



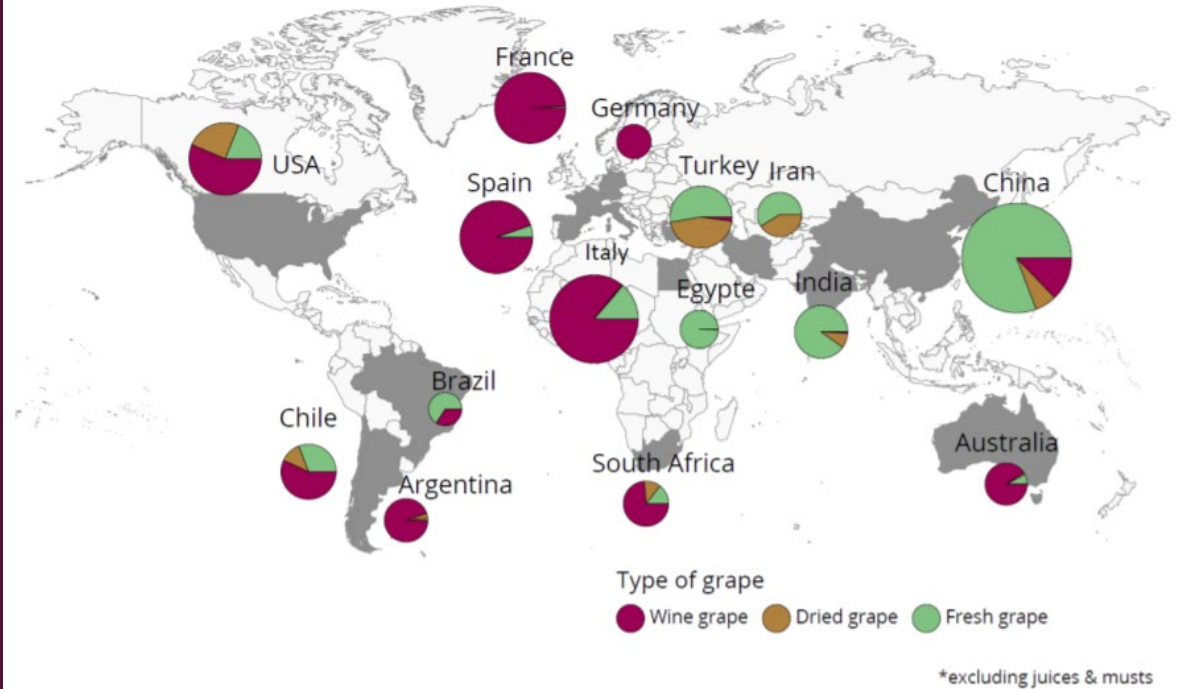
GRAPE BRITAIN: ENGLISH AND WELSH VITICULTURE IN AN ERA OF CLIMATE CHANGE

BETHANY MAY REYNIERS

SUPERVISED BY DR CAROLINE HOWE & DR TILLY COLLINS

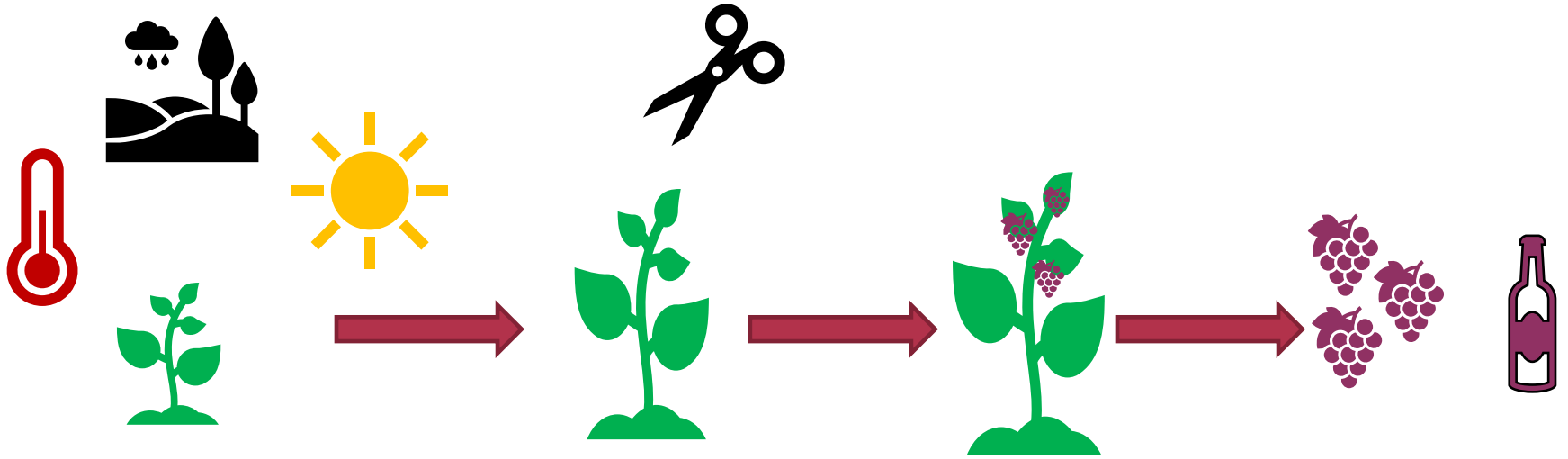
Global viticulture

- *Vitis vinifera*, commonly known as the grapevine
- Found on 6 continents
- 5th most valuable crop

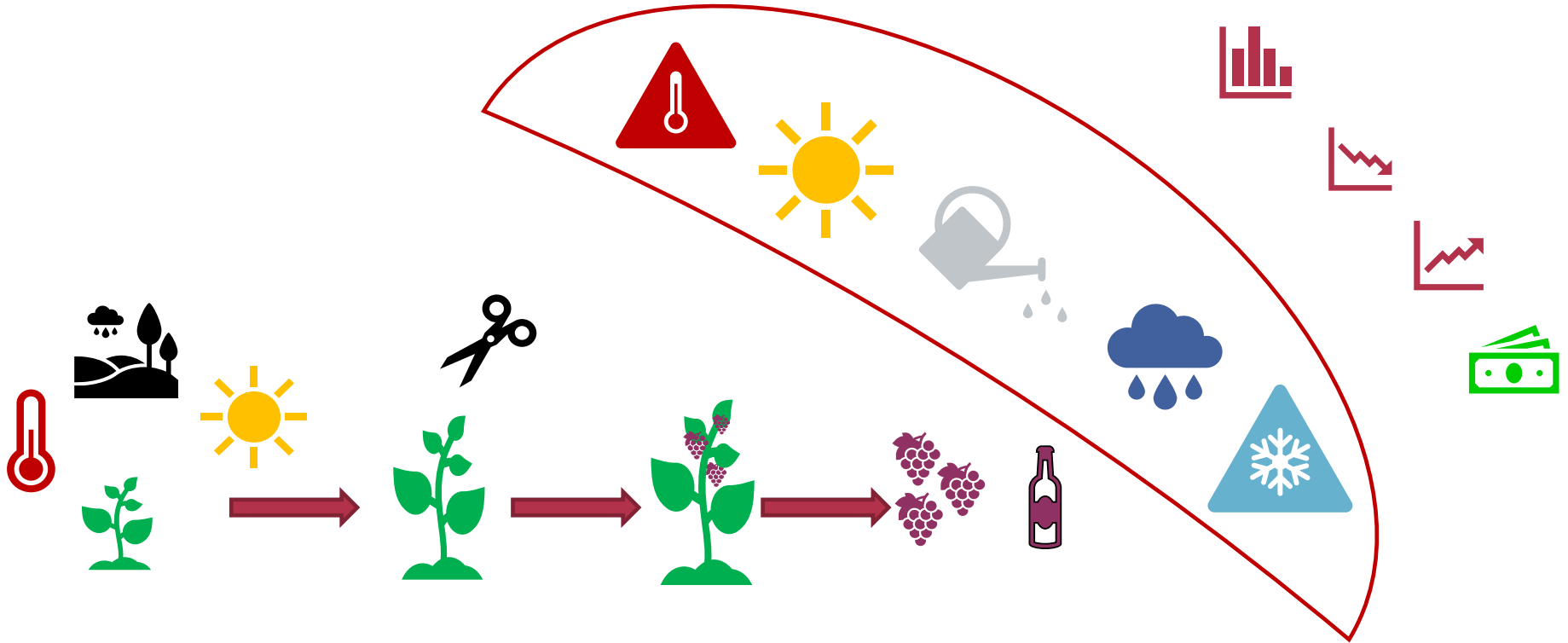


Global distribution of grapes (taken OIV, 2017)

The grape vine

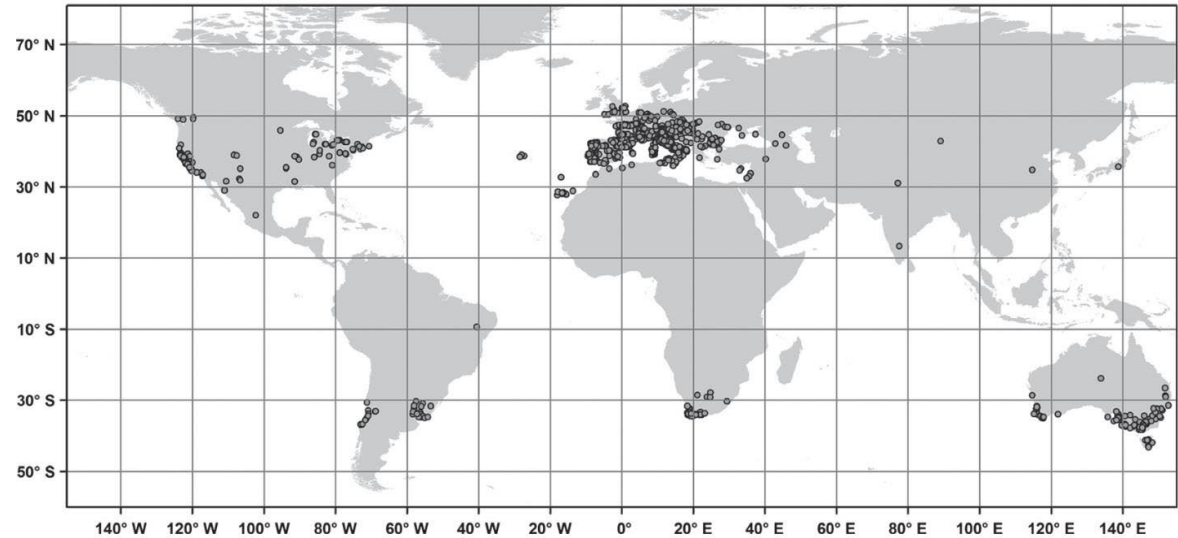


Impacts of climate change on the grapevine



Viticulture and climate change

- Climate change is a threat and an opportunity
- New areas are able to rapidly expand
- Terroir forms the backbone for European legislation



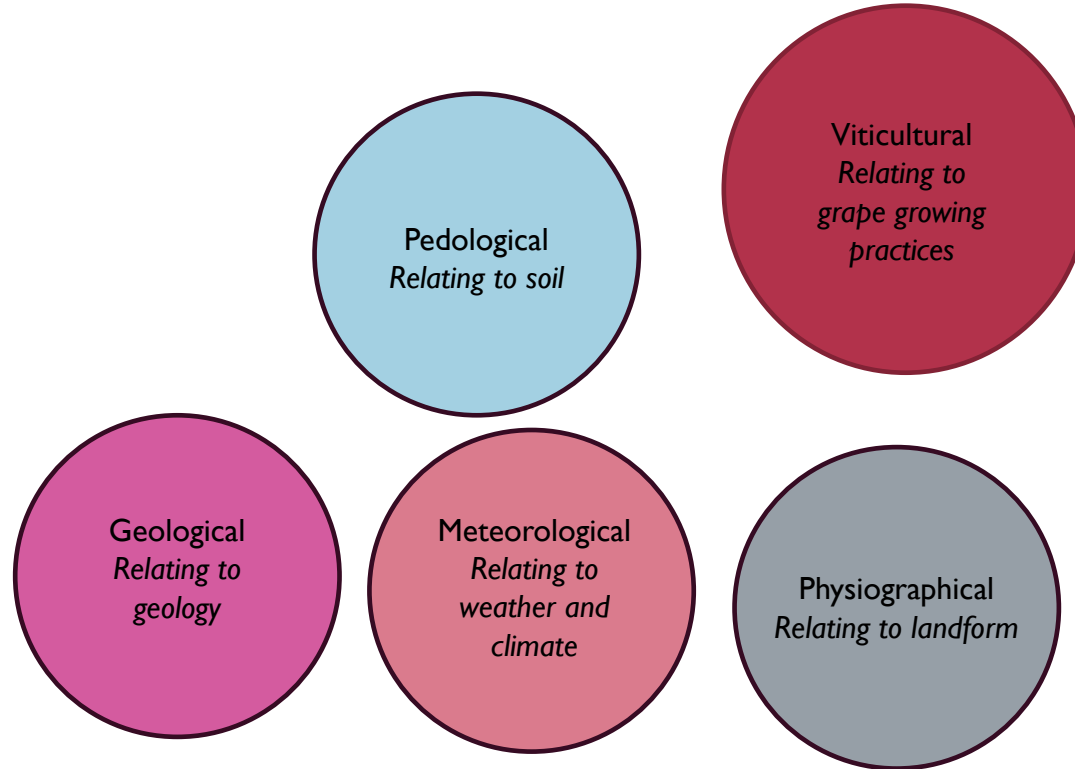
Global distribution of vines (taken from Fraga et al. 2012)

Terroir

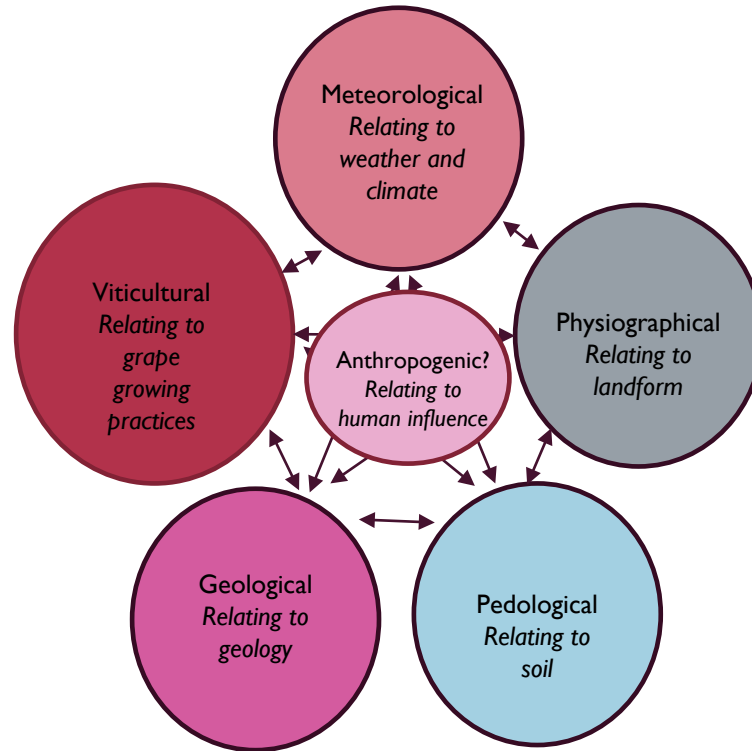
“...not easily grasped but includes physical elements of the vineyard habitat – the vine, the subsoil, siting, drainage, and microclimate. Beyond the measurable ecosystem, there is an additional dimension – the spiritual aspect that recognises the joys, the heartbreaks, the pride, the sweat and the frustrations of its history.”

- J. E. Wilson, 1998

Terroir – as it is widely considered today



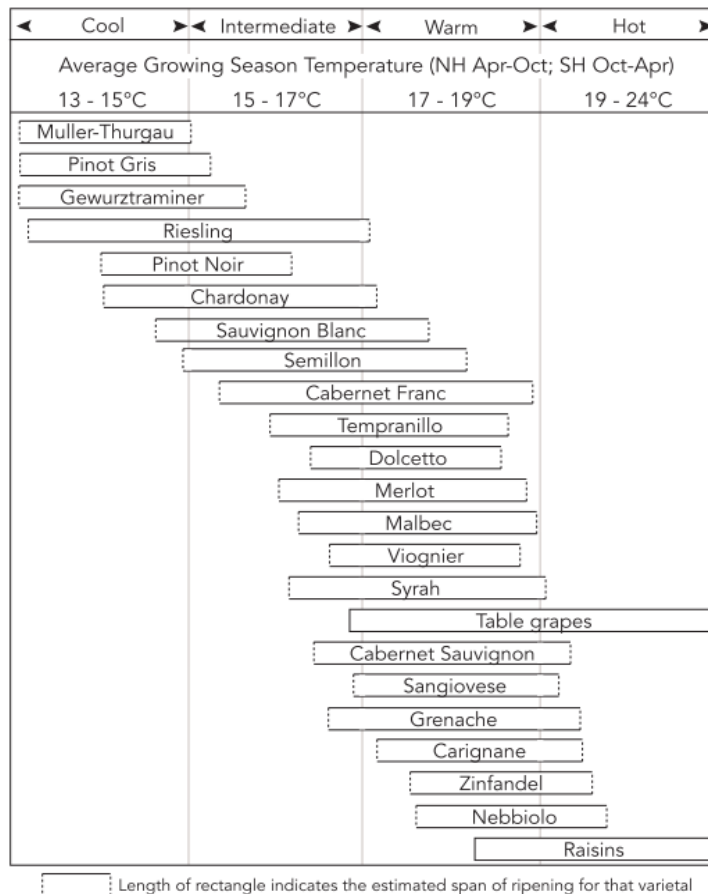
Terroir – a more holistic approach



Grape vine and climate change

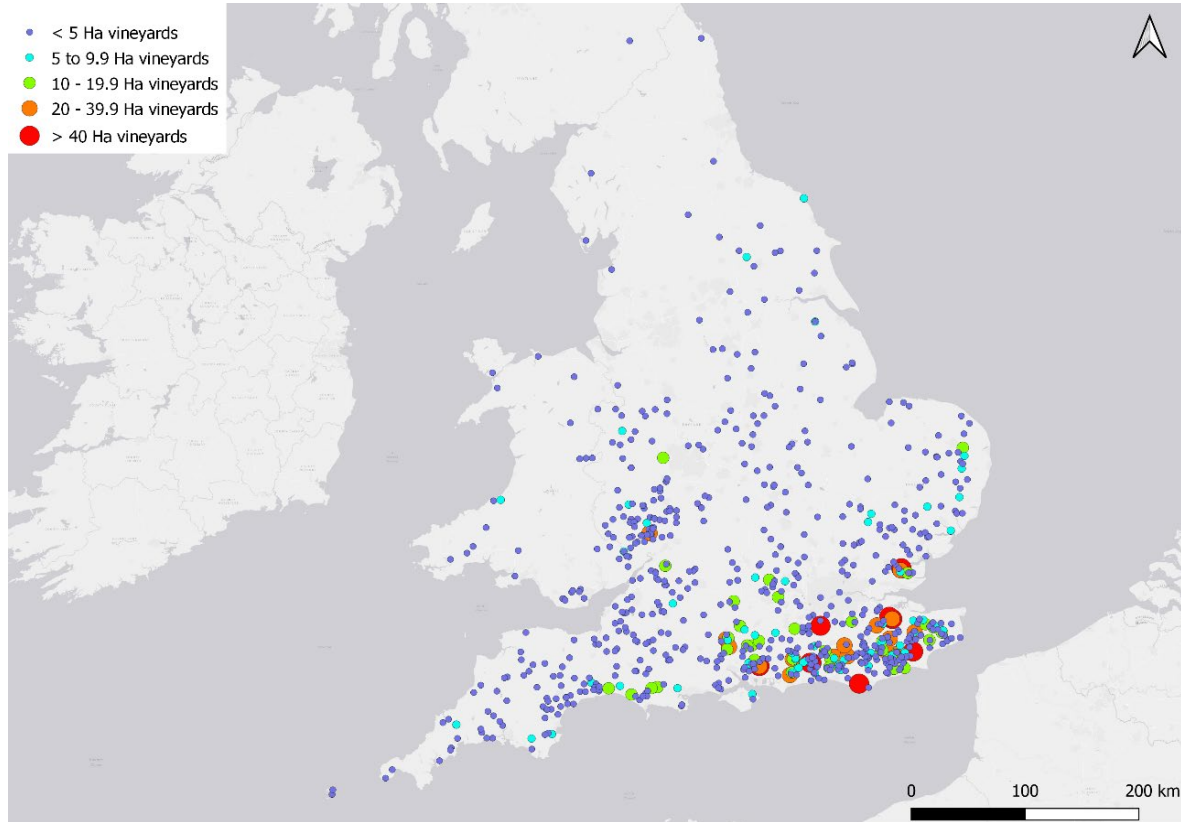
- Climate change will impact what grapes can grow in existing regions
- The legislation is already beginning to change
- Adaptability and resilience are important factors that wine makers need to take into account
- Previously unsuitable areas are now able to grow different cultivars

Grapevine Climate/Maturity Groupings

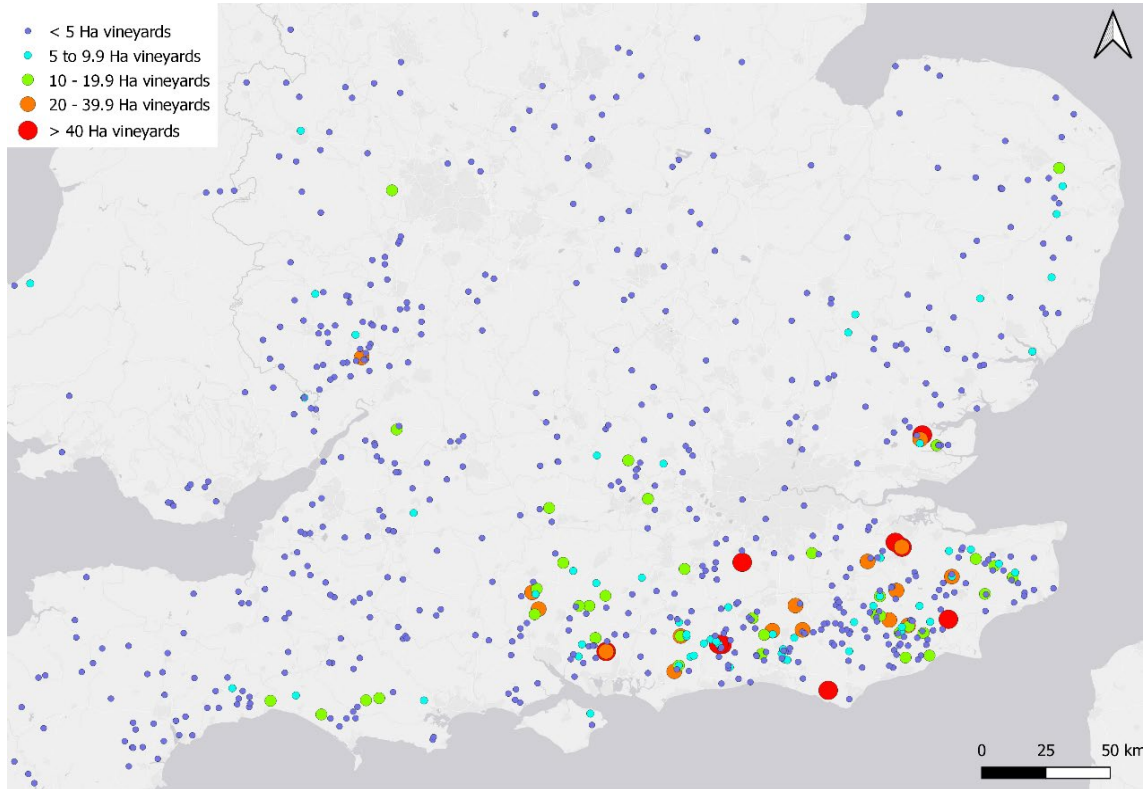


Grapevine maturity groupings (taken from Jones, 2006))

UK wine estates



UK wine estates



Current market trends



72% sparkling wines



28% still wines



Top 3 grape cultivars planted

- Pinot Noir
- Chardonnay
- Pinot Meunier



Multi award winning wines



2018 13.11 million bottles produced
2019 10.5 million bottles produced

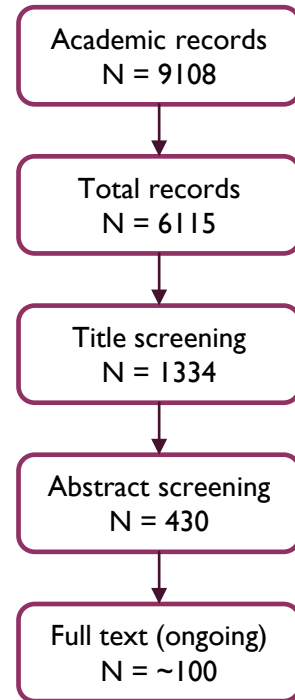
Systematic map

- Aim to identify how climate change is impacting viticulture globally
- Focusing on what the observed impacts of climate change on vineyards are

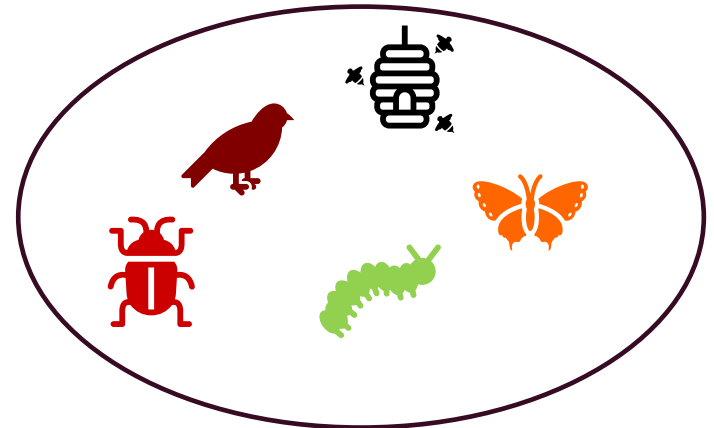
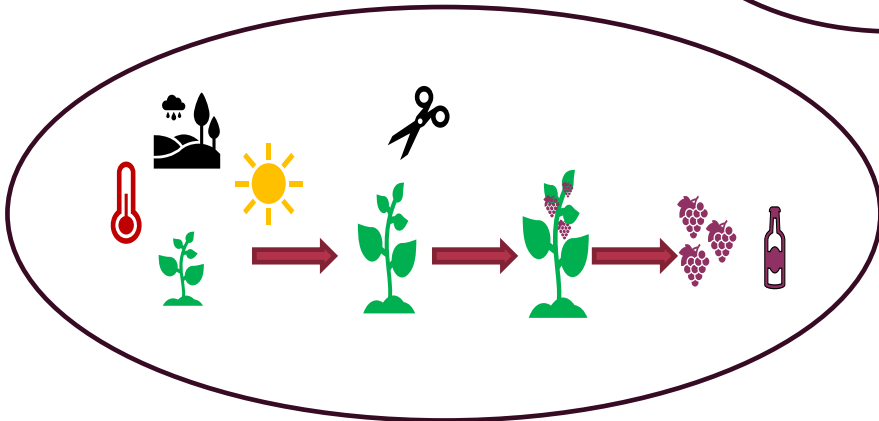
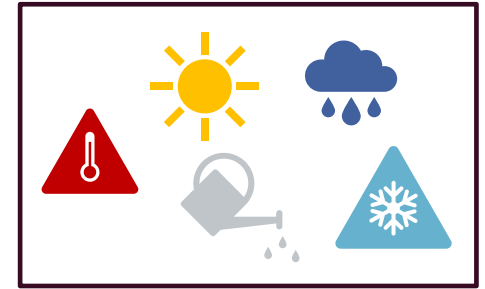


Systematic map – initial findings

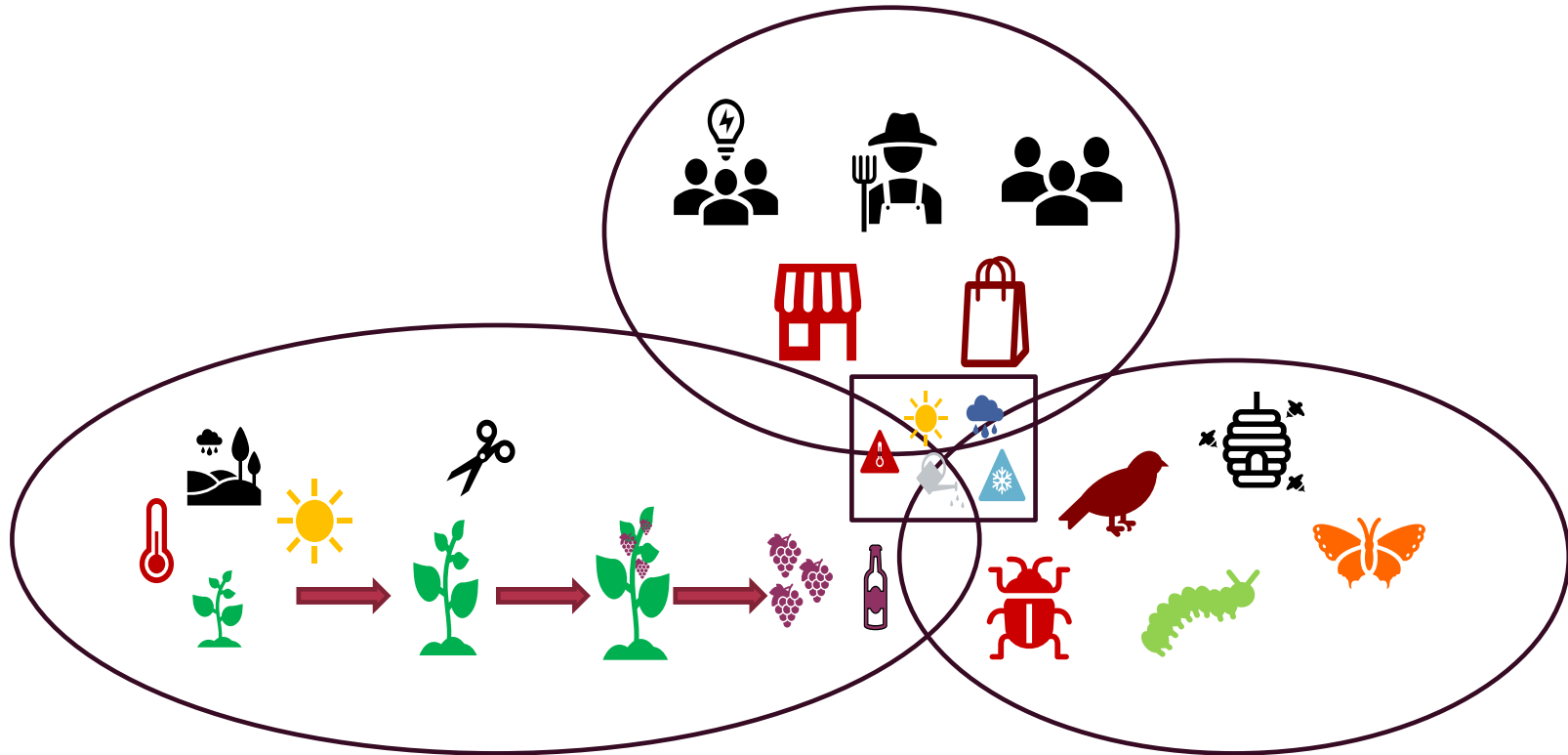
- The consequences are described, and the need to adapt acknowledged
- Consequences are not always attributed to climate change
- Phenological changes widely observed
- Changing variety is a common recommendation



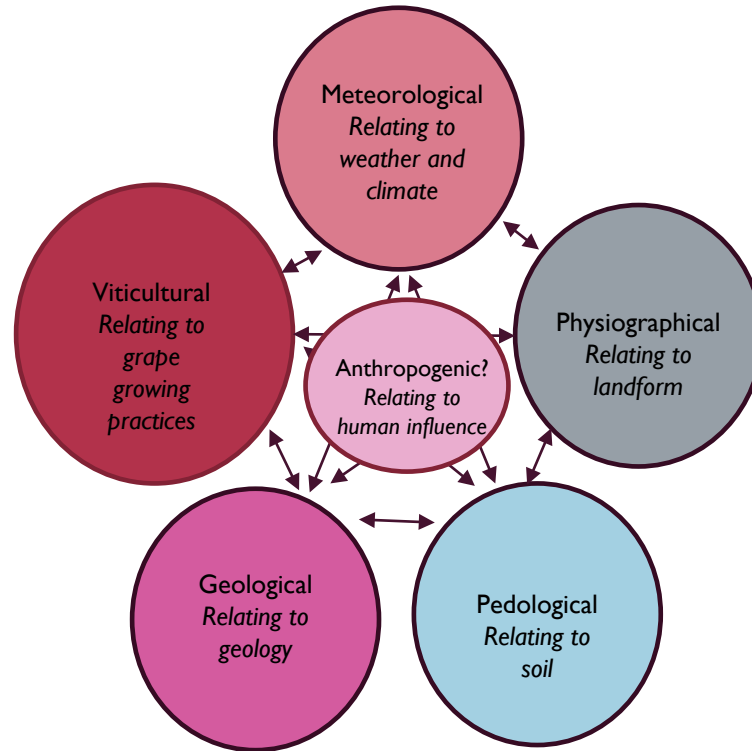
Improving adaptability - the current system



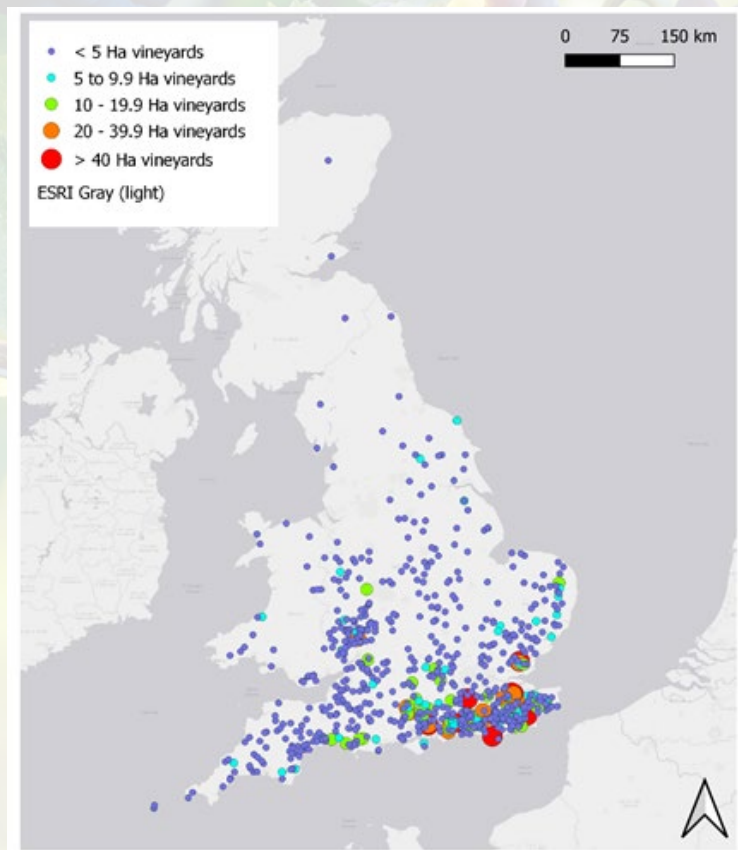
Social-ecological systems approach



Terroir – a more holistic approach



UK wine estates





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