

SENSOLIVE: UVL for Variability Management in Deficit Irrigation of Olive Groves

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- **Context**

- Previous experience

- Variability modelling

- Approach and challenges

1. Context

“As the largest water user, agriculture accounts for around 40% of the total water withdrawal in Europe, amounting to more than 80% in southern regions.”
[1]

“Olive production is strategic in Spain, where 51 % of the olive grove surface of the European Union is to be found.” [2]

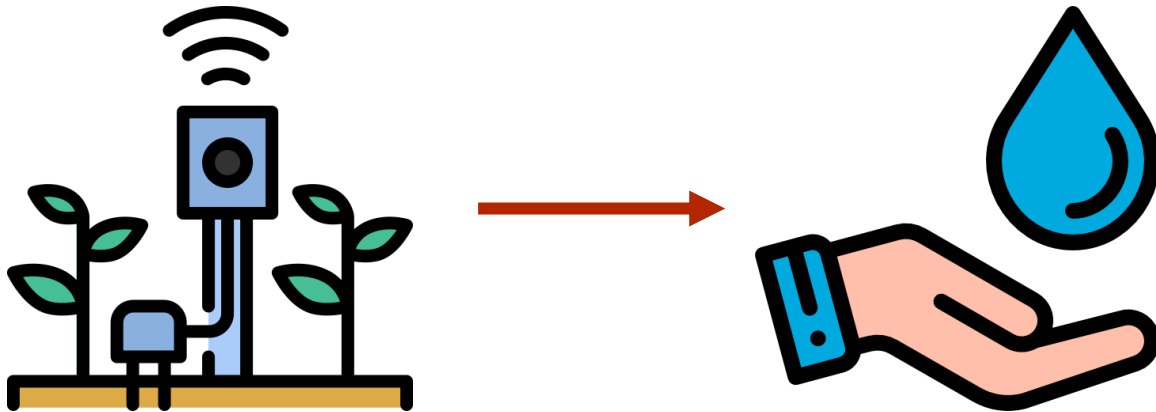


[1] P. Martinez, M. Blanco, Sensitivity of agricultural development to water-related drivers: The case of andalusia (spain), *Water* 11 (9) (2019) 1854.

[2] E. Taguas, J. Gómez, P. Denisi, L. Mateos, Modelling the rainfall-runoff relationships in a large olive orchard catchment in southern spain, *Water Resources Management* 29 (7) (2015) 2361–2375.

1. Context

Deficit Irrigation [3]

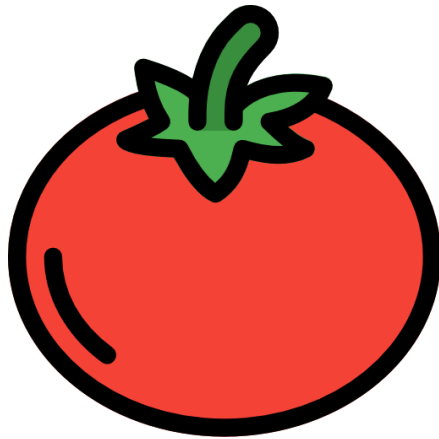


[3] A. Capra, S. Consoli, B. Scicolone, Deficit irrigation: Theory and practice, Agricultural irrigation research progress 4 (2008) 53–58.

- Context
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2. Previous experience

AquaIA: Implementing Controlled Deficit Irrigation by Means of Feature Modelling Techniques [4]



50400 configurations

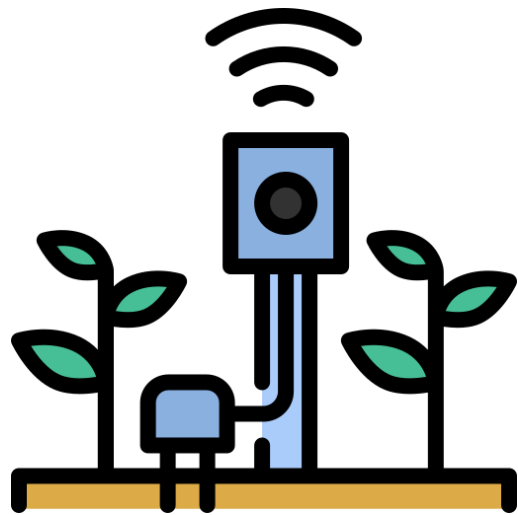
```
features
  "AquaIA: crops"
  mandatory
    Crop
    alternative
      Lettuce
      Tomato
  "Configuration constants"
  mandatory
    "Soil type"
    alternative
      Sandy
      SandyLoam
      Silty
      ClayLoam
      Clay
```

[4] F. S. Benitez, J. A. Galindo, M. Corell, F. J. Domínguez Mayo, Aquaia: Implementing controlled deficit irrigation by means of feature modelling techniques, in: Proceedings of the 2025 29th ACM International Systems and Software ProductLine Conference-Volume A, 2025, pp. 201–210.

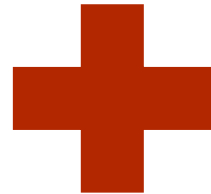
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- Approach and challenges

3. Variability modelling

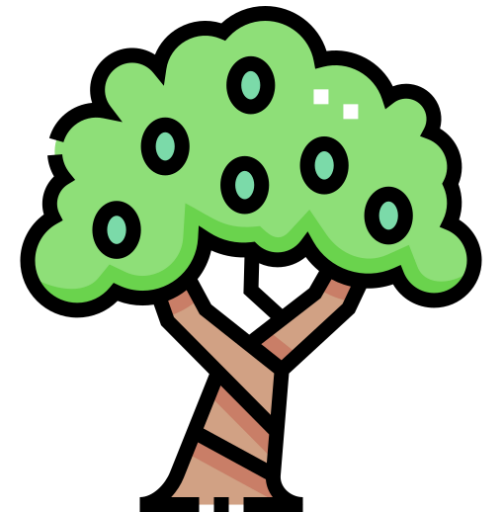
Variability



Sensors



Irrigation
methods



Crops

- 
- Context
 - Previous experience
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 - **Approach and challenges**

4. Approach and challenges

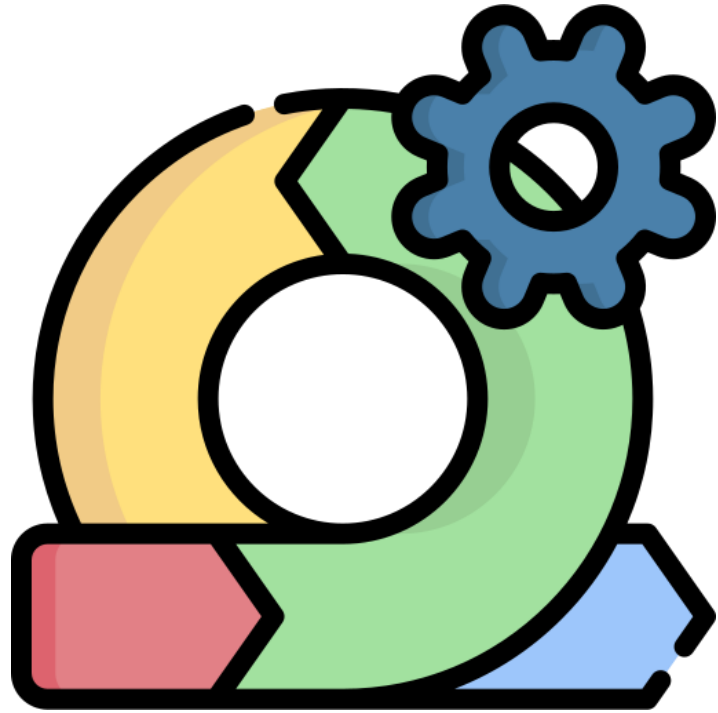


Model



Build

4. Approach and challenges



Agile methodologies



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