# A co-production methodology for high-quality climate services: An example from the health sector.

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# What are climate services?

A climate service is a service or a tool designed to provide individuals or organizations with climate information that is useful for them to make decisions. These individuals or organizations could be, for instance, an energy company, an agricultural firm or a public health agency.

Like any service it must be fit for purpose, meaning that the climate service must meet the needs of the end-user.

Moreover, for the service to be considered high quality, the following characteristics are essential: user-tailored, science-based, transparent, timely, equitable and accessible.
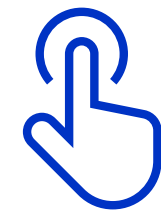
User centered

Science based

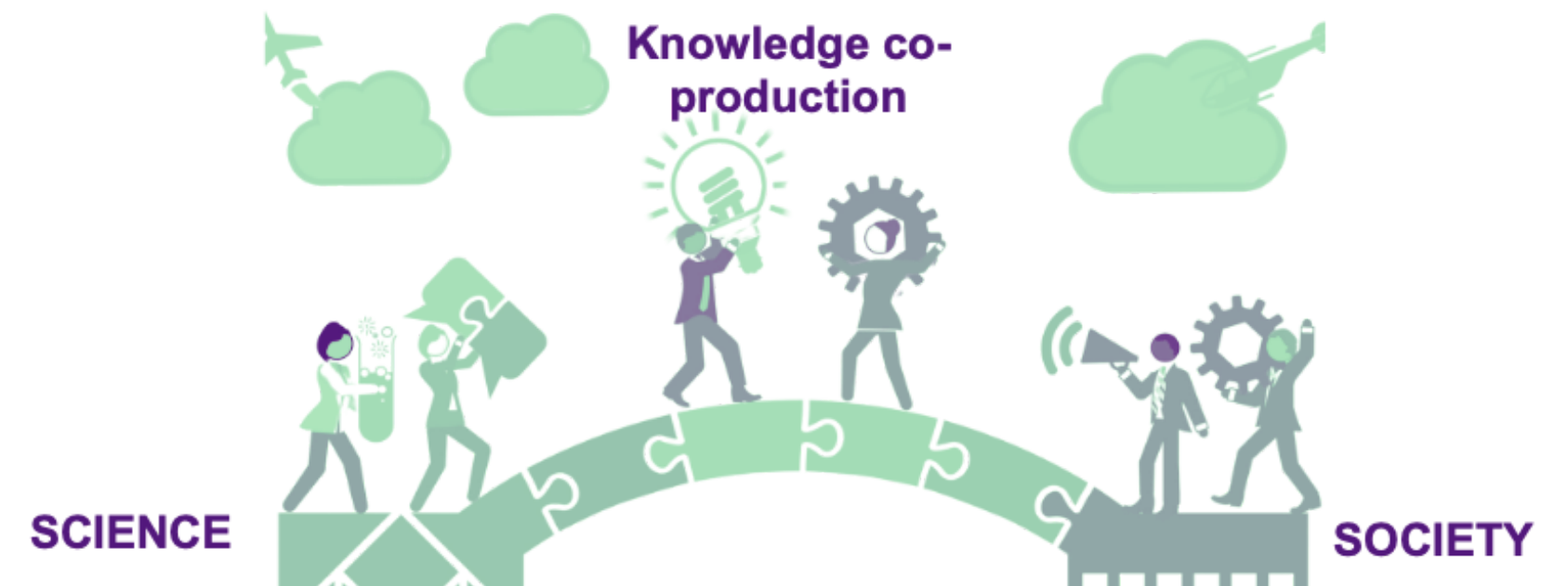Transparent

Timely

Equitable

Accessible

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# This is easier said than done...

Despite having better quality climate data, this data is rarely incorporated in policy and planning.

In other words, the progress in climate sciences does not directly translate into better-informed decisions.

**Knowledge co-production** processes intervene to narrow this **usability gap** by creating a science-stakeholders interface that involves users in the design of climate services and their later incorporation in decision-making.



SCIENCE

Knowledge co-production

SOCIETY

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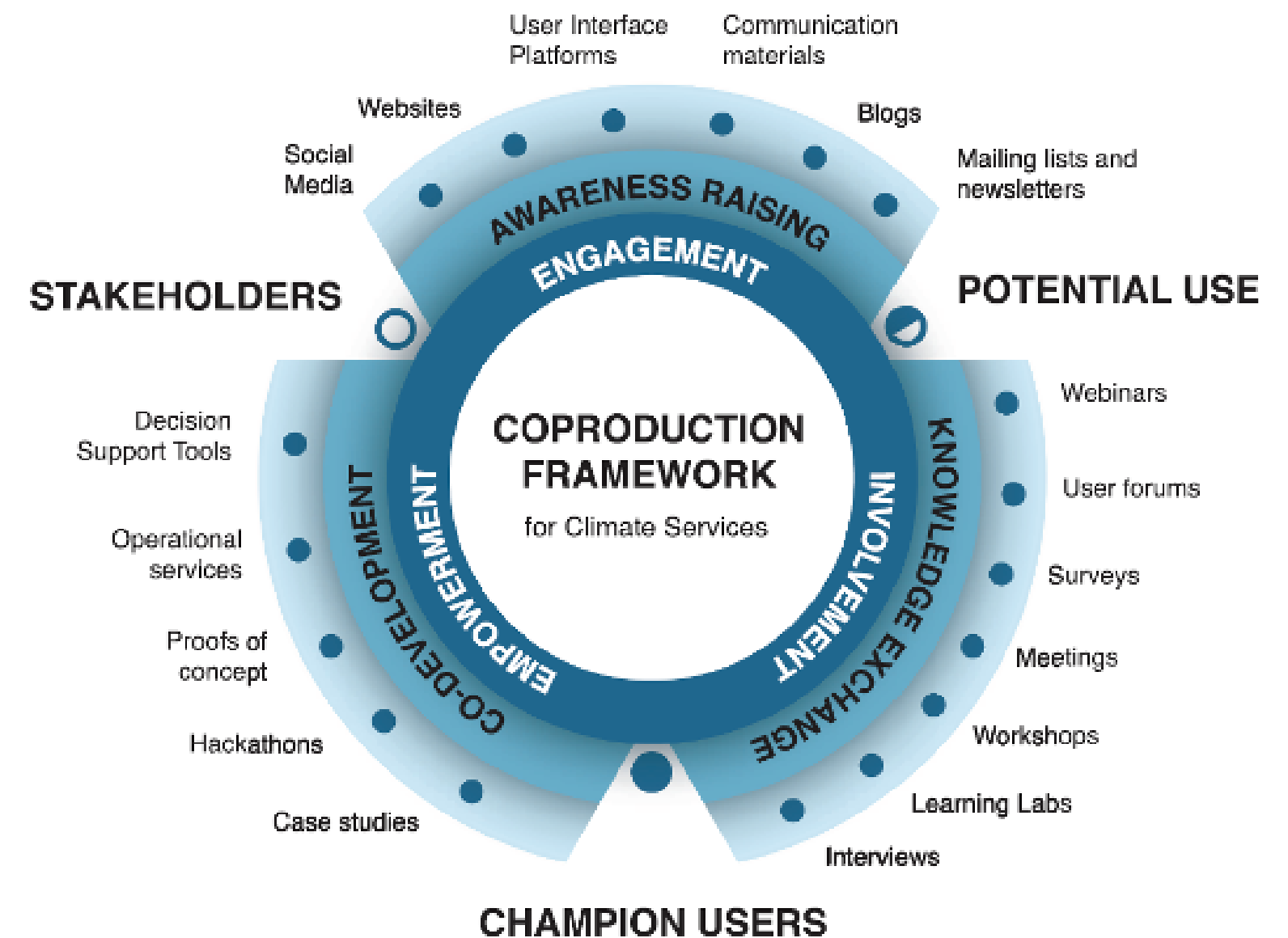Centro Nacional de Supercomputación

# Climate services have to be co-produced by providers and users.

By integrating users at every stage of the co-design process of the climate service, we ensure that climate services are not only technically robust but also genuinely responsive to the real-world challenges faced by the communities they aim to serve and this way addressing the usability gap.

The Knowledge Integration Team from the Earth System Services group at the Barcelona Supercomputing Center, developed a knowledge co-production framework for the development of climate services, with the aim of helping to establish a smooth and effective interface between scientists and stakeholders that facilitate stakeholders involvement that would help decreasing the usability gap.

Initial engagement with stakeholders occurs through awareness campaigns, utilizing various communication tools. Some stakeholders transition to potential users, which engage in knowledge exchange and co-learning to provide input on user needs and service usability. Finally, selected users actively contribute to co-developing climate services, ensuring usability and uptake in policy and planning processes.



https://www.sciencedirect.com/science/article/pii/S0959378021000509?via%3Dihub

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# How do we ensure that a climate service reaches high quality?

The creation of high-quality climate services is fostered by the development of 'standards' for climate services. These standards should ensure relevance, credibility, legitimacy and authority, thus creating a two-way trust between the provider and the end user.

There are standards for everything: for assuring the safety of products, for protecting and restoring the environment, for ensuring the wellbeing of people, etc.

Taking the example of the pharmaceutical industry, it relies on standards to ensure that new drugs are safe and effective. These standards define testing, dosing and quality control procedures, resulting in reliable treatments. By adhering to these standards, the industry maintains its credibility and ensures global access to safe medicines.



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# Climate services components

However, **there is not yet a set of climate services standards** nor agreement on the criteria and spectrum of actors necessary for defining the standards, best practices and guidance.

The Climateurope2 project has been funded by the European Commission to address all these challenges.

Due to the complexity of climate services, to address their standardisation, Baldissera Pacchetti, M & St. Clair, A.L. (2023) proposes to break them into some high-level components, such as decision context, coproduction, knowledge systems and delivery mode.
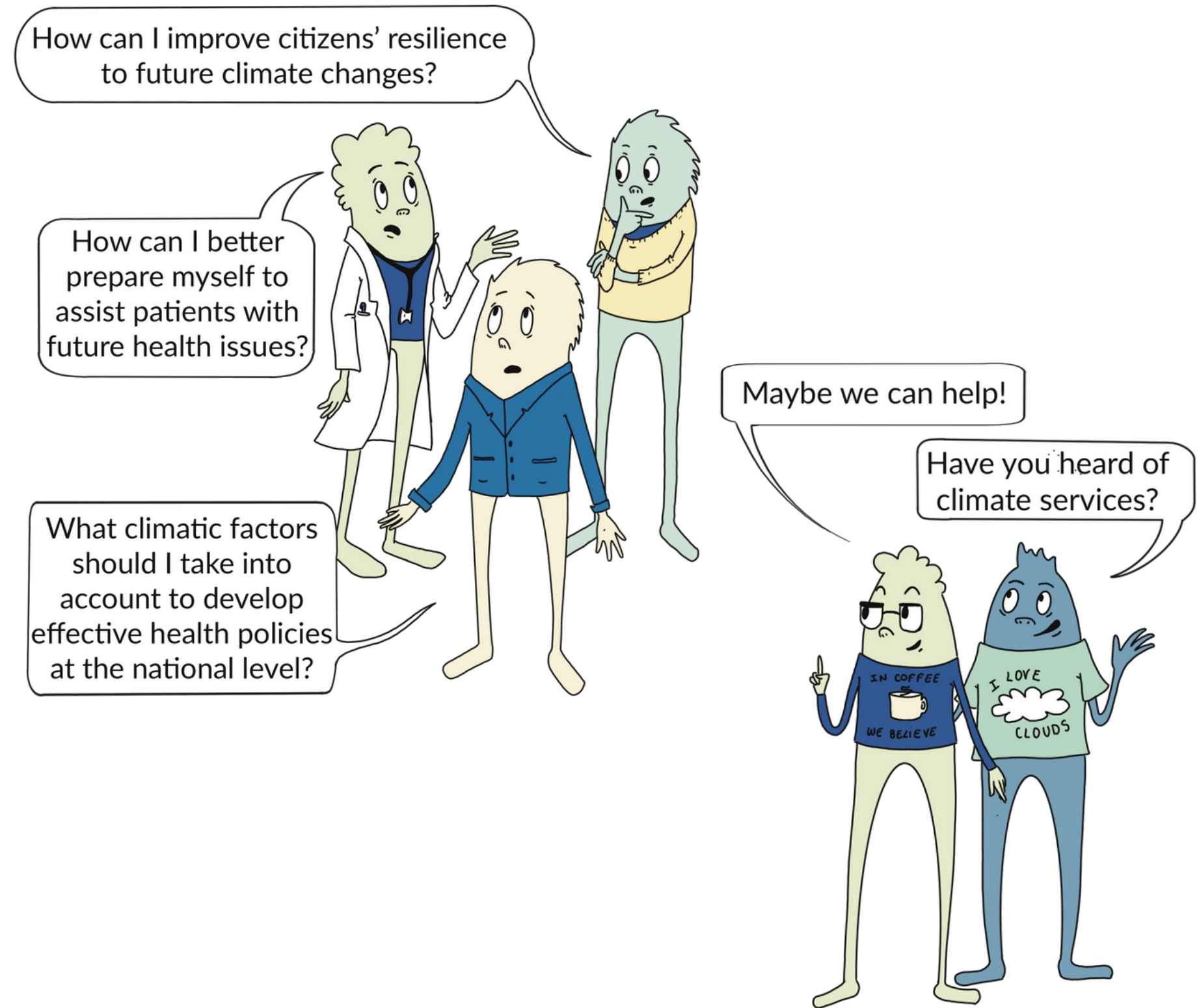


**Climate services components**

Decision context

Ecosystem of actors and co-production processes

Delivery mode and evaluation

Knowledge systems

# Decision context

The decision context refers to the kinds of decisions the climate service supports, including its geographical and political context.
This includes the policy structure and other forms of governance that require and enable climate services to develop.

# Ecosystem of actors and co-production processes

This component also addresses the co-production processes that are relevant for different actors and different stages of the climate service development process.
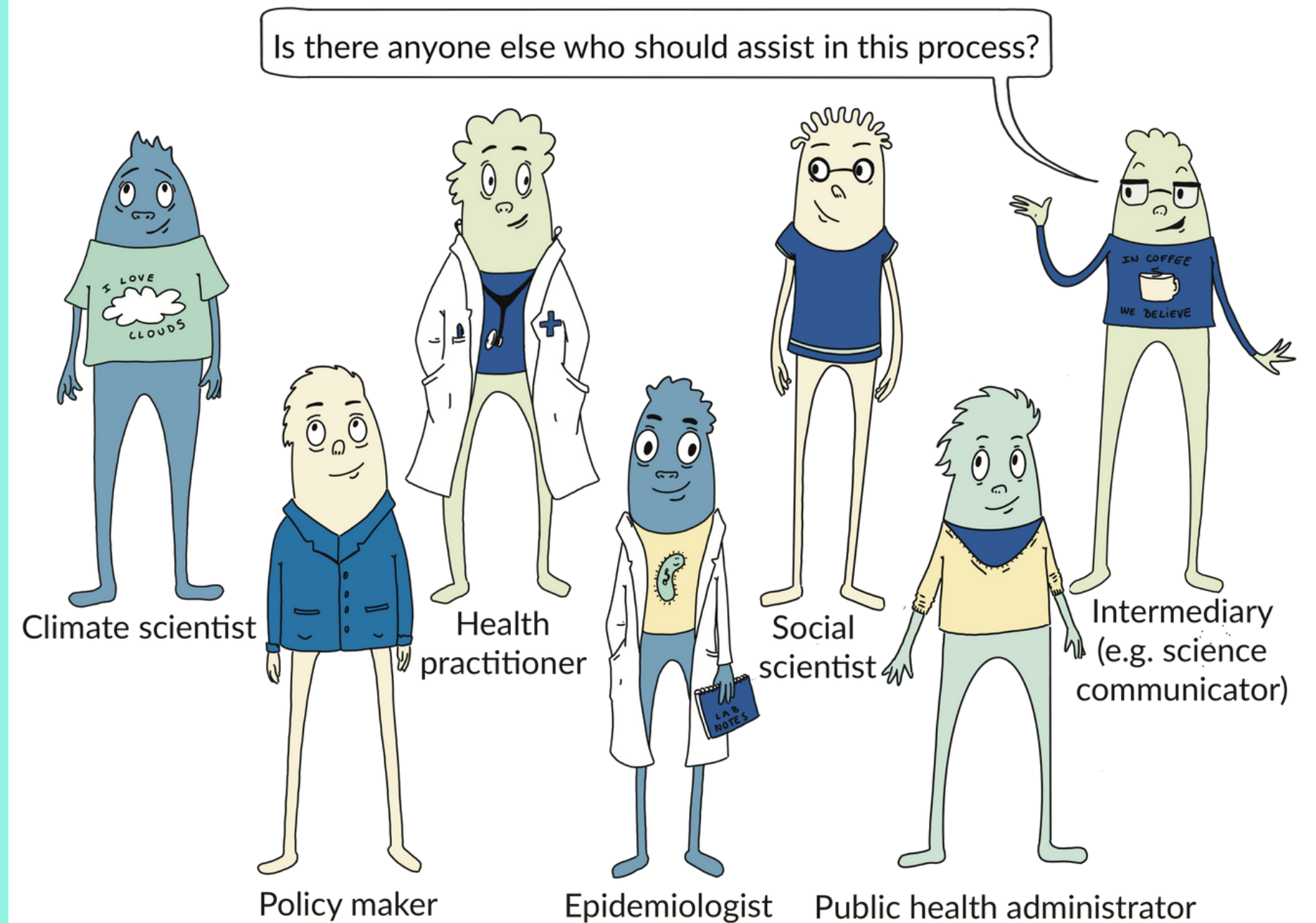
# Ecosystem of actors and co-production processes

This component identifies the different actors involved in (co)producing, evaluating, and taking up climate services, as well as the actors that might become relevant because of a particular decision context.
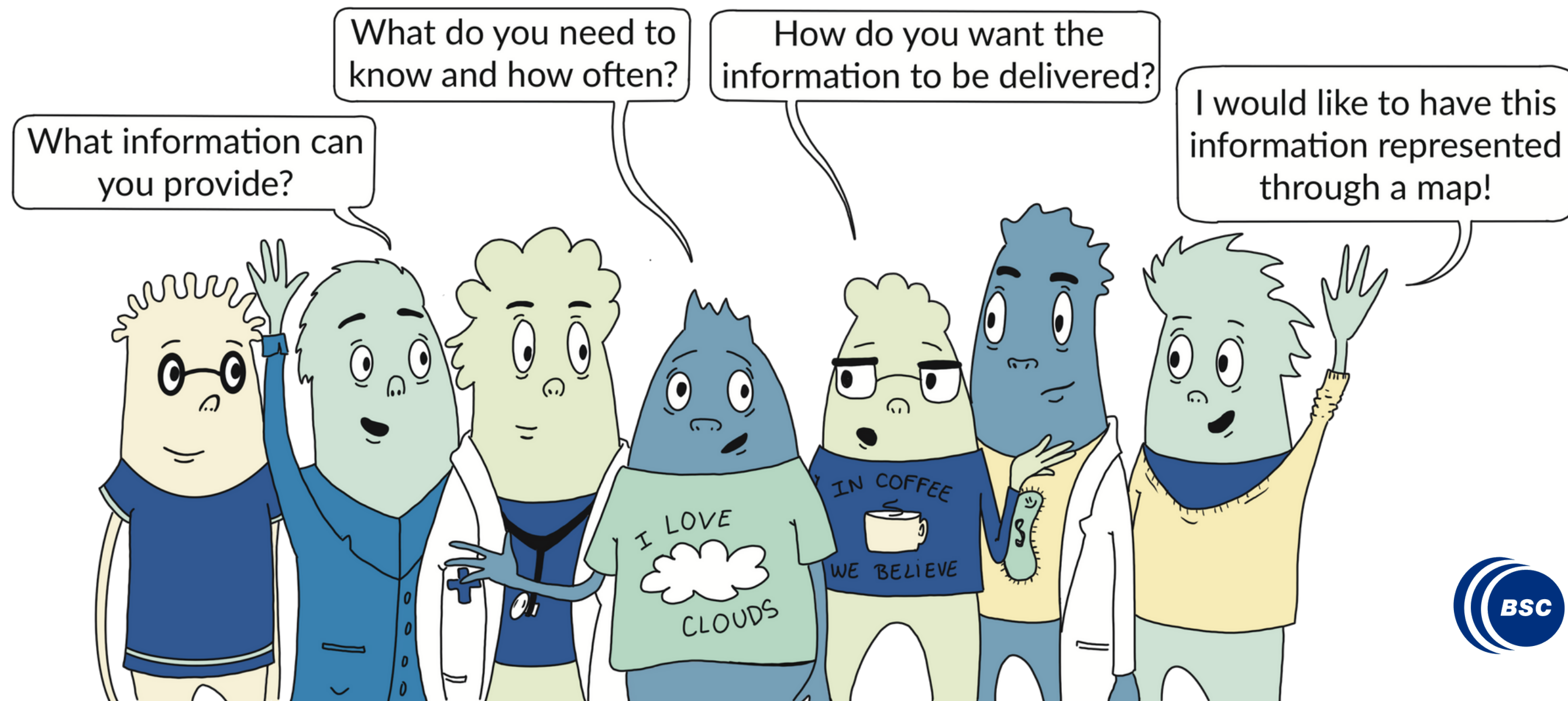
# Knowledge systems

This component relates to climate data, but not only. Environmental, social, economic and technical, as well as engineering data and local knowledge to develop and implement local adaptation and mitigation strategies, are relevant here too. This is also the case of selection, evaluation and translation processes related to this data. Data accessibility, as well as for the climate data its storage and stewardship, also fall under this component.
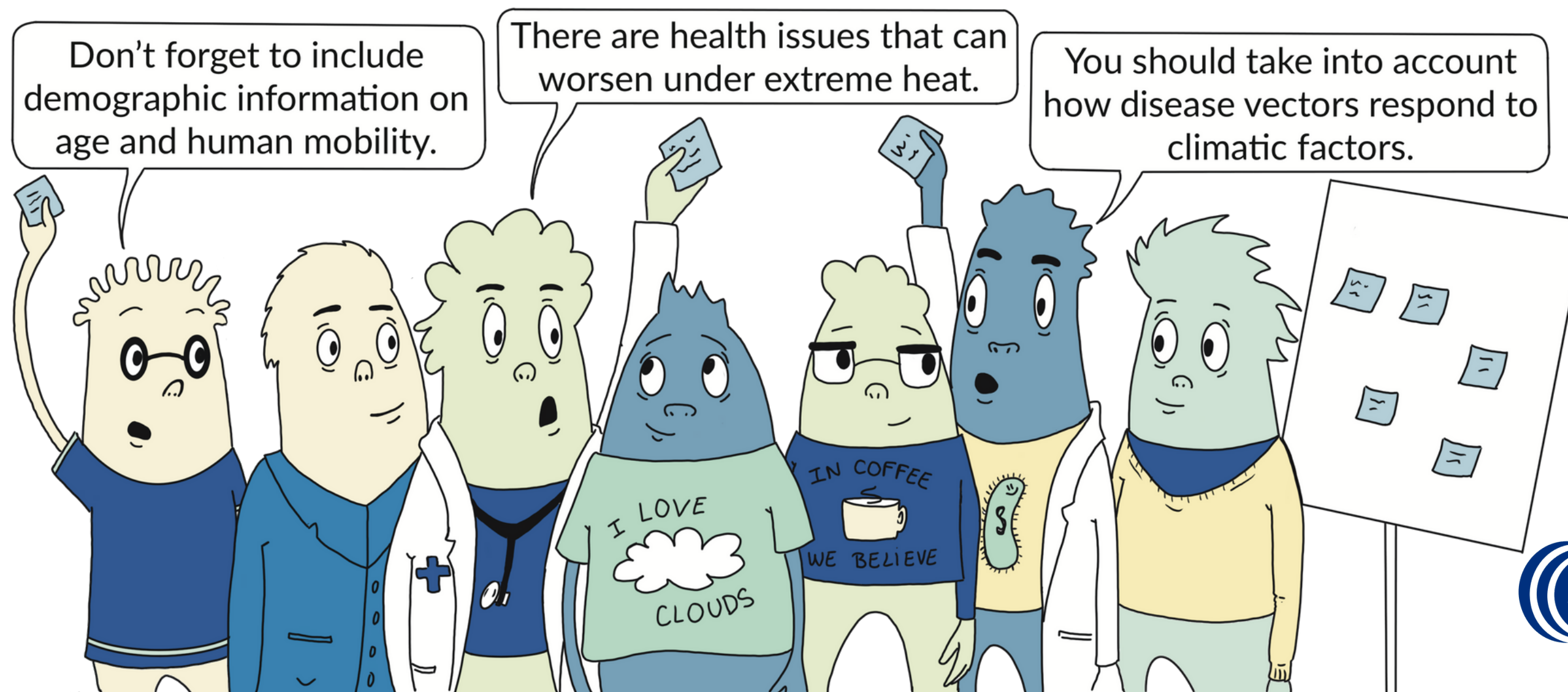
# Delivery mode and evaluation

This component regards how a climate service is delivered, and how this delivery is evaluated at various steps. This should include the tailored aggregation and combination of data and processes to match the decision and context of the service practitioner.

# IDAlert
## Infectious Disease decision-support tools and Alert systems
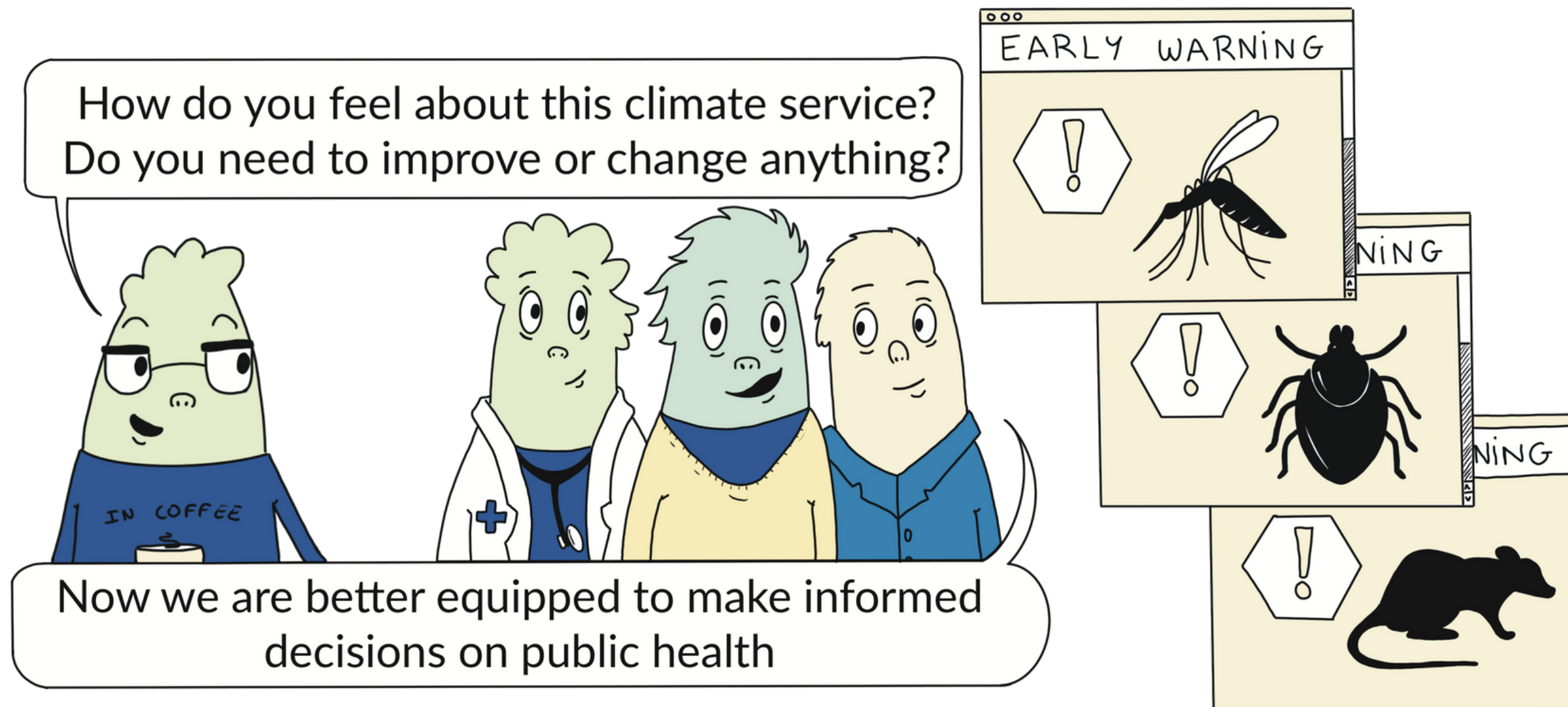
A practical example to illustrate what kind of form delivery can take, is the seasonal indicator platform that the IDAlert project is developing.

IDAlert is a project funded by the European Commission under the Horizon Europe programme (grant agreement No 101057554) which approach expands the IPCC's framework of hazard, exposure, vulnerability and risk by including the One Health triangle of animals, humans and the environment, allowing to contribute significantly to research at the intersection of One Health, EcoHealth, infectious diseases, and climate change.

IDAlert aims to tackle the emergence and transmission of pathogens and the spread of zoonotic diseases by developing novel indicators, innovative early warning systems and efficient tools for decision-makers, and by evaluating adaptation and mitigation strategies to build a more resilient Europe to emerging health threats.
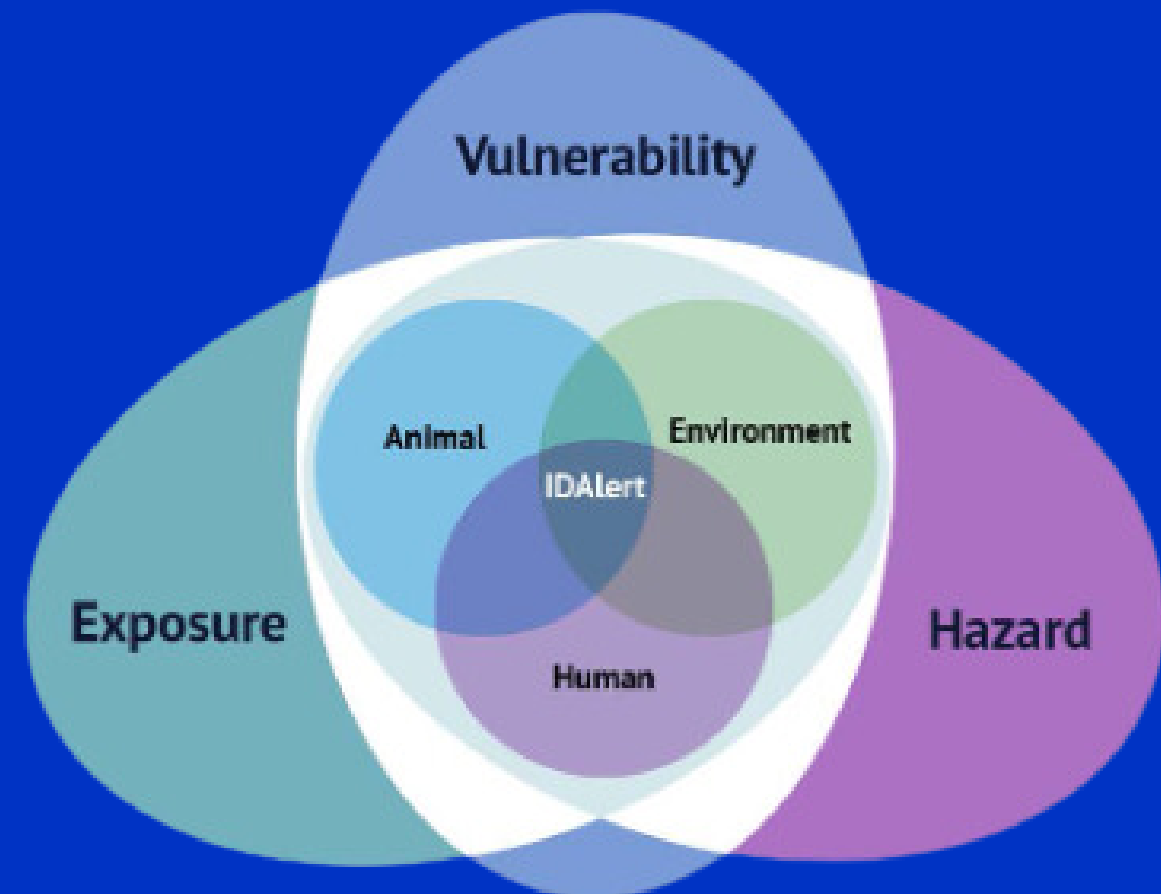
# Thank you

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