

Analysis of the drivers of practices in the irrigated farming systems: a multi-level spatial explicit approach in northern Tunisia during the past 15 years

I. Ferchichi¹ – I.Mekki¹, – N. Taouajouti¹ – F. Abdelwahed¹ – A. Zairi¹ – R. Zitouna-Chebbii¹ – D.Rizzo²

1 INRGREF – 2 UMR LISAH



Analysing Crop Decision-Making systems in Irrigated Areas

- Describe farmers' decision-making process for crop choice and management
- Understand dynamics of crop sequences and identify key factors influencing these decisions

**Case study Irrigated area Echraf,
Haouaria Plain**

Data and Method

Irrigation network plan; Plot and land use maps	Georeferenced database on cropping systems	Interviews with experts (administration)																																			
<p>2017; 2008-2017</p>	<p>2008-2017</p>	<div> </div> <div> </div> <div> <p style="text-align: center;">↓</p> <p>Calendrier culturel (CTV Haouaria)</p> <table border="1"> <thead> <tr> <th>janvier</th> <th>février</th> <th>mars</th> <th>avril</th> <th>mai</th> <th>juin</th> <th>juillet</th> </tr> </thead> <tbody> <tr> <td>préparation de la terre</td> <td>transplantation + recouvrement DAP</td> <td>2ème irrigation</td> <td>200g E DAP+ 100g G AM+ irrigation</td> <td>32kg AM-0kg acide phosphorique+10 kg nitrate potasse</td> <td>4kg AM+4l phosphate +64kg solupotasse</td> <td>récolt</td> </tr> <tr> <td></td> <td></td> <td></td> <td colspan="3" style="text-align: center;">irrigation chaque 3-4jrs</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td colspan="2" style="text-align: center;">irrigation chaque 45min</td> <td colspan="2" style="text-align: center;">irrigation chaque 2h/jour</td> </tr> <tr> <td></td> <td></td> <td></td> <td colspan="3" style="text-align: center;">prévention de Mildiou : après 18 jrs de plantation application du traitement systémique → après 10^{ème} application du pénétrant (étoic) → → jusqu'à mi-mai pénétrant (une fois/semaine)</td> <td></td> </tr> </tbody> </table> </div>	janvier	février	mars	avril	mai	juin	juillet	préparation de la terre	transplantation + recouvrement DAP	2ème irrigation	200g E DAP+ 100g G AM+ irrigation	32kg AM-0kg acide phosphorique+10 kg nitrate potasse	4kg AM+4l phosphate +64kg solupotasse	récolt				irrigation chaque 3-4jrs							irrigation chaque 45min		irrigation chaque 2h/jour					prévention de Mildiou : après 18 jrs de plantation application du traitement systémique → après 10 ^{ème} application du pénétrant (étoic) → → jusqu'à mi-mai pénétrant (une fois/semaine)			
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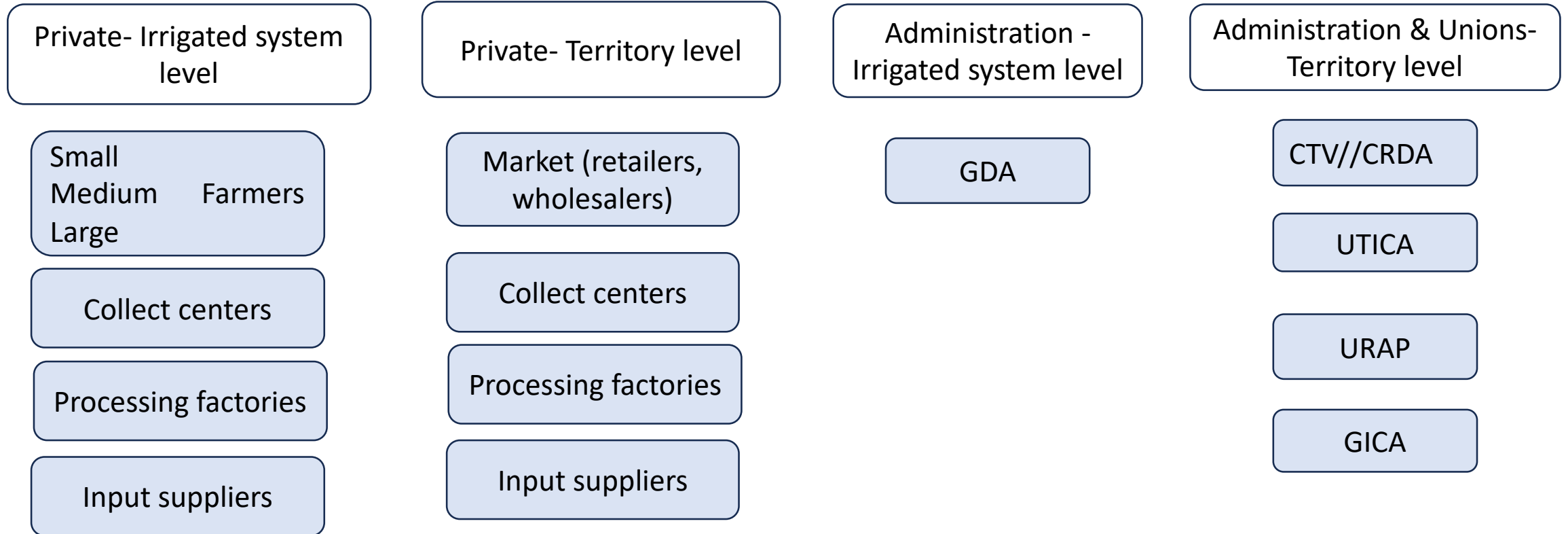


Agro-industry plants (tomato and pepper transformation)

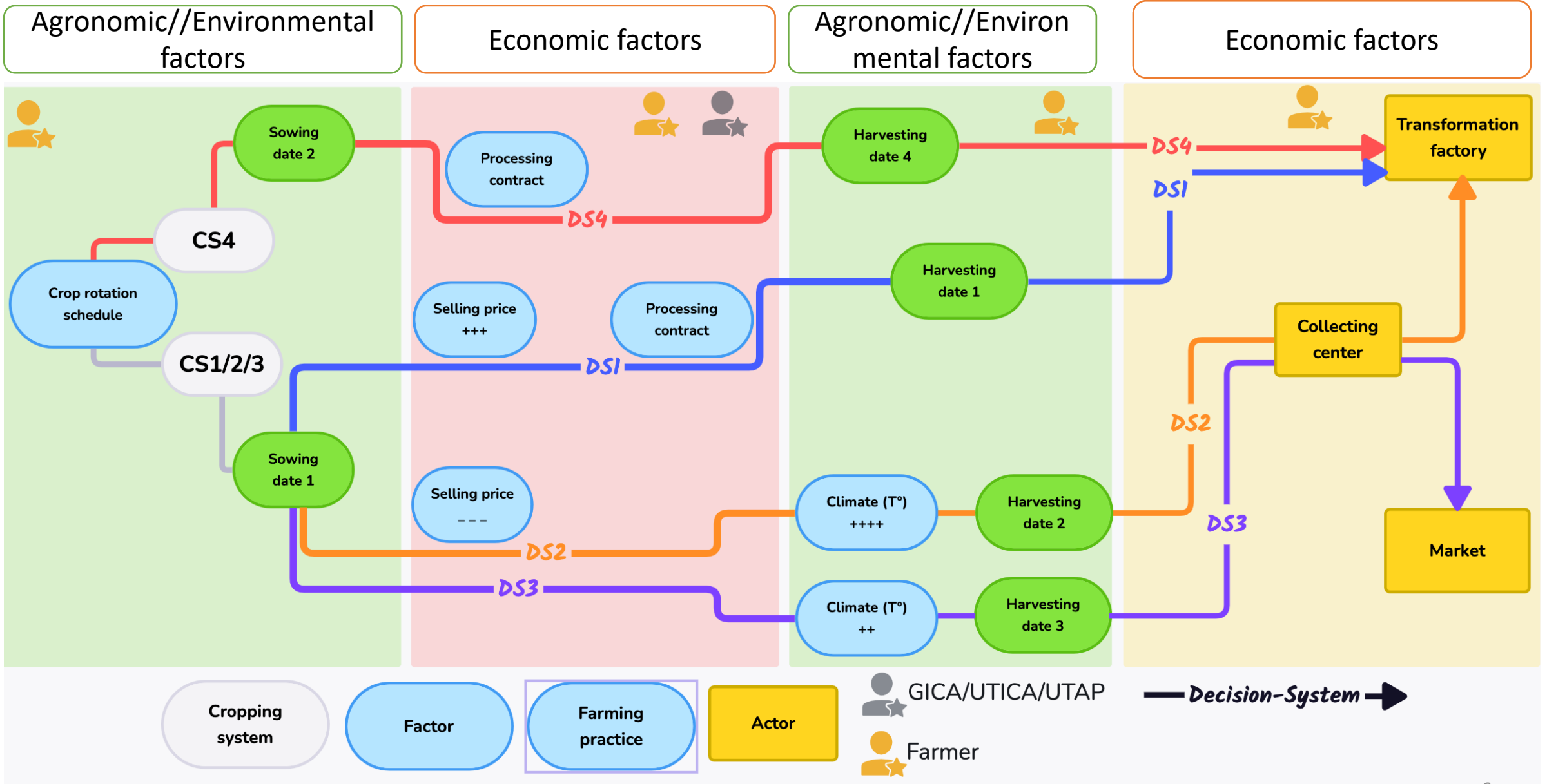
Cropping systems

- SC1: Tomato//Forage crops
- SC2: Tomato//Early and first early potatoes
- SC3: Tomato// Peanuts
- SC4: Tomato//Late peanuts

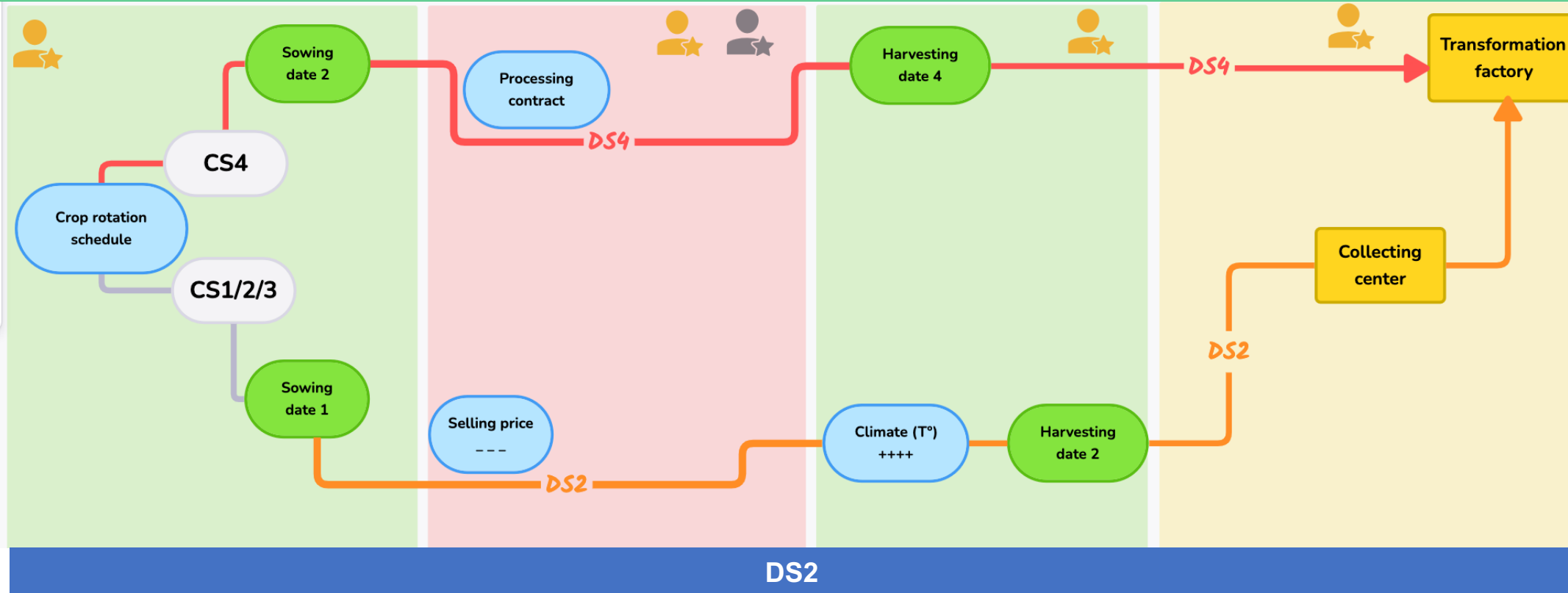
Findings/Key actors-tomato cropping systems



Findings/Decisional systems

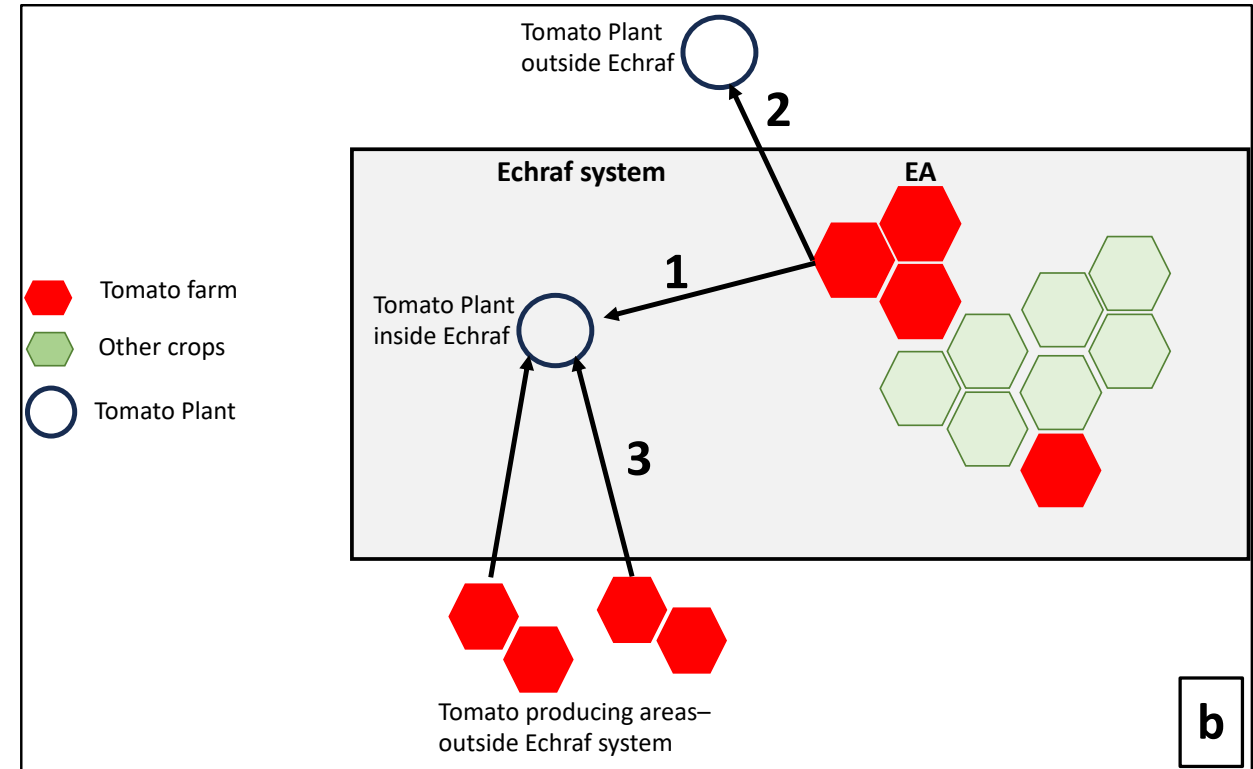
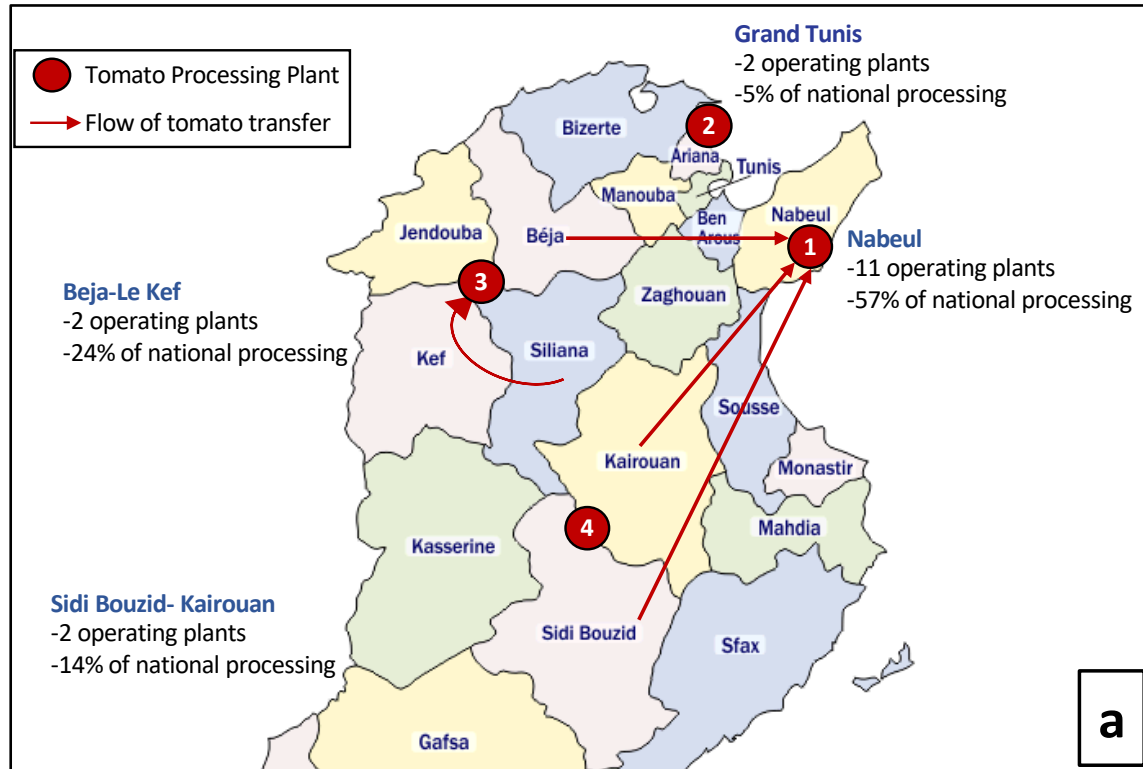


Findings/Example DS2 & DS4



- CS 1: Fodder crop/Tomato/Fodder crop
 - Sowing date: the end of February and mid-June
- ➔ If the selling price is not acceptable for the farmer & if the temperature is high
- ➔ Harvesting date: Late May-early June
- ➔ The farmer will go through a collection center

Findings/Key actors-Industrial tomato production



Theoretical & Practical implications

Complexity of Decision-Making

- Multiple nested levels at various temporal and spatial scales
- Interdependencies between factors within and outside decision unit

Influence of Other Actors & importance of institutional actors

- Internal and external to the analyzed level
- Direct and indirect impacts on farmers' decisions



Need for Multidisciplinary Approach

- Consider actors' logic and socio-economic context
 - Initiation of a Multi-stakeholders' dialogue

THANK YOU FOR YOUR ATTENTION

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