

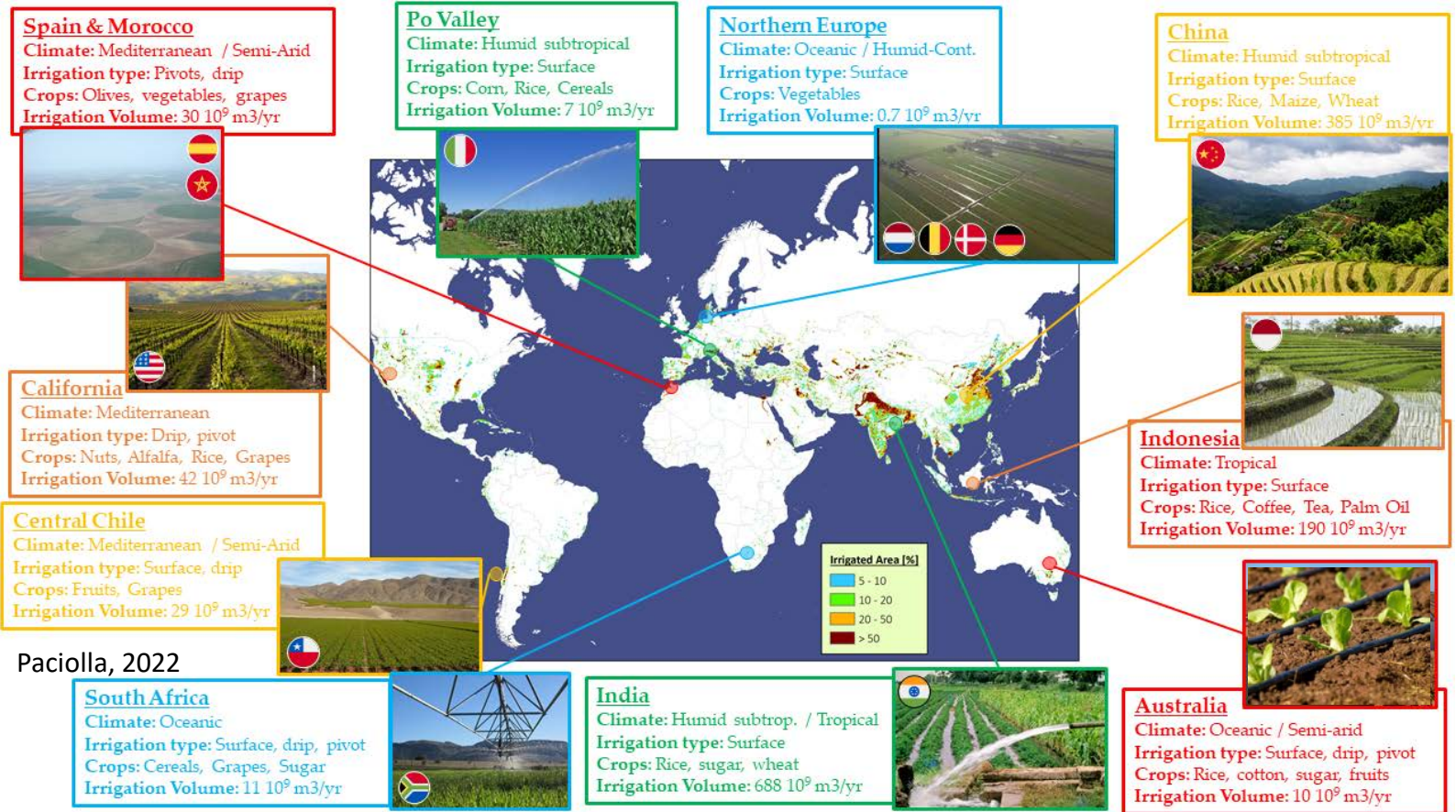


Irrigation quantification and management, and its effect on the water cycle

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The working group aims to advance our knowledge of the irrigation process, its quantification, and on how the management of irrigation water could impact the water and energy cycles, and how we could better implement this process and effects into land surface models.



Paciolla, 2022

Irrigated areas: 2% of the global land area (17% of cultivated area)

contributes 40 percent of the total food production

Agriculture is the largest consumer of water worldwide, accounting for 24% of total freshwater use in Europe, with 80% in some areas of the World (FAO 2022).

## **Contribution to HELPING themes:**

We will look at irrigation at multiple scales, from the field scale (**Theme 1, Research Goal 1**) to Irrigation district areas and continental areas, by understating the differences and similarities across world regions (**Theme 1, Research Goal 2**).

### **The main questions we aim to address are:**

- how much water is used for irrigation worldwide at multiple scales?
- How can we improve the modeling of the irrigation process in our hydrological models integrating with remote sensing data?
- What are the impacts of irrigation on the water and energy cycles, and how will they change over time?

## **Expected outcomes:**

- (a) short-term: create a global network of researchers, identification of available datasets, process knowledge and methodologies, helping to identify new research questions.
- (b) long-term perspective: improve the knowledge of the irrigation process and management, and its impact on the water and energy cycles.
- (c) ultimate result: leverage this working group network and results to build long-lasting activities on irrigation water volume quantification and management; and to involve irrigation water stakeholders

## **Activities:**

- Meetings and webinars to allow researchers working on the irrigation topic to connect each other and create a network of scientists, focusing on cutting-edge research questions
- Meetups at EGU, AGU, IAHS,...conferences
- Collaborative papers, Journal issues
- Development of common activities
- Connection with other existing working groups, as the GEWEX GLASS/GHP Irrigation Cross-Cut initiative