Food and Agriculture Organization of the United Nations

GLOBAL SYMPOSIUM on SOILS and WATER

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Soil and water: a source of life

Theme 1. Soil and water management in Rainfed Agriculture

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itps INTERGOVERNMENTAL TECHNICAL PANEL ON SOILS

GLOBAL SOIL PARTNERSHIP

development.

Introduction

- Rain-fed agriculture accounts for more than half of the world's food production
- It has a crucial role in food security and in social stability cohesion and economic development .
- It will have to produce more and better in a context strongly constrained by:
- Climate change at work;
- The increasing scarcity
- Degradation of basic natural resources (soil, water and biodiversity)
- and socio-economic difficulties.

Le réservoir de Sidi Salem, dans la pluvieuse région de Béja, plafonne à seulement 16 % du niveau maximum.
FETHI BELAID/AFP

Upgrading rain-fed areas

Rain-fed agriculture requires the implementation of new and improved agricultural water management practices.

There are two broad strategies for increasing yields in rain-fed agriculture through better use of rainfall:

- water harvesting – collecting or harvesting more water, infiltrating it into the root zone;

- Through soil and water conserving techniques that increase or reduce plant root-zone evaporation and drainage losses *(green and virtual Water)*.

- The introduction of drought-tolerant crops combined with the effects of CO2 fertilization improves crop yields and reduces vulnerabilities to climate variations.

-Improved water management practices must be combined with best agronomic practices *Transition towards Agro-ecology*

-Public investment and assistance to farmers as well as by the expanding and digitizing of extension services.

The promises of Agro-ecology

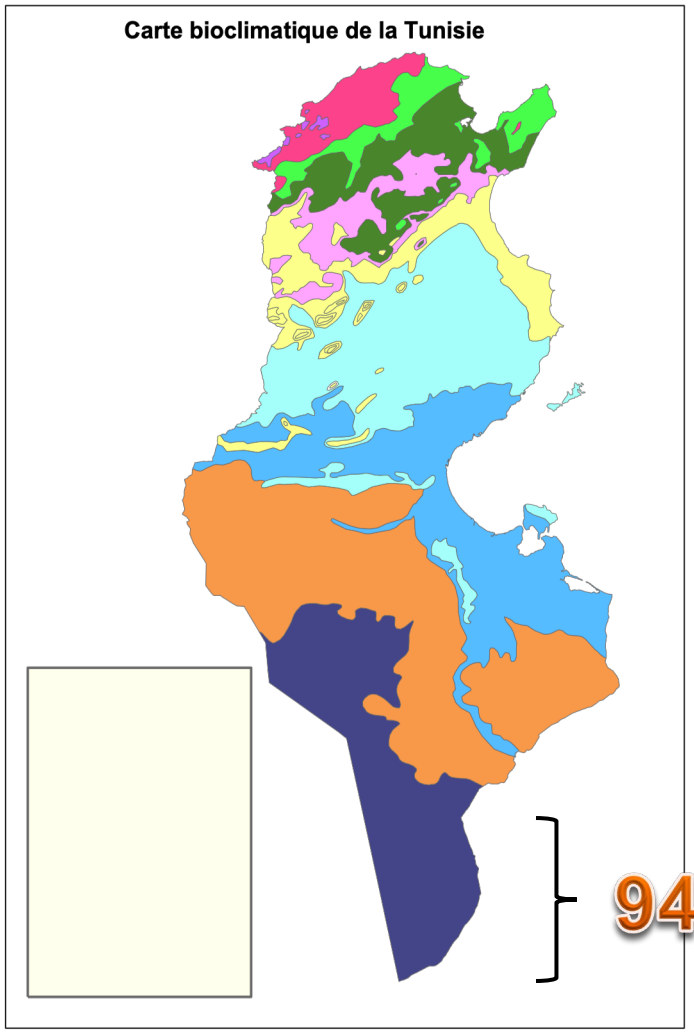
C-smart systems, ecologically intensive, which manage both rainwater and soil fertility: (Carbon, Nutrients, Structure/porosity, Water reserve), for small-scale agriculture enhance CC adaption, acquire resilience, produce more and better and play a driving role in the well-being and development of rural communities.

Current systems do not make enough use of rainwater

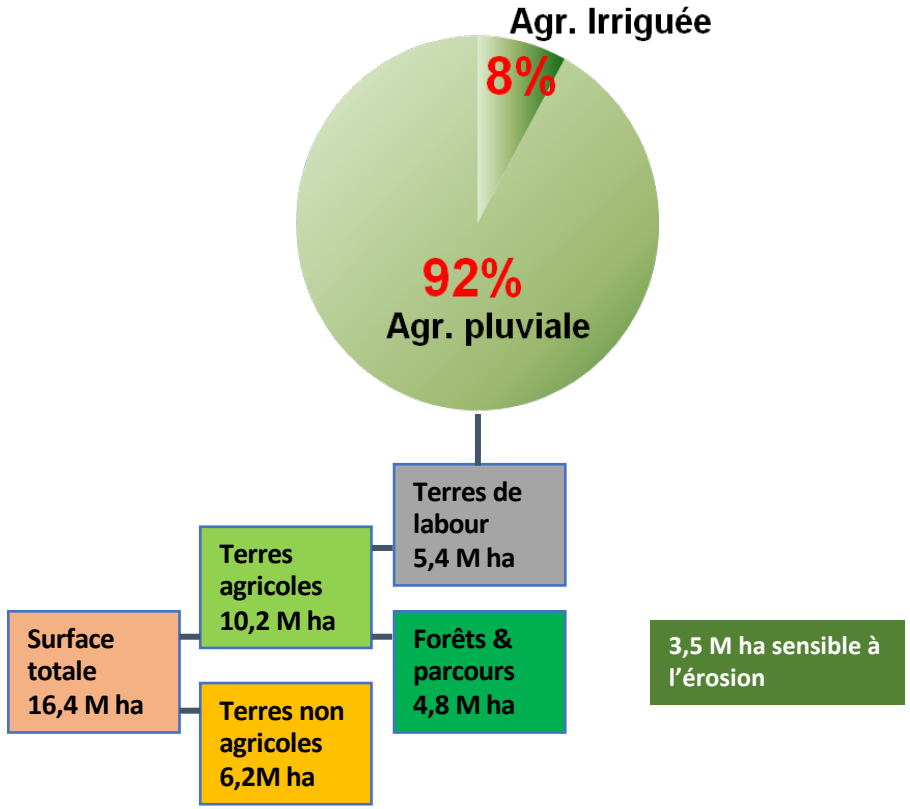
What can policy makers should do to Enhance Rain-fed Agriculture?

- **Consider rainfall and soils in a coordinated ways**
  - Accelerate the adoption of improved management practices by small-scale farmers
  - Governments can eliminate barriers to investment through credit, crop insurance and safety nets
- **Strengthen governance and institutional arrangements**
  - To create conditions for sustainable water management in rainfed systems
  - Efforts are needed to promote investment in water management.
  - New organization of space, New local governance, Decentralization.
  - Water ressources planning must also consider rainwater management
- **Adopt an inclusive, participatory and consultative approach.**
  - involving farmers in developing technologies within their local community.
  - Adopting new technologies and practices calls for the active research capacities inclusion, building the capacity of farmers and providing extension services
- **Develop drought preparedness programmes**
- **Integrating Research and Project results**

Tunisia An arid country dominated by Rain-fed agriculture



Cinq zones bioclimatiques :
- humide (>800 mm),
- sub-humide (600 à 800 mm),
- semi-aride (400 à 600 mm),
- aride (100 à 300 mm)
- désertique ou saharienne (<100 mm).



Rain-fed agriculture accounts 92% of farmed land and contributes to approximately 65% of agricultural production in value terms.

Only region of the cereal plains in the North – North East are suitable + 300mm/ year

Diagnosis analysis shows

Rain-fed agriculture concerns a production system where crops, arboriculture or grazing (natural Pastoral resources rangelands) benefit onlyb and directly from rain.

Strengths

- **Dominant activity in rural areas**
- **Avoiding rural exodus**
- **Primary source of employment for populations far from the coast and large cities.**
- **Important place on the international olive oil market**
- **Cereal growing, arboriculture and sheep farming constitute an important contribution to food security and national PIB.**

weakness

- **Poor performance of Farmers**
- **Limited Access to credit in the absence of land titles**
- **unsuitable structures (exploitation size)**
- **Soil conservation problems,**
- **Poorly organized sectors,**
- **Insufficient funding, etc,**
- **Institutional framework is inefficient**
- **Lack of organization of Farmers**

Several national strategies, programs and action plans developed to face Drought crisis

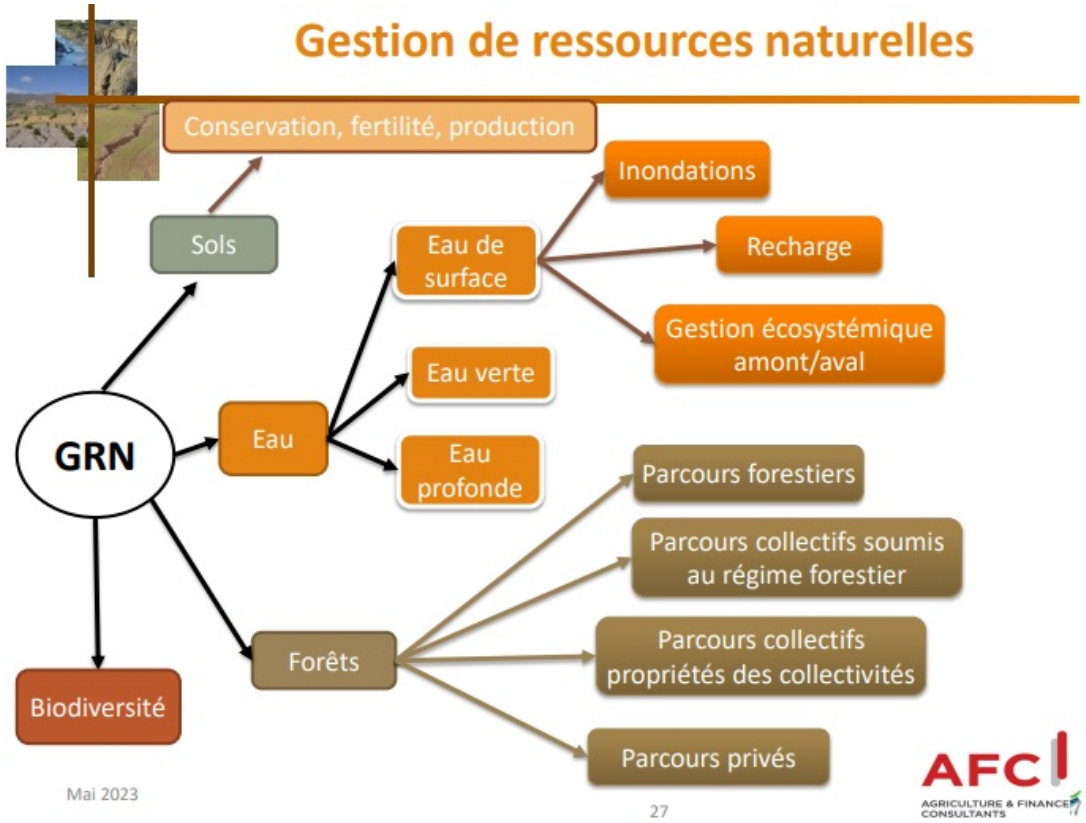
- ✓ National Strategy for Adaptation to Climate Change
- ✓ National Drought Management Plan
- ✓ National Sustainable Development Strategy
- ✓ National action program to combat desertification
- ✓ Water Strategy 2050
- ✓ National water and soil conservation strategy for 2030
- ✓ National strategy for the development and sustainable management of forests and rangelands

The measures proposed in the ACTA 2050 strategy, those which contribute more specifically to supporting rain-fed agriculture.The new ACTA strategy is built on the following vision “Sustainable management of natural resources for the development of rural territories ”
Tunisia2050 WaterStrategy Contribute to socio-economic development by securing the availability and access to water resources Tunisia by developing an efficient, equitable following an integrated water resources management approach.

ACTA Strategic Orientations

1- Protection of soil regeneration and improvement of its fertility
2-Fight against gullies and waterways
3- Agricultural valorization of CES works
4-mobilization of runoff water and increase in water storage in the soil, on the surface and in depth (green water and groundwater)

5-- Adaptation and climate change, GRN
6-Capitalization and dissemination of know-how
7-Listening to rural areas
8- Territorial Governance
9- Legal, regulatory and financial support
10 - Development Rural and Gender

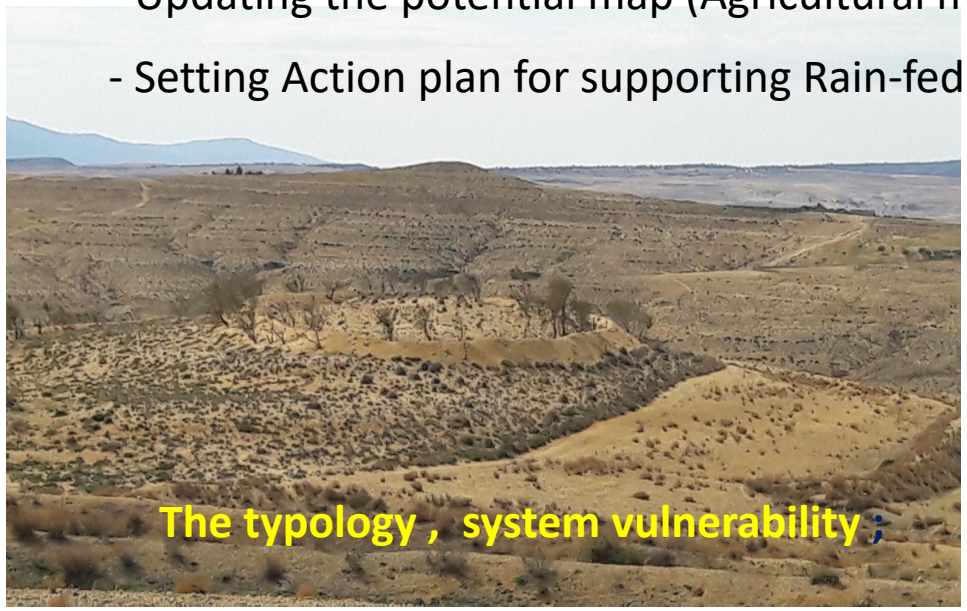


Support for rain-fed agriculture: a real challenge for the majority of program strategies and action plan (WSC – Waters by 2050)

- Developping Approaches and Tools for promoting Rai-nfed agriculture& implementation like

GSP Tools

- NSIS Soil Data base enhance modélisation of ecosystem services and simulation of real crop growth.
- Elaborating Maps : Spatialization in the territory (1.Vulnerability,2 .Priority,3 .planification,4 .Monitoring System))
- Soil Doctors accomodate farmers accompagnement
- Glosselan help to asses soil quality and fertilty
- Involving Research Results, Synergy with projects outputs
- VGSSM for SLM implementation in rainfed system agriculture
- Updating the potential map (Agricultural map) will serve as a basis for the support policy
- Setting Action plan for supporting Rain-fed agriculture



Linked Indicators rainfed systems Status

Impact Indicators measurements of developmental initiatives are needed to correct the type and nature of interventions and implementation modalities

- Indicator1 : Solid Transport T/ year
- Indicator2: Mobilized water m3/Hectare
- Indicator3: Developed superficies Hectare/ year
- Indicator4: Rate of Organic matter %
- By news strategy Main Challenge Develop 60 000 hec/year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