AFRICAN DEVELOPMENT BANK GROUP

ERRADA
Egyptian Regulatory Reform And Development Activity

وزارة التخطيط والتنمية الاقتصادية
Ministry of Planning and Economic Development

# BUSINESS ENABLING ENVIRONMENT FOR SMEs TOWARDS GREEN ECONOMY DEVELOPMENT IN EGYPT

*A Policy Paper on Industry Challenges facing SMEs in Some Green Economy Related Fields*

* *This study was prepared by* ***Dr Mona Mohamed Yahia*** *(Senior Consultant) and* ***Dr Ammar Kessab*** *(Principal Governance Officer, ECGF.1) with the support of* ***Olivier Stoullig*** *(Principal Industrial Policies Officer, PITD.1),* ***Kaouther Abderrahim Ben-Salah*** *(Principal Country Economist, ECCE) and* ***Dr Siham Mohamed Ahmed*** *(Principal Agricultural Expert, AHAI.3). Overall guidance was received from* ***Dr Heba Shahein*** *(Executive Director, ERRADA) and* ***Dr Kevin Lumbila*** *(Acting Division Manager, ECGF.1).*

# TABLE OF CONTENTS

## LIST OF ABBREVIATIONS

| | |
|---|---|
| **ACT** | Agri-food Cluster Transformation Fund in Singapore |
| **AFDB** | African Development Bank |
| **AREF** | Africa Renewable Energy Fund |
| **BIRAC** | Biotechnology Industry Research Assistance Council in India |
| **CBD** | Convention on Biological Diversity |
| **CFC** | Common Fund for Commodities |
| **CPF** | World Bank Group Country Partnership Framework |
| **CSAF** | Council on Smallholder Agricultural Finance |
| **CST** | Costa Rica Certification for Sustainable Tourism |
| **DPL** | Development Policy Loan |
| **EBRD** | European Bank for Reconstruction and Development |
| **EPA** | The United States Environmental Protection Agency |
| **ESG** | Enterprise Singapore |
| **EU** | European Union |
| **FAO** | Food and Agriculture Organization |
| **FCDO** | United Kingdom's Foreign, Commonwealth and Development Office |
| **FEI** | Facility for Energy Inclusion Africa |
| **GCF** | Green Climate Fund |
| **GDP** | Gross Domestic Product |
| **GEFF** | Green Economy Financing Facility |
| **GGGI** | Global Green Growth Institute |
| **GSTC** | Global Sustainable Tourism Council |
| **INPI** | Brazil National Authority for Industrial Property Matters |
| **IP** | Intellectual Property |
| **IQF** | Individual Quick Freezing |
| **IRENA** | International Renewable Energy Agency |
| **ISO** | the International Organization for Standardization |
| **LPRP** | Logo for Products with Reduced Packaging |
| **MSMEDA** | Egyptian Micro, Small and Medium Enterprises Development Agency |
| **MSMEs** | Micro, Small and Medium-Sized Enterprises |
| **MSW** | Municipal Solid Waste |
| **NCCS** | Egypt's National Climate Change Strategy |
| **NEA** | National Environment Agency of Singapore |
| **NEP** | Philippines National Ecotourism Project |
| **NGO** | Non-Governmental Organization |
| **NWT** | Northwest Territories of Canada |
| **NZAID** | New Zealand Agency for International Development |
| **PNDM** | Morocco's Municipal Solid Waste Management Program |
| **PPP** | Singapore Packaging Partnership Programme |
| **PSFU** | Private Sector Foundation Uganda |
| **R&D** | Research and Development |
| **RIE** | Singapore Research Innovation and Enterprise |
| **SACREEE** | SADC Centre for Renewable Energy and Energy Efficiency |
| **SADC** | Southern African Development Community |
| **SADS** | Egypt's Sustainable Agricultural Development Strategy 2030 |
| **SDGs** | Sustainable Development Goals |

| | |
|---|---|
| **SDS** | Egypt's Sustainable Development Strategy: Egypt Vision 2030 |
| **SEFA** | Sustainable Energy Fund for Africa |
| **SFA** | Singapore Food Agency |
| **SIF** | SME Impact Fund in Tanzania |
| **SMEs** | Small and Medium Size Enterprises |
| **SNRVD** | Morocco National Strategy for Waste Reduction and Conversion |
| **SPA** | Singapore Packaging Agreement |
| **SPS** | Sanitary and Phyto Sanitary Certification |
| **START** | Support to Agricultural Revitalization and Transformation Facility |
| **TRIPS** | Trade Related Aspects of Intellectual Property Rights Agreement |
| **UK PACT** | United Kingdom Partnering for Accelerated Climate Transitions |
| **UNCDF** | United Nations Capital Development Fund |
| **UPOV** | International Union for the Protection of New Varieties of Plants |
| **US** | The United States of America |
| **WIPO** | World Intellectual Property Organization |
| **WTO** | World Trade Organization |

# I. INTRODUCTION

Today, there is a consensus that sound actions should be taken to address the growing climate change and environment related challenges. Therefore, economic growth endeavours should go hand-in-hand with efforts to protect the environment and mitigate the harmful effects on ecosystems and natural resources. Small and Medium Size Enterprises (SMEs) represent about 90% of businesses around the world and are major contributors to GDP[1], making them key economic drivers. According to the Egyptian Micro, Small and Medium Enterprises Development Agency (MSMEDA), small enterprises contribute about 43% to Egypt's GDP and account for over 75% of the total employment in the Egyptian market[2]. Since SMEs could play a pivotal role in the development of green economy sectors, it is worth exploring how they could be encouraged and supported to effectively play this role in Egypt.

Looking at Egypt's Sustainable Development Strategy (SDS): Egypt Vision 2030, we can see that green economy is very relevant. Under the Economic Dimension, the energy Pillar aims - among other aspects – at the efficient use of traditional and renewable energy resources in a way that contributes to economic growth. Under the Environmental Dimension, the Environment Pillar envisions the integration of environment in all economic sectors and achieving diversified production resources and economic activities[3].

With the aim of developing an enabling business environment for Egyptian SMEs operating in strategic green economy sectors, this study was conducted to determine the main obstacles and challenges facing those SMEs and to make recommendations on how to overcome these challenges. For the purpose of this study, five strategic green economy sectors were targeted namely; agri-business, bio-fertilizers, new and renewable energy, ecotourism, and waste management and recycling.

Mapping of relevant stakeholders was performed and then interviews were conducted with a sample of Egyptian businesses and SMEs operating in the indicated sectors and with representatives of relevant government authorities. Based on these interviews the main challenges facing SMEs in these sectors were identified. It was found that in addition to challenges related to access to proper finance that suits the specific needs and characteristics of SMEs, other challenges stem from the legislative, regulatory and policies in place, lack of incentives or support initiatives; and lack of awareness of the available support mechanisms. Research was then conducted to study the experiences of other countries and determine the most relevant best practices in supporting SMEs in the identified green economy sectors with a special focus on potential actions targeting the identified challenges.

In light of all of the above, a set of recommendations were provided to specifically tackle the identified challenges in each sector. In general, there is a need for revisions and amendments to some relevant laws and regulations. Studies should be conducted to determine the most appropriate financing mechanisms that meet SMEs specific needs in particular sectors. It is

[1] Small and Medium Enterprises (SMEs) Finance. The World Bank. Available at: https://www.worldbank.org/en/topic/smefinance

[2] Small enterprises contribute 43% to GDP, account for over 75% of employment: MSMEDA. Available at: https://www.zawya.com/en/economy/north-africa/small-enterprises-contribute-43-to-gdp-account-for-over-75-of-employment-msmeda-vg3dnfmy

[3] Sustainable Development Strategy: Egypt Vision 2030 (http://sdsegypt2030.com/)

important also to develop standards and specifications for the products, processes and operations in the identified sectors. SMEs also need sectoral policies to support their operation in green economy fields.

In addition, it is indispensable that the regulatory framework provides an enabling environment for SMEs and does not in itself pose obstacles that would discourage them from operating in the relevant green economy sectors. Government support initiatives and incentivization schemes would have a great impact. Further, it was found that it is of utmost importance to develop national strategies in the identified green economy sectors targeting SMEs or at least considering them as main stakeholders and supplementing them with effective policies and clear implementation plans. Finally, to make sure that SMEs could avail themselves to the support systems available it is essential to ensure that mechanisms are in place to make the SMEs aware of such support systems.

## II. OBJECTIVE AND SCOPE:

The **objective of this** study is to identify, categorize and analyse challenges faced by SMEs operating in strategic green economic sectors as well as carry out research on best practices done elsewhere and provide recommendations to overcome each of the challenges. The study focuses on SMEs and relevant government ministries working on the targeted green businesses or economies in Egypt. These green businesses are agribusiness, bio-fertilizers, ecotourism, renewable energy, and recycling and management of waste. The green businesses fields were selected as they are closely linked to the UN sustainable development goals (SDGs).

The Agribusiness is selected as it closely linked to SDG 2 (the Zero-Hunger goal) and to the first goal of Egypt Vision 2030 (Quality of Life), as it contributes to food security. The use biofertilizers increases plant productivity, induces the plants to consume higher levels of carbon dioxide, and reduces plant pathogens which minimizes the need to use pesticide. Therefore, this sector was selected as it helps to achieve SDG 13 (the Climate Action goal) and the fourth and fifth goals of Egypt Vision 2030 (Knowledge and Innovation, and Environmental Sustainability respectively). Furthermore, it positively affects SDG3 (the Good Health and Well-Being goal). It also helps to reach SDG2, and is in line with the first and third goal (Strong Economy) of Egypt Vision 2030. The green and eco-tourism sector is selected as an important tool to achieve sustainable economic growth in non-urban areas and it positively contributes to SDG 11 (the Sustainable Cities and Communities Goal), SDG 15 (the Life on Land goal) and SDG 8 (Decent Work and Economic Growth), which is also reflected in the third goal of Egypt Vision 2030. The renewable energy sector was selected as it contributes to SDG 7 (the Affordable and Clean Energy goal) and is one of the actions towards having a better climate as a reflection of SDG 13. The waste management was selected as it helps to achieve SDG 11 and SDG 12 (the Responsible Consumption and Production goal) and is in line with first and fifth goals of Egypt Vision 2030. Furthermore, the study of all these sectors helps Egypt to shift to green economy.

The specific objectives for each sector are as follows:

1. **Agri-business sector:**
    a. Enable the SMEs who are working in the field of Agri-business sector by giving them better framework to harmonize themselves.
    b. Lower the loss of agricultural products.
    c. Achieve self-sufficiency of agricultural products as per the needs of the market.

d. And export the excess amounts of such products.

2. **Biofertilizers:**
    a. Encourage the development and use of bio-fertilizers.
    b. Facilitate the procedures to register innovative biofertilizers.
    c. Provide a framework for the protection of bio-diversity and have a scheme for the benefit sharing of innovations derived from lively resources.

3. **Green and Eco-tourism:**
    a. Incentivize the SMEs to engage in the green and eco-tourism as it positively contributes to the national GDP.

4. **Renewable Energy:**
    a. Enabling the SMEs to operate and use renewable energy.
    b. Encourage the public to use renewable energy sources.
    c. Protect the national industry by having proper control over the quality of imported products.

5. **Waste management:**
    a. Facilitate the procedures for the SMEs to operate in agricultural waste management.
    b. Regulate the management of E-Waste.

## III. METHODOLOGY

In order to meet the study objectives, the following steps were taken:

### A) Literature review and stake-holders interview:

A review of existing literature on the topic was conducted. Research has been done about the relevant laws in each sector. In addition, interviews were conducted with a sample of entrepreneurs who own and run the SMEs operating in the indicated sectors and with representatives of relevant government authorities.

### B) Identification of the challenges:

Based on the literature review and interviews, a set of challenges, obstacles, issues and problems on the ground that hampers each sector were identified.

### C) Categorization and Analysis of the challenges:

The challenges were categorized and analysed to understand the nature of each challenge, the actual reasons behind it, whether it is due to awareness, financial, policy making or other reasons.

### D) Research where necessary about the best practices:

Where necessary, research was done about the best practice from different countries in the relevant fields to benefit from their experience. This has guided the framing of the recommendations made.

### E) Providing a set of recommendations to overcome each of the challenges:

Based on the above analysis, a set of recommendations was provided so each challenge can be overcome, inclusive of identifying opportunities of collaboration, and partnership in each sector to enhance the green economy.

# IV. AGRICULTURAL AND AGRIBUSINESS INDUSTRY

## 4.1. Background:

The Agri-business industry has various stages where SMEs may intervene. Based on the conducted interviews with a sample of the SMEs operating in the agribusiness sector, the following 4 stages relevant to the study at hand are highlighted:

- Stage 1: Importing or producing seedlings, or plantings.
- Stage 2: Cultivating the products.
- Stage 3: Industrial phase which involves treating harvested material whether by individual quick freezing (IQF) or otherwise.
- Stage 4: Selling the products inside and outside Egypt.

## 4.2. Challenges:

To identify the challenges facing SMEs operating in the agribusiness sector, a number of interviews were conducted with representatives of a number of SMEs. The interviewed participants were selected based on networks, willingness to participate, and availability within the short time frame of this study. Semi structured interviews were conducted in person. A total number of 10 owners or representatives of SMEs working in the field of the Agri-business industry and with potential export capabilities and also 3 farmers were interviewed. From the responses, the following main challenges were identified:

- Challenges in the pricing of agribusiness products due to lack of information and strategy at sectoral level in the field of agriculture. Information on supply prices determined by the government are not available beforehand to agribusinesses which could negatively affect their competitiveness as such information could affect the prices of purchase from farmers and the prices set for exportation.

- High costs of production resulting from the transfer of the raw materials “harvested materials” to be used for industrial purposes over long distances between the agricultural fields and the industrial facilities. This unnecessarily increases the amount of agricultural waste and the harvested material have a high risk of being contaminated with pollutants during the long transportation process.

- The linkage between the procedure for obtaining the Sanitary and Phyto Sanitary Certification (SPS Certificates) and the status of Intellectual Property (IP) rights protection. The Agricultural Quarantine Authority refuses to grant SPS Certificates unless the producer of the agri-manufactured product either signs a license agreement with the IP rights holder or declares that the harvested material does not violate IP rights of third parties.

- Sustainability of businesses due to the lack of financial means and lack of start-up capital for projects in early stages especially because of insufficient capacity to prepare all needed documentations and lack of managerial and financial skills.

## 4.3. Categorization and Analysis of the challenges:

The challenge that agri-business SMEs is facing in pricing their products is of political/administrative nature.

While there are some government efforts to guide strategic grain farmers (wheat, maize, and rice), in general there is no harmonization across Egypt about the other crops. Agricultural land is divided among many farmers who are not obliged to unite or coordinate together to carry out large scale production. The outcome of such lack of coordination is that the agri-business does not have clarity about the expected levels of harvested materials (raw materials of agri-business). Therefore, the agri-business sector is not able to speculate the price due to the availability of very little information about the prospected levels of supply which does not enable the SMEs in the agri-business sector to efficiently formulate pricing strategies for their products. For the business to formulate a pricing strategy, it needs to know ahead the amount of prospected production. For example, if a producer of strawberries is aware that the production of strawberries in Egypt would be very high in year 2023, he would automatically deduce that the price of his products will decrease, therefore, he might decide to cultivate a different fruit for which the demand would be high.

While the government is aware of Egypt's competitive advantage related to its soil in the production of some products, it is of utmost importance to consider that the SMEs in the agri-business sector need to have their products supplied on a large scale. The aim is to optimize the operational cost of production and drive the business to make a reasonable profit.

The second challenge is the long distance between the farms and factories which is due to a set of laws that aim at protecting agricultural land by prohibiting to build establishments on agricultural lands. In accordance with the Art. 152 and 156 of the Agricultural Law no. 53 of the year 1966 as amended by the Law no.164 of the year 2022[4] it is generally prohibited to build establishments and factories on agricultural lands with limited exceptions. Perpetrators who build on agricultural land without a special permission may face fines up to one million pounds in addition to 2 years imprisonment penalty. The limited exceptions to the prohibition to build on agricultural land include "establishments that carry out plants and animals' production in accordance with the regulation that shall be issued by the Minister of Agriculture."
Pursuant to the law mentioned above, the Minister of Agriculture has issued the decree no. 615 of the year 2016 which sets out a list of establishments that are allowed to be built on agricultural land. Those relevant to this study are: Preservation freezing of vegetables, fruits, poultry establishments, the selection and packaging of vegetables and fruits establishments and recycling of agricultural waste establishments. The decree did not specifically take into account

[4] Article 152 as amended states that: "It shall be prohibited to form any establishments or buildings on the agricultural land or take any measures to divide the agricultural lands to build on it…
The following shall be an exception from the above: a-… b-… c-…
d- The land that projects that serve the agricultural or animal production are built upon as shall be decided by the Minister of Agriculture…".
Art. 156 states that: Art. 156 states that: "Violation to Art. 152 shall be punishable by imprisonment and a fine not less than EGP 10,000 and not more than EGP 50,000…".

the agri-business needs to have some establishments which do not necessarily fall into the mentioned categories, such as thermal treatment factories, juice factories…etc.

The third challenge is related to the Minister of Agriculture decree no. 386 of the year 2021 which aims at regulating and coding all the agricultural land and varieties in Egypt to enable tracking any product down to its source for quality purposes. The issue is that Article 5 of this decree mandates the Agricultural Quarantine Authority to code the varieties that have IP rights in Egypt. It stated that: "The Agricultural Quarantine Authority shall take the necessary procedures to satisfy the requirements of encoding and exporting the varieties that have IP rights in Egypt."

In this regard, it is useful to highlight that the protection of new plant varieties in Egypt is governed by Book 4 of the Law no. 82 of the year 2002 on the Protection of IP Rights which is compliant with the International Union for the Protection of New Varieties of Plants (UPOV) Convention 1991 and the Trade Related Aspects of Intellectual Property Rights (TRIPs) Agreement. IP rights are private rights and therefore, taking the necessary steps to enforce these rights is the responsibility of the IP rights owner not the regulatory authorities concerned with dthat the product is free from a certain level of chemical residues in accordance with the SPS Convention and the photo-sanitary conditions of the importing country. It is the responsibility of the business entity to ensure it does not violate any valid IP rights on the exported plant varieties or products in Egypt or in the country to which it exports. Checking the IP protection status of all agricultural exported products would burden the regulatory authority and unnecessarily waste time and resources.

Establishing a system of linkage between the procedure to grant an administrative certificate or approval and the status of IP rights protection is widely known as the "linkage problem". This linkage system has no legal basis in the IP law, and it might unnecessarily delay the procedures of obtain the necessary approvals for exportation.

### 4.4. Best Practices:

Research showed that **Barbados** has developed in 2016 a national policy framework for the development of the Micro, Small and Medium-Sized Enterprises (MSMEs) in many sectors. A very interesting feature in this policy framework is that while its pillars targeted cross cutting aspects such as business support framework, access to finance, and business competitiveness, the strategy focused also on special development sectors. In the field of Agri-business, the policy objectives included facilitating the development of SMEs through the identification of a number of policy initiatives such as: offering incentives to investors to provide financial solutions to SMES, encouraging training and capacity building on developing business management skills, ensuring adequate lands are made available, provision of marketing and market information support, and conducting value chain analysis. Examples of the potential incentives for MSMEs are access to grant funding, tax credits on using green technologies and for training, and tax benefits for some business models such as franchising or exporting[5]. This could be a good model as it does not only tackle issues of finance but also market competitiveness, availability of information, and business capabilities.

[5] Barbados National Policy Framework for SMEs (https://commerce.gov.bb/wp-content/uploads/2020/05/National-MSME-Policy-as-approved-by-Cabinet-and-laid-in-House-of-Parliament.pdf)

It has also been found that **Palestine** has adopted a strategy to develop the agri-business on a sectorial basis. The latest version of the strategy is for the period 2021-2023. The fourth strategic goal is enhancing the production, productivity, diversity and competitiveness of the Palestinian agricultural sector. Priority intervention to achieve this goal include – among other aspects - directing and supporting farmers' initiatives for intensive and semi-intensive production systems and the implementation of modern systems of agricultural production, and establishing national initiatives and policies with the aim of reducing the cost of production inputs. The fifth strategic goal is ensuring farmers' access to services that respond to their needs and support value chains in terms of quality, cost and time. Among the priority interventions under this goal are securing appropriate financing mechanisms for small, women and youth farmers, enabling access to quality services for agricultural business development, and improving information systems in relation to marketing and product quality[6].

An investigation by the United Nations Capital Development Fund (UNCDF) in February 2019 in Uganda revealed that the country has approached the traditional financial challenge faced by the SME's as a start-up via the Support to Agricultural Revitalization and Transformation (START) Facility. It found that the real issue was that most SMEs in the agribusiness did not have proper financial and business management skills and capacities to ensure their business survival and sustainability. The START management Board agreed that SMEs needed capacity building to strengthen their business and financial management capabilities, the lack of which was a reason for the many rejections in the call for proposals by START in 2018. Therefore, UNCDF and the Private Sector Foundation Uganda (PSFU) decided to provide advisory services, training and mentoring to agri-SMEs on basic bookkeeping and accounting, financial projection, feasibility studies and general management[7]. Given that most SMEs in Uganda lack proper documentation, financial records and proper governance structures, the START facility has also worked closely with shortlisted SMEs to ensure that they have the prerequisite financial and business systems so that they can receive the funding[8].

An important lesson learnt from this experience is that securing funds and financial solutions to agribusinesses might not alone help agribusinesses to thrive and compete effectively in the market. It is indispensable to ensure SMEs in this sectors actually have the capacity to make the best use of the provided financial solutions to grow their businesses and achieve market success.

A similar approach has been followed by **Tanzania** to overcome the financial challenges that the SME's face at the start-up period. The SME Impact Fund (SIF) supported by the Common Fund for Commodities (CFC) finances SMEs and entrepreneurs who have potential but are not supported by the local banking system. It provides capital loans to entrepreneurs facing limited availability of capital as the main challenge. SIF aims to specifically target women entrepreneurs in an effort to overcome the gender imbalance issues. It has found that women-led enterprises perform better and show greater commitment to repayment. In addition to the

---

[6] Palestine Cabinet. Sectoral Strategy for Agriculture. http://www.palestinecabinet.gov.ps/WebSite/Upload/Documents/%D8%A7%D9%84%D8%A7%D8%B3%D8%AA%D8%B1%D8%A7%D8%AA%D9%8A%D8%AC%D9%8A%D8%A9%20%D8%A7%D9%84%D9%82%D8%B7%D8%A7%D8%B9%D9%8A%D8%A9%20%D9%84%D9%84%D8%B2%D8%B1%D8%A7%D8%B9%D8%A9%202021-2023.pdf

[7] Impact Capital for Development (UNCDF). START Facility to Increase Business Development Support to SMEs in Agribusiness (https://www.uncdf.org/article/4503/start-facility-to-increase-business-development-support-to-smes-in-agribusiness)

[8] Impact Capital for Development (UNCDF). START Facility Providing Affordable Finance to Agribusiness SMEs (https://www.uncdf.org/article/6192/start-facility-providing-affordable-finance-to-agribusiness-smes)

support from investors, SIF has a local banking partner allowing it to extend its services to rural areas and also a number of technical partners[9].

Great efforts are also made in many countries across Africa. Dalberg Global Development Advisors (a consulting firm) conducted studies on the economics of Agri-SME lending in East Africa (Kenya, Rwanda, Tanzania, Uganda, and Zambia) in an attempt to close the data gap on the economics of financing agricultural SMEs. Such data was considered very important to identify the necessary market interventions and how they could be effectively employed to incentivize more lending to SMEs without distorting the market. Proper targeting of the agri-SMEs finance gap is needed to be able to use blended finance as a means to catalyse private investments in developing countries and mobilize the necessary funds. The studies conducted resulted in the identification of the main categories of actors serving the financing needs of different agri-SME segments, provision of information on the lending capacity and the profitability of the lenders (banks and non-banking financial institutions), determining whether the lending activity in the target sectors was sufficient and designed properly, identification of the challenges facing the lenders as they try to expand their agri-SME lending portfolio, and the recommendation of a multifaceted support model[10].

At the second international summit on food production in Dakar (25-27 January 2023), the African Development Bank Group and the Government of Canada announced the launch of a special fund to support SMEs in the agricultural sector in Africa. This Agri-food SME Catalytic Financing Mechanism is a blended finance facility that aims to catalyse and de-risk investment for agriculture SMEs[11].

In 2020, the USAID, Swiss Agency for Development and Cooperation and the IKEA Foundation worked jointly to offer a grant to Aceli Africa to help bridge the financing gap of many Agri- SMEs in Tanzania, Kenya, Rwanda and Uganda. Aceli Africa tries to incentivize financial institutions to provide loans to agri-SMEs. However, a big challenge facing Agri-SMEs is that banks are reluctant in many cases to provide them with loans. Small entities are considered risky to loan for a number of reasons including price volatility, the seasonality of farming, pest invasions and the weak regulatory framework. On the other hand, microfinancing initiatives are not suitable for agri-SMEs as they are seen as larger than the microenterprises targeted by microloans. Therefore, Aceli partners with various organizations in an attempt to bridge the finance gap through provision of incentives to financial institutions that support agri-SMEs. An example of such incentives is over the losses of the first loan from the financial institution to an agri-SME to encourage these institutions to take the agri-SMEs lending risk. In addition, Aceli provides technical assistance to agri-SMEs on effectively using the loans they receive to optimize their growth[12].

By November 2021, 26 leading commercial banks and impact investors have registered for Aceli Africa's financial incentives program. In 2021, the Dutch Ministry of Foreign Affairs

---

[9] Common Fund for Commodities. SME Agribusiness Development in East Africa (https://common-fund.org/sme-agribusiness-development-east-africa-0)
[10] Dalberg Global Development Advisors (Dalberg) in Partnership with Council on Smallholder Agricultural Finance (CSAF). The Economics of Agri-SME Lending in East Africa (https://agrilinks.org/sites/default/files/resources/the_economics_of_agri_sme_lending_in_east_africa_final_report.pdf)
[11] African Development Bank Group. Press Briefing on the African Development Bank's Agri-food SME Catalytic Financing Mechanism Special Fund (https://www.afdb.org/en/news-and-events/events/press-briefing-african-development-banks-agri-food-sme-catalytic-financing-mechanism-special-fund-58420)
[12] The Borgen Project. Aceli Africa: strengthening African agribusinesses (https://borgenproject.org/african-agribusinesses/)

and United Kingdom's Foreign, Commonwealth & Development Office (FCDO) joined IKEA Foundation, the Swiss Agency for Development and Cooperation, and USAID's Feed the Future initiative as anchor funders to Aceli Africa[13].

The Agri-food Cluster Transformation (ACT) Fund – one of the funding schemes of the Singapore Food Agency – supports local farmers in enhancing their production capacities and capabilities. The Act fund has three co-funding components: capability upgrading supporting the purchase of farming equipment and conducting pilot trials to raise farm productivity, resource-efficiency and reduce pollution and waste; innovation and test-bedding to support the development of innovative farming technology/systems and the testing and demonstration of feasibility of new farming technologies/systems; and technology upscaling supporting the purchase of large commercial-scale, automated and advanced farming technology solutions for integration with agri-input production, post-harvest and waste treatment technologies[14].

### 4.5. Recommendations:

To help the sector to overcome the proposed challenges it is recommended to do the following:

A) **Compose a Governmental Committee to formulate a national strategy and review the policies set out in the field of agri-business and adopt a policy for agriculture on a sectorial basis and make the data of the amounts of expected harvest materials transparently available to the SMEs working in the field:**

The adoption of an agriculture policy on a sectorial basis allows the SMEs working in the field to predict the amount of harvested material (raw material) and allowing information and data for speculating prices; therefore, enhance their ability to predict the international equilibrium price of their commodities and enhances their ability to make informed decision about the selection and amounts of harvested materials to be purchased to for the purpose of processing and exporting.

The price of harvested material is a cost component in the products of the agribusiness industry. Accurate speculation of the cost is crucial to the development of sound pricing strategies. The transparency of the amounts of harvested materials can be granted via the development of a national platform to provide a database accessible to those who work in the field to enable them to efficiently develop and execute financial plans in a manner that makes the final product available in the international market with a competitive price. The price of harvested material products follows the rules of supply and demand, therefore, transparency in the levels of supply of harvested material will help the agri-business to better speculate the cost of production of agricultural production.

B) **Review Article 5 of the Minister of Agriculture Decree no. 386 of the year 2021:**

It is necessary to review Article 5 of the Minister of Agriculture Decree no. 386 of the year 2021 concerning the linkage between the SPS certificate and the IP. IP rights are primarily private in nature in accordance with the preamble of the Trade Related Aspects of Intellectual

[13] Aceli Africa. Aceli Africa Lands $62M in International Donor Commitments to Unlock Private Sector Lending to Agricultural SMEs in East Africa (https://aceliafrica.org/aceli-africa-lands-62m-in-international-donor-commitments/)
[14] Singapore Food Agency. Agri-food Cluster Transformation (ACT) Fund (https://www.sfa.gov.sg/food-farming/funding-schemes)

Property Rights Agreement (TRIPs). Dismantling the link between the IP in the field of Plant Varieties and the SPS Certificate is also consistent with the TRIPs Agreement, UPOV Convention 1991, and the SPS Agreement to which Egypt is a party. It would also allow the SMEs to export their products to countries which the IP holder does not have any kind of protection.

Some of the plant breeders have been able to suspend shipments of frozen strawberries from Egypt at the EU customs point based on an allegation that there might be a violation of their IP rights. Such actions have led the Egyptian Quarantine Authority to link the IP rights and the SPS certificate. In this regard it is noted that the EU Directive no. 608 of the year 2013 allows the customs authorities to suspend and potentially destroy goods as a provisional measure if they violate an IP right and the concerned person does not oppose such destruction within a relatively short period of time. Since the mentioned suspension at the customs point is a provisional measure, it does not necessarily mean that the goods in question violate IP rights. For the violation to be proven there must be a judicial decision to that effect. In fact, many of the exporters were successful in the opposition and were able to make their goods enter the EU. Therefore, the suspension of the SPS Certificate pending the signing of a license agreement with the IP right holder or declaring that the exported agricultural products do not violate IP rights is not an appropriate measure, especially that under the Egyptian IP Law no. 82 of the year 2002, in general, the IP protection does not extend to harvested materials or materials directly obtained from harvested material.

C) **Review the Minister of Agriculture's decision no. 615 of the year 2016 concerning the conditions and procedures** to add more agribusiness factories other than exceptions mentioned in the law to build on an agricultural land such as the thermal treatment facilities and those producing fresh juice[15].

D) **Conduct studies about methods of support and financing the SMEs** especially in their early phases and explore the opportunities of the support offered by international agencies and organizations such as African Development Bank Group in this field to enable capacity building of the lenders and financial institutions to support the SMEs, as well as to enable the SMEs to properly manage the funds they receive in an efficient manner. This is expected to maximize the extent to which agribusinesses benefit of the provided financial support and incentives. As shown in light of the experiences in some African countries above, development of appropriate funding schemes and ensuring the beneficiary businesses are able to manage effectively how they would use such funds would help these businesses achieve market success and expansion.

## V. BIOFERTILIZERS INDUSTRY:

### 5.1. Background:

Biofertilizers are products containing living or dormant micro-organisms such as bacteria, fungi, actinomycetes and algae, alone or in combination, which on application help in fixing

[15] Surprisingly, the Minister of Agriculture decision no. 615 of the year 2016 allows for recycling facilities to be built on agricultural land but it does not mention other facilities that may be more crucial, therefore, this decision is recommended to be reviewed.

atmospheric nitrogen or solubilize/ mobilize soil nutrients[16]. Recently, biofertilizer technology is gaining attention amongst the agronomists and soil scientists because of its considerable benefits, especially in sustainable agriculture. Biofertilizers are preferred to chemical fertilizers because they are cost-effective, ecologically friendly, and guarantee sustainable agricultural production[17]. However, the biofertilizer industry is to a great extent untapped in Africa due to lack of market development, inadequate regulatory framework and ineffective quality control systems; thus, the full adoption and benefits of biofertilizer are yet to be fully realized compared to the developed nations[18].

The main categories of biofertilizers include Nitrogen-Fixing Biofertilizers, Phosphate-Solubilizing Biofertilizers, Composting accelerators, and Plant-growth-promoting rhizobacteria[19].

Biofertilizers improve the soil texture, soil fertility and crop yields[20]. They do not allow pathogens to flourish by destroying many harmful substances present in the soil that can cause plant diseases. Being natural fertilizers, they are eco-friendly and cost-effective. Prolonged use of chemical fertilizers degrades the soil and negatively affects crop yield. Furthermore, biofertilizers enhance the water holding capacity of the soil and add essential nutrients such as nitrogen, vitamins, and proteins to the soil[21]. They are the natural form of fertilizers and hence, widely used in agriculture.
Currently the Egyptian IP office has issued 12 patents in the field of biofertilizers, but unfortunately very few numbers of patent holders were able to actually exploit their inventions on the ground.

## 5.2. Short description to the biofertilizer business cycle:

The process of developing biofertilizers is highly technical. The main stages in the development and commercialization of biofertilizers are: isolation of microbes, laboratory and greenhouse screening for specific characters, testing under axenic conditions, formulation, pot trials and small-scale testing, trials under field conditions and in situ evaluation, biosafety regulations and standardization, and commercially producing the biofertilizer[22]. The main key factors in the biofertilizers production are microbial strains, formulation type, carrier materials, and field applications.

---

[16] FAO. The international Code of Conduct for the sustainable use and management of fertilizers (https://www.fao.org/3/ca5253en/ca5253en.pdf)
[17] Kumar et al (2022). Biofertilizers: An ecofriendly technology for nutrient recycling and environmental sustainability (https://www.sciencedirect.com/science/article/pii/S2666517421000742)
[18] Raimi et al (2021). Biofertilizer production in Africa: Current status, factors impeding adoption and strategies for success. Scientific African (https://www.sciencedirect.com/science/article/pii/S2468227621000028#bib0022)
[19] FAO. Plant Nutrition for Food Security. FAO Fertilizer and Plant Nutrition Bulletin. (https://www.fao.org/3/a0443e/a0443e.pdf)
[20] Bhattacharyya et al (2020). Biofertilizers as substitute to commercial agrochemicals. Agrochemicals Detection, Treatment and Remediation. (https://www.sciencedirect.com/science/article/pii/B9780081030172000118)
[21] Mahmud et al (2021). Biofertilizers: A Nexus between soil fertility and crop productivity under abiotic stress. Current Research in Environmental Sustainability. (https://www.sciencedirect.com/science/article/pii/S2666049021000396)
[22] Ahmed et al (2018). Perspectives of Microbial Inoculation for Sustainable Development and Environmental Management. Frontiers in Microbiology. (https://pubmed.ncbi.nlm.nih.gov/30568644/); Mitter et al (2021). Rethinking Crop Nutrition in Times of Modern Microbiology: Innovative Biofertilizer Technologies. Frontiers in Sustainable Food Systems. (https://www.frontiersin.org/articles/10.3389/fsufs.2021.606815/full); Basu et al (2021). Plant Growth Promoting Rhizobacteria (PGPR) as Green Bioinoculants: Recent Developments, Constraints, and Prospects. Sustainability. (https://www.mdpi.com/2071-1050/13/3/1140)

## 5.3. Challenges:

Firstly, stakeholders of the biofertilizers industry reported challenges to obtain the governmental license to utilize their new products in accordance to with the Law no. 12 of the year 2020 on Organic Farming. One of the main reasons behind the obstacles in obtaining this licence and implementing the law is the delay in issuing the Fee Schedule by a Ministerial Decree.

Secondly, the stakeholders have also reported the lack of mechanisms to examine new products at the Ministry of Agriculture to obtain marketing approval in this field in addition to lack of awareness about the efficiency of such type of fertilizers.

Furthermore, challenges are reported concerning the need for capacity building on biofertilizers business administration, and that there is no law that regulates the access to genetic resources.[23] Thirdly, patent applications covering green technology innovations including biofertilizers go through the regular track of patent examination procedures. By law, the patent application goes through an examination of the formal and substantive requirements to obtain a patent. This process may take on average about 4 years until a final decision is made. Businesses operating in such technological fields might could benefit from an accelerated track as this would facilitate licensing and raising funds through the earlier practice of granted patent rights.

Finally, the SME's/Start-ups also reported the conventional financial challenges centring around the lack of incentives to encourage farmers to use this kind of fertilizers. In addition to the financial challenges, the research and development (R&D) process is required in order to develop new bio-fertilizers.

It is important to analyse the above-mentioned challenges and to look into potential solutions to overcome them as that would lead to positive outcomes to SMEs in the biofertilizers sector. Examples, include, encouraging the development of new and innovative biofertilizer products, accelerating market entry, enhancing competitiveness in the market, facilitating the obtainment of funding, and promoting collaborations and partnerships in this sector.

## 5.4. Categorization and Analysis of the challenges:

The challenges in this sector were found to be mainly law and policy related.
Challenges of obtaining the governmental license rests upon the fact that the biofertilizers industry is relatively new in Egypt. It is useful to mention that the Egyptian Parliament has issued the Law no. 12 of the year 2020 on Organic Farming and its Executive Regulation has been issued in 169 of the year 2021. Because the law is relatively new, it has not been fully implemented. There is a delay in issuing the "Fees Schedule" which is currently being reviewed at the level of the Ministerial Cabinet.

[23] For further readings about laws that regulate access to genetic resources see: EU Regulation 511/204 and EU Regulation 1866/2015 at https://eur-lex.europa.eu/EN/legal-content/summary/access-to-genetic-resources-and-sharing-of-benefits-arising-from-their-utilisation-nagoya-protocol.html; Indian Biological Diversity Act 2002 at: https://www.indiacode.nic.in/handle/123456789/2046?sam_handle=123456789/1362#:~:text=India%20Code%3A%20Biological%20Diversity%20Act%2C%202002&text=Long%20Title%3A,connected%20therewith%20or%20incidental%20thereto.

It is worth noting that before the issuance of the mentioned law no. 12 of the year 2020, the innovators in the field of bio-fertilizers were not able to explicitly mark their fertilizers as bio, instead used to chemically analyse their products and register them at the competent authority at the ministry of agriculture as a "chemical fertilizer". The analysis of the Law no. 12 of the year 2020 reveals that it did not contain clear provisions that allows the Ministry of Agriculture to examine new compound products in this field. The result is that the innovators are required to examine their new products at a reference foreign country, and based upon such examination, the competent authority at the ministry of agriculture allows the inventor/creator of the new compound to register it as a bio-fertilizer.

Access to genetic resources is governed by the Convention on Biodiversity (CBD) 1992 and the Nagoya Protocol 1994 governs the benefit sharing scheme of such resources.[24] Article 3 of the Convention on Biodiversity 1992 recognizes that the Members of this Convention enjoy sovereign rights over the genetic resources present over its land. The Nagoya Protocol provides for the right of benefit sharing schemes between the inventor and the country to which the genetic resource is owned. Article 3 of the CBD states that: "States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction."

It is worth noting in this regard that Art.13 of the Egyptian IP Law no. 82 of the year 2002 imposes an obligation on the inventor to disclose the genetic resource that he relied on to obtain his invention if his invention is related to genetic resources. The realization of the territorial rights and the benefit sharing scheme is reflected in the draft law on "Access to Life Resources and Benefit Sharing Schemes". However, unfortunately such law has not been yet issued.
Due to the lack of production of bio-fertilizers, as the industry is relatively new in Egypt, farmers are not sufficiently aware about the benefits that they might enjoy if they decide to use bio-fertilizers as opposed to using chemical fertilizers. There is also the lack of sufficient financial incentives in this field.

### 5.5. Best Practices:

Most of the challenges in this field are due to the fact that Egypt is relatively new in this industry. Many of such challenges can be overcome by formulating and implementing strategies to strengthen this sector.

For example, the NITI Aayog - the apex public policy think tank of the Government of India, and the nodal agency responsible for catalysing the economic development – established a task force on production and promotion of bio-fertilizers and organic fertilizers in 2021. The terms of reference of the task force cover – among other aspects – devising measures or policy initiatives for encouraging the commercial production, packaging, marketing and distribution of bio-fertilizers, exploring public private partnerships, and suggesting mechanism and policy support to encourage the commercial production, packaging, marketing and distribution and use of bio-fertilizers in order to create a level playing field with inorganic fertilizers[25].

[24] To review the text of the convention and Nagoya Protocol, please see: https://www.cbd.int/
[25] NITI Aayog India. Task Force on Production and Promotion of Bio-fertilizers and Organic Fertilizers (https://www.niti.gov.in/task-force-production-and-promotion-biofertilizers-and-organic-fertilizers)

In March 2023, the task force issued a report on "Production and Promotion of Organic and Bio Fertilisers with Special Focus on Improving Economic Viability of Gaushalas" with the aim of guiding interventions for improving the financial and economic viability of Gaushalas, and the production and promotion of organic and biofertilizers. The report indicates that India's market for biofertilizers is 12 billion Rupees and is expected to increase to 20 billion Rupees in the next few years through raising awareness and increased demand. The report also refers to the market assistance to organic and biofertilizers manufacturers through various subsidy schemes. The report recommends a number of incentives and policy interventions to encourage production and use of organic and biofertilizers, for example, extension of subsidy or market development assistance for biofertilizers and mandatory 10-20% off-take of bio-fertilisers by companies[26].

In 2022, The Global Green Growth Institute (GGGI) - a treaty-based inter-governmental international development organization – along with the Colombian Ministry of Science, Technology and Innovation, the Ministry of Agriculture and Rural Development and Innpulsa Colombia - the entrepreneurship and innovation agency of the National Government -, financed by the UK Partnering for Accelerated Climate Transitions (UK PACT) Program in Colombia, have launched three innovation challenges seeking innovative solutions for the development of bio-fertilizers with the aim of meeting the demand and nutritional need of the national agricultural sector. The potential participants may include among others companies, start-ups, spin-offs and SMEs. The benefits for the selected candidates include 22.000 USD in technical assistance contracted by the GGGI and training and support on the Instrument of Tax Benefits[27].

To promote environmentally sound technologies, Brazil National Authority for Industrial Property Matters (INPI) launched in 2012 the "Green Patents" program. The program provides fast track procedures for patent applications related to green technologies. The program was updated in 2020 and is available for patentable technologies on - among others - renewable energy, energy conservation, waste management and agriculture. On top of the accelerated processing of patent applications which helped the businesses in exploiting their patent rights earlier, the green patent label provided patent owners with more opportunities for funding and investments[28].

### 5.6. Recommendations:

To help the sector overcome the identified challenges it is recommended to do the following:

A) **Adopt measures to enforce the Executive Regulation no. 169 of the year 2021 in addition to reviewing the Law no. 12 of the year 2020.**

It is prudent to accelerate the process of issuing the "Fees Regulation" relevant to the registration of "bio-fertilizers" to enable the competent authority at the Ministry of Agriculture to approve the registration of bio-fertilizers.

---

[26] NITI Aayog India. Production and Promotion of Organic and Bio Fertilisers with Special Focus on Improving Economic Viability of Gaushalas (https://www.niti.gov.in/sites/default/files/2023-03/Gaushala-report-2_07032023_print-file.pdf)
[27] The Global Green Growth Institute. The Government of Colombia, GGGI and the UK PACT boost bioeconomy through Open Innovation Challenges (https://gggi.org/the-government-of-colombia-gggi-and-the-uk-pact-boost-bioeconomy-through-open-innovation-challenges/)
[28] WIPO Updated Landscape on Expedited Protection of "Green" Inventions in Brazil (https://www3.wipo.int/wipogreen/en/news/2021/news_0016.html)

The use of compound and innovative bio-fertilizers requires trials to ensure its safety and efficacy. The ministry of agriculture requests from those who apply to register an innovative bio-fertilizers to carry out the tests in fields outside Egypt and obtain the approval to use the bio-fertilizers of a reference country, such as EU or USA. Only then, the ministry of agriculture relies on the tests made abroad to approve the registration of an innovative or a compound bio-fertilizer.

It is also equally important to review the Law no. 12 of the year 2020 by adding provisions to Section 2 of Part 1 to enable the competent office to review and examine new bio-fertilizers compounds in the ambit of issuing the governmental licenses to such compounds.

B) **It is also recommended to review the IP Law no. 82 of the year 2002 Book I** which regulates the issuance of patents in Egypt to enable that the applications of green technologies including those related to bio-fertilizers to go through a fast-track process. The procedure according to the current law is that the patent applications are examined in chronological order after paying the examination fees. The fast-track procedure allows the patent applications in the field of green technology to be examined at a separate track upon request from the applicant. The Accelerated prosecution of patent applications might encourage innovation in green technology fields including biofertilizers as it could facilitate the businesses rapid use of their patents portfolios for example, for funding, investments and partnerships[29].

C) **It is also important to issue the Law on access to biological resources** and sharing the benefits arising from its utilization based on the sovereign rights of Egypt as cited in Article 3 of the Convention on Bio-Diversity mentioned above and give effect to Article 13 of the Egyptian IP Law no. 82 of the year 2002.[30]

D) **It is useful to benefit from the Indian and Colombian experiences regarding the policy making and incentives** to raise the awareness of the importance of bio-fertilizers and promote its use and fuel R&D in this field, such as tax reduction on innovative products, weighted tax deduction[31] on R&D activities, fast track for the regulatory approval of biotech products, interest free loan for technology development and licenses and other incentives[32].

E) Another important point is to consider **putting into practice the International Organization for Standardization (ISO) standards during the production process.**

---

[29] WIPO IP Office Green Policy Note 1: Accelerated Patent Prosecution (https://www3.wipo.int/wipogreen/en/docs/ipo-green-policy-note-1.pdf)

[30] Art. 13 of the Egyptian IP Law states that: "The patent application shall be accompanied by a detailed description of the invention, including a full statement of the subject matter and of the best way to enable a person of expertise to execute it, and of each product or method for which protection is sought…
Where the invention involves biological, plant or animal product, or traditional medicinal, agricultural, industrial or handicraft knowledge, cultural or environmental heritage, the inventor should have acquired the sources in a legitimate manner."

[31] Taxguru. Weighted deduction for scientific research and development (https://taxguru.in/income-tax/weighted-deduction-scientific-research-development-ay-201718.html#:~:text=Under%20the%20existing%20provisions%20of,house%20research%20and%20development%20facilities)

[32] Biotechnology Industry Research Assistance Council (BIRAC). India Bio-Economy Report (https://birac.nic.in/webcontent/1594624763_india_bioeconomy_rep.pdf), p.15.

This would substantially impact the quality assurance and product quality, positively. An independent monitoring body should be put in place to inspect and verify that the stipulated operative procedures are judiciously followed and met by manufacturers during production.

F) To complement the earlier measures, it is of utmost importance to take the necessary steps for promoting the use of biofertilizers.

# VI. WASTE MANAGEMENT AND RECYCLING INDUSTRY

## 6.1. Background:

The waste management (recycling) industry depends on the type of different waste such as:

Agricultural waste: The Agricultural wastes are defined as the residues that result from growing cultivated crops and/or during the first processing of raw agricultural products including vegetables, fruits, dairy products, meat, poultry, and other products. There are five main sources of agro-wastes: (1) crop residues; (2) agro-industry processing wastes; (3) animal wastes; (4) food wastes; and (5) hazardous and toxic wastes like pesticides. The statistics on agricultural waste in Egypt, according to the Economic Affairs Sector of the Ministry of Agriculture and studies of the Agricultural Research Center show that Egypt produces more than 35 million tons of agricultural waste annually, and only 12% of this amount is recycled, while the other millions of tons are disposed either by burning or dumping in canals and drains. Agro-wastes are critical resources that, if properly used, can underpin human livelihoods and wellbeing. Proper management of agro-wastes may also support the mitigation of climate change, produce innovative bio-ingredients and biodegradable materials, and enhance green growth and a circular bioeconomy.

The Agricultural waste industry cycle involves 4 stages:

- Stage 1: Collection of waste from farmers or agro-industrial factory.
- Stage 2: Cutting and chopping process.
- Stage 3: the industrial phase which involves treatment to produce fuel, bio-fertilizer, and animal food additives.
- Stage 4: Selling the products within Egypt or abroad.

Electronic waste: Collection of electronic waste is done through many channels, and almost entirely through the informal sector. E-waste is bought by street peddlers (Robabekia) who roam the streets in carts calling for old household items and buying them at cheap prices. E-waste bought by bidders in lots or in tons on occasions when private or public organizations offer their E-waste for sale in a formal bidding process usually comprises functioning equipment that is obsolete for the organization. E-waste is sorted out by scavengers from formal and informal dumpsites. E-waste from maintenance and repair workshops.

As reported by the Ministry of Environment, it is estimated that Egypt's annual e-waste amounts to 90,000 tons per year. The private sector contributes to 58% of which households

contribute 23% and the public sector contributes 19%[33]. E-waste is hazardous as it contains harmful substances such as Lead, Mercury, Arsenic or Cadmium etc. It also contains precious metals such as Gold, Silver and Copper...etc[34].

Absence of proper mechanisms to handle E-waste can result in toxic emissions in the air, or water and soil which has hazardous effects on the environment and health of human being.

## 6.2. Challenges:

Reported challenges in the field of waste recycling include difficulties in obtaining the license to operate facilities working in the field of recycling, and the presence of very little incentive to work in this field.

Companies also reported the lack of the standardization process of innovated animal feeding products which are produced from agricultural waste. In addition, it is found that there is lack of clarity on the management of E-Waste in Egypt.

## 6.3. Categorization and Analysis of Challenges:

The difficulty to obtain the governmental licenses is owed to the fact that the establishment and operation of such facilities requires an approval from different governmental authorities such as: The governorate, the Ministry of Environment, the Ministry of Agriculture, the Electricity Authority…etc.

Upon reviewing the Law no. 72 of the year 2017 promulgating the Investment Law, the limit of all the incentive an investor can obtain is 80% of the statutory capital that he has invested in the project. In practice, capping the incentives with a percentage of the statutory paid capital might not be the best approach as the statutory paid capital may only represent a minimal amount as compared to the actual invested amount in the companies working in this field. Perhaps, linking the incentive to the annual revenue, or profit may be feasible.
The challenge of the companies to license innovative animal feeding products obtained from agricultural waste is owed to the fact that the Regional Centre of Feeding and Animal Feeding that is part of the Ministry of Agriculture, requires from the relevant company or SME to conduct the tests and deliver the standards of such products to be approved by the Centre. The innovators - due to lack of the necessary funds - become reluctant to finance the tests required for the standardization specially, because once the standard is set, it will be available for competitors free of charge.

The lack of clarity on managing the E-Waste is a reflection of a legislative gap in the Waste Management Law No. 202 of the year 2020 which did not include a specific section to deal with the e-waste, in particular, how the different components shall be separated and how each of them should be safely treated. The outcome of such gap is that there is no clarity or specific guidelines despite the fact that while the classification of the waste from agricultural, plastic, metal origin can occur simply by guiding the user, the e-waste includes metals, plastic parts and hazardous material the classification of which cannot be done via the public. Rather, there

[33] Enterprise. Introducing "E-Tadweer," the nationwide electronic waste recycling app (https://enterprise.press/greeneconomys/introducing-e-tadweer-the-nationwide-electronic-waste-recycling-app/)
[34] Chakraborty et al (2022). Metals in e-waste: Occurrence, fate, impacts and remediation technologies. Process Safety and Environmental Protection (https://doi.org/10.1016/j.psep.2022.04.011)

needs to be specific-guidelines to handle the e-waste to dismantle and extract precious elements from it in an efficient manner. Unfortunately, the current law does not respond to such a need.

## 6.4. Best Practices:

- Legislation, regulatory framework and policy

The Environmental Protection Agency (EPA) in USA has formulated a National Recycling Strategy in 2021. The strategy primarily aims at improving the markets of recycled products, improving the infrastructure, standardizing the measurements and increasing data collection. The strategy allows all the stake holders to participate in its implementation including waste management companies, university professors …etc.[35].

In the field of e-waste, Singapore is developing in handling the e-waste progressively. (SS587 certificate) standard has been issued for the management of the end-of-life ICT equipment. The standard is consistent with other established international management system standards. SMEs can seek the Enterprise Development Grant by Enterprise Singapore (ESG) for co-funding support of up to 70% of qualifying costs for obtaining the standard certification[36].
Morocco faced various challenges in the municipal waste management sector including those related to legal and institutional framework, cost effectiveness and long term financial stability. Recognizing municipal solid waste (MSW) management as a top priority due to its health and environment implications, the government of Morocco conducted two major reforms. It passed the Solid Waste Management Law 28-00 in 2006 and developed the 15-year National Municipal Solid Waste Management Program (PNDM)[37].

The PNDM program has three target areas, namely: enhancing sector governance through legal, regulatory and institutional measures, improving sector sustainability through the introduction of financial mechanisms and incentives for supporting long-term viability of investments and services, and mainstreaming social and environmental considerations into the planning, implementation, and operations of MSW services and investments. The government of Morocco requested from the World Bank a Development Policy Loan (DPL) to support the implementation of policy reforms and programs through the provision of budgetary support and policy advice. Two DLP series were implemented. The development objective of the first series (DPLs 1 and 2) was to improve the financial, environmental, and social performance of the MSW sector in Morocco while the development objective of the second series (DPLs 3 and 4) was to improve the economic, environmental, and social performance of the MSW sector. The budget support from the DPLs enabled the transfer of funds to local administrations for investments in MSW collection, disposal, recycling, and recovery and capacity building and awareness raising[38]. In addition, Morocco has launched in 2019 its National Strategy for Waste Reduction and Conversion (SNRVD)[39].

---

[35] The US Environmental Protection Agency (EPA). National Recycling Strategy (https://www.epa.gov/system/files/documents/2021-11/final-national-recycling-strategy.pdf)
[36] Singapore National Environment Agency. SS 587 (https://www.nea.gov.sg/programmes-grants/schemes/ss587)
[37] The World Bank. Morocco: Improving Municipal Solid Waste Management through Development Policy Operations (https://www.worldbank.org/en/results/2013/05/22/morocco-improving-municipal-solid-waste-management-through-development-policy-operations)
[38] World Bank. Morocco—Municipal Solid Waste Sector Development Policy Loans 1-4. Project Performance Assessment Report (https://ieg.worldbankgroup.org/sites/default/files/Data/reports/ppar_moroccomunicipalsolidwaste.pdf)
[39] Morocco Ministry of Energy Transition and Sustainable Development. National Strategy for Waste Reduction and Conversion (SNRVD) (http://www.environnement.gov.ma/images/D%C3%A9chets/Rapport_de_synth%C3%A8se_SNRVD_FR.pdf)

- Finance:

The Ministry of Sustainability and the Environment in Singapore offers funding for projects that supports environmental sustainability and involves the community through SG ECO Fund. Organizations and businesses can apply and supported projects cover widely sustainability related areas including waste reduction and conservation of nature and biodiversity[40]. The fund provides up to 80% of the supportable cost items, subject to a maximum of S$1 million and the funding is provided on a reimbursement basis for no more than three years from the Project start date. The beneficiary and the SG Eco Fund's Board of Trustees will co-own all IP rights arising from or created in relation to the Project. The SG Eco Fund retains the rights to utilise theses IP rights for charitable purposes[41].

Also, the National Environmental Agency in Singapore provides the 3R (Reduce, Reuse, Recycle) Fund which is a co-funding scheme to encourage organizations – including companies - to reduce waste disposed of at NEA's incineration plants and disposal facilities through the implementation of waste minimization and recycling projects. The agency co-fund up to 80 % of qualifying costs, subject to a cap of $1 million per project or per applicant and the disbursements are on reimbursement basis[42].

- Incentives for SMEs in Singapore:

The National Environment Agency (NEA) of Singapore launched in 2007 the Singapore Packaging Agreement (SPA) as a joint initiative by government, industry and NGOs to reduce packaging waste. With the end of the SPA in 2020, some initiatives were launched to continue supporting sustainable packaging waste management. One of these initiatives is the Packaging Partnership Programme (PPP) encouraging companies to adopt sustainable packaging waste management practices. It is an industry-led program developed in partnership between NEA and Singapore Manufacturing Federation. The program helps companies to fulfil obligations under the Mandatory Packaging Reporting framework starting 1 January 2021 and facilitates the exchange of best practices in sustainable packaging waste management. SPA Awards are granted to signatories who exerted notable efforts and achievements. Also, the Logo for Products with Reduced Packaging (LPRP) was developed by the PPP to be offered to offered to winners of the SPA and PPP members to be used on products that have undergone improvements to reduce the amount of packaging materials used[43].

- Support Initiatives for SMEs in Canada:

The Waste Reduction and Recycling Initiative in Canada provides financial assistance to NWT (Northwest Territories of Canada) - based municipalities, Indigenous governments and organizations, schools, non-profit organizations, businesses and individuals. The goal is to complete projects aiming to achieve goals such as reducing the amount of waste generated, reusing materials and products, recycling materials that are not already collected through a

[40] Singapore Green Plan 2030. Funding (https://www.greenplan.gov.sg/funding)
[41] Singapore Ministry of Sustainability and the Environment. SG ECO Fund (https://www.mse.gov.sg/sgecofund/)
[42] Singapore National Environment Agency. 3R fund (https://www.nea.gov.sg/programmes-grants/grants-and-awards/3r-fund)
[43] Singapore National Environment Agency. Singapore Packaging Agreement and Packaging Partnership Programme (https://www.nea.gov.sg/programmes-grants/schemes/singapore-packaging-agreement)

NWT recycling program, increasing awareness about the importance of reducing waste and encouraging environmental stewardship of waste resources, and recovering a useful benefit from waste[44].

The National Environmental Agency in Singapore has Research Innovation and Enterprise (RIE) Funding Initiatives. One example is Closing the Resource Loop Funding Initiative which supports R&D on sustainable resource recovery solutions for key waste streams such as e-waste, plastics and food with the purpose of finding useful and safe applications for treated waste residues[45]. Another example is Closing the Waste Loop Funding Initiative which encourages collaborations among educational institutes, research institutes and private sector with the aim of developing solutions to overcome the challenges of increasing waste generation, scarcity of resources and land constraints for waste management[46].

The EU has issued the Directive 19 of the year 2012 concerning the E-Waste. The directive aims to contribute to sustainable production and consumption of E-waste by reducing the amount of waste, increasing the lifecycle of the E-products and contributes to efficient use of resources through recycling and other forms of recovery.

## 6.5. Recommendations:

A) **Establishing a system to facilitate the obtainment of all the necessary approvals** for initiating a new business in the waste recycling.

It was indicated by some of the companies interviewed that multiple approvals have to be obtained from various government authorities to start a business in the waste recycling sector. So, a central system for facilitating licensing would meet the needs of SMEs in this field.

B) It also sensible to **conduct a study about the set of incentives that can be provided to the companies working in the sector and specifically in the field of waste re-cycling.** As presented in the best practices section above, incentives could be in the form of financial assistance or funding initiatives such as those implemented in Canada and Singapore.

C) **Review the mechanism of standardization of innovative animal feeding products** obtained from agricultural waste:

It is also recommended to review the mechanism of standardization of innovative animal feeding products which are obtained from agricultural waste so that the Ministry of Agriculture becomes able to substantively examine the safety and efficacy of innovative products and grants the license to market the innovative animal feeding products obtained from the agricultural waste through itself rather than requesting from the applicant to conduct such tests on his account, or requesting from him to provide a reference country which has approved such an innovative product.

---

[44] Environment and Natural Resources. Funding: Waste Reduction and Recycling Initiative (https://www.enr.gov.nt.ca/en/services/waste-reduction-and-recycling/funding-waste-reduction-and-recycling-initiative)
[45] Singapore National Environmental Agency. Closing the Resource Loop Funding Initiative (https://www.nea.gov.sg/programmes-grants/grants-and-awards/research-innovation-and-enterprise-funding-initiatives/closing-the-resource-loop-funding-initiative)
[46] Singapore National Environmental Agency. Closing The Waste Loop Funding Initiative (https://www.nea.gov.sg/programmes-grants/grants-and-awards/research-innovation-and-enterprise-funding-initiatives/closing-the-waste-loop-funding-initiative)

D) **Formation of a committee of experts to review the Law no. 202 of the year 2020.** It is also recommended to form a committee of experts to review the Law no. 202 of the year 2020 to include an additional section on handling e-waste similar to the EU Directive no. 19 of the year 2012. Reviewing the law is important as it is envisaged to cover the legislative gap as the current law did not include any guidance about e-waste management. Having clear legislative and policy frameworks on management of e-waste can help Egypt not only overcome hazardous effects on health and environment but also reap economic benefits from the development of this sector. Since e-waste includes various metals, plastics and glass, appropriate e-waste upcycling and recycling schemes could create huge economic opportunities. For example, recycling precious metals such as gold, silver, and titanium can save money and energy compared to obtaining them from their sources. Also, since plastics form most of the e-waste and they have the highest estimated economic value, an economically viable industry could be built on them. In addition, establishing businesses around the recycling of e-waste could greatly contribute to creation of more job opportunities[47].

# VII. ECOTOURISM AND GREEN TOURISM

## 7.1. Backgrounds

Ecotourism can be defined as "responsible travel to natural areas that conserve the environment, sustains the well-being of the local people, and involves interpretation and education"[48]. Such traveling can be created thanks to an international network of individuals, institutions, and the tourism industry where tourists and tourism professionals are educated on ecological issues according to the International Ecotourism Society.

According to the World Bank, tourism in protected areas have both direct and indirect economic impact. For example, it could generate income and increase demand for various products and services directly through tourists' spending on related services (e.g. accommodation, transportation, leisure…etc) and indirectly through spending on other local goods and services (e.g. handicrafts, local food, souvenirs… etc). Both direct and indirect impacts involve creation of jobs, growth of local businesses and support livelihood of local communities[49].

Ecotourism in Egypt is gaining increasing attention in the past few years, but still significant challenges are faced as the budding industry in spite of this is considered a historic industry. Egypt has natural attractions scattered across its deserts, two seas and the Nile Delta, amongst other making Egypt ripe with options for more sustainable travel.

The ecotourism industry is still limited and there is no clarity on the proportion ecotourism represents within the whole tourism industry. The reduction of harmful environmental impact, protecting the culture, maintains the natural areas which are considered the main component of this industry now a day. Even though there is a green certification for green hotels, there are

[47] Mohamed, A. (2019). Sustainability of e-waste Management: Egypt case study [Master's Thesis, the American University in Cairo]. AUC Knowledge Fountain. https://fount.aucegypt.edu/etds/783
[48] The International Ecotourism Society. What is Ecotourism (https://ecotourism.org/what-is-ecotourism/).
[49] World Bank. Banking on Protected Areas: Promoting Sustainable Protected Area Tourism to Benefit Local Communities (https://openknowledge.worldbank.org/server/api/core/bitstreams/2f5a3c06-8ce4-5d7c-a803-3c925a38adcc/content)

still gaps of regulations and rule to govern this industry. These regulations should extend to manage how buildings are constructed in the eco- protected area determine the source and kind materials to use and how to organize trips for guests and regulate the ecologically tourism businesses. A good reference in this regard also would be the recommendations of ERRADA on the Unified Green Code.

Egypt's environment and tourism ministries has launched several environmental initiatives between them to promote eco-tourism, including the Eco-Egypt campaign to connect travellers with Egypt's ecological sites and protected areas.

### 7.2. Challenges:

Challenges in the field of Eco-tourism are primarily due to lack of legislation, awareness, infra-structure and a clear definition of eco-and green tourism.

To label a hotel as "green" for example, certain parameters should be considered about the water supply and consumption, electricity supply and consumption, waste management, foods and beverages and gardening amongst others. Currently, there is no standardization of these parameters.

In addition, there is a need to develop the necessary green infrastructure close to eco-areas to support this type of tourism. Guidelines could be developed to determine the signs to be used in eco-areas, the standards and specifications for the designs and materials used in the buildings, and the planning of the facilities required in eco-areas. A good example in this context is the Philippines Administrative Order 2009-09 on Standard Design and Specifications of Signs, Buildings, Facilities and other Infrastructure that may be Installed and/or Constructed within Protected Areas.

Sustainability of the tourism industry primarily depends on the presence of a sufficient level of tourists to the locations, otherwise, the operating costs of the infrastructure and establishments becomes a burden on the private sector which would be inclined to participate in such activities without the minimum income. It is noted that the current level of income does not achieve sustainability for eco-areas.

### 7.3. Categorization and analysis of challenges:

The challenges are linked to the fact that the full potential of eco and green tourism sector has not been unlocked in Egypt. There is no sufficient awareness amongst the sector about its importance to the economy.

Green and Eco tourism are closely related to each other. A progressive development for a sustainable environmentally friendly tourism environment requires investments be made in areas that either fall on the eco-area or are close to it to develop the green infra-structure necessary for the presence of tourists in eco-areas, such as mobile networks, ambulance, security, medical facilities, a basic source of electricity and water…etc. Due to the lack of awareness of this type of tourism, there is a noted lack of such investments in eco-areas.

Egypt has made tremendous efforts to encourage the hotels to adopt and implement "Green Star Rating Certificate". The "Egyptian Hotel Associations", which is a private association, and the Ministry of Environmental Affairs had launched an initiative which adopted a "Green

Star Rating Certificate" to be given to hotels based on a set of parameters about water and electricity consumption, managing the waste...etc. However, there is no incentive for the hotels to transfer from the traditional model to the green models, especially that such transformation requires considerable amounts of investments.

Furthermore, the Law no. 8 of the year 2022 which regulates the license of the Hotel establishments and its Executive Regulation issued by the Prime Minister Decree no. 705 of the year 2023 does not cover the "Green Star Rating". This legislative gap is a reflection that the management of green and eco-tourism is a relatively new subject in Egypt. The legislation or regulation need to provide for the standards for granting the Green Star rating, the applicable review intervals and the consequences of non-commitment of entities to the standards after obtaining the Green Star rating.

The eco-tourism is primarily governed by the Law no. 102 of the year 1983 on Natural Protected Areas. The law sets out a list of prohibited actions in the eco-areas amongst which is building infra-structure except with a special approval from the competent authority.

The Executive regulation of the Law no. 102 of the year 1983 is issued by the Prime Minister Decree no. 1076 of the year 1983 and was subsequently amended by the Prime Minister Decree no. 264 of the year 1984 and the Prime Minister Decree no. 2728 of the year 2015. These regulations have empowered the competent body at the Ministry of Environmental Affairs to issue the necessary license to build establishments on an eco-area. Prior to 2015 there was no explicit requirement that the establishments that are built on eco-areas should not be harmful to the environment, such a matter was left to the discretionary power of the Ministry of Environmental Affairs. While the most recent amendment of the executive regulation in 2015 has expressly mentioned that the establishments should not be harmful to the eco-area, it is not updated to expressly mention that such establishments should be "Green". With the information presented, one can conclude that there are no published clear guidelines and standards on how to construct buildings in eco-areas.
Furthermore, the private sector is reluctant to invest in eco-tourism due to the lack of awareness of its importance and the financial benefits that can be obtained from such activity. In addition, switching to green tourism requires an initial capital investment that would be returned on a longer period of times, in the form of a "cost saving", than the traditional investment models.

### 7.4. Best Practices:

- Legislation, regulatory framework and policy

The Philippines has developed a national ecotourism strategy and action plan 2013 -2022 updating its earlier version 2002-2012 in continuation of the National Ecotourism Project (NEP) funded through a grant from New Zealand Agency for International Development (NZAID). The project made significant achievements including for example, development of ecotourism products in a number of sites and protected areas, assessment of all key ecotourism sites identified in the strategy, development of an ecotourism website, publication of quarterly newsletters on ecotourism, and the ecotourism fund study. The outcomes also included the establishment of income-generating projects among disadvantaged groups, creating more job opportunities, enhanced sustainable resource management, developing training modules on ecotourism, development of ecotourism standards and the implementation of ecotourism focused marketing initiatives by the Department of Tourism. In terms of economic impact, tourism share to the Philippines GDP was 5.97% and the share of employment in tourism was

11.3% of total employment. The 2013 – 2022 strategy's overall goal was to develop and manage globally competitive ecotourism sites, products and markets that will contribute to inclusive growth, which is to be achieved through 8 strategies. Strategy 2: Creating conducive environment for ecotourism investments has among its objectives developing confidence of the business sector on ecotourism investment and encouraging creative and innovative community-based ecotourism enterprises. One of the activities in this regard is to develop and streamline policies and procedures on ecotourism investments with having guidelines on incentive for ecotourism investments developed as an indicator. Another activity is to establish one-stop-shops for ecotourism investments. Also, under Strategy 3: Maximizing economic benefits to the host communities a program on Economic/Enterprise development is to be established. The strategy includes an introduction on the rationale, planning process and policy content; identification of ecotourism market trends, products and resources; analysis of infrastructure, services and human resources opportunities; links to the 2002-2012 strategy and the achievements; strategic framework; criteria for selection of priority sites; action plan; institutional framework; and database and monitoring and evaluation system[50].

In the 2002-2012 national ecotourism strategy of the Philippines, all relevant stakeholders were involved including the government, NGOs, government corporations, private sector, local government units, international organizations and bilateral arrangements, and outdoor associations. Natural resource base and Cultural resource base were identified, market analysis was done, and development of human resources was performed. The main components of the strategy were: Situation Analysis, Strategic Framework, Institutional Arrangements, National Ecotourism Program, and Action Plans. Within the policy and institutional framework, the Regional Ecotourism Stakeholders Consultation Workshops suggested - among others – providing financing and technical assistance to small ecotourism enterprises, developing standards and accreditation programs for ecotourism products to ensure the consistent quality of visitor experience, providing policy support through incentives, finance and matching grants for ecotourism projects, and integrating ecotourism in overall policies and programs at the local level, particularly in disseminating information, enhancing awareness and education[51].

The National Eco Tourism Plan 2016-2025 of Malaysia include five focus areas each with a set of implementation strategies and actions. The focus areas are: investment in ecotourism, tourism concessions, synergy between ecotourism and conservation, ecotourism marketing and ecotourism cluster. For example, under the investment in ecotourism focus area, one of the strategies in creating a pro-business environment for investors and the actions under this strategy include improving and streamlining coordination between investment related agencies and the Ministry of Tourism, Arts, and Culture through, for example, the provision of income tax exemptions[52].

The Costa Rican Tourism Institute established the Certification for Sustainable Tourism (CST) so that the businesses operating in the tourism sector comply with a sustainable model of natural, cultural and communal reserve management. The CST mark on a business, reflects its compliance to - among others – avoiding gas emissions, management and conservation of nature, handling waste positively, consuming biodegradable products and recycling, saving water and electricity, complying with environmental standards, employing and training local

[50] The Philippines National Ecotourism Strategy and Action Plan 2013-2022 (https://faolex.fao.org/docs/pdf/phi179040.pdf)
[51] The Philippines National Ecotourism Strategy 2002-2012 (https://bmb.gov.ph/bmb/Action_Plan/NES.pdf)
[52] Malaysia Ministry of Tourism, Arts, and Culture. National Eco Tourism Plan 2016-2025 (https://www.motac.gov.my/en/download/category/86-pelan-eko-pelancongan-kebangsaan-2016-2025)

communities and protecting the country's customs and traditions[53]. CST validity is for two years and the criteria to be evaluated to award the certification include: business management; social, cultural and economic management; environmental management; and the management of specific indicators according to category. Costa Rica CST standard has been reviewed by the Global Sustainable Tourism Council (GSTC) and the GSTC has announced that it achieved the 'GSTC-Recognized Standard' status[54].

India has developed its National Strategy for Ecotourism 2022. The National Strategy on Sustainable Tourism, the Ecotourism guidelines by the Ministry of Forest, Environment and Climate Change, and the National Strategy on Rural Tourism were considered. The Strategic pillars for development of Ecotourism according to the strategy are: State Assessment and Ranking, State Strategy for Ecotourism, Information, Education and Communication, Capacity Building and Certification (including skills development of small businesses), Marketing and Promotion, Destination and Product Development, Public-Private and Community Partnerships, Governance and Institutional Framework. The guiding principles for the development of ecotourism by the Ministry of Forest, Environment and Climate Change included facilitating the sustainability of Ecotourism enterprises and activities. Among the aspects considered within the framework to engage the private sector was the provision of appropriate tax and non-tax incentives by the Government to encourage ecotourism operators to commit to internationally recognized standards and practices of ecotourism[55].

Ecotourism Australia (non-government organization) established in 1991 promotes and supports the national ecotourism industry. It has the world's first national ecotourism certification program and all its programs standards are globally acknowledged. Ecotourism Australia has over 1,700 certified experiences. The two main business certification programs they offer are ECO Certification and Sustainable Tourism Certification. The latter was launched in 2022, with the aim to support the tourism industry to show their commitment to the four sustainability pillars, namely: environmental, cultural, financial/business, and socio-economic. Additionally, it has other specialist certification programs. On its website, the organization offers a guide of its programs along with a questionnaire to help interested businesses identify which programs would be the best fit for them[56].

Ecotourism Kenya is the first ecotourism society to be established in Africa. It provides support to the tourism industry through voluntary certification schemes, awards and community asset building. The organization mission is to champion responsible tourism practices by linking tourism, conservation & communities. It has 4 main focus areas: leadership and transformation, research and advocacy, standards and best practices and community development. Under standards and best practices, there are a number of programs and initiatives including Eco-Rating Certification with three levels Bronze, Silver and Gold, and Travel Ife for Tour Operators Certification. It also has Eco-bytes which is a weekly segment to disseminate information on ecotourism and responsible tourism best practices. For Community Development, there are three main aims: the integration of host communities and community-based tourism into mainstream tourism, capacity building for local communities and exploring

[53] The Costa Rican Tourism Institute. CST TOURISM SUSTAINABILITY (https://www.ict.go.cr/en/sustainability/cst.html)
[54] Global Sustainable Tourism Council. Costa Rica CST Standard is a GSTC-Recognized Standard (https://www.gstcouncil.org/costa-rica-cst-standard-gstc-recognized-standard/)
[55] India National Strategy for Ecotourism (https://tourism.gov.in/sites/default/files/2022-09/National%20Strategy%20for%20Ecotourism%202022.pdf)
[56] Ecotourism Australia (https://www.ecotourism.org.au/)

more opportunities for tourism involvements within and beyond the destinations where the host communities exist. The overall goal is to promote equitable distribution of the benefits accruing from community-based tourism[57].

- Support Initiatives for SMEs

As the Philippines was developing its 2013-2022 national ecotourism strategy and action plan, the Department of Tourism had initiatives to develop community-based tourism projects and to provide technical assistance for self-sustaining businesses and micro enterprises[58].

## 7.5. Recommendations:

As previously mentioned, the eco and green tourism are closely related topics. The presence of sustainable eco-tourism is hardly imaginable without sustainable green tourism in the first place. In light of such understanding, it is recommended to do the following:

A) **Formulate a strategy for green and eco-tourism along with an action plan:**

Building on the Philippines experience, the strategy should allocate roles for all stakeholders during its execution. The strategy should take into account the special need of the eco-tourism areas to have green facilities close to it ensuring they pose no harm to the environment. The strategy could also be to develop the eco and green tourism business in a progressive way.

A comprehensive strategy should cover – among other aspects – the protection of natural areas and wildlife habitats, an environmental impact assessment and a mechanism for monitoring tourism activities, community involvement and benefit sharing, the preservation of cultural heritage, safety and liability issues for tourists and operators, licensing and certification of ecotourism operators, and marketing and promotion of ecotourism destinations. A great example in formulating a national strategy on ecotourism is the Philippines National Ecotourism Strategy and Action Plan.

B) **Compose a committee of experts to review the current legal framework and standards for the green and eco-tourism:**

The initiative of the Hotels Association to adopt the "Green Star" Certificate is the work of a private group. However, such initiative is not sufficiently backed up by legislation and regulations to ensure its consistency and promote wider application across Egypt. In addition, since it is a private mark, there are no sufficient resources to make sure that the green star hotels are continuously compliant with the requirements of certification. It is not clear whether the current scheme allows for degrading the hotel by removing one or more green stars.

While the current legal framework entails a list of items that may not be done in an eco-area it falls short of guiding the investors what is recommended to be done leaving the matter to the discretion of the Ministry of Environmental Affairs without clear guidelines about the needs of each eco area, the allowed types infra-structure, the daily number of visitors…etc. Therefore,

[57] Ecotourism Kenya (https://ecotourismkenya.org/)
[58] The Philippines National Ecotourism Strategy and Action Plan 2013-2022 (https://faolex.fao.org/docs/pdf/phi179040.pdf)

it is reasonable to review the current legal framework to have clear standards, optimized to suit the needs of each eco-area whether its nature is marine, or desert, or forest or other.

C) **SMEs incentives:**

The green and eco-tourism are relatively new topics in Egypt. It is estimated that the number of hotels that have obtained a green star level certificate is less than 10% of the hotels and resorts. Awareness of green and eco-tourism benefits could also be raised via media campaigns inside and outside Egypt to aid the SMEs to have reasonable flow of tourists to cover their operational expenses.

The role of SMEs is important as many of them are tourism companies which play an active role in bringing tourists to Egypt. Their collective efforts secure sustainability of the business via the various promotions and attractive packages they offer to tourists. It is equally recommended to have some tax incentives for the companies which offer eco-and green tourism packages to encourage them to offer competitive packages in this field to enhance the flow of tourism to such areas. Similar incentives could also be offered for the green hotels and resorts operators to encourage them to shift from the traditional model to a green model to support the eco-tourism. The experiences of India and Malaysia in this regard is worth exploring as highlighted in the best practices section above.

# VIII. RENEWABLE ENERGY:

## 8.1. Background and challenges:

The renewable energy sources are becoming vitally important as the traditional sources are scarce. However, in Egypt the use of renewable energy resources by private individuals and house hold is still very limited.

The sector faces many challenges. First, due to lack of resources, the amount of capital to start a business in this field is huge as compared to other fields, and there is a low return of investments unless the project is done on a large scale. The traditional business model in the sector of renewable energy is that the company constructs an establishment of a “renewable energy source unit” and then the electricity is sold to the government which sells it to the individuals. As a result, the SMEs are discouraged from participating in such projects due to the high value of the required initial capital investment.

Egypt also faces the challenge around the examination of imported products in this field for the purposes of quality assurance. Furthermore, while the Egyptian universities are rich with studies in the field of renewable energy resources, very little of such studies transform into practical application.

## 8.2. Categorization and analysis of challenges:

The attention of the Egyptian government to the need of the presence of renewable energy sources started in the late 80’s. The first law which was issued in this regard is the Law no. 102 of the year 1986 concerning the establishment of the New and Renewable Energy Authority. The newly established authority back then, was mandated primarily to:

- Conduct studies and develop plans to evaluate the resources of renewable energies.

- Conduct studies about the technical, economic and environmental impact of the renewable energy resources projects.
- Set up priorities in industry fields that are recommended to utilize renewable energy sources, execute renewable energy resources projects whether by itself or with the cooperation of other entities.
- Suggest the specs for the devices of renewable energy resources for its quality assurance and issuance of the certificates relevant to this regard.
- Perform all the agreements that the Egyptian authorities execute relevant to such competences, and the Authority is also empowered to execute agreements with the corresponding authorities in Egypt and abroad.

Due to lack of resources, the Authorities contribution to electricity supply was not sufficient to match up the elevated demand for electricity resulting from the high increase of population rates. Such a matter has led the government to issue the Law no. 203 of the year 2014 concerning "Incentivizing the Production of Electricity from Renewable Resources". The new law empowered the Authority to issue tenders to the private sector to establish units to produce electricity from renewable sources whereas the operation of the units shall be done via the mentioned Authority. Under this law, the Egyptian Company of Electricity was empowered to issue tenders for the establishment and operationalization of units that produce electricity from renewable resources. Such a law has encouraged the big multinational companies in this field to engage with the government to execute projects at the national level.

The current legal infrastructure hardly allows for the SMEs to participate in the national projects as the tenders issued by the government are for mega projects which require high value capital amounts of investments beyond the reach of the SMEs. Therefore, the current role of the SMEs in this field is mostly limited to assembly of imported items for the production of solar panels and in some instances production of electricity from renewable resources on a minute scale. The result of such legal framework is that the contribution of the SMEs to the production of electricity is relatively limited.

The reported challenge of failure to examine samples of the imported products of items necessary for the assembly of solar panels for quality assurance purposes is owed to a legislative gap. The authority responsible for examining the imported products is the "General Organization for Export and Import Control" *inter alia* "The Authority for Surveillance and Control of Exports and Imports" which is mandated to collect samples of the imported items and send it to the competent labs to issue reports for quality assurance purposes. The items list which may be sampled for examination is found in the Decision of the Minister of industry and trade no. 770 of the year 2005 which regulates the imports and exports, the list did not include photovoltaic cells among other missing items necessary for the operation of solar panels and solar devices.

The standard specs of imported items of solar panels are set out as a result of cooperation between the New and Renewable Energy Authority and the Egyptian Authority for Standards and Quality. The competent lab in respect of examining the components of solar panels is the New and Renewable Energy Authority and the certificate of compliance is issued by the Egyptian Authority for Standards and Quality based on a compliance report issued by the New and Renewable Energy Authority.

In 2018, the Minister of Trade and Industry has issued the Decree no. 914 which regulates importation of items of solar panels and solar devices. However, the Decree did not expressly

empower the Authority for Surveillance and Control of Exports and Imports to collect samples of such devices for quality assurance purposes. The result is no surveillance for such devices which allows for some importers to import low quality products and sell to the market for low prices replacing the sales of the higher quality Egyptian products.

## 8.3. Best Practices:

- Legislation, regulatory framework and policy

In 2019, Japan and Germany established the Energy Partnership to further strengthen their bilateral cooperation for a successful energy transition. The partnership involves he mutual exchange on innovation, digitisation and flexibility in certain fields including renewable energies. A declaration of cooperation was signed between the Federal Ministry for Economic Affairs and Energy in Germany which responsible for energy policy and the Japanese Agency for Natural Resources and Energy of the Ministry of Economy, Trade and Industry in Japan. It was decided to establish a Japanese-German Energy Transition Cooperation Committee and two working groups one of which is concerned with renewable energy and energy transition. Among the aspects that the partnership offered was to help establishing connections between businesses and policy makers. It also provided background energy policy material and comparative studies to enhance communication on energy transition[59].

As mentioned earlier, Barbados has a national policy framework for the development of MSMEs which identified - among the strategic sectors for the development of the local economy - the Renewable Energy sector. The policy objectives included facilitating the development of MSMES in the identified sectors with identification of a number of policy initiatives under each sector. Those included for example, in renewable energy sector: providing incentives to MSMEs promoting awareness and promoting production standards; in agribusiness sector: offering incentives to investors to provide financial solutions to MSMES, encouraging training and capacity building on developing business management skills, ensuring adequate lands are made available, provision of marketing and market information support, and conducting value chain analysis[60].

- Finance

The Sustainable Energy Fund for Africa (SEFA) is a multi-donor Special Fund managed by the African Development Bank. It provides catalytic finance to support private sector investments in renewable energy and energy efficiency. It offers technical assistance and concessional finance instruments to remove market barriers and improve the risk-return profile of individual investments. SEFA receives contributions from various governments. SEFA initiatives included mini-grids Market Development Program and country-focused support to create an enabling investment environment enabling the finance of two scale-up green energy programs in Congo and Burkina Faso. SEFA develops blended-finance initiatives, catalysed the preparation and financial close of the Africa Renewable Energy Fund (AREF) [Pan-African equity fund] and establishment of the Facility for Energy Inclusion (FEI) [debt financing

[59] The Japanese-German Energy Partnership (https://www.energypartnership.jp/)
[60] Barbados National Policy Framework for MSMEs (https://commerce.gov.bb/wp-content/uploads/2020/05/National-MSME-Policy-as-approved-by-Cabinet-and-laid-in-House-of-Parliament.pdf)

platform for small-scale renewables in Africa]. SEFA's three strategic priorities are: Green baseload, Green mini-grids, and energy efficiency[61].

The SADC Renewable Energy Entrepreneurship Support Facility is implemented in all countries of the Southern African Development Community (SADC). It builds on the Memorandum of Understanding between SADC Centre for Renewable Energy and Energy Efficiency (SACREEE) and the International Renewable Energy Agency (IRENA), with the purpose of supporting the development of the market of renewable energy in the SADC region through capacity building of SMEs. It serves as a platform for technical support and mentorship platform, increases the confidence of financial institutions in sustainable energy systems and creates linkages between the entrepreneurs and financial institutions. The facility provides technical assistance and not financial support to SMEs in the SADC region. One of its specific objectives is to strengthen the capabilities of the renewable energy SMEs to adopt sound business practices and facilitate their access to financing in affordable terms[62].

### 8.4. Recommendations:

The existing infra-structure hardly allows the SMEs in Egypt to take part in the transformation from reliance on the traditional sources of electricity to electricity obtained from renewable resources. It is therefore recommended to take the following steps to enable the production of larger amounts of electricity from renewable resources:

A) There is a need to **develop policies to allow the SMEs to actively engage in the production of electricity from renewable resources.** Perhaps, the government may develop useful roof top initiatives to use roof top areas for the purposes of generating electricity from solar panels. The burden of the project could be divided among the participants with a loan that would be paid from the difference of reliance on the traditional electricity and the electricity generated from the roof top. It would be useful in this regard to conduct a study to estimate the cost and benefits of households signing up on this initiative.

B) **Establish connection with the universities working in this sector and utilize their projects:**

There seems to be a disconnect between the studies made in this field and its utilization on the ground. It is prudent that the stakeholders from the universities and the businesses become engaged together to benefit from the innovative products in this field.

C) **Review the legal framework along with the Minister of Trade and Industry Decree no. 914 of the year 2018 and Decision of the Minister of Finance no. 770 of the year 2005** to allow SMEs to operate in a more efficient manner and reduce the importation of low-quality products to the benefit of the Egyptian industry.

---

[61] African Development Bank Group. Sustainable Energy Fund for Africa (SEFA) (https://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/sustainable-energy-fund-for-africa)

[62] SADC Centre for Renewable Energy and Energy Efficiency (SACREEE). SADC Renewable Energy Entrepreneurship Support Facility (https://www.sacreee.org/content/sadc-renewable-energy-entrepreneurship-support-facility-0)

D) **Exploring opportunities of collaboration with international organizations on making funds available to SMEs in this sector in particular the launch of blended finance initiatives** and the development of credit schemes that meets the needs of the SMs.

## IX. CONCLUSION:

Promoting green economy is very pertinent to Egypt's efforts toward achieving its Sustainable Development Strategy: Egypt Vision 2030. As SMEs are key economy drivers with positive contributions to GDP and employment, it was highly important to study how SMEs could be supported in selected green economy sectors. This study involved literature review, interviews with stakeholders, identification and analysis of challenges facing SMEs operating in the selected sectors, researching relevant best practices and proposing recommendations. To ensure a complete capture of the whole picture, an overall SWOT analysis has been performed to identify positive and negative internal and external factors relevant to the identified challenges and the proposed recommendations.

### 9.1. SWOT Analysis:

**A) Agricultural and Agribusiness Industry**

| Strengths | Weaknesses |
|---|---|
| - Strategies, Policies and Action Plans:<br><br>* SDS: Egypt Vision 2030 in particular the Economic Dimension where the projects for economic development include developing agricultural areas and supporting agro-industry, and establishing an agricultural modernizing center.<br>* Sustainable Agricultural Development Strategy (SADS) 2030. | - Laws and Regulations:<br><br>* Need to review the Ministerial Decrees such as the Ministry of Agriculture Decree no. 386 year 2021 establishing unnecessary linkages of SPS certification with the IP system while this is not required by national IP law nor relevant international agreements.<br>* Need to review the Minister of Agriculture Decree no. 615 year 2016 to add more exceptions to the establishments allowed on agricultural land.<br><br>- Strategies, Policies and Action Plans:<br>* Lack of a national policy for agriculture on sectorial basis.<br><br>- Funding:<br>* Need to develop appropriate funding schemes to best serve the specific needs of SMEs in this sector.<br><br>- Awareness and Capacity Building:<br>* Lack of the necessary management and financial administration skills for SMEs |
| Opportunities | Threats |

| | |
|---|---|
| - Support from International Organizations for funding and capacity building:<br><br>* African Development Bank (AFDB) has implemented various support projects where technical assistance and/or finance were provided to support the scaling up of small holder farmers and agribusiness entrepreneurs.[63] | - Limited competitive advantages to local SMEs and limited capabilities to compete in local market and export their products to other countries. |

## B) Biofertilizers Industry

| Strengths | Weaknesses |
|---|---|
| - Laws and Regulations:<br><br>* Organic Farming Law no. 12 year 2020<br><br>- Strategies, Policies and Action Plans:<br><br>* SDS: Egypt Vision 2030 in particular the Economic Dimension and the Environmental Dimension.<br>* Sustainable Agricultural Development Strategy (SADS) 2030 referring to establishing a strategy for organic agriculture to the latest bio-technologies and the use of organic fertilizers and to conducting studies on the use of chemical and biological fertilizers. | - Laws and Regulations:<br><br>* Lack of a Law to regulate access and benefit sharing upon the use of biological resources.<br>* Lack of necessary provisions on the Fee Schedule in relation to the registration of new products including biofertilizers which affects the implementation of the Organic Farming Law no. 12 year 2020 and its Executive Regulations.<br>* Lack of clear provisions or mechanisms to examine and approve innovative biofertilizer products, and on necessary standardization for them.<br><br>- Strategies, Policies and Action Plans:<br><br>* Lack of a national policy and action plan on supporting biofertilizers industry and promoting the use of biofertilizers.<br><br>- Initiatives:<br><br>* Lack of initiatives to encourage farmers to use biofertilizers sector.<br>* Lack of financial incentives such as tax reductions to support R&D in this sector.<br><br>- Funding:<br><br>* Lack of financial support mechanisms to encourage R&D in SMEs operating in this sector.<br><br>- Awareness and Capacity Building: |

[63] AFDB in Egypt (https://www.afdb.org/fileadmin/uploads/afdb/Documents/Publications/African_Development_Bank-_Egypt_office_brochure.pdf)

| | |
|---|---|
| | * Lack of the necessary business administration kills for SMEs operating in this sector.<br>* Lack of farmers' awareness of the benefits of using biofertilizers. |
| Opportunities<br>- Support from International Organizations for funding and capacity building. | Threats<br>- Limited competitive advantages to local SMEs and limited capabilities to compete in local market and export their products to other countries. |

### C) Waste Management and Recycling Industry

| Strengths | Weaknesses |
|---|---|
| - Laws and Regulations:<br><br>* Waste Management Law no. 202 year 2020<br>* Investment Law no. 72 year 2017<br>* Environment Law no. 4 year 1994, including a Chapter on management of dangerous waste<br>* General Public Cleaning Law no. 38 year 1967 concerning management of solid waste.<br><br>- Strategies, Policies and Action Plans:<br><br>* National Climate Change Strategy (NCCS) 2050 in which some of the performance indicators of the strategy goals include increasing quantities of waste that are recycled.<br>* National Environmental Action Plan 2002/17 covering - among others – solid waste management including agricultural residue and industrial and hazardous waste.<br>* SDS: Egypt Vision 2030 in particular the Economic Dimension and the Environmental Dimension. In particular, the environment programs include enhancing the efficiency of solid-waste management system and supporting its sustainability, and developing a system for disposal of hazardous wastes.<br>* Green ICT Strategy aiming at reducing adverse effects on the environment resulting from the expansion of using ICT devices, and covering the e-waste management.<br><br>- Initiatives and Measures:<br><br>* The national campaign "Safe Disposal of E-Waste" through "E-Tadweer" application, which was launched by the Ministry of Environment. It is a form of partnership with the private sector to support entrepreneurship in sustainable | - Laws and Regulations:<br><br>* Need to review the Investment Law no. 72 year 2017 with regard to the limit to the total incentives an investor can obtain which might not be sufficient for SMEs operating in this sector.<br>* Non-clarity of necessary provisions in some relevant laws or regulations such as on the details on the management of e-waste in the Waste Management Law no. 202 year 2020 and its regulations.<br>* Lack of provisions on the development of standards for innovative animal feed products based on agricultural waste.<br>* Difficulty in establishing a new business in this sector due to the requirement for obtaining various licenses and authorizations from different government authorities.<br><br>- Strategies, Policies and Action Plans:<br>* Lack of national strategies on waste management<br>* Insufficient implementation of national policies and lack of clear action plans such as on management of e-waste.<br><br>- Funding:<br><br>* Lack of financial incentives for SMEs operating in this field. |

| | |
|---|---|
| management of hazardous waste[64]. E-Tadweer provides incentives to encourage the recycling of electronic devices[65]. | |
| Opportunities<br><br>- Potential Support from International Organizations for funding:<br><br>* AFDB Projects such as providing credits for banks to enable further lending to SMEs[66] and enabling Industrial Waste Management and SME Entrepreneurship Hub[67]. | Threats<br><br>- Limited competitive advantages to local businesses<br>- Loss of potential economic revenues contributing to the GDP and employability rates |

### D) Ecotourism and Green Tourism

| Strengths | Weaknesses |
|---|---|
| - Laws and Regulations:<br><br>* Hotels and Tourism Establishments Law no. 8 year 2022<br>* Law no. 102 year 1983 on Natural Protected Areas<br><br>- Strategies, Policies and Action Plans:<br><br>* National Climate Change Strategy (NCCS) 2050 in which some of the performance indicators of the strategy include reduction in energy consumption in the tourism sector.<br>* SDS: Egypt Vision 2030 in particular the Economic Dimension and the Environmental Dimension. In particular, the projects for economic development include encouraging green tourism and establishing touristic and residential communities in North Coast.<br><br>- Initiatives and Measures:<br><br>* The national "Green Star" Certification and Capacity Building Program for Hotels reflecting their level of environmental performance. Hotels have to pass the capacity building program and to meet certain requirements to obtain the Green | - Laws and Regulations:<br><br>* Lack of sufficient and clear provisions on standardization of green hotels and establishments, in particular under the Green Star Rating.<br>* Need to review the implementing regulations of the Law on Natural Protected Areas to expressly mention that establishments operating in eco-areas should be green, not just not harmful to the area.<br><br>- Strategies, Policies and Action Plans:<br><br>* Lack of a national strategy and an effective action plan on green and ecotourism.<br><br>- Infrastructure:<br><br>* Lack of sufficient infrastructure to support the operation of ecotouristic areas.<br><br>- Awareness and Capacity Building:<br><br>* Lack of awareness of businesses on the potential of this sector and its importance to the economy. |

[64] UNDP Egypt. Launch of E-Tadweer for e-waste management (https://www.undp.org/egypt/press-releases/launch-e-tadweer-e-waste-management)
[65] E-Tadweer (https://www.etadweer.com/)
[66] African Development Bank (AFDB) Group. Egypt – MISR Bank Project (https://projectsportal.afdb.org/dataportal/VProject/show/P-EG-HAB-011)
[67] AFDB Group. Egypt – Green Growth: Industrial Waste Management and SME Entrepreneurship Hub (https://projectsportal.afdb.org/dataportal/VProject/show/G-EG-BG0-ZZZ-001)

| | |
|---|---|
| Star rating[68]. GSTC announced that the Egyptian Ministry of Tourism's Green Star Hotel program has achieved 'GSTC Recognized' status[69]. | |
| Opportunities<br><br>- Potential Support from International Organizations for capacity building. | Threats<br><br>- Limited competitive advantages to local businesses<br>- Loss of potential economic revenues contributing to the GDP and employability rates |

## E) Renewable Energy

| Strengths | Weaknesses |
|---|---|
| - Laws and Regulations:<br><br>* Law no. 203 year 2014 on Incentivizing the Production of Electricity from Renewable Energy Resources<br><br>- Strategies, Policies and Action Plans:<br><br>* SDS: Egypt Vision 2030 in particular the Economic Dimension and the Environmental Dimension<br>* Integrated Sustainable Energy Strategy 2035 to enhance the Renewable Energy contribution to the supply of generated electricity<br>* National Energy Efficiency Action Plan 2022<br>* National Climate Change Strategy (NCCS) 2050 in which some of the performance indicators of the strategy goals are: increasing the contribution of new and renewable energy to the total electricity production and reduction in energy consumption in the tourism sector. | - Laws and Regulations:<br><br>* The current legal framework hardly allows SMEs to participate in national projects as the tenders issued by the government are for mega projects which require high value capital amounts of investments beyond the reach of the SMEs.<br>* Gap in the legal framework for examining imported products relevant o this sector which might be of low quality and which in the same time put the local products into disadvantage being cheaper.<br><br>- Initiatives:<br><br>* Lack of initiatives on academia business partnership in this field to help convert research outcomes to marketable technologies.<br>* Insufficient incentives for SMEs in the renewable energy sector.<br><br>- Funding:<br><br>* Need to develop appropriate funding schemes to best serve the specific needs of this sector which requires big initial capital to establish the business. |
| Opportunities | Threats |
| - Support from International Organizations for funding and capacity building:<br><br>* Green Economy Financing Facility (GEFF) Egypt developed by the European Bank for | - Limited competitive advantages to local SMEs and limited capabilities to compete in local market and export their products to other countries. |

[68] Green Star Hotel. The "Green Star Hotel" Program – Egypt's Green Certification Program in support of Sustainable Tourism (https://www.greenstarhotel.org/)
[69] GSTC. Green Star Hotel Achieves GSTC Recognition (https://www.gstcouncil.org/green-star-hotel-achieves-gstc-recognition/)

| | |
|---|---|
| Reconstruction and Development (EBRD) and supported by the European Union Neighbourhood Investment Facility: It provides finance and technical support for private sector businesses to develop green investments projects such as for energy efficiency and renewable energy[70]. | |

### ❖ General Aspects Common to all Sectors

| Strengths | Weaknesses |
|---|---|
| - Laws and Regulations:<br><br>Egypt already has a number of laws that tackle various relevant aspects to green economy in general and the selected sectors in particular.<br><br>- Initiatives and Measures:<br><br>Egypt has a number of initiatives that could contribute positively to supporting green economy. For example:<br>* Ministry of Finance 2022/2023 Fiscal year measures to support Egypt transition to green economy including: revenue and tax system improvement to encourage the shift to green activities, a system of incentives and initiatives to support the transition to a green economy and reduce emissions, and expanding the use of green financing means. | - Funding:<br><br>- Awareness and Capacity Building:<br><br>* Lack of awareness on potential opportunities and available support initiatives in the selected fields<br>* Lack of the necessary management and financial administration skills for SMEs |
| **Opportunities** | **Threats** |
| - Potential Support from International Organizations for funding and capacity building, for example:<br><br>* EBRD along with the European Union (EU) and the Green Climate Fund (GCF) are also providing new funds under GEFF to support green programs and investments for the private sector by enabling local financial institutions to lend SMEs and businesses operating in this sector[71].<br>* The World Bank Group Country Partnership Framework (CPF) 2023 – 2027 for Egypt to support the development of a green, resilient, and | - Low competitive advantages for local SMEs operating in the identified fields with respect to competing imported products<br><br>- Limited capabilities of SMEs operating in the identified fields for exporting their products |

[70] Green Economy Financing Facility (GEFF) in Egypt (https://ebrdgeff.com/egypt/)
[71] EBRD. EBRD, EU and GCF support Egypt's transition to a greener and more inclusive economy (https://www.ebrd.com/news/2023/ebrd-eu-and-gcf-support-egypts-transition-to-a-greener-and-more-inclusive-economy.html)

| | |
|---|---|
| inclusive economy where the private sector plays a critical role[72].<br>* Participation in the WIPO Green Marketplace[73] which helps in making green technologies available for license, collaboration, joint ventures, and sale. | |

## 9.2. Recommendations and Way Forward:

The study at hand shows that there is a room for adapting the policy, legal and administrative structure in the fields Agri-business, Biofertilizers, Waste management, Renewable Energy, and Green & Eco-tourism in a manner to encourage the SMEs in Egypt. The conclusion is divided into specific set of recommendation for each sector and general recommendations which are applicable to more than one sector:

### A) Specific Set of recommendations:

One of the main challenges in the agri-business is the lack of ability to formulate formulating pricing strategies for their products to compete in the international market due to the lack of sufficient information about the prospected amounts of agricultural products which would be available in a future specific year. Such challenge can be overcome if Egypt starts to adopt sectorial agricultural policy. The policy would lead to harmonization along the sector which would help both the farmers and the owners of the agro-factories. Currently the farmers are cultivating small scattered pieces of land and then marketing their products to the traders and agro-factories. Such practice does not enable the business to speculate the amount of agricultural products in an upcoming year, thus affects the pricing strategies. To overcome such a challenge, the agro-factories can cooperate with the ministry of agriculture to be well informed about the future export plans of such agricultural manufactured products, and the ministry of agriculture could incorporate their export plans into a strategy for the farmers to follow to secure the needs of the business. Hence, the farmers would be able to secure a buyer for their products and the agro-industry would be able to have better information to enable them to compete in the international markets.

The strategy would also benefit the farmers as the lands will be efficiently allocated, according to its nature, by selection of the agricultural products which is compatible with the soil. Such approach would yield higher amounts of harvested materials, and will aid to secure the national needs of agricultural products.

In this regard, the Ministry of Agriculture has issued the decree no. 386 of the year 2021 which sets establishes a coding system for each cultivated land and type of agricultural product to enable tracking down the agricultural products and linking it to each land via a serial number. Article 5 of such decree has empowered the agricultural quarantine authority to encode the plant varieties which has intellectual property rights. In practice, the Agricultural Quarantine Authority refuses to issue the SPS certificate if the exporter is not listed on the white list privately held by the intellectual property right owner.

---

[72] The World Bank. Egypt: World Bank Group Launches New Partnership Framework to Support Green, Resilient, and Inclusive Development (https://www.worldbank.org/en/news/press-release/2023/03/21/egypt-world-bank-group-launches-new-partnership-framework-to-support-green-resilient-and-inclusive-development)

[73] WIPO Green (https://www3.wipo.int/wipogreen/en/).

It is recommended to amend the Ministerial Decree no. 386 of the year 2021 by deleting the mentioned Article 5 because it gives out protection to the IP right beyond the boundaries set out by the IP law. The territoriality principle mandates that the IP holder should register plant variety and obtain a certificate in each of the country he wishes to protect his variety. Therefore, if a plant variety is protected in Egypt, it does not necessarily mean that it would be automatically protected in the country which variety would be exported to. Furthermore, in accordance with the IP law, the protection of plant varieties does not generally extend to "harvested materials", which are the subject of Egyptian exports, except under very limited cases. Therefore, it is recommended not to link between the SPS certificate and the IP rights, and leave such a matter to the IP holders to resort to the courts to obtain injunctions after proper examination of each alleged violation on a case by case basis.

The biofertilizers industry is closely linked to the agri-business industry. The Egyptian Law, for the first time, has dealt with the regulation of the biofertilizers via the Law no. 12 of the year 2020. The law empowers the Ministry of Agriculture to approve the usage of biofertilizers with the aim that the final agricultural product obtains a "bio" certificate. In practice, if a bio-fertilizer is innovative, the Ministry of Agriculture requests from the innovator to resort to a reference country to obtain its approval that the product is safe and efficient. Only based on this approval, the Ministry of Agriculture allows the innovator to register the new bio-fertilizer. It is therefore, strongly recommended to start building up capacities within the Egyptian Ministry of Agriculture to self autonomously examine and assess the efficacy and safety of the new bio-fertilizers, and to review the application of Article 18 of the Executive Regulation no. 169 of the year 2021 so as to enable the Ministry of Agriculture to efficiently perform its mandate to examine innovative compound fertilizers without the need to resort to a reference country.

It is equally recommended to issue the draft law which deals with "Access to Biological Resources and Benefit Sharing Schemes" to provide a legal framework to encourage innovation derived from live resources and share the benefits of the IP rights that may come out of new innovations pertinent to living organisms.

Recycling of agricultural waste is a relatively new field of business in Egypt. In the past, it was a common practice to burn such waste which resulted into higher levels of pollution. As the technology advanced, it is now possible to convert agricultural waste into innovative animal feeding products. However, currently the SMEs in Egypt are required to bear the cost of standardization of the production of innovative animal feeding products which will eventually be accessible to the competitors. The outcome is that the SMEs are inclined to bear such additional expenses which might benefit other competitors in the market. Therefore, it is strongly recommended, to incentivize the SMEs, to review the mechanism of standardization of innovative animal feeding products which are obtained from agricultural waste so that the Ministry of Agriculture becomes able autonomously grant the license to market such products after substantive examination.

In addition, upon review of the Law no. 202 of the year 2020, which deals with waste management, it is noted that it divides the waste into hazardous waste and non-hazardous waste. The E- Waste contains some hazardous substances and precious useful substances as well. Therefore, it is strongly recommended to add a section to the Law no. 202 of the year 2020 to encourage recycling such waste in an efficient environmentally friendly manner.

Review of the current scheme of the projects of renewable energy resources reveals that the system in place is more efficient towards mega-projects. To encourage the SMEs, it is recommended to formulate a strategy to allow the SMEs to actively engage in the production of electricity from renewable resources as their role is currently limited in this field.

It is also important to bridge the gap between stakeholders from the universities and the businesses become engaged together to benefit from the innovative products in this field.
The green and eco-tourism sector is an important sector to enable the persons living in the non-urban areas to have sustainable income. Egypt has done great efforts through the Egyptian Hotel Association towards standardizing the services of the hotels to implement the "green star rating" system. However, such initiative is set out on private efforts rather than on legal framework to ensure its consistency. Furthermore, the eco-tourism requires large sum of infra structure investments to encourage high value long stays visits.

### B) General Recommendations:

In general, it is important to constantly review the financial incentives schemes available for the SMEs to encourage innovation and use of technology. The report has references from different countries to encourage innovation and technology.

Also, Egypt has many incentives such as E-Tadweer, the Green Star initiative, some initiatives in the rural areas to encourage separation of waste, however, such initiatives are not sufficiently publicized and lack legislative framework within which such efforts are standardized and consistently becomes applicable. Review of the current initiatives, and backing them up with legal framework is strongly recommended.

Furthermore, there is a need invest in capacity building in the technological fields so as to enable the authorities to self-autonomously asses the efficacy and safety of innovative products in the relevant fields of technology.

There is also a need to educate the relevant sectors about new important topics such as the protection of intellectual property, the balances of the rights and obligations of the intellectual property rights holders, the exceptions and limitations allowed for under the TRIPs Agreement, the UPOV Convention and its implementation in the national law.

In addition, ERADA can play a crucial role by monitoring and reviewing the challenges that occur due to the applications of the new laws, regulations and ministerial decrees that are issued and to review the effect of such decrees and propose reforms as necessary.
Finally, the report at hand is meant to provide an overview of the main challenges in the relevant sectors. However, conducting such type of studies is recommended to be an on-going exercise, and to conduct further studies to go into in depth analysis for each of the challenges, the effect of implementation of recommendations, and to enable progressive development in each sector.

## ANNEXE I. MEAN GENERAL RECOMMANDATIONS

| SDGs | Vision 2030 objective | sector | Recommendation | The action | The main provider | Requirements to implement. (law, Ministerial Decree……) | Time frame (SH-MED-LN) | KPIs | impact |
|---|---|---|---|---|---|---|---|---|---|
| 2 | Objective 1 | The Agri-business | adopt sectorial agricultural policy | Form a committee to conduct the study | Ministry of agriculture | ●sufficient information about the prospected amounts of agricultural products<br>●sufficient information about the nature of the land, suitable conditions for cultivating specific corps<br>●sufficient information about water resources | MED | ●Form the committee to formulate the strategy<br>●Formation of the strategy to be adopted<br>●Monitor the implementation plan of the strategy | ●The value of agricultural products will increase as there will be efficient use of land<br>●The volume of the exported agricultural products will increase |
| | | The Agri-business | not to link between the SPS certificate and the IP rights | Delete item 5 of the Ministerial Decree no. 386 of the year 2021 | Ministry of agriculture | ●Issue Ministerial Decree to amend Decree no. 386 of the year 2021 | SH | ●The Minister of Agriculture deleted clause 5<br>●The Quarantine Authority cancelled the instructions that links between the SPS and IP matters | ●Increase of the amounts of exports of agricultural products |
| | | Agri-business | Amend Minister of Agriculture has issued the decree no. 615 of the year 2016 | Form a committee to review the possibility of the inclusion of other | Minister of Agriculture to select the experts | ●Information about the area of cultivated land<br>●Information about the needs | MED | ●Formation of the committee<br>●The Decision 615 of the year 2016 is amended in | ●Higher production of agri-business products<br>●Lower the cost of production |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | establishments on the agricultural land | | of other types of establishments that might be considered to be built on agricultural land and prioritizing them over others<br>●Information about the current practice (distance between agri-factories and agricultural lands)<br>●Selection and formation of the committee | | accordance with the recommendations of the committee | ●Higher ability to compete in the international market |
| 13 | 4 & 5 | Bio-fertilizers | Issue the schedule of fees for the registration of bio-fertilzers | Finalize the review of the schedule by the Cabinet | The Cabinet and Minister of Agriculture and the Chairman of the Food Safety Authority | ●Draft Fees schedule is prepared already | SH | ●Issue the Regulation | ●Proper registration of biofertilizers and having adequate controls |
| | | Bio- fertilizers | Issue the draft law that regulates Access to Life Resources and Benefit Sharing Schemes | The Parliament | The Parliament | ●The Draft Law is ready | SH | ●Issue the Law | ●Proper regulation of access to genetic resources<br>●Sharing the benefits of new inventions that is derived from genetic resources |
| | | | Adding provisions to Section 2 of Part 1 of the Law no. 12 of the year 2020 to enable the competent office to review and examine new bio-fertilizers compounds | The Minister of Agriculture and the Parliament to conduct a study and suggest a draft law proposal | Ministry of Agriculture and the Parliament | ●Formation of a committee of experts to review the law<br>●Suggest a draft proposal<br>●Capacity building exercise have the team able to examine the new | Med | ●The law no. 12 of the year 2020 is amended by including a section the allows the ministry of agriculture to substantively examine the safety and efficacy of bio- | ●Self- dependency of the national authorities to examine the safety and efficacy of bio-fertilizers<br>●Encouraging the development of new bio-fertilizers |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | compound biofertilizers | | fertilizers compounds<br>●A decision of approval of 1 new compound bio-fertilizer is issued without the need to rely on a reference country | |
| | | Bio-fertilizers | Adopt fast track route for the examination of new bio-fertilizers | The President of the Patent Office suggests a proposal | The President of the Patent Office -and the Parliament | ●Formation of a committee of experts to review the Book 1 of the law no. 82 of the year 2002<br>●Suggest amendments to the law | Med | ●Review Book 1 of the Law no. 82 of the year 2002 to be amended to include fast track process for | ●Increase the number of patents in the green field<br>●Encourage innovation in the field of bio-fertlizers |
| | | Bio-fertilizers | Standardization of the process of production of bio-fertilizers (ISO Certificate) | Issue a standard process for the production of each bio-fertilizer | The minister of agriculture and the Egyptian Organization for standards and quality | ●Issue a Ministerial Decree from the Minster of Agriculture to standardize the process of production | Med | ●Ministerial Decree is issued | ●encourage the use of bio-fertilizers |
| | | Bio-fertilizers | Take steps to promote the use of bio-fertilizers | Awareness campaigns about bio-fertilizers | The Ministry of Agriculture | ●Allocation of budget for the promotional campaigns<br>●Information about the different bio-fertilizers and its benefits | Med | ●Progressive registration of pieces of agricultural lands in Egypt as Bio | ●Increase of exports due to having better quality agricultural products |
| | | Green and Eco-tourism | Formulate a strategy for the green and eco-tourism development plan | Formation of a committee | The ministry of environmental affairs, the ministry of tourism | ●Areas suitable for green tourism<br>●Number of habitants close from such areas<br>●Allocation of budget | LN | ●A strategy is published<br>●Progressive implantation of the strategy | ●Increase in the number of tourists<br>●Increase of the foreign income derived from eco-tourism |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | ●Vision to recover the investments made in these areas | | | |
| | | Green and Eco-tourism | Compose a committee of experts to review the current legal framework and standards for the green and eco-tourism | Committee is formed and sets out standards | Ministry of Tourism | ●Information about the standards of green hotels<br>●A committee to inspect the hotels who obtained the green star system | LN | ●Minister of Tourism issues the necessary decree to standardize the green star system | ●Increase of tourism<br>●Harmonization of the green star rating system |
| | | Green and Eco-tourism | Tax incentives | Committee is formed to suggest a set of tax incentives | Ministry of Finance<br>Ministry of Tourism<br>Ministry of Local Development<br>The Parliament | ● Joint view about the set of tax incentives that will benefit the business and encourage eco-tourism | Med | ●A Law is issued that provides for tax incentives for eco-tourism | ● Increase in the revenue in foreign currency from tourism in eco-areas. |
| 7,13 | 5 | Renewable energy | Adoption of policies to allow the SMEs to actively engage in the production of electricity from renewable resources | Propose a project suitable for SMEs | Minister of Electricity and the Chairman of the Renewable Energy Authority | ●Information about the list of SMEs working in the field of renewable energy | Med | ●At least 1 project is executed by an SME | ●Encouragement of SME's to be more involved in such projects<br>●Higher generation of electricity from renewable resources |
| | | Renewable energy | Establish connection between the universities working in this sector and the private sectors to utilize their projects | Establish cooperation between the universities, and stake holders to have new projects | Renewable Energy Authority and The Faculty of Engineering in different universities | ●Database about the new projects, and ideas from the universities | MED | ●Database of projects exist<br>●Cooperation is established<br>●1 project stems out from the university to be implemented | ●Encouragement of the university students and professors to bring innovative solutions |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Renewable energy | Minister of Trade and Industry Decree no. 914 of the year 2018 and Decision of the Minister of Finance no. 770 of the year 2005 | The Minister of Trade and industry amend the decree no. 914 of the year 2018<br>The minister of Finance issue a decree to amend the decree no. 770 of the year 2005 to allow the Control of Exports and Imports Authority to take samples of solar equipment. | The Minister of Trade and Industry<br>The Minister of Finance | ●Amendment of the decree no. 914 of the year 2018 issued from the Minister of Trade and Industry<br>●Amendment of the Decree no. 770 of the year 2005 issued from the Minister of Finance | SH | ●Both decrees are amended | ●Protection of the local industry from importing low quality components of solar equipment<br>●Having better controls over the quality of imported products related to solar energy equipment |
| | | Renewable energy | Exploring opportunities of collaboration with international organizations on making funds available SMEs in this sector in particular the launch of blended finance initiatives and the development of credit schemes that meets the needs of the SMEs | Apply to obtain funds from international organizations | Minister of Planning<br>Minister of Electricity<br>Chairman of the Renewable energy authority | ●Database about the institutions, international organization who are willing to provide such funds | SH | ●1 successful application to receive funds from a funding organization | ●Receipt of funds will encourage SMEs working in this field. |
| 11,12 | 1, 5 | Waste Management | Establishing a system to facilitate the obtainment of all the necessary approvals for initiating a new business in the waste recycling | Adopting 1 window system | Ministry of Electricity,<br>Governorates and Municipalities<br>Ministry of Environment | ●Consolidation of a representative of each of the approval authorities under 1 building | SH | ●1 Window license is issued | ●Facilitation of procedures<br>●Encouragment of SMEs to work in this field |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | Civil Defense Authority | | | | |
| | | Waste Management | conduct a study about the set of incentives that can be given to the companies working in the sector and specifically in the field of waste re-cycling | Formation of experts committee | All the relevant Ministries | ● Information about types of waste<br>●Information about the amount of waste<br>●Classification of waste<br>●Technical knowledge about efficient waste management<br>●Other information may be required by the relevant committee | Med. | ●The study is done | ● A set of specific recommendations for incentives to be given to SMEs working in the waste management to encourage SMEs to operate in this field. |
| | | Waste Management | Review the mechanism of standardization of innovative animal feeding products obtained from agricultural waste | Review the stages of application, allocation of human resources to review the application, | Food Safety Authority<br>&<br>Ministry of Agriculture<br>&<br>Egyptian Organization for standards and quality | ●Information about the current mechanism of approvals<br>●Information about different products in the market<br>●Technical knowledge about methods of production<br>●Allocation of budget | SH | ●1 Industrial process is standardized without the need of the SMEs to bear the full cost of standardization | ●More innovation in this field<br>●Less agricultural waste<br>●Higher volume of production of poultry and meat |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Waste Management | form a committee of experts to review the Law no. 202 of the year 2020 to include an additional section on handling E-Waste | Regulation of E waste | Ministry of Environmental Affairs<br>and<br>The Parliament | ●Information about the E-waste<br>●Legal and Technical knowledge about E-Waste matters<br>●Review the current practice of EU regulations | Med | ●The Law no. 202 of the year 2020 is amended by virtue of a new law from the parliament which includes handling e-waste | ●Better extraction of precious materials from E-Waste in an efficient manner<br>●Increase the revenue from E-Waste |