1st Mediterranean Forum for PhD Students and Young Researchers

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Performance of Farming Systems in Semi-Arid Areas: Lebanon Case Study

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1. Introduction

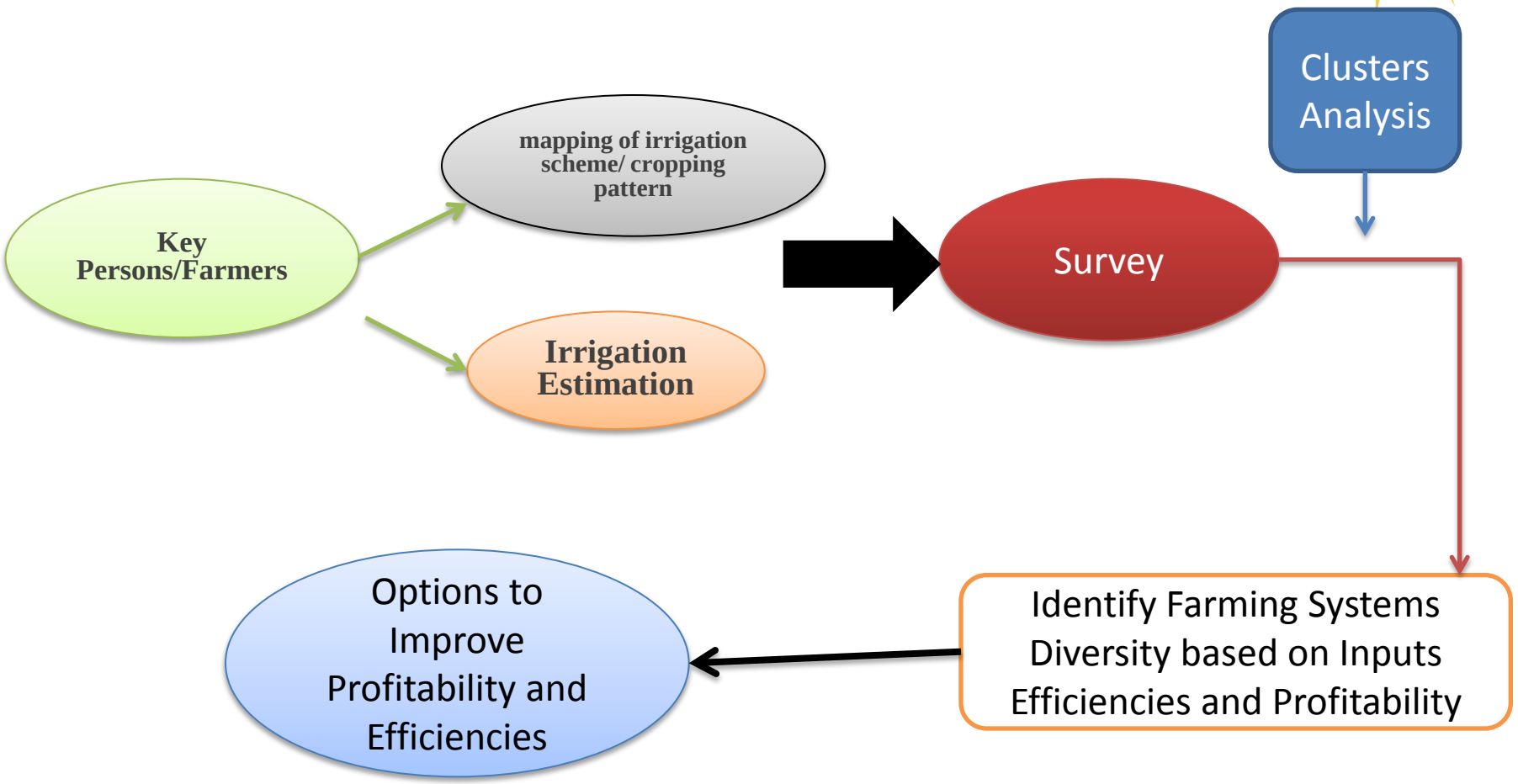
- Water scarce region: 70% of the region's agricultural production is currently rain-fed.
- Investing has been in provision of more irrigation water through dams and reservoirs.
- The Government of Lebanon plans to increase the water storage capacity from its present level of MCM 220 to higher levels of about MCM 500.
- In the past 2 decades, tens of artificial irrigation lakes were constructed by in all regions of Lebanon.
- Ministry of Agriculture (MoA) is planning to construct more than 110 irrigation lakes in the coming five years in marginal rural areas to improve the livelihood of poor farmers.

The purpose is to assess the performance of farming systems in semi-arid areas in terms of water use and other inputs efficiencies.

- → Classify the farms based on structural criteria.
- → Associate for each farm type input efficiency indicators.
- → Discuss production strategy for each farm type.
- → Discuss levers for improving farms profitability and efficiency.

Baalbek-Hermel area is the most decertification prone area in Lebanon with high rainfall fluctuation.

2. Materials and Methods

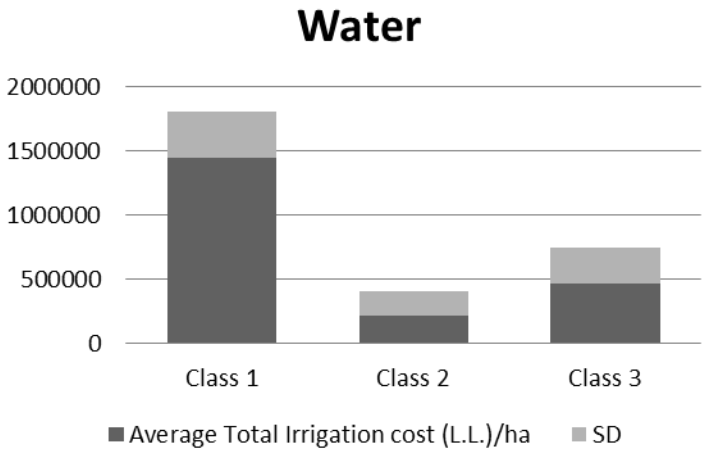


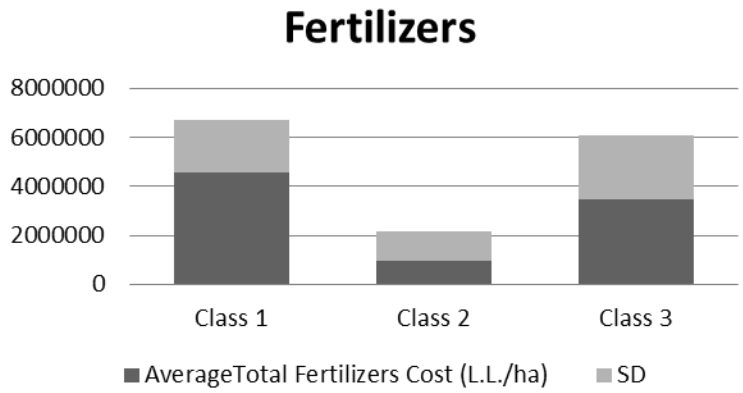
3. Results and discussion:

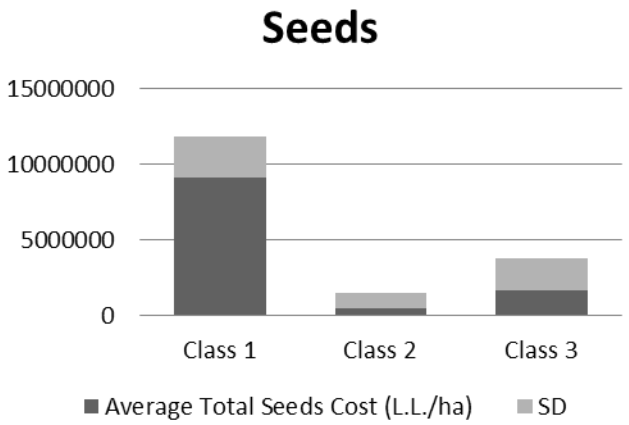
1= Highest Value 2= Medium 3= Least

	Class 1: Potato & Barley	Class 2: Grapes &Tobacco	Class 3: Vegetables & Fruits
Gross Margin	3	1	2
Surface Area	1	2	3
Water Cost	1	3	2
Seeds Cost	1	3	2
Fertilizes Cost	1	3	2
Pesticides Cost	3	2	1
Transport Cost	1	3	2
Labor Cost	3	2	1

3. Results and discussion:







4. Conclusion

1) Water is not always the problem/solution in semi-arid farming systems.
2) Other factors of production should be taken also taken into account when planning to introduce irrigation projects. Improving the efficiency of resources can improve farm profitability, without the need to put more inputs.
3) Irrigation distribution systems based on units of area or time are not always inefficient as usually perceived.