

# Participatory science to measure tourists flows : involving islanders and visitors in the creation and use of digital counting solutions

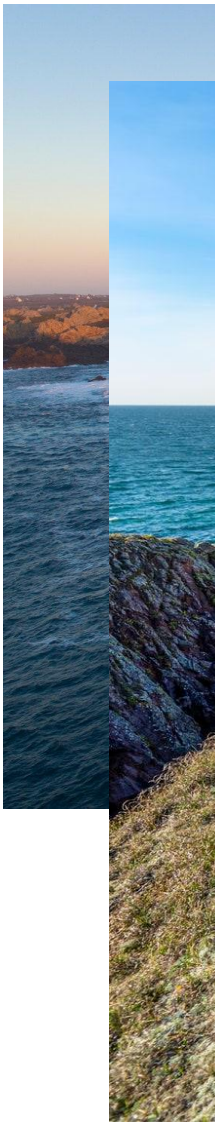
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*Alicante, 31/08/2023*









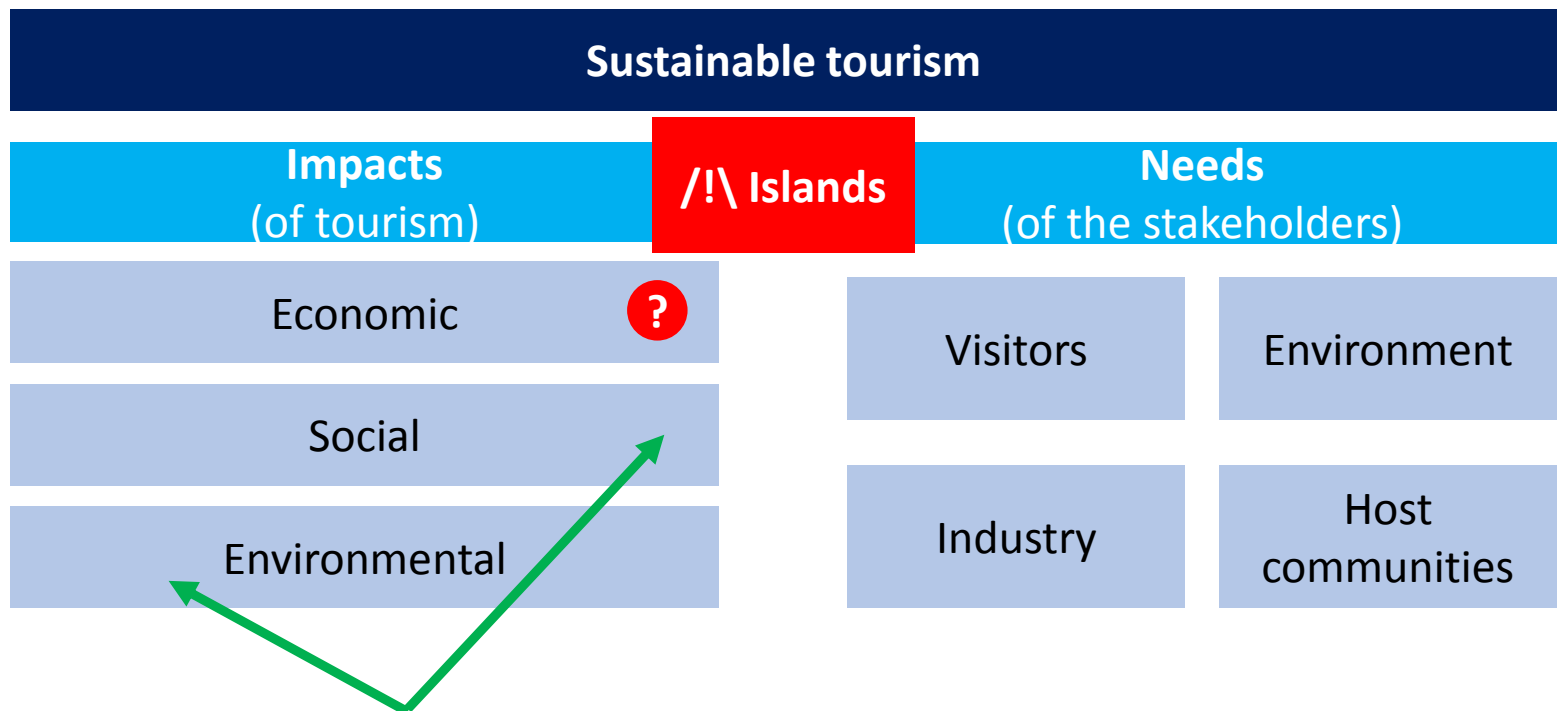
KILLERS OF PLANET  
GO HOME !

VOS RÉSIDENCES  
SECONDAIRES

**STOP AU SUR-TOURISME**  
**SAINT-MALO N'EST PAS DISNEY MALO**

# Context 1/3

UNWTO on “sustainable tourism” (2016) : *"Tourism that takes full account of its current and future **economic, social and environmental** impacts, addressing the needs of visitors, the industry, the environment and host communities"*



**Abundant and recent literature** about preservation, heritage, cultural diversity, the social and environmental components of sustainable tourism (Couao-Zotti, 2022; Pupion, 2010)

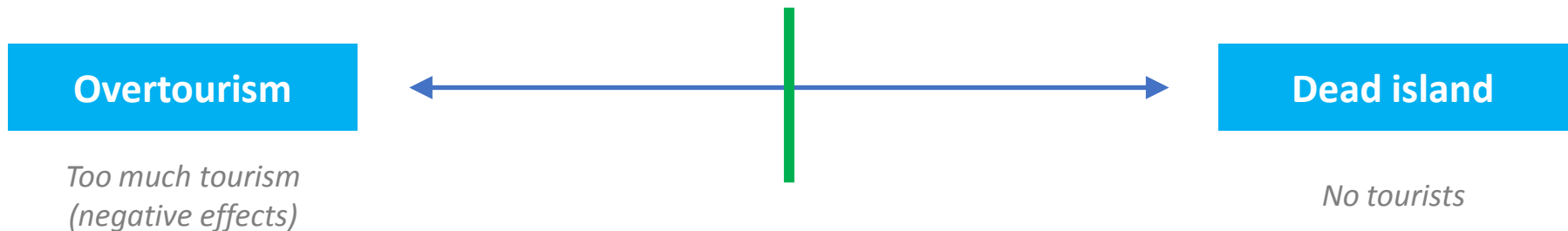
## Context 2/3

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The **economic aspect** should not be forgotten, **vital** for islands

- allows the maintenance of an activity throughout the year
- maintain services and infrastructures which are rare for their low density of inhabitants (doctor, pharmacy, school, etc.)
- tourism places are first and foremost living places, and must be and remain so to continue to attract tourists (Pendlebury J et al, 2009)

-> need to **receive a flow** of visitors, tourists and day-trippers, that is **acceptable** for the different stakeholders



## Context 3/3

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### **Prerequisite to manage flows :**

Objective, quantified and updated data to measure **real AND felt frequentation**

### **Lack of a barometer** for local and regional managers to :

- 1) Measure and audit visitor numbers
- 2) Put management choices of each island into perspective
- 3) (ideally) Provide a basis for the daily management, to design a real welcome to visitors

### **Assessed existing approaches** of data collection :

- One-shot ground studies : precise but costly and quickly outdated
- Drones, cameras : personal data issues too sensitive so far
- Big data : unstructured, fragmented, not goal-oriented, complex, costly
- Captors : some in place, unilateral decisions, no coordination

**-> complete with a counting method based on participatory science**

# Participatory science – Theoretical framework

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Participatory science (citizen science) : scientific research conducted with the **active participation of the population** (Cham 2021) at several stages (ex : collection, analysis, or even protocols design)

The huge potential of participatory science has since been established (Kosmala et al, 2016) with **proven methods for obtaining quality data** (training of volunteers, statistical adjustment tools, accessibility, standardization and simplicity of protocols and analysis methods to facilitate their appropriation, etc.).

**Increases the power of the scientific community tenfold** (Kullenberg & Kasperowski, 2016)

- Multitude of individual observers
- Significant volumes of data collected
- Reliable
- Very efficient, for a minimal cost
- Involves citizens (and thus helps the implementation of public policies -> virtuous circle)



# Concretely

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## Objective : describe a scientific design

- that makes it possible to obtain data on tourists numbers,
- based on the principles of participatory science

-> find a **method** and build a **turnkey kit**

## Contributions

### Useful & operational

- Complete protocol
- Practical
- Turnkey kit

### Sustainable tool

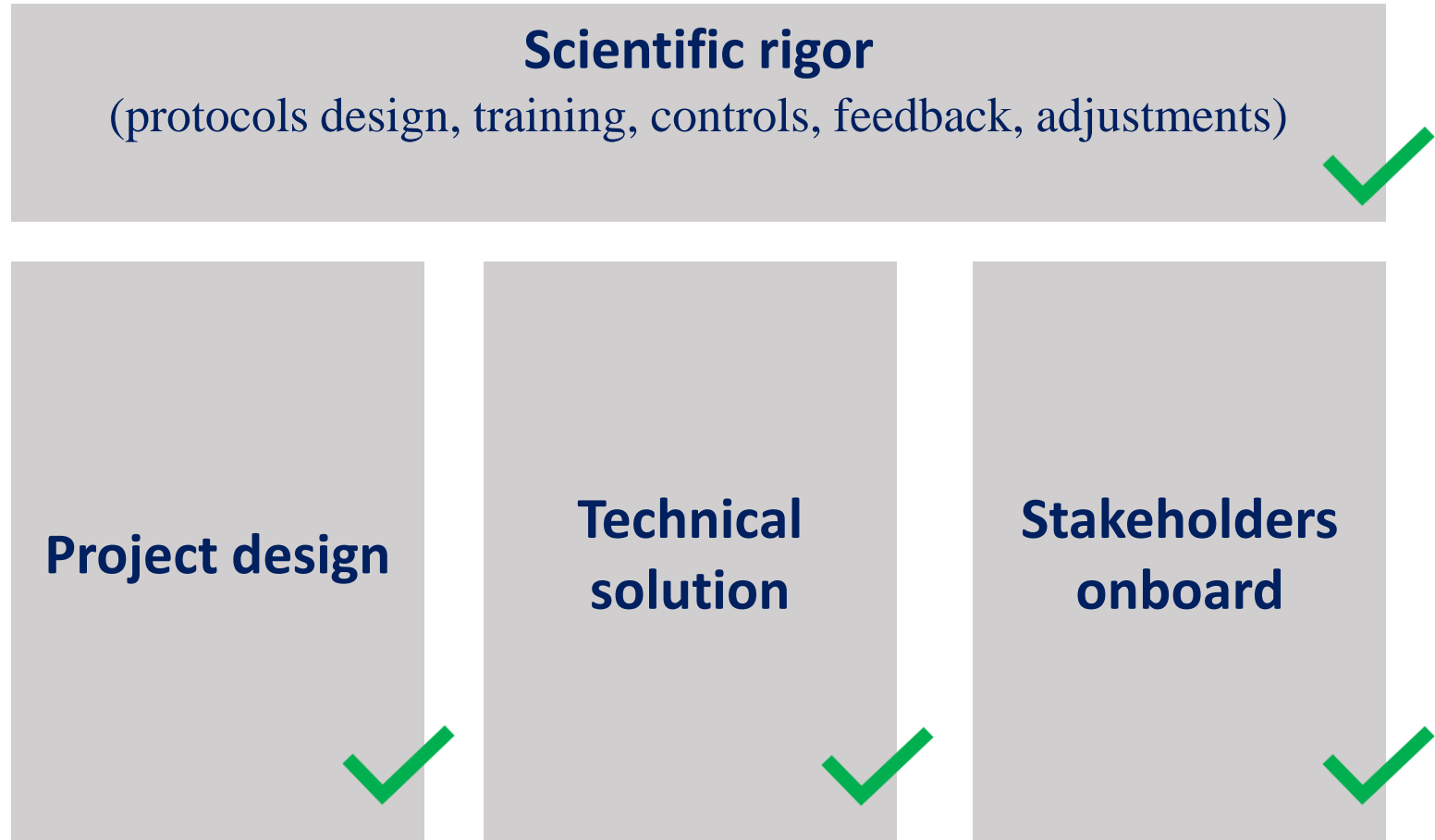
- Affordable
- Modular, adaptative, reusable
- Replicable & scalable

### Insights on

- Levers for participation
- Blocking points for participation
- Arguments to develop such approaches

# Conditions

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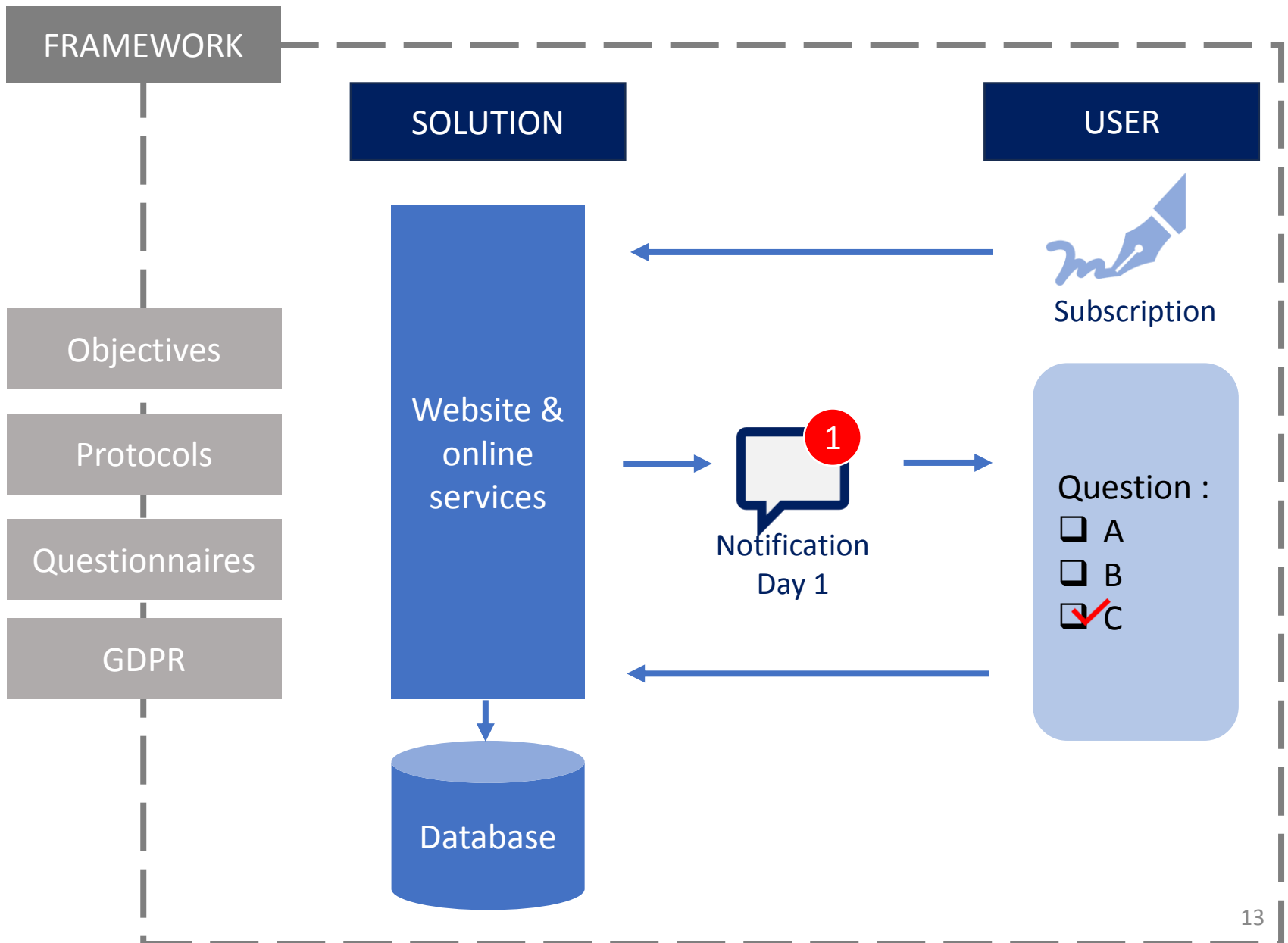


# Project design : intended main stages

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1. Definition of the numerical **objectives**, scope and methods of the studies with the stakeholders (data, period, survey sites, organization, etc.)
2. Definition of observer training **protocols** and collection protocols
3. **Training** of observers (project, tools, methodology, application)
4. **Observation** phase (monitoring, sampling, controls)
5. Ongoing **verification** and curation of the data collected (quality)
6. **Closing**, consolidation, analysis and communication
7. **Feedback** and return of experience -> turnkey kit

# Technical solution



# Status

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Project design



Ready for test

Technical solution



Functional

Stakeholders



To convince

***“People already complain when asked to sort their waste.  
Rely on them to count tourists ?  
It won't work. It's a scientist delusion.”***



To conclude

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# MARKETING SCIENCES

**Any ideas, projects, desires  
related to the subject ?**



**Contact us !**

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