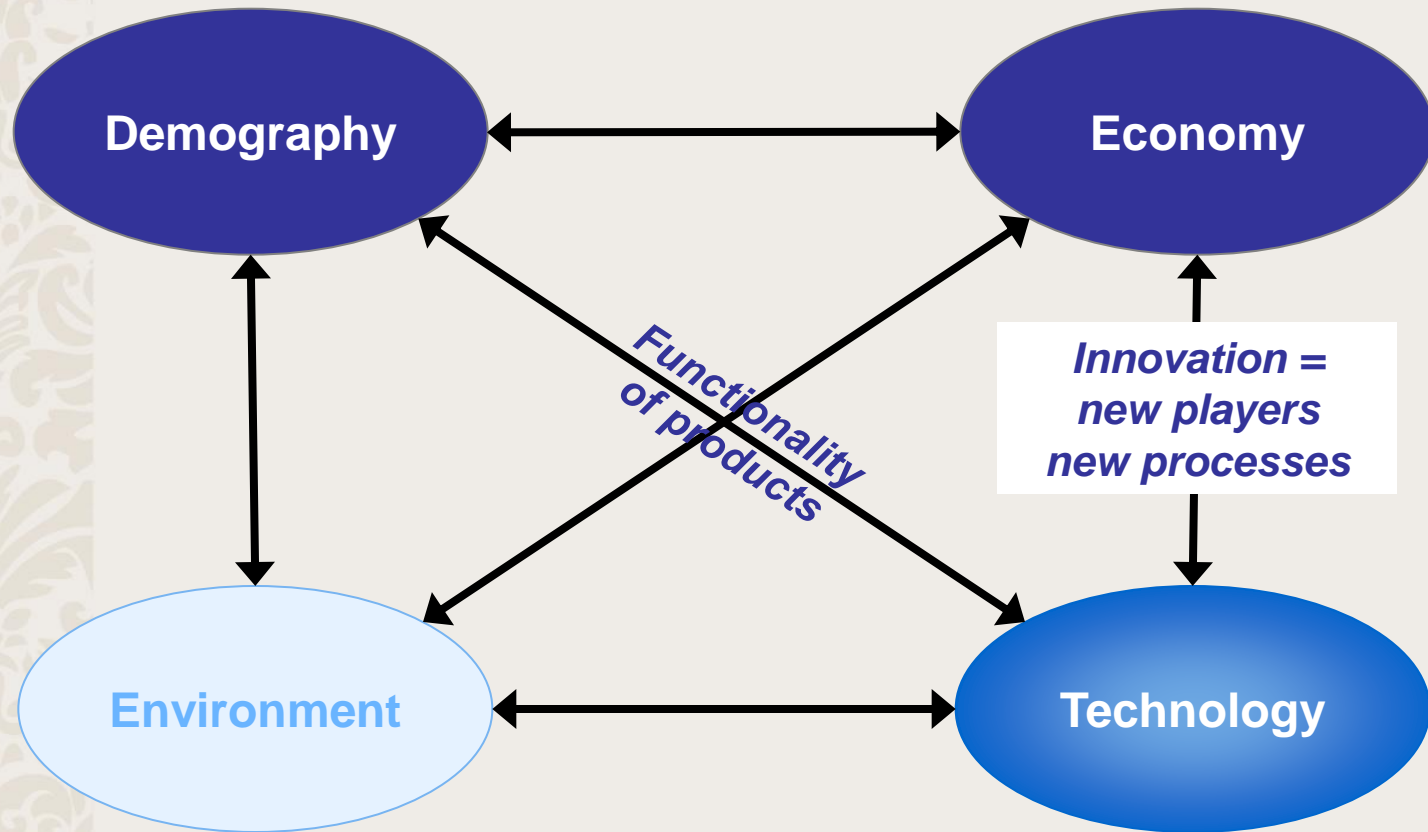
New promising fields:

- Biotechnologies
- Nanotechnologies
- Vehicle propulsion
- Laser and optics
- Etc ...

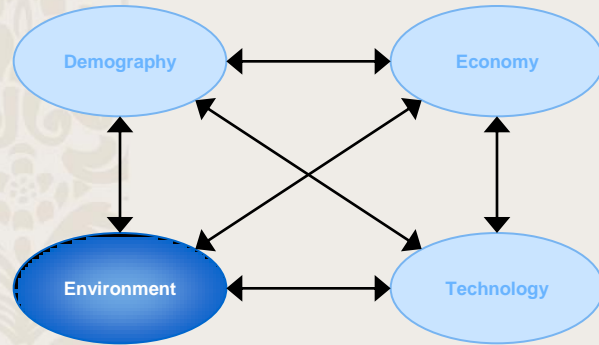
New interactions between consumers and producers



Demographic changes and the economy impact the future of technology – and vice versa



4. The environmental dimension is unavoidable



The scarce resources of tomorrow:

- Raw materials, energy
- Food
- Space
- Time
- Silence / quietness
- Darkness in urban areas
- (clean) Water
- Privacy
- Comfort

People will accept to pay higher prices to have access to these scarce resources

This will change the relative price of goods / services



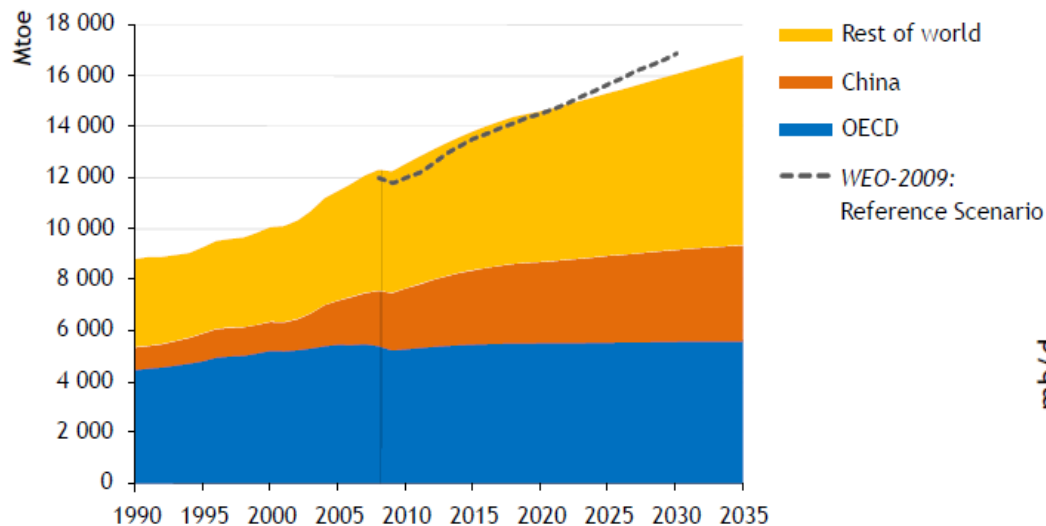
Consequences for clusters ?

- The emergence of scarcity will lead to new market opportunities
 - What is scarce is highly valued
 - Efficient houses, social linkages
- Things / services that have little or no value today will have a high value tomorrow
 - Examples:
 - Space, privacy, time for oneself
- New conception of products
 - Modular products, easier to upgrade with latest technology or to recycle



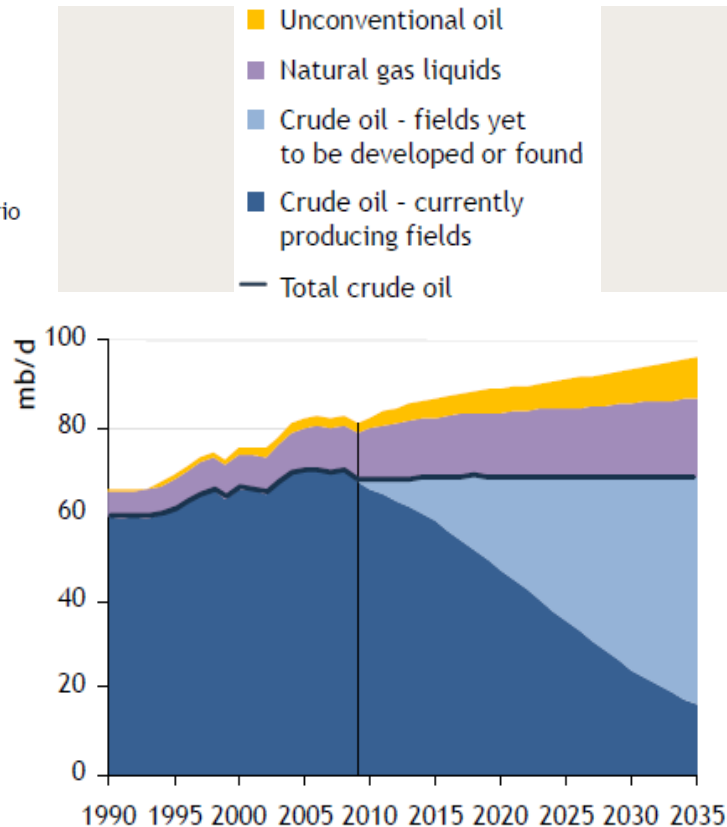
Between 2010 and 2030, world primary energy demand will grow by more than 40%

World primary energy demand by region in the New Policies Scenario



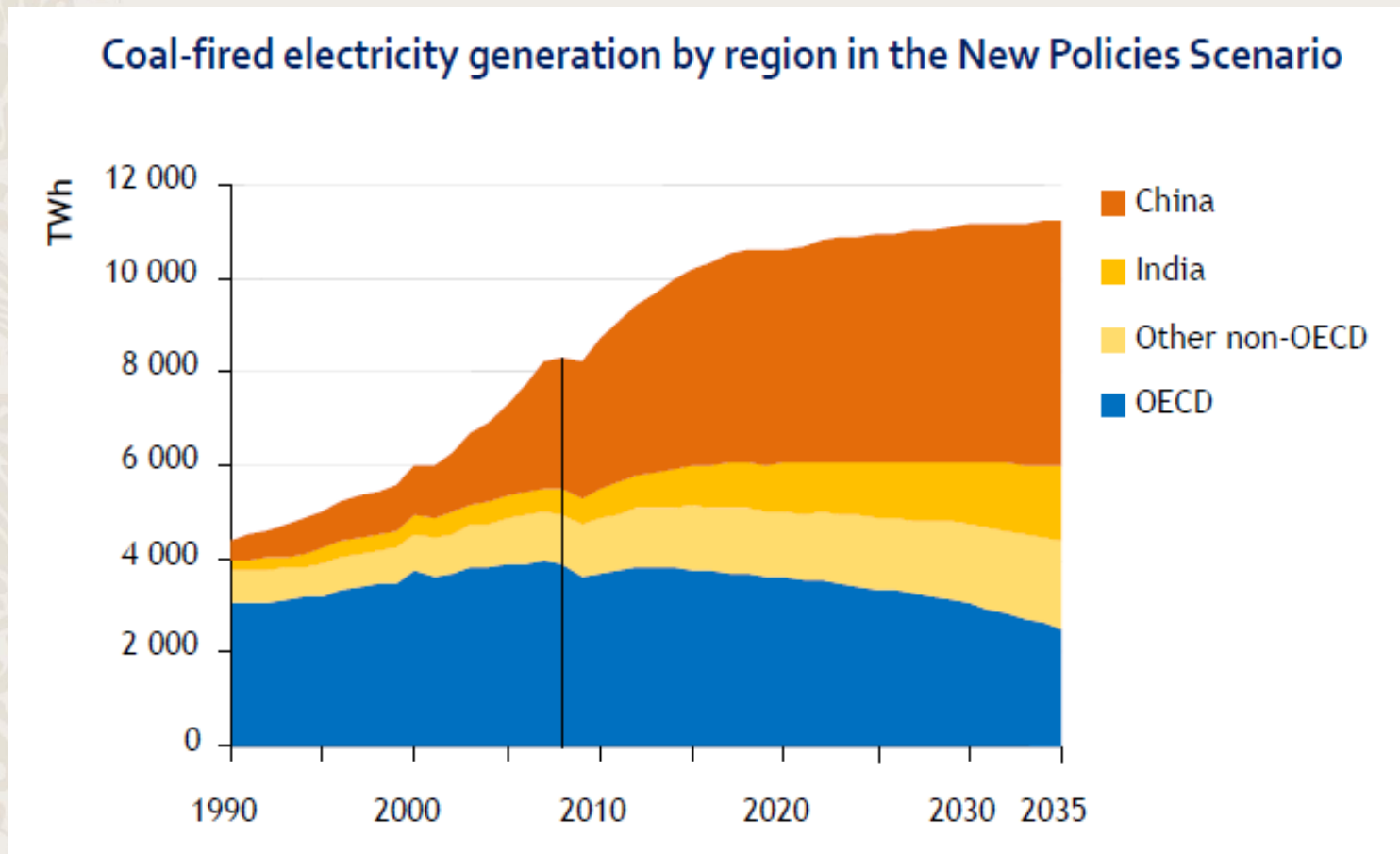
Source: IEA Energy Outlook 2010

World oil production by type in the New Policies Scenario



Source: IEA Energy Outlook 2010

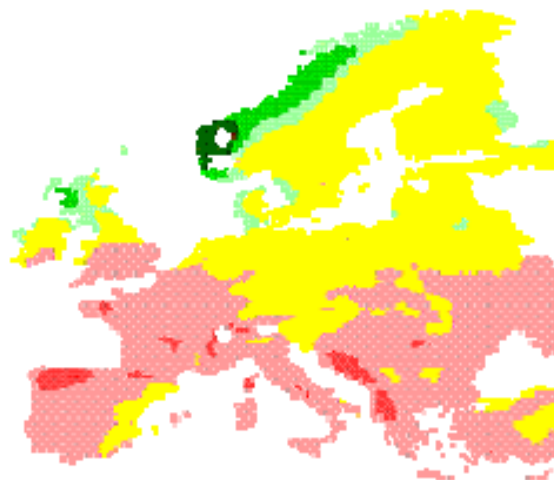
Given the oil peak and fears of the nuclear, coal fired electricity generation will have to grow – with major consequences on the environment, not on prices !!!



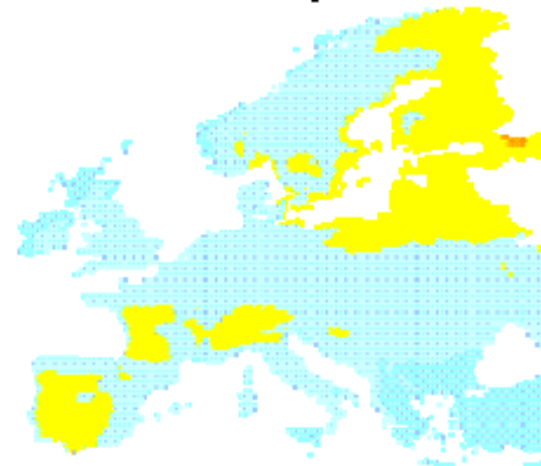
Greenhouse gas emissions accelerate climate change. This will have a major impact on agriculture

Changes in average mean precipitation and temperature between 2011-2040, from the 1961-1990 period

Precipitation



Temperature

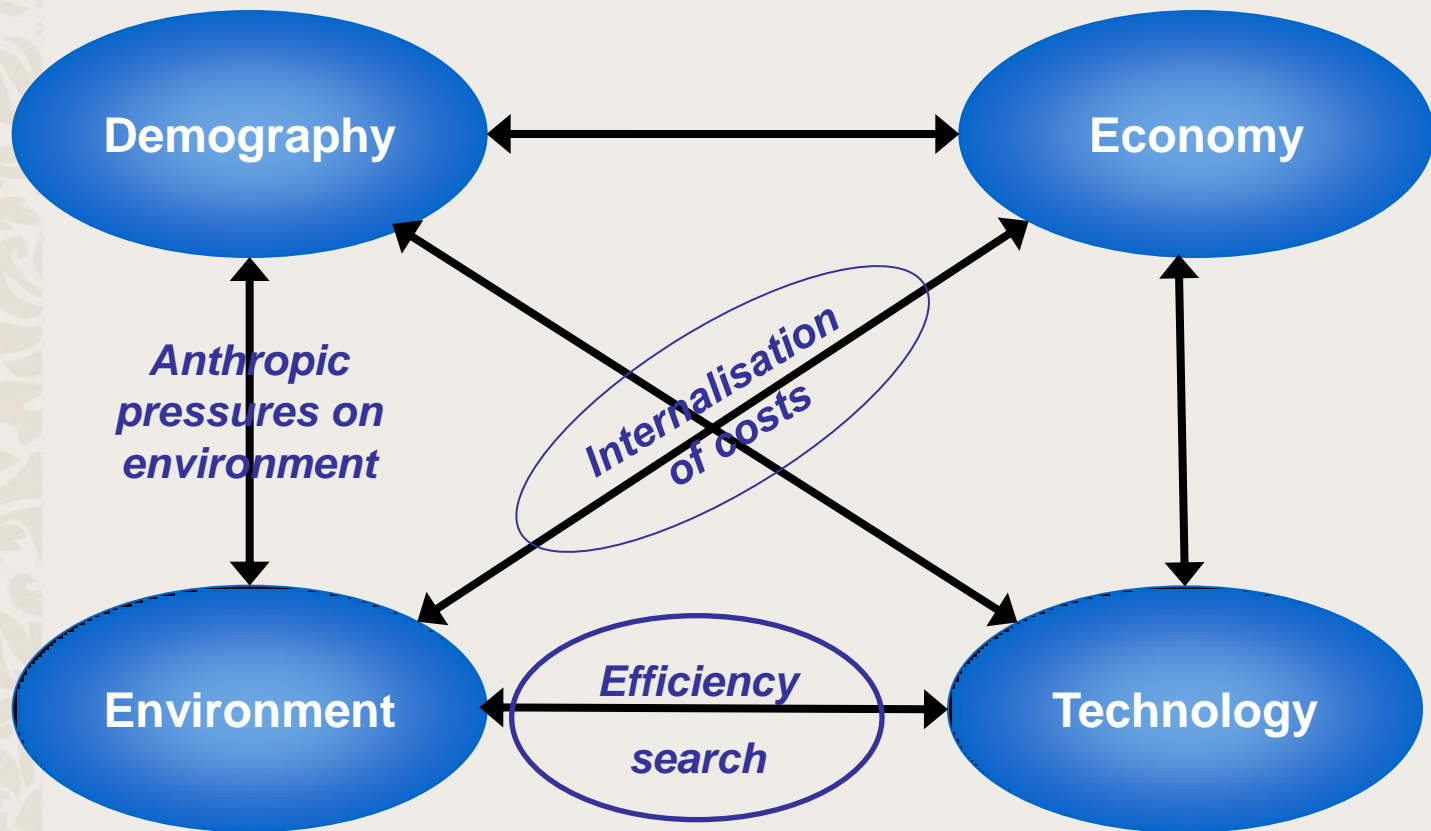


Consequences for clusters ?

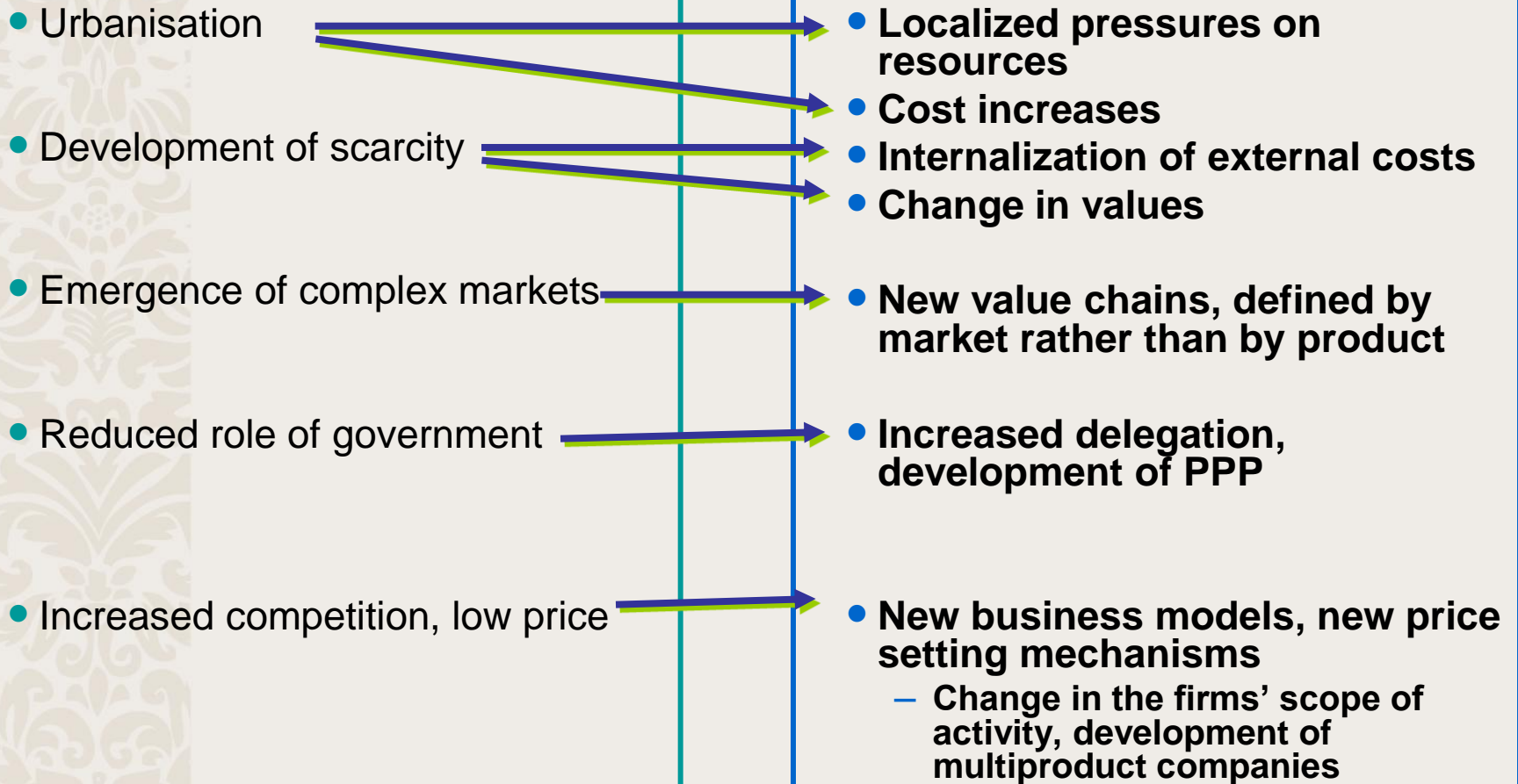
- Many agri-food producing regions will have to re-orient their production
 - Changes in temperatures
 - Lack of water
 - Fewer productive soils
- Food will be scarce ...
- ... and so will water, which impacts the energy mix



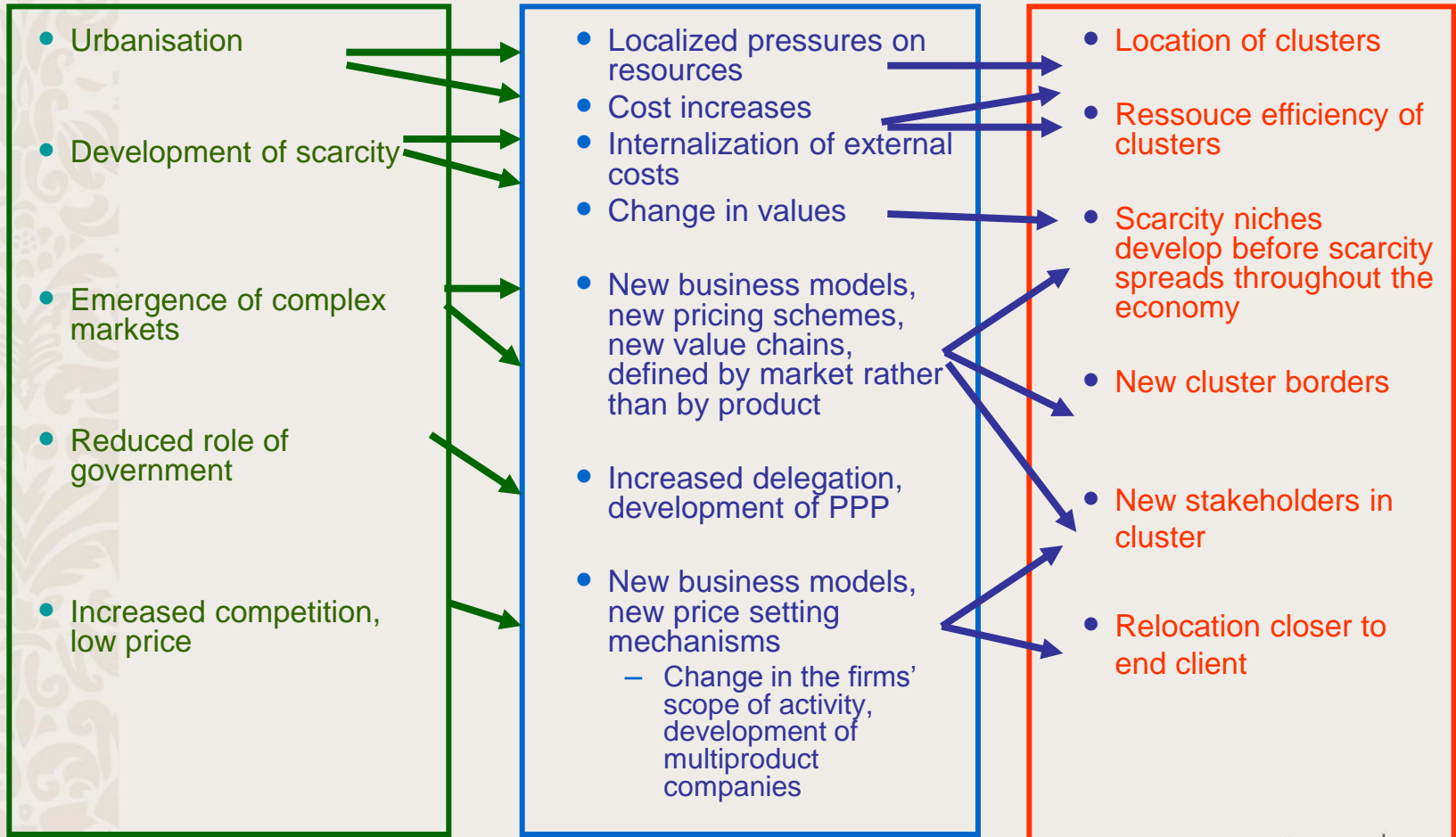
Links between the economy and the environment: sooner or later, external costs of the environment will be internalized, and the search for efficiency will be ongoing



Impact on clusters

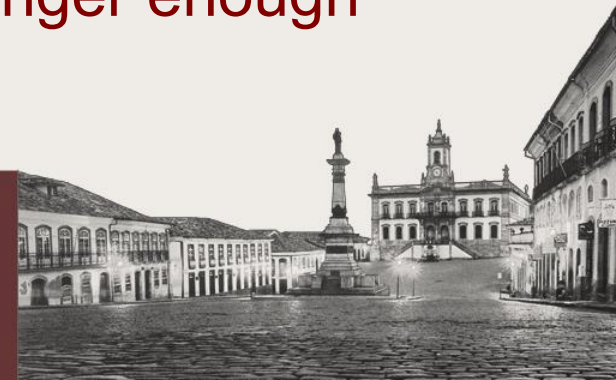


Impact on clusters



Consequences for clusters

- Need to internalize environmental impact of activities
 - Identify and « build » tomorrow's clusters
 - Continuously review the clusters' frontiers
 - Open the cluster to new (un-conventional) stakeholders
 - Reach out to / interact more with the individual consumer
 - Do not neglect local markets
-
- The traditional goals of reducing costs, increasing efficiency, even innovating are no longer enough



Tomorrow's clusters

- Tomorrow's clusters ?
 - Second life (for « active-retired » people)
 - Eco-nest
 - « Béguinages »
 - Integrated mobility
 - Combines :
 - transport equipment manufacturers,
 - service operators,
 - telecom operators,
 - electronics producers,
 - insurances,
 - parking space owners
 - Etc...
- Not all are export oriented, but all create jobs and serve a real demand



Thank you for your attention

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