POWERING TUNISIAN AGRICULTURE WITH RENEWABLE ENERGIES

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TOWARDS THE EXPANSION OF RE IN TUNISIAN AGRICULTURE SECTOR…

Why transition to renewable energy?

What are the opportunities for the use of RES and the issues that hinder their development?

Pilots projects

Weaknesses and strengths

Recommandations
TUNISIAN DAIRY SECTOR

**AT THE SOCIAL LEVEL**

- 40% of working days in the agricultural sector
- Stabilization of breeders in production areas (112 thousand breeders, representing 30% of breeders)
- Ensure food security
- Source of raw materials for food industries

**AT THE ECONOMIC LEVEL**

- 11% of the value of agricultural production
- 25% of the value of animal production
- 7% of the value of food industries

⇒ Total electricity consumption of the agricultural and agri-food sector: **2882 GWh**

⇒ Total photovoltaic potential in the agricultural and agri-food industries
  - Potentiel brut (MWC): **1100**
  - Potentiel exploitable (MWC): **315**
WHY TRANSITION TO RENEWABLE ENERGY?

✓ REASONS

- CONTINUOUS AND SIGNIFICANT INCREASE IN ENERGY CONSUMPTION AND COSTS DUE TO RISING STANDARD OF LIVING AND DEVALUATION OF THE LOCAL CURRENCY
- CONTINUOUS DEPLETION OF LOCAL FOSSIL RESOURCES
- DEPENDENCY ON IMPORTS WITH A RATE OF AROUND 60%
- SIGNIFICANT POLLUTION CONTRIBUTING TO CLIMATE CHANGE

✓ GOALS:

- IN ADDITION TO REDUCING ENVIRONMENTAL POLLUTION AND STRENGTHENING THE SECURITY OF SUPPLY, SUSTAINABLE ENERGIES ARE EXPECTED TO CONTRIBUTE TO:
  - ENERGY SECURITY;
  - REDUCE THE NATIONAL NEGATIVE ENERGY BALANCE;
  - INCREASED LOCAL ADDED VALUE AND JOBS CREATION
  - PRODUCTION COSTS REDUCTION
WHAT ARE THE OPPORTUNITIES FOR THE USE OF REs AND THE ISSUES THAT HINDER THEIR DEVELOPMENT?

**OPPORTUNITIES:**

- TUNISIA SET UP, FROM THE MIDDLE OF THE YEARS 1980, A POLICY OF ENERGY CONTROL. THE IMPLEMENTATION OF THIS POLICY IS BASED ON FOUR INSTRUMENTS: INSTITUTIONAL, REGULATORY, FINANCIAL AND TAX:
  - THE LAW OF DECEMBER 2015 WHICH PAVED THE WAY FOR THE LIBERALIZATION OF THE EXPLOITATION OF RENEWABLE ENERGIES BY PRIVATE INVESTORS, TUNISIANS AND FOREIGNERS
  - IMPLEMENTING DECREES THAT PROVIDED CLARIFICATIONS AND CLARIFICATIONS HAVE BEEN PUBLISHED (DECREE NO. 2016-1123 / AUGUST 2016 =)
  - THE STRATEGY FOR THE PROMOTION OF GREEN ENERGIES BY 2030 WAS ADOPTED IN NOVEMBER 2016
- FOR THE AGRICULTURAL SECTOR, ADOPTION OF THE NEW INVESTMENT CODE BENEFITS AND INCENTIVES FOR INVESTING IN RENEWABLE ENERGIES.
- TUNISIA ENJOYS A VERY ATTRACTIVE SUNSHINE RATE FOR SOLAR ENERGY PV.

**CONSTRAINTS:**

- OUR COUNTRY IS LAGGING FAR BEHIND IN RENEWABLE ENERGIES DUE TO:
  - LACK OF INVESTOR AWARENESS OF THE MAJOR CHALLENGE OF THIS STRATEGIC SECTOR IN THE FUTURE
  - LACK OF KNOW-HOW, ESPECIALLY ON A TECHNICAL LEVEL
  - POOR COMMUNICATION ON THE BENEFITS ATTRIBUTED TO INVESTMENTS IN RES
  - VERY HEAVY INVESTMENT ESPECIALLY FOR THE ACTORS OF AGRICULTURAL VALUE CHAINS WHICH ARE CHARACTERIZED BY THEIR SMALL SIZE AND THEIR VERY LIMITED FINANCIAL MEANS.
  - LACK OF EXTENSION OF THESE TECHNOLOGIES AMONG FARMERS.
WEAKNESSES & STRENGTHES

• WEAKNESSES
  o Farmers are not aware of new technologies
  o Farmers do not have the means to cover capital cost associated with RES
  o Limited access to funding
  o Lack of dissemination of good practices
  o Low membership of farmers in professional organizations
  o Weak collaboration between the different actors in the value chain

• STRENGTHES
  o Tunisia engagement at international level (United Nations Framework Convention on Climate Change COP23, ODD2030, …)
  o Commitment of donors to fund and support the RES use
  o Opportunities to implement private public partnerships in order to develop the use of RES
  o Enhance research results in development projects
EXPERIENCE WITH REFERENCE TO THE FINDINGS AND RECOMMENDATIONS OF THE INVESTA PROJECT

• KNOWLEDGE, EDUCATION, TRAINING, EXTENSION OF RE USES AMONG PRIVATE AND PUBLIC ACTORS

• SIMPLIFY THE ADMINISTRATIVE PROCEDURES FOR COLLECTING SUBSIDIES

• INITIATE THE REVISION OF PRICING AND SUPPORT POLICIES THROUGH ANALYSIS AND STUDIES

• ANY POLICY CHANGE SHOULD BE PROGRESSIVE AND THERE MUST BE PREREQUISITES SUCH AS RISE PUBLIC AWARENESS

• SHOWING HOW RE USE HAS COMPETITIVE ADVANTAGE

• ESTABLISHMENTS OF CONTRACTUEL RELATION BETWEEN VALUE CHAIN’S ACTORS AND PROMOTE THE SYNERGY BETWEEN THEM.

• STRENGTHEN CONTROLS AND FINES AGAINST ILLEGAL MILK COMMERCIALIZATION AND TRANSFORMATION
EXAMPLES OF SUCCESSFUL POLICIES

• SOLIDARITY FUNDING SYSTEM BASED ON THE BUSINESS RELATION BETWEEN MILK VALUE CHAIN ACTORS

• LINK THE VETERINARY HEALTH AGREEMENT WITH THE IMPLEMENTATION OF BIOGAS UNIT

• VALUATION OF THE NEW INVESTMENT LAW, WHICH ENCOURAGES INVESTMENT IN EQUIPMENT AND MODERN MEANS OF PRODUCTION, INCLUDING RENEWABLE ENERGY IN ADDITION TO THE LAW OF 2016 ABOUT THE LIBERALIZATION OF THE EXPLOITATION OF RENEWABLE ENERGIES BY PRIVATE INVESTORS
RECOMMANDATIONS

• ADAPT INVESTA RESULTS TO TUNISIAN REALITIES: CONTEXTUALIZATION OF THE STUDY TO THE SPECIFICITIES OF THE TUNISIAN AGRICULTURAL SECTOR

• CAPITALIZATION OF THE RESULTS OF THE VARIOUS PILOT PROJECTS TO GENERALIZE THEM

• CAPACITY BUILDING OF INSTITUTIONS INVOLVED IN THE MILK SECTOR IN THE USE OF RENEWABLE ENERGIES

• NEED OF AN INTEGRATED NEXUS APPROACH

• ENCOURAGE THE CREATION OF AN INTERNATIONAL NETWORK ON THE USE OF RENEWABLE ENERGY IN THE AGRICULTURAL SECTOR TO FACILITATE TRADE
THANK YOU FOR YOUR ATTENTION ... 😊

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