

Work stream on values and valuation of benefits (T3.1)

- What constitutes a **value proposition** of climate services,
- How to **organize, classify, and demonstrate** values with methodologies and best practices,
- Application of valuation methods and **recommended principles** and practices

Work stream on business innovation (T3.2)

- Forms of **business (model) innovations** for climate services,
- How to **organize, classify, and showcase** business innovations and how to stimulate their sustainability,
- Application of innovation strategies and **recommended principles** and practices

Business innovation

Jaroslav Mysiak et al
CMCC

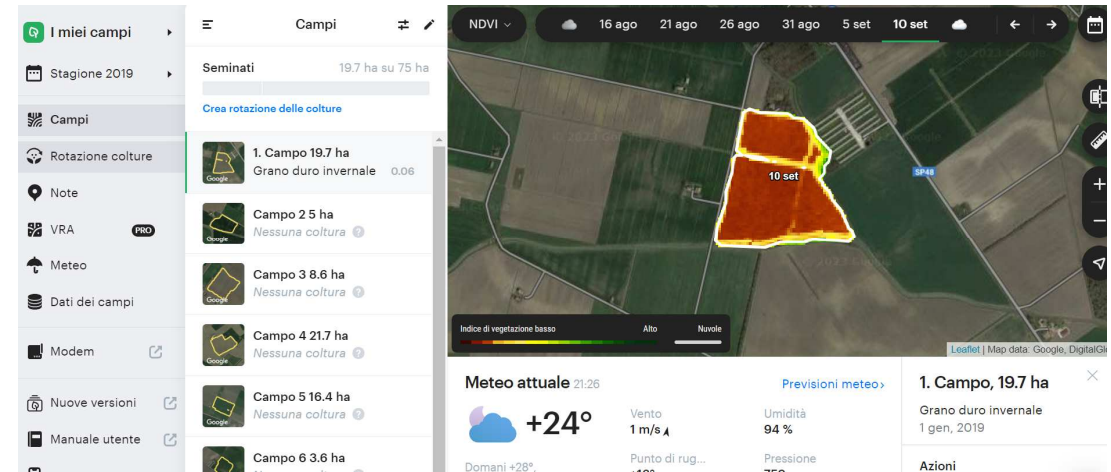
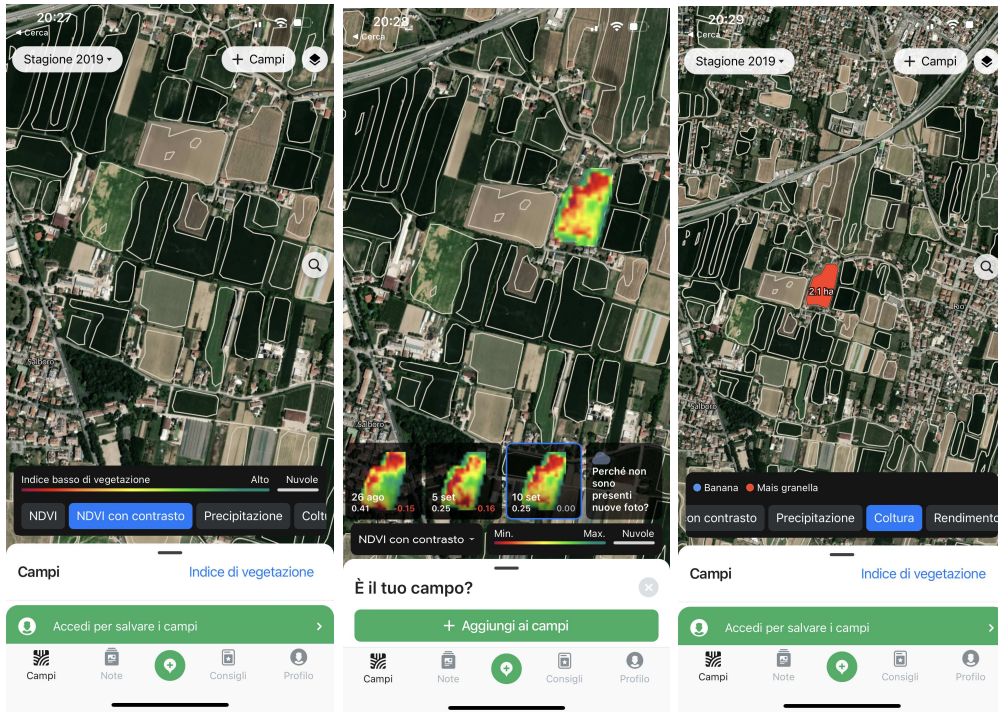
Second Webstival, 19 September 2023

This project has received funding from the European Union's Horizon Europe research and innovation programme under grant agreement No 101056933. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Climate, Infrastructure and Environment Executive Agency (CINEA). Neither the European Union nor the granting authority can be held responsible for them



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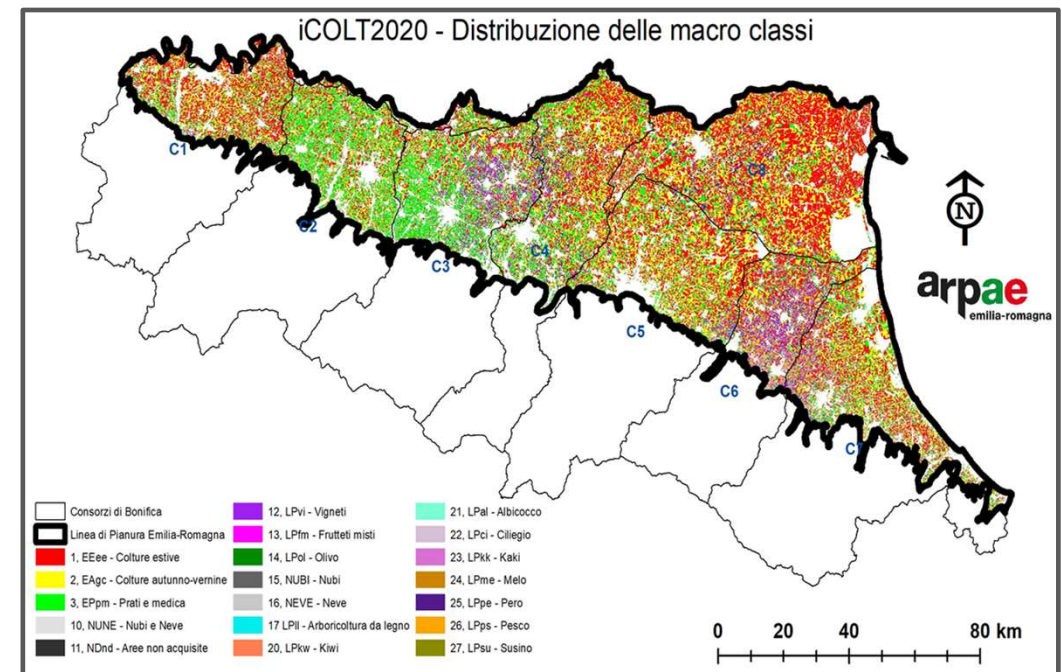
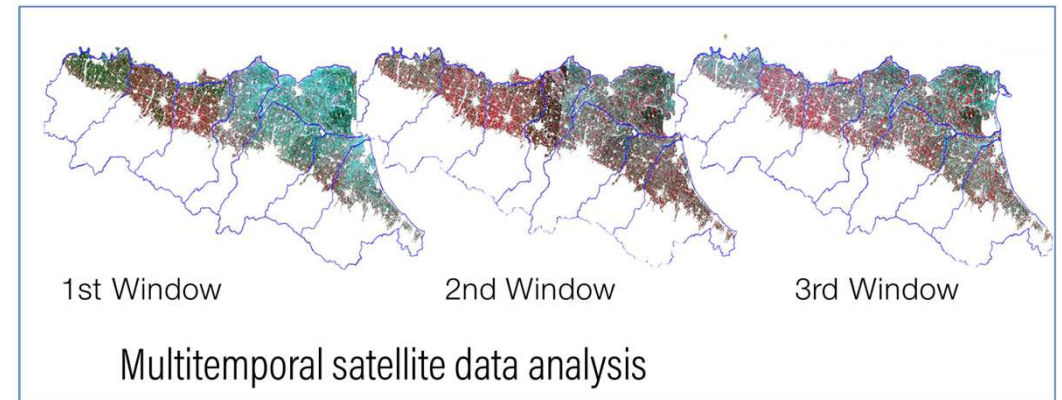
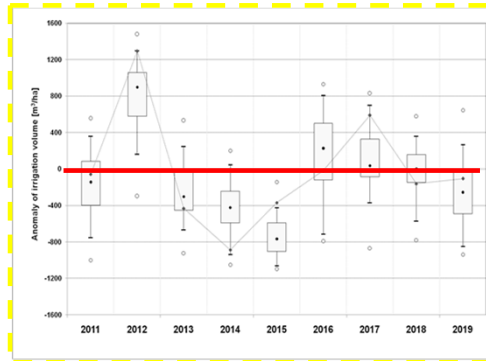
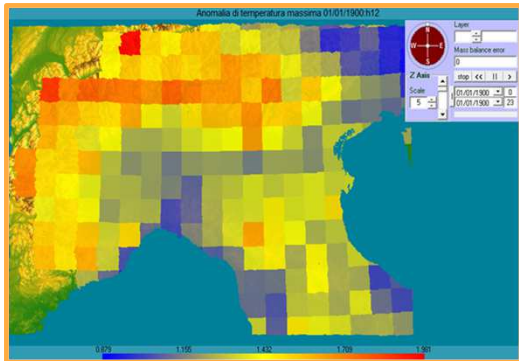
Imagine a farmer using an app to effortlessly manage fields and crops, including identifying fields, inputting crop details, and monitoring soil moisture and plant water stress. Access information on fertilizer usage for optimal effectiveness.



The farmer can access the same data on a desktop computer, essentially creating a farm accounting system that connects with weather and climate information. It also provides irrigation recommendations, including timing and quantity for the entire season.

This is an example of an integrated climate service.

Imagine a regional environment agency using advanced Earth Observation models to detect planted crops and assess irrigation demand before the irrigation season begins. The agency uses **seasonal climate forecasts** to estimate whether the upcoming season will be wetter or drier than the historical baseline. Weather (+7 days) and climate forecasts (+3 months) provide anomalies of crop water needs. The agency is able to inform farmers about how much water to secure for irrigation, guiding their decisions.



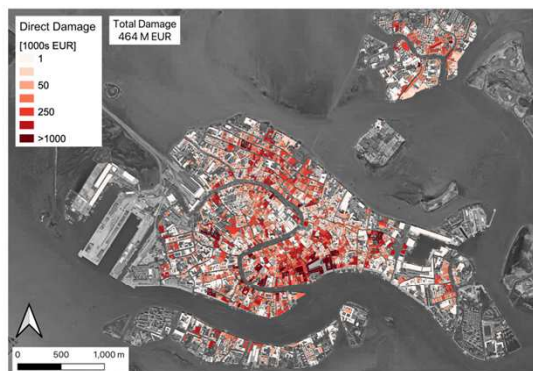
Climate services generate private and collective benefits.

Private benefits materialise through cost reduction, increased yields and incomes, better-informed planning and protection against unforeseen events, and potential of new entrepreneurial ventures.

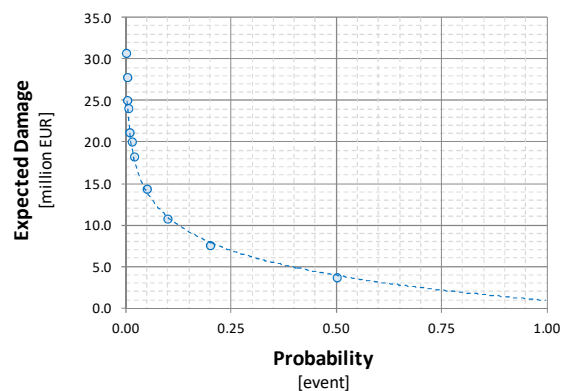
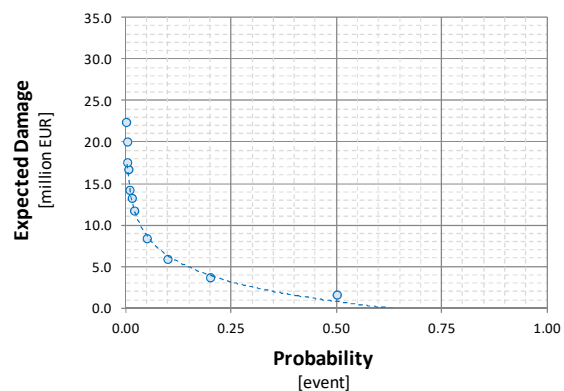
Collective benefits are embedded in greater water, energy and food **security**; enhanced **resilience**, adaptive **capacity**, and innovation-prone policy and business environments.

Collective benefits are sizeable after a critical mass of uptake/use of services was reached.

Irrigation services for example may lead to greater on-farm water-use efficiency but if water tariffs are low or insensitive to actual water consumption, **farmers gain little from a change**. Collective benefits from adoption of irrigation services at large scale are sizeable both in terms of higher reliability of water supply as well as the possibility to allocate the conserved water to new users.



Venezia 2021, assessment of the economic benefits arising from the flood protection in Venice. Annual expected damage (AED) and loss (AEL) under current and future climate (different scenarios)



Source: Essenfelder et al, in preparation

Global Flood Risk Intelligence Platform (AI/ML-based)
<https://saferplaces.co>

SOURCE SCENARIOS

☒ Historical
 ☐ RCP4.5_2050
 ☐ RCP4.5_2100

RAINFALL SCENARIO

Tag	RT(y)	D(h)	Precipitation(mm)	Add
RAIN1	100	1	90	+ -

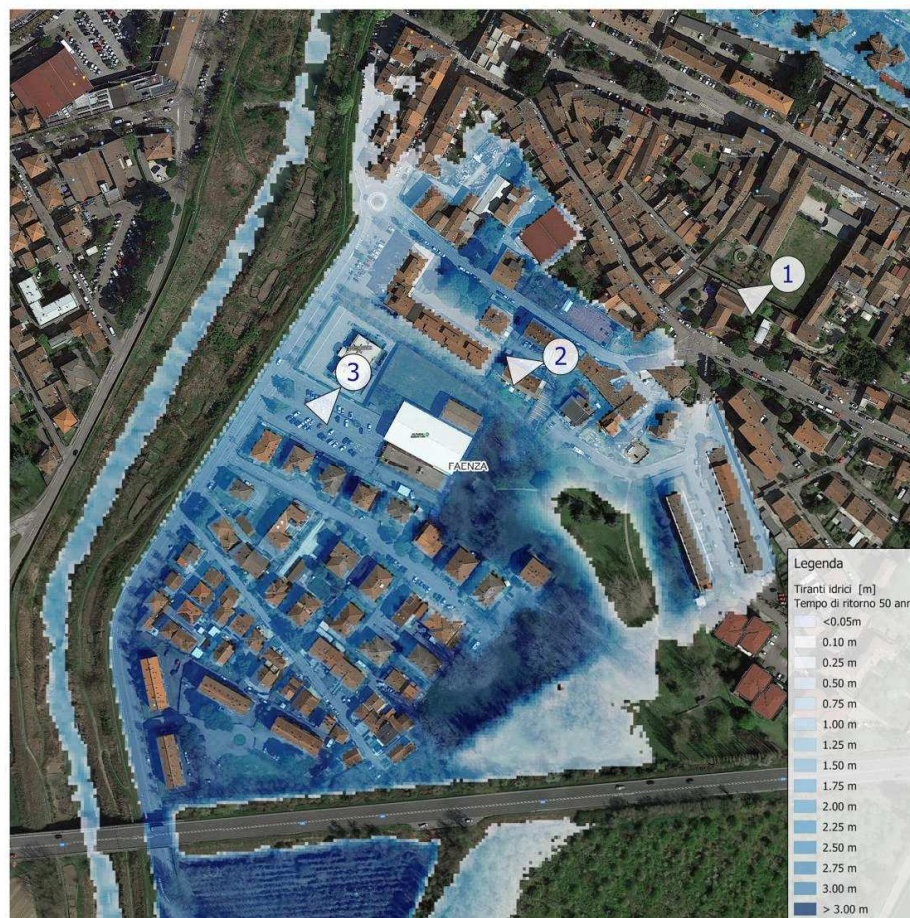
New Scenario

EXTREME SEA LEVEL SCENARIO

Tag	RT(y)	ESL(m)	R	Tan(a)	Add
COAST1	100	1.8	<input type="checkbox"/>	0.002	+ -

New Scenario

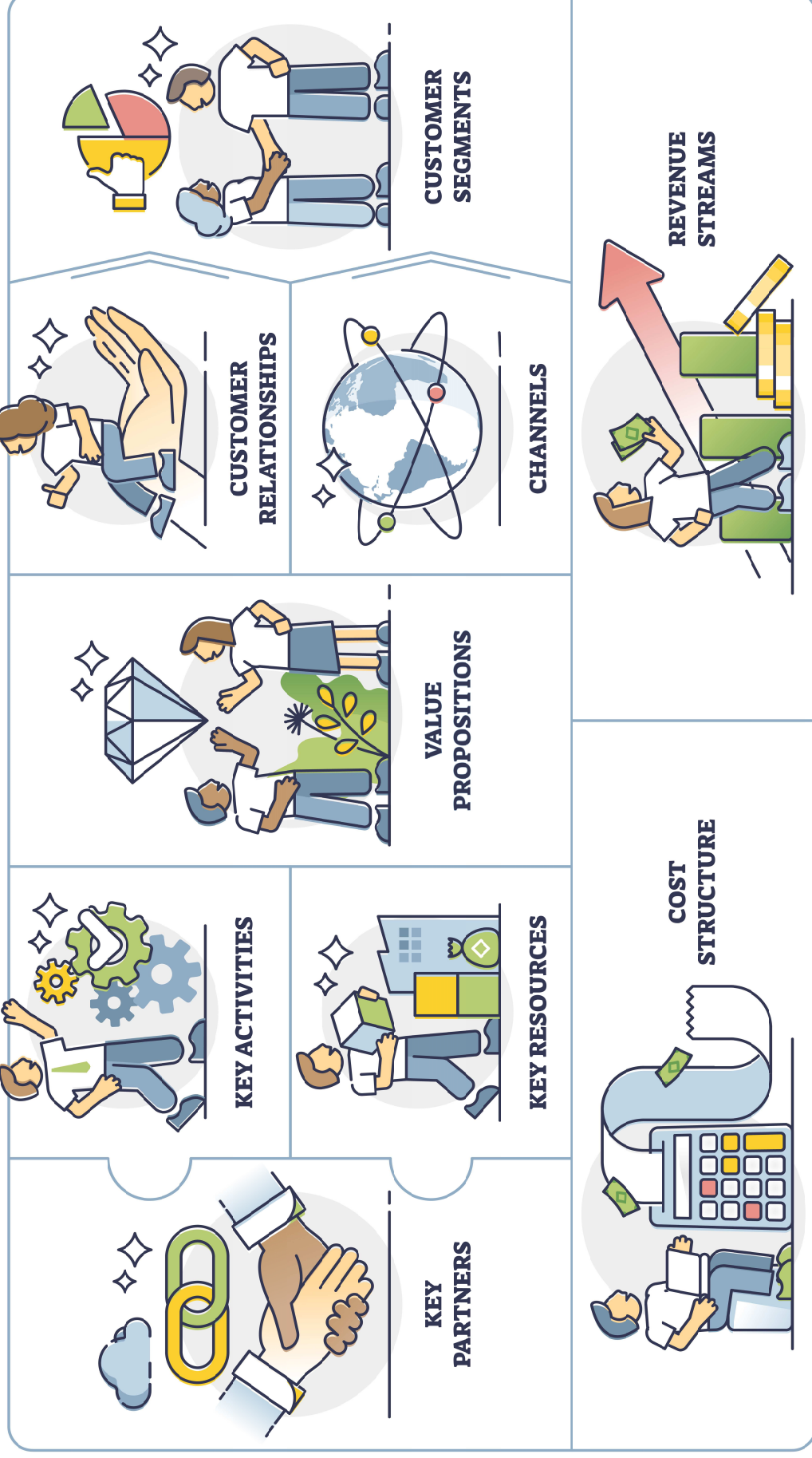
CONTROL PANEL

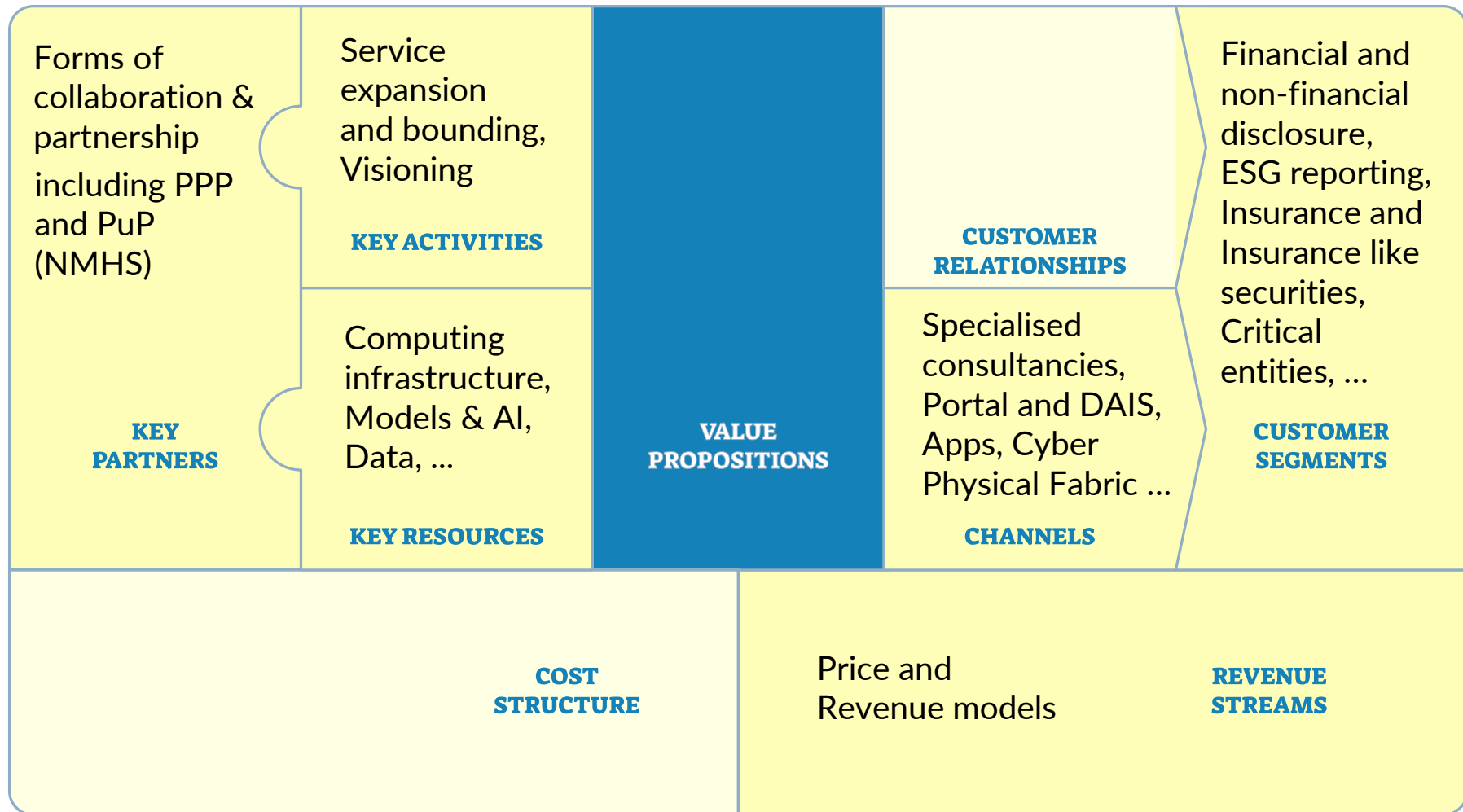


Alluvione del 3 maggio 2023 a Faenza
 località Borgo Durbecco

Confronto tra aree allagate da ripresa aerea e
 mappe dei tiranti idrici (tempo di ritorno 50 anni)
 prodotte dalla piattaforma SaferPlaces







Sustainable business innovation has prompted a diversity of mechanisms to capture and detain value generated by climate services.

Full potential of business model innovation has yet to be exploited and the market growth will depend on the ability to harness this innovation.

Innovation in business model as a means of creating value is a new field of innovation research and practice. Therein, financial models addressing revenue flows and distribution of economic costs and benefits are fundamental for business viability.

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Thank you