National Meeting

Rural Renewable Energy In Egypt: Leveraging The Skills Of Women For A More Rapid Growth

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Presentation Outline

1. EGYPT: Employment and Education Trends
2. EGYPT: Renewable Energy Sector
3. PROJECT: Overview
4. PROJECT: Gender Findings
5. EGYPT: Gender Strategy
6. CONCLUSION
Female Gamechangers: Reshaping the Sector

DECENTRALIZED PV SECTOR
Aya Zanaty
ACO
Founder
Cairo, Egypt
Supplies about 30% of the de-centralized market

BIOGAS SECTOR
Mona el-Khodeiry
BIOGAS
Founder
Aswan, Egypt
In little over 2 years, implemented more than 220 units in 10 provinces

BIOGAS SECTOR
Shaimaa Omar
BIOMAX
Founder
Sohag, Egypt
Established more than 500 biogas units on small and medium scales
Participation Trends in Egypt

**Labor Force Participation**
- **Female**: 23%
- **Male**: 66.9%

**Unemployment**
- **Female**: 23%
- **Male**: 7.8%

**Youth not in education, employment or training**
- **Female**: 35%
- **Male**: 19.6%

Young women are underrepresented in STEM education

## Evolution of Installed Renewable Energy Power Capacity in GW

<table>
<thead>
<tr>
<th>Type of power station</th>
<th>2009/10</th>
<th>2021/22</th>
<th>2029/30</th>
<th>2034/35</th>
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</thead>
<tbody>
<tr>
<td>Hydro</td>
<td>2.8</td>
<td>2.8</td>
<td>2.9</td>
<td>2.9</td>
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<tr>
<td>Wind</td>
<td>0.5</td>
<td>13.3</td>
<td>20.6</td>
<td>20.6</td>
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<tr>
<td>PV</td>
<td>0.0</td>
<td>3.0</td>
<td>22.9</td>
<td>31.75</td>
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<tr>
<td>CSP</td>
<td>0.0</td>
<td>0.1</td>
<td>4.1</td>
<td>8.1</td>
</tr>
<tr>
<td>TOTAL</td>
<td><strong>3.3</strong></td>
<td><strong>19.2</strong></td>
<td><strong>50.5</strong></td>
<td><strong>62.6</strong></td>
</tr>
</tbody>
</table>

Source: IRENA, 2018
“...off-grid application of Solar in agriculture is a significant opportunity, amounting to nearly 2000 MW in photovoltaic (PV), approximately $4 billion in investment.”
PROJECT OVERVIEW

Unlock the potential for clean technology start-ups within the agricultural sector in Egypt

- Strengthen the ecosystem supporting the clean technology sector
- Identify key challenges and barriers across the value chain
- Connect key stakeholders across the value chain
PROJECT METHODOLOGY & OUTCOMES

Phase I Baseline Analysis of Solar Farming in Egypt

LITERATURE REVIEW
VALIDATION WORKSHOP
100 SURVEYS IN 10 GOVERNORATES WITH STAKEHOLDERS (GENDER DATA)

Phase II Learning, Ideas, and Network Creation

3 FOCUS GROUPS
2 FIELD VISITS
CASE STUDY ANALYSIS

Phase III - Market sizing and financial analysis

30 INTERVIEWS AND MEETINGS WITH STAKEHOLDERS
48 VISITS TO FARMS
PV PUMPING MARKET ASSESSMENT AND SEGMENTATION
SENSITIVITY ANALYSIS
FINANCIAL MODELS

Overall, rapidly growing industry

PRIVATE SECTOR LEVEL
Value chain needs stronger collaboration & communication

MAIN BARRIERS TO GROWTH
Access to client finance
Lack of internal strategic planning, quality control & access to talent
Female Founders in the Renewable Energy Sector

**PV SECTOR**
12% of founders are FEMALE

**BIOGAS SECTOR**
30% of founders are FEMALE

**NATIONAL AVERAGE IN PRIVATE SECTOR**
17% of founders are FEMALE

Source: IFC, 2018
Female Employment Opportunities in the Renewable Energy Sector in Egypt

Employment in PV
- Female: 20%
- Male: 80%

Employment in Waste-to-Energy
- Female: 15%
- Male: 85%

Source: IFC, 2018; CAPMAS, 2016 in Egypt Oil & Gas News Paper; Mahinaz Elbaz, 2018
INTERVIEW GENDER FINDINGS
Gender and Renewable Energy

20 INTERVIEW PARTICIPANTS
16 MALE FOUNDERS
4 FEMALE FOUNDERS

Perceived Challenges Faced by Women in the Ecosystem

- **Culture**: 6
- **Time Constraints (Infants)**: 2
- **Work Load**: 4
- **Physical Effort**: 9
- **Mobility**: 12

**Total**
FOCUS GROUP FINDINGS
Gender and Renewable Energy

3 PARTICIPANTS
1 MALE
2 FEMALES

Safety
Family
Culture
GOVERNMENT STRATEGY

Women’s participation in the workforce will reach 35% by 2030.

Women’s unemployment rate will decrease to 16% by 2030.

Estimated earned income will increase from 29% to 58% by 2030.
1. CHALLENGES AND BARRIERS
2. IDENTIFY GAPS ACROSS VALUE CHAIN
3. IDENTIFY SHORTCOMINGS IN STEM
4. LARGE-SCALE SECTOR
Female Gamechangers: Reshaping the Sector

DECENTRALIZED PV SECTOR
Aya Zanaty

BIOGAS SECTOR
Mona el-Khodeiry

BIOGAS SECTOR
Shaimaa Omar
THANK YOU