

The green economy in Morocco

a strategic goal involving partnership dynamics
and intensified coordination of policies and initiatives



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Abstract

Transitioning to a green economy compliant with ecological balances and capable of opening new opportunities for wealth creation and sustainable jobs, has become part of a major objective of the new sustainable development strategies being pursued by some countries in North Africa, especially Morocco.

Environmental constraints (water stress, land degradation, overly strong energy dependence, vulnerability to climate change, various types of pollution) and the limitation of economic growth and social development policies to create jobs and reduce social and spatial disparities, require a shift of economic modelling to that of a green and inclusive economy, driven by the private sector and able to create jobs, help reduce poverty and curtail territorial development imbalances.

These are the key issues for Morocco which has definitely made the green economy a strategic focus of its sustainable development policy. The country is committed to mobilizing all stakeholders and building innovative public-private partnerships (PPP) to increase environment-compliant investment likely to create value-added and sustainable jobs, especially for young people whose unemployment rate reached 19% in 2013. Discussions are taking place for the establishment of a Green Investment Fund to encourage companies to initiate innovative projects. The establishment of innovative partnerships with the private sector, local communities and civil society is needed for building a green economy.

Reforms (institutional, regulatory and financial) and incentive policies are already being implemented to improve the integration of environmental issues and promote the development of strategic sectors such as renewable energy, energy efficiency, water economy, sustainable solid and liquid waste management, inclusive agriculture, aquaculture and ecotourism. Further efforts are needed in the following areas: adaptation and enforcement of regulations, environmental taxation, costing of environmental goods and services, sustainable and appropriate financing mechanisms, mobilizing knowledge and innovation, and finally monitoring and evaluation.

Building a green economy (a process, not an event), will not be possible without partnering innovatively with the private sector, local communities and civil society. Such partnerships should enable the mobilisation of needed investments and technology solutions, local skills development and intensify the commitment and solidarity of all stakeholders. Eco-innovative SMEs will be the real driving force of the green economy. To this end, their capacity should be improved with the infusion of new green financing and appropriate support. Given its importance, special attention should be given to integrating the informal sector.. Although still low, the level to which Moroccan firms are committed to corporate social responsibility (CSR), happens to be one of the highest in Africa, the Maghreb and the Arab world. The role of the banking sector in financing the green economy should be strengthened to develop financial products geared towards the green economy.

The need to improve business competitiveness in the context of a green economy with high value-added requires innovation and technological development. Also, strengthening and adapting its national innovation system is a major challenge for Morocco, ranked

84th out of 143 countries in the 2014 global innovation index, but still a limited performer, particularly in terms of innovation in the field of business and market sophistication. Funding for scientific and technical research, mainly public, did not exceed 0.8% of GDP in 2010 (against 2 to 3, 5% in the industrialized countries).

Greening the economy will also require policy convergence and instrument adaptation, including (i) business industrial policy development and sustainable practices, (ii) territorial policies, (iii) national systems for training, education and innovation, and (iv) national systems for information, follow-up and evaluation. Finally, this process should be accompanied by continuous and inclusive communication and dialogue on the green economy.

Increasing green investment, a goal that has become a priority

Given its policy commitment to sustainable development,¹ Morocco is firmly oriented towards promotion of the green economy. A National Charter² and Model Law³ on environment and sustainable development have been adopted to bring all public policies into alignment with a National Sustainable Development Strategy (NSDS), currently being finalized. Transitioning successfully to a green economy and accelerating implementation of the national climate change policy is one of the priorities of the NSDS. To promote green investment and encourage companies to initiate sustainable projects, a green investment plan has been prepared and a review is underway for the establishment of a Green Investment Fund (holding public and private capital).

New green industries to support growth and generate jobs

- Renewable energy (CSP, PV, and wind);
- Energy efficiency;
- Liquid sanitation;
- Waste management and recovery;
- Aquaculture ;
- Adaptation and Risk Management
- Forest capital value chains;
- Aromatic and medicinal plants.

A roadmap on green growth and territorial development has been adopted within the framework of the "Green growth and territorial development" focus group⁴, led by Morocco. The country is also involved in several initiatives (Global Green Growth Institute, "Partnerships for Action on Green Economy (PAGE)"⁵, and the Greco Initiative for green competitiveness in the Mediterranean, launched by UNEP in 2008).

1 The new Constitution (July 2011) establishes "the right to sustainable development" and extends the tasks of the Economic Social and Environmental Council(CESE). to environmental issues and sustainable development

2 The National Charter for Environment and Sustainable Development adopted in 2012 aims to strengthen integration of the environment in all public and sectoral strategies.

3 99-12 Model Law on the Environment and Sustainable Development Charter (January 2014)

4 NAME-OECD Initiative on Governance (2011-2015).

5 PAGE is a joint Initiative (UNEP, ILO, UNIDO and UNITAR) established to support countries in developing national green economy strategies by 2020.

A skills development strategy in green occupations is being prepared.

Opportunities for green jobs have been highlighted by several recent studies, including the study by the Economic, Social and Environmental Council (CESE, 2012), which indicates that the investments projected in four key sectors of the green economy (renewable energy, energy efficiency, solid waste management and sewerage), amounting to € 20 billion, should be expected to create over 90,000 new jobs by 2020. Mapping of employment opportunities and green entrepreneurship conducted within the framework of the "YES Green"⁶ project also confirms a significant potential for integrating the youth, whose unemployment rate reached 19.3% in 2013 for the 15-24 year-old cohort (source: HPC).

Business commitment to the environment is changing

To assist businesses in this transition and enhance public-private dialogue, the «Confederation Générale des Entreprises Marocaines» (CGEM) has set up a "Green Economy" commission (formerly Sustainable Development Commission), whose mission is to encourage and support companies in their environmental approach and in their commitment to the green economy. It has been collaborating to this effect, with the Moroccan Centre for Clean Production (CMPP), which provides manufacturers with technical assistance and fund raising support. Over 55 CGEM member companies received the CSR label of the CGEM (ISO 26000 standard). This label, which was created in 2006, is awarded for a period of 3 years following an evaluation conducted by a firm of independent experts accredited by the CGEM. Despite some progress, the number of ISO 14001 certified firms (environmental management) remains limited (It has grown from around 20 companies in 2007 to about 40 in 2013) and concerns rather big businesses. According to Vigeo International Agency⁷, the level of commitment of Moroccan firms to CSR, although low, is one of the highest in Africa, the Maghreb and the Arab world. The number of tourist institutions certified "Green Key 1" is also increasing with 57 institutions in 2013, as against 60 in 2011 and only 13 in 2008.

The Stakes of the green economy in Morocco

Compared to many countries in the subregion, Morocco has made significant progress in recent years, with a decline in poverty level and a relatively diversified industrial structure. However, the industrial sector has not sufficiently contributed to the creation of jobs (about 75,000 jobs over the last decade) and the growth of agricultural productivity remains inadequate with a high dependence on grain imports. To date, the knowledge and innovation mobilisation, necessary for successful transition to a green economy, remains insufficient.

6 The "yes green" UNDP project supports training of young people and the creation of Very Small green Enterprises ("Start-up" green projects), particularly in the vulnerable eastern parts of the country and Tangier-Tetouan.

7 Vigeo, an agency founded in 2002 is recognized as an international leader in audit and CSR scoring. It measures the performance and risks of over 2,500 listed firms in the world in six areas (environment, human rights, human capital development, community involvement, business ethics and corporate governance), 22 criteria and 250 indicators.

The environmental context is marked by creeping desertification, fragile forested areas⁸, diminishing of water resource potential⁹, a sharp degradation of such fragile ecosystems as oases, loss of biodiversity, high vulnerability to climate change and natural disaster risks.

Economic activities are causing significant pollution¹⁰ (production of phosphoric acid and fertilizers, production of concentrated minerals, heavy use of pesticides and fertilizers in agriculture, industrial and artisanal tanneries, pharmaceuticals and processing industries). Over 90% of industrial effluent and 50% of domestic waste is dumped into the sea. The coast suffers the negative impacts of rapid urbanization and the concentration of economic activities (80% of industries, 53% of tourist capacity and 92% of foreign trade). CO₂ emissions are modest but increasing¹¹. Environmental degradation, initially costed at 3.7% of GDP on average (WB, METAP Project, 2003) is widely underestimated. The cost of air degradation and its impact is estimated at 3.6 billion Dirhams/year, representing about 1.03% of GDP (source: MEMEE Site).

ocially, Morocco has succeeded in lowering the degree of absolute poverty, but people are still very vulnerable, especially in the rural areas, with 70% of the poor. According to the ESEC, the benefits of economic growth (4.8% in 2013, source HCP) and social development policies fall short of expectations to reduce social and spatial disparities. Unemployment remains high (9.2% in 2013)¹², especially among young people (19.3% in 2013). A review of the generalized subsidy policy (sugar, edible oil, petroleum products, butane gas), which cost the state 46 billion dirhams in 2013 (US \$ 5.7 billion) representing almost 13% of the national budget, is being finalized, with particular hopes of targeting low-income people more effectively.

Through its key components (agriculture, industry, energy) the economy faces many environmental limits as shown in the following table:

Key economic sectors	Environmental constraints
<p>Agriculture : 15% GDP; Employs 46% of the total and 80% of the rural workforce.</p> <p>23% of total exports; 1/3 of the production is processed</p> <p>Grain production dominates (75% of UAA) and covers 60% of needs (average year); 97 million quintals of grain (2012-2013)</p>	<p>Uses 80% of water resources for irrigation with more than 50% of network losses;</p> <p>18.7% of total energy consumption (2010)</p> <p>Soil degradation and water pollution (fertilizers, solid waste and pesticides)</p> <p>31% of global GHG emissions (2004 data)¹³</p> <p>High vulnerability to climate change (mainly rain-fed agriculture)</p>

8 National fuelwood demand exceeds 11 million tons / year and represents 30% of total energy needs, 88% of which concerns the rural environment.

9 Water availability is estimated at 730 m³/ person / year (2010) whereas it was 2560 m³ / person / year in 1960. This amount, already well below the water stress threshold of 1,000 m³/person / year, could drop to 530 by 2025-2030.

10 Half the surface water and groundwater resources are affected by pollution (IRES, 2013)

11 CO₂ emissions increased from 1.84 CO₂ Teq/ per capita in 1994 to 2.21 (2000) and 2.51 (2004).

12 HCP. Note on the situation of the labour market in 2013.

13 Source: Climate change policy in Morocco (March 2014)

<p>Fisheries: 2-3% GDP Production : 1 000 000 t (2010)</p> <p>Potential : ~1,6 million Tons /year ~500 000 jobs</p> <p>Consumption: 10kg/pc/yr (global average: 17kg/pc/year)</p>	<p>Overexploitation of key species</p> <p>Low level of aquaculture production: To alleviate pressure on stocks, aquaculture development is planned with the objective of producing 200,000 t (2020) against less than 500 t in 2012 and create 50,000 direct jobs</p>
<p>Phosphates and derivatives: 3.5% of GDP (2010) ; 20% of world production (1st world exporter and third producing country); 24% of total exports (8 million t/year). Estimated production of 19.96 MT (2010)</p> <p>Agribusiness: 30% industrial production; 100 000 jobs ; 5% GDP and 2% exports (2011)</p> <p>Fishing Industry: 70% of the catch is processed (freezing and canning) including 85% exported. 58% of food exports; 6.8% of total exports (DEPF, 2011), and ~ 2.5% of GDP</p>	<p>80% of industries are concentrated on the coast and produce 1.5 MT/waste a year of which 256 000t are dangerous. Only 23% of industrial waste is recycled (2010) and 4% used for energy recovery</p> <p>988 million m³/year of wastewater largely dumped into the marine environment without prior treatment</p> <p>Industry is the first energy consuming sector (2 billion TPE)</p> <p>Industry rejects approximately 5.99 million CO₂ eqT.</p>
<p>Logging industry: 2% of agricultural GDP; 0.4% national GDP and 50 000 permanent jobs; provides income for 50% of the rural population.</p> <p>5-7 billion Dirhams/year</p> <p>4% of the world's cork supplies (150,000 quintals/year).</p>	<p>Represents 30% of timber and industrial wood needs (600,000 m³/ year). Timber harvesting exceeds triple the potential of the forest.</p> <p>18% of the national energy balance (11 million m³/year i.e. 4 million Oil Teq), representing 30% of the total energy demand (of which 88% by rural areas). Deforestation, estimated at 31 000ha /year, reduces the ecosystem's ability to absorb CO₂.</p>
<p>Energy : 3% GDP ; 35,000 jobs</p> <p>Extreme energy dependence: 97%</p> <p>Sustained annual increase in demand: 5% (energy) and 7-8% (electricity)</p> <p>Energy bill: 11% GDP (2011) against 7.4% in 2009</p> <p>Direct subsidies : 5% GDP (2011)</p>	<p>Primary energy Primary energy intensity (Tep/1000 Dh GDP)</p> <p>consumption (Mtoe / year)</p> <ul style="list-style-type: none"> ▪ 2009 : 15.1 ▪ 2009 :0.48 ▪ 2011 : 17.3 ▪ 2011 :0.54 ▪ 2012 : 17.8 ▪ 2012 :0.54 <p>Energy mix strongly dominated by coal, gas and oil</p> <p>More than 52% of global GHG emissions (2004)</p> <p>RE (Hydro, wind and solar): 7% of national primary energy consumption, of which 6% hydro and 1% wind (2010)</p>

Environmental and policy performance in promoting the green economy: an acceleration of reforms

Morocco has made significant progress in areas such as air quality control¹⁴, fighting global warming, forestry¹⁵, renewable energy development, rural electrification¹⁶, access to drinking water in rural areas, environmental upgrading and education. Efforts are being made to strengthen the sewerage infrastructure (500 million m³ of untreated wastewater annually), waste collection, recycling and recovery (4.5 million tons of untreated solid waste annually)

reforestation at a still inadequate speed, energy efficiency, sustainable transport, rationalization of water consumption and the development of non-conventional water resources.

Major reforms have been carried out in recent years in institutional, regulatory and strategic terms¹⁷. The State Secretariat for Water and the Environment has been replaced by a Minister-Counsellor to the Minister of Energy, Mines, Water and Environment, in charge of the Environment portfolio (2013). Special Agencies and institutes (ADEREE, MASEN, National Agency for the development of aquaculture, IRESEN) have been created and Green City projects launched.

Several strategic environmental assessments (SEA) have been conducted (PNDM, Green Morocco Plan and 2050 Tourist Vision underway). Two national strategies for the protection of the environment and sustainable development, a strategy for energy efficiency, a report on the state of the environment, a study on an environmental accounting system¹⁸ and the Third National Communication on climate change are under preparation.

A review on environmental performance has just been completed. It has laid special emphasis on the limits of environmental compliance control system and the need to strengthen the enforcement of legislation (using the polluter-pays principle), to introduce SEA in the national legislation and to improve the system of environmental impact studies. Environmental performance was incorporated into the new Public Procurement

New financing schemes are being put in place

- An Energy Efficiency Fund (EEF) with a capital of 390 million Euros to support the sectors of industry, construction and public lighting
- A gradual reform of energy subsidies
- An Industrial Investment Fund to finance implementation of the new strategy (2014-2020). 20 billion Dirhams will be allocated.
- An environmental tax on packaging in 2015

14 A draft bill on pollution control is being drafted and air emission mapping should cover the entire country in late 2014 (EPA, 2014).

15 In recent years, improved reforestation rate has been noted (40 000 ha/ year on average against 25 000 ha / year in 2005). Under the Reforestation Master Plan 1 million hectares of land should be reforested by 2030.

16 The rural electrification rate increased from 22% (1996) to 96% (2009) and 97.4% in 2012.

17 The National Water Policy (2009); The National Action Plan against global warming (2009); The Green Morocco Plan for Agriculture (2008); the Halieutis Strategy for Fisheries (2009); The new energy strategy that seeks a diversified mix with renewable energy ascendancy (2009).

18 The analysis of the study on environmental accounting has identified three priority pilot accounts: water, waste and environmental spending.

Act (2014). The Tourist strategy provides financial support mechanisms to support the development of eco-zones and innovative products for environmental protection and energy efficiency. The current classification system of tourist institutions, under revision, will introduce sustainability standards into the mandatory criteria for obtaining a ranking.

To support its environmental policy and allied sectoral programmes, the country has adequately used the funding opportunities within the framework of international and bilateral cooperation, including mobilization of carbon credit financing for 8 projects registered under the CDM (3MtCO₂/year of mitigation potential) and 13 projects under validation (2 MtCO₂ / year) It has also been endowed with a range of specific funds and economic instruments as shown in the following table.

Examples of Special Funds	Examples of economic instruments
<ul style="list-style-type: none"> - National Environment Fund (FNE)¹⁹ - Industrial Pollution Control Fund (FODEP) - Liquid Sanitation and Wastewater Sewerage Fund - Energy Development Fund (EDF) - Hassan II Fund for economic and social development - The National Forest Fund financed by taxes (taxes on imported wood, forestry revenue) finances the conservation, protection and upgrading of the forest - The Joint Financing Fund with "RENOVOTEL 3" banks, dedicated to the upgrading of tourist accommodation facilities through tangible and intangible investment funding with a view to improving service quality and factoring in environmental issues (partnership between the Ministry of Tourism, the Central Guarantee Fund, the Ministry of Economy and Finance and the National Federation of Hotel Industries). 	<p>Subsidies to popularize water savings in agriculture and promote solar water pumping for agriculture.</p> <p>Comprehensive climate risk insurance for small farmers who receive subsidies for their contributions.</p> <p>An environmental tax²⁰ whose revenue, estimated at around 157 million Dirhams annually, are assigned to the National Environmental Development Fund to develop the plastic recycling industry.</p> <p>"Moussanada Siyaha" Mechanism, to assist tourism sector SMEs with grants and technical support) for certification/eco-labelling, energy auditing or the establishment of an environmental management systems (partnership between the Ministry of Tourism, the National Agency for the Promotion of Small and Medium Enterprises, Ministry of Economy and Finance and the National Tourist Confederation).</p> <p>Bonuses for the renewal of freight fleets (Finance Act 2014- 2016).</p>

19 The FNE is a special account dedicated to projects for the protection and development of the environment.

20 Environmental sales , ex- Factory and plastic import taxation at 1.5% ad valorem. It was instituted by the 2013 Finance Act and entered into force in January 2014.

Major sectoral programmes are currently being implemented, contributing to the promotion of a green economy.

Solar Plan (2020)	Integrated Wind Programme (2020)
<ul style="list-style-type: none"> ▪ Vision 2020: 5 plants (total output 2,000 MW) or 14% of national electricity needs ▪ Total cost estimated at 70 billion Dirhams ▪ Annual saving: 1 million Tpe ▪ Avoided emissions: 3.7 million tons of CO₂/year ▪ Commissioning of the first plant: 2015 	<ul style="list-style-type: none"> ▪ Vision 2020: 2000 MW or 14% of the total electrical capacity ▪ Overall estimated cost: 31.5 billion dirhams ▪ 280MW in operation and 720 MW under development ▪ Annual saving 1.5 million toe ▪ Avoided emissions: 5.6 million tons of CO₂/year. ▪ Commissioning of the first wind farm in 2014.
Energy efficiency - construction, transport industry (2030)	National irrigation water saving programme
<ul style="list-style-type: none"> - Objective: <ul style="list-style-type: none"> ▪ 12% energy saving by 2020 and 15% by 2030 ▪ To reduce greenhouse gas emissions by 35% (transport) ▪ Reduce energy bill by 15% by 2030 (ref year 2008) - Investment required: more than 21 billion Dirhams <ul style="list-style-type: none"> ▪ 40 000 jobs (2020) ▪ Act 47/09 on energy efficiency (2010) ▪ Customized pricing (electricity consumption) ▪ Energy efficiency code in construction 	<ul style="list-style-type: none"> - Vision 2030: <ul style="list-style-type: none"> ▪ save up to 2 billion m³/year of which 1.4 billion m³/year at farm level ▪ Reconversion into drip irrigation of 550 000 ha (2020) ▪ 330,000 ha equipped with modern water saving systems (2013) nearly 24% of the total area against 11% in 2007.

National household and ancillary waste programme	National sewerage plan
<ul style="list-style-type: none"> - Vision 2020 ▪ DMS collection rate: 90% (2020) against 80% (2013) ▪ Recovery rate 20% (2020) ▪ Landfills: 100% in urban areas (2025) - Estimated investment: 37 billion DH - More than 11 000 direct jobs 	<ul style="list-style-type: none"> - Vision 2020: ▪ Rate of connection to sewerage network 80% (urban) against 72% (2011); ▪ Urban wastewater treatment rate 60% against 24% (2011). ▪ Wastewater treatment up to the tertiary level and reuse at 50% by 2020 and 100% by 2030. - Estimated investment: 43 billion DH - More than 10 000 direct jobs

The main international indicators show the progress made

- Ranked 81st/178 countries in the Environmental Performance Index (EPI, 2014);
- 5th country in Africa, below Tunisia (3rd place) and Algeria (4th) but above Egypt (7th) and Libya (10th) in the Performance Index of the 2014 World Energy Architecture;
- Leader in the Arab Region (71 points), followed by Egypt (53 points), Tunisia (47 points), Algeria (45 points), Sudan (25 points) and Libya (20 points), in the development of renewable energy, according to the AFEX-2013 Index (Arab Future Energy Index);
- Leader in climate change control in Africa and the Arab world, 15th out of 58, up 15 places compared to the 2013 ranking;
- The city of Rabat was selected as a green city in 2010, among 15 cities in the world, within the "100 cities initiative" of UN-Habitat and listed as a UNESCO World Heritage site in 2012

The new industrial policy, an opportunity for the development of green sectors

The new industrial Acceleration Plan (2014-2020) aims to increase to raise sector GDP to 23% (against 14% at present) and create 500,000 jobs, especially for young people. Measures will be put in place to improve business productivity and competitiveness, especially SMEs (over 90% of industrial activities) and support the gradual integration of TPEs: creation of a public industrial investment fund, commitment of the banking sector, re-design of the investment charter, forging of alliances between big business, on the one hand, and SMEs and TPEs, on the other, adoption of a needs-based training system. The green economy vision will need to be aligned with this new plan in order to promote

The green economy vision will need to be aligned with this new plan in order to promote priority green industries, boost local industrial production capacity and strengthen corporate commitment to sustainable development.

priority green industries, boost local industrial production capacity for certain value chain segments related to these sectors and strengthen corporate commitment to sustainable development.

Promoting innovation, a big deal

Innovation is at the heart of industrial integration and the green economy challenge. Morocco is ranked 84th/143 countries according to the 2014 Global Innovation Index, below Tunisia (78th) but above Egypt (99th) and Algeria (133rd). While progress is notable in terms of infrastructure and human capital, the performance of the national innovation system remains limited, particularly in terms of business innovation and market sophistication. There is also an inefficient coordination of efforts, insufficient funding and lack of collaboration between universities and businesses (low utilization of research findings and projects unsuited to the needs of the economy). The funds allocated for scientific and technical research, mainly public, did not exceed 0.8% GDP in 2010 (vs. 2.26% in France and 3.4% in Japan)²¹. SMEs lack funds to finance research; nearly 80% of businesses rely on self-financing to develop their research projects.

In order to stimulate technological innovation and strengthen research and training in the new sectors, a number of measures have been taken such as "Morocco's Innovation Initiative" which aims to increase research funding (2% GDP by 2020 including 25% private), the creation of a support innovation Fund (380 million dirhams), the setting of a construction policy for innovation cities, the development of techno poles and the creation of specialized research and training institutions. OCP launched in 2011 the Innovation Fund for Agriculture to promote innovation and entrepreneurship in agriculture and agribusiness

Innovative financial instruments support the development of renewable energy

The renewable energy development programme requires a significant investment of more than 100 billion Dirhams (~ 10 billion Euros). 1.5 billion Euros have already been raised via multiple donors (ADB, WB, EIB, AFD, KfW and EU) as part of a public-private partnership for the construction of the first solar power plant in Ouarzazate (500MW in 2017). The other plants will be completed over the period 2018-2020. Financial arrangements combine domestic and foreign public and private funds and refer to concessional and non-concessional financing mechanisms as part of multilateral and bilateral cooperation. An energy investment company (EIC²²) has been created and an energy development fund has been set up.

The ongoing review of energy subsidies (introduction in 2013 of pegging a number of petroleum products²³ to international prices) has already led to partial cuts in fuel subsidies used for transport. Pricing of electricity has been increased to take into account the

21 According to the "the site inventory on innovation financing in Morocco," carried out by the Moroccan Association for capital investors and Grant Thornton Council.

22 The EIS is a public investment company founded in 2010 with a capital of one billion dirhams whose mission is to make equity investments in renewable energy projects and energy efficiency.

23 Petroleum products constitute about 55% of compensation spending.

real prices. Interest is growing between large multinationals (GDF Suez, Alstom, Siemens, ACWA Power, etc.) and SMEs in the sector. According to the ANIMA-MIPO observatory, Morocco has attracted an average of one FDI project per year between 2003 and 2009, 3 projects in 2010, 4 in 2011 and 7 in 2012. Several wind farm projects have been developed in the form of construction contracts (Operation and Transfer of Title)²⁴. In 2013, GDF SUEZ and its partner Nareva Holding launched the construction of the Tarfaya wind farm with a capacity of 300 MW, or 40% of the total wind power capacity of the country. The latter was the subject of a 20-year power purchase agreement with the National Office of Electricity and Water Supply (ONEE.) A CDM project has been set up for development of the wind farm of Lafarge cement plant (Tetouan). It covers 40% of the electricity needs of the plant (38 million Kw/ h) and reduces CO2 production by 30 000 tons per year.

Renewable Energy Development Programme (RE)

- Objective: Produce 6000 MW (solar, wind and hydro) to reach 42% of the energy mix (2020).
- Investment: more than 100 billion dirhams (solar and wind)
- Savings: 2,5 Millions of Tep
- Avoided emissions: 9.5 million CO2 T/ year.
- Important institutional and regulatory reforms, including Act 13-09 which allows the production of green electricity by private firms with grid integration and interconnection
- Maximizing industrial integration rate

The Green Morocco Plan (PMV): a multidimensional approach for inclusive and environmentally-compliant agriculture

The Green Morocco Plan (2008-2020) aims to improve the performance of the agricultural sector so as to make it a leading force for economic growth and poverty reduction through increased agricultural²⁴ GDP, increased exports, job creation and improvement of farm incomes.

The first pillar of PMV aims to develop efficient agriculture, with high value added, by mobilizing agricultural land in the State's own domain and its transfer (under long period lease up to 40 years) to national or foreign private operators in the framework of public-private partnerships that add value in the main sectors, including export sectors (citrus fruits, olives, fruits and vegetables). It is based on an aggregation model that establishes relations among the private investors who have a good financial standing with dozens of small and medium-scale farmers, as part of a three-party contract-system: the State/ private investor, and private investor/farmers. This model removes a number of key constraints in the sector such as financing, access to land²⁵ and farm size (farm areas can reach 200 to 2000 ha) and promotes the sharing of risks, the transfer of skills and the development of trade capacity. It should end up benefitting some 540,000 farmers.

24 Agricultural average incomes are very low because 70% of farms have less than 2.1 ha.

25 74% of farms in Morocco do not exceed 5 ha in size.

As for the second pillar, it follows an approach of social support (with a high contribution of the State) to small and medium-size farmers, especially in difficult areas (mountains, oases, plains and semi-arid plateaux) in order to significantly increase their farming income and enhance soil production. Nearly 715,000 farmers have benefited so far. In 2013, 245 women's cooperatives were created around land produce.

To meet the PMV's large financing needs (nearly 66 billion dirhams for the period 2009-2015), multiple solutions have been implemented through the Agricultural Development Fund (restructured with increased allocation), Hassan II Fund (DH 800 million in four years), the Rural Development Fund, national banks -which have developed products tailored to the needs of farmers, like Crédit Agricole du Maroc which financed 15,000 small farmers with up to 5.5 billion dirhams at the end of August 2013 through the "Tamwil al Fellah" Institution, and, finally, international financial partners

On the environmental level, the PMV was the subject of a Strategic Environmental and Social Assessment (SESA). It is consistent with the National Water Strategy (2009-2015) in developing the use of efficient irrigation water systems as part of the National Irrigation Water Saving Programme (330 000 ha were equipped with drip irrigation systems in 2013 and 410 000 ha are planned for late 2014). A national solar pumping programme that aims to install a fleet of 3,000 photovoltaic pumping systems with a total power of 15 MWp should have been completed in 2014. The comprehensive insurance programme against climate hazards continues and would cover an area of 600 000 hectares in 2014 and one million hectares in 2015

Recent data from the High Planning Commission, the Ministry of Economy and Finance and the Ministry of Agriculture show an increase in the cultivated area of 750,000 hectares since the launch of VMS in 2008, an improved performance of the main production sectors²⁶, a 43% increase in agricultural production and a 23% increase in agricultural employment. They also reveal a revival of investment (53 billion dirhams over the last five years, including 22 billion from the private sector) and the creation of 20 GIE and over 40 agricultural cooperatives. These data are encouraging; however, a mid-term comprehensive assessment should be conducted to measure: (a) its actual impact in terms of investments and granted public subsidies; innovation, training and coaching mechanisms and achieved performance, especially in terms of food security, agribusiness development and impact on small farmers and rural exodus, (b) the level of implementation of the recommendations of the Strategic Environmental Social Assessment (SESA) in order to take into account all the environmental constraints, including climate change mitigation.

Management of household and Incillary waste : integrating the informal sector and improving financing schemes

The household waste programme (PNDM) aims to reduce waste²⁷, upgrade (recycling, composting and energy production) 20% of waste in 2020 (against 10% in 2013) and create 150,000 jobs in five years. The priority sectors concerned are: plastic waste,

²⁶ The average crop production increased from 2.8 tons / ha to 3.5 t / ha.

²⁷ Production of Management of household and Incillary waste increased from 5.30 million tons in 2009 to 6.85 million tons in 2013 which 5.38 were produced in urban areas.

paper and cardboard waste, used oils, batteries and tires. A chain management unit will be established within the Ministry of Environment.

Household waste management falls under the jurisdiction of local authorities²⁸, but may be outsourced to private operators²⁹. The sector, which involves a significant unorganized informal component is now widely untapped and requires adoption of a framework that gives visibility into future projects, clearly defines the responsibilities of the stakeholders concerned (including the informal sector), grants incentives to SMEs/TPE and is accompanied by technical and financial capacity building to encourage the creation of micro-enterprises in the recycling business.

Progress has been made in terms of collection and disposal in controlled landfills³⁰. Government's efforts are also moving towards the creation of new industries and the integration of informal actors. A business plan has been developed to support the sector of plastic packaging and an environmental tax has been adopted (2013 Finance Act). For the used car batteries sector, the regulatory framework is being established and a partnership agreement was signed between the Ministry for the Environment, the Ministry in charge of Small-Sized Enterprises and integration of the informal sector and the battery producers' group in order to create a group of economic interest and define the institutional, technical and financial mechanisms.

Sectors that are dedicated to tires and used oils are also being developed. Waste energy production is still marginal despite significant development potential. Two projects of energy production from landfill biogas are in progress (Fez and Oujda) and a partnership agreement was established with cement manufacturers for joint waste incineration. The composting sector is at an experimental level.

The used car batteries sector

- The country produces 674,000 used battery units/year or about 10 000 t of waste
- Three companies specializing in the manufacture of batteries will recycle 60% of used batteries
- Mechanism:
 - The consumer returns the used battery when buying a new one or makes a 150 dirham-deposit if the used battery is not presented immediately (civic gesture)
 - A levy of 30 Dirhams per refurbished battery is made to supply the FNE

Government's efforts are also moving towards the creation of new industries and the integration of informal actors.

28 Municipalities with technical and financial capacities are insufficient receive financial incentives from the government, but are facing difficulties at the time of reimbursement of expenses .

29 80% of the collection is provided by private operators under a delegated management.

30 37 % of household waste have been controlled discharge 2013 against 10% in 2008 .

Conclusion

Morocco regards the green economy as a priority issue, clearly stated in the national sustainable development strategy, which contributes to environmental preservation, controlling global warming, resource recovery, job creation, the improvement of industrial performance, and achieving territorial balance. Important initiatives are already underway to: (i) increase green financing through the strengthening of international cooperation, mobilize the private sector and domestic public resources; (ii) develop an industrial policy capable of generating jobs and (iii) enhance skills and innovation in the green technology.

The national strategy for the green economy should integrate the transformation of the productive fabric, boosting the job market, innovation and the territorial dimension.

While the commitment of business leaders is currently a decisive factor for CSR, other factors such as regulations, sectoral context, competition, technology transfer, capacity building and market increase, play an important role in promoting the green economy and creating an eco-innovative SME network.

The lessons learned from the implementation of initiatives and ongoing sectoral programmes should foster the reflection and choice of options within the framework of the necessary development of a comprehensive green economy structuring strategy that incorporates the necessary transformation of the productive fabric, job market enhancement, innovation and territorial dimension.

Some recommendations:

- To adopt a comprehensive green economy strategy with clear and measurable objectives and indicators;
- To continue adaptation, coherence and operation of the legislative framework addressing green economy challenges;
- To develop adequate economic and financial instruments to support the implementation of priority programmes such as energy efficiency and the development of recycling and waste composting industries;
- To ensure that the new industrial strategy integrates environmental requirements and participates in the growth of green industries, innovation and regional development;
- To capitalize on research findings, strengthen and adapt R & D programmes, in correlation with value chain development goals and by improving university-industry synergies;
- To continue efforts to develop environmental taxation;
- To strengthen support mechanisms for SMEs/VSE (engines of the green economy);
- To update the calculation of the costs of environmental degradation and promote the use of environmental economic evaluation, particularly by speeding up implementation of the environmental accounting system;
- To establish a nomenclature of green jobs and establish a monitoring mechanism on needs in this area;
- To adapt and strengthen education and training programmes in relation with green economy challenges and business needs;
- To strengthen monitoring and evaluation systems and incorporate indicators on the green economy.

Acronyms

ADEREE	Agency for Development of Renewable Energy and Energy Efficiency
EESC	Economic, Social and Environmental Council
CGEM	General Confederation of Moroccan Enterprises
EPA	Environmental Performance Assessment
HCP	High Planning Commission
IFPRI	International Food Policy Research Institute
IRES	Royal Institute for Strategic Studies
IRESEN	Research Institute for Solar Energy & New Energies
HCEFLCD	High Commission for Water and Forestry and the fight against desertification
KWh	Kilo Watt hour
MAPM	Ministry of Agriculture and Maritime Fisheries
MASEN	Moroccan Agency for Solar Energy
MEMEE	Ministry of Energy, Mines, Water and Environment
MT	Million tons
CDM	Clean Development Mechanism
OCP	Cherifien Phosphates Office
WTO	World Tourist Organization
PNA	National Sanitation Program
PNGDS	National Solid Waste Management Program
UNEP	United Nations Environment Programme
CSR	Corporate Social Responsibility
PET	Oil ton equivalent

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