



# An Overview of Strategic Markets to Develop Cooperation

Brazil, Mexico, India, Japan, South Korea,  
Morocco and Tunisia

European Cluster Collaboration Platform  
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**Index**

- Index ..... 2
- 1. Introduction..... 3
- 2. An overview of strategic markets to develop cooperation..... 4
  - 2.1 Latin America..... 4
    - 2.1.1 Brazil ..... 4
      - 2.1.1.1 Biotechnology..... 4
      - 2.1.1.2 Renewable energies ..... 6
    - 2.1.2 Mexico ..... 6
      - 2.1.2.1 Agro Industry ..... 6
      - 2.1.2.2 Automotive industry..... 8
  - 2.2 Asia ..... 9
    - 2.2.1 India ..... 9
      - 2.2.1.1 Building and Construction sector ..... 10
      - 2.2.1.2 Renewable energy ..... 11
    - 2.2.2 Japan..... 13
      - 2.2.2.1 Biotechnologies ..... 14
      - 2.2.2.1 Renewable Energy..... 15
    - 2.2.3 South Korea ..... 17
      - 2.2.3.1 Telecommunications ..... 17
      - 2.2.3.2 Automotive industry..... 18
  - 2.3 Mediterranean Countries..... 20
    - 2.3.1 Morocco ..... 20
      - 2.3.1.1 Aeronautics..... 21
      - 2.3.1.2 Sustainable tourism..... 21
    - 2.3.2 Tunisia..... 22
      - 2.3.2.1 Textile and Clothing industry..... 22
      - 2.3.2.2 Information and Communication technologies sector ..... 23
- 3. To sum-up..... 24

## 1. Introduction

Micro-economic policies and, in particular, Innovation policies have been taking a growing importance over the last three decades. Economic theory developments following Schumpeter creative destruction principle shows that technology and innovation are the main factors explaining the growth of the economy in developed countries. First innovation policies or actions plans were implemented in the nineties and on the basis of Mr. Porter theory, cluster policies became several years ago one of the main pieces of innovation policies in an increasing number of countries.

**In Europe**, different tools have been developed to support the development and internationalization of clusters and their members, especially the SMEs. The European Cluster Collaboration Platform (ECCP) is the cornerstone of the European strategy in support of SME internationalisation through clusters. The ECCP provides a wide range of information and services to facilitate the interaction between clusters not only within Europe but also with international partners. In view of fostering closer cooperation worldwide, the ECCP has signed Memoranda of Understanding (MoUs) with international partners in **Brazil, India, Mexico, Morocco, Japan, Tunisia, and South Korea**. Building upon these MoUs, the ECCP enables cluster organisations to establish new partnerships and networks in strategic markets outside Europe for the benefit of their SMEs.

Between 2003 and 2012, **Latin America** lived a period of stability and positive economic development. With the exception of Venezuela and Argentina, most countries achieved high levels of economic growth whilst maintaining low inflation. The positive effects that clusters can have on both business and local development are particularly important for Latin American countries which, despite their current economic growth, continue to suffer from several market failures and institutional weaknesses. It is also a way to attract foreign investments. There are examples of successful clusters initiatives in Argentina, Brazil, Chile, Colombia, Mexico and Uruguay. This report focuses on two countries: Brazil and Mexico. Brazil has some effective clusters, but the country has a cumbersome fiscal system as well as high levels of red tape and bureaucratic burden. There is also, due to US proximity, a potential and some initiatives to implement a cluster policy in Mexico. In Mexico, efforts to enhance competitiveness are held at state level. Some clusters initiatives can be identified. Several support institutions have joined the efforts of each state or have arisen as a result of planning cluster initiative.

The **Asian model of cluster policy** is based on a sequence of actions: “a flowchart approach” according to Ahifami Kuchiki and emphasizes the importance to order policy measures and to provide appropriate incentives. This point of view is not shared by other publications which underline that there is an explosion of clusters and cluster policies in Asia, with a great variety of models developing in various countries: China, Vietnam, Thailand, Malaysia and Japan (See Garne-Lecler Asian industrial clusters, global competitiveness and new policy initiatives). Singapore, Taiwan and South Korea also provide good examples of government led clusters. As mentioned in the report “Cluster initiatives in developing and transition countries: “cluster initiatives need to be adapted to the local context. Since clusters struggle with different barriers to competitiveness, no single model can fit all cluster initiatives.”

Innovation and technology development are key issues for the competitiveness of all economic systems. Aware of these determinants for the future of the economy, **the Mediterranean countries** and particularly Morocco and Tunisia have engaged an economic development strategy that gives a central place to competitiveness supported notably by technological innovation.

This paper provides a quick overview of some specific sectors of activities in the countries where a MoU has been signed with the ECCP, which could be of interest to develop cooperation for European clusters and SMEs.

## 2. An overview of strategic markets to develop cooperation

### 2.1 Latin America

Between 2003 and 2012, Latin America has lived through a period of stability and positive economic development. With the exception of Venezuela and Argentina, most countries achieved high levels of economic growth whilst maintaining low inflation. The region has seen strong growth in recent years. Still, Latin American economies remain over-dependent on commodity exports with the vulnerability which that entails, and levels of poverty and inequality remain high.

The IFM has forecasted for 2013 that Latin America could grow by 3.4 %, slightly higher than the world average (3,3%). The acceleration of growth in the region is mainly due to the very slight improvement in the global context, the strength of domestic demand and especially by the recovery of the Brazilian economy. Brazil, the first demographic and economic power in Latin America , should indeed see this year a relatively high growth (3 %) after facing a significant slowdown in 2012 ( 0.9%). Mexico, the second Latin American economy should see its GDP grow by 3.5 % this year, a slight decrease compared to 2012 (3.9 %).

#### 2.1.1 Brazil

Brazil is Latin America's giant in every sense of the word. Brazil's highly diversified and industrialized economy is the largest in Latin America, and the 8th largest globally. The country has mature manufacturing, mining and agriculture sectors and rapidly expanding technology and services industries. It is also home to the most sophisticated and diversified science, technology and innovation system in Latin America. Having made important economic reforms over the past years, Brazilians should now reap the benefits of stability and growth. We will focus in this report on two sectors of activity among the key sectors of activities in Brazil: biotechnology and renewable energy.

##### 2.1.1.1 Biotechnology

Figurehead of biofuels, the main actor of biomedical development in Latin America and haven of biodiversity, Brazil is now one of the most favorable countries for the development of biotechnology. According to the Brazilian Analysis and Planning Centre (CEBRAP), the Brazilian economy will rest largely on this sector of activity, which extends from the world of medicine (equipment, pharmaceutical manufacturing, and diagnostics) to that of the cosmetics industry and energy (biofuels).

The biotechnology sector in Brazil is still young, but it was continually growing since the 1990s. Today, Brazil should count of approximately 250 to 350 Brazilian companies active in the biotechnology sector, earning an annual income of about 4 billion (\$ 180 billion for the entire globe) and employing nearly 30,000 people.

Most of the specialized biotechnology companies are SMEs with a turnover rarely exceeding 2 million BRL (€ 770,000) and more than 86% of them are importers. The latest statistics point out a value of over € 385 million spent on imports mainly coming from the United States and Europe.

Like many other private sectors in Brazil, the biotechnology sector is not evenly distributed. Indeed, the states of southeastern weigh heavily in this sector, they account for almost 90% (São Paulo up to 40.5%; Minas Gerais, 24.5%, Rio de Janeiro, 13.1% and Rio Grande do Sul 8%).

The main sector of interest in biotechnology are the human health (nearly 40%), the environment and bioenergy (15%), animal health (14%) and agriculture (10%).

The region of Belo Horizonte (capital of Minas Gerais, the second State of Brazil in terms of population) is the main national center with 50 companies mainly concentrated in the sector of population/human health and agro-industry. The region of São Paulo is the second in terms of importance with 40 companies. Again, most of the companies are active in the health of populations (38%). The third concentration of biotechnology companies in Brazil is Campinas (around 100 km from Sao Paulo) with 18 companies. This center benefits from the presence of the Federal University of Campinas (UNICAMP). Finally, the region of Ribeirão Preto (350 km from Sao Paulo) is the fourth national center with 16 companies. This area benefits from the presence of the University of São Paulo and SUPERA, business center located on the campus of the university.

#### **Sub-sectors of activities:**

- **Diagnostics:** This specific sector focuses almost 50% of biotech companies. Imports of reagents, antigens, antibodies and genetic diagnoses are those that increase the most, especially because of the demand of the major Brazilian laboratories. The two major areas of interest for investments in the sector are Immunology diagnostics and rapid tests.
- **Animal health:** Brazil is the largest market for animal health in Latin America and the fifth world market. This sector knows a strong growth and the Brazilian meat sector has increased its market shares in Europe and Asia (115 000 tones of beef to Europe per year since 2011).
- **Environment:** All the sub-sectors of the Brazilian market for environmental products, treatment and water purification and waste treatment continues to grow.
- **Food industry:** In Brazil, the cultivation of GMOs is legal. With its biotech crops, Brazil accounts for 60% of the expansion of GM crops in the world.
- **Biochemicals:** Fine chemicals and enzymes are very important for the Brazilian bio-industry. Enzymes and proteins are used for program development and biotechnology products in the country. In Brazil, the use of agrochemicals is not new. The revenues of the Brazilian agrochemical market today are more or less 2.5 billion. Herbicides represent the largest portion of this market in Brazil.
- **Equipment and supplies:** Biotechnology equipments are essential for each Brazilian laboratory and public institution wishing to develop projects, products and services in the field of biotechnology.

### **2.1.1.2 Renewable energies**

The Brazilian Renewable Energy industry is well-established today, with almost 50% of Brazil's total energy consumption currently derived from renewable sources. Despite a relatively high penetration compared to the rest of Latin America, Brazil is dedicated to renewable energy expansion; the government aims to increase renewable energy consumption at least 10% by 2020. Beyond promoting greener, more sustainable energy sourcing for burgeoning Brazil, the government also seeks to diversify renewable resources as 80% of the country's current electricity is fueled by hydroelectric power.

Wind-power, biomass and small hydro sub-sectors are currently promoted by several government initiatives and incentive programs:

- The Alternative Energy Source Incentive Program (PROINFA), implemented in 2002, subsidizes the higher cost of alternative energy through a levy on consumer electricity bills;
- The National Agency of Electrical Energy (ANEEL) recently changed legislation to allow independent and individual producers using renewable generation to easily connect to the energy grid and a net-metering Power Compensation System was introduced to offer credits on energy bills;
- The Energetic Development of States and Municipalities (PRODEEM) and "Light For All" development programs encourage development of alternative energy systems in isolated locations of the country.

According to the Brazilian Energy Research Company (EPE), in the past five years electricity generated from biomass grew over 120%, while wind energy generation jumped almost 700%. The Global Wind Energy Council (GEWV) expects Brazil's wind energy capacity to grow at least another 450% by 2016. These high levels of renewable energy growth in Brazil are not based on the short-term, but opportunities for expansion will exist well into the next ten years as the market continues to develop. A comparison of Brazil's current energy consumption (IEA reference cases, World Bank) to other competitive markets demonstrates an opportunity to increase per capita consumption as well as expand production and availability to decrease energy costs. Ranking data for sub-sector potential also demonstrates Brazil's strong position to grow Solar and Wind sub-sectors, exceeding the potential of even the most developed markets such as the U.S. and Canada. Abundant natural resources (including ideal solar and wind profiles), strong government incentives, compelling financing options and facilitated logistics make Brazil one of the most attractive global markets for renewable energy. **The Brazilian market offers major opportunities to develop cooperation in this sector particularly in the solar and wind sub-sectors.**

### **2.1.2 Mexico**

Strategic industries in Mexico are: aerospace, processed food, automotive, medical devices, household appliances, electronics, renewable energy, creative industry, IT services.

In this report, we will focus on the Agro Industry sector and the automotive sector.

#### **2.1.2.1 Agro Industry**

The richness of Mexican food, which has been declared Intangible Cultural Heritage by the United Nations Educational, Scientific and Cultural Organization (UNESCO), lies in the wide variety of its

products, which not only nourish its population but also an industry that is constantly expanding. This combination of tradition and modernity brings to Mexico the ingredients to become a global agro-industry power.

Mexico's agro-industry has experienced rapid growth due to several factors, such as its surface area, which provides the sector with a significant diversity of climate, flora and fauna, and its geographic closeness to the US, one of the world's leading markets, which has boosted exports. Mexico has become the second largest supplier of processed foods to the US; close to 80% of Mexican exports are destined for this market. Mexico is the third largest producer in the Americas and eleventh exporter globally of agri-foods; more than 800 Mexican food products are present in international markets. Nine of the 10 leading processed foods transnational in the world have active presence in Mexico.

Considered a strategic sector, the agro-industry in Mexico is a broad umbrella under which several branches are included: agriculture, forestry, husbandry, apiculture, hunting, fishing, biotechnology, drinks (alcoholic and non-alcoholic), sweets, tobacco, snacks and packaging. Mexico stands out as a strong exporter in the majority of these food product categories. According to data from the Ministry of Economy (SE), between 2003 and 2007 Mexico's agricultural exports grew by 12% on average every year, while imports increased by 11%. By 2010, Mexico's agri-food exports were valued at 16.9 billion USD.

Mexico is among the top global exporters of products such as avocado, papaya, mango, processed peppers, organic coffee, tomato, Persian lime, aloe vera, cucumber and greenhouse peppers,... It also plays a notable role in other areas, as the eighth largest meat product manufacturer in the globe and, in the area of alcoholic beverages, Mexican tequila has been granted denomination of origin in recent decades and found a spot in the preferences of many international consumers, becoming symbolic of Mexico.

Mexico also shows strength in processed foods exports, which account for over 18.4% of total sales abroad, and their growth rate has ranged from 18% to 20% annually, going mainly to Japan, the US and South Korea. Mexico owes its export success to the agro-industry and processed food industry's compliance with the leading health regulations in the world, including Good Agricultural Practices (GAP), the Hazard Analysis and Critical Control Points (HACCP) certifications and the US Food and Drug Administration's (FDA) requirements.

### **Close to Consumers**

In 2012, Mexico produced 123.95 million USD in processed foods, a 2.3% increase compared to 2011; "the food industry accounted for 23.2% of the manufacturing Gross Domestic Product (GDP) and 4.1% of the country's total GDP," explains Armando Cobos Pérez, CEO of the National Chamber of the Food Preserve Industry (CANAINCA), a business organization which affiliates food packaging industries. CANAINCA is the meeting point for 45 companies, which together account for more than 90% of all bottled foods in Mexico, and which include important international trading companies such as Coca-Cola, Campbell's, Famesa, Herdez, Jumex, La Costeña and Nestlé, among others.

According to forecasts, between 2012 and 2020 the Mexican industry's production is set to grow at an annual average rate of 7.6%. The industry's modernization has been boosted by a fixed

investment of 1.8%. Furthermore, companies have focused on creating new product packaging with a diversity of sizes and mixes to satisfy the needs of Mexican and international consumers. According to data by Global Insight, food companies' net operative gains for 2012 have reached almost 28.339 billion usd.

### **Traditional or Cutting-edge**

Mexico's agro-industry has also allocated significant amounts of production capital to cutting-edge biotechnology that will enable it to create genetically enhanced foods. In 2012, the country was ranked sixteenth globally in available land for genetically enhanced crops, with 421,000 hectares, mainly used for cotton, corn, wheat and soy. At the same time, it is one of the largest producers of organic agriculture worldwide, a sector that grew out of rescuing traditional agricultural processes from Mesoamerican peoples. In 2012, Mexico was among the top 20 markets in terms of organic product sales, and is ranked third in the Americas.

Mexico's agro-industry is a delectable mix of the past and future of food production.

#### ***2.1.2.2 Automotive industry***

One of the most important industries in Mexico is the automotive industry. Many major car manufacturers have set up their operations in Mexico, including General Motors, Ford, Chrysler, BMW, Toyota, Honda, Volkswagen and Mercedes Benz. The Mexican automotive industry has also gradually become more advanced, from purely functioning as an assembly manufacturer to becoming a centre for research and development. Mexico's automotive industry is mature, dynamic and in continuous growth. In 2011, Mexico's automotive industry showed clear signs of recovery; light vehicle production reached a new historical record with 2.55 million vehicles. At a global level, Mexico ranked as eighth producer of light vehicles. In two years, Mexico climbed two positions, surpassing French and Spanish production.

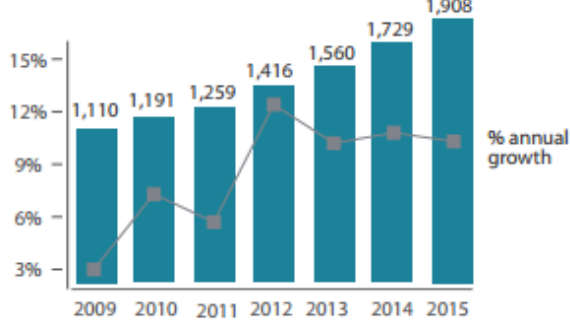
Currently, the automotive sector accounts for 4% of the national GDP and 20% of manufacturing production. It is expected that the Mexican automotive industry will continue to grow in the future. The forecasts indicate production will reach 3.7 million units by 2015.

Companies in the light vehicle industry have a total of 18 production complexes located in 11 states of Mexico, where they perform activities that range from assembly and armoring, to casting and stamping of vehicles and engines. To date, more than 48 car and light truck models are produced in Mexico. 42 makers have official representation in the country with nearly 400 different models, making Mexico one of the most varied and fulfilled automotive markets in the world.

In terms of heavy vehicles, the OEMs have reached an important level of development in the country, performing activities ranging from assembly, stamping and bodywork, producing a wide range of models to satisfy the demand of the domestic and export markets. Currently, 11 commercial vehicle manufacturers and two engine manufacturers for this kind of vehicle have production facilities in Mexico. In 2011, Mexico reached production of 136,678 heavy vehicles, ranking as sixth producer globally behind China, Japan, India, The United States and Brazil. The heavy vehicle production in Mexico is expected to reach 196.8 thousand vehicles by 2016.

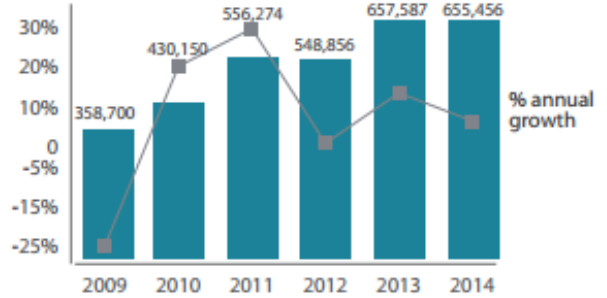


Light vehicle sales at international level (2009-2015)



Source: ProMéxico with data from Datamonitor

Heavy vehicle sales at international level (2009-2014)



Source: ProMéxico with data from Datamonitor

Most of the assembling companies in Mexico have subcontractors located around their vehicle plants to comply with supply and delivery deadlines.

The recognized quality of Mexico’s automotive manufacturing has enabled several OEMs to choose Mexico as a unique manufacturing platform for all their destinations. This sets the adequate industrial environment for luxury vehicles manufacturing, fostering Mexico as an exclusive platform for OEMs. In recent years, the Mexican industry has shown a shift in trends, going from the maquilas of automobiles towards the development of capacities for the integral production of vehicles for specific niches, such as Vehizero and Mastretta.

## 2.2 Asia

Asia is the world’s fastest growing economy region and the population of its 46 states represents 60% of the world population (4.2 billion people). The largest economies in Asia in terms of both purchasing power parity (PPP), and gross domestic product (GDP) are China, Japan, Russia, India, South-Korea, Indonesia, Philippines, Thailand, Singapore, Australia and Turkey.

This report focuses particularly on three countries: India, Japan and South Korea because they signed a MoU with the ECCP. The other countries listed above represent a real opportunity for the European entities to develop collaboration and partnerships. Partnership agreements could be signed in the future with the ECCP in order to facilitate relationships with these high-growth countries.

### 2.2.1 India

Since the early 1990s, India has transformed its economy into a global powerhouse. Despite recent deceleration in GDP growth, India continues to be one of the fastest growing economies in the world and has the potential to become one of the three largest global economies by 2050. India’s growing population, rising per capita income levels, rapidly expanding manufacturing and services sectors, and the associated infrastructure and natural resources requirements make it a potential tremendous market.

Main sectors of activities:

- **Agriculture, Food and Beverages:** Opportunities in India's agricultural sector encompass a broad range of sub-sectors including commodities, food and beverage processing and genetics.
- **Information and Communication Technology (ICT):** The Indian telecommunications industry is one of the fastest growing in the world. The mobile phone subscriber base is growing at rates of over 80% while internet access continues to rise at a phenomenal rate with increasing deregulation, literacy levels, lower costs of PCs and an overall increase in consumer awareness. Moreover, the Wi-Max/Broadband Wireless access (BWA) market in India is poised for significant growth with the Government issuing new licenses as well as a new Telecom policy in 2009. India also has a vibrant film and entertainment industry that relies heavily on special effects and animation.
- **Life Sciences:** While the biotechnology industry in India currently holds 2% of the global market, it has the potential to emerge as a global player.
- **Education:** The growing dynamism of the economy and the resulting prosperity are driving demand for quality education in India. Despite India's large network of educational institutions, the increasing demand for quality education far surpasses the supply.
- **Power and Renewable Energy:** In order to sustain its economic growth, India is poised to increase its installed capacity five-fold within the next 20 years, offering short- and long-term opportunities to European companies in all areas of the power sector. Efforts on new and renewable technologies are increasing with global emphasis on clean energy and combating climate change.
- **Transportation Infrastructure:** The Government of India estimates that \$500 billion will be spent in the infrastructure sector in the next decade, with the private sector playing an important role. Important opportunities exist for investors, as well as companies with international experience in project planning, engineering and implementation, feasibility and environmental impact studies and construction

This chapter focuses more especially on the renewable energy sector and the building and construction sector.

### ***2.2.1.1 Building and Construction sector***

The building sector is growing at a rapid pace and is the third largest consumer of energy, after industry and agriculture. Environmentally benign technologies and practices in this sector can address sustainability issues and contribute to conservation of national resources. An initiative of the Confederation of Indian Industry-Sohrabji Godrej Green Business Centre (CII-Godrej GBC), the Indian Green Building Council (IGBC) has a vision to facilitate the country to emerge as one of the global players in green buildings by 2015.

IGBC has the unique distinction of pioneering and spearheading the green building movement in India. The concerted efforts of all the stakeholders that began 10 years ago are bearing fruit and India is now placed on the international map for green buildings. Today, India has 1,002 registered green building projects with a footprint of over 627 million sq ft. These buildings are spread across the five climatic zones of the country.

India has experienced significant growth in the building sector and construction is one of the largest economic activities in the country today. As the sector grows, preserving the environment poses a plethora of challenges, while at the same time it presents an opportunity for various stakeholders. The resource demand in buildings has also been growing over the years and there is an urgent need to minimize the use of resources without sacrificing the overall growth and development of the sector.

Green buildings can have tremendous benefits, both tangible and intangible. Tangible benefits include reduction in water and energy consumption from day one of occupancy. The energy savings could range from 20 to 30 per cent and water savings around 30 to 50 per cent. The construction sector therefore needs to play a responsible role towards preservation of the environment.

Eco-friendly technologies such as solar air conditioning, wind towers, geothermal system, earth tunnel cooling, etc., integrated with developing townships can cut down energy requirements sizably. The market potential for green building products and technologies is estimated to grow to US\$100 billion by 2015. Green buildings will redefine the way buildings are constructed across the globe. Increased awareness and focus on sustainability has brought into focus the need to foster and promote such buildings. Since its introduction in 2001, the green building concept has emerged as a useful tool in designing sustainable buildings. The steady increase in green building projects is a clear signal that they are here to stay and are all set to redefine the way buildings are constructed. The early foray in green buildings has placed India in a leading position and the movement is well poised to reach greater heights in the nation.

### ***2.2.1.2 Renewable energy***

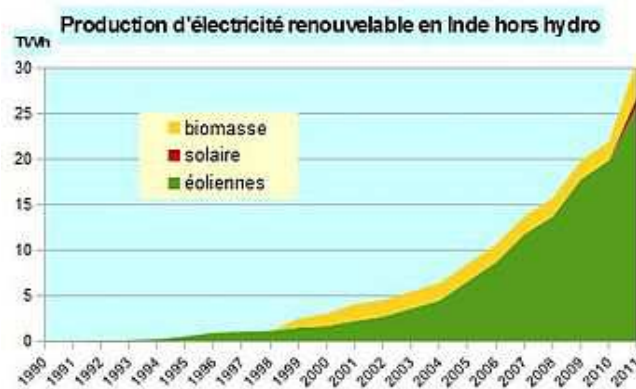
Indian urban population increased by 32% between 2001 and 2011, and it represents more than 30% of the total population. By 2050, 50% of India's population live in urban areas, which has already resulted in an increased in terms of transport and energy needs. The Indian government plans to invest more than EUR 500 billion in infrastructure during the next 20 years. Moreover, India is the world's third destination in terms of investment in the renewable energy sector, the country currently has a power generation capacity by 26 GW of installed renewable energy, and plans to double this capacity by 2017. RES currently contribute about 5.5% of India's electricity mix. Thus, the Indian solar market is growing at 35% per year through the National Solar Plan, which aims to add 20 GW of solar power by 2022.

#### **Key figures:**

- The total electricity generation capacity installed in India November 30, 2012 is 210,937 MW of which 25,856 MW (over 12%) is from renewable sources.
- The dynamism of the Ministry of New and Renewable Energy (MNRE) and the funding agency the Indian Renewable Energy Development Agency (IREDA) has enabled rapid growth of renewable energy in India.
- Renewable energy in India:
  - Only 20% of the renewable energy potential used in 2011;
  - the fifth largest installed capacity of renewable energy in the world;
  - the fifth largest installed capacity of wind turbines in the world;
- 68% of India's electricity is generated from coal, 15% by hydro, 8% from gas and less than 3% comes from nuclear power. The demand for electricity is increasing constantly. It should triple in 2020.

India has great potential in terms of renewable energy and launched itself since 1970 in an important use of the energy program. To ensure the implementation of its sectoral policies, the Government has established specialized public financial institutions, such as the Indian Renewable Energy Development Agency (IREDA), whose primary mandate is the development of renewable energy, but also the promotion of energy efficiency.

India plans to install 30 GW of installations of renewable electricity generation by 2017. Federated States at the respective governments have announced various policies to promote renewable energy. For example: The states of Gujarat and Rajasthan have announced their "political Solar" for the implementation of projects of about 10MW. The private sector response to these projects is very positive.



Wind turbines are well ahead in the production of renewable electricity with 26 TWh in 2011, they produced 2.6% of India's electricity. Biomass is far behind with 4 TWh, or 0.4%, and solar 1 TWh (0.1%). As on 31/12/2012, facilities producing electricity from renewable technologies in India reached an installed capacity of 27.5 GW. The table below (source: ERAI) provides the distribution of power.

Source : ERAI

Technology	Installed Capacity (MW)
Wind	18420
Mini Hydel	3496
Biomass	1249
Biogas	2240
Waste Incinerators	96
Solar	1176
Waste Incinerators	114
Biomass/Biogas cogeneration	426
Rural Biomass Gasification	17
Industrial Biomass gasification	139
Photovoltaïque(>1kw)	106
Hybrids/ Wind turbines	2

- Hydroelectricity Plants

Through the Himalayas, India has a significant hydroelectric potential:

- 84000 MW economically exploitable;
- over 6780 MW of mini-and micro-hydro;
- 94000 MW of 56 viable sites for pumped storage

In November 2012, the installed capacity is about 39,324 MW, or 18.64% of the total electricity installed capacity in India. The public sector has a dominant share of 97% in this sector through the National Hydroelectric Power Corporation and the Northeast Electric Power Company, which are few public companies engaged in the development of Hydropower in India. The Tehri Dam on the Bhagirathi, associated with hydroelectric 2,400 MW, commissioned in 2006, is the second largest dam in India (260 m high) and eighth in the world.

- Wind energy

India has already begun, like Germany, Denmark and China, to struggle to evacuate power generated by wind turbines in windy periods in areas where they are most numerous: a report from Power Grid Corporation of India provides 400 billion rupees investment to enhance the evacuation of wind and solar power systems.

- Solar energy

A study by McKinsey ranks India a world leader for solar potential with an annual yield of 1700 to 1900 kWh per kW followed by the United States (especially California), Hawaii and Spain (1600 kWh / kWp).

Under the National Action Plan on Climate Change presented by the Prime Minister of India, a program to promote solar energy called Jawaharlal Nehru National Solar Mission was approved by the government and includes three steps.

Electricity generation:

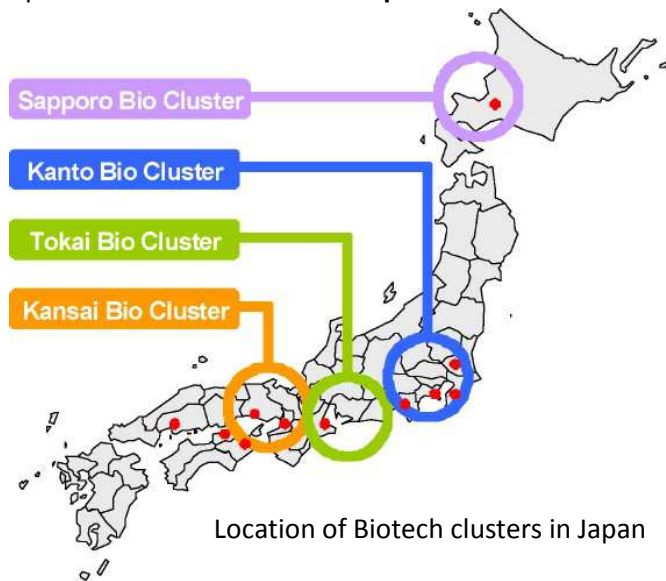
- 1000 MW by 2013 ( phase 1), an additional 3,000 MW by 2017, with the obligation to purchase at a special rate imposed (as in Europe ) electricity distributors goal could be doubled for an international technology transfer and financing , the voluntary target of 20 000 MW in 2022 will depend on the learning curve of the first two phases , which may lead to grid parity;
- Creation of favorable conditions for local production of solar equipment, particularly thermal;
- Installation of 15 million square meters of solar thermal (solar hot water) by 2017 and 20 million by 2022 and then deploy 20 million solar lighting systems for rural areas by 2022.

## 2.2.2 Japan

Over the past decades, the EU and Japan have developed strong economic ties: Japan, the world's third largest economy, is the EU's 7<sup>th</sup> largest trading partner. Among the Japanese key sectors of activity (ICT, micro-electronics, automotive industry,...), this report focuses on the Biotechnology sector and the renewable energy field.

### 2.2.2.1 Biotechnologies

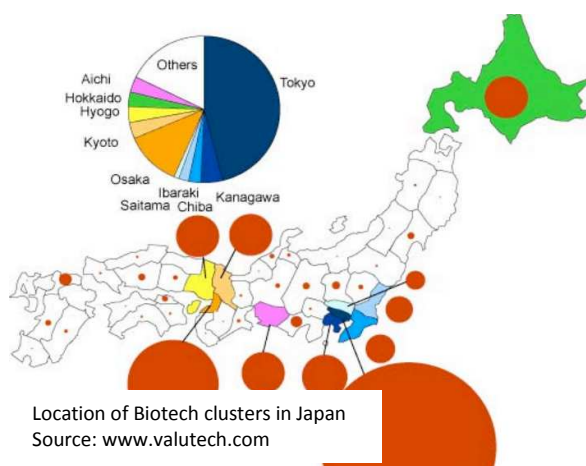
Japan is one of the **most developed countries in the biotechnology sector** as shown by its number of



patents filed. Long time considered as a closed market, the Japanese health sector is rapidly expanding and increasingly opening their doors to foreign firms. The rapidly aging population and the recent deregulation create a favorable environment for foreign companies' entry on the Japanese market of health and care. After the US, **Japan is the second largest market** in devices markets in the world. Total medical expenditure is over EUR 290 billion a year and the Japanese pharmaceutical market is bigger than both France and Germany's combined. In 2010,

almost a quarter of Japan's 127 million people were over 65. And this is predicted to increase to over 30% by 2025 (like in Europe) and to 40% by 2055. Japanese society is therefore facing an increasing number of chronic and long-term diseases. The sector of biotechnology keeps on growing each year, and applications related to biomedicines, regenerative medicine and genetic therapies, as well as functional foods represent a highly valued market for foreign companies. Joint research projects or partnerships between Japanese and foreign companies are considerably increasing these last years and it is a strategic must for foreign firms operating in these sectors to have foothold in Japan to growth global.

The Japanese market for biotechnology products has reached around 25 trillion yen in 2010, thanks to new innovations and the growing competition fostered by deregulation. The biotechnology based sectors considered most promising are **drug development, bio-services and bio-devices**.



The bio-pharmaceutical market, centered on antibody drugs, is showing an annual growth rate of roughly 10%, and it is expected that this trend will continue. Future bio-pharmaceutical are likely focus not only on developing newly discovered and created active proteins for use with drugs, but also on developing drug delivery and formulation technologies. Japan also experiences an important development of functional foods (foods for specific health use), especially for seniors, included foods with

contributions from biotechnology or genetically modified foods. The market size in 2010 could reach 3.4 trillion yen (about 25 billion €).

### 2.2.2.1 Renewable Energy

In Japan, the deployment of hybrid cars and other eco-cars aims to reduce CO2 emissions as a countermeasure against global warming. The introduction of eco-houses equipped with photovoltaic power generation, high-efficiency hot water heaters and LED lighting is being promoted for more than just improved insulation. Moreover, the Japanese people's interest has grown in the markets concerning energy saving and renewable energy as a result of the electricity shortages caused by the Great East Japan Earthquake

In addition to countermeasures against global warming, the government has set forth "Green Innovation" as the driving force for growth in its "New Growth Strategy" by setting a target of 50 trillion yen and the creation of 1.4 million jobs within the environmental market. With the introduction of the Feed-in Tariff for renewable energy planned for July 2012, an increase of new enterprises in the renewable energy field is expected. Moreover, to combat electricity shortages, the government also launched a subsidy support scheme funded by the supplementary budget to promote the growth of future energy systems involving the improvement of electricity supply and demand, renewable energy, and energy saving.

Moreover, since the Japanese earthquake and tsunami in 2011, the country has understandably seen an explosion of interest in renewable energy. A plethora of wind and solar projects were announced, especially in the early days after the Fukushima nuclear plants were shut down. Goldman Sachs said recently that it will invest as much as \$487 million in Japanese fuel cell, solar, wind and biomass efforts. The Japanese government, meanwhile, has set renewable targets of between 25% and 35% of total power generation by 2030, by which time some \$700 billion would be invested in new, renewable energy. Japan currently produces about 10% of its electricity from renewable sources. The renewable share goal is 20% by 2020.

- Photovoltaic Generation



According to the International Energy Agency (IEA), the cumulative installed capacity of photovoltaic (PV) power worldwide in 2010 grew to 34,953 MW, a 68% increase over the previous year. The cumulative installed capacity in Japan amounts to 3,618 MW, corresponding to 10% of the world's total and making Japan the third largest market behind Germany and Spain. In Japan, a support system for PV power installation was introduced for the second time in 2009, and subsidy applications for PV power surged rapidly from 20,000 in FY2008 to 140,000 in FY2009. Since then, subsidy

applications have continued to grow, and further expansion of the PV market is greatly anticipated. Moreover, because of the launch of an excess electricity purchase system, the growth of the PV power market is centered on home use. In 2010, 991 MW of PV power were installed for home use, corresponding to roughly double the figure of the previous year. The deployment of medium and large PV power systems for public, industrial, and commercial use with capacities in the range of 10

kW to 1 MW are predicted to increase due to the Feed-in Tariff for renewable energy starting in July 2012. Additionally, the government has secured a supplementary budget of 87 billion yen in subsidies to support the introduction of photovoltaic generation in homes and fund-creation projects for recovery measures.

- Wind power generation

Recently, Japanese wind power generation has been steadily introduced, and the cumulative installed capacity in Japan has increased at an annual rate of roughly 10%. As of December 2011, the introduced resources had reached 1,832 wind turbines with an output of 2,501 MW (Japan Wind Power Generation Association). According to the “Global Wind Statistics 2011” from the Global Wind Energy Council (GWEC), Japanese wind power generation is the 13th largest in the world. Japanese topography is complex, with less flat land compared to other countries. This means the amount of connectable wind power is restricted, which creates obstacles to the installation of wind power generation facilities. Therefore, the installation of wind power generation facilities with storage batteries is required to stabilize output and to reinforce the power grid. Wind power turbines with an output of 2 MW per unit consist of 20,000 parts, which come from a wide range of industries. It is expected that the Feed-in Tariff starting in July 2012 will lead an industry recovery in the Tohoku District, which is said to be the most suitable place for wind power generation. This is also expected to create a ripple effect on supporting enterprises through increased domestic demand.

- Biomass energy

Biomass energy is used in a wide area, namely electricity, gas and fuel for transportation. Raw materials are derived from various resources such as forest resources, residues of agricultural products and foods as well as sewage sludge. Therefore, industry academia and government are advancing various approaches including how to use resources efficiently and local production for local consumption in consideration of the local characteristics. For example, research and development are being promoted, aimed at sustainable expansion giving consideration to the compatibility of the development of biofuels for transportation with foods supply, reduction in greenhouse gas emission throughout the lifecycle and so forth.



Aiming at the improvement of energy security and the reduction of CO2 emissions, renewable energy such as PV power and wind power generation, as well as future vehicles such as electric vehicles, have come into focus.

Storage batteries play an important role in stabilizing variable output of PV, storing wind power generation, and storing surplus energy. Furthermore, storage battery related industries (for example, electric vehicles that use storage batteries as a power source) are expected to

grow inside and outside of Japan. Industries related to storage batteries are very attractive because there are a wide range of supporting businesses, such as raw material processing and importation, parts manufacturing, storage battery manufacturing, storage battery usage (electric/electronic appliances, vehicles and industrial machines, building/construction, energy, etc.), and related service



suppliers. Typically in Japan, storage batteries for use in electric vehicles are developed and produced in cooperation between storage battery and automobile manufacturers. Storage batteries for use in power grids are commonly built-to-order for electric power companies and new energy generation facilities since the number of storage batteries in a power grid is limited. There are also a few cases of storage batteries being utilized in the home (demand side). The development of the supply chain business model has just begun. According to the Ministry of Economy, Trade and Industry, the total domestic production of batteries in 2010 amounted to about 690 billion yen, and storage batteries accounted for 85% of this total. As for lithium-ion batteries, despite a decline following the global financial crisis, domestic production (largely for personal electronic devices) had recovered to 1.2 billion units worth 277.5 billion yen in 2010. It is expected that the increased demand for storage batteries, next generation vehicles and renewable energies will lead to greater demand for lithium-ion batteries and related products/systems in the coming years. The government allotted 21 billion yen from the FY2011 third supplementary budget to promote lithium-ion storage batteries

### **2.2.3 South Korea**

Ranking fifteenth in the list of the world's largest economic powers, South Korea has shown a spectacular growth over the past thirty years. Korea is the EU's 10th largest trading partner and the EU has become South Korea's second export destination. In terms of EU export and import, the share of South Korea compared with the total accounts for 2.1% respectively. EU exports to South Korea enjoyed an annual average growth rate of 7% between 2007 to 2011.

The country's main sectors of activity are textile, the steel industry, automotive, shipbuilding and electronics. South Korea is the largest producer of semiconductors in the world. The manufacturing sector represents about 35% of the GNP, while the tertiary sector accounts for more than 60%.

#### **2.2.3.1 Telecommunications**

The country has become in a few years a leading global player in the technology sector and telecommunications. This is mainly due to the dynamism and the will of its population, and especially to the strong involvement of public and private sectors. Chaebols in particular have played a major role in the development of Korea and new technologies.

The market for new technologies of information and communication is a priority for the South Korean government. According to the Bank of Korea, between 30 and 40% of the increase in GDP is put on the account of the IT sector. The development of this sector depends largely on the increased government support through major public investments, as well as massive investments in research and development. Significant investments in telecommunications infrastructures have been made in recent years, allowing the country to have a developed infrastructure of submarine cables and satellites, as well as solid Internet resources to meet the growing demand in terms of telecommunications. The performances and efforts of manufacturers (Samsung Electronics and LG Electronics) and of the three national operators (SK Telecom, Korea Telecom and LGU+) were also a decisive factor in the rapid development of telecommunications in the country.

### **A focus on the mobile sector**

On a population of 49 million in June 2011, South Korea includes 52.23 million mobile subscribers. This represents a penetration rate of mobile phones of 106%, which means that many subscribers have several mobile phones. The 3G network was launched in 2003 and new investments are being made by operators to launch 4G.

### **Key figures (2011)**

South Korean population: 49 million

Number of Internet users: 37.4 million with 18.1 million broadband

Number of mobile subscribers: 52,23 million whose 49,64 million in 3G

Number of fixed line subscribers: 27, 155 million

Number of Smartphone: more than 20 million

The rapid evolution of mobile telephony in Korea is largely due to the presence in the territory of manufacturers such as Samsung and LG. In 2011, Samsung Electronics is the world's largest memory, televisions and mobile phones manufacturer and the second largest manufacturer of flat screens. Moreover, the competition between the three national operators SK Telecom, Korea Telecom and LGU + allows a favorable climate for innovation and a rapid development of telecommunications.

SK Telecom is currently leading the mobile market, with more than 50.6% of market share, which represents 25.7 million subscribers, KT with a market share of 32% and 18% for LGU +. They are both operators of fixed and mobile telephony, and Internet service providers. They are trying now to become real media companies, and not to remain simple phone operators.

This explosion of mobile has caused a real change of use. Already in 2005, South Korea was one of the first countries in the world where the mobile receives television. Nowadays, we use the mobile phone, of course, to make calls, but we consult our e-mails, take pictures, listen to music, manage our agenda and our accounts etc. In South Korea, we can point out the emergence of new uses related to the predominance of mobile in the life of every day. For instance, end of 2011, Homeplus, the second largest retailer in South Korea, has launched a virtual supermarket in a subway station in Seoul.

The explosion of mobile in Korea also has an impact on the development of near-field communication technology, or NFC. This contactless technology enables the exchange of information between devices at a distance of about 10 cm. there is a real keen interest of the Korean for mobile phone with this technology, which makes possible for instance the express payment in cash.

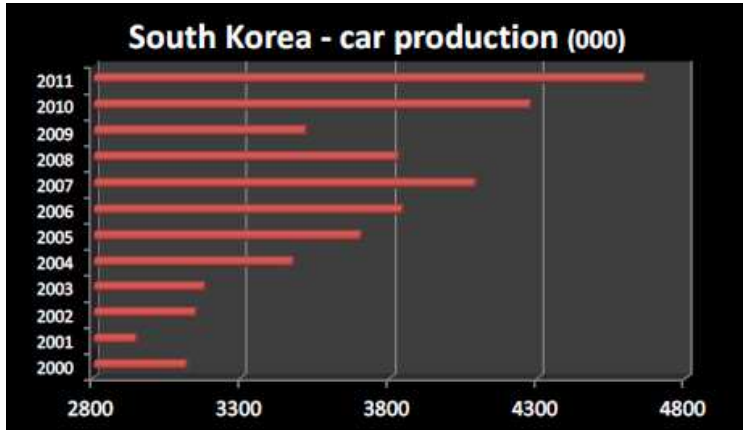
### ***2.2.3.2 Automotive industry***

The South Korean automotive industry is at an enviable position in the global automotive industry. Its dynamic and frequently trendsetting policies have enabled domestic manufacturers to cater to global demand by providing a range of vehicles, including attractively priced small cars, versatile niche vehicles, and luxury cars. **Automotive industry has been crucial for the fast development of South Korea economy over last 25 years. In the nineties' the huge development of domestic production up to 3 million vehicles was pursuing the "invasion" of global market through creating local employment and income.**

The industry leaders have been at the vanguard of some major movements, such as setting up of overseas production facilities to benefit from the low costs of manufacturing. With able support from global electronic appliances and IT leaders such as Samsung and LG, the South Korean automotive industry has delivered sophisticated products. Heavily backed by superior technology and strong potential for next generation vehicles, the future of South Korean automotive sector looks strong. The **automotive industry in South Korea** is the fifth-largest in the world measured by automobile unit production and the fifth-largest by automobile export volume. While its initial operations were merely the assembling of parts imported from foreign companies, Korea is today among the most advanced automobile-producing countries in the world. In the 1990s, the industry manufactured numerous in-house models, demonstrating not only its capabilities in terms of design, performance, and technology, but also signaling its coming of age. The automotive industry was one of South Korea's major growth and export industries in the 1980s. By the late 1980s, the capacity of the South Korean motor industry had increased more than fivefold since 1984. Total investment in car and car-component manufacturing was over US\$3 billion in 1989. Total production (including buses and trucks) for 1988 totaled 1.1 million units, a 10.6% increase over 1987, and grew to an estimated 1.3 million vehicles (predominantly passenger cars) in 1989. Almost 263,000 passenger cars were produced in 1985—a figure that grew to approximately 846,000 units in 1989. In 1988 automobile exports totaled 576,134 units, of which 480,119 units (83.3%) were sent to the United States. However, domestic market is still become the focus of demand since made in Korea car became the major selection of most Korean where foreign car could only cover approximately 5% of current domestic market. One of the factors that help the success of the national car was according to the R& D which being aggressively developed through the cooperation between government, industry and university indeed.

South Korea today has developed into one of the world's largest automobile producers. Three major companies—Hyundai Motor Company, Kia Motors Corporation, and Daewoo Motor Corporation accounted for about 90% of the South Korean market, while the remainder was split among two minor producers and imports. Hyundai, the country’s dominant automaker, produced cars, light trucks, and commercial trucks and buses; it was part of the larger Hyundai Corporation, which had interests ranging from construction to shipbuilding. Kia, South Korea’s second largest automaker was acquired by Hyundai in 1999. Daewoo, owned by the Daewoo Group conglomerate, entered the automobile field on a large scale in the 1980s and had won nearly a fifth of the market before entering into financial receivership and reorganization in 2000. At the start of the 21st century, Daewoo appeared likely to become the first major South Korean company to be taken over by a foreign firm.

Currently, car produced in South Korea are 4.657.000 (in 2011), the 5.8 % of global production and the country ranks 5th in absolute globally.



Domestic light vehicle market is mature. The market growth between 2004 and 2011 was 25% from 1.2 million to few thousand units below 1.5 million, achieving the 12<sup>th</sup> position in the global rank. For next years the Korea Government is still planning a market growth based on progressive further increase of

Source: Focus2move

individual purchase power. The market is stable or in marginal decline during the 2012, due to the effect of European economic crisis over South Korean exports. A slight growth is foreseen for future years with a market over 1.6 million in the 2015. Hyundai is dominating the competition. Full year 2011 closed with Hyundai share at 45%, followed by Kia at 35%, GM Korea (Chevrolet & Daewoo) at 8% and Ssangyong at 2.9%.

Three significant areas have been identified in South Korea: Busan, Ulsan and Seoul. Busan and Ulsan are two cities that labeled by the nation as the auto valley that function as the R& D center which involved government, industry and university. And meantime, Seoul is the main domestic market for the automotive industry. Busan city is located strategically in the southern part of the peninsular which facilitates with international airports and seaport developed as the new area after Ulsan city for the R& D center for automotive and auto parts industry in South Korea. The clustering theory of the industry is applied in developing the area whereby enhance the direct interaction between people who involved in the industry through face to face communication, and the networking among them as personal or group interactions mutually benefit them in terms of healthy competition in the objective to grow the industry. Future forecast in the next ten years for the Korean automobile industry in the objective to remain competitive globally are through the technological and educational support with profit maintain, global expansion, labor relation improvement, mutual development and cooperation with SMEs.

The Korean automotive industry has consistently driven internationalization forward and expanded its presence on important markets. For example, its market share in Western Europe, which in 2010 was at 4.2% and totaled 540,000 autos, had risen to 5.9%, or 692,000 passenger cars, by 2012. And at the beginning of the year 2013 this trend was continuing (market share in January 2013: 6.4%).

This means that from 2010 to 2012, Korean OEMs increased their passenger car sales in Western Europe by 28%– despite the continuing weakness on this market. This represents a rise of around 150,000 new cars.

## 2.3 Mediterranean Countries

There is an economic “boom” in Africa and according to IMF, the continent will have the world’s fastest growing economy during the next 5 years. Africa has already more middle class consumers than the more populated India, but of course, it is a fragmented market and trade between Africa and the rest of the world increased by 200 % between 2000 and 2011.

### 2.3.1 Morocco

Thanks to its economic development model, which combines openness, liberalisation and structural reform, Morocco has shown resilience in a difficult national and international context. Nevertheless the slowdown in activity in Europe, which is the country’s chief economic partner and below-average agricultural production, resulted in a distinct slowdown in growth, which was 3.2% in 2012. However, growth should pick up in 2013 to reach around 4.6%, driven by the consolidation of internal demand. Some industries have been given a boost by the implementation of the 2009-15 National Pact for Industrial Emergence (*Pacte national d’émergence industrielle*, [PNEI]) and they should make a vigorous contribution to growth. The PNEI is the result of strategic choices made at the start of the 2000s to encourage the emergence of new centres of growth, competitiveness and jobs. Morocco has focused on encouraging niche industries for export and on international promotion of emerging services to businesses. It is in these dynamic sectors of the economy, including several of the 6 World Crafts of Morocco (Offshoring, Automobile, Aeronautics, Electronics, Textile & Leather, and the Food

Industry) targeted by the Pact Emergence industrial, that are expected to be developed cooperation agreements. Some of these activities are already involved with the initiative of the three pilot clusters: clusters in the areas of ICT, microelectronics and electronics and mechatronics.

This chapter focuses on the aeronautics sector. This report provides also overall information about the tourism sector which is well developed in Morocco, with a strong tourist industry focused on the country's coast, culture, and history and it offers opportunities of collaboration.

### *2.3.1.1 Aeronautics*

The Moroccan aeronautic industry stands out as an emerging industry with a strong growth in exports (a jump in a decade of 88 times the value of exports from 2000, achieving a 2% share of the Nation's value of exports - USD 521 MM by 2010).

The aircraft, which covers civil and military aircraft, represents a new strategic direction for the Moroccan industrial development. New clients such as EADS Morocco aviation, Safran, Boeing, airlines AIR FRANCE and RAM are located in Morocco, as well as the implementation of SMEs and large foreign and Moroccan companies.

The aviation industry is experiencing strong growth, notably in 2009 it reached 10% and 35% over the last three years. Its contribution to the trade balance increased from 2% in 2005 to more than 5% today. Around 100 companies in Morocco currently operate in the sector, employing around 10,000 people, with much of the workforce based in component manufacturing, engineering and services. A number of companies have been present in the country for over a decade, including the French component producer Le Piston Français and French Safran, operating through a number of subsidiaries including Matis, Aircelle, Snecma, Sagem and Teuchos. The number of firms is expected to rise as global demand for aircraft components increases, with the Midparc initiative expected to create around 10,000 much-needed jobs.

Data from Morocco's aerospace trade group, the Group of Moroccan Aviation and Aerospace Industrialists (Groupement des industries Marocaines Aéronautiques et Spatiales, GIMAS), shows that aeronautics generated Dh5.2bn (€468m) in export revenues in 2011, up from Dh4.7bn (€424m) in 2010. Exports in wiring, manufacturing and maintenance accounted for 82% of total aerospace revenues, according to a report released by the Ministry of Finance in September 2011.

Bombardier expects to invest \$200m (€157m) in establishing its plant over the next eight years and create around 850 jobs as it looks to harness Morocco's competitive labour and transportation costs. The company plans to set up a temporary unit at the beginning of 2013 in Casablanca's aviation industries zone (Aéropole), across from the MidParc site, to work out of until the industrial park opens.

### *2.3.1.2 Sustainable tourism*

**Tourism in Morocco** is well developed, with a strong tourist industry focused on the country's coast, culture, and history. Morocco has been one of the most politically stable countries in North Africa, which has allowed tourism to develop. However, for the last two years Morocco has stagnated and suffered from a lack of visibility as a tourist destination. This has become a worrying trend. In the first

nine months of 2012, only 7.278 million tourists visited Morocco. An increase of only 0.1 per cent compared to the same period in 2011. The sector represents a very significant share of GDP: 8%. Some categories are emerging as key areas for growth. These include **golf and sports tourism in general, eco-tourism and health and wellness tourism. The Ecotourism represents a relatively new tourist offer for Morocco.** Supported by the authorities through Vision 2020, the "sustainable tourism" niche is now receiving a great deal of attention. It aims to put Morocco into the top 20 most popular tourist destinations in the world. With a programme of contracts signed with the State, eight regional centres will develop environmentally-friendly tourism, promoting Morocco's national heritage, nature sites, and offering activities focused on sports and well-being. Morocco has been nominated to be the President of the Global Partnership for Sustainable Tourism in 2013.

Hiking, horse-riding, paragliding, green tourism, crafts, interaction with the local population, guest houses, etc. have proved to be very popular with European tourists, particularly those from France, Germany, Great Britain and Scandinavian countries. Morocco is also seeing a growing Russian clientele, which is appreciative of both luxury and authenticity. This wealthy class of tourists will choose for example to spend the end-of-year holidays camping in the middle of the desert, in a five star setting.

### 2.3.2 Tunisia

Tunisia has a diverse, market-oriented economy, with important agricultural, mining, tourism, and manufacturing sectors but faces an array of challenges in the wake of the country's 2011 revolution. Key exports now include textiles and apparel, food products, petroleum products, chemicals, and phosphates, with about 80% of all exports going to the European Union. This report also provides an overview of the ICT sector, a dynamic sector which offers numerous opportunities for cooperation.

#### 2.3.2.1 Textile and Clothing industry

The sector of Textile and Clothing is considered strategic for the Tunisian National Economy. It is the largest sector of the manufacturing industry in terms of exports, employment and added value. In fact, the sector has 2,095 companies employing more than 200,000 persons, that is to say 41% of all manufacturing jobs.

Among the 2,095 units in the sector, 1,752 enterprises produce for export that corresponds to 83% of the sector. 640 companies are 100 % foreign owned. 40% are large companies employing more than 80 232 persons, which represents 40% of total employment in the sector. 60 % are small and medium enterprises employing around 120 000 persons.

Sector exports increased from TND 4481 in 2004 to TND 5183 in 2008, an average annual increase of 4 %. The countries of the European Union are the main customers of Tunisia for textile products with 36% for France, 32% for Italy, 10% for Germany, followed by Belgium, the Netherlands, the United Kingdom and Spain.

The sector of Textile and Clothing is divided into 6 industries distributed as follows:

- The spinning industry
- the weaving industry
- The finishing industry
- The hosiery

- Manufacture of fabric and knitted wear
- Other textile industries

The region of Monastir is the first concentration of textiles and clothing entities with 563 units which corresponds to 27% of all enterprises in the sector, followed by the Grand Tunis with 435 companies, then Sousse, Nabeul and Sfax with 12%, 11% and 9% respectively. All these regions represent 80% of the industry.

The textile and clothing industry is the sector where the Euro-Mediterranean Partnership is the most developed. Among the 1752 total export sector units, 966 are in partnership with mainly European companies. France occupies the first position with 435 units, followed by Italy with 267 units, then Belgium and Germany with 115 and 97 units respectively.

#### **Textile & clothing sector in figures:**

- More than 2 000 companies provide almost 200,000 jobs.
- 83% of companies export their entire production.
- 1,124 companies are held entirely or partially by foreign partners.
- On average, more than 4,000 million Tunisian dinars are earned through exports annually.
- More than 170 million Tunisian dinars on average are invested per year.
- FDI: 994 million Tunisian dinars in terms of stock.

The success of Tunisia's textile & clothing industries is based on a high degree of know-how, diversified product lines, optimized production thanks to low costs, quick lead-times, and proximity to European centers of decision. Tunisia stands out as one of the most important producers of clothing in the world. For several years already it has been one of the foremost world suppliers of clothing, the fifth supplier to Europe and the second to France in this field. It is also ranked as the second textile exporter per capita. Exports by the textile and clothing sector have been growing steadily. Thus, despite strong competition from Asia and the dismantling in 2005 of the Multi Fiber Agreement (MFA), the industry has bounced back to preserve its market share. In 2008 it has recorded a growth of more than 8% of exports in Euros as compared to 2006.

However, since 2008 and the end of the Multifibre Agreement which introduced import quotas on Chinese products in Europe, the market shares of Tunisia (3.6% in 2011) are slowly eroding face under pressure from Turkish and Chinese textile industries. The Tunisian businesses remain small size (71% of firms in the sector have less than 100 employees) and cannot invest heavily. The sector needs to seek opportunities in new, more lucrative business areas. One of those areas is the development of products that use **technical textiles/advanced textile** such as work and protective wear, medical applications and the automobile sector. Several Tunisian companies have developed the know-how for such products but need to look for new markets. This new activities represent a real opportunity to develop partnerships.

#### **2.3.2.2 Information and Communication technologies sector**

The ICT sector is extremely dynamic in Tunisia. It accounts for 7% of GDP and is growing by 14% per year. That means around 100,000 jobs in the country. There are some 1,200 companies on the technology scene in Tunisia, among them overseas firms, especially French firms. Sagem, Alcatel,

Orange, Bull and IBM are of course highly active. The actual technology is spread over many fields; all sectors of the economy are affected by ICT technology.

In Tunisia, the government has positioned these technologies at the heart of the national development plan. This is why Tunisia can count on efficient infrastructures and on a young and skilled workforce in the ICT field. The Tunisian telecommunication network is amongst the most modern in the Mediterranean basin, consisting of seven nodes nationwide, equipped with broadband multiservice switches, integrating voice traffic, Internet traffic and multimedia. Ranking 50 on 142 on the Network Readiness Index of 2012 and first in the Mediterranean South region, Tunisia is the best placed to exploit the opportunities offered by information and communications technology. Tunisia also ranks first in North Africa in terms of fixed telephone quality. However the network is not yet sufficiently deployed with only 11.5 fixed subscriptions per 100 habitants. The international internet bandwidth is one of the highest in the region even though the number of household with computer and internet connection is still limited in Tunisia.

However, there is real enthusiasm for mobile. Three operators –Tunisie Telecom, the incumbent operator; (private telecommunications company) Tunisiانا; and (French multinational telecoms corporation) Orange– share the market between them. And market coverage is well over 100%: there are 12 million SIM-chips in use for a population of 10 million, ranking Tunisia just behind Israel and Jordan. Moreover, the rollout of 3G, which Orange initiated in 2009, has enabled the applications ecosystem to grow very fast. These days the development field is mainly driven by the emergence of Cloud-based services. We are talking here about a very promising market. There is now a data centre up and running in Tunisia and two more are planned.

Another sub-sector can be point out. Mobile payments have not really taken off in Tunisia, in contrast to sub-Saharan Africa. People still like to handle physical money. However, several banks have initiated projects. One was to enable mobile payments in taxis, but that never really caught on. Geolocation, by contrast, is a rapidly-increasing trend. A geolocation project was launched jointly with Algeria last year, aimed at both private companies and the state apparatus. Everyone is now ready to invest today to reap the rewards tomorrow. Tunisians are also getting very excited about performance marketing. They are seeing a growing number of websites making promotional offers and also sites for private sales.

IT security is also starting to be an area for attention.

### **3. To sum-up**

This broad analysis based on a few countries and specifics sectors demonstrated that there are a lot of opportunities in these different regions of the world both, as promising markets for our industry and as potential commercial or technology partners for European clusters and SMEs.

It is not surprising if we have in mind that in 10 years, the middle class will be around 1 billion people and that 90% of its population will live in emerging or today less developed countries.

Therefore, it is crucial to pursuit the policy initiated in 2011 and to sign MoUs with other emerging economies in the world.



<b>Country</b>	<b>Opportunities for cooperation</b>
<b>Brazil</b>	Biotechnology Renewable Energy especially solar and wind sub-sectors
<b>Mexico</b>	Agro industry Automotive industry
<b>India</b>	Building and Construction sector especially, green buildings Renewable energy especially solar energy
<b>Japan</b>	Biotechnology especially, drug development, bio-services and bio-devices Renewable Energy
<b>South Korea</b>	Telecommunications, especially mobile sector Automotive industry especially passenger car industry
<b>Morocco</b>	Aeronautics Tourism especially, sustainable tourism, eco-tourism
<b>Tunisia</b>	Textile and clothing industry especially, advanced textile ICT especially ,Mobile and IT security

To conclude, this paper provides a quick overview about cluster policies implemented in the world (outside Europe) and mentions some specific examples which could be of interest to select the next partners of the European Cluster Collaboration Platform.

#### **NAFTA**

- Canada

The National Research Council (NRC) has developed an explicit cluster strategy. The goal is to have a strong national economic/industrial backbone in the pursuit of longer term Canadian economic S.T. and social objectives.

(Source: DECA reviews of regional innovation competitive regional Clusters- Chapter 7 – Canada).

- ● USA

There is not a national level cluster based policy. But some states have a cluster policy (OECD report – op cited-mentions 2 examples: Georgia and Oregon)

#### **AFRICA**

The 5 largest economies in Africa are South Africa (n°1), Egypt (n°2), Nigeria (n°3), Algerian and Morocco. At the exception of Nigeria, none of those countries are among the fastest growing economies.

The 7 fastest growing economies are: Ethiopia, Mozambique, Tanzania, Congo, Ghana, Zambia and Nigeria. Congo is suffering from political uncertainties and Zambia remains one of the poorest countries in the world.

Botswana success since the independence in 1966 can also be cited. (Main source of growth: diamond mining).

The 4<sup>th</sup> annual conference of Pan African Competitiveness Forum celebrated in Nigeria, in November 2012 concluded on the importance of clusters as tool for African countries to create employment, alleviate poverty and achieve sustainable security, representatives of following participated in this conference: Tanzania, Uganda, Gambia, Ghana, Senegal, Kenya, Zambia, Nigeria (and New Zealand and Sweden).

There are some publications about innovation systems and industrial clusters in Africa. They show that clusters have enabled enterprises to overcome many binding constraints on the areas of capital, skills, technology and market to grow and compete through more effective knowledge and technology diffusion (See knowledge, technology and cluster based growth in Africa-World Bank). Examples cited in this publication are from Ghana, Kenya, Nigeria, Tanzania, Uganda, Mauritania and South Africa. They are about following sectors: wine, textiles and clothing, fishing, handicrafts and furniture, automotive industry and manufacturing. A publication of the Scandinavian Institute for competitiveness and development identifies cluster initiatives in the following countries: Ghana, Nigeria, Senegal, Gambia, Kenya, and Ethiopia. Beside industrial clusters, there are also examples of "SIDA support of research based innovation cluster development in Africa". The training was provided in 3 countries: Nigeria, Ghana, Kenya, but there were also participants from Gambia, Senegal and Ethiopia.

It is suggested on the basis of this quick analysis to select two countries among the following countries: Ethiopia, Nigeria, Ghana, Kenya, and Tanzania.

## **ASIA**

Some publications underline that there is an explosion of clusters and cluster policies in Asia, with a great variety of models developing in various countries: China, Vietnam, Thailand, Malaysia and Japan (See Garne-Lecler-Asian industrial clusters, global competitiveness and new policy initiatives). Singapore, Taiwan and South Korea also provide good examples of government led clusters.

However, clusters struggle with different barriers to competitiveness, no single model can fit all cluster initiatives. They need to be adapted to the local context. Innovation policy in Vietnam is at the design phase rather than at an implementing phase. Taiwan could become a political problem, if an agreement is not signed with China.

It is suggested to select the following countries: China, Malaysia, Singapore or Thailand.

There is no evidence based on an internet quick analysis that there are cluster initiatives in Indonesian (except nutrition and wood furniture).

## **Latin America and the Caribbean.**

The arrival of Intel in Costa Rica contributed the development of an ICT cluster and within 10 years they built an effective cluster which is today the leading producer of ICT per capita in Latin America.

There are also examples of successful clusters initiatives in Argentina, Brazil, Chile, Colombia, Mexico and Uruguay. Chile has several advantages: an open, less bureaucratic business environment, a highly sophisticated financial services industry and a special programme “start up Chile” to attract companies, in particular, from the Silicon Valley a quickly develop a so –called chilecon valley.

According to a report of the inter American development bank, there were also cluster policy initiatives and projects supported by the governments and the bank in Latin America over the last years: Haiti , Ecuador, Guyana, Paraguay, Guatemala, Panama, Nicaragua , Dominican republic and Honduras.

To conclude, most of Latin American countries have implemented at least some cluster initiatives, but it is suggested to focus, at this stage, on the main countries: Brazil, Chile , Mexico , Argentina.

### **Other countries outside Europe**

Both Australia and New Zealand have also existing clusters policies and/or initiatives (see cluster presentation on clusters in Stockholm. 2008 + OECD proceedings + Anderson, Schwoag- Serger, Sörvik, Harson – IKED – p.197)