

# *Chenopodium quinoa*

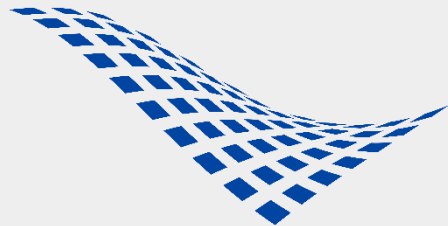
10 years of its introduction to Rhamna Region

Challenges and opportunities toward a sustainable adoption.

***Managing water scarcity in river basins : innovation  
and sustainable development***

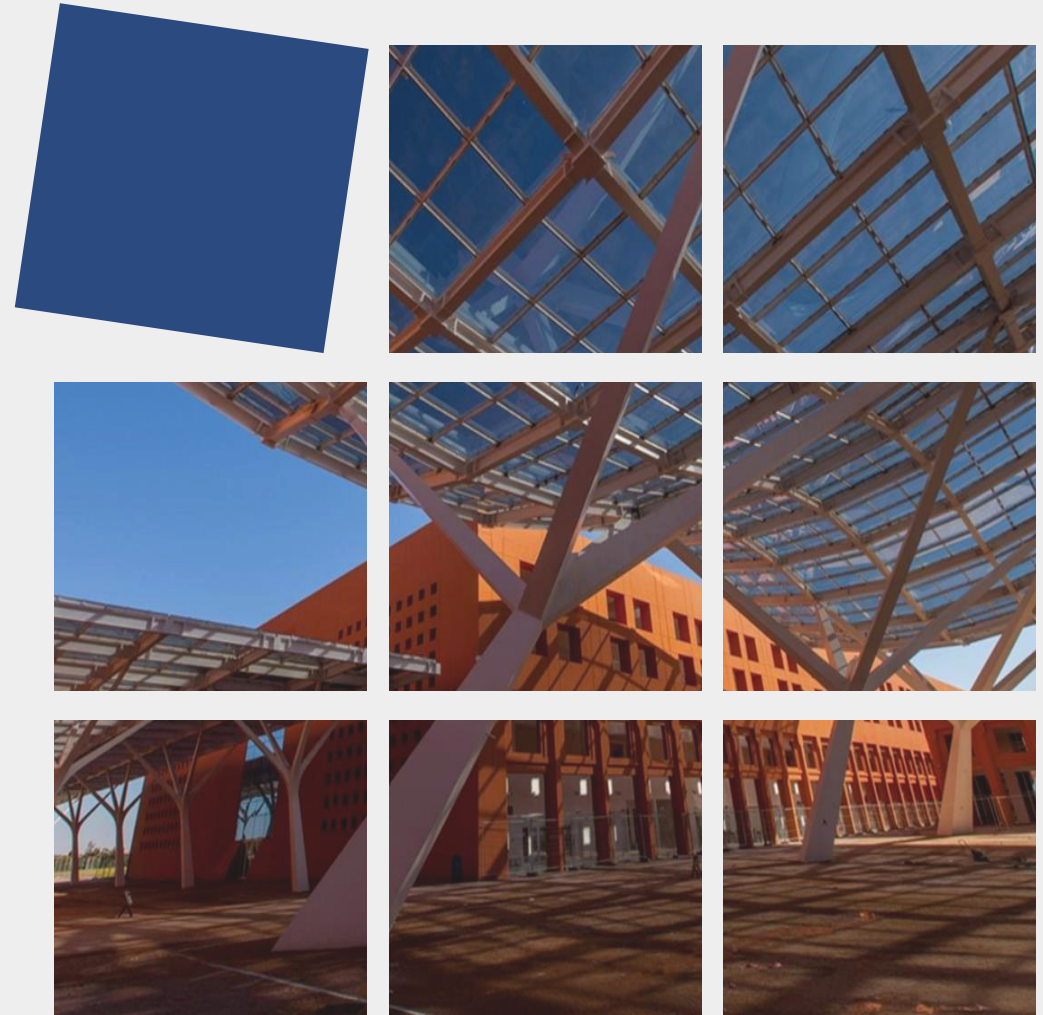
**Manal Mhada**

[manal.mhada@um6p.ma](mailto:manal.mhada@um6p.ma)



جامعة محمد السادس  
متعددة التخصصات التقنية

ⵜⴰⵎⴰⵎⵓⵔⵜ ⵏ ⵓⵎⵎⵓⵎⵎ ⵙⵉⵔⵉⵔ ⵏ ⵓⵎⵎⵓⵎⵎ ⵙⵉⵔⵉⵔ  
MOHAMMED VI POLYTECHNIC UNIVERSITY  
UNIVERSITÉ MOHAMMED VI POLYTECHNIQUE



# *Chenopodium quinoa*

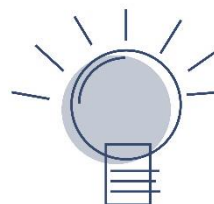
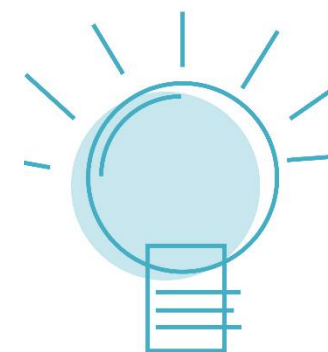
## 10 YEARS OF ITS INTRODUCTION TO RHAMNA REGION.

Value chain evaluation for better understanding and meaningful actions



# A BIT OF HISTORY FOR A BETTER UNDERSTANDING

What?  
When?  
How?  
Where?



# WHAT? WHEN?

- 1999 first introduction
- 2008 second introduction





# HOW? WHERE?

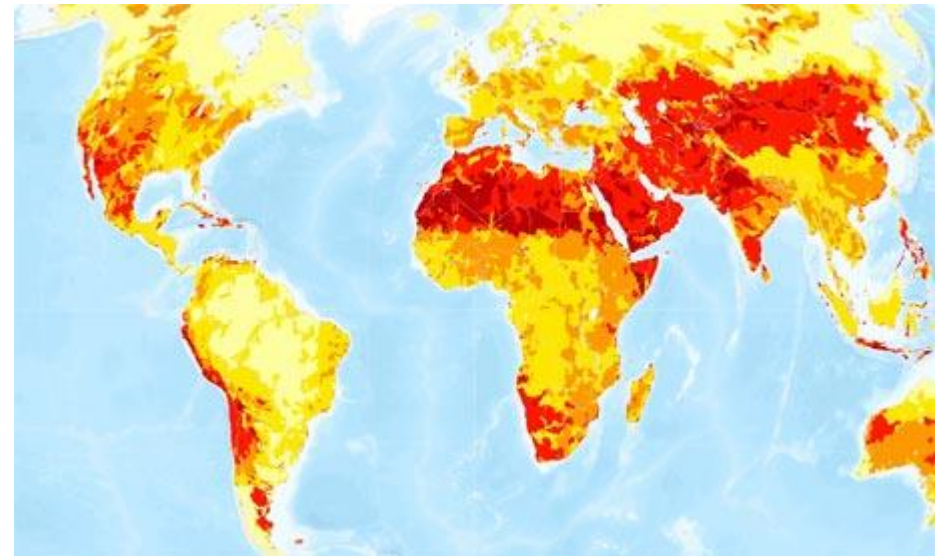
- Introduce alternative crops
- Khenifra, Rhamna, Abda....



# WHY?

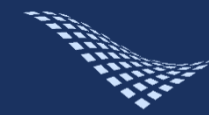
Let's see the big picture

- Water scarcity and geopolitical issues



Water risk: map and data via Guardian

# WHY?



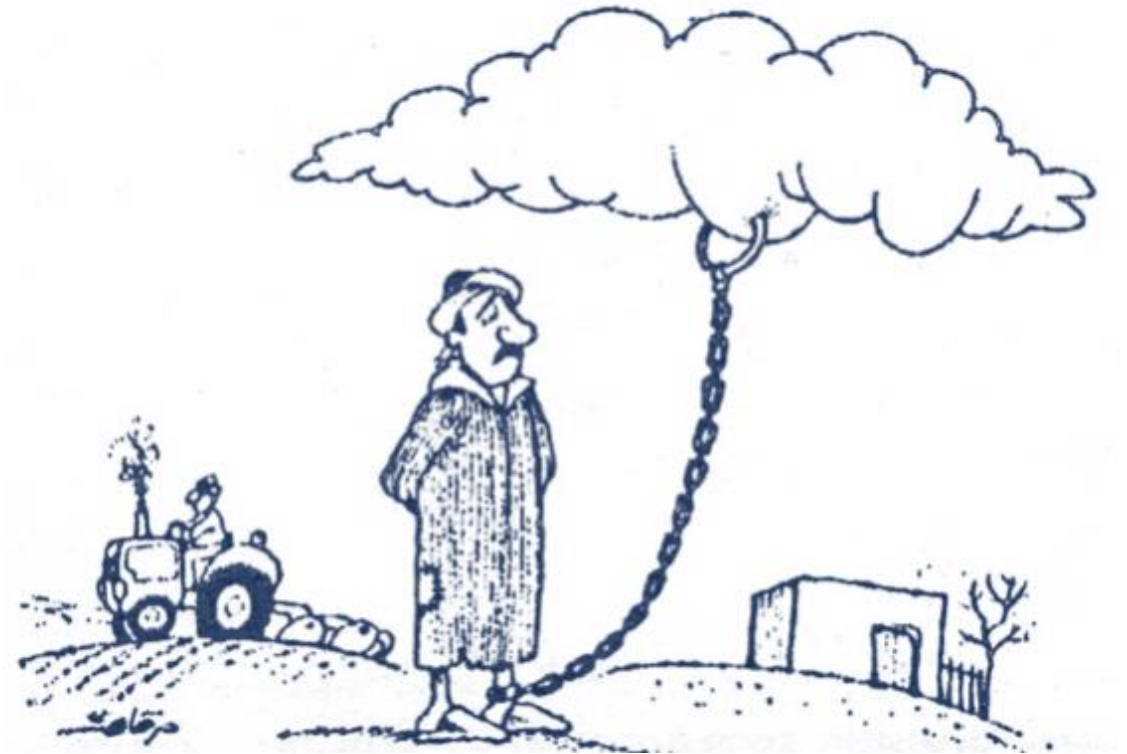
جامعة محمد السادس  
متعددة التخصصات التقنية  
MOHAMMED VI POLYTECHNIC UNIVERSITY  
UNIVERSITÉ MOHAMMED VI POLYTECHNIQUE





# WHY? RISKS AND CHALLENGES FACING SMALL FARMERS

- Climate change (Impact on agriculture, Foods, Security and Peace)
- Land degradation and persistent biotic and abiotic stresses
- Poor mechanisation
- Inadequate or weak environment policy
- Poor infrastructure





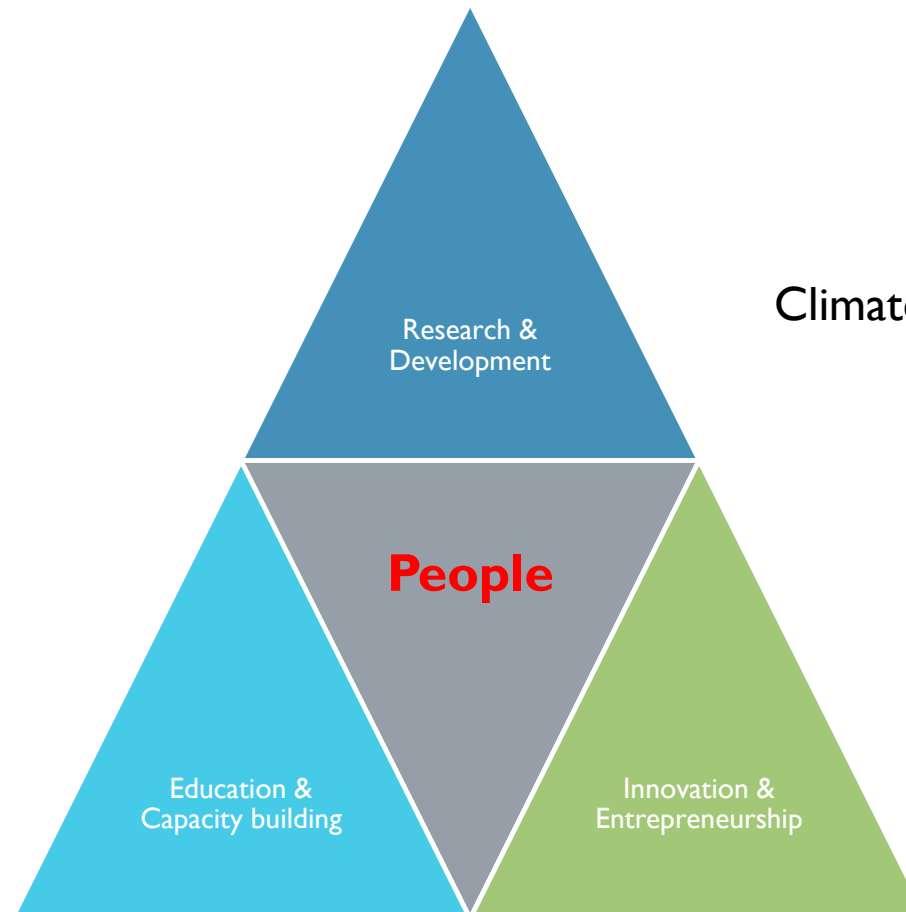
# WHY?

Different region

Different time

Different partners

**Same Vision and Drivers**



Climate is changing... People too

# SCALING UP QUINOA VALUE CHAIN TO IMPROVE FOOD AND NUTRITIONAL SECURITY IN THE RURAL/POOR COMMUNITIES OF MOROCCO

PARTNERS: UM6P – ICBA – IDRC



## Scaling up quinoa value chain to improve food and nutritional security in the rural/poor communities of Morocco

### 1 - Diagnostic

1.1. Socio economic survey

1.2. Determine gaps and weaknesses in the existing quinoa value chain

1.3. Identify opportunities for quinoa value chain development and actors



1.4. Identify upgrading strategies and develop a plan to address the identified gaps and weaknesses to enhance the existing value chain business model in Rhamna.



### 2 - Upgrade

2.1. Introduce high yielding cultivars and best practices for optimal productivity

2.2. Develop quinoa based products that fit within the Moroccan context

2.3. Upgrade production

2.4. Assess the demand for quinoa product and develop marketing and pricing strategy



2.7. Assess the impacts and performance of the upgraded business model and develop scaling up strategy.



### 3 - Upscale

3.1. Establish seed production system

3.2. Generate demand for quinoa products



3.3. Create a conducive policy environment for a national quinoa program



### 4 - Exchange

4.1. Establish linkages between value chain actors including governmental entities, farmers, women cooperatives and private (OCP, Start-up)

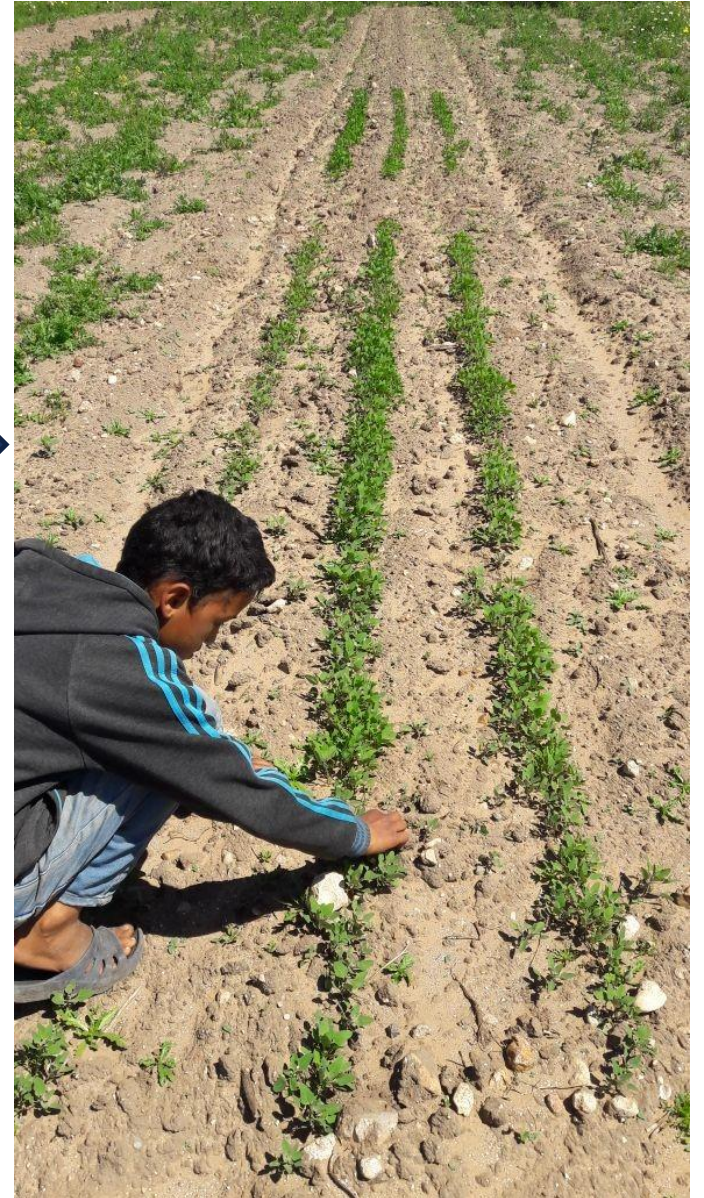
4.2. Develop and deliver training packages to all value chain actors (extension services, farmers, women cooperatives...etc)

4.3. Generate awareness concerning quinoa and its benefits through dissemination of project results





Field evaluation  
in farmers lands



Trials at the  
Experimental  
farm of the  
UM6P









# Survey



Sharing

Foods

Experiences

Livelihood

Space





# Training

## Field training

- Best practices of quinoa production
- Importance of crops diversification
- Nutritional value





## Visits to the University and the Experimental farm



# DIAGNOSTIC

SOCIO-ECONOMIC SURVEY

VALUE CHAIN EVALUATION

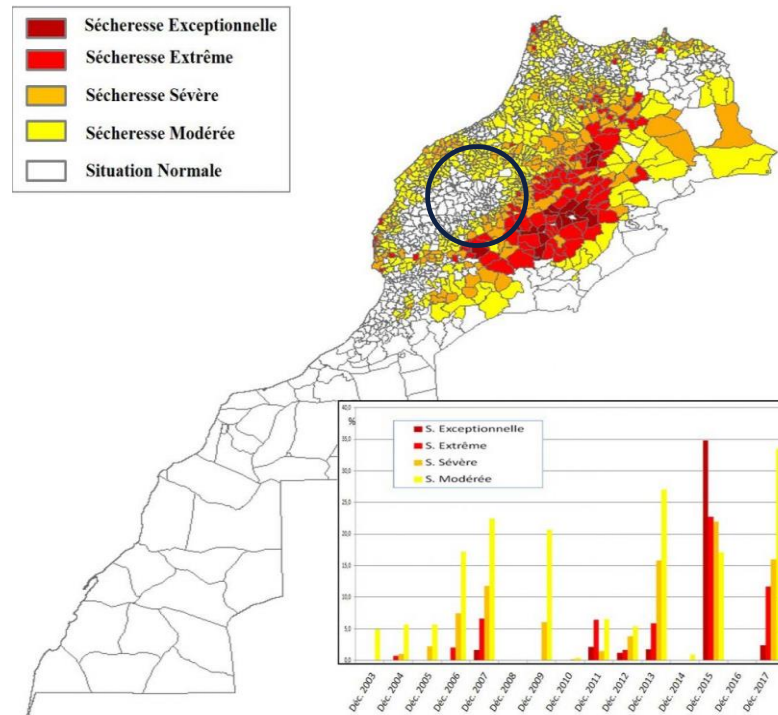




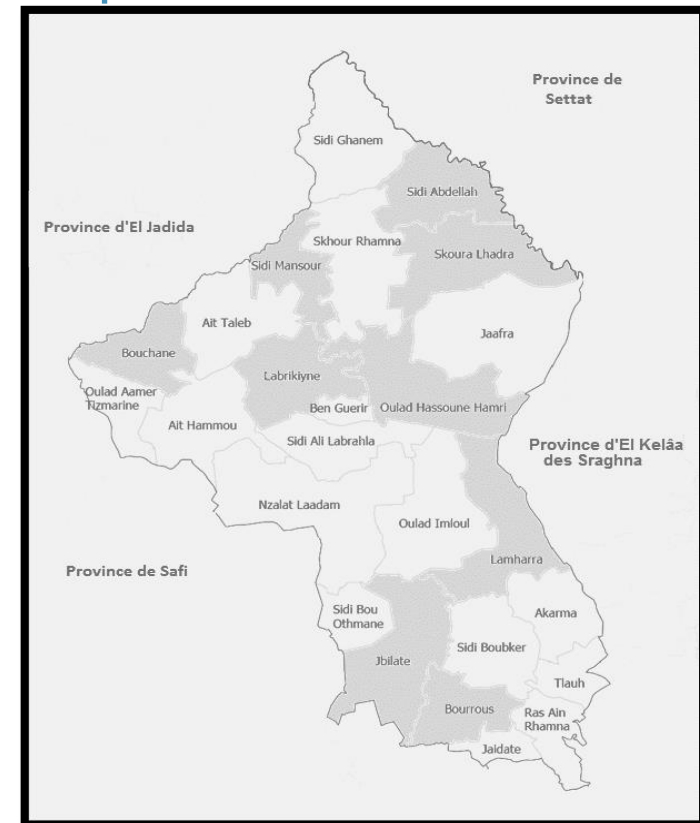
# SOCIO-ECONOMIC SURVEY

## AREA OF STUDY

### Map of Morocco – Drought variation 2003/2017



### Map of Rhamna Province



# SOCIO-ECONOMIC SURVEY

## DESCRIPTIVE ANALYSIS

### Surveys distribution on the province

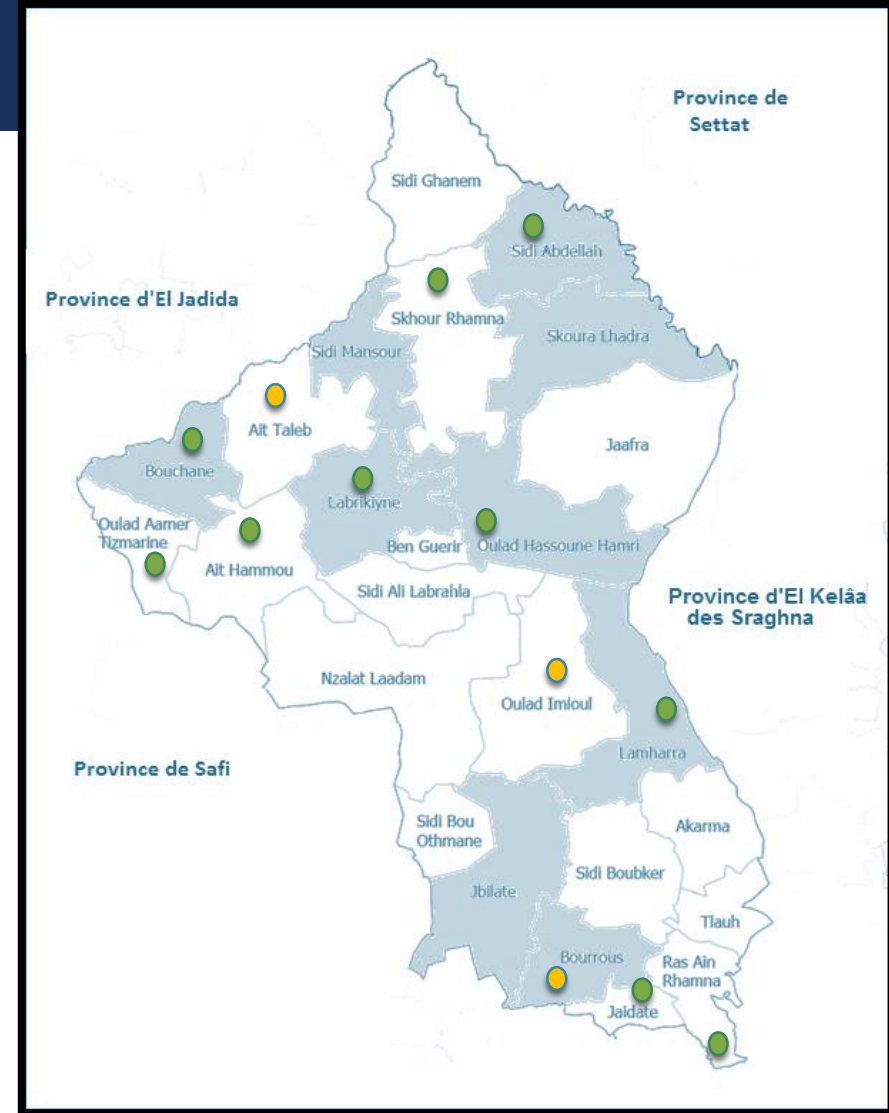
#### The men's Survey

	Commune	Number of men
1	Ait Hemmou	15
2	Ait Taleb	10
3	Bouchane	14
4	Bourous	23
5	Jaâdate et Ras El Ain	11
6	Lebrikiyine	13
7	Lemharra	82
8	Oued Imloul	48
9	Ouled Amer Tizmarin	20
10	Ouled Hessoun	13
11	Sidi Abdellah	46
12	Skhour Rhamna	23
	Total général	318

#### The women's Survey

Commune	Effectif de femmes
Ait Hemmou	1
Bouchane	8
Bourrous	11
Lebrikiyine	11
Lemharra	67
Oued Imloul	38
Sidi Abdellah	19
Skhour Rhamna	24
Jaâdates	2
Total général	181

= 499 cases / stories / experiences....

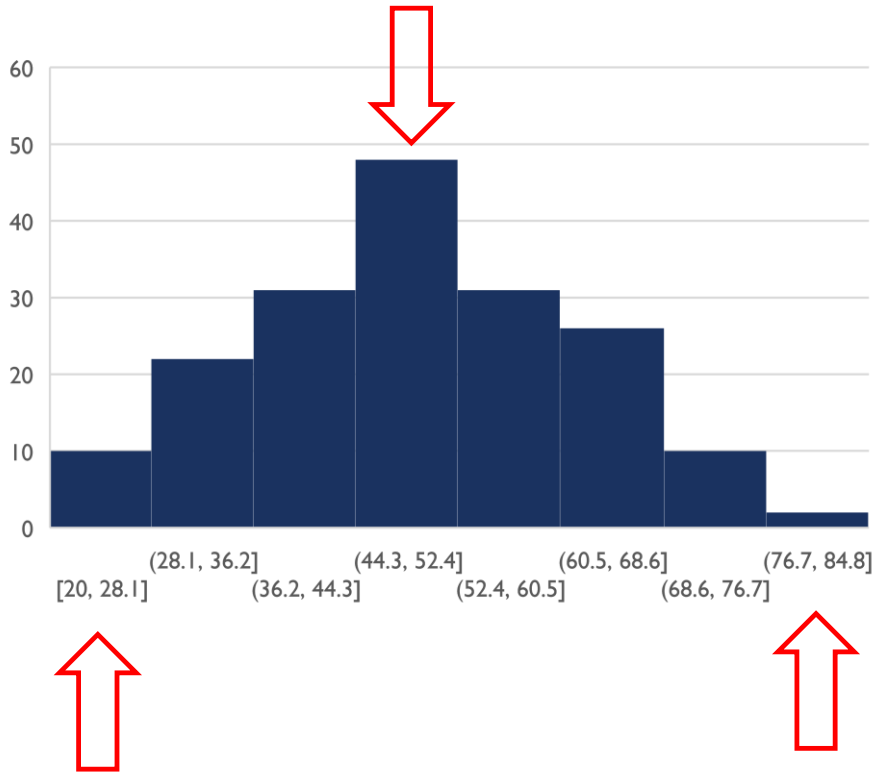


Map of Rhamna Province

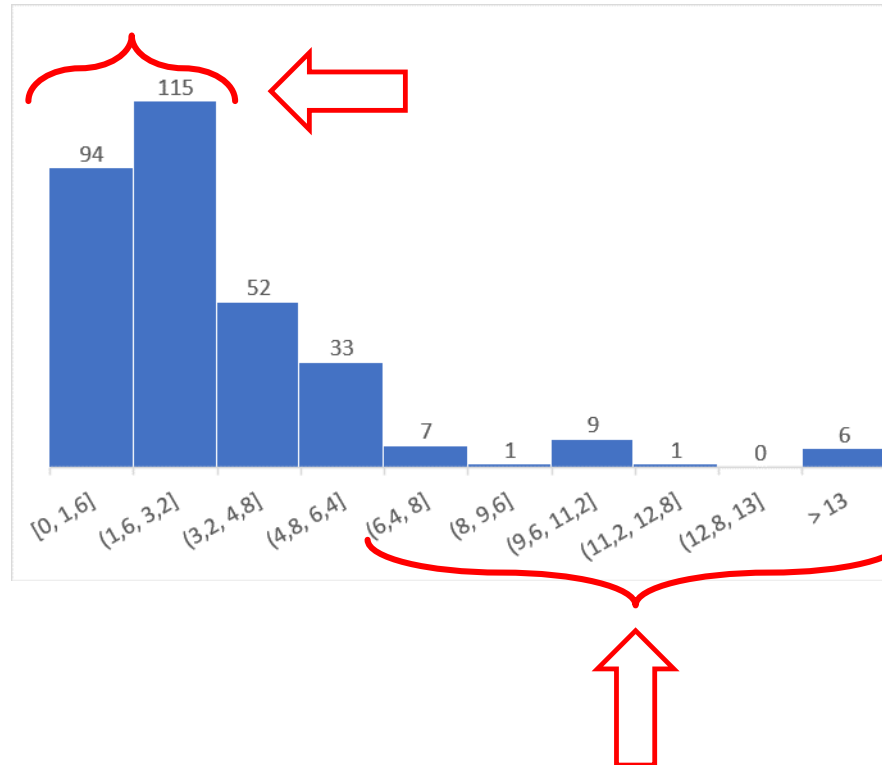
# SOCIO-ECONOMIC SURVEY

## DESCRIPTIVE ANALYSIS

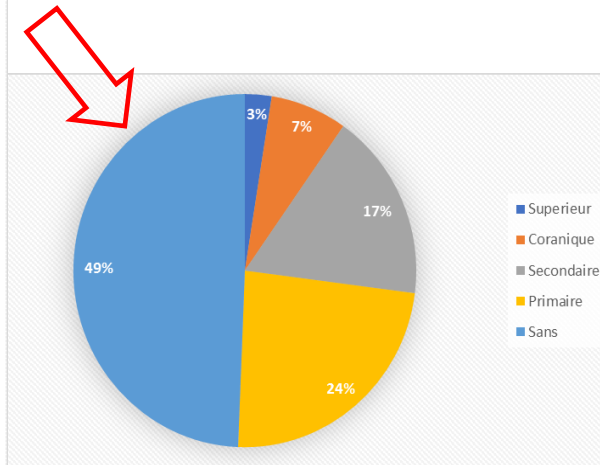
Age ranges



Farms size distribution



Education level







# SOCIO-ECONOMIC SURVEY

## DATA ANALYSIS

Exploring farmers' attitude toward diversification and adoption of new crops

- Farmers perceived problems - general

Production technique

Profitability

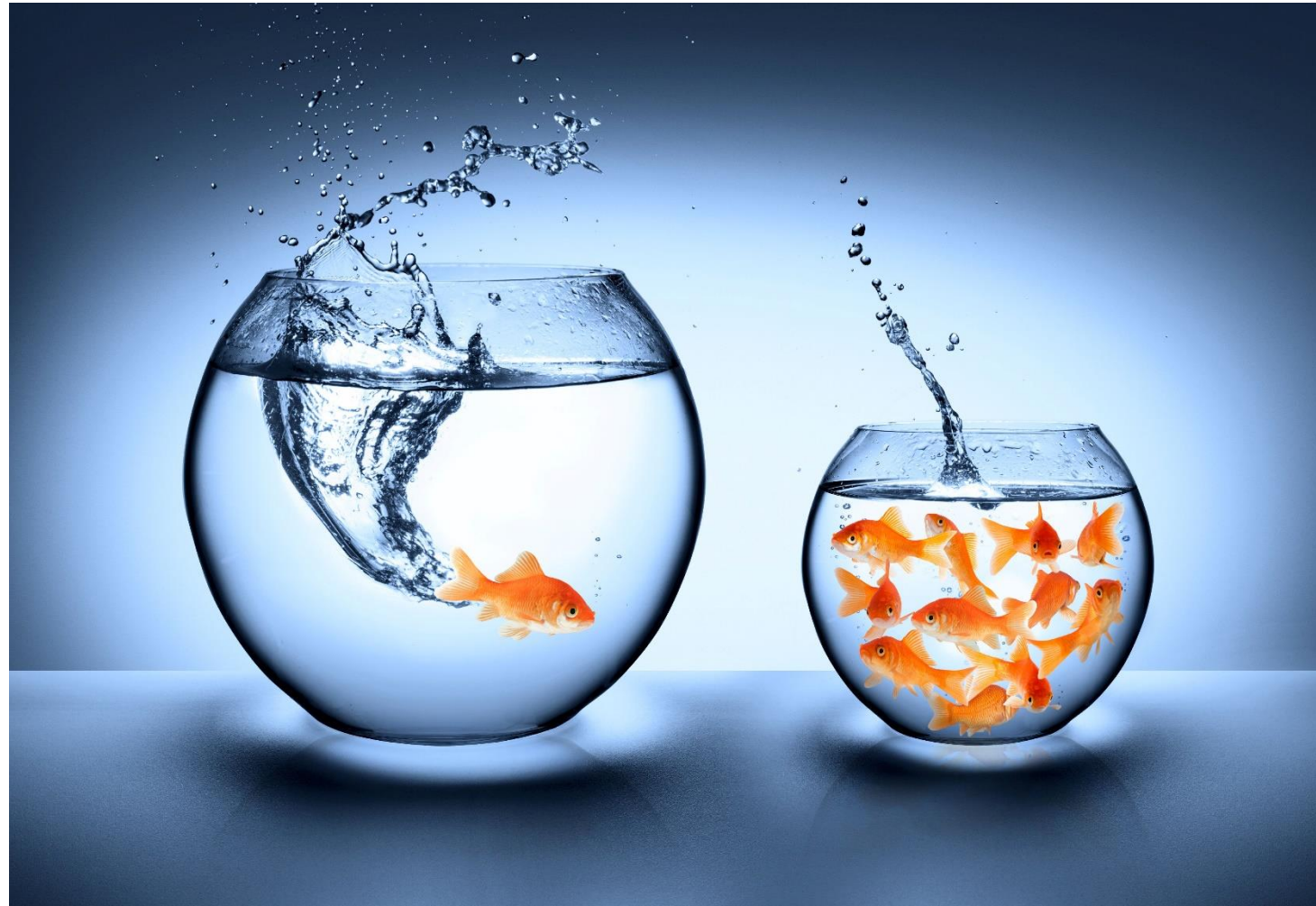
Funding

Market

Uses .....

Challenges	Description
Production technique	Training on production techniques
	Less work forces
	Technical and local supervision and Follow-up
	Viable seeds
Funding	Mechanization
	Facilities to start the compagne
Profitability	Yield higher than other crops
	Interesting price and revenu
Market	An existing market
	Easy marketable product
	Develop contract with B2B
Uses	Fodder
	Auto consumption

# BIG PROBLEMS = HUGE OPPORTUNITIES





# CHALLENGES TO OPPORTUNITIES

## Drivers for adoption of quinoa

- Researchers perceived Solutions

Solutions	Description
Production technique	Training on production techniques Technical and local supervision and Follow-up Viable seeds Mechanization
Funding	Facilities to start the compagne
Profitability	Yield higher than other crops Interesting price and revenu
Market	An existing market Develop easy marketable product Develop contract with B2B
Uses	Multi uses - Fodder Auto consumption

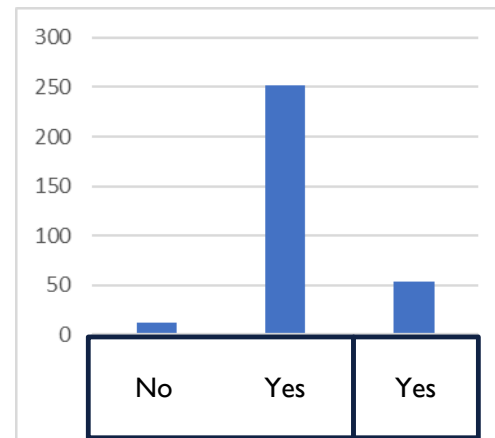
# VALUE CHAIN EVALUATION





# VALUE CHAIN EVALUATION

## The ambition to cultivate quinoa



← Number of farmers who know about quinoa

Number of farmers does not know about quinoa and their interest expression

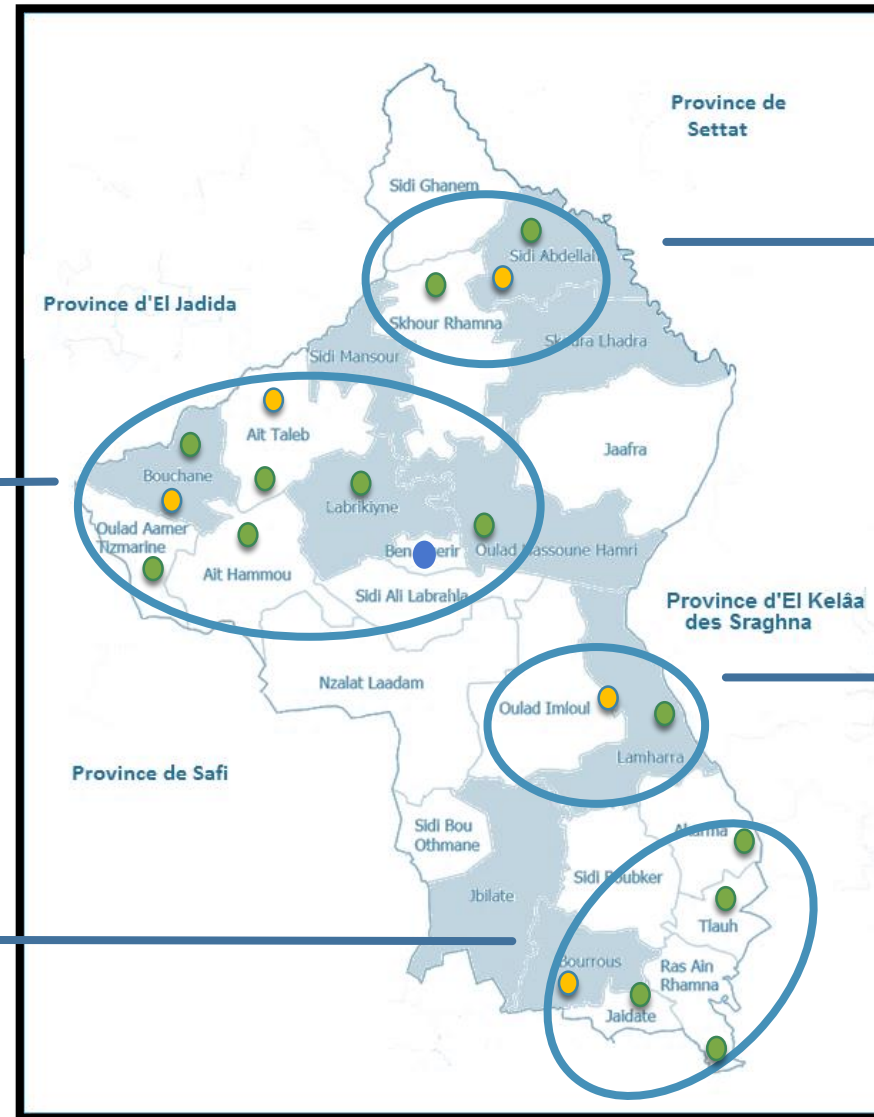
## Potentiel areas

### Localization 1:

- Presence of production and processing association of quinoa.
- Existence of a well-organized local by INDH.

### Localization 4:

- Irrigated area.
- Possibility of using quinoa in an intercropping system with young olive plantations.
- Existence of a well-organized local by INDH.



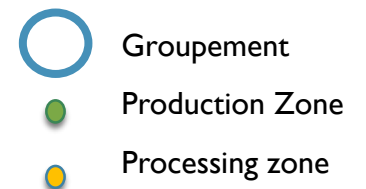
Map of Rhamna Province

### Localization 2:

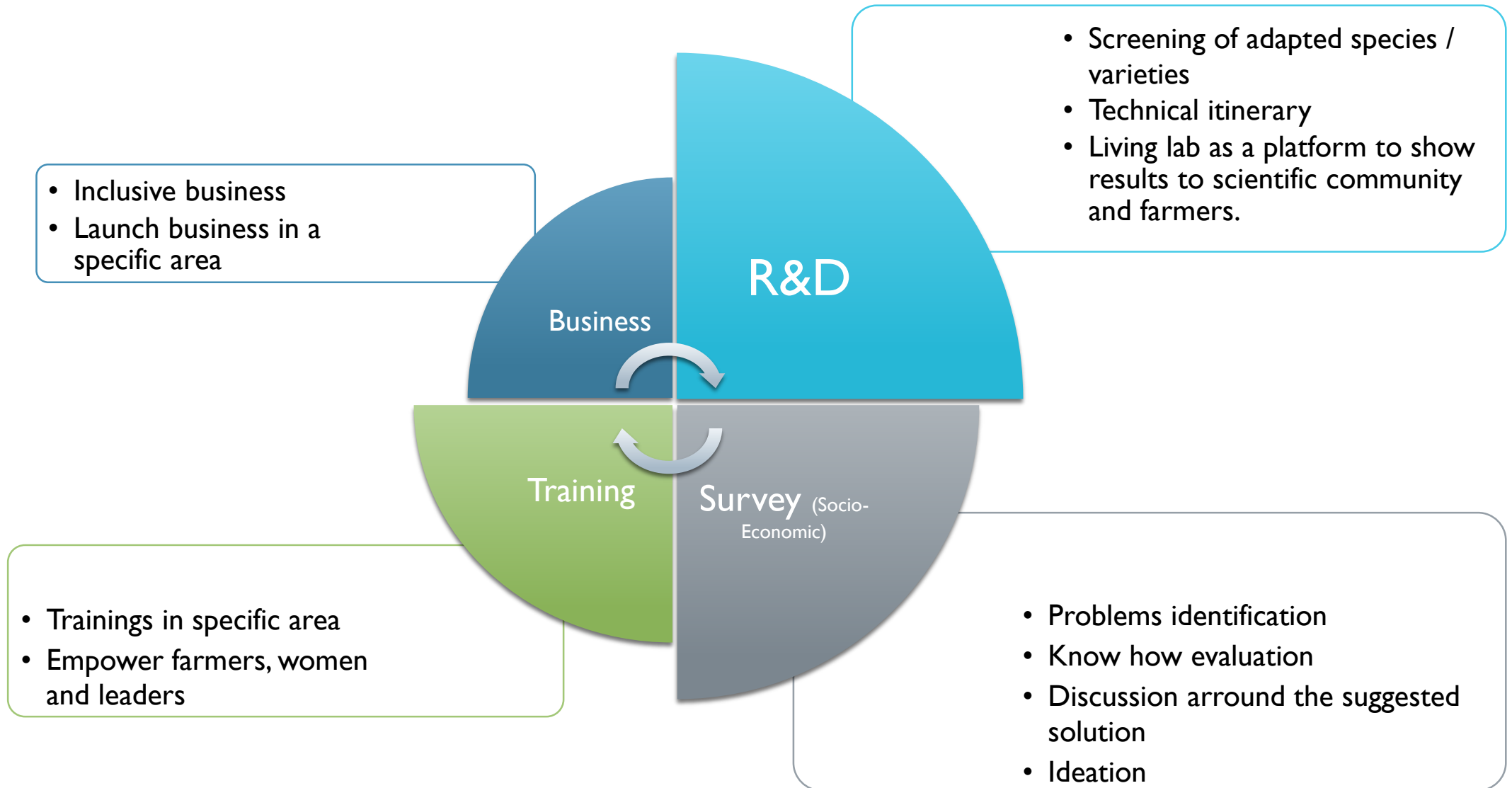
- Region highly affected by cochineal = abundance of agricultural land.
- Existing cooperative.
- Women very involved in Income Generating Activities

### Localization 3:

- Existence of a well-organized local by INDH.
- Women very involved in Income Generating Activities
- Abundance of agricultural land







Value chain evaluation for a better understanding and meaningful actions

# CONCLUSION



SDGs: to get everyone on board to unite the vision and accelerate the process

To bring other players to support not only small initiatives... but to accelerate a movement that we are co-creating around the World.

# THANKS TO:

## ■ Partners:

UM6P

IDRC

ICBA

La province de Rhamna

Local Authority

DPA, ONCA

## ■ Students:

Oumaima Rami

Amira Fetouab

Fatima Azaykou

Youssef Bentata

Mouhssine Sallami





# Thank you

*Managing water scarcity in river basins : innovation  
and sustainable development*

Manal Mhada

[manal.mhada@um6p.ma](mailto:manal.mhada@um6p.ma)

Challenges and opportunities toward a sustainable Quinoa adoption.

