



D. 3.5 – Discussion paper on Morocco

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Abstract: The discussion paper on Morocco provides inputs for a policy discussion on cluster cooperation and policy arrangements on clusters with Morocco. The report contains information on existing EU- Morocco cluster collaboration and good practices, which can be good practice examples for other clusters from Europe in their collaboration approach towards Morocco.

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1. Concept

This series of “discussion papers” is elaborated according to the selection of 10 third strategic countries by the European Commission DG Internal Market, Industry, Entrepreneurship and SMEs (DG Growth) and its Executive Agency (EASME) and shall serve as input and preparatory papers to the policy discussions / policy meetings. It is in part also published on the platform. Only the chapter “recommendations” is aimed for confidential use without publication.

This document is intended to provide a fair complete overview of the ongoing cluster to cluster¹ cooperation between European and Morocco clusters, as well as other types of cooperation at an upper level, between for example European Members States organisations (national or regional development agencies, national cluster associations, etc.) and Moroccan organisations to enhance cluster- or cluster-enhanced cooperation. It provides examples of practices of cooperation at different levels. It is further intended to provide an analysis of the potential for cluster cooperation in the future, especially with a thematic focus. Three sectors are analysed in more detail: the textile sector, the production sector and the energy sector.

The background knowledge and good practices can be used in policy discussions to illustrate the gradual vitality of cluster cooperation and practical hints for a policy involvement to this regard.

This document can only be a flashlight on selected aspects and selected sectors. Additional information may be obtained from the preparatory briefing document which compiles some macroeconomic background and some information on Moroccan clusters and organisations with similar functions.

¹ Cluster and cluster related terms are used with the following meaning in this document:

- Clusters: Clusters are generally described as groups of specialised enterprises, often SMEs, and other supporting actors in a particular location that cooperate closely together.
- Cluster initiatives: A cluster initiative is an organised effort aiming at fostering the development of the cluster either by strengthening the potential of cluster actors or shaping relationships between them. They often have a character like a regional network. Cluster initiatives are usually managed by cluster organisations.
- Cluster organisations: Cluster organisations are entities that support the strengthening of collaboration, networking and learning in innovation clusters and act as innovation support providers by providing or channelling specialised and customised business support services to stimulate innovation activities, especially in SMEs. They are usually the actors that facilitate strategic partnering across clusters. Cluster organisations are also called cluster managements.
- Cluster participants: Cluster participants are representatives from industry, academia or other intermediaries, which are commonly engaged in a cluster initiative. Given the case a cluster initiative has a certain legal form, like associations, cluster participants are often called cluster members.
- Cluster policy: Cluster policy is an expression of political commitment, composed of a set of specific government policy interventions that aim to strengthen existing clusters and/or facilitate the emergence of new ones. Cluster policy is to be seen as a framework policy that opens the way for the bottom-up dynamics seen in clusters and cluster initiatives. This differs from the approach taken by traditional industrial policies which try (and most often fail) to create or back winners.

2. Overview of Morocco – existing EU-Morocco cluster cooperation

EU-Morocco collaboration is characterised by an asymmetrical relation: on the one hand, the EU has implemented many programmes to foster EU-Morocco cluster collaboration. On the other hand, and despite an important political will, there is so far a limited number of Moroccan clusters to partner with. As a result, this chapter lists first the various programmes that have been implemented to foster EU-Morocco cluster collaboration, and makes suggestions to enable cluster collaboration, with the Moroccan clusters, taking into account the current stage of development and the specific features of the potential partners. The EC is currently funding the Next Society project, which is key in increasing collaboration between the EU and the MENA countries, including cluster collaboration. Therefore, it is likely that clusters from both sides increase their collaboration in a near future.

2.1. Existing EU-Morocco cluster collaboration

Morocco is part of the targeted community of the European **Neighbourhood Cooperation Policy**, and it is part of the **Euro-Mediterranean Partnership**, under which negotiations for a Deep and Comprehensive Free Trade Agreement (**DCFTA**) are ongoing.

Recent **European collaboration projects** with relation to innovation, cluster policy and/or cluster activities, include the following:

- **EUROMED Cluster Excellence**² (EC, 2012-2014), was a capacity building programme for Mediterranean clusters on policy and actor level, which conducted several support measures across the Mediterranean Sea, including a cluster training week in May 2013 in Casablanca.
- **MOBILISE**, Morocco and the EU: Strengthening bilateral links in innovation and science for economy (EC, 2012-2015)³: This project aimed to strengthen bilateral cooperation in science and technology between the EU and Morocco. Amongst the activities, the project helped identify EU-Morocco cluster cooperation. The project also conducted training on cluster management and helped initiate cooperation with four Moroccan clusters a (e.g. collaboration interest of European cluster organisations targeting Morocco was explored in a survey -see listing below).
- **CINEA** (EU-MED Cooperation to foster Innovation and Exploitation in the Agro-Food Domain) (EC, 2014-2016)⁴ brought together leading research organisations, industry associations and innovation players from the EU and the Mediterranean region to bridge the existing gap between research and innovation in the area of food and agriculture research. The ultimate goal was to facilitate the transfer of scientific knowledge to industries and public services and bi-regional cooperation between all stakeholders along the knowledge value chain in the agro-food domain, thus contributing to meeting European and national/regional sustainable

²EC, <http://ec.europa.eu/DocsRoom/documents/5422/>

³EC, http://cordis.europa.eu/project/rcn/105424_en.html

⁴EC, http://cordis.europa.eu/project/rcn/111442_en.html

development goals. This included research-to-industry twinning projects between research organisations and SMEs/industry representatives.

- **MAGHRENOV** (EC, 2013-2016)⁵ aimed to support innovation in the renewable energy & energy efficiency (RE&EE) sector in the Mediterranean basin. The consortium brought together partners from Europe and Maghreb countries, whose goal was to establish a common Euro-Mediterranean innovation space. Major activities were devoted to capacity building (human resources as well as research & innovation infrastructures), business creation, including joint financial support to EuroMed innovation projects in the RE&EE sector, and enhancement of mobility of young academics among businesses and research sector in the EU and Mediterranean partner countries.
- **MARE** (Mediterranean activities for research and innovation in the energy sector) (EC, 2013-2016)⁶: The MARE project aimed to bring together actors from the whole value chain of innovation (R&D organisations, intermediaries, business parks, clusters and SMEs) in order to foster cooperation for bridging the gap between research and innovation in the EUROMED area, towards three technology pillars (microgrids, desalination, and energy efficient buildings). MARE conducted a set of activities assisting the market uptake of research results, improving competencies and mutual learning of organisations from both areas and finally identified areas on potential STI cooperation between Member States and “Mediterranean Partner Countries (MPC)” under the H2020 and bi-regional programmes. Emphasis was given to enhancing the Common Knowledge and Innovation Space between EU and MPC and to supporting partnerships between Member States and MPC countries through market uptake of research results for global competitiveness and reach of new markets.
- **REELCOOP** (REnewable ELectricity COOPeration) (EC, 2013-2017)⁷ was an EU/FP7 funded project aiming to develop renewable electricity generation technologies and promoting cooperation between EU Partner Countries and MPC.
- **MENFRI** (Mediterranean Network of Forestry Research and Innovation) (EC, 2013-2016)⁸ aimed to realise a dialogue and action platform in forestry, encouraging scientific and technological collaboration within the Mediterranean basin. The main goal of the project was therefore to create a favourable environment for the development of an innovative and job creating business sector in this region while addressing climate change. The project supported bridging the gap between research and innovation by improving performance in managing, transferring and using the knowledge resulting from ecological research and forest management and by better aligning both research and economic objectives to societal needs.
- **The Next Society** (DG NEAR 2017-2021) is the currently running most important EU-MENA countries cluster collaboration project: it aims at reinforcing the Mediterranean ecosystem by conducting strategic training on intellectual property mobility from the MENA countries to the EU. The Next Society implements various types of activities for the clusters: need diagnosis to improve their management, benchmarking visits and training, cluster mentoring, invitation to

⁵Maghrenov, <http://maghrenov.eu/p/objectives>

⁶EC, http://cordis.europa.eu/project/rcn/109863_en.html

⁷Reelcoop <http://www.reelcoop.com/>

⁸MENFRI, <http://www.menfri.eu/>

international business development missions, and the creation of a i-community, including a mapping realised in collaboration with the ECCP. Regarding the mapping, clusters members of The Next Society are encouraged to profile on ECCP.

Collaboration intentions or collaboration activities with Morocco driven by European cluster organisations include the following (non-exhaustive list)⁹:

| Cluster Organisation | Website | Technology Area | Country | Source |
|--|--|------------------------------|----------|--------|
| PEGASE | www.pole-pegase.com | Aviation and space | France | E |
| LAZIO CONNECT | www.lazioconnect.it | Aviation and space | Italy | M |
| bioPmed | www.biopmed.eu | Biotech | Italy | M |
| QUALITROPIC | www.qualitropic.fr | Biotech (food) | France | M |
| BioCon Valley Mecklenburg-Vorpommern | www.bioconvalley.org | Biotechnology | Germany | M |
| Natural Stone Industry Cluster (Cluster Piedra) | www.clusterpiedra.com | Construction/building sector | Spain | E |
| Cluster Eco Construction | www.clusters.wallonie.be/eco-construction-fr | Construction/building sector | Belgium | M |
| TWEED | www.clustertweed.be | Energy and environment | Belgium | E |
| Polight (Enviroment Park) | www.envipark.com | Energy and environment | Italy | E |
| RICAM | www.clusterricam.org | Energy and environment | Spain | E |
| Cluster Energietechnik | www.cluster-energietechnik.de | Energy and environment | Germany | E |
| Solartys | www.solartys.org | Energy and environment | Spain | E |
| EnergyIN - Pólo de Competitividade e Tecnologia de Energia | www.energyin.pt | Energy and environment | Portugal | E |
| Cluster TWEED | www.clusters.wallonie.be/tweed-fr | Energy and environment | Belgium | M |
| Lean Energy Cluster | www.leanenergy.dk | Energy and environment | Denmark | M |
| Netzwerk Energie & Umwelt e. V. | www.neu.energiemetropole-leipzig.de | Energy and environment | Germany | M |
| deENet Competence Network Distributed Energy Technologies | www.deenet.org | Energy and environment | Germany | M |
| AVAESEN (The Valencian Energy Industries Cluster) | www.avaesen.es | Energy and environment | Spain | M |
| Spitzencluster Solar Valley Mitteldeutschland | www.solarvalley.org | Energy and environment | Germany | E |

⁹Sources: “M” indicates identified Europe based interest in the frame of the Project MOBILISE; “E” indicates interest declared in “Bronze Label” assessment questionnaires of the European Secretariat for Cluster Analysis (ESCA, www.cluster-analysis.org.)



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| Cluster Organisation | Website | Technology Area | Country | Source |
|---|--|--|----------|--------|
| Subcarpathian Renewable Energy Cluster | www.REScluster.eu | Energy and environment | Poland | M |
| Cluster Finanzdienstleistungen | www.bfz-ev.de | Financial Services | Germany | M |
| Pôle Aquimer | www.poleaquimer.com | Food industry (non-biotech) | France | E |
| Cluster Food + i | www.clusterfoodmasi.es | Food industry (non-biotech) | Spain | E |
| Associaó del Cluster Aqüicat (Acuipius) | www.acuipius.org | Food industry (non-biotech) | Spain | E |
| Pôle de Compétitivité Qualiméditerranée | www.qualimediterranee.fr | Food industry (non-biotech) | France | M |
| Agrocluster Ribatejo | www.agrocluster.com | Food industry (non-biotech) | Portugal | M |
| Food Cluster (Cluster Ernährung) | www.cluster-bayern-ernaehrung.de | Food industry (non-biotech) | Germany | M |
| HCP - Health Cluster Portugal | www.healthportugal.com | Health and medical science | Portugal | E |
| TICBioMed | www.ticbiomed.org | Health and medical science | Spain | M |
| Numélink | www.numelink.com | Information and communication | France | E |
| CET | www.canariasexcelenciatecnologica.com | Information and communication | Spain | E |
| CICAT - El Clúster d'Il·luminació de Catalunya | www.cicat.cat | Information and communication | Spain | E |
| Madrid ICT-Audiovisual Cluster | www.madridnetwork.org/estructura/audiovisual | Information and communication | Spain | E |
| CAP DIGITAL PARIS REGION | www.capdigital.com | Information and communication | France | M |
| Teknokent ICT Cluster | www.odtuteknokent.com.tr | Information and communication | Turkey | M |
| Hungarian Mobility and Multimedia Cluster | www.mmklaszter.com | Information and communication | Hungary | M |
| Latvian IT Cluster | www.itbaltic.com | Information and communication | Latvia | M |
| BICCnet – Bavarian Information and Communication Technology Cluster | www.bicc-net.de | Information and communication | Germany | M |
| Pôle Mer Bretagne | www.pole-mer-bretagne.com | Maritime technologies, water resources | France | E |
| MINALOGIC (France) | www.minalogic.com | Micro, nano and optical technologies | France | M |
| Pôle des Microtechniques | www.polemicrotechniques.fr | Micro, nano and optical technologies | France | M |
| Teknokent Defence Industry Cluster | www.tssk.odtuteknokent.com.tr | Military Applications | Turkey | M |
| Istanbul Chemicals and Chemical Products Exporters' Association (IKMIB) | www.immib.org.tr | New Materials and chemistry | Turkey | E |



| Cluster Organisation | Website | Technology Area | Country | Source |
|---|-----------------------------|-----------------------------|----------------|--------|
| BalticNet-PlasmaTec | www.balticnet-plasmatec.org | Plasmatechnology | Germany | M |
| ESSIAD Association of the Aegean Industrialists and Businessmen of Refrigeration. | www.essiad.org.tr | Production and engineering | Turkey | M |
| Pôle MecaTech ASBL | www.polemecatech.be | Production and engineering | Belgium | M |
| MESAP | www.mesap.it | Production and engineering | Italy | M |
| Aegean Textile and Raw Materials Exporters' Associations | | Textile industries | Turkey | E |
| AEI TÈXTILS | www.textils.cat | Textile industries | Spain | E |
| Gremi de Blanquers D'Igualada | www.igualadaleather.com | Textile industries | Spain | E |
| CLUTEX – Cluster technical textiles | www.clutex.cz | Textile industries | Czech Republic | M |
| CCTL | www.cctl.es | Transportation and mobility | Spain | E |
| Aragon Automotive Cluster | www.caaragon.com | Transportation and mobility | Spain | E |
| ALIA - Cluster Logistico de Aragon | www.aliaragon.es | Transportation and mobility | Spain | E |
| Transport, Mobility and Logistics Berlin-Brandenburg | www.mobilitaet-bb.de | Transportation and mobility | Germany | M |

Figure 1: Summary Table of European cluster organisations with interest or active in cooperation with Morocco (According to a listing elaborated in the scope of the EC project MOBILISE (source M) and data being compiled by the European Secretariat for Cluster Analysis (ESCA, www.cluster-analysis) (source E)

2.2. Engaging with Moroccan actors

The previous part outlines that, on the European side, both policies and clusters are active in fostering cluster collaboration in Morocco. Yet, for this discussion paper, no example of cluster to cluster collaboration between the EU and Morocco could be found.¹⁰ This may be because Morocco counts rather few clusters. Therefore, the discussion paper aims at proposing a way to engage with Moroccan clusters, based on their specific features (cf. Preparatory Briefing).

As seen in the Preparatory Briefing, Moroccan clusters are heavily supported by the Ministry of industry, investments, trade, and digital economy (Ministère de l'Industrie, de l'Investissement, du Commerce et de l'Economie Numérique - MCINET), under its innovation policy 2009-2014, and its Industrial acceleration plan ("Plan d'Accélération Industrielle") 2014 – 2020.

This last does not support explicitly cluster but utilises clusters to help reinforcing value chains, their internationalisation and their innovation capacity. In that regard, the ministry has a dedicated service for cluster development ("Service du Développement des Clusters"). Since 2011, the Ministry sends an annual call for proposals to support clusters. Since the inception of this call, 13 clusters have been supported by the Ministry.

Calls for proposals result into applications of pre-existing initiatives or initiatives formed to that regard. Evaluation criteria are

- The cluster's development strategy and notably the creation of added-value and the increase of market shares;
- The capacity of the clusters to conduct collaborative innovation including the practical partnership conditions, coordinating team and designated leader, mutualised means, etc.;
- The capacity of the project to collaborate with other thematic projects, at the regional or local level;
- The visibility of the cluster internationally.

Most of the Moroccan industrial clusters identified in the Preparatory Briefing are the offshoot of this support programme. As a result, and as per the conclusions of the Preparatory Briefing, clusters are tightly bound to the public authorities in Morocco. Indeed, the Moroccan public authorities, i.e. the MCINET for most of the clusters, the Masen, in the case of the Solar Cluster, and the Ministry of agriculture, for the agro-food clusters, seem to be efficient gateways to initiate clusters and as a consequence potential collaboration. Not only they are stakeholders in each of the clusters, but in addition, they have the financial and judicial means to foster international cooperation projects.

¹⁰ It can be expected that the project The Next Society will foster such collaboration thanks to its extensive cluster collaboration activities. This analysis was however conducted when the project only started.

3. Good practices / Success stories related to cluster cooperation

Despite a number of European Programmes which intend to foster cluster cooperation with the Mediterranean countries in general and Morocco in particular, no running partnerships could be found between European and Moroccan clusters. Instead, this report highlights good practices in two sectors, which already involved EU-Morocco cooperation of different actors and which count clusters that could be targeted by European clusters for cluster collaboration: the textile and clothing industry, as well as the renewable energy sector. It is important to highlight that The Next Society is likely to foster collaboration between clusters and that therefore, the situation will change.

3.1. Textile and clothing industry

The Euro-Mediterranean dialogue on the textile and clothing industry was launched at the “Euro-Mediterranean Ministerial Meeting on Industry” in Caserta, Italy in 2004. The dialogue provides a platform for an exchange of experiences and information on available instruments and initiatives to improve the competitiveness of the textile and clothing industry across the Euro-Mediterranean area.

The participants represent national administrations, industrial associations, chambers of commerce, enterprises, trade unions, research and educational centres involved in the textile and clothing sector from the entire pan-Euro-Mediterranean area. The 49 contracting parties to the Convention on pan-Euro-Mediterranean rules of origin are EU countries, Mediterranean partners and, since 2013, countries from the European Free Trade Association (EFTA) and the Western Balkans.¹¹

Morocco has been an active member of the Euro- Mediterranean dialogue on textile and clothing industry - the only sector-based dialogue the European Union carries out with Mediterranean partner countries.¹²

Actual discussion topics include digital integration, energy and resource efficiency in the textile and clothing industry in the Euro-Mediterranean, and local sectorial development support.

Since 2010, the EU has been supporting Morocco's textile, technology, and tourism sectors with a programme of € 50 million. More precisely for the textile sector, actions were focused on vocational training through different actions. Moreover, the textile sector is one of the key priority sectors identified in the former industrial policy entitled "Plan d'Emergence Industrielle" for which the EU has provided € 60 million budget support, as well as the current industrial policy (2014 – 2020) entitled “Plan d'Accélération Industrielle”.

¹¹EC, https://ec.europa.eu/growth/sectors/fashion/textiles-clothing/international-trade/euromed-dialogue_en

¹²EC, http://trade.ec.europa.eu/doclib/docs/2015/april/tradoc_153336.pdf

In Morocco, one billion of pieces of clothing are produced per year by 175,000 employees (30 % of all industrial jobs nationwide) in 1,600 local companies, resulting in Moroccan Dirham 31.4 billion (approx. € 3,1 billion) of exports in 2015 (marking 24 % of the country's total exports).¹³

The production of jeans and casual collections in Morocco has a long tradition. It was previously and is mainly supported through fairs targeting suppliers and customers of the clothes manufacturing segment of the fashion value chain, like “Maroc in Mode”¹⁴ & “Maroc Sourcing”¹⁵.

The textile sector is considered a strategic ecosystem by the Ministry of industry (MCINET) and its value-chain is structured through the Moroccan association for the textile and clothing industry (“Association Marocaine de l’Industrie du Textile et de l’Habillement” – AMITH). AMITH, has been a long running partner of the Moroccan government for the textile sector development, training, export promotion, etc. Under practical considerations, they fulfil cluster- like functions in the context of internationalisation, by supporting the selection of suitable potential local cooperation partners for European companies and/or clusters and their representatives from abroad interested in cooperation with local stakeholders. In addition, they provide their members with practical services to support their internationalisation notably by linking to the chambers of commerce and industry,¹⁶ and helping them for the custom procedures¹⁷. They signed a partnership agreement with the customs, in 2012.

The **Moroccan Denim Cluster (MDC)**¹⁸ was founded by the Moroccan Industry Association (AMITH)¹⁹ and the Ministry of Industry, Trade, Investment and the Digital Economy. It had its premiere at the Maroc in Mode & Maroc Sourcing in Casablanca in October 2014. The MDC defines itself as an institution aimed at optimising the reputation and image of the Moroccan denim and casual wear manufacturing industry. MDC covers all segments of upstream textile supplies including weaving, finishing and washing. With activities regarding branding, the cluster initiative aims to further extend Morocco’s share in the value chain downstream. One of the strategic goals is the development of marketing and communication strategies.

The aim of the cluster organisation is also to create incentives for innovative joint product developments. MDC is aiming to drive collaborative projects in the Moroccan denim and sportswear industry. One of the newest projects was a line of recycled denim clothing, designed together with students of the Casa Moda University in Casablanca. Amongst the MDC members are local weavers, clothing manufacturers, washers, accessories manufacturers as well as training institutes and fashion schools, the school for higher education in the textile and clothing industries (ESITH) and CASA MODA ACADEMY, the technical centre of textile and clothing (CTTH) and promotion organisations (MAROC EXPORT). A recent report estimates that the organised companies account for approximately 4,000

¹³Sportswear International: <http://www.sportswear-international.com/news/stories/Sourcing-Review-Maroc-in-Mode---How-Morocco-wants-to-push-its-textile-industry-12626>

¹⁴Maroc in Mode <http://www.marocinmode.ma/>

¹⁵Marocsourcing <http://www.marocsourcing.ma/marrakech/>

¹⁶ AMITH, <http://www.amith.ma/portail/Pagefr.aspx?id=159>

¹⁷ AMITH, <http://www.amith.ma/portail/PageFR.aspx?id=71>

¹⁸MDC: <http://www.moroccandenimcluster.org/>

¹⁹AMITH www.amith.ma/portail/

employees in the region²⁰. However, AMITH represents many more companies of the sector and has been a long running partner to the government with regards to industry development and promotion.

The **Cluster des Textiles Techniques Marocains (C2TM)**²¹ was founded in November 2013, the founding members include both companies, public and private institutions, as well as educational and research institutions. The main purpose of the cluster is to position the supply of Moroccan companies on technical textiles sectors with high added value, and to stimulate innovative collaborative projects in this area. This collective vision is addressed by enhancing the competitiveness of member companies through innovative products with high added value in the technical textile sectors to subsequently capture a share of the domestic market and gradually move towards export.

Both cluster initiatives described here are related to the actual “Plan d’Accélération Industrielle”: This plan focuses on three advanced ecosystems (fast fashion, denim, and distribution) and three further ones which are about to be developed: home fashion, stitching, and technical textiles.

The ecosystem development, amongst others, comprises a set of coordinated measures as outlined in Figure 3:

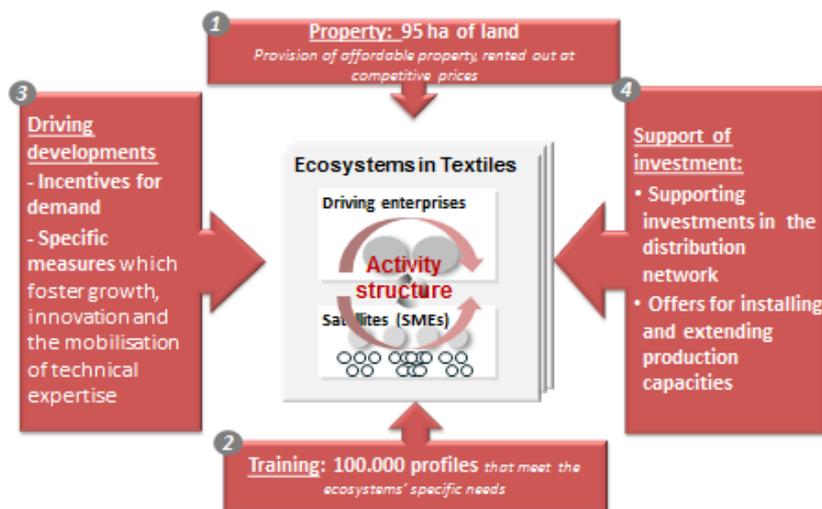


Figure 2: Key measures for Ecosystem Contracts: This figure gives an overview on the coordinated industrial development approach: Provision of suitable space (Technopark) (1), Training (2), Measures to enhance innovation, expertise and demand (3), and investment support (4)²²

²⁰UNIDO 2015; http://media.wix.com/ugd/e37c9b_13774500e56847329d7b7632e2413351.pdf

²¹C2TM: <http://c2tm.ma/en/>

²² Bahi, Rachid, Ministère de l'Industrie, du Commerce, de l'Investissement et de l'Economie Numérique 2015, <http://ec.europa.eu/DocsRoom/documents/10130?locale=en>

3.2. Solar power generation

Morocco is the largest net energy importer in North Africa. It has thus become a key priority for the government to increase and diversify the country's energy supply while encouraging a more rational and more efficient use of energy. With regards to the latter, a decision was taken in 2014 to reduce and eliminate subsidies on diesel and fossil fuels used for electricity generation.

The National Energy Strategy in Morocco is one of the most ambitious and comprehensive renewable energy strategies in the Middle East and North Africa region. The government set the goal of reaching 42 % of installed capacity (or 6,000 MW in total) from renewable energy (hydro, wind, and solar; 2,000 MW each) by 2020, aiming to spend USD 13 billion towards this target whilst doubling overall capacity. The Moroccan Solar Plan calls for the construction of five solar complexes with a total installed capacity of 200 MW at different locations in the country, of which two are now operating. The Moroccan Wind Plan equally targets the creation of an installed capacity of 2000 MW across the country.²³ The target to achieve 42 % of the country's energy mix from renewable sources by 2020 has lately even been raised to 52 % by 2030.²⁴

The government established the Moroccan Agency for Solar Energy (Masen) in 2010, a public-private venture as the vehicle for managing the roll-out of the solar plan. It is a limited liability company which is 25 % each owned by the Government of Morocco, the state utility for water and electricity (ONEE), the Hassan II Fund for Economic and Social Development, and the Société d'Investissements Energétiques (SIE). Masen's aims are both to enhance energy capacities, and to support the development of a new industrial sector in Morocco through training, capacity building, and research and development (R&D).²⁵



Figure 3: Scope of activities by MASEN²⁶

²³Alaa Alhamwi, David Kleinhans, Stefan Weitemeyer, Thomas Vogt, Moroccan National Energy Strategy reviewed from a meteorological perspective; in Energy Strategy Reviews, Volume 6, January 2015, Pages 39–47

²⁴MASEN <http://www.masen.ma/en/masen/>

²⁵MASEN <http://www.masen.ma/en/masen/>

²⁶MASEN <http://www.masen.ma/en/presentation/>

Therefore, Masen became driver and coordinator of the development of the solar energy sector of Morocco. For the National “NOOR” Concentrated Solar Power Projects, Masen has taken on the role of lender, raising the debt financing itself from a group of International Finance Institutions, including African Development Bank, the Clean Technology Fund, European Investment Bank, International Bank for Reconstruction and Development, and Kreditanstalt für Wiederaufbau.²⁷

For skills development, a case-by-case cooperation with RENAC, a Germany based training provider for workers in solar technologies is in place²⁸.

The development of this cluster initiative to be managed by a dedicated cluster organisation was supported by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) and other European donors. The development of this innovation cluster required close cooperation between stakeholders, with Masen as a lead partner together with the Ministry of Energy, Mines, Water and Environment (MEMEE), Ministry of Industry, Trade and New Technologies (MCINET), Ministry of Higher Education, Scientific Research and Management Training (MESRSFC) and Research Institute in Solar Energy and Renewable Energies (“Institut de Recherche en Energie Solaire et Energies Nouvelles” - IRESEN).

In 2011, several study tours to Germany and Spain were conducted, for the benefit of key persons in the Moroccan partner institutions to strengthen their capacities and to build strategic alliances between Morocco and Europe. These trips included the conference EU-PVSEC (European Photovoltaic [PV] and Solar Energy Conference and Exhibition) in Hamburg (Germany) on photovoltaic technologies, the conference SolarPACES in Granada (Spain) on Concentrated Solar Power (CSP) technologies, and a study tour to analyse the mechanisms of the German leading-edge cluster of technologies for solar energy “Solar Valley”. Main results were detailed insights into the solar technology value chains and the creation of strategic alliances.²⁹

Masen today became a hub for trade within Africa and also between Africa and Europe by capitalising on the national expertise gathered, its strategic geographical position, and strengthened interconnected electricity transmission infrastructure in place.³⁰

The cluster organisation operating Solar Cluster (“Cluster Solaire”) was supported by GIZ and World Bank and received also financial support from its members. The initial cluster members included two universities and 11 companies. In addition, several industry associations (metal, electronic, engineering, materials) are connected to the cluster initiative. The Masen president was also president of the cluster.³¹ However, no currently ongoing joint undertakings of Solar Cluster with European counterparts are known.

²⁷Inside Africa <http://www.insideafricalaw.com/publications/2015/q3/moroccan-csp-programme-project-profile/>

²⁸RENAC www.renac.de

²⁹DLR <http://www.dlr.de/dlr/Portaldata/1/Resources/documents/2013/giz2013-en-support-moroccan-solar-plan.pdf>

³⁰MASEN http://www.masen.ma/media/uploads/documents/MASEN_Brochure_instit_Anglais_finale.pdf

³¹Cluster Solaire <http://www.clustersolaire.ma/le-cluster-solaire/nos-partenaires/>

Cluster partnership between the Solar Cluster and Capénergie



In 2018, Capénergie, a French Pôle de Compétitivité has signed a cooperation agreement with the Moroccan Solar Cluster. The partnership, part of Capénergie internationalisation strategy, focuses on technologies for renewable energy production, notably solar power and its applications, as well as the integration of renewable energies onto the grid. This partnership will enable to

strengthen the ties between French and Moroccan companies and provides members of each side with technical and business opportunities.

The partnership includes the construction of a demonstrator project in Morocco, which will be reproducible in other regions of Africa, as part of promoting the technologies and innovations of companies in each country. Three areas of cooperation are identified:

- *“Micro-grids, as the issue of self-sufficiency will be crucial in the coming years in Morocco*
- *Biomass, to recycle waste produced by the agri-food industry (sugar, oils, cereals)*
- *Hydrogen production, which could be used in situ by the chemical industry thanks to low-cost photovoltaics.”*

The partnership also involves to strengthen information sharing to help both parties access new markets.³²

³² Capenergies signs a cooperation agreement with the Moroccan Solar cluster, <http://www.capenergies.fr/en/capenergies-signs-a-cooperation-agreement-with-the-moroccan-solar-cluster/>, consulted on 30/01/2019

4. Opportunities/potential for further EU-Morocco cluster cooperation and related recommendations

If little cluster collaborations have been initiated so far, Morocco remains a strategic partner for European clusters, which presents a wide array of interesting features to develop cluster cooperation. This chapter aims at bringing forward four critical features of the Moroccan economy and institutional framework, which present opportunities for cluster development. In addition, three sectors are analysed to bring out their specific strengths with regards to cluster collaboration: The textile sector, the production sector and the energy sector.

4.1. Critical features of Morocco's economy with regards to potential cluster collaboration

Speed and Proximity

Morocco's geographic location, as well as the performance of its production system provide interesting features to intensify industrial cooperation, between the EU and Morocco. Global value chains tend to re-locate in search of ever more cost-effective production locations. "Lot-size one" flexible manufacturing developments and generally higher dynamics of change in markets, due to e.g. "mass customisation" trends or ever shorter fashion lifecycles require an ever more flexible organisation of production processes to increase sales, to minimise stock bound capital, and unsold stock. Overall returns on investment are enhanced through speed and proximity – which Morocco can deliver from a European perspective, in comparison to production locations which are geographically and culturally more distant.

Gateway to West Africa

In trade and economic terms, Morocco understands itself as the interface, the hub, in between West Africa and Europe. In the culturally and linguistically French influenced West Africa, Morocco is regarded highly. In Morocco itself, 10 million French speaking, 6 million Spanish speaking and many young English speaking people simplify communication and related threats to productivity. The successfully ongoing development of Morocco as a production location for textile, aeronautics, cars, food and more could be followed by other sectors, in the first place those that do not require large initial investments, like IT and its adoption for African/French users.

Morocco is likely to foster its position as a production location for low cost products of brand owners, or as a production location for their licensees - similar to a position that Turkey currently still holds. This is mainly about electronics, mechanical engineering, and elements of solar technologies. With regards to the now prominently promoted location for "service offshoring", it could also be a location

under consideration for European organisations which want to serve the French speaking markets back in Europe.

Strong political support to create clusters

More importantly, there is a strong political support from Moroccan authorities to develop clusters. Developing clusters allows to address various aspects of their industrial strategy. At first, clusters bring together actors of the same value chain. Yet, reinforcing strategic value chains is at the heart of Morocco's industrial policies. In addition, clusters can help the Moroccan enterprises to internationalise their product. This is in line with the Moroccan industrial policy, which foresees exports as a driver for the national economy. Last, Morocco aims at becoming an innovative economy, and therefore aims to channel clusters into collaborative research.

To implement their cluster policies, the MCINET strongly supports the creation of clusters. The Ministry selects potential clusters and funds them. In addition, the Ministry takes shares in each of the Moroccan clusters and thus influences their development.

The importance of trade unions

In addition to the strong political support brought to the creation and management of clusters, Morocco has strong, well-structured trade unions, which organise value-chains, notably in the textile industry. This importance of trade unions shows that enterprises of same value chains have already organised themselves. In addition, and this is notably the case in the textile sector, trade unions are drivers of cluster creation.

4.2. Technical focus: Textiles sector

The example of the textile sector shows that a sustained cooperation between EU and Morocco exists at policy and technical expert level. Nevertheless, and despite an active support to the textile ecosystem from the public authorities, Moroccan-European cluster-to-cluster (innovation) is only starting.

The proximity between Morocco and Europe give a substantial advantage to the textile sector, which is, to some extent, already integrated into European value chains. For example, Inditex (Spain) has over 300 suppliers accounting for more than 60,000 employees in Morocco. Production in Morocco, together with production in Spain and Portugal, is considered as “production in proximity” of the headquarters making up a total of 55 % of the overall production.³³

Within the framework of the Agreement with IndustriALL Global Union, Inditex collaborates (through its local Corporate Social Responsibility teams in Morocco) with representatives of international and local unions, as well as different manufacturers to carry out training and skills programmes at the

³³ Les Eco, Le Maroc, Atelier géant d'Inditex, <http://www.leseco.ma/business/45552-le-maroc-atelier-geant-d-inditex.html>, consulted on 03/01/2019

country's factories and to improve the employment conditions of their workers. Specific training programmes are in place for the evaluation and improvement of the health and safety of workers (related legislation, monitoring the health and safety systems, best practices for the assessment of risks). This is supported as well by conducting a health promotion project in the garment sector locally in Morocco in collaboration with *Médicus Mundi Andalusia*, a partner of the international *Médicus Mundi Health network*.³⁴

Similar cooperation approaches could as well be followed by cluster organisations representing a group of (smaller) enterprises.

4.3. Technical focus: Production sector

Benefiting from the proximity of Morocco to Europe to create integrated value chains could also be feasible for the automotive, the aeronautics industries, and electronics/mechanical parts production: Flexibility and speed require the full integration into the Original Equipment Manufacturer (OEMs)/brand owners Enterprise Resource Planning (ERP) systems, namely for production planning, controlling, their sourcing and logistics in their local value-add networks.

Adequate technological capacities in Morocco are needed, and cluster organisations may find an appropriate area of activity to that regard. They could also engage in providing related training to generate adequately skilled workforces – or better: experts. Such activities could relate to the typical technopark-based ecosystem industrial development policy. Joint training centres or joint technology infrastructure could be created and maintained to support foreign investors.

4.4. Technical focus: Energy sector

Unlike the two preceding sectors, which need clusters to innovate, the renewable energy sector in Morocco is highly innovative. On the one hand, the technologies of the Noor project, a large solar energy production plant (cf. part 3.2) have been developed especially for this large-scale use. On the other hand, the Noor plant provides a unique testbed to continue innovative research, in the field of solar production.

Aware of the innovation potential of this project, the Kingdom of Morocco has created the Masen, which in turned has created the Solar Cluster, to channel such collaborative potential, as specified above. The Solar Cluster gathers several institutional stakeholders, both Moroccan authorities and international donors. It is a structure with which cluster collaboration is likely and encouraged.

³⁴See www.inditex.com/sustainability/suppliers/suppliers_world

Interviews and contributions

- Fatima-Ezzahra AIT EL HABTI, Chef de Service de Développement des Clusters, Ministère de l'industrie, du Commerce, de l'Investissement et de l'Economie Numérique; information exchange in January 2017
- Gnomon; Cluster expert Alain Tubiana on ongoing cluster related cooperation; information exchange in January/February 2017