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DIGITAL & DATA ACTION FRAMEWORK FOR ECOLOGICAL PLANNING

FRANCE NATION VERTE

Agir · Mobiliser · Accélérer

Contents

Foreword

Two years after the launch of the "digital and data" action framework for ecological planning, it is essential to reaffirm our commitment in the face of scientific challenges and the imperative of coordinated collective action for the ecological transition. Ecological planning remains a solid and realistic framework for charting a credible course towards achieving our goals of decarbonization, and preserving our biodiversity and resources.

Today, this common framework is being strengthened, and should enable the State, local authorities, businesses and citizens to better identify, prioritize, deploy and coordinate available solutions. In this respect, digital technology remains an indispensable tool, a major transversal lever capable of accelerating an ecological transition that is fair, efficient and adapted to the growing complexity of our challenges.

Building reliable, shared infrastructures and databases, reducing lead times, intelligent data management, anticipating crises, networking players, aiding decision-making, simplifying... digital technologies offer decisive opportunities, but also risks that we need to manage with vigilance. The update of our action guidelines therefore pursues our ambition: to align our values and principles of ecological planning with an ethical, sovereign and responsible vision of digital technology in the service of ecology, and which embraces all stakeholders. Best practices exist everywhere, in all fields and with a very large number of players: implementing the reference framework bridges the gap between a strategic direction and the realization of concrete projects, which can be multiplied by sharing best practices.

I would like to underline the constant commitment of our national and local public sector employees, whose mobilization and cooperation are at the heart of this progress. I therefore warmly welcome this first update of the "digital and data for ecological planning" action repository, which bears witness to the effort to coordinate the ecosystem that has taken place over the past 2 years and still needs to be pursued. There is still a long way to go, but this step opens up a phase of concrete action around the first emblematic projects, bearing witness to our collective determination to meet this major challenge.

Augustin Augier
General Secretary for Ecological Planning

Approach

The new version of the "Référentiel d'Actions Numérique et Données" is the fruit of a long updating process, carried out through numerous discussions and exchanges between the program managers of the SGPE's "Numérique et Données" unit and the various project sponsors.**Each action has been reworked and adapted according to its evolution and progress, while new actions have been added to reflect a coherent action plan for digital technology at the service of the ecological transition.**

the first version of this document was the result of a colossal project undertaken by Laura Letourneau in 2023, which she sums up as follows:

"Making better use of digital technology and data to accelerate the ecological transition is a collective, very collective undertaking. The challenge is to move from what can sometimes seem like a Brownian motion, in which everyone puts in a lot of energy without a sufficiently effective collective articulation, to a hive of activity, which allows for a disorganized organization, where everyone does their part on their own playing field in the service of a common goal.

So we plucked up our courage and rolled up our sleeves, the 300 national and regional public-sector employees involved in the project. We worked in "collective and commando" mode so that everyone could put their different projects on the table. We did a mini-tour of France and an experiment in Brittany. We carried out an international comparative study to draw inspiration from successful examples, and exchanged views with our counterparts and various European and international bodies, notably at a 3-day event organized by the UN. We informally consulted external players - NGOs, think tanks, digital manufacturers, trade associations - in particular at an event that brought together over 150 players.

It was titanic, laborious, sometimes thankless work. But it was also a lot of stimulating moments, both intellectually and humanly. Energetic, with the impression of having begun to embrace complexity to make it legible, actionable and prioritized in terms of impact for end beneficiaries. To try and achieve results that match the ecological emergency.

Nine months after the kick-off meeting in February, we have produced a "v0" reference framework that structures what we are already doing and what we want to do collectively to put digital technology and data at the service of ecology. It's a concrete, pragmatic basis for work that tries to go beyond clichés. It is both dense and needs to be completed even further, given the vast range of subjects to be dealt with. It is designed to be challenged and enriched during the next six months of public consultation, but above all over the long term, in an ongoing, sincere and effective co-construction.

This repository doesn't just define the "what", what we want to do, and the associated public platform logic. It begins with the "why", the site's declaration of intent, via its Manifesto: what is its purpose? As a company, what do we want to do and what don't we want to do when it comes to combining ecological and digital transformation? He also takes a keen interest in what is often the most complicated and forgotten issue: the "how? This obsession with implementation begins with internal transformation. Over 120 additional people will be recruited over time to implement the project. Together with the public-sector employees already involved, they will form a network of "Digital and Data Intrapreneurs for Ecology", with a product culture that is field-based, determined, open and supportive. Deployment also requires the professionalization of external regulation: to ensure that all players can do their part, we need to activate mechanisms to support innovation ("carrots"), assess compliance with the public platform doctrine ("sticks"), and above all, create commitment.

Why, what and how can't be thought of sequentially: they need to be worked on and developed together, each impacting the others.

The adventure begins now. Whether you become an intrapreneur from the inside or do your bit from the outside, we're counting on you to dive in at 200%. And you can count on the attentiveness, commitment and determination of our public servants!"

Laura Létourneau,
In 2023, she was appointed by the Prime Minister to put her experience in digital health at the service of ecological planning.

THE ADVENTURE BEGINS NOW. WHETHER YOU BECOME AN INTRAPRENEUR FROM THE INSIDE OR DO YOUR BIT FROM THE OUTSIDE, WE'RE COUNTING ON YOU TO DIVE IN AT 200%. AND YOU CAN COUNT ON THE ATTENTIVENESS, COMMITMENT AND DETERMINATION OF OUR PUBLIC EMPLOYEES!

1.

WHY?

Like innovation or money, digital is not an end in itself. So, first and foremost, we need to collectively answer the "why"? Why is the project necessary? What is its purpose? it is also essential to define the associated ethical framework: what are the risks associated with digital technology? How can we proactively manage them to keep them to a minimum?

CONTEXT

Digital technology is not an end in itself, but an often indispensable means of achieving more noble business objectives. In this respect, all public policies must natively integrate the digital dimension. However, digital is not neutral. It's a technology that comes with its own set of risks, which need to be proactively managed.

> ***Everyone's trying to grasp digital technology with their own history and skills, but there's no shared philosophy. It's important to raise questions. As long as we don't affirm this common purpose, we won't make any headway. "***
>
> *Conurbation and City of Rennes*

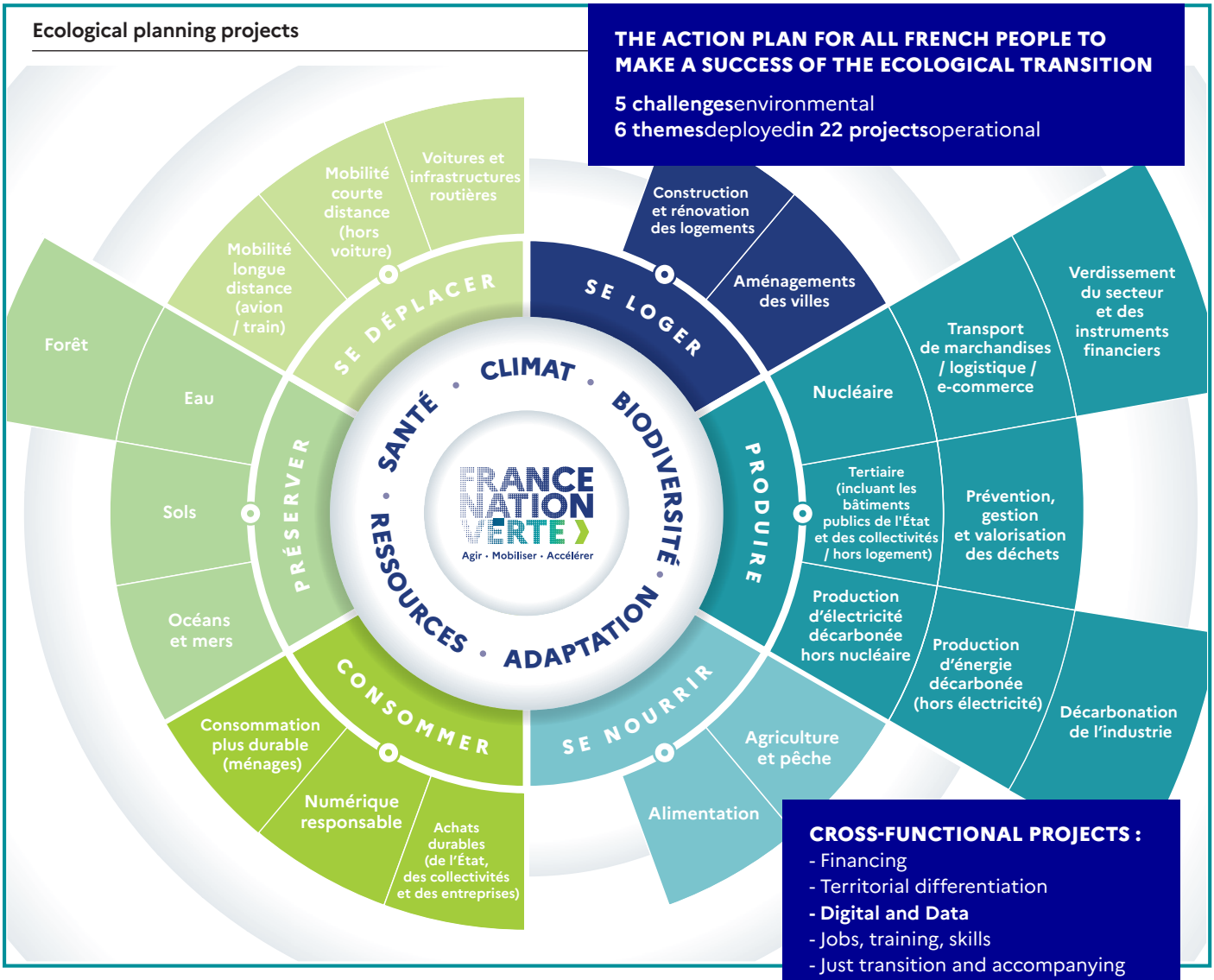
Digital technology alone will not save life. In some respects, it even contributes to worsening climate change. The significant environmental impact of digital technology, the pitfalls of technosolutionism when deployed to the detriment of sobriety, paralysis of action in the phantasmal expectation of perfect knowledge of the situation, false information, leakage of personal data, digital divides, the democratic stakes of models and artificial intelligence :**"To inaugurate the ship is to inaugurate the shipwreck, and digital technology comes with its own set of real risks".**

But launching is necessary.

On the one hand, information - i.e. data and the digital tools needed to produce it - is essential for ecological planning and monitoring. Just as France Nation Verte's business workshops will not be deployed without funding or territorialization, they will not be implemented without the "Digital and Data" cross-cutting workshop. The "Why?" sections of each thematic zoom illustrate this point. Digital technology must serve an ecology that is effective and fair, radical but not brutal.

Secondly, because beyond being a tool, digital technology represents a civilizational change. And if we don't have a proactive strategy capable of creating alternatives, others will impose their own de facto framework of values through usage. The risk of uberization is not a fantasy: it's already sometimes the GAFAMs that are more effectively

Ecological planning projects



alerting the French to deteriorating air quality or other environmental risks, with data and models that are not always deemed reliable by the public bodies concerned, even though these are highly regalian subjects. If we want the framework of values surrounding digital development to be democratically constructed, the best defense is attack. Without digital sovereignty over the public platform, there can be no ecological sovereignty. We therefore need to adopt a genuine industrial policy for the digital sector as well.

> ***Developed countries need financial resources and technologies to make their ecological transition with little social upheaval. "***
>
> ***UN Secretary General***

> ***There can be no ecological transition without environmental data. "***
>
> ***France Nature Environnement***

MANIFESTO

The manifesto describes both the objectives and the framework of values within which development took place. It's the compass for all the public and private players who contribute to it. We need to take a look at it regularly, and re-establish our course if we're drifting off course. Or adapt the compass if what we want collectively evolves.

It walks on the two legs mentioned above: taking advantage of all the opportunities offered by digital technology and data to collectively implement an ecological transition that is as efficient and fair as possible, while minimizing the risks associated with these technologies.

Combating these risks requires action proactive, determined and effective: this is the purpose of all the ethics-related actions indicated in Orientation A of the "Transversal" theme.

MANIFESTO

Without digital tools and data, there would be no massive development of renewable energies, no development of carpooling, no traceability regarding waste management nor precise monitoring of phytosanitary products. There would be no consideration for endangered species when doing urban planning, no measurement method of private companies' environmental footprint, no active targeting of aids towards the citizens in need. There would be no transparency regarding our consumption decisions' footprint, -no efficient management of water resource in case of drought, no anticipation of coastline retreat or simply no IPCC report.

Given the major systemic and urgent challenge of ecological transformation, digital technologies are vital to target the most efficient actions, to handle complexity, to reduce delays, to model, to anticipate crises, to network different initiatives and to mobilize around them. All in all, it is an essential tool to implement together an ecological transition both efficient and fair to everyone.

Neither ambition nor urgency must however lead us to neglect the risks associated with these technologies. Digital technologies must help to change the system we live in, and not contribute to optimize it even more. Digital technologies for ecology must be developed in an ethical, humanist, citizen-centered and sovereign framework that fights against technosolutionism, guarantees digital simplicity, protects privacy, leaves no one behind, takes action against false information, and ensures the resiliency of the systems and the democratic aspects of modelization.

2.

The next step is to determine the "what? What actions need to be taken to achieve these objectives? What is their underlying doctrine? This is the "public platform" approach, which enables us to embrace the ecosystemic nature of the issues and the complexity that goes with it ("cartographic vision"), while at the same time sticking to the needs of players in the field ("vision by use case").

THE PUBLIC PLAFORM LOGIC

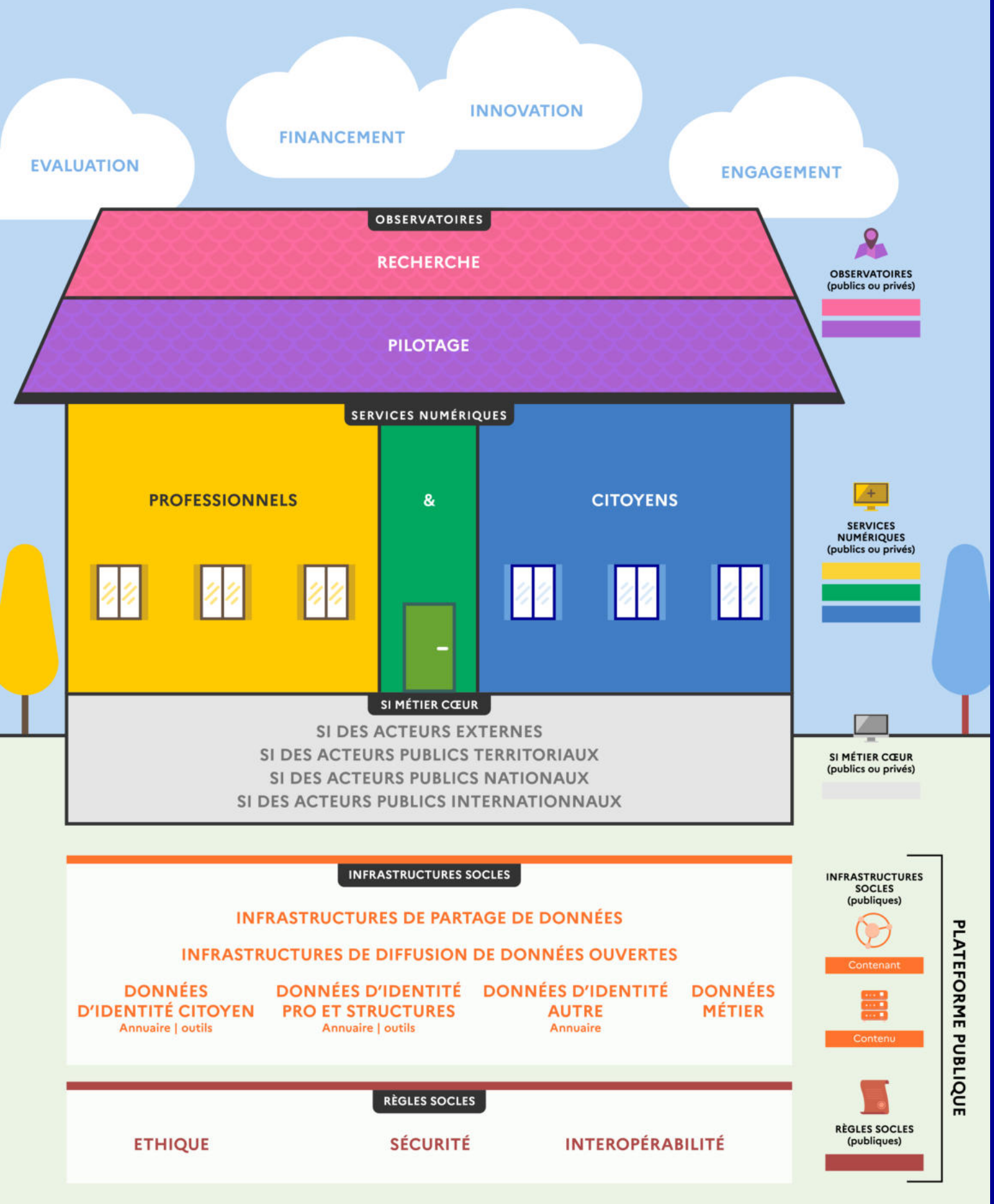
PLATFORM LOGIC PUBLIC PROPOSES TO INSPIRE CITY GOVERNANCE FOR EFFICIENT DISTRIBUTION ROLES BETWEEN THE PUBLIC AND PRIVATE.

"It's a mess", is the feedback most frequently heard from those working to put digital technology at the service of public policy. The ecological transition is no exception. The entropy may even be increased tenfold by the scope and diversity of the subjects and players involved. And yet, as the "use cases" presented show, for a digital project to be a success, it is often necessary for a large number of players to do their part in a coordinated fashion (developing the necessary standards, making the data available, creating the interface, deploying the tool, training users...).

The logic of the public platform proposes to draw inspiration from the governance of a city to effectively distribute roles between the public and private sectors. In a city, the public authorities lay down the rules (town-planning codes, highway code, etc.) and build or organize the construction of the basic infrastructures that enable residents to exchange and live together harmoniously (roads, sewage system, electricity network, etc.). Most buildings, on the other hand, are managed by external players (private sector, associations, civil society, etc.), with the exception of social housing, where there is no economic model. Public authorities ensure that buildings comply with the relevant regulations (e.g., town-planning code) and are connected to the appropriate infrastructure (e.g., sewage system). It can also support stakeholders to ensure that buildings are as adapted and innovative as possible.

In the digital sector, the logic is the same:

Public authorities issue basic rules on ethics, security and interoperability of digital tools (in brown in the building). Ethical rules include the fight against the risks mentioned in the Manifesto (see actions 1-4 of the "Transversal" theme).



INFRASTRUCTURES SOCLES

INFRASTRUCTURES DE PARTAGE DE DONNÉES

INFRASTRUCTURES DE DIFFUSION DE DONNÉES OUVERTES

DONNÉES D'IDENTITÉ CITOYEN	DONNÉES D'IDENTITÉ PRO ET STRUCTURES	DONNÉES D'IDENTITÉ AUTRE	DONNÉES MÉTIER
Annuaire | outils	Annuaire | outils	Annuaire	

RÈGLES SOCLES

ETHIQUE | SÉCURITÉ | INTEROPÉRABILITÉ

INFRASTRUCTURES SOCLES (publiques)

Contenant

Contenu

RÈGLES SOCLES (publiques)

PLATEFORME PUBLIQUE

WHAT?

THESE FOUNDATIONS MUST BE ROBUST AND PRAGMATIC. WITHOUT THEM, WE BUILD EVERYTHING ELSE ON SAND.

- **It also builds base infrastructures.** These are identity or business databases ("content"), which are disseminated in*open data*or shared with a given circle of players via ad hoc infrastructures ("containers") - in orange in the building.

These foundations must be robust and pragmatic. Without them, everything else is built on sand.

- **Most of the time, however, it is external players who build digital services for citizens and/or professionals** (e.g. farmers, manufacturers, collective mobility players, etc.) - in blue, green and yellow on the building. These digital services revolve around these players' core business information systems, which form the backbone of their tools (in gray on the diagram).

- **The core business information systems of both public and private players, as well as digital services, must comply with basic rules and be connected to basic infrastructures.**

- **The necessary data produced by these tools must also be fed into observatories to be used for secondary purposes, for steering public policies (in purple) or for research (in pink).**

- To guarantee respect for this urbanization and support tools that best meet the needs of citizens and professionals, **public authorities must activate the regulatory levers at their disposal, the "carrots"** ("financing" and "innovation" clouds) **as "sticks** ("evaluation" cloud),**and bring this collective adventure to life** ("commitment" cloud). These actions are described in the "How" section.

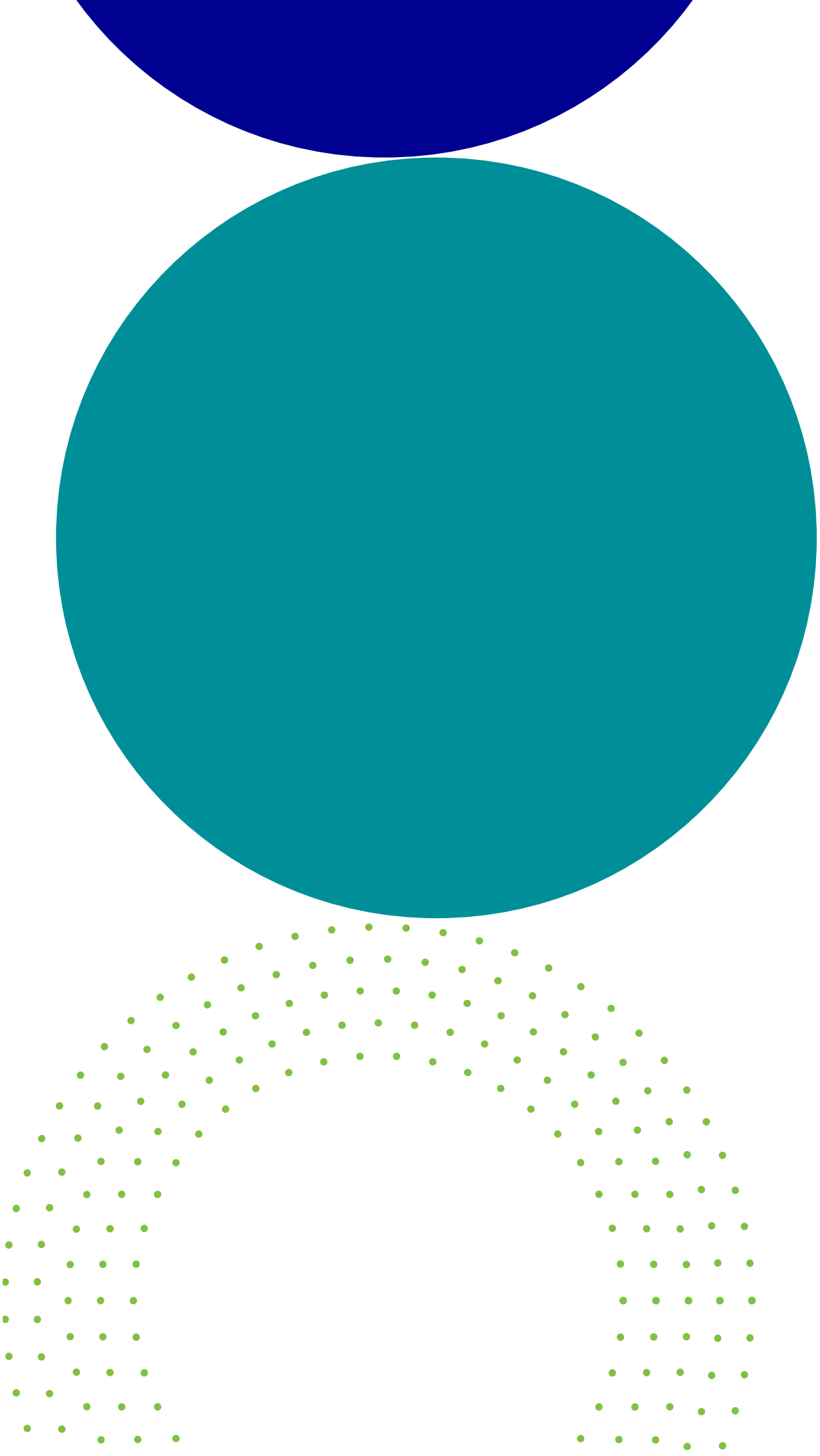
Each brick in the building rests on, and relies on, the proper functioning of the bricks below.

The public platform doctrine allows roles to be divided between the public and private sectors. Far from an "all-public" or "all-private" logic, it defines a third way in which everyone plays their part on their own playing field, for innovative, efficient and ethical public-private collaborations. This collaboration takes the form of shared digital bricks, monopolized by the public sector over the relevant geographical perimeter, to which digital services are connected, often in the private, competitive sector.

It also makes it possible to distribute public roles between territorial, national and international levels. Since climate change and the erosion of biodiversity are global issues, several projects require coordination between European or international countries, and therefore the sharing of information, i.e. data, structured according to common rules and shared by efficient shared infrastructures. This is the case, for example, with plastic pollution in the oceans and the construction of an efficient carbon market. The same logic applies at French level, where many issues transcend administrative boundaries. At both French and global level, it is also necessary to agree on a common methodology and standards, so as to be able to sum up individual actions and check whether they enable us to meet our commitments. On the other hand, some issues are specific either to France or to each territory.

The geographical perimeter of each building brick is indicated in the legend. As a general rule, the deeper the brick, the more likely it is to be shared at global, European or at least French level. Its scope also depends on the level of maturity of a subject, and is bound to evolve over time: it often happens that the need for a specific brick emerges from a "pioneering" territory, and that it is gradually generalized. For players in the field, national or international bricks are the foundations on which they can build their core IS or digital business services even faster.**By pooling the lower layers, we can territorialize the tip of the iceberg all the more effectively.**

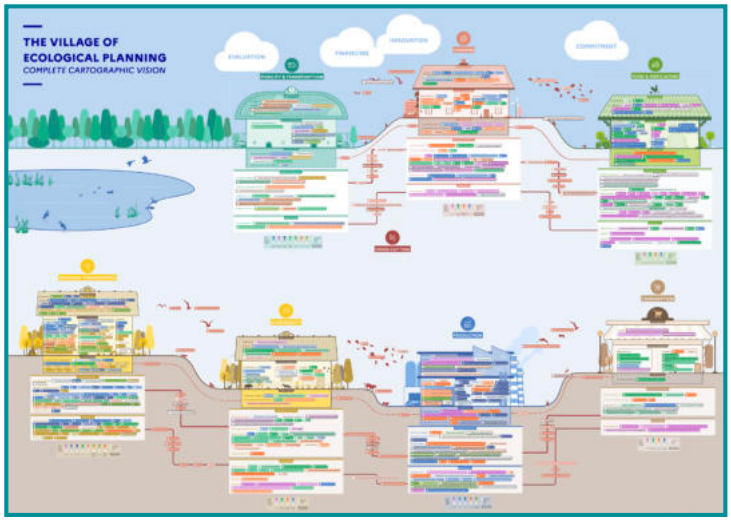
POOLING OF THE LOWER LAYERS TERRITORIALIZATION OF THE EMERGING PART OF THE ICEBERG ALL THE MORE MORE EFFICIENT.



THE METHOD

The work was structured around the themes of France Nation Verte.

This organization makes it possible to circumscribe areas of reasonable size in terms of the number of subjects and players, and to make the link between themes when necessary. For example, it is essential to make the link between preserving biodiversity and actions that exert pressure on biodiversity (housing, agriculture, transport, etc.), or between transport used for the daily mobility of people ("mobility & transportation"), leisure ("consumption") and goods ("production").



For each of these 8 themes, two types of work were carried out:

1

A cartography in the form of a "building" specific to each theme:

- *A station for "mobility & transportation"*
- *An eco-home for "housing"*
- *A hut for "resource conservation"*
- *A cabin with animals for "biodiversity"*
- *A plant for "production"*
- *A farm for "food & agriculture"*
- *A store for "consumption"*
- *Pipes, animals and leaves moving from building to building for "cross-cutting"*

... all forming the "village of ecological planning".

On each building, the existing digital bricks or bricks in progress, for all players, have been arranged, together with a legend:

- ***The color*** *indicates the sub-theme to which the brick belongs*
- ***The gradient*** *indicates its status*
- ***The pictogram*** *indicates its geographical scope: territorial, national or international*

Their positioning in the building is important: it describes the type of digital brick in question, and therefore draws the sharing of public/private and territorial/national/international roles associated with it, via whether or not the brick can be shared.

The most important bricks are circled in black. These are also the bricks shown in the "ecological planning village", which provides only a brief overview of each building.

Each of these priority building blocks is the subject of a numbered "action" detailed in the thematic zooms. These actions are structured into lettered "orientations" that follow the strata of the building. The orientations are classified "from bottom to top", because while all the actions need to be parallelized to work in "product" mode and to keep up with the ecological emergency, they all

rest on the building's foundations, which therefore need to be improved as a priority.

The structuring of each action is designed to be both pedagogical and pragmatic: first, the business challenges are explained, followed by the current situation and associated irritants, and the sub-actions to be undertaken, together with their initiators and timetable. The initiators are classified from central administrations to operators and territories; the main initiator is indicated in bold. These actions and their timetable are indicative at this stage: depending on feedback from the public consultation process and further in-house work, they may need to evolve in agile mode.

2

One or two priority use cases:

- ***"Mobility and Transportation":***
  - *Analyze and plan mobility*
- ***"Housing":***
  - *Reducing energy consumption in housing*
  - *Improving the citizen's path to renovation*
- ***"Resource conservation":***
  - *Forecasting water resources and managing crises*
  - *Managing coastline recession*
- ***"Biodiversity":***
  - *Taking biodiversity into account in urban planning decisions*
- ***"Production":***
  - *Efficient deployment of renewable energies*
- ***"Food and agriculture"***
  - *Enhancing soil quality*
- ***"Consumption"***
  - *Making environmental cost measurement more reliable and harmonized*
- ***"Cross-cutting"***
  - *Equipping citizens*
  - *Equipping territories*

Work on each use case is structured as follows:

- A pedagogical explanation of the business challenges and the current state of digital tools and associated data, as well as the impact indicators to be monitored.

- A description of the problems encountered in the current situation by the various people who play a role in the selected use case.

- The journey of two of these personae through different bricks of the house in the current situation, then in the medium term, then in the target. The irritants indicated in red in these paths gradually improve thanks to the actions undertaken in 1 above (turning green). These two personae are the same as in the "vision by use case" summary.

- Description of the improved situation as a target for all personae.

- The table summarizing the actions to be taken in the medium term and targeted at each stage of the journey to address the problems identified.

This structure makes it possible to test a method in "product" mode on a few priority use cases. There are many other use cases, which can be added as the project progresses.

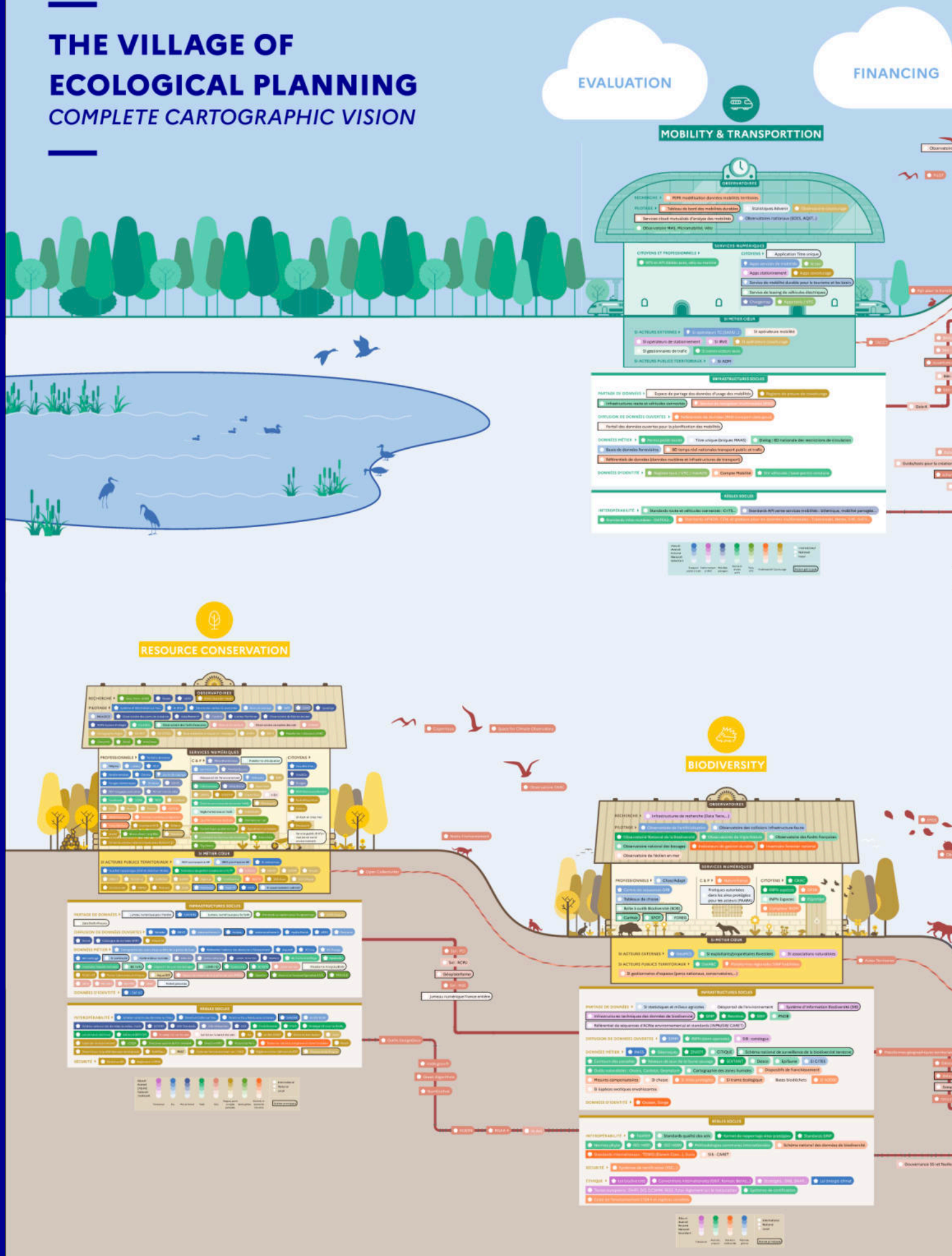
This work complements the cartographic work.
It allows us to put ourselves in the shoes of each beneficiary, and to ensure that the actions undertaken, brick by brick, are correctly articulated to ensure "end-to-end" operation, as seen from the field. It also enables us to define the priority actions for the theme: which of all the bricks are essential to improving the lives of the people we have selected?
Conversely, cartographic work enables us to know everything that exists, for all public players, so that we can capitalize on it when trying to solve problems in the field. It enables us to think about the urbanization of bricks in a systemic way: what's based on what? what needs to be interoperable with what?

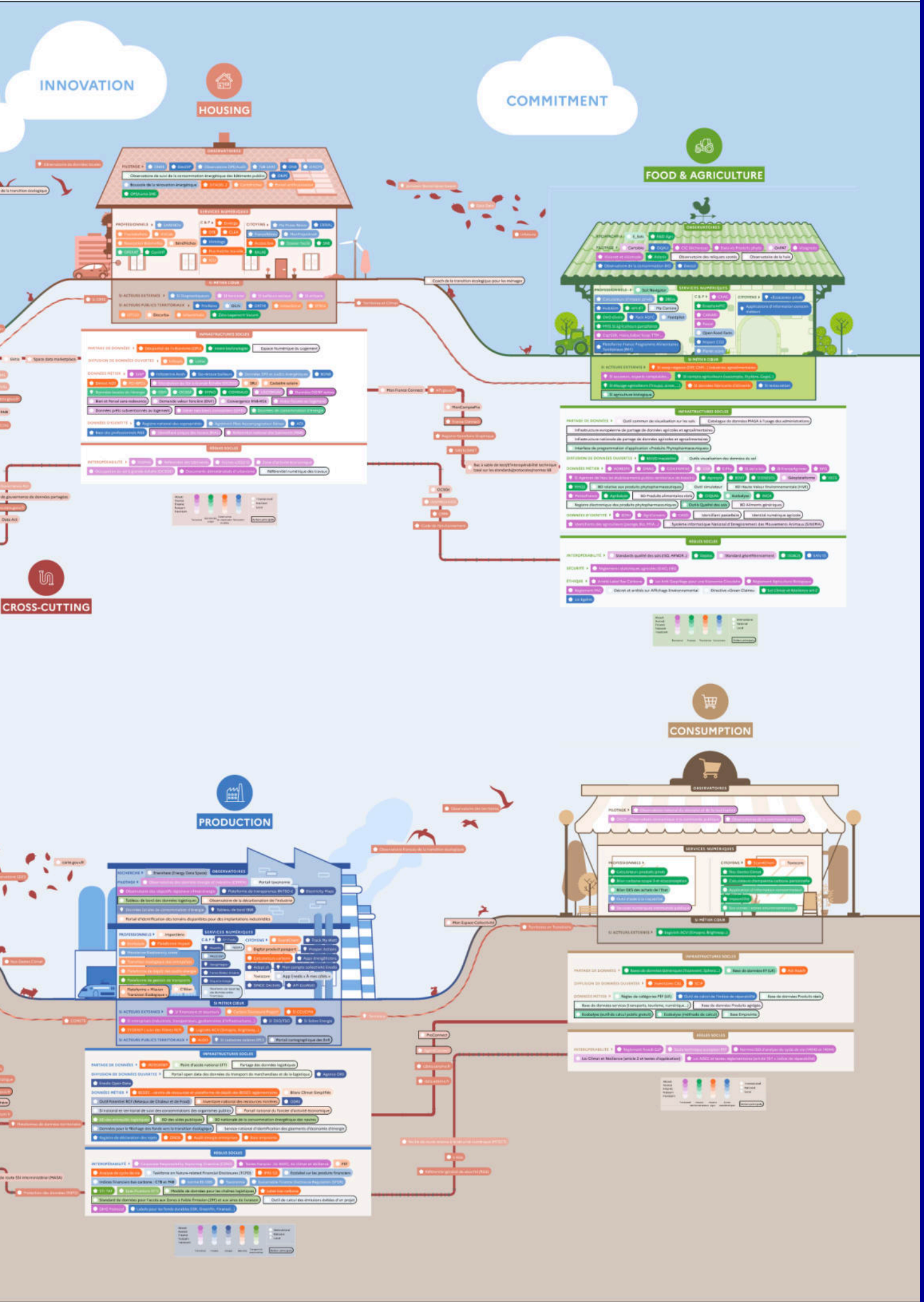
The following two double-page spreads present the cartographic and use-case views in summary form, across all themes.

The "what?" of each thematic zoom presents both the mapping and associated actions, and the priority use case(s).

THE VILLAGE OF ECOLOGICAL PLANNING

COMPLETE CARTOGRAPHIC VISION




INNOVATION
COMMITMENT
HOUSING
FOOD & AGRICULTURE
CROSS-CUTTING
CONSUMPTION
PRODUCTION
WHAT?

VISION BY USE CASE: PERSONAE AND THEIR PROBLEMS_

CROSS-CUTTING

Equipping citizens

Catherine lives in a medium-sized city who are wondering about their carbon footprint and what they can do to participate in the transition. However, it's not enough, **she doesn't know how to calculate her carbon footprint, what to do or where to start.**

Florent is a citizen who wish to change their daily practices and become more involved in the transition, but**he doesn't know what financial aid is available and to which he is entitled.**

Equipping territories

Nadège works in a sub-prefecture. Advising elected representatives and local government on their environmental projects, and the implementation of their own projects**it comes too late in their construction and lacks qualitative and quantitative knowledge. It can neither speed up the process nor improve the impact of each project.**

Stéphane is a territorial agent, it looks for examples of public and private projects to carry out its project. **He's isolated and doesn't know where to start. He has difficulty seeing the scope of the questions to be asked in terms of ecological transition. He doesn't know how to qualitatively measure environmental impacts.**

MOBILITY & TRANSPORTATION

Analyze and plan mobility

Claire is in charge of mobility studies for a small EPCI. It needs to carry out an overall diagnosis of mobility in order to size on-demand transport lines and assess their impact on air quality.**It doesn't know what data it has at its disposal, what tools and methods it can use, or how its territory compares with others.**

Patrick works for an AOM which is preparing a mobility plan emphasizing car-sharing and cycling. It is encountering a number of difficulties: **its survey data is aging, it doesn't know how to generate other data from the individual data collected, and it would need support for more advanced modeling.**

RESOURCE CONSERVATION

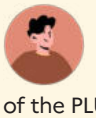
Water resource forecasting and crisis management

Marie-Agnès is the mayor of a small town. **It is difficult to find personalized, local information on trends over the last 10 years in actual water withdrawals and uses.**In crisis situations**however, it is difficult to anticipate the evolution of resources and demand.**

Arnaud is a farmer. He has declared his planned withdrawals but **he has trouble declaring his actual deductions each quarter.** When restrictions are placed on water use,**he can't find a single site that informs him on a daily basis of his obligations and the restrictions that apply to his activity.**

Managing coastline recession

Karine owns a house on the coast. She is concerned because she sees television reports about the retreat of the coastline and**she doesn't know where to find the information she needs.**



Swann is a risk engineer in a design office who is working on the revision of the PLU.**It has difficulty finding relevant and reliable data on this commune, and does not have all the tools it needs to predict the evolution of the coastline.**

BIODIVERSITY

Taking biodiversity into accountin urban planning decisions

Nirmala is an urban planning agency, and is intended to help a local authority draw up its PLU(i) and its Sustainable Development Plan (PADD). **It encounters difficulties in gathering data and assessing the associated protection and restoration issues. It is struggling to collect field data that can be cross-referenced with CarHab.**

Laurent works for the regional council, and is responsible for drafting the environmental component of the new SRADDET.**It is encountering difficulties in gathering regional and local data on natural habitats and assessing the associated protection and restoration issues. Not all data is yet available, and sources and formats differ.**

HOUSING

Reduce energy consumptionhousing

Philippe is a public statistician with the Ministry. It must produce benchmark indicators on the state of the housing stock, the work carried out, the households benefiting from subsidies, and so on. Despite the efforts made,**it encounters major difficulties in cross-referencing databases and producing indicators that are updated every year.**

Célya works for a local authority. It should target buildings with a high renovation potential, in order to support households in the renovation work they need to undertake. **This is difficult to achieve, both because of limited knowledge of, or access to, available databases, and because of limited information processing skills.**

Improving the citizen's path to renovation

Mélanie is an owner. She consulted several private websites to look for a replacement boiler.**She's having trouble finding her way around. She had to put together two applications, one for MaPrimeRenov, the other for CEE.**

Vincent is a France Rénov' advisor, **it must repeat information to households** who come to him and tell him they've already answered his questions on simulators or help platforms. **He doesn't know whether his advice led to any work being carried out.**

FOOD & AGICULTURE

Enhancing soil quality

Anne is a farmer. She consulted her agricultural advisor to identify good practices for adapting to climate change, particularly drought, through better soil management, and had soil analyses carried out.**She's a little lost and struggling to find the funding to begin the transition.**

Etienne works at the Ministry and helps implement the agricultural component of ecological planning. **It is struggling to develop relevant indicators for monitoring changes in practices aimed at storing carbon in soils (soil cover, hedges) and changes in the actual storage of carbon in soils.**

PRODUCTION

Efficient deploymentrenewable energies

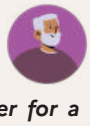
Elise lives in a commune that is launching a consultation on the identification of RE acceleration zones. She wondered whether she could install photovoltaic panels on the roof of her house, but she was not sure**she doesn't know where to find this information.** As a member of an NGO,**it struggles to access data on acceleration zone projects at national level, so as to be able to challenge them.**

Antoine is a mayor and must propose areas of its territory suitable for new renewable energy production facilities.**He has no idea what land is available to develop new facilities.**On the other hand, **municipal staff have not been trained in the use of GIS tools.**

CONSUMPTION

Reliable, harmonized measurement of environmental cost

Flora is a consumer, she uses consumer applications and observes the scores on packaging to guide her consumer choices in clothing, furniture and cosmetics....**This information is often inconsistent. The information is also different when she travels in Europe.**



Pascal is CSR manager for a clothing brand. He is seeking to measure the impact of a relocation project on his company's carbon footprint, and is preparing to implement the new consumer information obligations.**It's costing him dearly. He feels he's doing the same job twice, with different results. What's more, what he does in France is not recognized in other countries.**

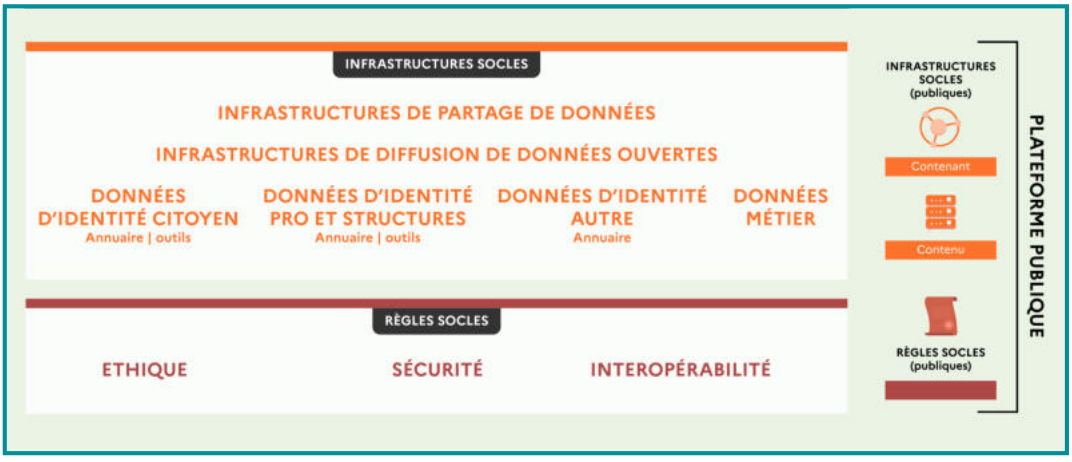
THE BACKGROUND

THE MAIN CONTRIBUTION OF THIS RÉFÉRENTIEL IS TO UNVEIL THESE UNDERGROUND BRICKS IN ORDER TO INITIATE, UNLOCK, SECURE OR ACCELERATE THEIR DEVELOPMENT AND INTEGRATION INTO ALL HIGHER-LEVEL BRICKS.

As explained, each brick rests on those below. Dysfunctions observed at the tip of the iceberg, such as the lack of interoperability of digital services (building walls) or the lack of coherence of observatory data (building roof), are very often due to dysfunctions or the absence of robust foundations.**The rules and infrastructures on which they are based regularly fall victim to the "tragedy of the commons"** for example, an interoperability standard, an identifier or a data-sharing infrastructure is needed by everyone, but is nobody's baby. These are often fairly technical projects, with a major but indirect impact on the final beneficiaries. They often lack support and have difficulty finding funding, as funding is usually allocated on a theme-by-theme basis.

The main contribution of this repository is to reveal these underground bricks in order to initiate, unlock, secure or accelerate their development and integration into all higher-level bricks. It tackles several sea-serpents whose proper functioning is essential if we are to professionalize, industrialize and rapidly scale up to meet the ecological emergency. These building blocks are integrated into the first orientations of each theme.

As indicated,**actions concerning visible bricks, integrated into the following orientations, are dealt with in parallel and not sequentially.**This is essential, because it is they who prioritize work on the foundations, according to the needs of citizens, professionals, or organizations that use the data for management or research, and who enable us to work "in product mode".



SEVERAL KEY IDENTIFIERS ARE CURRENTLY MISSING OR NEED TO BE SPED UP.

About base rules :

Base rules can be common to all themes, in which case they are entered in the "transversal" theme, or specific to each theme. This is notably the case for most interoperability rules, which quickly become business-specific.

- On ethics: this first pillar is essential. It is this pillar that provides the framework of values defined in the Manifesto, so that it does not remain at the stage of a declaration of intent. These actions must be built for and by citizens, both directly and via representative associations.

> ***The "transversal" action 1 is new.*** *Its aim is to help us choose the right balance in the use of our data to implement an effective and fair ecological transition: how can we resolve the paradoxical injunctions between protecting sensitive data and the effectiveness of environmental and social public policies? As a company, how far do we want to go?* ***Actions 2, 3 and 4 are to be accelerated and integrated into each project within the reference framework.*** *All actions must be designed to minimize their environmental impact (or not be launched if the cost/benefit ratio is negative), to be inclusive, and to guarantee trust in models and artificial intelligence if they use them.*

-On safety:

> ***Cross-functional" actions 5, 6 and 7 concern the security of digital tools used by the central government, public establishments and local and external public stakeholders****(respectively). The further these players are from central government and ANSSI, the more indirect but important their role is, as regulator, support and/or coordinator of the cybersecurity industry.*
>
> ***Action 8 is new:*** *in addition to cyber risks, the digital sector needs to work on its own resilience to climate and energy risks. Business continuity and recovery plans will therefore be strengthened in line with these new threats.*

-On interoperability :

> ***The "transversal" action 9 on the "standards factory" is new:****it aims to professionalize and standardize the development of standards, while speeding up their creation and deployment, via action 10 and the strategy presented in the "How?*
>
> ***New industry standards will be created in a number of areas:****this is the case, for example, with the digital repository of home renovation work (action 3 of "Housing"), which is currently lacking to better characterize the work to be carried out, process subsidy applications and measure the effectiveness of this work.*

About base infrastructure :

Core infrastructures are first and foremost made up of "content": identity databases and associated identification tools, and business databases.

-On identity databases and associated identification tools:

> ***Several key identifiers are currently missing or need to be speeded up****this is the case, for example, with premises and building identifiers, which are essential for cross-referencing different business data such as Energy Performance Diagnostics, requests for subsidies for building work or energy consumption in housing, and for ensuring that public policies are properly targeted and have the right impact (actions 1 and 2 of "Housing").*
>
> ***In addition to databases, a great deal of work needs to be done on personal identification tools, to make their connection to the many existing tools more fluid and secure*** *on the citizen's side, France Connect or France Connect + will be integrated into the digital citizen services in the repository; on the professional's side, ProConnect will be integrated primarily into digital services for farmers and professionals.*

-On business databases: several databases need to be consolidated, enriched or created, such as the databases on real-time information for public transport (action 2 of "Mobility and transportation"), the databases on water (action 3 of "Resource conservation"), the databases on soil quality or on the environmental impact of real

food products (actions 4 and 7 of "Food and agriculture"), databases on the repairability, durability and environmental impact of products thanks to the Digital Product Passport (action 4 of the "Consumption" initiative), databases on logistics warehouses and the energy consumption of ships to reduce the environmental impact of freight (actions 6 and 7 of the "Production" initiative).

This content must then be distributed securely and within a legal framework via "containers", which allow the data to be distributed by*open data* and/or to share them or make them accessible to a restricted circle of players, when they are not intended to be open.

-On open data dissemination infrastructures: thanks in particular to European regulations in this area, the openness of environmental data is usually in a good position compared to other public sectors. Nevertheless, improvements are underway or need to be developed in terms of freshness, quality and/or free access, for example in the case of MétéoFrance data. The provisional schedule for opening up this data will be updated and made public every six months (action 12 of "transversal").

-On data-sharing infrastructures: they can take a number of technical forms (access via a*data lake* vs. simple API; centralized vs. decentralized, etc.) and meet different needs.

Concerning the needs of public players:

This involves, for example, circulating data from the Ministry of Agriculture or the Ministry of Public Finance to the Ministry of Ecology (actions 8 of "food and agriculture" and 4 to 8 of "housing"), or to local public players. The opening up of these colossal IS, initially designed to implement the pothis is essential, however, if we are to be able to implement France Nation Verte effectively. In the same way as for open data, the provisional schedule for the circulation of this data will be updated and made public every six months (action 11 of "transversal").

In addition, national and regional public players sometimes need access to private data of general interest, to plan green mobility infrastructures for example (action 13 of "transversal").

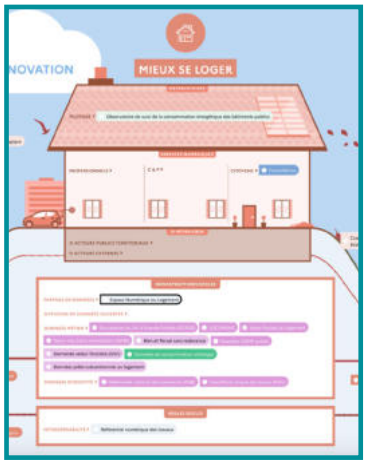
Concerning the joint needs of public and private players:

This is perhaps the most important point in the standard.

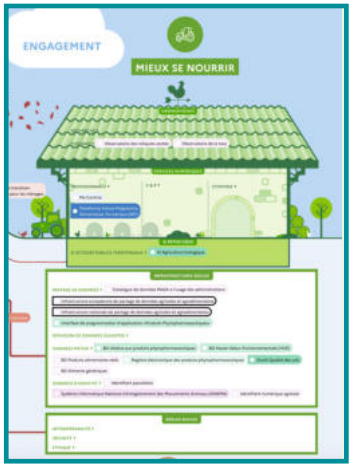
The need to share data between a restricted circle of private and public players to implement their ecological planning policies has emerged in all areas. Historically, to meet this need, it has often been external private or associative players who have built the necessary sharing infrastructures. However, the associated governance poses problems of continuity (as with a nuclear power plant, if you want to plan for the long term, you can't risk running out of funding every six months), sovereignty (there can be no ecological sovereignty without digital sovereignty over the basic rules and infrastructures) and neutrality (which hinders other private players, especially startups, from using these pivotal infrastructures, and prevents the activation of incentive and coercive levers to get third-party digital services to connect to them).

To enable the deployment of these infrastructures and the industrialization of the associated public policies,**it is therefore essential to move their governance towards more public models, or to set them up where they do not exist.** Private digital players can contribute to building these infrastructures, but as service providers, not on their own behalf, without which the above criteria cannot be met. It is also essential for them to build the digital services that are grafted onto these infrastructures, which are in the competitive domain ("walls" of the building). The more secure the underlying infrastructures, the faster these digital services will be deployed.

This need has arisen in particular in :

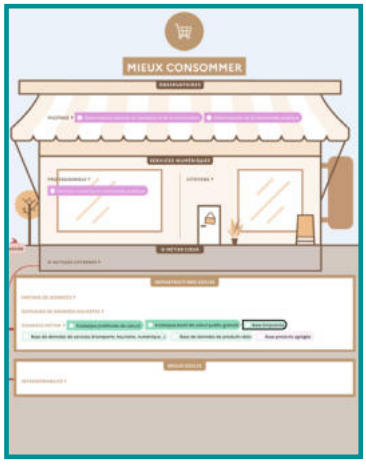


- ***"Housing",*** *to ensure that the path taken by citizens wishing to renovate their homes, and by the professionals and public authorities involved, runs more smoothly, thanks to the creation of a digital space for public housing (action 13 and use case 2 in the theme).*

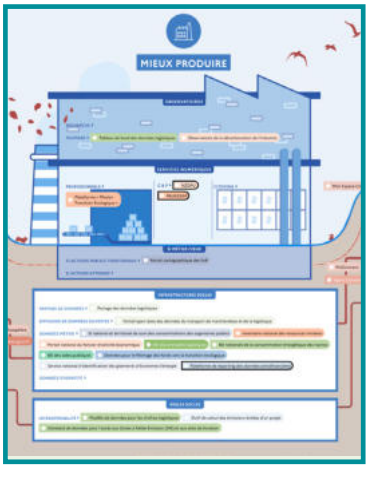


- ***"Food & agriculture",*** *to secure and accelerate the deployment of key public policies for agro-ecological transition at European level, such as environmental labelling of foodstuffs, monitoring of plant protection products and carbon credits (action 9 of the theme).*

IT'S ESSENTIAL TO MOVE THE GOVERNANCE OF THE DIGITAL COMMONS TOWARDS MORE PUBLIC MODELS, OR TO CREATE THEM WHERE THEY DON'T EXIST.



- ***"Consumption",*** *to calculate the environmental impact of various products and services (textiles, furnishings, cosmetics, digital products, etc.) in a harmonized and transparent way, in particular for the purposes of environmental labelling, via a partnership with Ecoinvent (action 1 and use cases in the theme).*

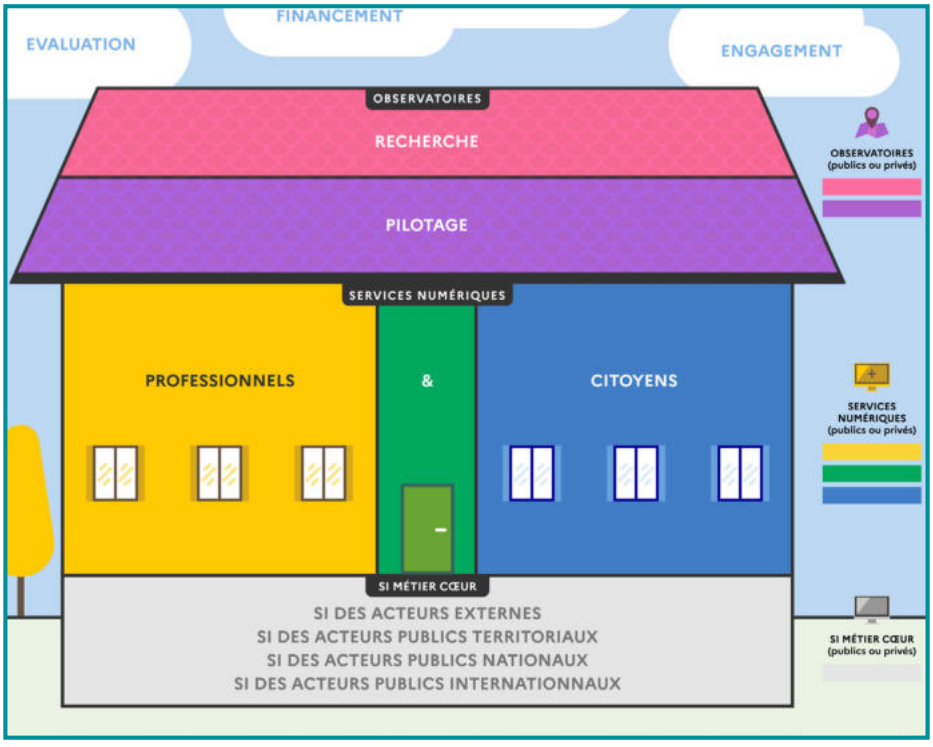


- ***"Production",*** *to promote the accessibility and transparency of corporate extra-financial data at French, European and international levels, with a single national public platform that will feed the European infrastructure (ESAP) and the international infrastructure (NZDPU), whose governance will also become public (action 11 of the theme).*

As the last three examples show, the stakes are often European or even international. France's role is to act as a pilot, prefiguring and supporting the higher-level infrastructure, both to help give it credibility from an operational point of view and to influence the strategic choices that will be made in terms of governance and standards.

Furthermore, at territorial and national level, infrastructures for open data dissemination and/or data sharing can be pooled between the various public players to natively fluidify their interoperability and improve our collective efficiency. This is the role played by the geoplatform, both across the board and for several of the repository's thematic use cases.

META-TOOLS AS ENTRY POINTS



With regard to territoriesand digital services for citizens and professionals :

These digital information systems and services are largely developed by external, often private, players. Some are developed by public players, particularly when they are linked to a public policy (receiving aid, complying with a legal obligation, etc.). In addition, the more the theme relates to a public service provided by public or semi-public bodies, the more these digital services are also public (the "resource conservation" walls contain more bricks than the "food & agriculture" walls). For example:

-For local government employees: cross-functional tools to help local authorities accelerate their ecological transition (including MonEspaceCollectivités, see action 20 and use case n°1 of "cross-functional") or thematic tools such as the mapping portal for renewable energies (action 13 of "production"), GéoLittoral on coastline recession (action 10 of "resource conservation") or tools enabling public purchasers to give priority to reuse and recycling (action 9 of "consumption").

-For citizens in all their facets a cross-functional tool to help citizens accelerate their ecological transition (*I take action*(see action 21 and use case 2 of "transversal") or thematic tools such as France Rénov' (action 14 and use case 2 of "housing").

-For professionals in each theme for example, we have developed thematic tools such as Trackdéchets (action 30 of "resource conservation"), and FOREG to inform forest stakeholders of the probability of the presence of protected species (action 6 of "biodiversity"),*my canteen* for collective catering operators (action 14 of "Food and agriculture") or the "Ecological Business Transition" platform for VSEs/SMEs (action 3 of "Production").

There is an abundance of public tools for the first two target groups, often to the detriment of clarity and ease of use. **To solve this problem without creating a single obese software package that suits no one, a meta-tool will serve as an entry point**(MonEspaceCollectivités for territories and the*I take action* for citizens). They will natively integrate a synthesis of the more specialized tools, and point towards them in a fluid way, thanks to the mutualization of the lower layers (identification of actors in particular). The various existing tools will also be harmonized and rationalized.

Concerning observatories for steering public policies and research :

Similarly, there is an abundance of public and private observatories for management purposes, sometimes to the detriment of data legibility and consistency. Work on building foundations will help improve the situation. In addition, as with the tools for territories and citizens,**the public meta-observatory used to monitor and evaluate the Green France plan will be continuously improved, and will point to more specialized observatories** ("dashboard", action 22 of "transversal"). The various existing observatories will also be rationalized.

New steering observatories are also planned, such as hedgerows (action 18 of the "Food and agriculture" initiative), decarbonizing industry, and goods transport and logistics (actions 1 and 12 of the "Production" initiative).

New research observatories are also being developed or upgraded,such as Green Data for Health on health and the environment (action 29 on "resource conservation").

FOCUS ON ADAPTATION AND CRISIS MANAGEMENT_

Faced with the already visible consequences of climate change, it's no longer enough to focus on mitigating our impact on the planet; we also need to adapt to new environmental conditions. To this end, **adaptation is one of the key elements of the ecological transition, for which anticipation and information sharing, and therefore digital technology and data, play a key role.**

On the one hand, digital technology must help other sectors to be resilient. Establishing a database on soil quality, for example, will enable us to adapt practices, particularly agricultural practices, to these soils (see focus on "Food & agriculture"). Another example: we need to improve the reliability of data on the built environment and land use, so as to be able to cross-reference them with data on the swelling and shrinkage of clays (see zoom on "Housing").

Digital technology must also work on its own resilience how, for example, do you manage a crisis when all or part of the information systems involved in managing that crisis are down? This is the aim of action 8 of the "Transversal" theme.
The detailed plan of this reference framework natively integrates various actions relating to adaptation. It will be supplemented over time, according to the needs expressed in the business action plan on adaptation.

Specific work is also needed on the subject of anticipation and crisis management. On this particularly cross-functional subject, a working group led by the SGPE, bringing together key ministries and operators (Ministries of the Interior, Ecology, Health; OFB, BRGM, IGN, etc.), has produced the following inventory and framework actions. The specific actions arising from these will be incorporated into the thematic action plan at a later stage. Work on crisis management has also been incorporated into the governance arrangements to be put in place at territorial level, which is the first level mobilized during crises, and at international level, since crises often go well beyond administrative borders.

First of all, a needs analysis was carried out.

A dozen major types of crisis relating to climate change and the collapse of biodiversity have been identified to date:

1. *Flooding, including glacial and periglacial melt*

2. *Avalanches*

3. *Landslides, including clay swellings*

4. *Underground cavities and coastline erosion*

5. *Atmospheric meteorological events, including storms and cyclones*

6. *Forest fires*

7. *The drought*

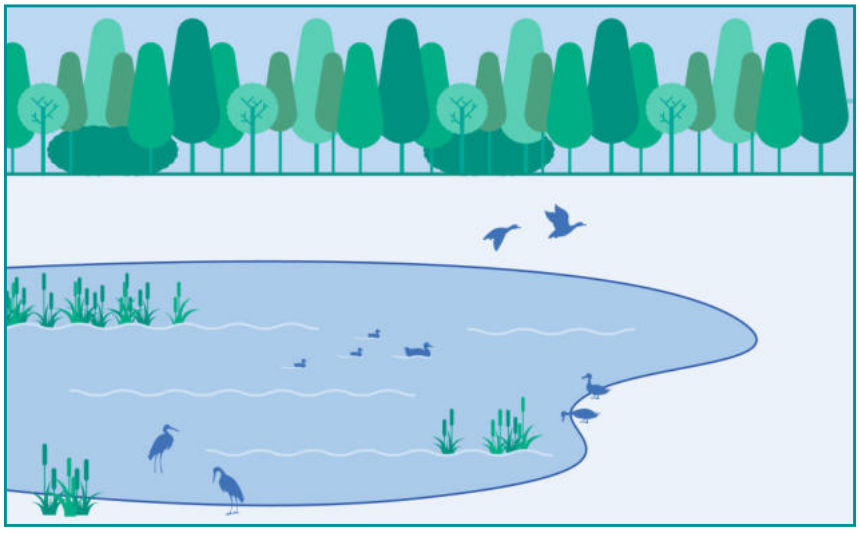
8. *The heatwave*

9. *Air quality deterioration*

10. *Health risks, epizootics and vector-borne epidemics, including biological invasions*

11. *Forward-looking crises*

> ***This repository is an opportunity to reinforce a systemic national approach to the use of data to anticipate and manage environmental crises. "***
>
> ***Gérald Darmanin***
> ***Minister of the Interior and Overseas France***



They are distinguished by various criteria:

- ***Their kinetics*** *on the one hand, there are the so-called "hard" crises, rapid and sudden. They are fairly well circumscribed in time and space (a fire, for example). On the other, there are "soft" crises with slow kinetics and evolution, less well defined in time and space (drought, for example).*

- ***Their foreseeable evolution*** *due to climate change and the collapse of biodiversity. Some natural hazards are set to increase in frequency and intensity. Examples include underground cavities, glacial and periglacial melt, clay swelling and biological invasions.*

-***The synergy between risks.*** *The interaction between certain risks in a changing environment is difficult to predict, and can generate a cascade of acute crisis situations ("domino effects").*

- ***Geographic reach*** *local, national and/or international. Physical and biological phenomena often impact several countries on one or more continents.*

Crisis managers need up-to-date, directly accessible information to be able to anticipate and manage these crises. **This calls for a systemic national approach in terms of digital and data, which includes not only crisis managers but also all the players who help to anticipate and assess the crisis.**

An action plan was then drawn up.

For each crisis, once the business requirements have been defined, the following questions need to be answered:

1

What data is needed for anticipation and crisis management?

Data may not be available for all of France. For example, the total area of land likely to be affected by glacier detachment has not yet been exhaustively mapped in France, nor has the presence and volume of cavities.

It also happens that data is not updated as frequently as it should be. This is the case for monitoring the appearance of new invasive exotic species or pests: current systems require highly advanced data qualification, which is certainly necessary for their scientific reuse, but often leads to long exposure times, incompatible with close monitoring of the subject.
Generally speaking, information sources are widely dispersed and rarely fluidly accessible. This leads to the construction of sometimes complex feedback channels, designed on a case-by-case basis rather than as part of a systemic approach.

It is therefore necessary to identify all data sources and to use them in a satisfactory way. The level of quality required must be defined in the light of the above-mentioned criteria, and regularly assessed, for example using an indicator of the availability of information at the right time. It is also essential to set up a feedback system that takes into account the cross-referencing of crises in order to deal with these particularly complex cases.

2

To retrieve this data, what changes are needed in terms of information systems?

Even if it is often impossible to anticipate all needs in "cold weather" (when the crisis is over), it is necessary to anticipate as far as possible the required changes to information systems, as the creation of new systems during the crisis itself is always a delicate matter.

This approach was initiated within the Centre national de commandement stratégique, a dedicated structure set up for the major sporting events to be held in France in 2023 and 2024. The center has equipped itself with a hypervision tool that is intended to prefigure a national crisis management tool based on data, sized and adapted to all types of crisis. It will have to evolve in order to be able to collect all the public and private data needed to monitor weak signals and rapidly assess the situation in the event of an event. This hypervision tool is a data visualizer with a handrail containing encapsulated geographical data. Synapse is the reference tool for Geographic Information Systems.

To ensure the smoothest possible flow of data into these tools, we need to identify and create data-sharing infrastructures for each type of business. These infrastructures will need to ensure the consolidation of sector-specific data upstream of Synapse, by involving experts with business-specific knowledge, and then feed it into the tool. The information systems producing the business data will be based as much as possible on the usual tools used by the people who are supposed to produce them, so that they don't have to learn new software in the middle of a crisis. Modeling tools useful for management purposes should also be exploited.

3

Finally, what digital channels should be used to communicate information to the general public?

A population alert system has been clearly identified for "hard" crises: FR-Alert. It broadcasts a message to the cell phones of people present in an area facing danger, alerting them to the abnormal nature of the situation, the nature of the crisis and the behavioral instructions to adopt in order to save lives. Recent use of FR-Alert has demonstrated the benefits of this tool when positioned during the public alert period (lower number of emergency service interventions, casualties or victims).
On the other hand, digital communication services for citizens ahead of hard crises, in the vigilance phase, or for so-called "soft" crises, of moderate intensity and spread out over time, are not always clearly defined.
On the one hand, we need to define a single source of official information, to be used by all public and private digital services, so that citizens have access to reliable, consistent information. In particular, it is important to work closely with GAFAMs to ensure that the instructions they disseminate - on what to do in the event of poor air quality or flooding, for example - are well aligned with information aimed at guaranteeing homeland security (see action 4.2 of "Transversal").
On the other hand, these messages need to be disseminated effectively via public digital services aimed at the general public, in addition to non-digital channels (weather on TV, town halls, etc.). FR-Alert is the tool to be used by the administrative authority (prefect or mayor) in the event of a red alert: immediate danger to the population, damage to physical integrity and gain in terms of crisis resolution. We need to define the tools that will be used to disseminate prevention and information messages relating to crises that are still soft, for example*I take action* (action 21 of "Transversal"), and/or the Plan Individuel de Mise en Sûreté (PIMS, formerly PFMS) in its digital format, published in 2024.

A first version of the table answering these questions for each crisis has been produced. It is now a question of carrying out the following two actions relating to adaptation and crisis management.

1.1Complete the table cross-referencing the various crises and the 3 areas for reflection identified; associate an urbanization strategy for the information systems involved and an ambitious plan for implementing the actions defined

LEADS : ***SGPE****dGPR, MIOM, MSP, MASA, DINUM, all the national and regional trade players involved*

CALENDAR :*S2 2025*

1.2Define and implement the organization's internal urbanization strategy, including interoperability with Synapse, in line with the interdepartmental strategy of the previous action

LEADS : *SGPE,****every player involved***

CALENDAR :*from S1 2026*

3.

HOW?

Finally comes the most complex and overlooked question: "how?". It's time to move on from the action-based vision of "what?" to an actor-based vision, as proposed by Bruno Latour in "Down to earth? Who has to do what to make the project work? What is the role of each player, whether private or public, local, national or international? What levers of internal transformation or external regulation must public authorities activate to remove obstacles to implementation?

INTERNAL TRANSFORMATION: ORGANIZATION, RESOURCES AND CULTURE

ALL THE PLAYERS INVOLVED ARE STILL SUFFERING FROM TOO MUCH ENTROPY, WHICH PREVENTS PROJECTS FROM BEING PROPERLY ARTICULATED AND SCALED UP.

At regional, national and international level, the consensus is that, while there have been a number of significant advances in recent years, particularly in terms of data openness, all players are still suffering from too much entropy, which is preventing projects from being properly articulated and scaled up.

"We don't even know whether we have 4 or 5 energy-climate platforms in our region", said one regional player. "We need an orchestra conductor to bring coherence to the different projects", said a national player. "Projects are not interoperable, because the players are siloed, because funding is compartmentalized", said the international players at the "Vers une révolution par le*big data* for the planet" organized in Vienna by UN bodies.

In addition to governance, the issue of insufficient human and financial resources dedicated to the subject is mentioned. The work culture, which is still often not sufficiently "product-oriented" and "field-oriented", is also regularly cited as one of the major obstacles to effective deployment.

AT NATIONAL LEVEL

To respond to the need for decompartmentalization and political support, and in line with the creation of the SGPE, a France Green Nation "Digital and Data Strategic Committee" has been set up. Co-chaired by the SGPE and DINUM, it will regularly bring together the stakeholders in the scheme to allocate funds, coordinate and secure the program as a whole. The SGPE will ensure that the level of ambition is aligned with the business plan, and that there is consistency between the different themes. It will coordinate online and field consultations, territorial and international aspects, and the implementation of regulatory levers for effective global deployment. DINUM will ensure a "product mode" approach to developing digital tools and securing the proper execution of actions in a context of high uncertainty. This involves a number of best practices, such as the fact that being in production takes precedence over having complete documentation, or that the impact on key indicators must always take precedence, as well as radical transparency regarding project results.

In view of the scope and scale of the standard, thematic committees will also be set up. They will be structured around France Nation Verte themes and co-piloted by a "Green Nation" pair-**principal** / secondary " :

- ***Mobility & Transportation: DGITM**/DGEC*
- ***Housing: DGALN**/DGEC*
- ***Resource conseration: DGALN**/SGPE*
- ***Biodiversity: DGALN***
- ***Production: DGE**/SGPE*
- ***Food & Agriculture: MASA**/CGDD*
- ***Consumption: CGDD**/DGPR*
- ***Cross-cutting: SGPE**/DINUM*

They will also include the SGPE, DINUM, CGDD, SGs and all other central administrations, operators and external stakeholders required for each theme.
The most important point is that the structuring of the new financial resources allocated to the site will, as far as possible, be consistent with this governance. Resources will be allocated not actor by actor, but action by action, in order to decompartmentalize projects and therefore data.**20 million euros from an interministerial fund have been committed as of 2024 via the Fonds d'INvestissement Numérique et Données pour la Planification Écologique (FINDPE - Digital and Data Investment Fund for Ecological Planning)** to test implementation methods. In a highly constrained budgetary context, we maintain our recommendation to mobilize substantial human and financial resources to finance these productive investments, and will propose innovative solutions to converge towards the initial 5-year allocation of 250 million euros.
More importantly, following the recommendations of the IGF/CGE report on the State's human resources in the digital age,**considerable additional human resources will have to be allocated to the various central administrations involved; in particular, 120 digital FTEs have been allocated to MTE-CT and MASA from 2024.**

All those contributing to the project form the "Digital and Data Intrapreneurs for Ecology" communitythe company's work culture has been revamped to promote HR attractiveness, internal mobility, decompartmentalization and solidarity.

The two actions below will therefore be carried out on processing at national level:

2.1 For central government: define the framework that will give it the means to implement this reference framework, both in terms of skills and capacity to deliver	***LEADS : SGPE, DINUM,**MTE-CT, MASA, MESFIN, MSP, MIOM, MEAE, MESR* ***CALENDAR :**2025*
2.2 For key operators in the ecological transition: integrate the repository's actions into operators' work programs (COP, COG...); estimate any additional FTEs required; enable application of the DINUM remuneration scale, removing any regulatory obstacles where necessary.	***LEADS :** SGPE, DINUM, MTE-CT, MASA, **operators*** ***CALENDAR :** 2025*

OPERATORS GET ORGANIZED FOR EFFICIENT IMPLEMENTATION

HOW?

As an agency specializing in the assessment of health risks related to food, the environment and work, Anses relies on the knowledge generated by scientific research, as well as on measurements and observations. As part of its work on food-related issues, Anses has promoted the interoperability of databases on food safety and composition, and their environmental impact, developed by various public bodies.
The challenge for Anses is to gain in speed and robustness, and to work with other data producers to enable One Health approaches, for the benefit of protecting the health of populations, the environment and the evolution of food systems, by sharing its data with third-party operators.

INERIS is both a producer and a user of environmental data to carry out its expert missions in technological risk prevention. In particular, it has extensive experience in air quality, in support of public authorities. It is on this theme that INERIS has contributed to the work on the repository, with suggested improvements in data sharing and dissemination.
Its activities combine data generation and modeling. The lack of a digital culture hinders the integration of digital technology into its processes, limiting the capitalization and reuse of data. Discussions between business lines and information systems specialists should contribute to the development of a common culture.

Météo-France contributed to the mapping of the digital environment in support of the ecological transition by providing information on its services and platforms. Météo-France also contributed to the preservation of resources, in particular water resources (drought monitoring), forests (Météo des forêts and fire-fighting indices) and air quality (Copernicus).
As a reference source for adaptation, Météo-France is developing a range of services to support organizations. A project has been launched to enrich and improve the supply of public data. Reflection is underway on ways to strengthen the resilience of the establishment's information system.

The ONF has committed itself to this standard on issues relating to the protection and enhancement of forest resources and forests, including sylvoclimatic diagnosis, forest health diagnosis, and the question of increasing the accessibility of forestry data and encouraging their use.
Through its involvement in this standard, the NFB aims to modernize its information systems and open them up to the outside world, and to offer mobile, high-performance solutions that make the most of data, despite specific needs or cybersecurity issues, for example, which act as a brake.

SHOM is a key player in the reference system for sea and coastal issues. It is involved in a number of structuring initiatives, such as the creation of a digital twin of the ocean, and the construction of climate services for sea level to understand the impact of climate change on coastal areas.
From an organizational point of view, SHOM has set up thematic steering bodies for digital issues, and has improved its attractiveness and employer brand. However, progress in automatic processing will not be sufficient to meet future challenges. A review is currently underway to define the employment ceiling and the expert profiles required to meet SHOM's digital ambitions.

Cerema is a public body under the authority of the French Ministry of Ecological Transition and Territorial Cohesion, and the first to be jointly managed by the State and local authorities. It helps local authorities adapt to climate change. With its strong potential for innovation and research, notably through its Carnot Clim'adapt institute, Cerema is active in 6 fields: Expertise & territorial engineering, Building, Mobility, Transport infrastructures, Environment & Risks, Sea & Coast.
In all its fields of activity, Cerema promotes a responsible digital approach for territories. It promotes a national interoperability framework, supports the creation of data ecosystems, and produces national reference data, freely accessible via portals (Artificialisation des sols, Géolittoral, Géoplateforme, etc.). Through its simulation capabilities, Cerema is positioned in the field of digital twins for territories, and is involved in several projects concerning renewable energies, mobility data and water resources.

The MNHN is at the heart of biodiversity knowledge, whether through its research activities, its conservation of scientific collections, or its support for public policy. It is at the crossroads of national biodiversity information systems (SI Biodiversité, Pôle national des données de biodiversité and Réseau national des collections naturalistes ReColNat), for which it is partly responsible for the technical infrastructures. As scientific manager of the natural heritage inventory, it is one of the key players in coordinating and equipping field players, and organizing the opening up and dissemination of this data. In close partnership with the OFB, notably through the joint PatriNat unit, it works across the board to preserve biodiversity, supporting public nature conservation policies and ensuring that biodiversity is taken into account in sectoral activities.
After an unprecedented effort to modernize and secure its information systems, MNHN and OFB have joined forces to strengthen the company's position as the world's leading research organizations role as a major operator of biodiversity data, serving public policy and research.

The OFB is a public establishment responsible for protecting and restoring biodiversity in France, and for coordinating national IS on water, marine environments and biodiversity. The OFB and MNHN, along with IRD and CNRS, oversee PatriNat, a center of expertise and data, working on the mapping and understanding of water withdrawals, as well as on crisis anticipation and management. PatriNat has also contributed to work on preserving biodiversity. The OFB will participate in its implementation, notably by adapting the projects it supervises, such as the national water abstraction bank and habitat mapping, to align them with the objectives of the latter.
The OFB wishes to strengthen its skills and governance in terms of data. The OFB's strategy focuses on improving its knowledge of environmental data, and on proposing to services adapted to the end-users of this data.

Anah runs France Rénov', the public housing renovation service, with a particular focus on energy-efficient home renovation. France Rénov' is the single point of entry for all renovation projects, providing equal access to information, guidance throughout the renovation process, and a social mission for low-income households. Anah is working on the continuous improvement of France Rénov', both from the point of view of households (knowledge of France Rénov', simulation of grants, ease of application submission, protection against fraud, effectiveness of support, etc.) and of the operators implementing the public service (knowledge of the housing stock, monitoring of the renovation dynamic, analysis of the effectiveness of grants, etc.).
The Secrétariat Général au Pilotage Stratégique ensures the coherence of the agency's work, including digital work, and works closely with a fast-growing IT Department which, thanks to its organization into functional domains, is implementing structuring projects such as the merger of aid platforms or the overhaul of data architecture.

CSTB's main contribution is in the area of reference data, particularly in relation to the National Building Database, to consolidate and increase knowledge of buildings (e.g. DPEs) via AI processing, and in digital twin technologies to address different uses at district, building and component scales. Based in particular on knowledge graphs, they aim for the interoperability needed for systemic approaches (overall performance, risk, ZAN, etc.).
These subjects are addressed by the Energy/Environment and Information Technology operating divisions, and are supported by two R&D programs (renovation, innovation, making the act of building more reliable; digital and data).

IGN is the cartographer of public service. By mobilizing several sources of data, and accelerating automated processing using AI, it is possible to build a position for steering environmental change and making choices for territories. IGN provides solutions to support public policies, based on four pillars: accessing core data, co-constructing data repositories, bringing together data communities and accelerating commonality, and mobilizing maps in public services.
With the geo-commons approach, IGN is offering multi-stakeholder solutions capable of industrializing digital tools and data and making them more transversal. The Geoplatform provides open software building blocks for data management and processing, which can be integrated by Green France Nation players to set up data hubs, interactives and observatories, such as the Renewable Energy Portal and the French Forest Observatory. The Datalliance open network also enables the scaling-up of innovative public and private solutions.

BRGM, the French national geological survey, is involved in issues concerning the subsoil and its applications: water, energy, natural hazards and their impact on buildings and infrastructures. Its activities therefore lie at the heart of the various themes covered by this reference framework. More specifically, BRGM will be involved in work relating to water abstraction and coastline management.
Given the scale of the work to be carried out, BRGM's digital team is structured by skill: data structure, modeling, simulation, AI, etc. BRGM also has its own digital infrastructures. BRGM also has its own digital infrastructures. Nevertheless, BRGM is facing recruitment difficulties. While the appeal of meaningful professions has enabled us to recruit geoscientists with significant digital experience, it remains extremely difficult to attract computer scientists, not least because of a lack of competitiveness. BRGM intends to modify its recruitment strategy accordingly.

INRAE is a public scientific and technological establishment whose research focuses on the environment, agriculture, food and health, often using multi-disciplinary approaches and with a view to achieving sustainable practices. It works on various transitions, as well as on interactions between environmental health, animal health and human health. It is interested in the economic sustainability of practices and insurance against risks, and takes social sciences into account in its approach. INRAE deals with issues requiring multidisciplinary approaches, thanks to internal collaborations and multiple external partnerships in France and abroad.
The Groupement d'Intérêt Scientifique Sol (GIS Sol) is tasked with designing, guiding, coordinating and implementing soil inventory and quality monitoring initiatives. It brings together the Ministries of Ecology and Agriculture, which co-chair it, ADEME, OFB, INRAE, IRD, IGN and BRGM, and manages a soil information system to produce and make available to the public information on soil characteristics, functions and the ecosystem services to which they contribute. GIS Sol coordinates consultation and cooperation between its members, and maintains close links with European and international institutions.

The role of the ASP in the repository is mainly to draw on its expertise in geographic information on agricultural surfaces, alongside the IGN, to facilitate the monitoring of actions carried out in the territory. As the body responsible for paying out Common Agricultural Policy subsidies, the ASP is in charge of the Graphic Land Register.
Historically designed on the basis of CAP regulatory requirements, adapting it to the new needs arising from the repository is the main challenge in a context where the current information system is highly complex.

ADEME mobilizes digital technology by providing reference data and tools to accelerate the ecological transition through awareness-raising, mobilization and innovation. ADEME maintains 150 digital tools. ADEME's digital strategy is based on several orientations: to be the operator, on behalf of the State, of a certain number of tools, databases and reference observatories, used by companies or local authorities; to encourage the use of digital technology for the ecological transition through mechanisms, incubators and startups; to mobilize innovation capacities in the service of the ecological transition and to pursue the common call for projects, and the opening up of the Agency's data.
ADEME will be involved in most aspects of this reference system, including: supplying reference data for environmental labelling, participating in the territorialization of ecological planning, promoting its contents to the general public, and revitalizing CEREN to provide reference data for the transition of industry.

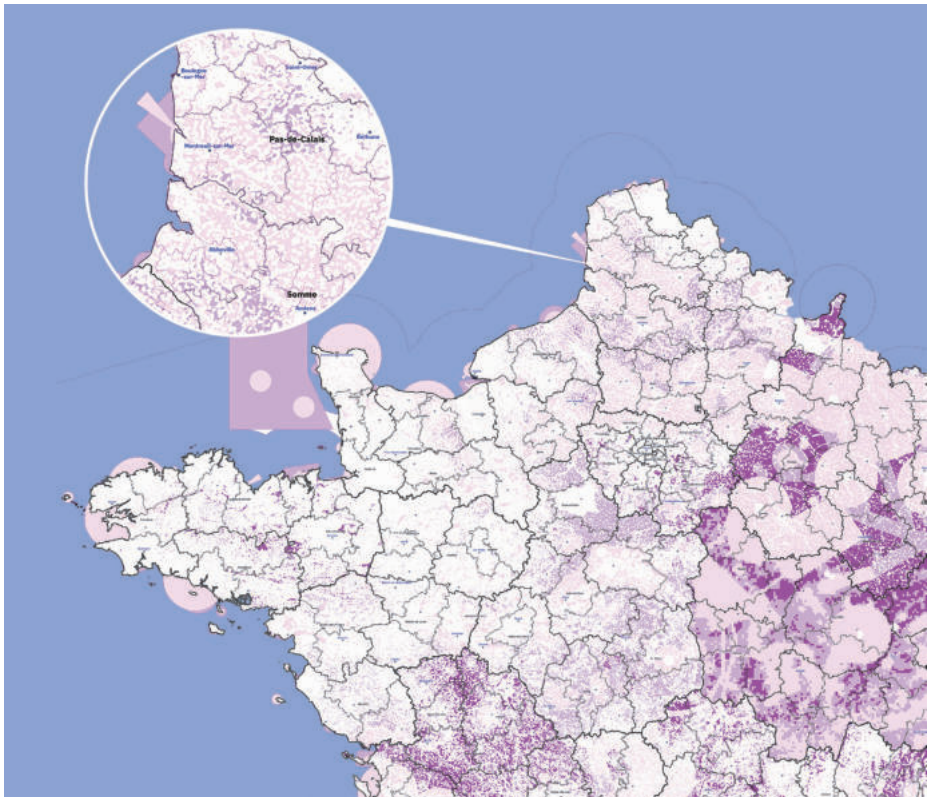
But also : research operators, public investors..

TERRITORIAL_ LEVEL

LIKE THE ECOLOGICAL PLANNING BUSINESS STRATEGY, GREEN FRANCE'S "DIGITAL & DATA" STRATEGY NEEDS TO BE LOCALIZED IN ORDER TO HAVE A REAL IMPACT.

France Nation Verte's "digital and data" project has involved SGARs, DREALs and representatives of local authorities in the early stages of developing a common frame of reference. Nonetheless, the maps produced are limited to a generic description of the regional bricks. They do not go into territorial specificities, in order to maintain a certain degree of legibility. Similarly, the use cases evoke fictitious territorial personae. They do not detail, territory by territory, how the use case is implemented in practice.

And yet, it's essential that these issues be dealt with from the national (and sometimes even international) level down to the field, to ensure that they work "end-to-end", with data exchanges in both directions. **Like the ecological planning business strategy, Green France's "Digital & Data" strategy needs to be localized in order to have a real impact.**



Needs have been identified in the following 3 areas.

Given the complexity of the subject and the number of players involved, an intra-territorial and territorial/national working method was tested with the Breton region in May and June 2023, under the coordination of the Region and the Prefect (SGAR/DREAL). A summary of the results of this work is presented below.

Generally speaking, the Breton players who responded welcomed the approach, and mentioned the importance of supporting certain players, particularly those with few digital skills. It's a vast undertaking, but "there's a desire to do something about it, because the problems have been widely identified, and because the approach is clearly focused on the territories" (SGAR/DREAL Bretagne).

To support this work, IGN, Cerema, ADEME, OFB, ANCT and CDC will provide territories with digital and data engineering services as part of the regional COPs currently being deployed. It will capitalize on existing collaborative structures where appropriate.

Launch of COP Grand-Est

1

For the public platform and associated mapping, it is necessary to :

Complement national mapping with territorial mapping of the existing situation, in line with action 15.1 of the "Transversal" theme *Brittany, for example, has described all its regional or sub-regional digital tools (Data Etat Bretagne, Observatoire de l'Environnement en Bretagne, GéoBretagne, Rennes Metropole and Brest GIS, Plateforme photographique des paysages, Portrea...).*

Report any problems with national digital bricks. *Among the problems raised by the Bretons were access to data from private players, which should be negotiated at national level (e.g. Waze), or access to data from public players, which is sometimes not granular enough to enable use at local level (e.g. BRGM), shared after lengthy negotiations on a case-by-case basis instead of developing a global framework (e.g. catchment areas), subject to payment (e.g. MétéoFrance), or not geolocated: BRGM), shared after lengthy negotiations on a case-by-case basis instead of developing a global framework (e.g.: perimeters of water catchment areas), subject to a charge (e.g.: MétéoFrance), not geolocalized (e.g.: SIRENE) or made available with excessively long lead times (e.g.: SANDRE, RPG). Brittany also mentioned the importance of territorializing financial data.*

Make the necessary proposals for the evolution of territorial digital bricks to implement an effective urbanization and mutualization strategy. *The Breton players have proposed, for example, that local catalogs be shared between them, to reduce complexity and facilitate interoperability, and that authentications be upgraded to the national core digital identity bricks (France Connect, ProConnect etc.).*

2

With regard to use cases, it is necessary to :

Project how the action plan for each use case defined at national level can be deployed at territorial level, adapting it if necessary. *One of the points raised by the Bretons was the need to make national data accessible via a desktop format (CSV) in addition to the API format, as not all local public sector employees are able to use the latter.*

If necessary, identify other priority use cases for the region. *Brittany, for example, has brought up the issue of green algae, which involves major data issues.*

Choose the crisis in the "adaptation and crisis management" section that is most relevant to the region, and define the way in which national-territorial coordination will operate (see action 1 in the ad hoc section).

Help solve problems identified in the diagnostic phase of the regional COPs being deployed.

3

Concerning the governance and organization of this work,

in conjunction with those set up at national level (see previous section), we need to improve coordination with the national level and between local players, capitalizing on existing collaborative structures where appropriate (regional data or geographic information platforms, observatories, etc.).

The Bretons, for example, pointed out that it was common for several local players to be approached in parallel by the national level on the same subject, which contributes to entropy.

The two actions below will therefore be carried out:

3.1 Formalize the "Digital and Data" engineering offer for territories	***LEADS : SGPE**cGDD, CNIG, DINUM, IGN, Cerema, CDC, ADEME, OFB, ANCT* ***CALENDAR :**2025*
3.2 Define a framework that enables innovation at the territorial level to meet local needs, as well as scaling up to the level of several territories, or even nationally when the need is proven	***LEADS : SGPE**operators (IGN, Cerema, CDC...), Region and Prefect of Region, local public players* ***CALENDAR :**S1 2026*

AT EUROPEAN AND INTERNATIONAL LEVEL

> ***I congratulate France, which presents an excellent example of how digital transformation and ecological transition can be mutually reinforcing. The Secretary-General of the United Nations has called for the construction of such digital commons on a global scale. We are now more confident about our common ability to meet this challenge. "***

Amandeep Sigh Gill,
UN, Secretary-General's Envoy for Technology

In the same way, zooming out this time, several exchanges have taken place with other states and international organizations.

In particular, an international comparative study was carried out on 12 countries that seemed particularly interesting, either because of their work on ecological transition, or because of their work on digital transformation, or both (Canada, China, Denmark, Estonia, Fiji, Finland, India, Israel, Japan, Netherlands, Switzerland, UK). The results, available online, show that "while ecology is a rising priority for most countries, the idea of putting digital at the service of ecology varies". When the two transitions intersect, the subjects addressed are more related to "GreenIT" (how to reduce the environmental impact of digital technology, with the greening of data centers, for example) than to "ITforGreen" (how to put digital technology at the service of ecology). However, a number of topics relating to environmental data collection and "Smart Cities" are also highlighted.

Exchanges have also taken place with several international organizations working on digital and/or ecological issues, including the United Nations Secretary-General's Technology Envoy, the United Nations Environment Programme (UNEP), the United Nations Development Programme (UNDP), the United Nations Framework Convention on Climate Change (UNFCCC), the United Nations Conference on Trade and Development (UNCTAD), the Global Partnership for Sustainable Development Data (GPSDD), the Organisation for Economic Co-operation and Development (OECD), the World Bank, the Agence Française de Développement (AFD), the European Space Agency (ESA) and the European Commission. France took part in the 3-day event "Towards a Big Data Revolution for the Planet", organized in Vienna in September 2023 by UNEP and the Science Policy Business Forum, bringing together public and private experts in the field.

As at national and territorial level, the findings of various countries and international organizations are unanimous:**even though digital technology and ecology are often seen as the two major transformations of the 21st century, the former has not yet sufficiently served the latter.** Several projects are emerging in a scattered fashion in both the public and private sectors, but they often struggle to scale up in the absence of a systemic vision and effective governance. The structuring done at French level, with a "public platform" section (mapping) and a "use case" section to prioritize work, was particularly appreciated.

The subject is fractal: just as this project needs to be rolled out at territorial level, it is also necessary to build its European and international versions. Indeed, since climate change and biodiversity erosion are global issues, many projects require coordination between European or international countries, and therefore the sharing of information, i.e. data, structured according to common rules and shared by efficient base infrastructures ("house foundations"). This is the case, for example, with forests and their carbon stocks, biodiversity, plastic pollution in the oceans, methane emissions and the construction of an efficient carbon market. This is also particularly true of adaptation and crisis management issues, such as early warning systems for global crises, water scarcity and loss and damage. This is essential if we are to comply with the Paris Agreement, in terms of both mitigation and adaptation.

As at the territorial level, work needs to be carried out in 3 areas:

1

The international public platform or "digital commons what rules and infrastructures exist, or need to be created, at European and/or international level? How can we guarantee the long-term opening up and sharing of the necessary public and private data?

2

Priority use cases, such as those identified above. As at national level, it is they who must guide the work on the public platform: to implement such and such a use case, what digital commons are needed?

3

The adequacy of public aid for international development (AFD, World Bank, etc.) with the two points above, so that countries have the means to set up their national infrastructures and connect them to the international digital commons.

All energies must play their part in climate action. At a time when science and our fellow citizens are rightly asking us to continue our efforts, digital technology will be a powerful and indispensable vector for implementing the Paris Agreement. "

Catherine Colonna
Former Minister of Europe and Foreign Affairs

To move forward in this direction, the following two actions will be carried out on the transformation at international level:

4.1 Disseminate French work, in particular through the translation of the present guidelines into English, forge links with partners involved in similar projects, and promote work on the 3 above-mentioned themes at the international level

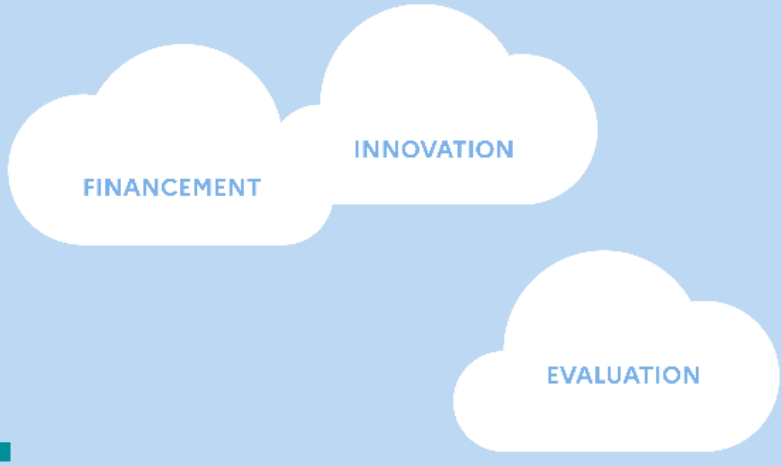
***LEADS : SGPE**dAEI MTE-CT, MEAE, relevant industry players*

***CALENDAR :**from 2025*

4.2 Integrate this strategy into the new digital subdirectorate being created at the Ministry of Foreign Affairs

***LEADS : MEAE**sGPE, DAEI MTE-CT*

***CALENDAR :**from Q3 2025*



EXTERNAL REGULATION: INNOVATION, EVALUATION AND COMMITMENT

In the logic of the public platform, public authorities must do more than simply transform themselves to be able to develop their own projects. it also has an essential role to play in regulating external players, to ensure that everyone does their part. At its disposal are incentive mechanisms (the "financing" and "innovation" clouds) and coercive mechanisms (the "evaluation" cloud). Above all, beyond the "carrots" and "sticks", there is a responsibility for ongoing, effective co-construction with the field ("commitment" cloud).

FINANCING AND SUPPORTING INNOVATION, INCLUDING ARTIFICIAL INTELLIGENCE_

Public authorities support innovation so that innovative business information systems and digital services can emerge and grow. Specific initiatives have also been launched in the field of artificial intelligence.

Support for innovation

Entrepreneurial players are helping to invent key solutions for sobriety, energy sovereignty and environmental transformation. Public authorities have a variety of levers at their disposal to encourage the emergence and deployment of innovation, as shown in the three examples below. Other levers are also deployed (see more exhaustive table in "Deployment strategy").

On the one hand, public authorities are driving and promoting the ecosystem of green businesses (greentechs).

This is the case for the CGDD, which coordinates the Greentech Innovation committee that brings together FrenchTech, BPI and the CDC to promote all green businesses, and pilots the Greentech Innovation initiative. This initiative comprises a community of over 290 Greentech Innovation start-ups and SMEs. These companies are promoted through a range of services (advice, visibility, etc.) and the organization of events such as Meet'Up Greentech, which promotes meetings between players and access for innovative start-ups and SMEs to public contracts. Several initiatives are currently underway:

The following three actions will be carried out

5.1 Publish an annual Call for Expressions of Interest to select and support innovative start-ups and SMEs

LEADS : ***CGDD****cDC, BpiFrance, FrenchTech, ADEME, all the business players involved*

CALENDAR :*Q1 2023 - Q2 2024*

5.2 Launch V1 of "Mes Services Greentech", a tool to support eco-innovative companies in their search for funding, financing and public procurement, and public purchasers in their selection of innovative companies

LEADS : ***CGDD****-dAJ MESFIN*

CALENDAR :*subject to publication of the necessary data*

5.3 Develop the National Network of Greentech Incubators, a forum for some 30 players involved in accelerating the development of innovative startups and SMEs, to implement synergies, communication, access to resources and the experience of an entire network throughout France

LEADS : ***CGDD,****members of the incubator network*

CALENDAR :*Incubators added as the project progresses*

On the other hand, the public authorities are creating a framework of trust to enhance public-private technical synergies.

This is the case of IGN and its Datalliance network, which helps solutions to scale up.

Substantial funding is available to support the emergence of new industrial solutions. However, although many start-ups and SMEs demonstrate a high potential for innovation, the solutions they seek are often limited to the local demonstrator stage. There are several reasons for this, such as the lack of end-user expertise to evaluate solutions or integrate new findings into existing decision-making processes.

By helping the most promising private-sector players to access publicly-funded contracts to meet their local knowledge needs, Datalliance will enable these players to benefit from both recurrent funding to stabilize their business and significant operational references to enhance the value of their solutions, particularly internationally.

The following action will be carried out

5.4. Supporting the first 10 companies selected by Datalliance

LEADS iGN, *private players, public players trade concerned*

CALENDAR- *since Q2 2023*

AD HOC PROGRAMS (E.G. FRANCE RELANCE)

FINANCING

TECHSPRINT

DATALLIANCE

GREENTECH

INNOVATION

ARTIFICIAL INTELLIGENCE

Finally, public authorities generate collective dynamics to accelerate innovation.

CDC's TechSprint program aims to support innovation by providing financial backing for projects that meet public policy challenges. To create synergies between players and avoid the capture of innovations, the approach is deliberately geared towards co-construction, bringing together public players, local authorities, major groups and digital players. Replication of this type of event will accelerate innovation for the ecological transition.

The following action will be carried out

5.5 Launching wave 3 of TechSprint	***LEADS CDC,*** *public players involved, private players*

Mobilizing artificial intelligence

Artificial intelligence (AI) is a lever for mobilizing innovation to meet certain needs of national and regional public players for the ecological transition.

- **Private sector :**the approach integrates both support schemes for companies committed to the ecological transition and, equally, actions to facilitate the meeting between the needs of local authorities and corporate solutions. Strongly linked to the interministerial AI acceleration strategy, this action is characterized by support for the development of a new industrial sector around frugal AI and the use of AI leverage to develop new products, services, industrial sectors in phase with the constraints and opportunities of a net zero-carbon world by 2050.

- **Territorial public players** aI is useful for predicting, modeling and optimizing energy systems, water management, waste collection procedures, anticipating pollution peaks and planning mobility. The use of AI should be implemented in situations where the environmental balance of the solution is positive, hence the need to measure the environmental impact of deployed AI solutions. The strategy provides a solution on two levels, by subsidizing demonstrators in real-life conditions, and capitalizing on this knowledge for all territories.

- **National public-sector players** for government agencies and operators, AI is a means of improving predictions, automating data analysis (such as images) or assisting decision-making. As with previous digital revolutions, making a success of AI requires a massive effort on several levels: acculturation, training, financing and feedback.

Concrete actions on AI include:

6.1 Promote local authority projects combining AI and ecological transition through France 2030's DIAT call for projects	***LEADS : CGDD****banque des Territoires, SGPE* ***CALENDAR :****wave 2 until December 1, 2023, preparation of wave 3 in H1 2024, wave 3 application in H2 2024.*
6.2 Raise the skills of Ministry of Ecology staff in the use of AI through the exchange of practices and peer support within the "AI Club"	***LEAD : CGDD,****all MTE-CT IA referents* ***CALENDAR :****throughout 2024-2025*
6.3 Promote emblematic AI projects led by the MTE-CT and operators, such as the reference database for the description of land use for the entire territory (OCS-GE) led by IGN (full list of projects detailed in appendix to the AI roadmap)	***LEADS : CGDD****all the public players involved* ***CALENDAR :****continuously*

EVALUATION_

To ensure that these business IS and digital services grow fast and straightforward, we also need to make sure that they take root in the "foundations of the house". This involves specific assessment actions to ensure that they comply with the base rules and connect to the base infrastructures.

First, we need to make them enforceable. It's essential that players have a clear idea of the building blocks they need to respect, and the associated timetable. This work must not be carried out brick by brick, but actor by actor: what is the set of bricks to which a region's geographic information software must be connected? Waste management software? In phase 1, starting with the most important bricks for priority use cases? In phase 2, by being more ambitious? This process of reflection needs to be carried out by actor and by "wave", in a logic of small, rapid steps.

For this enforceability to be truly respected, it is then necessary to be consistent all public funding, whether in the form of subsidies or public procurement contracts, must include compliance with these requirements as a prerequisite. In certain cases, these measures may be supplemented by control and sanction mechanisms.

Communicating on the level of compliance of players is also a powerful means of regulation that can be activated if necessary.

The following action will be carried out

7.2. For each theme, make the various financing and public procurement grants conditional on compliance with this set of bricks

LEAD : SGPE,***Co-pilots for each theme***,*internal and external stakeholders*

CALENDAR :*From Q4 2025*

COMMITMENT_

Even more important than the house and the clouds of "evaluation", "financing" and "innovation" is the fact that we've set ourselves in motion around a truly collective adventure. In order for this reference system to be used by all the public and private players who have a role to play, it needs to be constantly co-constructed with local players in a sincere, constructive and efficient manner.

First and foremost, we need to set up regular exchanges around Digital and Data for Ecology, to synchronize all the players (NGOs, associations and think tanks; digital manufacturers; professionals in each field) and build trust. In particular, a collective discussion open to all will be organized each year, so that the various contributors can look back on all the actions carried out over the last six months and look forward together to the next six months.

NGOs, associations and think tanks

RAC
LPO
WWF
GREENPEACE
Institut Montaigne
terra nova – La fondation progressiste
IDDRI
I4CE Institute for Climate Economics
Pour un réveil écologique
Les Amis de la Terre France
Solagro
cnnum – conseil national du numérique
agir pour l'environnement
ZenVn Research
The Shift Project
data for good
Le Lie Rre
Renaissance Numérique
Digital New Deal Foundation
make.sense
INC – Institut National de la Consommation
France Nature Environnement
La Fabrique Ecologique
Que Choisir

Illustrative, non-exhaustive list

COMMITMENT

CO-CONSTRUCTION
WITH STAKEHOLDERS

Digital manufacturers

Design offices

The following action will be carried out

8.1 Organize the first collective exchange on Digital and Data for Ecology, to present the results of the public consultation and the work carried out in 2024 and S1 2025.

***LEADS :** SGPE, all the business players concerned*

***CALENDAR :** summer 2025*

DEPLOYMENT STRATEGY

WHAT DOES THIS PLAYER'S "PART" CONSIST OF? WHAT ARE THE OBSTACLES PREVENTING IT FROM PLAYING ITS ROLE TODAY? HOW CAN THEY BE OVERCOME?

It is the coordinated conjunction of the internal transformation and external regulation actions described above that will enable effective deployment. Once the "what" has been defined, we need to move on to the "how" by inverting the matrix and putting ourselves in the shoes of each public or private player. What is this player's "part"? What are the obstacles preventing them from playing their role today? How can they be overcome, using the incentives and coercive levers at their disposal?

The "how?" section of each thematic zoom presents the role of each player or group of public and private players in implementing the standard (thematic "what?" section).**The task now is to choose the right incentive and coercive levers for each of them, using the "toolboxes" below.**These toolkits take up and complete the actions presented in the "external regulation" section.

A particularly effective incentive is the deployment support mechanism for software publishers (also known as the "Open and Non-Selective System", implemented, for example, in the Ségur numérique en santé program). Once the set of opposable bricks has been defined (see "Assessment"), it may be deemed necessary to pay software publishers directly to implement them in a very short timeframe, compatible with the ecological emergency.

The issue of the shortage of digital skills in the private sector, not mentioned in the tables below, has also been included in the "Jobs, training, skills" cross-functional area of ecological planning.

Incentive and coercive mechanisms aimed at external players are often not self-sufficient.**They need to be complemented by the public servants closest to the ground in local and regional authorities.**

Existing or future incentives ("financing" and "innovation" clouds)

TO DESTINATION ACTORS AUDIENCES (NATIONAL OR TERRITORIAL)	***Human resources***	Increase in the number of FTEs Work on HR attractiveness	
	Financial resources	Operating budget (Finance Bill)	
		Ad hoc programs	France Relance France 2030 FTAP FAST Operators Other (AMI and AAP) Green background
	Support	Beta.gouv and the network of state startup incubators (DINUM) La Fabrique des Géocommuns (IGN), Fabrique des Mobilités, Fabrique de la Logistique Public innovation laboratories (DITP) Public research incubators ("Allègres") Training / Acculturation Territorial expertise (CEREMA) Local authority incubators Hubs des Territoires (Banque des territoires) Territoires d'innovation (Banque des Territoires, France 2030 program) France Expérimentation (DITP) European Business and Innovation Centers (EBCI)	
	Communication	Transparency of public action	
TO DESTINATION ACTORS PRIVATE	***Financial resources***	Deployment support mechanism	
		Ad hoc programs	France Relance France 2030 FTAP FAST AMI/AAP, CEE program, other
	Support	Datalliance (IGN) TechSprint (CDC) France expérimentation (DITP) European Business and Innovation Centers (CEEI) Animation of ad hoc communities Greentech incubator network (CGDD) Local networks (Quest for Change - Grand Est, Choose Paris Region - Ile-de-France...) Training / Acculturation	
	Communication	Public labels and brands (La FrenchTech - including FrenchTech Green20 and Agritech20, Greentech innovation - CGDD, PROPULSE - DGITM, label AgriO - INRAE)	
		Transparency of compliance levels ("name and praise")	

NB: Financing and support mechanisms are sometimes/often mixed and are aimed at both the public and private sectors

Coercive levers available or to be developed ("evaluation" cloud)

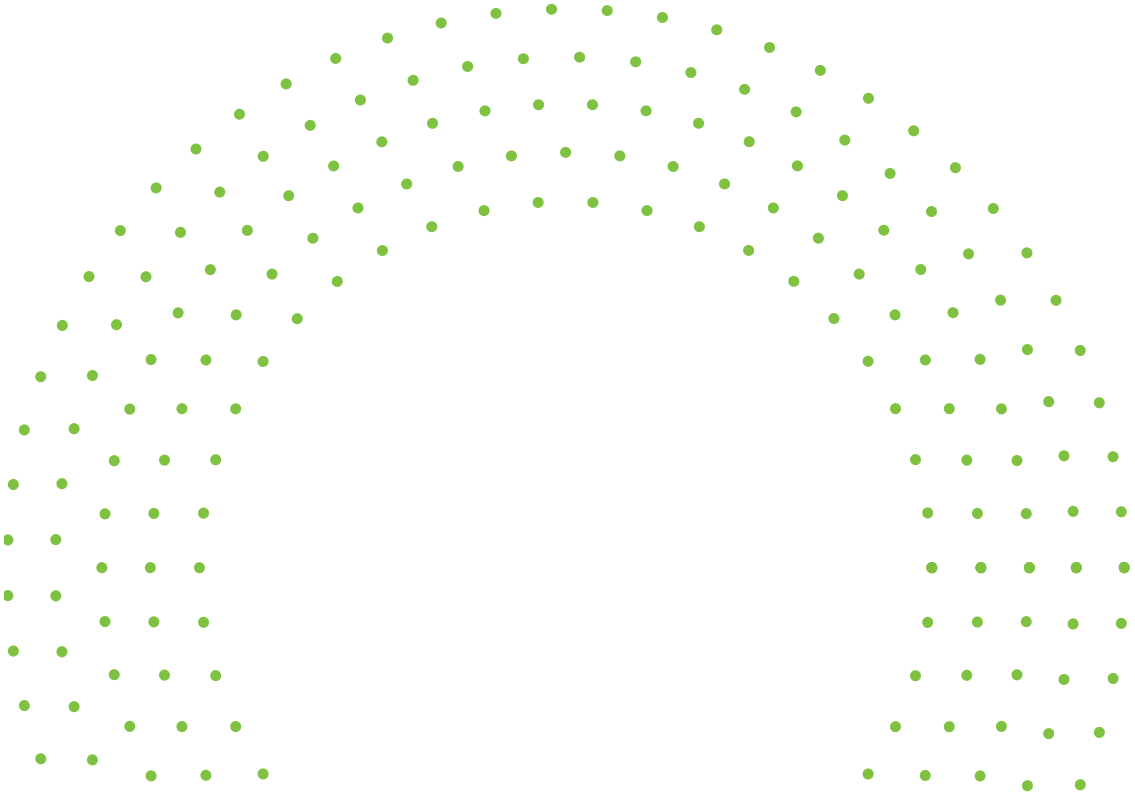
TO DESTINATION ACTORS AUDIENCES (NATIONAL OR TERRITORIAL)	***Political arbitration***	Introduction into the organization's reference framework, COG, COP
	Opposability	European and international regulation, directive or obligation National, sectoral or interministerial legal or regulatory obligation
	Communication	Transparency of public action
TO DESTINATION ACTORS PRIVATE	***Opposability***	European and international regulation, directive or obligation National, sectoral or interministerial legal or regulatory obligation
	Conditionality or penalty	Prerequisites for certification (e.g. SRI or EEE label) Public procurement prerequisites Prerequisites for obtaining funds from public programs Direct penalty
	Communication	Transparency of compliance levels ("name and shame")

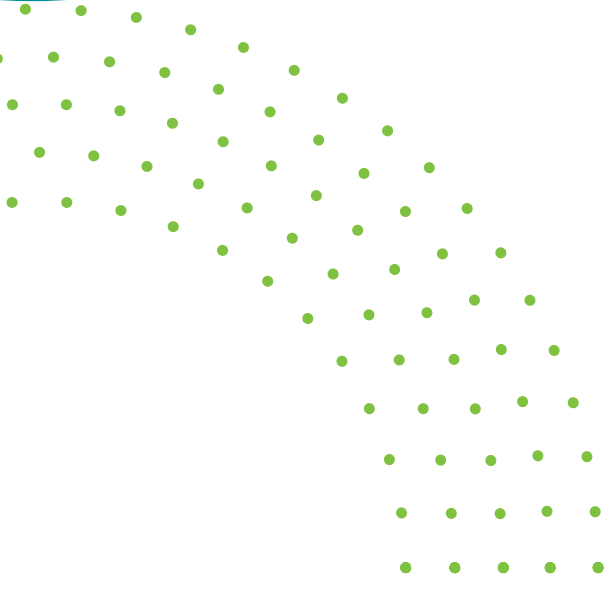
The following action will be carried out

9.1 Define the precise role of local public players in deploying the reference system

LEADS : ***SGPE, territorial public players****all the internal and external players involved*

CALENDAR :*T4 2025*





End notes

A WORD FROM THE MINISTERS EN 2023

Ecological transition and digital technology go hand in hand: the use of digital technology and efficient use of data is a major challenge for accelerating the ecological transformation of territories, businesses and administrations, while involving citizens. On the administrative side, the optimal use of digital solutions and data helps us to steer the ecological transition, with faster and better-targeted decisions, while promoting transparency and private and public innovation stimulated by access to data. This repository illustrates the importance and diversity of the actions that lie at the heart of the missions of the Ministry of Ecological Transition and Territorial Cohesion. I would like to thank all our departments, central and decentralized services, and our operators for their significant mobilization: it will continue in the implementation of these actions, as close as possible to the territories.

Christophe Béchu
Minister of Ecological Transition and Territorial Cohesion

French agriculture and forestry are at the heart of ecological planning. They provide solutions for reducing greenhouse gas emissions through carbon capture, biomass production and biodiversity preservation. Farmers were pioneers in digitizing their activities. They produce and use data to optimize crop inputs and treatments, animal health and welfare, and consumer traceability. Data also contributes to the fight against climate change and the adaptation of agricultural and forestry practices. While respecting consent and the security of exchanges, data must be used to steer the agro-ecological transition. This is the aim of this reference system. By consolidating the basic rules and infrastructures, and promoting the development of digital services for farmers, this plan will help strengthen our country's food sovereignty and the health of our forests.

Marc Fesneau
Minister of Agriculture and Food Sovereignty

France is now exposed to a wide variety of natural hazards, extending to areas that were previously spared. The increase in the number and intensity of extreme natural phenomena, and above all their possible simultaneity, are at the heart of our concerns. Sharing information, and therefore digital data, plays an essential role in anticipating and managing these crises, and in raising awareness and alerting populations. This repository is an opportunity to reinforce a systemic national approach in this field, by emphasizing interministerial work between crisis managers and all the players who help to anticipate and assess crises.

Gérald Darmanin
Minister of the Interior and Overseas France

My conviction is that we need to use every lever to accelerate the energy transition. Digital technology, with the processing and visualization tools it makes available at lower energy costs, can play a key role in this. For example, it can objectify sometimes divisive debates on the place of renewable energies in regional planning. This is the approach I have adopted with the renewable energy planning portal for elected representatives. They now have all the information they need to act in full knowledge of the facts and enable their regions to become more energy resilient.

Agnès Pannier-Runacher
Minister for Energy Transition

How can we know where, when and how to build and renovate housing, and how can we explain elected officials' decisions to our fellow citizens, if we don't have the data to make objective assessments? We need to have access to the data that currently exists in the housing sector, but which is not sufficiently catalogued and exploited, and to have the means to process it in order to successfully implement housing and development policies that meet the needs of our fellow citizens and our territories

Patrice Vergriete
Minister attached to the Minister for Ecological Transition and Territorial Cohesion, responsible for Housing

Transport accounts for 30% of CO2 emissions in France, and digital technology must be at the service of the ecological transition of our mobility. It enables everyone to optimize their travel solutions, and should help players to make the right investment decisions, based on richer data shared between players. This repository is a fantastic opportunity to accelerate concrete actions for the mobility of people and goods, and to build together - government departments, local authorities and mobility players - coherent and efficient infrastructures and digital public services for users, companies and the public players themselves.

Clément Beaune
Minister attached to the Minister for Ecological Transition and Territorial Cohesion, responsible for Transport

Helping companies to access data to diagnose their biodiversity footprint and their consumption of resources, particularly water, assisting elected representatives to integrate biodiversity into the revision of their urban planning documents... These are just some of the very concrete situations to which this reference tool will respond. Data and digital applications are at the heart of the Water Plan and the National Biodiversity Strategy 2030, both of which I am leading, and which mobilize all stakeholders: State, local authorities, associations, businesses and citizens.

Sarah El Haïry
Secretary of State to the Minister for Ecological Transition and Territorial Cohesion, with responsibility for Biodiversity

The impacts of climate change on human health are numerous (development of vector-borne diseases, pandemics, increase in cardio-respiratory pathologies...), which is why mitigating and managing its impacts are priorities for the Ministry. Digital technology will contribute to this ecological transition. We will develop the necessary information systems, whether for public information on environmental health, drinking water management or health crisis preparation and management.

Aurélien Rousseau
Minister of Health and Prevention

The data generated by our research and the new uses to which digital technology is put are a precious resource if we are to make a success of the ecological transition. Our researchers work every day to collect, process and make this data accessible to society. Their use opens up unprecedented prospects for tackling environmental challenges. Close collaboration between the world of research and the other players in the ecological transition means that knowledge can be transformed into concrete action for a more sustainable future.

Sylvie Retailleau
Minister of Higher Education and Research

Our society is affected by two transformative forces: the ecological transition and the digital transition. Getting these two transitions to work together is an imperative for the future, and a major issue of sovereignty. That's what this standard embodies. Our responsibility is to secure the digital commons essential to the success of this ambition, in particular to facilitate the circulation of data enabling businesses, public players and civil society to initiate and effectively manage their ecological transitions.

Jean-Noël Barrot
Minister attached to the Minister of the Economy, Finance and Industrial and Digital Sovereignty, with responsibility for the Digital Sector

All energies must play their part in climate action. At a time when science and our fellow citizens are rightly asking us to continue our efforts, digital technology will be a powerful and indispensable vector for implementing the Paris Agreement. I therefore strongly support the coherence of our policies and the deployment of the international component of our new guidelines.

Catherine Colonna
Minister of Europe and Foreign Affairs

Digital technology is an invaluable tool that must be used to serve the general interest, in this case, the ecological and energy transitions. Within the framework of this repository, data will be used for the benefit of public policies. Moreover, its deployment will be secured through the re-internalisation of key digital skills. The dynamics at work are crucial to the success of the ecological transition challenge, and I salute the committed public servants who are contributing to it.

Stanislas Guerini
Minister for Public Transformation and the Civil Service

Local and regional authorities are key players in the ecological transition, which is why territorialization is at the heart of our concerns. The strategy is also a reminder of the need for data governance. This reference tool, for which I salute the work carried out in partnership with the many players in the field, will be invaluable in ensuring that the ecological transition is implemented in line with the regional COPs.

Dominique Faure
Minister attached to the Minister of the Interior and Overseas France, responsible for Local Authorities and Rural Affairs

We need to build a strategy for financing the ecological transition to meet this major challenge. We also need to equip ourselves with common compasses for effective action, planning and anticipation. This repository is all about providing players with the right data and the right tools to make the ecological transition a success. We need to share data, such as that which is so useful on premises, on their occupancy, on buildings, between administrations and with all stakeholders.

Thomas Cazenave
Minister attached to the Minister of the Economy, Finance and Industrial and Digital Sovereignty, with responsibility for Public Accounts

The AMF supports the initiative undertaken to facilitate and organize data sharing between the State and local authorities in support of the ecological transition. "

A WORD FROM THE TERRITORIES IN 2023

We applaud the dynamic collective work underway and the strategy's commitment to territorialization. It is essential to establish common, balanced governance for data sharing between public players. This is a major challenge, and we hope that this strategy will make it possible to simplify access to data of general interest, as well as the joint management of environmental projects between the State and local authorities. "

Céline Colucci, Managing Director

Les interconnectés
RÉSEAU DES TERRITOIRES INNOVANTS

RÉGIONS DE FRANCE

The Regions applaud the collective effort made to draw up this reference framework. The ecological transition is a major undertaking for both the State and local authorities. The Regions are already heavily involved, notably through their role in steering SRADDETs and their coordination of public data. By building on the governance structures and tools already in place at regional level, this repository will enable us to deepen the partnerships between the State and local authorities, which are essential if we are to work together to create the digital commons of tomorrow. In this way, the ecological transition can be built as close as possible to the people and players concerned.

Nathalie Gosselin, member of the Pays de la Loire Regional Council and CNIG representative for Régions de France

afigéo

This reference framework is ambitious. The CRIGEs are ready to implement its objectives at local level, with the support of Afigéo and CNIG. Their links with the field, their dual digital/business expertise, and their role as the pivot of local/national relations are all assets in the deployment of a French-style ecology.

Christine Archias,
vice-president and president of the CNIG standards commission

The air-climate-energy expertise of approved air quality monitoring associations (AASQA), the digital services they offer and the data they make available contribute to our country's ecological transition, thanks in part to their digital skills and know-how. Atmo France is participating in the national digital boom in the public interest. Digital technology should facilitate rather than complicate the work of those involved in the ecological transition, and this is one of the essential missions of the reference system that Atmo France supports. It will enable us to respond more effectively to the needs of local authorities, by making the most of the digital expertise and data at their disposal.

Catherine Hervieu, President

We have been involved in this work since the beginning of 2023, which has enabled us to highlight the diversity of approaches, players and schemes mobilizing digital and data in favor of the ecological transition. It was a very fruitful exercise, which enabled us to meet and build trust with government departments and other data players in the regions, in the direction of an unprecedented coordination and convergence effort in favor of ecological planning. This is both vital and welcome, as access to reliable, consistent and regular data is the indispensable basis on which to build a territory's diagnosis and then its action plan. The repository must therefore draw on the historical expertise of local players. The regional energy and environment agencies and observatories that are members of the RARE network will play a key role in the regional implementation of this reference framework, and we look forward to working with them.

Nadège AUSTIN, Director

We live in a complex world where data is a central issue. The importance of digital technology and mastery of data no longer need to be proven, and this also applies to the ecological transition. This repository will be a valuable contribution to the exercise of the Départements' competencies. It will be a first step towards a more effective approach to ecological transition issues, and perhaps an aid to the implementation of a predictive and forward-looking tool.

François Sauvadet,
President of the Assembly

is convinced that digital technology can be put to good use in the environmental and energy transitions. In the DataImpact dossier, aligned with the organization of this reference framework, we use case studies to show how local authorities are mobilizing public data, at both national and local levels, to better understand situations and steer public policies. We have been able to measure the absolute necessity of greater coordination between national and local players, and to contribute to the work of France Nation Verte. It's a complex task that must be pursued with determination. Above all, we need to look at this cooperation from a political point of view, and not just a technical or organizational one.

Constance Nebbula, President,
Vice President of the Pays de la Loire region and Vice President of Angers Loire Métropole.

"This reference framework sets a course towards which the FNCCR and its members in charge of local energy, water, waste, decarbonized mobility, public lighting and digital utilities will be able to adjust their compass and direct their actions to build a coordinated, sustainable and effective ecological transition trajectory in the territories. "

Céline Viollet, Member of the Board of Directors, Committee Co-Chairwoman

Working closely with local authorities, economic sectors and all government departments, the Prefecture of Brittany (SGAR) has a long-standing tradition of promoting and disseminating public data (GéoBretagne, environmental observatory, DATA ETAT Bretagne...). These are just some of the useful elements for collective and individual action. Ecological planning, which is intended to give a global meaning to all these approaches, will be able to draw on this data to propose an ambitious and pragmatic trajectory for Brittany. The value of this has been demonstrated by the initial exploratory work carried out with our region during the development of this reference framework

Jean-Christophe Boursin, General Secretary, SGAR Bretagne

The repository is essential for the implementation of ecological planning: it will ensure the provision of digital infrastructures in territories and on a national scale, which go hand in hand with innovation by all players in terms of information services and transparency. "

IDDRI ***Sébastien Treyer, General Manager***

A WORD FROM STAKEHOLDERS

Nations Unies | Bureau de l'Envoyé du Secrétaire général pour les technologies

I congratulate France, which presents an excellent example of how digital transformation and ecological transition can be mutually reinforcing via digital commons, which bring together data and infrastructure to break down silos, improve interoperability and bring together public, private and civil society organizations to build a sustainable future. The Secretary-General of the United Nations has called for the construction of such digital commons on a global scale. We are now more confident about our shared ability to meet this challenge.

Amandeep Sigh Gill, Secretary-General's Envoy for Technology

FRANCE NATURE ENVIRONNEMENT

The missions of FNE Nature Environnement's 6,200 associations for the protection of nature are essentially based on the existence of shared, available and readable data. Citizen participation in public action is the key to environmental public policies that are understood, shared and therefore applicable on the ground. Lastly, this reference tool establishes a precise map of the digital tools available to territories, and deploys an ambitious strategy based on usage, putting digital tools back at the service of people. FNE will promote this culture of data in the service of local democracy.

Antoine Gatet, Chairman

This reference system meets critical needs for digital infrastructures. It is an exemplary process of co-construction with a wide range of stakeholders, in the service of collective intelligence and the ability to act differently. It is now essential to provide it with the means to implement this innovative and structuring approach. It's an inspiring project, and I'm sure it will attract many talented people for its implementation. The international dynamic is also essential for monitoring collective action, for feedback on best practices and for accelerating the scaling-up of transformations.

Valérie Masson-Delmotte, research director at CEA and former co-chair of the n° 1 of the IPCC

ONU programme pour l'environnement

Digital technologies are vital for improving the management of the ecological transition. They are needed to limit climate change, biodiversity loss, pollution and waste production. The ambitious French repository presents an innovative model for collaboration between the public and private sectors via digital commons. We need more examples like this to put digital technology at the service of sustainable development.

Golestan (Sally) Radwan, Director of Digital Transformation

Data and source codes are not just a technological issue, but first and foremost a political, democratic, scientific and economic one. There can be no ecological planning without tech, and even less so without accelerating the liberation of data. This frame of reference outlines the path we must take collectively, and is the toolbox we can all use to aim for the horizon we have chosen, and thwart the inevitable.

Eric Bothorel, MP, co-author of the report "Pour une politique publique de la donnée" ("For a public data policy")

FRANCE DIGITALE

We salute the colossal task of creating this benchmark, which brings France up to date with its responsibilities in terms of environmental transition. The logic of the public platform advocates innovative, ethical and efficient public-private collaborations. Startups will be fully committed to working alongside institutional and professional players to make this ecological planning a success.

Maya Noël, General Manager

numeum

In the age of ecological planning, data is an indispensable tool for sharing diagnoses and equipping stakeholders. The emergence of digital commons that can be mobilized by all players, public and private, national and regional, will be key to the implementation of ecological planning. The repository is an essential step in this direction. This dynamic is fully in line with the priorities of the French digital industry represented by Numeum.

Virginie Royer, Responsible Digital Delegate, Femmes du Numérique & Planet Tech'Care

esa

Earth observation from space is one of the world's largest sources of digital data, providing continuous and transparent information on the state of our planet and human activities. ESA recently launched the Space for Green Future Accelerator, a co-governed, independent, not-for-profit partnership to develop space-based solutions that support carbon neutrality and the greening of society. In this sense, we warmly welcome the development of this benchmark, which represents an excellent opportunity to strengthen the coordination of key players in this transformation.

Rune Floberghagen, Head of Climate Action, Sustainability and Science Department

"The work carried out in this reference framework is seminal. They show that data and the ability to process it are the primary factors in successful environmental transformation. What's more, they highlight the need for the French government to become a platform, and demonstrate the extent to which tomorrow's public policies will be built on the basis of cross-functional data and processes. "

cnnum conseil national du numérique

Gilles Babinet, Co-Chairman

BANQUE MONDIALE

The World Bank welcomes the publication of the Digital and Data for Ecology Action Framework. Our mission is to achieve a world without poverty, on a healthy planet, and these goals cannot be achieved without the use of data and digital transformation. The multilateral organizations and governments we support must continue to work together to harness digital data and public infrastructure to protect people and the planet.

Haishan FU, Chief Statistician

"For those working in the field, quick and easy access to data is essential if they are to be able to draw up diagnoses and action plans that are equal to today's challenges, and that enable them to grasp their full complexity. In many areas, information is incomplete, contradictory, obsolete, inaccessible or partial. The repository is to be welcomed, including in the intention expressed by its manifesto and governance: to put digital technology at the service of a fair and radical ecology, in its rightful place, combining the regal and the involvement of civil society. "

Solagro

Christian Couturier, Director

PNUD

Strengthening public digital infrastructures and guaranteeing more open, accessible and available data on biodiversity and ecosystems are necessary conditions for bringing about a change in the way we protect the environment. We welcome France's pioneering initiative on these aspects and the positive impacts it could have on intra- and international cooperation on digital, on the "Nature Pledge" and on the UN's 2030 Agenda.

Reina Otsuka, Director of Digital Innovation for Nature and Climate

I welcome this benchmark, which clearly highlights the critical role of digital technology and data in steering the ecological transition. It demonstrates our commitment to a greener, fairer world, thanks to the union of digital innovation, environmental protection and a strong social dimension.

roberto Viola, General Manager

In its latest Cahier Innovation et prospective, the CNIL examined the intersections and connections between data protection and environmental protection. The ecological transition cannot be achieved without engaging in a genuine democratic debate, to prevent and frame the development of devices that would have an impact on freedoms. The CNIL welcomes the inclusion of actions dedicated to this issue in this plan, and will not fail to support this work and reflection.

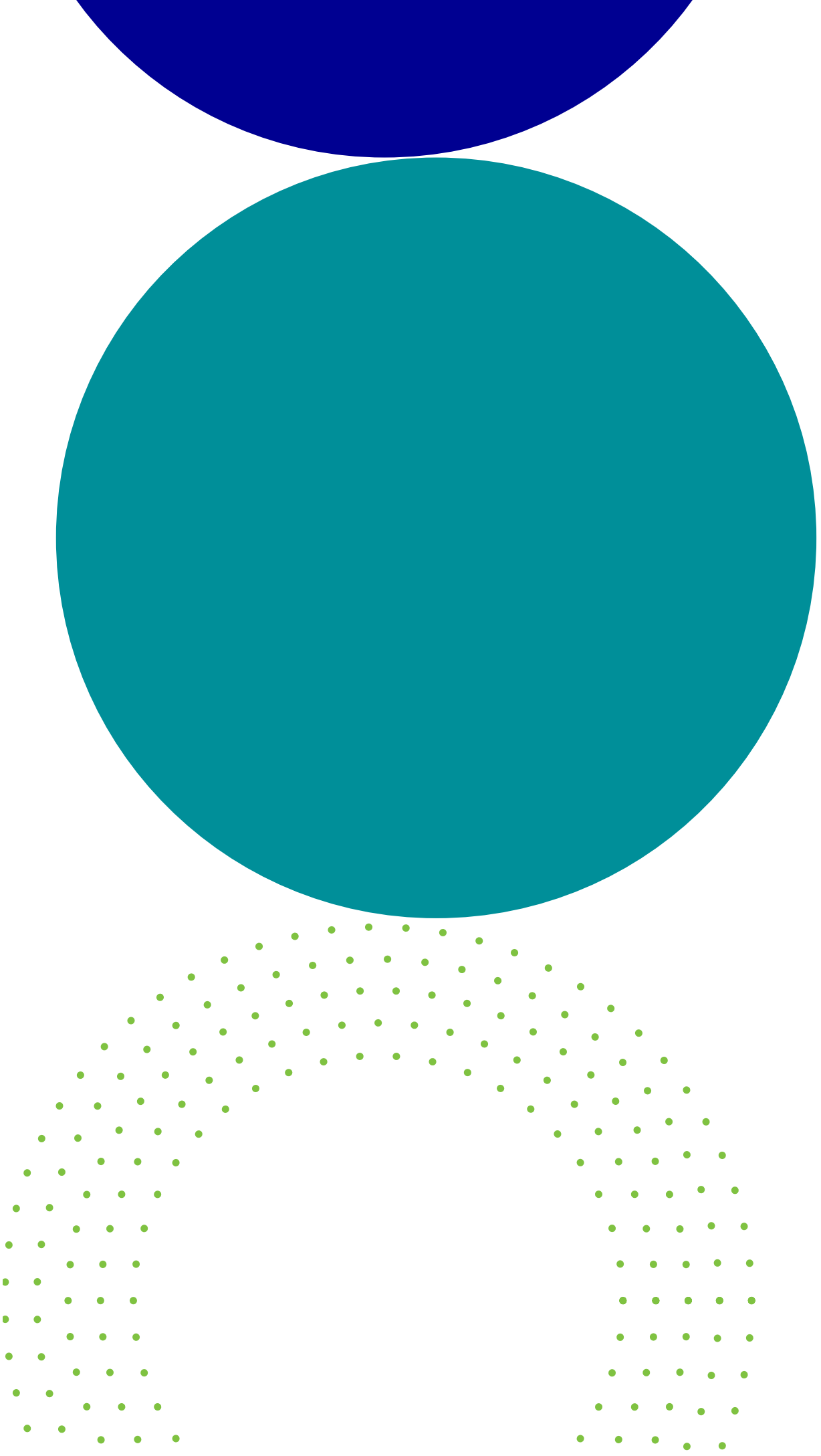
CNIL.

marie-Laure Denis, President

LA FERME DIGITALE

Agriculture needs to equip itself to accelerate its agro-ecological transition, and to effectively combat climate change and the decline in biodiversity in its territories. The repository, and in particular the "food and agriculture" pillar, is an unprecedented opportunity to put digital technology at the service of these essential challenges. FrenchAgriTech startups support the construction of digital commons to better circulate data and accelerate innovation!

Anaël Bibard, Data Division Representative



LIST OF ACRONYMS

The tables below list the acronyms used in the framework for each action.

CENTRAL ADMINISTRATIONS

AMDAC
Ministerial Administrators of Data, Algorithms and Source Codes

CGDD
General Commission for Sustainable Development

DIAMMS
Interministerial Delegation for Strategic Ore and Metal Supply

DNS
Ministerial Delegation for Digital Health

DSF
Forest Health Department

DIE
State Real Estate Department

DILA
Legal and Administrative Information Department

DICOM
Communications department (of a ministry)

DAE
State Purchasing Department

DAJ
Legal Affairs Department

DGALN
Directorate-General for Planning, Housing and Nature

DGEC
Directorate General for Energy and Climate

DGCCRF
General Directorate for Competition, Consumer Affairs and Fraud Control

DGPR
Risk Prevention Department

DGS
Health Department

DGAMPA
General Directorate for Maritime Affairs, Fisheries and Aquaculture

DGCL
Local Authorities Department

DGE
Enterprise Directorate

DGFiP
Public Finance Directorate

DGITM
General Directorate for Infrastructure, Transport and Mobility

DGT
Treasury Department

DINUM
Interministerial Digital Department

DNUM MTE-CT
MTE-CT Digital Division

MASA
Ministry of Agriculture and Food Sovereignty

MEAE
Ministry of Europe and Foreign Affairs

MESFIN
Ministry of the Economy, Finance and Industrial and Digital Sovereignty

MESR
Ministry of Higher Education and Research

MIOM
Ministry of the Interior and Overseas France

MSP
Ministry of Health and Prevention

MTE-CT
Ministry of Ecological Transition and Territorial Cohesion

SGPE
General Secretariat for Ecological Planning

SHFDS
General Secretariat, Senior Defense and Security Official

SNUM MASA
MASA digital service

OTHER NATIONAL PUBLIC BODIES

ADEME
French Environment and Energy Management Agency

AFNOR
French Standards Association

ASP
Agence de Services et de Paiement

ANSC
Civil Security Digital Agency

ANAH
National Housing Agency

ANCT
National Agency for Territorial Cohesion

ANSSI
French Information Systems Security Agency

ANSES
French Agency for Food, Environmental and Occupational Health and Safety

AOM
Mobility Organizing Authority

BRGM
Geological and Mining Research Bureau

CDC
Deposits and Consignments Fund (French Public Financial Institution)

Cerema
Center for Studies and Expertise on Risks, the Environment, Mobility and Planning

CEREN
Center for Economic Studies and Research on Energy

CNPF
National Center for Forest Ownership

CSTB
Scientific and Technical Center for Building

CNIL
French Data Protection Authority

CNIG
National Council for Geolocalized Information

CBN
French National Bar Council

CSN
Higher Council of Notaries

CNAM
National Health Insurance Fund

GART
Association of Transport Authorities

IFPEN
IFP Énergies Nouvelles

Ifremer
French Research Institute for Exploitation of the Sea

INERIS
French National Institute for Industrial Environment and Risks

IGN
French National Institute for Geographic and Forestry Information

INSERM
French National Institute of Health and Medical Research

Insee
French National Institute for Statistics and Economic Studies

INRIA
French National Institute for Research in Computer Science and Control

INRAE
French National Research Institute for Agriculture, Food and the Environment

LCSQA
Central Laboratory for Air Quality Monitoring

MNHN
National Museum of Natural History

OFB
French Office for Biodiversity

NFB
National Forest Office

SHOM
French Navy Hydrographic and Oceanographic Service

TERRITORIAL ORGANIZATIONS

DDT
Departmental Directorate for Territories

DRAAF
Regional Department of Food, Agriculture and Forestry

DREAL
Regional Department for the Environment, Planning and Housing

DRIEAT
Regional and interdepartmental directorate for the environment, planning and transport

FRANCE NATION VERTE

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Table of Contents

CROSS-CUTTING

Why?

The development, implementation, and monitoring of ecological planning at the regional level require the State, both centrally and locally, to have access to high-quality data that is comparable across regions and aligned with the thematic priorities of *France Nation Verte*. Such data is essential to support and secure the successful implementation of concrete projects. Likewise, local stakeholders (authorities, professionals, and citizens) must be able to access consistent, reliable data in a simplified and coherent manner, enabling them to focus their resources on achieving the defined objectives.

These multidisciplinary projects, which often operate across different geographical and temporal scales, necessitate data that is interoperable, easily aggregatable, and sufficiently qualified to ensure the relevance of its use. This data must feed into effective tools that serve both public and external stakeholders. However, certain datasets essential to the implementation of public policies remain unavailable. Furthermore, the abundance of open data, spread across numerous platforms, at varying scales, in multiple formats and structures, and of inconsistent quality, creates additional challenges. In addition, digital services are not always interoperable, and observatories do not always present information in a consistent manner.

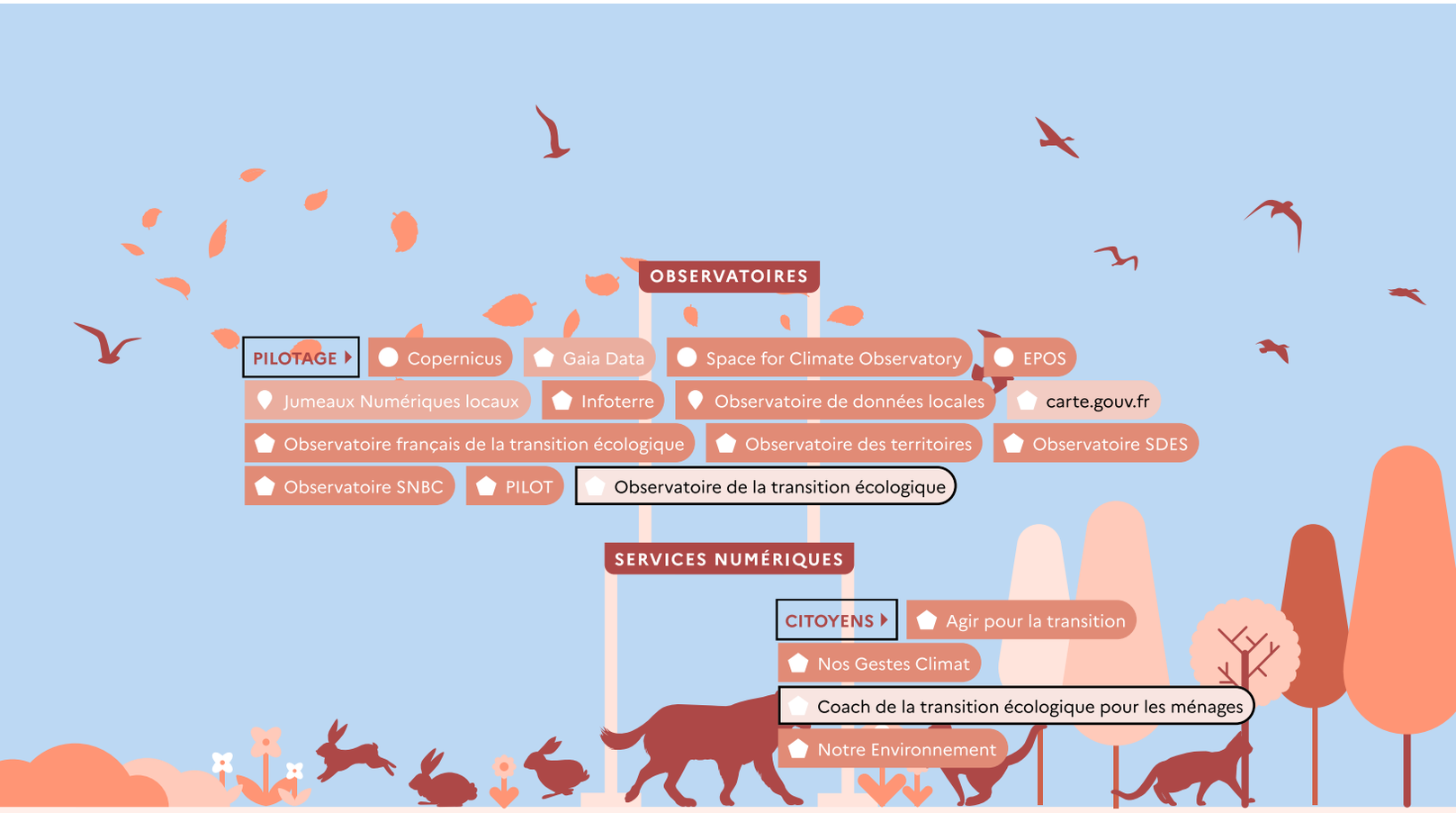
To address these issues, several cross-cutting building blocks must be established. These will enable thematic linkages, foster data pooling, and generate leverage effects.

The definition and adoption of common rules on ethics, security, and interoperability are essential prerequisites for the development of these higher-level building blocks. Pooling the infrastructure of public actors offers a rapid means of improving interoperability by leveraging existing resources. In parallel, the creation of shared technical components will embed interoperability by design and facilitate the pooling of efforts. The accelerated opening and sharing of data will further stimulate its use in support of public policies. Digital services that assist both local authorities and citizens, as well as observatories for public policy management, will be streamlined or made technically consistent. Moreover, specific digital services or observatories will be derived from broader digital platforms or observatories, in line with a meta-platform approach.

What?

Each of the priority building blocks outlined in black under the “Cross-cutting” theme below is the subject of a numbered “action”, detailed thereafter. These actions are structured into “orientations”, identified by letters, which correspond to the layers of the building. The orientations are arranged from bottom to top because, while all actions must be carried out in parallel to enable a product-based approach and to meet the urgency of the ecological challenge, they all rest on the foundations of the building, which must therefore be strengthened as a priority.

The structuring of each action is intended to be both educational and pragmatic: first the operational challenges are explained, followed by the current situation and associated difficulties, and then the sub-actions to be undertaken, with their designated leads and timelines. The leads are ranked from central administrations, to operators, and finally to local authorities; the main lead is indicated in bold. These actions and their timelines have been reviewed to incorporate the contributions of the public consultation, whether submitted in writing or during the hundreds of interviews conducted. They may subsequently evolve in an agile manner. These updates will be presented in summer 2025, and then annually.


OBSERVATOIRES
PILOTAGE
Copernicus
Gaia Data
Space for Climate Observatory
EPOS
Jumeaux Numériques locaux
Infoterre
Observatoire de données locales
carte.gouv.fr
Observatoire français de la transition écologique
Observatoire des territoires
Observatoire SDES
Observatoire SNBC
PILOT
Observatoire de la transition écologique
SERVICES NUMÉRIQUES
CITOYENS
Agir pour la transition
Nos Gestes Climat
Coach de la transition écologique pour les ménages
Notre Environnement

A Ensure the ethics of digital tools involved in the ecological transition

"Digital technologies for ecology must be developed within an ethical, humanist, civic and sovereign framework that avoids techno-solutionism, guarantees digital sobriety, protects privacy, leaves no one behind, ensures the resilience of systems and the democratic nature of models. Digital technologies are not neutral. They are technologies that come with its share of risks, which must be proactively regulated" (excerpt from the Manifesto).

Security and interoperability considerations alone are not sufficient. We must develop digital technologies for ecology within a value framework that reflects our society and fully address the risks identified. These issues have a major impact on daily life and touch on the very foundations of our societies. A collective reflection is therefore indispensable in order to address them.

The following actions, though of very different natures, are all essential to the sound development of ethical digital technologies.

1. Protection of sensitive data

Agree collectively on the appropriate balance between using personal data to reduce environmental footprints and protecting privacy

Our data is today collected and used by various public and private digital tools. While this can improve services for the common good, there is also a risk of behavioural surveillance (sometimes referred to as a "green dictatorship"). It is therefore important to decide collectively how far we wish digital technologies to measure or restrict behaviours, weighing the collective benefits for the ecological transition against the potential risks to personal data protection and privacy. It is also necessary to decide together how best to regulate these risks so that they remain socially acceptable.

This debate cannot be left solely to experts or representative bodies. It is therefore appropriate to establish a citizens' committee on digital technologies for ecology, composed of randomly selected citizens representative of the French population, as has already been done for similar issues in digital health. These debates may in particular be informed by the work of the CNIL in its Issue Paper No. 9 Cahier IP9[1], *"Data, Footprint and Freedoms."*

Several subjects have already been identified, including:

- The use of geolocated transport data to improve understanding of mobility patterns and develop green mobility
- The exploitation and dissemination of geolocated agricultural data, which can support the agroecological transition but may also raise concerns about surveillance or risks of land speculation.

1.1 – Where necessary, call upon experts, for example the National Consultative Ethics Committee, and

- **Leads: SGPE**, DINUM
- **Timeline:** Ongoing

[1] Available at the following link: https://linc.cnil.fr/cahier-ip9-donnees-empreinte-et-libertes

establish a citizens' committee on digital technologies for ecology to take a position on these issues

2. Reduce the environmental impact of digital technologies

Minimise the environmental footprint of digital solutions supported by the digital and data action framework

At a time when the effects of climate change are becoming increasingly evident in the lives of citizens and businesses, accelerating the ecological transition has become an imperative, particularly in the digital sector. In 2020, digital technologies accounted for 4.4% of France's annual carbon footprint and 11% of its annual electricity consumption[2]. It also represented 27% of the depletion of natural abiotic resources. If no action is taken, greenhouse gas emissions could increase by more than 60% by 2040. It is therefore essential to minimise the environmental footprint of the digital solutions set out in this framework and to avoid rebound effects.

The French State has addressed the issue of the environmental impact of digital technology through numerous actions and initiatives, which since October 2022 have been brought together within the High Council for Environmentally Responsible Digital Technology: the sectoral decarbonisation roadmap (Article 301 of the Climate and Resilience Act), MinNumEco, the REEN Act, the dedicated strategy under France 2030, among others. Their findings and recommendations underline in particular the importance of extending the lifespan of devices, monitoring usage, and reducing the energy consumption of data centres in order to curb the rapid growth of the environmental footprint of digital technologies. The actions set out in this framework must be consistent with these measures.

For example, a reference framework for the eco-design of digital services[3] was published in 2024 (a work carried out by Arcep and Arcom, in collaboration with ADEME, DINUM, CNIL and INRIA) to complement the digital solutions set out in this reference framework.

2.1 – Ensure compliance with the environmental recommendations arising from the work carried out by the public authorities, and make use of the tools deployed for this purpose (General Framework for Frugal AI, NumEcoEval, Green Algorithms, guidelines, the Digital and Environment Roadmap, the AI and Ecological Transition Roadmap, the REEN Act, etc.) in the implementation of the digital projects set out in this framework

- **Leads: SGPE, DNUM MTE-CT, SNUM MASA,** DINUM
- **Timeline:** Ongoing

2.2 – Ensure that these same recommendations and tools are

- **Leads:** SGPE, DNUM MTE-CT, SNUM MASA, **DINUM**

[2] ADEME & ARCEP. (2025). *Évaluation de l'impact environnemental du numérique en France*
[3] Available at the following link: https://ecoresponsable.numerique.gouv.fr/publications/referentiel-general-ecoconception/

applied and deployed in the implementation of digital projects led by private actors and local authorities

- **Timeline:** Ongoing

3. Address digital divides

Prevent some citizens, public officials and professionals from being left behind by the digital tools needed for the ecological transition

Access to and familiarity with digital technologies are not universally shared: 15% of French people are digitally illiterate[4]. Beyond the general public, a wide range of professionals as well as national and local public officials may also face issues relating to equipment, digital culture or training. Moreover, the very missions of public officials are being affected by the generalisation of digital tools, including artificial intelligence. Digital technologies must remain a tool at the service of individuals and must not hinder access to public services.

This requires, for example, addressing the lack of digital skills in certain services (State and local authorities) or within certain professions, in connection with the "*Emplois et Compétences*" ("Jobs and Skills") programme of France Nation Verte. It also requires implementing physical channels as alternatives to digital technologies for the most critical services in the framework, thereby contributing both to inclusion and to the resilience of the underlying operational activities. Finally, it is necessary to provide large-scale support to French citizens in the use of the civic tool of the ecological transition (*J'agis,* see action 21).

3.1 – For all relevant digital projects in the reference framework, provide alternative channels to digital tools

- **Leads: SGPE, DNUM MTE-CT,** DG Métier
- **Timeline:** Ongoing

3.2 – Implement *J'agis*, the ecological transition coach for households, while ensuring the quality of the user journey, the provision of tools for helpers or mediators, the training and the deployment of digital advisers

- **Leads: SGPE**, DINUM, ADEME
- **Timeline:** Q2 2025

4. Ensure trust in models and artificial intelligence

Ensure transparency and rigour in the models and artificial intelligence used by public and private actors, so as not to confuse innovation with progress

Transparency not only of data but also of processing and modelling is essential to building trust in digital tools and the content they produce. This is a matter of democracy: just as it would have been unthinkable for decisions on lockdown to be taken without transparency regarding Covid contamination and vaccination, it is indispensable to understand the underlying factors in measuring a carbon footprint, a flood risk or water or electricity cuts. This applies to public digital tools, but also to

[4] Bendekkiche, H., Viard-Guillot, L. (2023). 15% of the population is digitally illiterate in 2021. *Insee Première,* (1953)

private digital tools with significant impact, particularly when they disseminate messages to the population sometimes more effectively than public authorities, such as Google or Apple.

These risks are amplified by artificial intelligence, for example through the possible reinforcement of biases carried by training data. Artificial intelligence, which has significant potential to accelerate the ecological transition, must not become a black box. Its use must not take precedence over human judgement.

To make progress on these complex issues, it is proposed to begin with the actions set out below.

4.1 – **Explain the models used by *Nos Gestes Climat***	• **Leads: SGPE**, DINUM, **ADEME** • **Timeline:** Q4 2024
4.2 – **Identify private digital tools that disseminate messages relating to the ecological transition, particularly to citizens in the event of an environmental crisis, and work with the stakeholders concerned to ensure the reliability of the messages and to introduce transparency into the models**	• **Leads: SGPE,** DNUM MTE-CT, **DGE,** DG Métier, operators, private companies • **Timeline:** Q4 2025

B Ensure the security and resilience of digital tools involved in the ecological transition

Attacks on information systems are increasing. These attacks may originate from inside or outside administrations, operators, local authorities or private companies. The challenge is to protect the confidentiality, integrity and availability of data by preventing any unauthorised access, as well as any modification, manipulation or destruction of data.

Information systems relating to the ecological transition combine all of the risk factors linked to cybercrime due to their diversity, their media exposure, the financial flows they manage and the commercial secrets they record. They therefore require tailored information system security (SSI) measures.

Beyond cybersecurity in the strict sense, these information systems must also be designed to be resilient to climate change, to shortages of materials needed for digital components, to loss of access to electricity, and so on. These challenges are addressed in particular through business continuity and recovery plans, which anticipate the measures needed to maintain operations despite disruptions, including if necessary in downgraded operating modes.

5. Security of central government information systems

Implement the information system security roadmaps for ministerial departments

Ambitious roadmaps have been developed. They include the security accreditation of information systems, the generalisation of strong authentication, the preparation of business continuity and recovery plans for each service, the establishment of a national alert management network (CSIRT), the creation of a centre for the supervision and automated detection of security incidents (SOC), regular audits of internet-exposed addresses and Windows servers, the strengthening of office directories and administrative information systems, the replacement of obsolete information systems, and ongoing awareness-raising initiatives for all stakeholders.

5.1 – Define the 2025-2027 "digital security" roadmap for the Ministerial Department for Ecological Transition, Territorial Cohesion, Energy Transition and the Sea

- Leads: **DNUM and SHFDS of the MTE-CT**
- Timeline: H1 2025

5.2 – Implement the "digital security" roadmap for the Ministry of Ecological Transition, Territorial Cohesion, Energy Transition and the Sea

- Leads: **DNUM and SHFDS of the MTE-CT**
- Timeline: 2026-2027

5.3 – Implement the "digital security" roadmap of the Ministry of Agriculture

- Leads: **SNUM and SHFDS of the MASA**
- Timeline: Q4 2025

6. Security of public institutions' information systems

Support public institutions in implementing their information system security policy

The operators involved in the reference framework have varying levels of maturity in terms of cybersecurity. Experience-sharing workshops and technical support are needed, in particular on the security accreditation policy for standard and classified applications, certification, the hardening of the different components of information systems (directory, network, bastions, etc.), awareness-raising and training, and authentication policy. Certain functionalities will be pooled for operators that volunteer (remote back-up, supervision, training, etc.). An assessment of their strengths and weaknesses will be carried out as part of this coordination effort.

6.1 – Assess the level of maturity of operators and support them in implementing security policies in the Ministries responsible for Ecology, Territorial Cohesion, Energy and the Sea.

- Leads: **DNUM and SHFDS of the MTE-CT, ANSSI**
- Timeline: 2025

6.2 – Assess the level of maturity of operators and support them in

- Lead agency: **DNUM and SHFDS of MASA**, ANSSI
- Timeline: 2025

implementing security policies in the Ministry of Agriculture

7. Security of information systems of local public authorities and external actors

Support local public actors and external stakeholders in their information system security (SSI) policies.

With the exception of a few specific actions, for example in the energy sector, the work of the National Cybersecurity Agency of France (ANSSI) and of the ministerial ecology cluster is focused primarily on companies subject to the NIS 2 regulations or to the Defence Code. The transposition of the NIS 2 Directive has considerably broadened this scope, now covering companies with more than 50 employees or with a turnover of more than 10 million euros, in most sectors of activity relevant to the areas targeted by France Nation Verte.

In addition, an assessment of residual risks, in particular concerning small businesses, joint associations, and grant-funded associations - all of which remain excluded from this framework - will make it possible to identify possible additional measures to help them strengthen their digital security.

The Cyber Campus, which brings together professionals in the sector, schools and institutional actors, is mobilising its working groups to analyse priority areas for action from the perspective of resilience and the methods of support available to help stakeholders make progress. This input from cybersecurity professionals will complement the previous analyses, both on the assessment of the current situation in each professional sector and on the levers for improvement.

7.1 – **Implement the NIS 2 Directive for the actors in the ecological transition concerned; identify the residual security challenges for entities outside the scope of the regulation; and coordinate communities to help improve their level of resilience.**

- **Leads:** SGPE, **SHFDS and DNUM of the MTE-CT, SHFDS and SNUM of the MASA, ANSSI**, DINUM, DG Métier, professional associations
- **Timeline:** 2024-2025

7.2 – **Work in cooperation with the Cyber Campus with a view to enriching the work through representatives of the thematic sectors.**

- **Lead: DNUM of** the MTE-CT
- **Timeline:** Q2 2024

8. Resilience of information systems in the face of climate change

Ensure the proper functioning of business continuity and recovery plans in the face of severe climate events.

Climate change is leading to an increase in the number and intensity of meteorological phenomena such as floods, storms and heatwaves. These are risk factors that can destroy or force the shutdown of IT infrastructures or the networks supplying them with energy.

Business continuity plans and recovery plans (PCA/PRA) are the tools traditionally used to anticipate such disruptions. Their design is based on assumptions about anticipated events and their probability of occurrence. These plans must now be reinforced in light of these new risks.

8.1 – Draft a guide for updating the business continuity and recovery plans (PCA/PRA) of the administration and its public institutions in the face of climate-related hazards and energy crises.

- **Leads:** SGPE, DNUM and SHFDS of the MTE-CT, SNUM and SHFDS of the MASA, **ANSSI**
- **Timeline:** H2 2025

Ensure the interoperability of digital tools involved in the ecological transition

A data standard or norm provides principles, structures and conventions for producing, exchanging or representing data. Standards foster interoperability, homogeneity and consistent understanding across digital tools. For example, the "Addresses" standard is intended to enable the consolidation of an accurate national address database through the standardised integration of local address databases. By default, a standard is applied on a voluntary basis, but it may become mandatory if referenced in a legal text.

A data standard relates first to the semantic level (the vocabulary, concepts and their relationships) and the technical level (the conceptual data model specific to a given operational need). It may also extend to proposing one or more modes of physical implementation, such as exchange formats. XML, which is based on international norms, is for example used in the water information system.

Today, there are several standardisation bodies at international level (CEN, ISO, etc.) and at national level (CNIG, SANDRE, PatriNat, GISsol, SNOR, etc.). Maintaining these competences is essential to ensure continuity of activity, links between stakeholders, and the effective functioning of public policies beyond the purely technical issues of standards.

However, this fragmentation makes it more difficult to identify and locate a standard. It is therefore necessary to improve the discoverability of standards through simplified and consolidated access to information. In addition, the use of standards by stakeholders requires entering into the formalism of each domain (methods and processes). It is therefore necessary to harmonise standardisation models and processes. Finally, the evaluation of the quality and adoption of standards is not itself standardised. It is therefore important to harmonise governance by designating "standards of primary importance," which would then be collectively developed and recognised.

9. *La Fabrique des Standards (Standards Factory)*

Establish a design method and a model for describing standards to facilitate their discoverability and use by all stakeholders

The method envisaged, a kind of "standard of standards," sets out a minimum baseline of requirements necessary for the production of a major standard. Standards recognised by the State, intended to be integrated into public procurement or to produce reference data, will be required to comply with this model so as to facilitate their implementation by stakeholders.

The method incorporates best practices in line with the current state of the art and relies as far as possible on international standards, while maintaining a pragmatic approach.

9.1 – **Publish a design method and a common model for standards**[5]	• **Leads:** SGPE, **CNIG**, **CGDD,** DINUM, transport.data.gouv, Cerema, IGN, OFB, OpenDataFrance, local authorities, and AFNOR • **Timeline:** Q2 2025
9.2 – **Define common key performance indicators (KPIs) and circulate them as widely as possible among the various stakeholders for collective improvement of services**	• **Leads:** SGPE, **CNIG, CGDD,** DINUM, transport.data.gouv, Cerema, IGN, OFB, OpenDataFrance, territories, and AFNOR • **Timeline:** Q3 2025

10. schema.data.gouv

Circulate the standards that comply with the common model defined by La Fabrique des Standards.

Access to the standards produced under *La Fabrique des Standards* (action 9) will be centralised and harmonised through a reference service, schema.data.gouv.fr, supported by the reputation of the data.gouv ecosystem.

Work is underway to develop the methodology to be followed for publishing schemas on schema.data.gouv.fr as CNIG standards, as well as the model for circulating the standards.

[5] Available at the following link:
https://guides.data.gouv.fr/guides-de-data.gouv.fr/fabrique-des-standards/la-fabrique-des-standards/realisation-du-standard

10.1 – Enable the search for standards by label (CNIG, transport.data.gouv.fr) on schema.data.gouv and make labelled standards available as part of *La Fabrique des Standards*

- **Leads: DINUM**, CNIG, OFB, OpenDataFrance
- **Timeline**:
  Visibility of CNIG standards on schema.data.gouv Q4 2023
  Publication of new standards on schema.data.gouv on an ongoing basis from Q1 2024
  Revision of existing standards to bring them into the new format from Q2 2025

Streamline the use of data and the digital identification of stakeholders

Like all administrative documents (data and source codes), information relating to the ecological transition is subject to the general regimes governing the communication and dissemination of administrative documents and the re-use of public information. These are codified in the *Code of Relations between the Public and the Administration* (*Code des relations entre le public et l'administration*, CRPA) and form the paradigm of open data for public data by default. Where open data is not possible, they establish a framework for data sharing.

Sectoral provisions may replace this general framework. Thus, when classified as environmental information, such information benefits from facilitated access under the provisions of the *Environment Code* (*Code de l'environnement*), derived from the Aarhus Convention. When classified as geographic information, it must be published and shared according to well-defined technical standards within partnership-based infrastructures, in accordance with the European INSPIRE Directive.

Other provisions concern more specific sectors. For example, contracting authorities, public or private, must contribute to the inventory of natural heritage by entering or, failing that, by providing the raw biodiversity data acquired during certain environmental assessment studies, under the provisions of the *Law for the Recovery of Biodiversity* (*Loi pour une reconquête de la biodiversité*).

Finally, the circulation of data between administrations is governed by the provisions of two articles, the *Law for a Digital Republic* (*Loi pour une République numérique*) and Article L114-8 of the CRPA, in line with the GDPR.

All of these provisions are based on a paradigm of openness or data sharing, subject to regulatory restrictions designed to protect "sensitive" data, such as personal data, data covered by trade secrecy or, in the case of environmental information, data that could cause harm to the environment.

However, it is apparent that these regimes are sometimes overlooked or poorly understood, that their implementation is partial or delayed, and that some data which should be open or shared between administrations remains closed. Too often a "precautionary principle" is invoked against the circulation of data, slowing down initiatives. In some cases, regulatory texts themselves, through lack of precision, fail to provide the legal conditions for sharing or may deter data producers for fear of uses they would no longer control.

The objective is therefore to continue the momentum already initiated towards openness and dissemination, through a process based on the collection of needs, transparency, stakeholder training and planning, and in accordance with the principle "as open as possible, as closed as necessary."

11. Governance and internal data circulation

Respond to the needs of governance and data sharing between administrations in order to accelerate the implementation of ecological transition policies.

The circulation of data across ministries makes it possible to simplify user journeys in digital services (the "tell us once" principle) and ensures greater efficiency in the delivery of public policies. Such data may benefit ecological transition policies, even when this was not their initial purpose, for example by proactively identifying beneficiaries of certain financial support schemes.

Specific data access needs were identified during the preparation of this framework. For example, the lack of access to the fiscal invariant of premises hinders the cross-referencing of data characterising those premises (residential or non-residential). Access via an API from the Directorate General of Public Finances (Direction générale des Finances publiques, DGFiP), operational since the end of 2024, now enables better identification of characteristics and greater proactivity on the part of public authorities in the distribution of support.

11.1 – **Ensure that for each dataset used, a person responsible for its quality, updating and dissemination is identified, and distinguish between data producers, disseminators and users**	• Leads: **DINUM, all operators concerned** • Timeline: Ongoing action
11.2 – **Enrich and widely spread the legal guide[6] for Leads working with open data from data.gouv.fr**	• Leads: **DINUM,** DGFiP • Timeline: Ongoing
11.3 – **Identify authoritative regulatory data sources (not subject to interpretation)**	• Leads: **DINUM** • Timeline: Q4 2025, then ongoing
11.4 – **Accelerate data circulation by supporting data requesters and producers and by publishing progress reports**	• Leads: **AMDAC (MTE-CT and MASA), DINUM**, DG Métier, operators, territories • Timeline: Publication of the list in Q4 2024, then half-yearly review
11.5 – **Improve the availability of remote sensing data by pooling needs and capacities between State**	• Leads: **IGN, CNES** • Timeline: initial regional coverage in Q4 2026

[6] Available at the following link: https://guides.data.gouv.fr/guides-open-data/guide-juridique

stakeholders and local public authorities

11.6 – Make forest data available to EPCIs

- **Leads: IGN**, OpenForêt
- **Timeline:** demonstrator in Q4 2025

12. Open up data to external parties

Expand and improve the opening of essential data for the implementation of ecological transition policies.

Since February 2021, ministerial commitments regarding data publication and the "high-value datasets" defined by the European Commission have been listed on the website ouverture.data.gouv.fr (status and estimated date of publication).

The list of datasets to be published in response to the use cases identified in this framework has been updated and made available on ouverture.data.gouv.fr. For example, since 1 January 2024, Météo France data has been made freely available and reusable. The portal meteo.data.gouv.fr in particular enables local authorities to carry out vulnerability assessments based on Météo France's recognised observations.

Progress on this work will be monitored annually, within the framework of the Conference on Digital Technology and Data for Ecology.

As data publication practices expand, a proliferation of platforms providing access to such data has emerged (e.g. data.gouv.fr, data.ademe.fr). Their articulation with other platforms such as schema.data.gouv.fr and ouverture.data.gouv.fr is insufficiently documented, making this public service less legible. The aim will be to promote aggregators that rely on the data.gouv.fr platform, such as ecologie.data.gouv.fr.

12.1 – Accelerate data publication (open data) by supporting data users and producers, and by publishing progress on the work

- **Leads: AMDAC (MTE-CT and MASA), DINUM**, DG Métier, operators, local authorities
- **Timeline:** Publication of the list in Q4 2023, followed by a half-yearly review
-

13. Share private data of general interest

Establish a mechanism for access to private-sector data of public interest for priority use cases in the ecological transition.

The concept of "private-sector data of public interest" was first introduced in the *Law for a Digital Republic* (*Loi pour une République numérique*). It has been little used due to a lack of clarity and

binding provisions. Yet the opening up of certain data held by private legal entities can at times serve the public interest.

Such data may, for example, enable the more effective conduct of sectoral public policies, provide better information to citizens, or improve scientific research. This is particularly the case for mobility data from navigation assistants, which are needed to better understand, monitor, model and forecast mobility needs, thereby enabling local authorities, for instance, to make targeted improvements to roads or public transport routes.

European work on "Business-to-Government data sharing" provides an opportunity to develop these mechanisms further.

13.1 – Work towards the sharing of navigation assistant data, then extend the approach to other use cases

- **Leads: DGITM, SGPE,** DINUM**,** ADMDAC MTE-CT, relevant private companies
- **Schedule:** Work on mobility use cases: H2 2025, then extension

14. Deployment of a shared digital identification system for stakeholders

Deploy a digital identification system for citizens, professionals and public officials that ensures account consistency and streamlines user access.

Access to data and digital services currently requires citizens, professionals and public officials to go through various digital identification processes, involving multiple logins across different accounts, which complicates procedures.

For individual administrative procedures, the FranceConnect button is being increasingly deployed. It not only guarantees secure authentication for users but also enables the retrieval of the data required for the procedure. The challenge is therefore to accelerate the implementation of this authentication method in the citizen-facing services identified in this framework.

Persons authorised to act on behalf of companies or associations must also authenticate themselves to public authorities, for example when applying for financial aid or grants. A number of tools exist today. ProConnect is intended to become the preferred identification gateway for persons acting in a professional capacity.

Finally, ProConnect is also used by central government officials to access secure data and connect to their software. It will be extended across State services and local authorities, eventually becoming the preferred method for identifying public officials.

14.1 – [For citizens] Integrate FranceConnect, FranceConnect+, and France Identité into digital services for citizens, giving priority to *J'agis*, the ecological transition coach for

- **Leads:** SGPE, **DINUM**, DGALN, **ANAH**
- **Timeline:** H1 2025

households, and to *France Rénov'* (action 14 of "Better housing")

14.2 – **[For professionals] Integrate ProConnect into digital services for professionals, with priority given to services to farmers (action 2.1 of "Better food")**

- Leads: **DINUM, MASA**
- Timeline: 2025

14.3 – **[For public officials] Integrate ProConnect into national platforms for local authorities, in particular MonEspaceCollectivités (see action 20 of "Cross-cutting"), and into local platforms within the framework of local governance as set out in the reference framework**

- Leads: **DINUM, CGDD, ANCT,** ADEME, Cerema, IGN, territorial governance
- Timeline: starting in Q4 2024

E Establish a coherent ecosystem of infrastructures for the dissemination of open data and the sharing of non-open data

Infrastructures for the publication of open data and/or the sharing of non-open data (often referred to as "platforms") have been established for more than twenty years at both territorial and national levels, in order to meet needs for territorial knowledge, decision-making support, transparency and the implementation of public action. These platforms are essential tools for the ecological transition and its operational deployment across territories.

However, to move to scale and implement the *France Nation Verte* plan, greater efficiency is required. It is necessary to accelerate efforts to ensure coherence and shared use between existing and future platforms, both from a technical and an organisational perspective. This work must be carried out at the level of territorial platforms among themselves and with the national level, with a clear distribution of roles (action 15), and between national platforms (action 16).

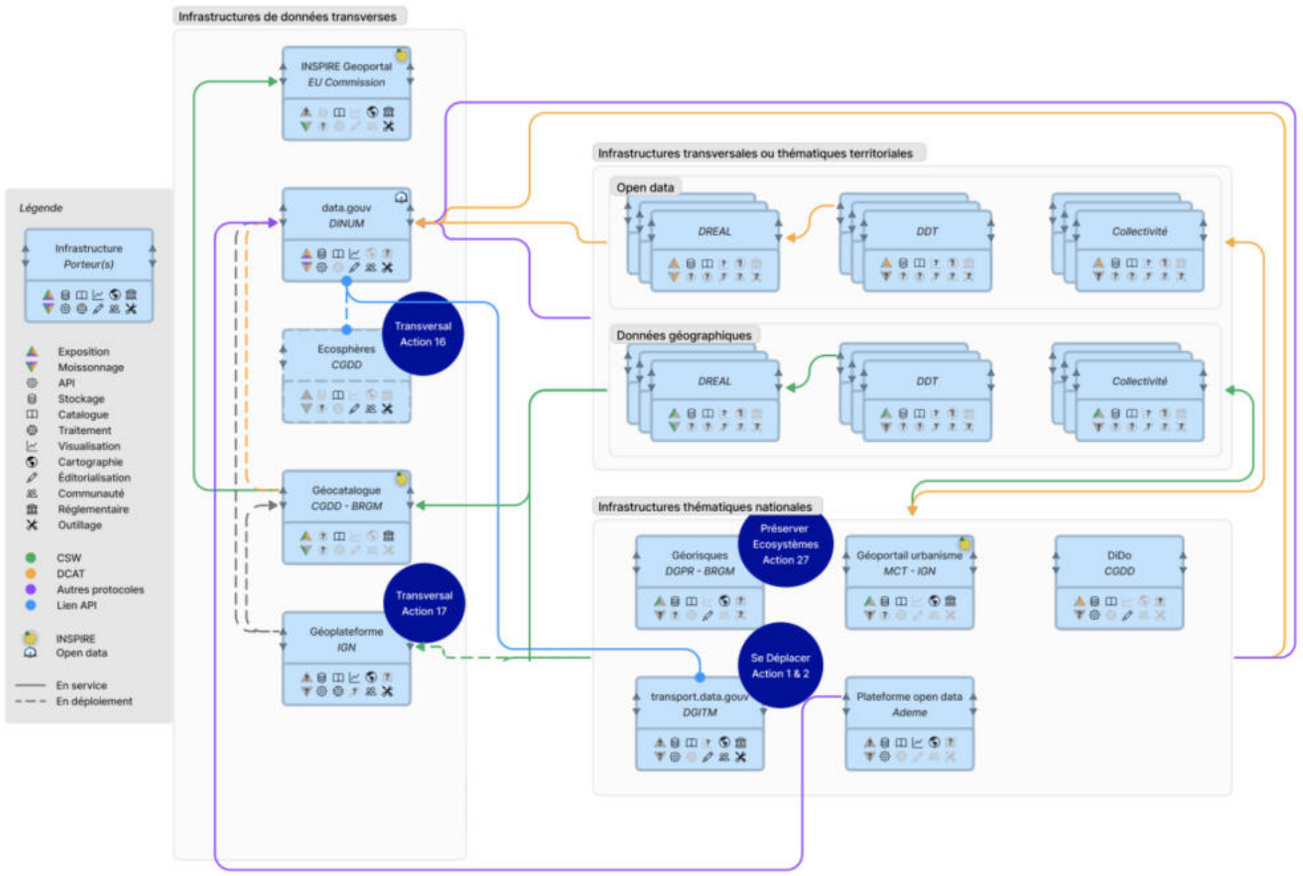
In a context of mass data and increased sovereignty issues, the ambition today is also to bring these public infrastructures closer to the European architectures under construction, in particular those promoted under Gaia-X and the new European data regulations.

In particular, the Data Governance Act (DGA), which entered into application in 2023, requires each Member State to establish a National Single Information Point (NSIP) and a structured framework for the re-use of protected data. At EU level, these NSIPs are interconnected through the European Single Access Point (ESAP).

In this context, French data infrastructures – whether territorial, national or sectoral – must converge towards a federated, interoperable and governed architecture, enabling France's active participation in the European data spaces. The foundational infrastructures, and even the service layers, of both

territorial and national platforms, such as the *geoplateform* (action 17) and digital twins (action 18), will fall within this federated approach.

All of the actions under this section E are also aligned through a technical review of the existing systems (technical cataloguing solutions, metadata formats, harvesting, etc.) and through continuous improvement aimed at streamlining exchanges between platforms, as shown in the diagram below.



15. Harmonisation of territorial and national platforms

Define and implement an effective urbanisation strategy between territorial platforms, among themselves and with the national level, by building on existing communities and pooling technical development plans

Communities of data "platforms" have historically developed in parallel. Local authorities, devolved State services and private companies have expressed the need for a more coherent strategy, both for their digital services and for their coordination with national services.

While heterogeneity of solutions is sometimes necessary to address territorial differences, parallel developments are often carried out by different public stakeholders to meet the same obligations. This situation leads to inconsistencies in file formats, geographic standards and data typologies from one territory to another, as shown by certain datasets (for example, the heterogeneity of OCS GE data – large-scale land cover).

Technological developments and competition from global digital giants make it necessary to strengthen complementarity and interoperability between platforms, both at national and European level.

At the territorial level, regions are gradually establishing territorial data governance bodies in the form of territorial data committees building on existing bodies. These committees will make it possible to align regional strategies coherently with the national level.

15.1 – **Invite local authorities to develop a territorial mapping, report any issues concerning the interface with national digital components, and make proposals for changes to territorial digital components in order to establish an effective strategy of architecture and shared use**	• **Leads:** SGPE and, in each region: **Regional President and Regional Prefect**, local public actors (decentralised State, local authorities, CRIGE, AREC, etc.), operators (IGN, ADEME, Cerema, etc.) • **Timeline:** initial results in H2 2025
15.2 – **Define and implement technical development plans to enhance interoperability and sharing between existing territorial platforms (geOrchestra, OneGeo, GeoIDE, geoplateform, etc.)**	• **Leads:** DREAL, **CNIG**, operators (Cerema, IGN, etc.), local authorities and their representatives, voluntary private actors • **Timeline:** definition in Q4 2024 by the CICCLO collective, followed by implementation of an initial common technical foundation (integration of ProConnect and the OGC Features API)
15.3 – **Make the National Address Database (*Base Adresse Nationale*, BAN) an interoperability component with other reference frameworks (RNB, RGE, sectoral systems), relying in particular on the CNIG Address Standard**	• **Leads: IGN, RNB, CNIG**, DINUM, Enedis, local authorities • **Timeline:** Address standard validated in Q4 2024, implementation launched in 2025 with the RNB and RGE
15.4 – **Ensure interoperability between national databases and European databases (for example through the alignment of standards)**	• **Leads: DINUM** • **Timeline:** ongoing action from Q3 2025

16. Ecospheres

Reference at national level the data useful for supporting the public policies of France Nation Verte in each territory, which are currently scattered across numerous data catalogues (platforms of devolved State services, thematic catalogues of line directorates, operators, etc.)

The platform ecologie.data.gouv.fr, developed through the Ecospheres project, is the public data catalogue for the ecological transition. It centralises and makes accessible to the public nearly 30,000 databases from public institutions (IGN, Météo France, ADEME, Cerema, OFB, BRGM, devolved State services, etc.) as well as

private stakeholders. ecologie.data.gouv.fr is linked to the national platform data.gouv, to which the Ecospheres team directly contributes functionalities for the harvesting of geographic data platforms.

It nevertheless differs from data.gouv in two respects:

- The provision of a "data packages" module offers users a contextualised presentation of the data they use, for example: monitoring of regional COPs, sustainable mobility, ADEME's *Territoires en Transitions* tool. These packages make it easier to search for and use data in support of public policy needs.
- Centralised and standardised monitoring of key indicators for ecological transition policies across different territorial scales, with more than 80 indicators available at launch, a number that will continue to grow.

16.1 – **Increase discoverability by publishing four initial data packages at the launch of the platform that address specific use cases**	• **Leads:** **CGDD**, DNUM MTE-CT, DINUM, DG Métier, operators, territories • **Timeline:** 2024, then ongoing development
16.2 – **Define quality indicators and test them based on metadata analysis**	• **Leads:** **CGDD**, DNUM, DINUM, DG Métier, operators, decentralised services, local authorities • **Timeline:** Test results in Q1 2024, followed by developments

17. Geoplatform

Deploy an open and shared infrastructure to meet the needs of geodata producers (data hosting and lifecycle management) and of developers of services and observatories.

Designed as a platform that can be easily interfaced (*API First* approach), the *geoplateform* provides modules that enable the development of digital services and observatories.

cartes.gouv.fr, the public service for maps and territorial data, is a first illustrative example. It offers a catalogue of databases and thematic maps (topography, ecology, security, land use, regulations, etc.), as well as simplified access to services allowing anyone to create, host, contribute to, share, visualise and publish data and maps independently.

For example, a local authority could host, update and publish on a map data concerning areas that contain beehives or those suitable for them. Or, an operator responsible for coastal monitoring could bring together existing data on coastal erosion on a single map and enable stakeholders to collaborate continuously in enriching it.

17.1 – **Deploy the first version of the *geoplateform*, which will include a foundation ensuring service continuity for users of the current *Géoportail* geoservices, and provide autonomy to data producers**	• **Leads:** SGPE, **IGN**, DINUM • **Timeline:** Q1 2024

17.2 – **Further develop the functionalities of the *geoplateform* in order to promote data circulation (interoperability with other platforms), its updating (multi-stakeholder and at scale), and its processing (in support of public policies)**	• **Leads:** SGPE, **IGN**, DINUM, GéoBretagne, geOrchestra, partners with use cases for new features • **Timeline:** Q2 2024: collaborative tools in the form of APIs Q3 2024: enhancement of data processing services Q2 2025 - Q1 2026: interoperability of cataloguing and authentication with regional pilot platforms based on use cases.
17.3 – **Launch cartes.gouv.fr, the public service for maps and data on the territory**	• **Leads:** SGPE, **IGN**, Cerema, OFB, SHOM • **Timeline:** Q2 2024: beta version deployed Q3 2024: gradual enhancement of cartes.gouv.fr Q4 2025: V0 enabling migration of geoportail.gouv and geoservices.ign.fr to begin Q2 2025 - Q1 2026: integration of the Geoplatform's collaborative tools into cartes.gouv Q1 2026 - Q1 2027: integration of mapping and data visualisation tools by cartes.gouv

18. Digital twins of France

Deploy the means to project into the medium- or long-term future, through simulations, in order to anticipate the cumulative effect of certain phenomena and to assess the foreseeable impact of specific land-use planning decisions or regulatory measures

Beyond the potential to link single-theme models (tree growth, wind turbine yield, dike effectiveness, electricity consumption of a territory, etc.), the digital twins of France, by enabling integration into a continuous geographic base, will make it possible to analyse the feedback effects of different thematic use cases on one another and to gain a better understanding of causal relationships.

Digital twin initiatives or simulation tools already exist for limited areas. The ambition is to cover the entire territory and to break down silos in the treatment of different issues, in order to enable systemic evaluation.

To this end, several local thematic use cases are being studied. This process will improve the specifications of the technical base. All use cases connected to the same technical base of data and services will be able to operate together and will gradually bring digital twins towards the systemic analytical capacity needed to address the complex challenges of ecological and climate transitions.

It must nevertheless be kept in mind that any collection and analysis of data entails a cost, both financial and environmental. Moreover, it would be unrealistic to claim to faithfully reproduce a territory

in all its complexity, given the number of parameters involved. However, work on targeted use cases, along with the most mature existing solutions, will deliver value to decision-makers on the most critical issues.

The project, with a duration of three years, will advance along three major and complementary axes:

18.1 – Establish a technical base of services and data that draws as far as possible on existing data and technological components provided by public or industrial stakeholders, who will further develop them within the framework of the project

- **Leads:** SGPE, **IGN**, Cerema, INRIA, 1Spatial
- **Timeline:** Q1 2026: initial building blocks of the technical foundation to provide services to existing tools or digital twins

18.2 – Develop thematic use cases with territorial stakeholders and gradually scale them up

- **Leads:** SGPE, **IGN**, Cerema, INRIA
- **Timeline** H2 2026: first solutions available for prioritised use cases at departmental or supra-departmental level

18.3 – Conduct a research programme to address the technical and scientific obstacles identified at the design stage of the project, as well as those revealed through the development of the use cases

- **Leads:** SGPE, **IGN**, Cerema, INRIA, 1Spatial
- **Timeline** H1 2026: theses started

19. Public aid reference framework

Create a reference framework of available public support schemes to facilitate information for potential beneficiaries and coordination between funders

Numerous public or semi-public support mechanisms, led by the State, local authorities, and public or private operators, are made available to encourage the ecological transition. For example, *MaPrimeRénov allows* eligible homeowners to receive financial assistance for the energy renovation of their property. However, the fragmentation of the portals listing available support schemes, together with the wide variety of eligibility conditions, makes the information difficult to read and even less auditable. To facilitate information for potential beneficiaries, and to enable funders to improve synergies between schemes and ensure consistency with ecological transition policies, it is necessary to create a framework documenting the financial support available for the ecological transition.

19.1 – Develop and publish a scheme for financial support available to businesses, individuals and local authorities in relation to the ecological transition, together with the associated eligibility conditions

- **Leads: ADEME**, ANCT, SGPE, CGDD, DGE
- **Timeline:** Q4 2025, then continuously updated

19.2 – Explore the development of a national reference framework for support schemes

- **Leads:** **SGPE**, ANCT, DINUM, DGE
- **Timeline:** H2 2025

F Provide digital tools to support territories in the ecological transition

To succeed in the ecological transition, impact-driven projects must be multiplied across local areas: reducing energy consumption and carbon emissions, reversing land artificialization, protecting resources and biodiversity, and so on.

To launch these projects, stakeholders must have better knowledge of their territory and build on projects that have proven effective. Their time must be optimised and not dissipated in time-consuming administrative procedures.

State support for projects is provided through the implementation of plans and contracts related to the ecological transition (*Plans climat-air-énergie territoriaux*, PCAET; *Contrats de relance et de transition écologique*, CRTE). These must be based on shared indicators for monitoring actions, tailored to the needs of the local authorities concerned and enabling the effectiveness of actions to be measured.

20. MonEspaceCollectivités and tools for local authorities

Set up a "toolbox" and provide standardised data tailored to territories for the ecological transition

Numerous tools are available to devolved State administrations and local authorities to support the implementation of ecological transition policies. Offered by State services and their operators, it is not always easy for a territory to identify the most suitable tool for its approach. Moreover, the data used to monitor the implementation of public policies are not always adapted to the needs of territories, and are not systematically comparable from one territory to another. This limits the replicability of the most successful projects and hampers consolidation at the national level.

To address this proliferation of tools, a single access point will provide users with a customised list of tools, adapted to their role. A simplified version will be directly integrated into *MonEspaceCollectivités*. *MonEspaceCollectivités* will also provide access to the complete detailed version of the service. Among these tools are *Plus Fraîche Ma Ville*, *Territoires en Transitions*, *Démarches Simplifiées*, regional data platforms, the *Boussole de la Transition Écologique*, *TerriSTORY*, *Aides Territoires*, *Urban Vitaliz*, etc. A strategy for coherence will need to be defined in order to maximise impact (ensuring interoperability, phasing out, launching or accelerating tools). Local stakeholders will be consulted to feed the platform with territorialised energy and climate indicators.

20.1 – Deploy MonEspaceCollectivités

- **Leads:** SGPE, **ANCT**, DG Métier, ADEME, Cerema, IGN, OFB, local authorities

	• **Timeline:** first version in Q4 2023. Version 2 in H1 2025, followed by gradual rollout of the project across each department
20.2 – **Centralise the reference territorial indicators for the ecological transition on ecologie.data.gouv.fr to support tools for territories (e.g. *Territoires en Transitions*, MEC)**	• **Leads: CGDD**, ANCT, DG Métier, ADEME, Cerema, IGN, OFB, territories • **Timeline:** first indicators in 2026
20.3 – **Publish a coherence strategy for the tools made available to territories in order to rationalise costs and increase the visibility and impact of tools that are maintained**	• **Leads: SGPE**, ANCT, **DINUM**, DG Métier, ADEME, Cerema, IGN, OFB, water agencies, local authorities • **Timeline:** Q3 2024
20.4 – **Recommend the right tool, at the right time, to the right person via *MonEspaceCollectivités***	• **Leads: SGPE**, **DINUM**, ANCT, Cerema • **Timeline:** first version in Q1 2025

G Provide digital tools to support citizens in the ecological transition

The environmental transition is now on everyone's mind, but for most citizens, studies highlight three main "pain points":

- The complexity of the subject: Where to start? What is relevant to me? What should I do? Most websites provide general information that is difficult to connect with one's own daily life.
- The difficulty of identifying reliable sources of information: On the vast majority of topics, contradictory information can be found, often underpinned by unclear technical details.
- A feeling of mistrust: Linked to the general tone of debates and to the injunctions to change coming from political Leads.

Public digital services have multiplied over the years with varying degrees of success. Several websites already exist or are under development: agirpourlatransition.ademe.fr, ademe.fr, mtaterre.fr, notre-environnement.gouv.fr, ecologie.gouv.fr, nosgestesclimat.fr, impactco2.fr, as well as websites focusing on specific topics (such as mieuxrespirerenville.gouv.fr) and numerous local initiatives.

While this proliferation has many advantages, the offer needs to be made more accessible to make life easier for citizens.

21. *J'agis*, the ecological transition coach for households

Provide personalised support to households in the ecological transition

Drawing on multiple sources of information from administrative or declarative databases (uses and attitudes, in particular from surveys such as *Nos Gestes Climat*), the digital service *J'agis*[7] is intended to provide long-term guidance to citizens on the actions to be implemented according to their means, situation and preferences: daily actions, financial support, educational resources, surrounding infrastructure, and best practices shared by peers.

The tool is designed to be exemplary in terms of transparency for citizens, providing the strongest possible guarantees of security regarding the sources, use, maintenance and protection of personal data, in connection with action 1 on ethics in the action framework.

Existing digital services for citizens will need to be aligned (made interoperable, phased out, launched, accelerated, etc.) and highlighted where relevant through *J'agis*.

21.1 – **Deploy *J'agis*, the ecological transition coach for households**	• **Leads: SGPE**, DINUM, ADEME • **Timeline:** Initial local trials in Q4 2023, beta in Q3 2024, official rollout in H1 2025
21.2 – **Publish a strategy to align the range of citizen-facing services and content in order to rationalise costs, increase visibility and impact, and highlight them through *J'agis***	• **Leads: SGPE**, DINUM, DNUM MTE-CT, **ADEME** • **Timeline:** H2 2025

H Develop observatories to enable clear monitoring and evaluation of the France Nation Verte plan

The proliferation of objectives and national plans contributing to the ecological transition (cross-cutting or sectoral strategies, roadmaps, multiannual programmes, etc.) makes it difficult to clearly monitor and evaluate the impact of the actions undertaken. The publication of the *France Nation Verte* plan in mid-2023 made it possible to set overall objectives that incorporate the entire national and supranational legal framework and the actions to be carried out across the territory. It was accompanied by a dashboard defining initial monitoring indicators and by an inventory of existing observatories.

22. Observatories of the Ecological Transition

Establish a public meta-observatory to monitor and evaluate the France Nation Verte plan, and align the existing specialised public observatories

[7] Available at the following link: https://jagis.beta.gouv.fr/

An initial version of the dashboard, developed by the Ecolab of the CGDD, accompanied the publication of the plan and has since been expanded. It will link to more specialised observatories, which must be aligned and rationalised by taking account of their scope (decarbonisation, resources, water, biodiversity, etc.) and the monitoring requirements of public policies.

22.1 – **Enrich the ecological planning dashboard ("meta-observatory") with coherent indicators articulated with existing indicators at the national level (SNBC, SNB, etc.) and those being defined at territorial level**

- **Leads:** **SGPE**, **CGDD**, FIEEC, and all relevant professional stakeholders
- **Timeline:** 2024-2025

22.2 – **Define a strategy to align the existing specialised public observatories at national level and highlight them through the dashboard**

- **Leads:** **SGPE**, **CGDD**, FIEEC, and all relevant professional stakeholders
- **Timeline:** 2025

Illustration based on two use cases

Work on the two following use cases is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different "building blocks" of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the "use case vision."
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Provide tools to citizens

For most citizens, the environmental transition encounters three major obstacles:

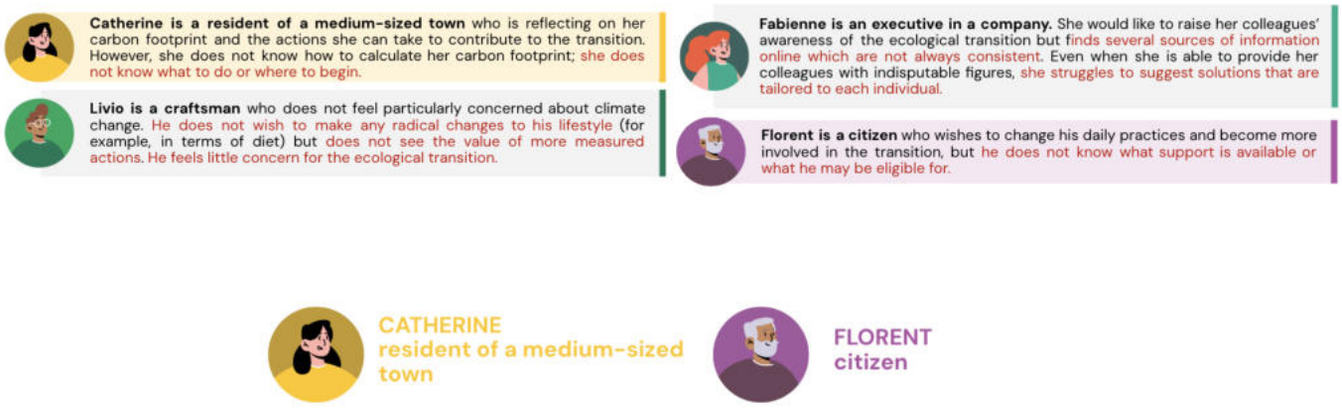
- The complexity of the subject: Where to begin? What concerns me? What should I do? Most websites provide general information that is difficult to connect to daily life.
- The difficulty of identifying reliable sources of information: On a vast majority of topics, contradictory information can be found, often underpinned by unclear technical details.
- A feeling of mistrust: Linked to the overall tone of debates and the injunctions to change coming from political Leads.

Numerous tools and information websites exist, but they generally provide broad information that is often difficult to relate to one's daily life. The challenge is therefore to support households clearly and simply in reducing their environmental footprint.

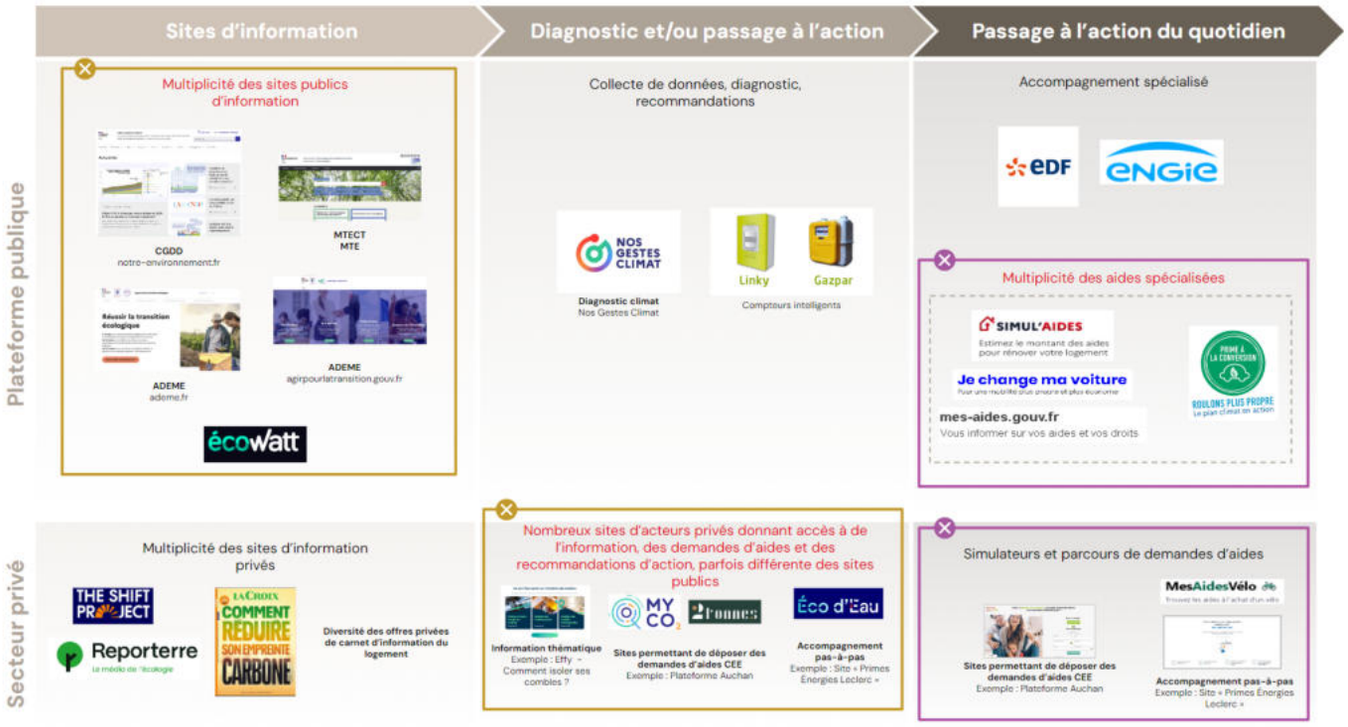
Through these tools, the objective is to increase the number of tonnes of CO2eq avoided and to measure an increase in the use of public support schemes linked to the transition. The relevant indicators include, in particular, the number of logins recorded on these online tools, the number of installations of external connectors such as smart meters, and the number of households proactively contacted.

Given that 25% of the objectives of ecological planning rely on changes in individual lifestyles, equipping citizens is essential if France is to meet its commitments on the ecological transition.

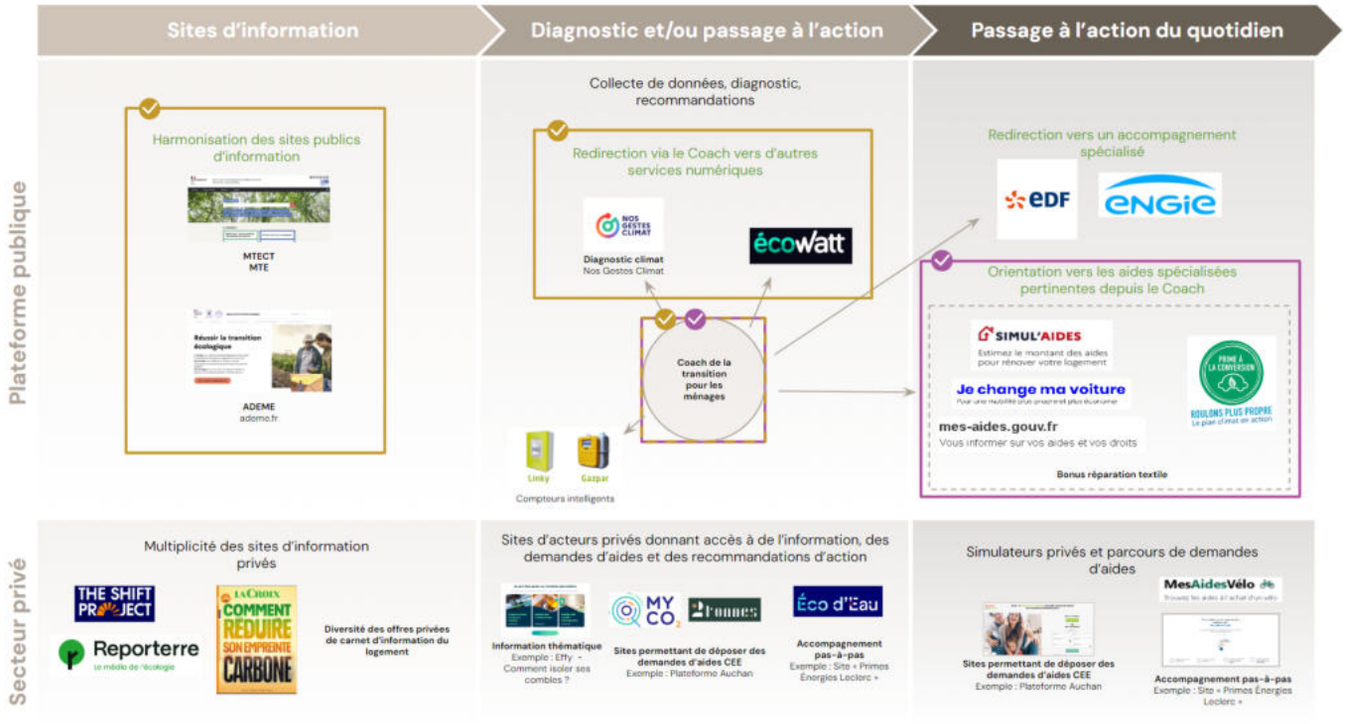
Personae – Current situation



Current situation



Target situation



Personae – Target situation

Catherine is a resident of a medium-sized town who is reflecting on her carbon footprint and the actions she can take to contribute to the transition. Thanks to *J'agis*, she knows her carbon footprint and the measures within her reach to reduce it.

Livio is a craftsman who does not feel particularly concerned about climate change. Thanks to the support provided by ***J'agis***, he understands which simple and practical actions he can take to contribute to the transition, and he can participate in the ecological transition at his own level.

Fabienne is an executive in a company. She would like to raise her colleagues' awareness of the ecological transition. Thanks to ***J'agis***, she can present them with an effective way of understanding their personal situation and obtaining solutions tailored to each individual.

Florent is a citizen who wishes to change his daily practices and become more involved in the transition. He can use ***J'agis*** to benefit from personalised guidance that directs him towards the support measures relevant to his situation.

Summary table

PHASE	IDENTIFIED ISSUES	ACTIONS IN TARGET VISION
	A lot of noise with public websites that are both very general and very similar (notre-environnement, agirpourlatransition, ADEME, MTECT)	Merge redundant websites and reallocate resources
	Static, non-customisable content	Offer personalised support via the engagement platform
	an overly long and disorganised list effect	
	Budget/HR dilution	- Merge redundant sites and reallocate resources - Manage based on traffic and engagement rather than content
	Inability to measure impact	- Merge redundant sites and reallocate resources - Manage based on traffic and engagement rather than content
	Information that is intended to be normative but is contradictory depending on the tools used	Coordinate one or more working groups to validate an official methodology for calculating individual carbon footprints (initiated by the ABC)
	Caricatural recommendations for action because they are not personalised (e.g. becoming vegan)	Propose personalised recommendations for action to enable citizens to take ownership of them (this is the central purpose of the engagement platform)
	High investment (10 to 30 minutes) for a fairly technical assessment that is only valid at a *given* moment *in time*, with no follow-up or grading of action	Propose solutions that allow people to estimate their carbon footprint quickly and easily (also possible via the platform)
	Difficulty in reaching beyond the circle of insiders	Pool communication efforts on a smaller number of objects with clearly defined contours (targets, objectives)
	Data from smart meters remains difficult to access	Simplify/roll out access to data from smart meters
	An offer focused primarily on energy, with two different meters if gas is used	Offer a package deal for access to energy (electricity + gas) and water consumption
	Plethoric portals and aid simulators with often technical information requests (RFR, QF, insulation, etc.)	Offer assistance based on a diagnosis and not just in the form of a catalogue or simulator (integrated into the commitment platform)
	Low awareness of assistance available to citizens, who often rely on the distributors of the service concerned	

Provide tools to local authorities

The territorial roll-out of ecological planning is a necessary condition for its effective implementation. This also applies to the digital aspects of planning: it is essential, if only to ensure proper data reporting—that there is strong coordination between the national and territorial levels, and that digital planning is also carried out effectively at local scale.

However, access to information at the territorial level remains highly complex. Numerous redundancies exist in the reporting of information, and data are provided in very different formats. These varied needs and projects require the mobilisation of significant numbers of digital services staff (who are not always clearly identified) all managed by local authorities through dozens of separate user accounts linked to different authentication systems. All of this makes it difficult for territories to use the digital services available to them efficiently.

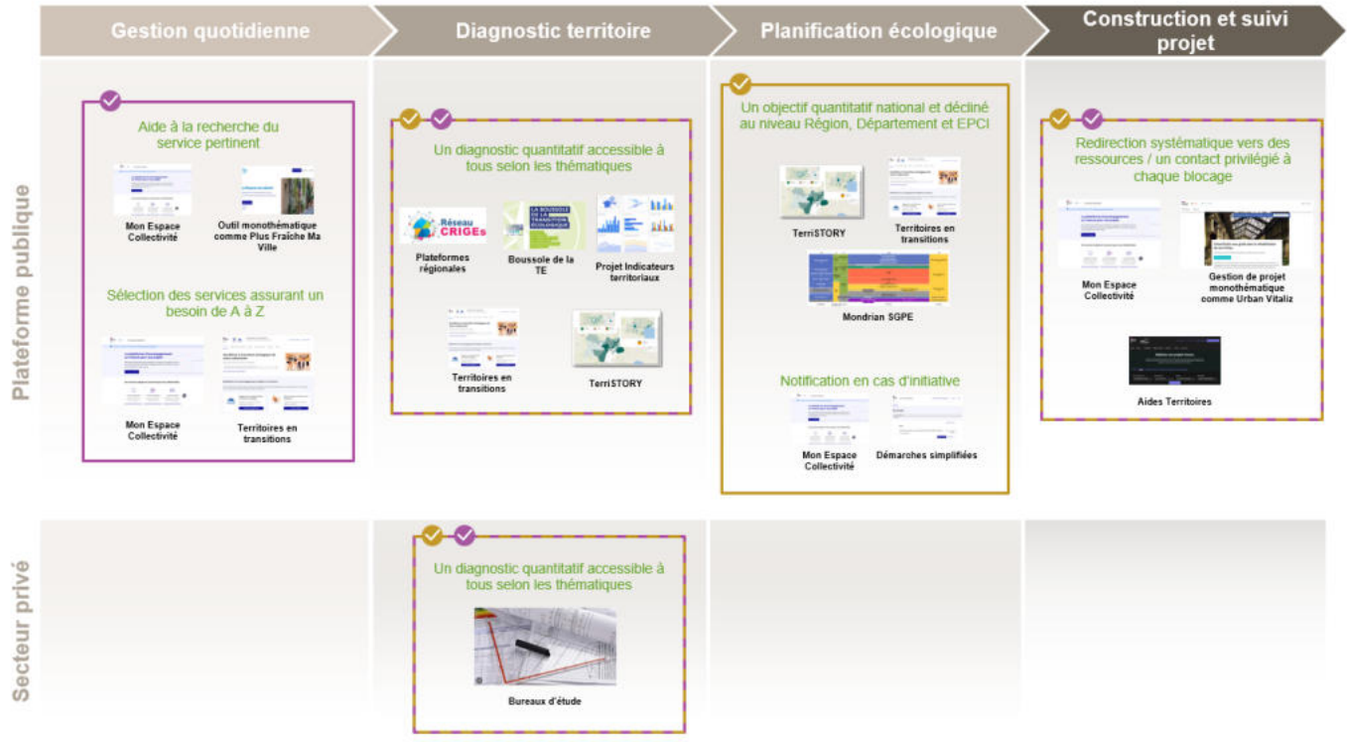
In this use case, the aim is therefore to support territories in achieving their ecological transition by helping them reduce administrative burden and improve their knowledge of local conditions in order to maximise the impact of projects.

As in the previous use case, the objective is to support territorial carbon trajectories and to measure a reduction in their emissions in tonnes of CO2 equivalent. Success will therefore be assessed by monitoring the number of logins to the tools provided, as well as the number of municipalities proactively contacted to benefit from public support schemes.

Personae – Current situation

Current situation

Medium-term situation and target vision



Personae – Target vision

Nadège works in a sub-prefecture or a Departmental Directorate of Territories (DDT). She advises elected officials and local authority staff in the development of their projects. She is notified of Thomas's intention to carry out a diagnostic assessment so that she can contact him and assist with the subsequent stages of his project, in particular with regard to his qualitative assessment. She organises project reviews in the area, during which elected representatives can present their projects through their initial reflections on possible improvements. All actions are recorded in a CRM system in order to take a proactive approach with each municipality via Mon Espace Collectivité.

Stéphane is a local authority officer who is looking for examples of projects and departmental, regional, national and private services to support the development of his project. The directory of services on Mon Espace Collectivité suggests to him the tool designed to facilitate his daily work. He logs in only once to access all the services provided in SaaS form via Mon Espace Collectivité or on the target service using the same credentials.

Thomas is a mayor who wishes to carry out a diagnostic assessment of his area, as this is a prerequisite for securing funding for his project. He can use the quantitative and qualitative assessments available without calling on a third party. He consults ecological planning objectives and measures the impact of his projects. He improves them by drawing on resources and inspiring actions to further develop his project. He has access to tools for quantifying the impact of his projects, in simplified form on Mon Espace Collectivité and in detailed form on Projet Indicateurs Territoriaux, Regional Platforms, TerriSTORY, Efficacity and Territoires en Transitions.

Isabelle is a Prefect. She guides local elected representatives on the regulatory framework and implements the Government's instructions, but she lacks visibility on the projects supported through national Calls for Expressions of Interest (AMI) or Calls for Projects (AAP). She uses a common framework of reference to view the commitments by area to date, with targets broken down by municipality and by theme, as well as an end-of-year projection by department and region, via Mon Espace Collectivité and Projet Indicateurs Territoriaux. She co-develops projects with elected representatives, and together they achieve their environmental objectives within the framework of the CRTEs available in Mon Espace Collectivité.

Pierre-Louis is the ecological transition officer within a major inter-municipal authority, a State service, or a public or private body. He is present in areas with more than 15,000 inhabitants. He is invited to participate in relevant projects in Mon Espace Collectivité and, in turn, invites other officers into Mon Espace Collectivité depending on the expertise required by theme (consultancy firms). He has access to a complete and user-friendly toolbox that facilitates the preparation of assessments and strategies for his area via the Regional Platforms, the Ecological Transition Compass, Projet Indicateurs Territoriaux, TerriSTORY, Efficacity and Territoires en Transitions.

Summary table

PHASE	IDENTIFIED ISSUES	MEDIUM-TERM ACTIONS	ACTIONS IN THE TARGET VISION
	Difficult to identify existing digital services and know which one to use for each area of public policy	- A directory of services - Help finding the relevant service - Free access to projects and their progress for use by third parties (departmental, regional, national or private) via Mon Espace Collectivité and single-theme tools such as Plus Fraîche Ma Ville	
	Duplicate features between services. Several authentication systems coexist and dozens of accounts to manage	- Selection of services covering a need from A to Z - Recommendation system via Mon Espace Collectivité and development of a tool rationalisation plan	- Single authentication system between each service with Mon Espace Collectivité as the entry point and other services always accessible online - Implementation of the tool rationalisation plan
	Too many different platforms and no consolidated vision	- A directory of services - Help finding the relevant service - Free access to projects and their progress for use by third parties (departmental, regional, national or private) via Mon Espace Collectivité and single-topic tools such as Plus Fraîche Ma Ville	
	No access to multiple platforms	- Selection of services covering all needs from A to Z - Recommendation system via Mon Espace Collectivité and development of a plan to streamline tools	- Single sign-on system between each service with Mon Espace Collectivité as the gateway or other services always accessible online - Implementation of the tool rationalisation plan
	Lack of skills and lack of time.		
	Lack of financial resources. Is it cost-effective for my local authority to incur these expenses?		
	Lack of methodologies and shared sources of data essential to the ecological transition	- A qualitative self-assessment (The Ecological Transition Compass) - A quantitative assessment accessible to all (TerriSTORY + Regional Platforms + Territorial Indicator Project) available online or in a simplified version via Mon Espace Collectivité or in full via Territories in Transition	Impact simulator available in a simplified version via Mon Espace Collectivité or in a full version via Territoires en Transitions, Projets Indicateurs Territoriaux, TerriSTORY, and regional platforms
	Support complicated due to lack of awareness of local intentions	Notification in the event of a diagnostic initiative (Mon Espace Collectivité and Simplified Procedures)	Impact simulator available in simplified form via Mon Espace Collectivité or in full form via Territoires en Transitions, Projets Indicateurs Territoriaux, TerriSTORY, and regional platforms
	Difficulty in obtaining a suitable territorial assessment for exchanges between the local authority and local communities	- A qualitative self-assessment (La Boussole de la Transition Écologique) - A quantitative assessment accessible to all (TerriSTORY + Regional Platforms + Territorial Indicator Projects) available online or in a simplified version via Mon Espace Collectivité or in a full version via Territories in Transition	Impact simulator available in a simplified version via Mon Espace Collectivité or in a full version via Territories in Transition, Territorial Indicator Projects, Terristory, and Regional Platforms
	No overall vision to verify the consistency of actions to achieve ecological transition objectives	A quantitative national SGPE objective broken down at the regional, departmental and EPCI levels (Territorial Indicator Project accessible online or in simplified form via Mon Espace Collectivité or in full via Territoires en Transitions)	Data visualisation of objectives versus impacts by theme, territory and project in a simplified version via Mon Espace Collectivité or in a full version via Territorial Indicator Projects, Territories in Transition and TerriSTORY
	No traceability	A quantitative national SGPE target broken down by region, department and EPCI (Projet indicateurs territoriaux available online or in a simplified version via Mon Espace Collectivité or in a full version via Territoires en Transitions)	Data visualisation of objectives versus impacts by theme, territory and project in a simplified version via Mon Espace Collectivité or in a full version via Territorial Indicator Projects, Territories in Transition and TerriSTORY
	Cumbersome process and proliferation of files	- Enhanced upstream support - Project initiatives at the top and bottom of the chain - Systematic redirection to resources or a dedicated contact for each blockage via Mon Espace Collectivité for general support, followed by redirection to experts via single-theme tools such as Urban Vitaliz and funding experts via Aides Territoires	A CRM system that unifies the relationship between all stakeholders and facilitates the triggering of actions according to each step forward via Mon Espace Collectivité
	No dialogue with the State	- Enhanced upstream support - Project initiatives at the top and bottom of the chain - Systematic redirection to resources or a dedicated contact whenever there is a blockage via Mon Espace Collectivité for general support, followed by referrals to experts via single-issue tools such as Urban Vitaliz and funding experts via Aides Territoires	A CRM that unifies the relationship between all stakeholders and facilitates the triggering of actions according to each step forward via Mon Espace Collectivité
	Consultations too late: potential impact wasted with truncated project monitoring and incomplete budget monitoring		A CRM that unifies the relationship between all stakeholders and facilitates the triggering of actions according to each step forward via Mon Espace Collectivité

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

- French Regions
- French Departments
- Interconnected
- Intercommunalities of France
- Association of Mayors of France
- Association of Rural Mayors of France
- AFIGEO / CRIGEs
- RARE / OREC
- FNCCR
- DECLIC
- Internet Cities
- Urban France
- Cyber Campus

Deployment table

STAKEHOLDERS	ACTIONS TO BE TAKEN
SGPE	Inform and mobilise citizens
	Reduce the environmental impact of digital technology
	Fight digital divides and ensure trust in digital technology
	Develop observatories to monitor France Nation Verte
	Manage the Digital and Data Action Framework
DINUM	Ensure rigorous data governance
	Roll out public digital identities
MTECT-DNUM	Co-manage the repository on cross-cutting issues
	Guarantee the security and resilience of public digital tools
MTE-CT: Decentralised services (DREALs, DDT)	With the national knowledge centres located within the DREALs, coordinate, design and produce dashboards to inform public services about the use of newly accessible data
CGDD	Continue to open up and share data between administrations
	Deploy Ecosphere(s)
	Support companies in the greentech ecosystem
	Support the deployment of AI for the ecological transition
	Provide indicators to local authorities
	Co-manage the reference framework on cross-cutting issues
DGCCRF	Contribute to *J'agis*, the ecological transition coach for households (consumer information)
ANCT	Support local authorities in taking ecological transition issues into account
	Make CGDD regional indicators available to the various stakeholders in a simple and educational format. One objective and one status update per theme France Nation Verte
	Bring together local authorities and the State in a single location to accelerate projects and multiply their impact on the region
	Recommend the right support (engineering, financing or expert services for the project theme) at the right time and to the right person, in collaboration with all stakeholders in the working group and the region
CNIG	Establish a design method and a common model of standards
	Bring all standards together on the DINUM schema.data.gouv platform
IGN	Deploy the Geoplatform
	Work on the interoperability of the Geoplatform with platforms identified as FNV core software components
	Launch cartes.gouv.fr, the public service for maps and data on the territory
	Deploy France's digital twin
Cerema	Support the creation of shared public/private data spaces in the regions, coordinate a group of public/private stakeholders to create interoperability between these data spaces and with the national platforms identified in FNV
	Test this interoperability with a dedicated "sandbox", as well as the implementation of data standards and the creation of shared models (on schema.data.gouv.fr)
ADEME	Develop and disseminate a reference guide to financial aid for the ecological transition and the associated eligibility conditions
	Monitor the progress of actions and the performance of local authorities by accelerating Territoires en Transitions in conjunction with MonEspaceCollectivités and the set of territorial indicators
Local authorities	Implement ecological transition projects
Territorial actors	As part of the work entrusted to OREC, ensure regular updates of spatial and temporal data on emissions, energy consumption and renewable energy production at regional and sub-regional levels in accordance with defined benchmarks
Private actors - local authority service providers	Conduct studies

	Support local authorities
	Produce regional data

MOBILITY & TRANSPORTION

Why?

The mobility sector is a major source of emissions and has struggled to reduce its CO_2 output. Alongside the decarbonisation of infrastructure and vehicles, changing travel habits is a key component of the ecological transition. Digital tools make it possible for individuals to measure the impact of their journeys across all modes of transport and for all user groups (citizens and businesses). They can also be used collectively to assess the medium- and long-term impacts of investment and service planning decisions. In addition, they enable the development of new shared mobility services.

In everyday life, digital services already make travel easier. They must also be harnessed to support the ecological transition in mobility. Alternatives to private car use can be facilitated through comprehensive, real-time information and simplified purchase of door-to-door intermodal transport tickets. Employee mobility can also be optimised by giving workers clearer comparisons of available commuting and business travel options, as well as better information about the financial support schemes available to them.

For research services and decision-makers, digital tools for mobility observation, planning and modelling must equally support sound decision-making towards decarbonised trajectories in each territory. For example, traffic and travel data collection systems can be pooled and made available to public actors through shared access to higher-quality, regularly updated datasets. Indicators, dashboards and modelling tools can be developed as digital commons, complementing private solutions. Similarly, maps can be produced to clearly show the multimodal accessibility of populations to public services and employment.

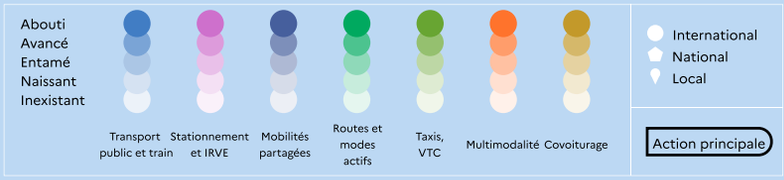
In terms of both investment and operations, most public resources and action in mobility are led by local authorities. However, the national level remains essential to provide reference datasets covering the entire territory, to pool foundational services that would otherwise be duplicated locally, and to give less advanced regions access to shared expertise. The key challenge is to ensure that the State and local authorities work together to build coherent and efficient digital infrastructures and public services for users, businesses and administrations alike.

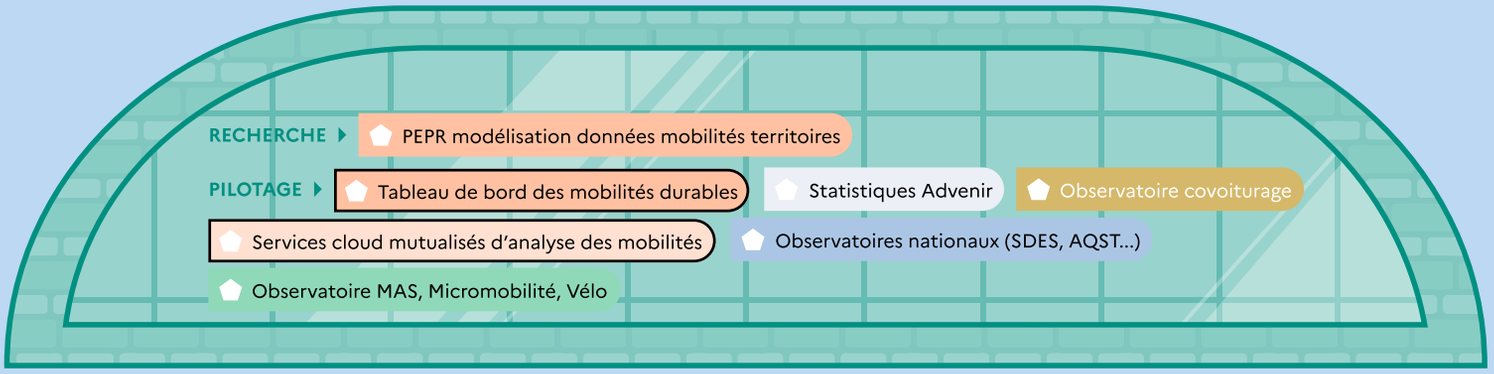
Accordingly, the *"Smarter Mobility"* strand of the Digital for Ecology programme is structured around three pillars: providing a common foundation (national standards and reference frameworks) for digital mobility services; pooling services and applications to simplify the user journey; and federating mobility analysis and planning to improve modelling and decision-making.

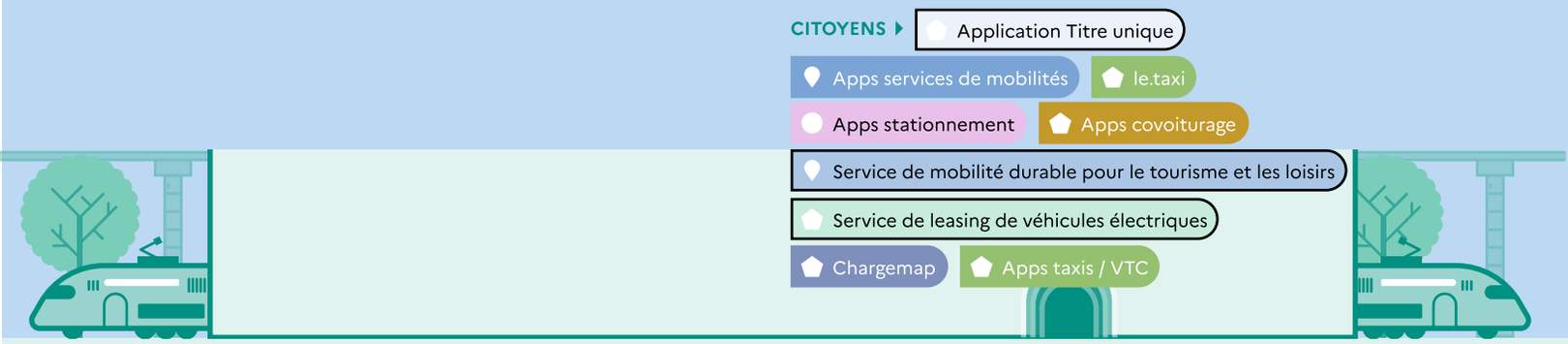
Freight transport and logistics are addressed separately under the *"Smarter Production"* theme. These actions do not, with limited exceptions, cover air and maritime transport, which may require further updates at a later stage.

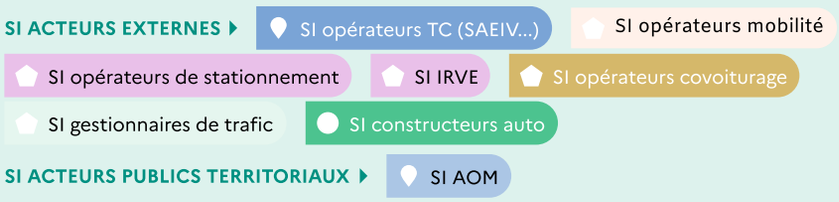
Finally, the current framework is focused on mobility, that is to say the decarbonisation of mobility practices. In 2024, a dedicated action will also address the decarbonisation of infrastructure, and an additional strand may later be developed concerning the decarbonisation of transport service operations and network management.

MOBILITY & TRANSPORTATION









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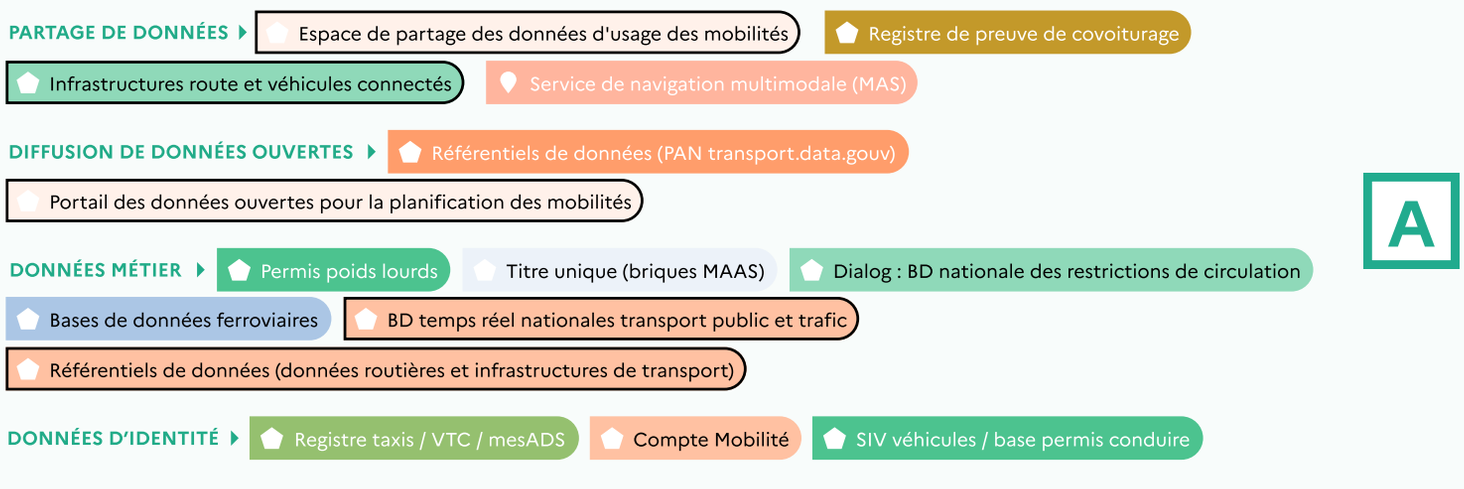

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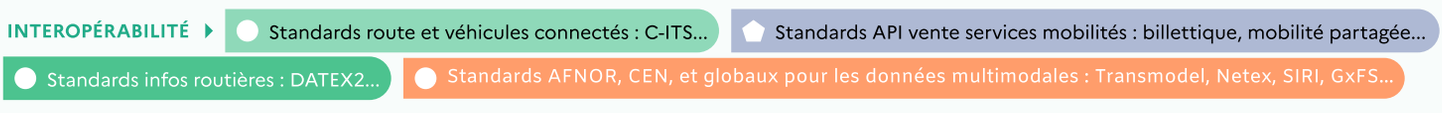


What?

Each of the priority building blocks outlined in black under the “Better mobility” theme below is the subject of a numbered “action”, detailed thereafter. These actions are structured into “orientations”, identified by letters, which correspond to the layers of the building. The orientations are arranged from bottom to top because, while all actions must be carried out in parallel to enable a product-based approach and to meet the urgency of the ecological challenge, they all rest on the foundations of the building, which must therefore be strengthened as a priority.

The structuring of each action is intended to be both educational and pragmatic: first the operational challenges are explained, followed by the current situation and associated difficulties, and then the sub-actions to be undertaken, with their designated leads and timelines. The leads are ranked from central administrations, to operators, and finally to local authorities; the main lead is indicated in bold. These actions and their timelines have been reviewed to incorporate the contributions of the public consultation, whether submitted in writing or during the hundreds of interviews conducted. They may subsequently evolve in an agile manner. These updates will be presented in summer 2025, and then annually.

A Provide core infrastructure to accelerate the deployment of green digital mobility serviceElectric Vehicle Charging Infrastructure

1 – Référentiels de données (données routières et infrastructures de transport)

Complete nationwide datasets on public transport and road networks essential for green mobility

The transition towards more sustainable mobility requires the creation of national data repositories that allow the collection and centralisation of transport and road network information. It is also necessary to define structured data models, building on existing standards to ensure maximum interoperability between different stakeholders.

These needs include, in particular, public transport stop data, which are essential for route calculation, real-time timetable information, fare calculation or passenger flow monitoring. Road network and parking data are equally crucial for greening road mobility. This covers shared mobility services but also, at a more detailed scale, pavements, accessibility, on-street parking, cycling infrastructure, and walkability. A consolidated reference database would provide reliable access to the key information needed for this transition.

The National Access Point transport.data.gouv.fr (PAN) already provides consolidated datasets such as carpooling areas or electric vehicle charging infrastructure. A national road database also exists, maintained by the IGN (Base Routière Nationale). The next step is to build on this foundation and adapt the reference datasets to emerging needs. To this end, IGN has initiated consultations with national and local network operators to define the transport layer of the "BD France" base.

Actions 8.1 and 8.2 are a continuation of this work, with a view to promoting the sharing of data useful for mobility planning.

1.1 – Consolidate and secure the national reference dataset of public transport stops initiated at the PAN

- **Leads: DGITM**, AOM, operators, CNIG
- **Timeline:** 2025-2026

1.2 – Create a navigable road reference dataset and a national parking database

- **Leads: DGITM**, **IGN** (road database), ANSC, local authorities, CNIG
- **Timeline:** H1 2026

2 – BD temps réel nationales transport public et trafic

Complete and federate real-time public transport and road information essential for public and private digital mobility services

Since its creation, the National Access Point (PAN) has significantly advanced data availability. However, many datasets remain incomplete. In particular, real-time information on public transport greatly improves service quality for users. It is therefore a priority to complete and qualify this information nationwide (currently, just under 200 networks provide real-time data on the PAN, out of roughly 450). Achieving full coverage may require upgrading older operational support systems and could take several years.

Beyond the PAN, other aspects of mobility information also require strengthening. Contrary to common belief, improving road information does not necessarily conflict with ecological planning. When properly used, it is also a tool for mobility management. For example, providing accurate information to transporters and delivery companies on traffic restrictions or delivery areas helps avoid accidents with potential damage to infrastructure, as well as illegal parking and nuisances for residents. It also facilitates modal shifts toward river and rail freight as part of an integrated decarbonisation strategy.

A priority is therefore to build a national database of traffic orders and delivery areas from all road authorities, published and exploitable by routing software so that delivery operators have clear information on authorised routes (delivery hours, vehicle dimensions, and weight limits), building on the DiaLog project[8]. This platform already enables municipalities to digitise traffic orders for dissemination through routing applications. The next step is to generalise these data flows to traffic services such as Bison Futé[9] and Avatar[10], for example. In the future, DiaLog could also integrate real-time roadwork data for simplified dissemination.

It is also essential to federate all traffic and parking data, which is costly for infrastructure managers to produce and often underused, so they can be made accessible and stored over time. These datasets are at least as valuable to users as they are for evaluating the effectiveness of traffic management measures. Services such as Bison Futé already integrate extensive road traffic data, but their accessibility must be improved. Moreover, more frequent updates of average annual daily traffic (AADT) would, for example, enable better anticipation of demand and improved planning for new electric vehicle charging points.

2.1 - Complete 100% of real-time information for public transport	• **Leads: DGITM**, AOM, operators • **Timeline:** 2024 - 2026
2.2. - Based on the existing register on the DiaLog platform, supplement and improve the reliability of national data on traffic restrictions	• **Leads: DGITM**, road managers • **Timeline:** H2 2025
2.3 - Provide a comprehensive real-time database of road and parking information using	• **Leads: DGITM**, road managers, Cerema • **Timeline:** 2026 (for integration of local authority data)

[8] Available at the following link: https://dialog.beta.gouv.fr/
[9] Available at the following link: https://www.bison-fute.gouv.fr/
[10] Available at the following link: https://avatar.cerema.fr/

existing data

3 – Infrastructures route et véhicules connectés

Establish a data-sharing solution for road mobility and connected vehicles to leverage digital technologies as a tool for managing green mobility

Car travel accounts for over 80 percent of total kilometers travelled, and roads form the main infrastructure for active mobility and public transport. Real-time road information, especially that derived from connected vehicles, is therefore an essential tool for mobility management. Data exchanges also improve road safety, particularly for vulnerable users such as cyclists and pedestrians, as well as crisis management and intervention planning.

Real-time information on electric charging and charging stations is equally critical for route planning, electric vehicle adoption, and power grid optimization. It is essential that projects such as QualiCharge, the PAN and CarbuRe[11] are complementary and interoperable.

The regulatory framework on data provision and access establishes reciprocal access obligations among road information stakeholders: provision of information on regulations, network conditions, traffic, safety alerts, infrastructure disruptions, charging stations, delivery area availability, and traffic restriction zones. This framework will progressively drive the digitalisation of road regulations.

Currently derived from national road network management tools and Bison Futé, the national road information system must undergo significant changes to meet ecological planning needs: integration of non-state infrastructure managers, expansion of accessible data types, diversification of data sources, and the development of services such as secure data exchange, data qualification and discovery, and interoperability between datasets and services.

The action consists of establishing a secure road mobility data space, with a dedicated component for the real-time sharing of information from connected vehicles and V2I (Vehicle-to-Infrastructure) and V2V (Vehicle-to-Vehicle) exchanges. This space will enable interoperable and secure data exchange. It will also include a public data access point, in line with open data policies, covering secure and authenticated data flows between public and private stakeholders for the development of online services, aligned with European work on Data Spaces.

This platform will facilitate the implementation of road data access regulations, in particular enabling smoother access to private data, in line with action 13.1 of the cross-cutting theme. It could also lay the groundwork for expanding data-sharing to all connected objects, as foreseen under the Data Act and the Data Governance Act.

3.1 – Define obligations for making private data available under European and national regulations

- **Leads: DGITM,** road managers, embedded data holders and charging and toll operators.
- **Timeline:** H1 2025

[11] Available at the following link: https://carbure.beta.gouv.fr/

3.2 - Specify the functionalities of a first version of the data space

This version should focus on implementing the above legislative and regulatory framework, based on European Commission guidance (Data Space Support Centre), methodologies from major existing platforms, ongoing projects (International Data Spaces Association, Gaia-X, EONA-X in France), and international examples (such as the German Mobility Data Space).

- **Leads: DGITM,** road managers, embedded data holders and charging and toll operators.
- **Timeline:** Q3 2025

3.3 - Launch, in a form to be defined (call for projects, public procurement, etc.), the implementation services for the data space and its components

- **Leads: DGITM** and those subject to the regulations
- **Timeline:** launch in H1 2026

4- Outils numériques pour le report modal et le covoiturage

Develop digital tools and practices that promote modal shift and carpooling

Accelerating the transition to sustainable mobility requires promoting concrete alternatives to individual car use, such as shifting to public transport, cycling, walking, and carpooling. Car sharing also has an important role to play in this modal shift. Digital tools are central to this transition: they must provide seamless and reliable access to real-time information on transport offers (road traffic, public transport schedules and availability, shared mobility services, park-and-ride facilities, etc.). Such accessibility is essential to make these alternatives attractive and to encourage changes in travel behavior.

At the same time, the development of open and secure APIs to enable data sharing between public and private stakeholders will strengthen visibility, regulation, and user trust in carpooling, bike-sharing, and other green mobility services.

4.1 - Develop analytical tools using mobility attendance data to guide public policies toward an adapted offer of modal shift

- **Leads: DGITM**
- **Timeline:** H1 2026

4.2 - Strengthen the quality and coverage of data on bike-sharing (e.g., battery telemetry, maintenance). Promote simple open-source applications

- **Leads: DGITM**
- **Timeline:** H2 2025

4.3 - Improve the integration of carpooling offers within mobility applications by regulating the opening of APIs and their referencing

- **Leads: DGITM**
- **Timeline:** Q4 2025

on the PAN

4.4 - Improve the promotion of decarbonized modes by integrating awareness-raising messages into navigation applications and, where appropriate, by including information on available subsidies depending on the origin and/or destination of the trip

- **Leads: DGITM**
- **Timeline:** H2 2025

4.5 - Create an open API dedicated to verifying the validity of driver's licenses to secure carpooling and car-sharing trips and to prevent fraud on financial incentives where applicable

- **Leads: DGITM,** ANTS
- **Timeline:** Q4 2025

5 - Service de navigation multimodale (MAS)

Provide basic infrastructure to simplify the development of multimodal digital services

Work is already well advanced for APIs related to the sale of transport tickets and mobility services, aimed at streamlining digital purchasing within the framework of the *Titre Unique* project (action 6). More in-depth investigation is required for usage data, where data-sharing issues in particular remain to be addressed.

The *Mon Compte Mobilité* project, initially supported by the *CEE* and then transferred to the *Fabrique des Mobilités* in 2023, had two main objectives. The first was to provide users with an identity gateway, allowing them to easily log into different mobility services with a single account, thus facilitating authentication and the secure transfer of their personal data between services. The second was to provide a rights management tool for entities financing mobility, such as employers, local authorities, and the State. Building on this experience, it is essential to further develop digital tools aimed at simplifying administrative procedures related to mobility. For example, such tools could automate the reimbursement of transport expenses by employers, thus easing administrative burdens.

5.1 - Provide APIs for the sale of mobility services: public transport, parking, shared mobility (car-sharing, bikes, e-scooters in free-floating systems)

- **Leads: DGITM**, **AFNOR**, FNMS ITxPT, Fabmob
- **Timeline:** Q3 2024 - 2026

5.2 - Provide access to usage data of mobility services

- **Leads: DGITM**, AFNOR, Fabmob
- **Timeline:** consultation on use cases in Q4 2024, initial implementation in Q4 2025

5.3 – Building on the deliverables of the *Mon Compte Mobilité* project (available in open data/open source), encourage the deployment of digital tools simplifying access to mobility services and the management of subsidies

- **Leads: AOM**, transport operators, digital service providers, Fabmob, ADEME
- **Timeline:** H1 2026

B Deploy digital services useful to citizens

6 – Application Titre Unique

Facilitate travel across the entire territory through a national digital service that allows access to mobility services and the easy purchase of transport tickets throughout France

This is the goal of the *Titre Unique* project, which from 2025 will begin testing in certain territories a mobile application that enables users to access information and purchase transport tickets, with a view to gradually expanding the solution nationwide. In parallel with the pilot phase, the governance framework developed by the State together with the Mobility Organizing Authorities (*AOM*) must lead to the transfer of this project to a dedicated operational structure beyond 2025.

The project is based on a roadmap co-developed with the *AOM*, in particular with the Regions, published in July 2023 and updated regularly. It involves, on one hand, the establishment of a national support (mobile application) and, on the other, of a digital commons (national interoperability platform) allowing the pooling of the main building blocks of public MaaS services within a comprehensive scope, notably including information on fare and stop databases, prepaid and postpaid distribution, and a card or mobile application (see actions 1 and 5).

In addition, discussions on the development of solutions for better management of delays and breakdowns in transport networks would contribute to improving the user experience. The effectiveness of a single ticket for a multi-operator and/or multimodal journey is compromised in case of disruption on one segment of the trip. It is therefore necessary to develop digital and regulatory solutions to minimize this risk, such as automatic rebooking in the event of delays during the journey.

6.1 – Pilot and then deploy, through a dedicated operational structure, a *Titre Unique* service in France

- **Leads: DGITM, AOM**, operators
- **Timeline:** Q1 2025 - H1 2026

6.2 – In connection with the national road data reference

- **Leads: DGITM**, AOM
- **Timeline:** Q3 2025

system, include mobility fares in the *Titre Unique* service

6.3 – Develop tools and rules for managing disruptions on multi-operator journeys

- **Leads: EONA-X, AOM**, operators
- **Timeline:** H2 2025

7 – Service de mobilité durable pour le tourisme et les loisirs

Promote sustainable tourism and leisure mobility services through digital technology

Leisure and tourism are major and growing drivers of travel, and there is a clear appetite for sustainable mobility within the population. An ecosystem of public and private digital services is currently emerging, which requires the creation or provision of data, along with the development of associated foundational infrastructures. Data from Atout France[12] and ADN Tourisme[13] already cover part of the needs, as do statistics available at the sub-regional level (France Tourisme Observation[14] led by Atout France, DATAtourisme[15]), but these datasets remain largely incomplete.

The proposed action aims to strengthen cooperation between mobility and tourism actors to define and launch priority initiatives, such as improving the quality of *points of interest* data (cultural and sports sites, etc.), developing "last mile" mobility solutions for tourist routes in mountain or rural areas (walkability, cyclability, road accessibility, carpooling options from train stations), or integrating event-related information with associated mobility solutions. In this context, the precise transport data available nationwide through the *PAN* can support the study of tourist flows and inform public policies aimed at fostering low-carbon tourism.

7.1 – Work jointly on an action plan to accelerate the transition toward sustainable mobility for tourism and leisure activities

- **Leads: DGITM, DGE**, Atout France, Travel Tech
- **Timeline:** Q3 2024-2025 (pilot)

7.2 – Improve the completeness and quality of *points of interest* data in France to optimize sustainable transport options

- **Leads: DGITM, DGE**, Atout France, Travel Tech
- **Timeline:** H2 2025

7.3 – propose digital solutions to address the "last mile" challenge

- **Leads: DGITM, DGE**, Atout France, Travel Tech
- **Timeline:** H2 2025

[12] Available at the following link: https://www.atout-france.fr/
[13] Available at the following link: https://www.adn-tourisme.fr/
[14] Available at the following link: https://www.france-tourisme-observation.fr
[15] Available at the following link: https://www.datatourisme.fr/

C Coordinate mobility analysis and planning

8 - Portail des données ouvertes pour la planification des mobilités

Services cloud mutualisés d'analyse des mobilités

Facilitate access to mobility data to provide an infrastructure for route calculations, multimodal accessibility, travel and territorial modelling, easily accessible to study services

A *national mobility portal* will bring together both existing open data and *Origin-Destination (OD)* datasets from private sources, such as *FCD (Floating Car Data)*, *FMD (Floating Mobile Data)*, or *Orange Flux Vision*. It will provide a homogeneous, reliable, nationwide base, serving public mobility policies, territorial diagnostics, and innovation. Projects such as ADEME's Diagnostic Mobilité[16], show the value of pooling this data to better equip local authorities.

In parallel, shared tools and services for analysis will be developed or consolidated to address the lack of internal expertise in many local authorities. These will include modules for route calculation, isochrones, transport accessibility, OD flows, as well as more advanced modelling and simulation tools. These software building blocks will be designed to be usable by non-experts (including the general public), shareable across territories, and, whenever possible, developed in *open source*.

In line with the Cerema's online community project on mobility data[17], this action also aims to foster a national community on modelling, involving local authorities, companies, schools (*UGE, ENPC, ENTPE…*) and research laboratories, particularly in the framework of the *PEPR MOBIDEC* project launched at the end of 2023. Within it, the FORBAC project[18] seeks to advance mobility modelling tools in order to evaluate the impact of public policies on territories.

Deployment will be progressive, starting with pilot territories and an initial priority use case, before expanding tools and available data according to identified needs.

8.1 - Set up an open data portal for mobility planning

- **Leads: DGITM, Cerema, INRIA**
- **Timeline:** 2024 - 2026

8.2 - Share usage and individual data with the professional community

- **Leads: DGITM, Cerema, INRIA**
- **Timeline:** 2024-2027

8.3 - Pool cloud-based public services for route and isochrone calculations

- **Leads: DGITM, IFPEN, Cerema, INRIA**
- **Timeline:** starting in Q3 2024

[16] Available at the following link: https://diagnostic-mobilite.fr/
[17] Available at the following link: https://www.expertises-territoires.fr/jcms/pl1_424299/fr/donnees-de-mobilite
[18] Available at the following link: https://pepr-mobidec.fr/forbac-pc1

8.4 - Pool cloud-based public services for travel modelling

- **Leads: DGITM, IFPEN, Cerema, INRIA**
- **Timeline:** starting in Q3 2024

9 - Tableau de bord des mobilités durables

Present operational, simple, and communicable territorial indicators to compare regions and track over time the evolution of supply, usage, expenses, and revenues

These indicators, linked to the various levers of transport decarbonization (modal shift, greening of the vehicle fleet, shared mobility, and sobriety), are complementary to specific indicators developed for regional or local observatories. They will encourage the sharing of definitions and tools for producing indicators, as part of efforts to foster a national mobility data community. This approach will build on existing work, particularly the Sustainable Mobility Dashboard[19], which already provides a set of indicators at national and territorial levels. It can be further enhanced to cover all dimensions related to decarbonization objectives, notably through better access to the *Vehicle Registration System* (*Système d'Immatriculation des Véhicules* – SIV), enabling more precise monitoring of fleet evolution and the impact of public policies.

9.1 - Establish new indicators (data not available in *open data*, cross-referencing datasets…), harmonization between national and local data, and add new functionalities to the tool (local data entry, dashboard customization, etc.)

- **Leads: DGITM, DRIEAT**, **CGDD**, DREAL, DDT, Cerema, local authorities, in particular AOM, OREC, RARE
- **Timeline:** from Q1 2024 for the completion of a second version including these indicators

9.2 - Adapt the legislative framework to authorize access to the *Vehicle Registration System* (*Système d'Immatriculation des Véhicules* – SIV) internally within the State and local authorities

- **Leads: DGITM, ANTS,** CNIL
- **Timeline:** H2 2025

Illustration based on a use case

Work on the following use case is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.

[19] Available at the following link: https://mobilite-durable-tdb.din.developpement-durable.gouv.fr/accueil/

- The journey of two of these personae through different “building blocks” of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the “use case vision.”
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Analyze and plan mobility

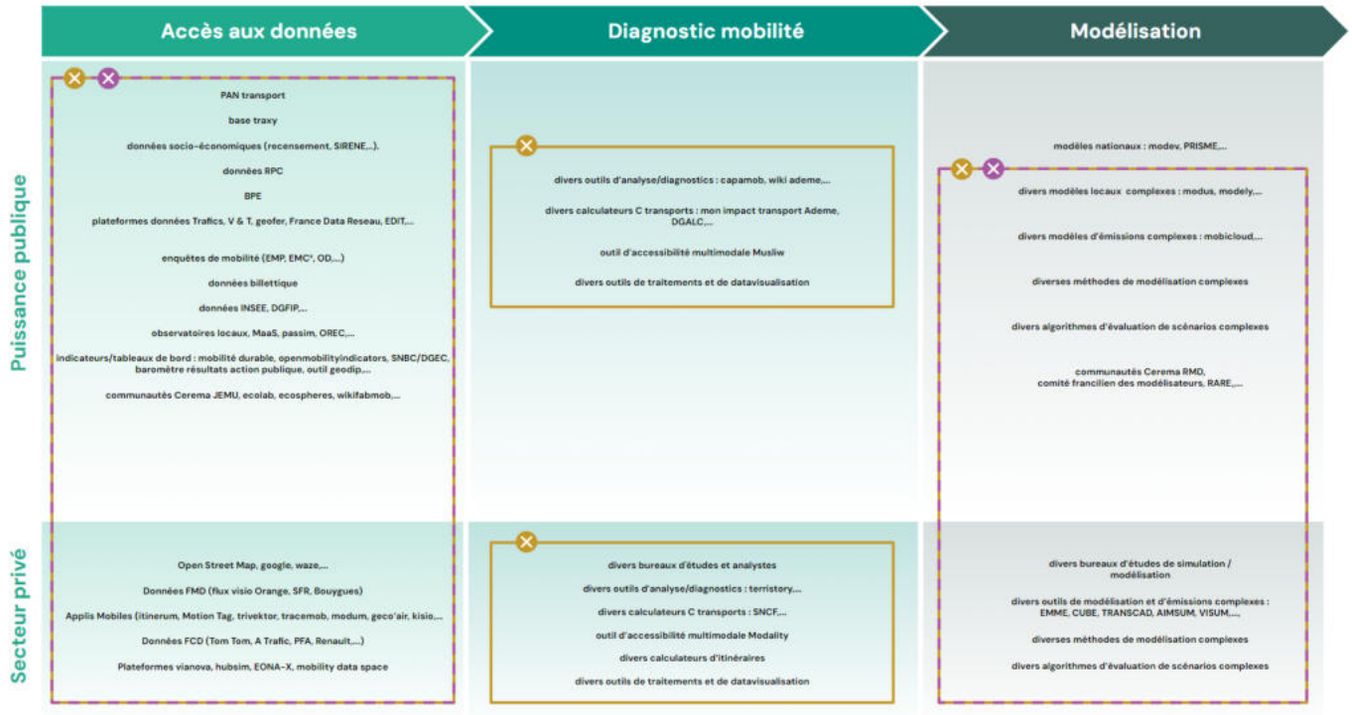
As local authorities and *Autorités Organisatrices de Mobilité* (*AOM*) design and implement mobility strategies that integrate decarbonization, digital tools must support this transformation by facilitating the analysis and planning of travel. This is a necessary condition for enabling individuals to prioritize greener modes of transport. Digital technology is required both for passive actions such as data visualization and for active actions such as the design of cycling lanes.

Currently, data come from various sources of uneven reliability, and simulation tools are either lacking or insufficient when faced with the most complex questions of mobility planning.

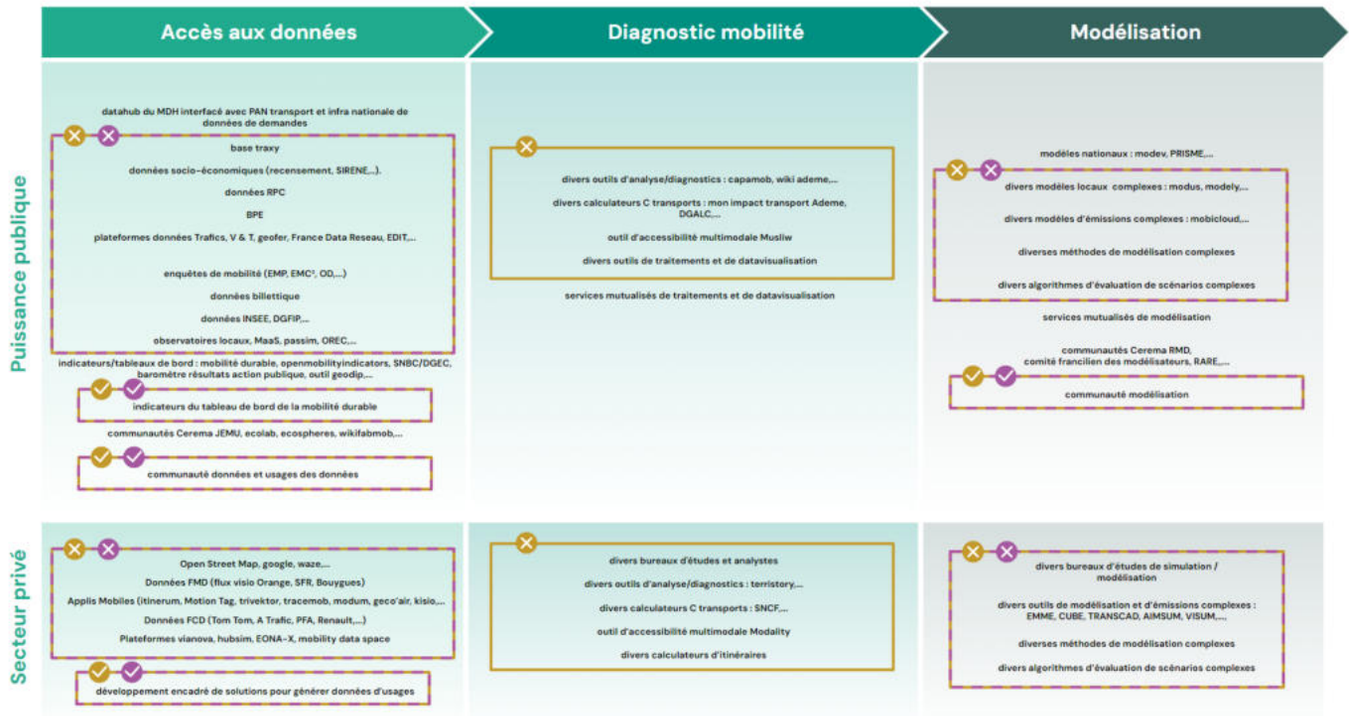
Several indicators will be used to guide the project, including the number of observatories, the amount of data available, the number of standards, the number of processing and data visualization tools, the usage rate of these tools, and user satisfaction.

Personae – Current situation

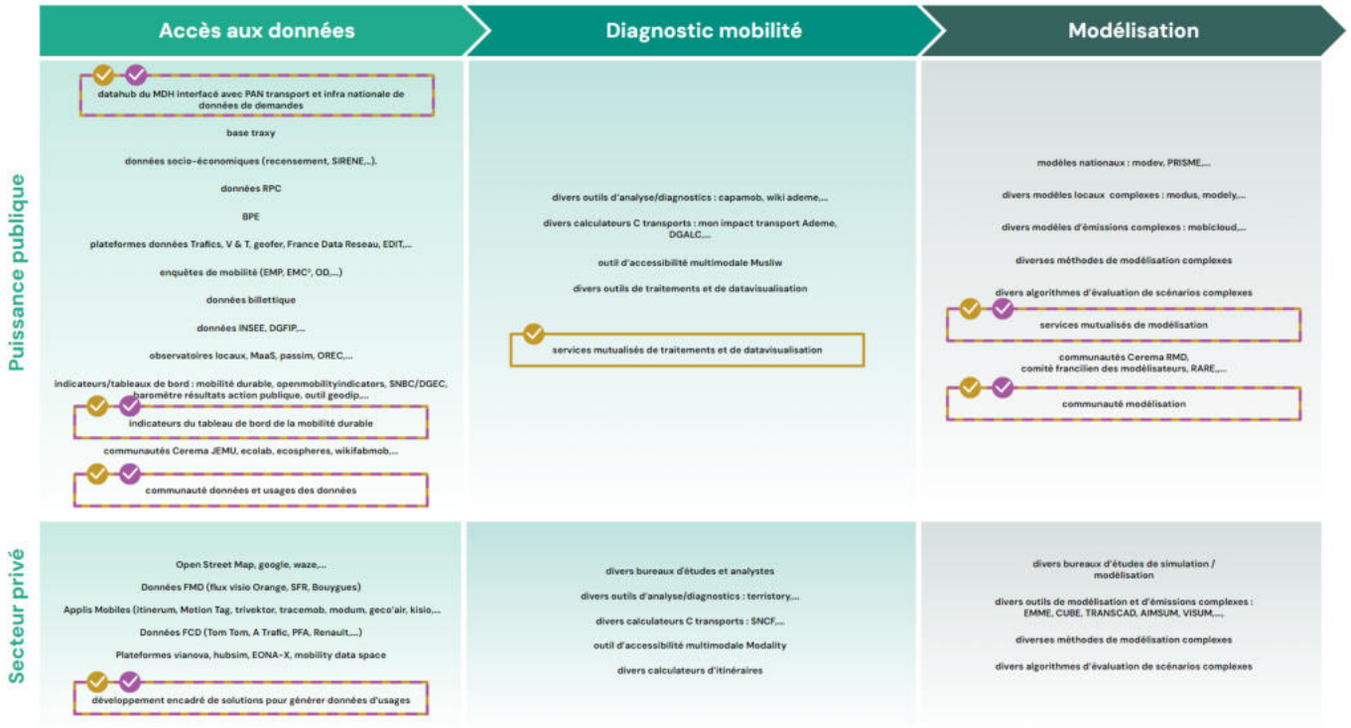
Current situation



Medium-term situation



Target situation



Personae – Target situation

Claire has found in the sustainable mobility dashboard a set of territorialised, operational and communicable indicators, calculated and maintained over time, which allow her to compare her area with others while also tracking the decarbonisation objectives for her mobility policies. Built around a trusted third party, the Mobility Data Hub (MDH) provides valuable support to help Claire test scenarios and evaluate her city's policies through its public and verifiable algorithms, guiding her elected representatives towards informed and rational decisions. She can rely on its data community, which will provide her with the necessary resources to turn to trustworthy data and use them appropriately, while also cross-referencing them to enrich her assessments. Its Data Hub component will make available to her the data required to support her projects. It will also be able to offer her services for data processing, data visualisation, accessibility calculations, and even modelling services. Its modelling community will not only equip her with tools, but also train and support her.

Nicolas can rely on the MDH data community to obtain reliable data in order to design his solution and assess his business model. Its Data Hub component will provide him with cleaned and validated data to support his projects. It will also facilitate his access to elaborated datasets for a detailed understanding of mobility, based on individual data supplied by transport operators, telecommunications providers, Mobility as a Service (MaaS) platforms, in-vehicle service providers, smartphone applications and car manufacturers, by virtue of its status as a trusted third party.

The mobility decarbonisation indicators in the sustainable mobility dashboard allow Patrick to track the main mobility trends since his last mobility survey, which is now becoming outdated. The data and tools of the MDH enable him to place these trends in a more detailed perspective. The methodological support provided by the MDH makes it possible to update data on travel demand by combining panel surveys with the aggregation of individual data such as digital travel traces. Its national datasets, dated and archived, allow him to take into account the impacts of crises on mobility, while both urban and rural data allow him to reflect the very different territories within the scope of his AOM. The resources of the data community and the shared data processing and visualisation services of the MDH allow him to analyse the potential for modal shifts while considering chained journeys. Those of the modelling community and its modelling tools enable him to project his decarbonisation scenarios.

Summary table

PHASE	ISSUES IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN THE TARGET VISION
	Scattered or even redundant data and tools (observatories, models)		- "Data and models" professional community - Supervised development of solutions to generate or provide access to usage data to supplement missing data - A data hub aggregating open and non-open data to collect and interface useful, enriched data - Shared processing and data visualisation services for common and accessible uses - Shared travel modelling services for more complex uses Standards and guidelines on usage data
	Non-generalised accessibility to useful data (or even tools)	Establishment of a data and data usage community	- "Data and models" professional community - Supervised development of solutions to generate or provide access to usage data to fill in missing data - A data hub aggregating open and non-open data to collect or interface useful, enriched data - Shared processing and data visualisation services for common and accessible uses - Shared travel modelling services for more complex uses
	Variety of data formats, which does not always facilitate use		Standards and guidelines on usage data
	Data usage is often poorly regulated, with unclear potential and limitations	Establishment of a data and data usage community	- "Data and models" professional community - Supervised development of solutions to generate or provide access to usage data to fill in missing data - Standards and guidelines on usage data
	Isolated data that is insufficiently matched		- Shared processing and data visualisation services for common and accessible uses - Shared travel modelling services for more complex uses
	Non-standardised indicators despite the need to cross-reference data for diagnostics	Start of implementation of national standard indicators	National indicators to quickly understand, assess and evaluate actions
	A multitude of steps to be taken to mobilise the various sources of funding available, with applications Complexity of the tools available for both diagnosis and modelling	- Establishment of initial mobility and learning models between local, regional, national, academic and private stakeholders. - Establishment of a modelling community	- "Data and models" professional community - Shared processing and data visualisation services for common and accessible uses - Shared travel modelling services for more complex uses

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

- GART
- Mobil'InPulse
- La Fabrique des Mobilités
- Alliance des Mobilités
- AGIR transport
- Urban France
- FNAU (urban planning agencies)
- Research consultancies
- Mobility data providers (e.g. motorway traffic, manufacturers and equipment suppliers such as PFA and Renault, Orange, Hove Patterns, etc.)
- Transport and mobility service operators including UTP (public transport), Fedeco (carpooling), Mobilians (automotive), Alliance des mobilités, FNMS (parking), FPMM (micromobility)
- Eona-X
- ASFA
- SER

Deployment table

STAKEHOLDERS	ACTIONS TO BE TAKEN
DGITM	Consolidate and improve the reliability of the national database of public transport stops
	Create a navigable road reference database and a national parking database
	Supplement and improve the reliability of real-time information for public transport and traffic restrictions (DiaLog)
	Clarify the obligations to make data available under European and national regulations
	Establish a connected road and vehicle infrastructure
	Develop tools to analyse usage data from different mobility structures in order to guide public policy towards a suitable modal shift offer
	Improve the quality and coverage of data on self-service bicycles (e.g. battery telemetry, maintenance). Promote open-source applications and engaging UX.
	Strengthen the integration, promotion and safety of carpooling by opening APIs, listing them on the PAN, displaying assistance information on GPS devices and creating a licence verification API.
	Provide APIs for the sale of mobility services and give access to data on the use of these services.
	In conjunction with the Mon Compte Mobilité trials, develop digital tools to simplify administrative procedures related to mobility.
	With the AOMs, trial and then roll out a Single Ticket service in France and list mobility fares and contingency management solutions on it
	Establish national sustainable mobility indicators for the sustainable mobility dashboard
	With the ANTS, develop the legislative framework to allow access to the Vehicle Registration System (SIV) internally by the State and local authorities
CGDD	Establish national sustainable mobility indicators for the sustainable mobility dashboard
	Contribute to other national indicators (SDES, etc.)
DGE	Accelerate the transition to sustainable mobility in tourism and leisure activities
	Improve the completeness and quality of data on points of interest on the national territory in partnership with the DGITM
	Propose solutions to solve the last mile problem in partnership with the DGITM
IGN	Create a navigable road reference system
IFPEN, INRIA and Cerema	Share usage and individual data with the professional community
	Set up an open data portal for mobility planning
	Pool route calculation and travel modelling services in the cloud
DRIEAT and DREAL	Establish national sustainable mobility indicators for the sustainable mobility dashboard
AOMs	With the DGITM, test and then roll out a Single Title service in France

STAKEHOLDERS	ACTIONS TO BE TAKEN
Data sharing solution providers	Contribute to private mobility data spaces (EONA-X, other providers)
Mobility operators and digital mobility service providers	Contribute to MaaS and standardisation
Private companies	Involve private stakeholders in mobility data communities

HOUSING

Why?

Today, the building sector accounts for 43% of annual energy consumption in France and generates 23% of national greenhouse gas emissions. Through building renovation, housing is one of the key levers available to advance the ecological transition. Digital tools are essential in many respects. For instance, the ambition to renovate a large proportion of the housing stock requires public authorities to have access to data on priority dwellings in order to identify and proactively contact homeowners. To help reduce energy consumption in housing by accelerating renovation, it is also indispensable to simplify the citizen's journey through the renovation process by means of digital tools. Likewise, it is vital to have access to data that makes it possible to assess the actual impact of renovation works on energy consumption, so that support schemes can be more effectively targeted and public renovation policy managed more efficiently. Public authorities must also use data to identify buildings using fossil fuels, assist them in their transition, and help optimise use of the existing housing stock by individuals.

At present, however, the framework is insufficiently unified, leading to duplication between public and private tools and a scattering of information that becomes difficult for administrations to mobilise and for citizens to find. Furthermore, data on housing and buildings are hard to reconcile because they are spread across different databases without easy access, due to the lack of widely available unique identifiers. This prevents a sufficiently accurate and clear overview from being established.

To address these issues, the plan proposes in particular to accelerate the production and dissemination of reference datasets, to facilitate access to data, to create a digital repository of renovation works, which would contribute to the establishment of a public sector-led digital housing space—to secure the regular production of land use data, to monitor energy consumption in the public housing stock, to coordinate data monitoring tools, and to strengthen the France Rénov' brand.

These actions are indispensable and represent those with the most direct impact on the ecological transition. Entire aspects of the digital strategy for housing policy, such as the management of housing subsidies (aides à la pierre), the allocation of social housing, or personalised housing assistance, are not covered in this framework.

What?

Each of the priority building blocks outlined in black under the “Better housing” theme below is the subject of a numbered “action”, detailed thereafter. These actions are structured into “orientations”, identified by letters, which correspond to the layers of the building. The orientations are arranged from bottom to top because, while all actions must be carried out in parallel to enable a product-based approach and to meet the urgency of the ecological challenge, they all rest on the foundations of the building, which must therefore be strengthened as a priority.

The structuring of each action is intended to be both educational and pragmatic: first the operational challenges are explained, followed by the current situation and associated difficulties, and then the sub-actions to be undertaken, with their designated leads and timelines. The leads are ranked from central administrations, to operators, and finally to local authorities; the main lead is indicated in bold. These actions and their timelines have been reviewed to incorporate the contributions of the public consultation, whether submitted in writing or during the hundreds of interviews conducted. They may subsequently evolve in an agile manner. These updates will be presented in summer 2025, and then annually.

HOUSING

Abouti
Avancé
Entamé
Naissant
Inexistant

Transversal | Sobriété des usages | Construction et urbanisation durables | Rénovation

International
National
Local

Action principale

OBSERVATOIRES

PILOTAGE ▸ ONRE | GéoDIP | Observatoire DPE/Audit | TdB SARE | ONB | ONCPE | Observatoire de suivi de la consommation énergétique des bâtiments publics | ONPE | Boussole de la rénovation énergétique | SITADEL 2 | Cartofriches | Portail artificialisation | OPS/carto SNE

E

SERVICES NUMÉRIQUES

PROFESSIONNELS ▸ SARENOV | Trackdéchets | VizCab | Résorption Bidonvilles | Bénéfriches | OPERAT | Conitiff

C & P ▸ Envergo | OPE | CLEA | Histologe | Plus Fraîche ma ville | FCU

CITOYENS ▸ Ma Prime Rénov | ERRIAL | FranceRénov | MonProjetAnah | AccèsLibre | Dossier Facile | SNE | BALAE

D

SI MÉTIER CŒUR

SI ACTEURS EXTERNES ▸ SI Diagnostiqueurs | SI foncières | SI bailleurs sociaux | SI artisans

SI ACTEURS PUBLICS TERRITORIAUX ▸ PrioRéno | OiLhi | ORTHI | UrbanSimul | SFREU | OTELO | Docurba | UrbanVitaliz | Zéro Logement Vacant

INFRASTRUCTURES SOCLES

PARTAGE DE DONNÉES ▸ Géoportail de l'urbanisme (GPU) | Intent technologies | Espace Numérique du Logement

DIFFUSION DE DONNÉES OUVERTES ▸ Infosols | LoVac

C

DONNÉES MÉTIER ▸ SIAP | Infocentre Anah | Go-rénove bailleurs | Données DPE et audits énergétiques | BDNB | Démat ADS | PCI-RPCU | Occupation du Sol à Grande Échelle (OCSGE) | SRU | Cadastre solaire | Données locales de l'énergie | OSFI | OCSGE | SYPLO | COMDALO | LOCOMVAC | Données DGFIP autres | Bien et Perval sans redevance | Demande valeur foncière (DVF) | Convergence RNB-RGE | Aides fiscales au logement | Données prêts subventionnés au logement | Gérer mes biens immobiliers (GMBI) | Données de consommation d'énergie

DONNÉES D'IDENTITÉ ▸ Registre national des copropriétés | Agrément Mon Accompagnateur Rénov | ADI | Base des professionnels RGE | Identifiant unique des locaux (RIAL) | Référentiel national des batiments (RNB)

B

RÈGLES SOCLES

INTEROPÉRABILITÉ ▸ INSPIRE | Référentiel des bâtiments | Friches v2022-12 | Zone d'activité économique | Occupation du sol à grande échelle (OCSGE) | Documents dématérialisés d'urbanisme | Référentiel numérique des travaux

A

A Accelerate the production and dissemination of identifiers and repositories

1 – Identifiant unique des locaux (RIAL)

To cross-reference different sectoral data such as Energy Performance Certificates (*Diagnostics de Performance Énergétique* – DPE), audits, applications for renovation aid, or energy consumption data for housing, and to ensure the proper targeting and impact of public policies (energy renovation, tackling substandard housing, housing subsidies, etc.), the *Répertoire inter-administratif d'identifiants des locaux* (*RIAL*), a cornerstone of interoperability, must be integrated into all applications.

It is also necessary to facilitate user access to this identifier, for instance by creating an interface allowing anyone to easily retrieve the identifier for their dwelling, particularly tenants (owners can already access it via *Gérer mes Biens Immobiliers – GMBI*).

Furthermore, it is important to grant the *DGALN* access to nominative data on property owners. These data are extremely valuable for carrying out proactive outreach to targeted groups in order to engage them in renovation assistance schemes and/or to encourage them to return housing to the rental market, for example through the services of the startup *Zéro Logement Vacant* (Zero Vacant Housing)[20]
.

1.1 – Develop an API to facilitate access to the tax identifier derived from the RIAL

- **Leads: DGFiP,** DGALN, CGDD
- **Timeline:** Q4 2024

1.2 – Facilitate access to this identifier for third-party users other than property owners, particularly tenants

- **Leads: DGFiP,** DGALN, CGDD
- **Timeline:** 2026

1.3 – Assess the feasibility of granting the DGALN access to nominative data on property owners, updated on a daily basis

- **Leads: DGFiP,** DGALN
- **Timeline:** 2026

1.4 – Systematically include this field, particularly in DPE databases

- **Leads: DGALN**, ADEME, CSTB, other relevant organisations
- **Timeline:** H1 2025

1.5 – Integrate this identifier into the various digital tools

- **Leads: DGALN,** potential users (ANAH, CAF, diagnosticians, energy distributors, etc.)
- **Timeline:** H2 2025

[20] Available at the following link: https://zerologementvacant.beta.gouv.fr/

1.6 – Maintain the production and provision of land reference datasets through the *DataFoncier* project in coordination with the DGALN

- **Leads: Cerema**, DGALN
- **Timeline:** From 2024

2 – Référentiel national des batiments (RNB)

Accelerate the deployment of the RNB in order to consolidate analyses at the level of housing units and buildings

The RNB[21] provides access to geolocation at the parcel level and to the grouping of premises within a building, something the *RIAL* alone does not allow. In practice, it is necessary to ensure full interoperability between the two reference systems to guarantee proper articulation, access, and dissemination of identifiers (via API and other web tools) to facilitate uptake by all reusers. Finally, the reference dataset must be disseminated across business information systems and key partners (*DPE, RE2020, Autorisations Droits des Sols, RNC, SDIS, BD TOPO, ENEDIS, GRDF, RPLS*, etc.).

2.1 – Define the governance of the reference dataset as a long-term digital commons

- **leads:** DGALN, DGFiP, **RNB,** IGN, ADEME, CSTB
- **Timeline:** Q2 2025

2.2 – Establish a legal status for the *RNB* as a reference dataset (within the meaning of the Public Data Service) and support the evolution of the legal bases under the responsibility of the DHUP

- **Leads: DGALN**, **DINUM**, DGFiP, **RNB,** IGN, ADEME, CSTB
- **Timetable:** Q4 2025: work on integrating this identifier into the AU, adapt the legal framework

2.3 – Implement the *RNB*, ensure its interoperability with the *RIAL* (database and infrastructure creation) and the *BAN*, and ensure wide dissemination (develop an API, create web tools, create matching services)

- **Leads:** DGALN, DGFiP, **RNB,** IGN, ADEME, CSTB
- **Timeline:** 2025

First stage Q2 2025: assess the legal possibility of disseminating the local tax identifier more widely, outside land registry files, so that it can be disseminated and a link between the local area and buildings can be established on the basis of the work carried out by CEREMA & RNB

2.4 – Integrate this identifier into the various digital tools and information systems of stakeholders

- **Leads:** DGALN, DGFiP, **RNB**, IGN, ADEME, CSTB
- **Timeline:** Ongoing

[21] Available at the following link: https://rnb.beta.gouv.fr/

3 – Référentiel numérique des travaux

Equip the energy renovation policy for housing to better characterise the work to be carried out, process grant applications and measure the effectiveness of this work

This reference framework will provide households, businesses, and aid scheme managers with a common vocabulary and structure for describing planned and completed renovation works. It will reduce unnecessary back-and-forth for clarifications and facilitate both the processing of subsidy applications and the performance of inspections. In addition, such a framework will improve knowledge of the actual costs and effectiveness of the works undertaken, thereby enabling better evaluation and targeting of public renovation support policies.

Several levels of ambition can be pursued through such a framework:

- Level 1: Development of a good practice guide for drafting an *RGE* (Recognised Environmental Guarantor) quote, accompanied by standard digital files "to choose or to fill in" by craftsmen as a minimum requirement. Alternatively, creation of an "RGE addendum" to quotes containing the standard description of subsidised works only.

- Level 2: Direct integration into quotation, accounting, and energy audit software (drop-down menus, etc.) to generate documents with descriptions that comply with the framework.

- Level 3: Feeding, by software publishers, into a single database accessible to the administrative services processing applications, allowing a detailed description of subsidised works (work data, associated dwelling identifier, etc.). The link between the quote and the database could be ensured via a unique identifier.

The 2024 consultation on this framework showed that industry stakeholders are generally expecting Level 3.

3.1 – Create the digital reference framework for work and the corresponding data schema

- **Leads: DGALN,** DGEC, ANAH, ADEME, CSTB, DGE, DGCCRF, DINUM
- **Timeline:** H1 2025

3.2 – Launch Mon Devis Sans Oublis[22], which is intended to support this data schema

- **Leads: DGALN,** DGEC, ANAH, ADEME, CSTB, DGE, DGCCRF, DINUM
- **Timeline:** 2024-2025

3.3 – Establish the co-evolution of the digital reference framework for renovation works with subsidy schemes and integrate the data schema into these aids

- **Leads: DGALN,** DGEC, ANAH, ADEME, CSTB, DGE, DGCCRF, DINUM
- **Timeline:** H1 2026

[22] Available at the following link: https://mon-devis-sans-oublis.beta.gouv.fr/

B Facilitate access to and production of data

4 – Gérer mes biens immobiliers (GMBI)

Facilitate access to data on housing occupancy and improve knowledge of the rental stock in order to target owners of properties requiring renovation, thereby encouraging their return to the rental market as part of efforts to combat housing vacancy

GMBI (*Gérer mes biens immobiliers*) is a digital service enabling property owners to consult all of their built assets. Following the abolition of the housing tax, it must provide access to a number of essential pieces of information that would otherwise no longer be available. It is therefore necessary to build APIs between *GMBI* and the tools of the *DGALN* sphere, while also taking into account specific needs for the future development of *GMBI*.

In particular, in order to construct a digital housing space bringing together a comprehensive set of data at the dwelling level, it is essential to rely on *GMBI* data to form its structure, feed it, and ensure its regular updating.

4.1 – Amend Article L 135B of the *Livre des procédures fiscales* to allow the *DGALN* access to *GMBI* data	• **Leads: DGFiP,** DGALN • **Timeline:** H1 2025
4.2 – Transmit occupancy data to map vacancy rates	• **Leads: DGFiP,** DGALN • **Timeline:** Q2 2025 Technical meeting to understand the impact of the transition to GMBI on the quality of data on housing vacancies and to improve its reliability
4.3 – Set up access to the next "Occupancy" API	• **Leads: DGFiP,** DGALN • **Timeline:** 2027 First stage Q2 2025: launch of an Occupancy API working group by the DGFiP and DGALN (data structure, testing, use cases)
4.4 – Access contact information (email addresses) of owners of vacant housing	• **Leads: DGFiP,** DGALN • **Timeline:** 2026
4.5 – Enrich the *GMBI* interface to better understand and act on the causes of housing vacancy	• **Leads: DGFiP,** DGALN • **Timeline:** data available in H2 2026 First stage in H2 2025: agree on a

shared grid of causes of vacancy (DGFIP, DGALN)

4.6 – Develop interoperability between *GMBI* and the public digital services *DossierFacile* and *Zéro Logement Vacant*

- **Leads: DGFiP,** DGALN
- **Timeline:** H1 2026

4.7 – Introduce the building identifier (*RNB*) into *GMBI* to strengthen the link between building and premises

- **Leads: DGFiP,** DGALN
- **Timeline:** 2026

4.8 – Access rent amounts collected by *GMBI* in order to support the development of regulatory public policies

- **Leads: DGFiP,** DGALN
- **Timeline:** 2027 for all data

  First stage Q3 2025: DGFiP communicates the optional completion rate

5 – Demande valeur foncière (DVF)

Better assess the economic impact of energy-inefficient housing (passoires thermiques) for homeowners and prospective buyers

The availability of *Demande de Valeur Foncière* (DVF) data is essential to improving knowledge of the state and evolution of the property market across territories, in order to ensure regulation and transparency of the housing market and to guarantee access to an appropriate housing pathway through the development of regulatory public policies.

5.1 – Access *Demande de Valeur Foncière* (DVF) data in its historical version, including the SAGES code, the act publicity reference, the relevant article of the General Tax Code, and the tax identifier of the dwelling

- **Leads: DGFiP,** DGALN, DINUM, MESFIN
- **Timeline:** identify the legal changes required for the circulation of this data H1 2025

6 – LOCOMVAC

Enable the development of a sustainable land strategy through the identification and rehabilitation of brownfield sites in response to the requirements of the Climate and Resilience Act

6.1 – Use a legislative vehicle to gain access to data on vacant commercial premises (*LOCOMVAC*)

- **Leads: DGFiP,** DGALN
- **Timeline:** H1 2025 amendment to the Tax Procedures Manual

7 – Données DGFiP autres

Secure the identity of users engaged in an Anah support pathway (combating fraud in applications for housing renovation aid)

7.1 – Access the contact information of aid applicants in the DGFiP databases

- **Leads:** DGFiP, **ANAH**
- **Timeline:** legal analysis in Q3 2025

8 – Bien et Perval sans redevance

Ensuring the regulation and transparency of the housing market

This data, which is currently purchased by the Ministry for Ecological Transition, enriches property sales data (*Demande de Valeur Foncière* or DVF) as it contains information on transactions carried out by notaries.

8.1 – Obtain free access to these data by including the Ministry for the Ecological Transition in the next agreement between the High Council of Notaries and the State

- **Leads:** DGALN, **MESFIN**, CGDD, CSN
- **Timeline:** H1 2025

9 – Données prêts subventionnés au logement

Obtain detailed data on housing subsidies to enhance renovation studies

The zero-interest eco-loan (*éco-prêt à taux zéro*) database has, since 2009, recorded data on operations financed through these loans. Access to detailed data at the level of each loan file, allowing cross-referencing with other fiscal data on households (income levels) and the dwellings concerned (year of construction, surface area), would enrich and improve the reliability of studies on housing energy renovation.

9.1 – Adapt the legal framework to enable the collection of nominative data on dwellings and on beneficiaries of State-subsidised loans (particularly *Éco-PTZ*)

- **Leads:** **CGDD**, SGFGAS
- **Timeline:** H2 2025

10 – Données de consommation d'énergie

Facilitate access to energy consumption data in order to harness it for the ecological transition

Secure access to this data is, for example, necessary to measure the impact of renovation works, identify the most energy-intensive dwellings—particularly those occupied by the most vulnerable households—and provide tailored recommendations to reduce energy use (see "use cases" in the

following section). This must be framed by the appropriate ethical safeguards (see action 1 of the "Cross-cutting" theme).

10.1 – Define the precise needs for access to energy consumption data, the associated ethical framework, and any legal barriers to be removed according to the identified use case

- **Leads: DGEC**, **CGDD, DGALN,** CNIL, energy distributors, CSTB
- **Timeline:** Q2 2025

10.2 – Define the legal and technical framework for linking the delivery point to the dwelling (RIAL) and to the building (RNB)

- **Leads: DGFiP**, **RNB, DGALN,** CNIL, energy distributors
- **Timeline:** Q3 2025

10.3 – Confirm or reject the need for a complete mapping of energy supply to buildings, and if confirmed, implement this mapping

- **Leads: DGEC,** DGALN
- **Timeline:** 2025-2026

10.4 – Define and provide indicators calculated from *OPERAT* data, particularly the distribution of consumption (D1, Q1, median, Q3, D9)

- **Leads: ADEME,** DGEC
- **Timeline:** 2026

10.5 – Define the framework for sharing district heating network data and implement it, notably by aligning *France Chaleur Urbaine*, *Pacoupa*, and *EnRézo*

- **Leads: ADEME,** DGEC
- **Timeline:** 2025-2026

11 – Occupation du Sol à Grande Échelle (OCSGE)

Ensure the regular production of land use data to combat land artificialization

It is essential to secure the national land use model and ensure its articulation with local tools, in order to provide a robust instrument that offers detailed and universally accessible knowledge of land use and land cover, and that supports the monitoring of progress in reducing soil artificialization. The key issue is compliance with the official land use nomenclature, ensuring a unified vision of artificialization and fair treatment across territories. This cross-cutting tool is used both to implement sustainable urban planning policies and to protect natural environments.

11.1 – Deploy the national *OCSGE* tool and support all users to ensure effective uptake

- **Leads: DGALN, IGN**
- **Timeline:** entire national territory covered by H2 2025

12 – Base de données nationale des bâtiments (BDNB)

Establish a reference database for building energy renovation

In order to sustain the growing momentum of the public policy on building energy renovation, ensure its proper implementation and assess its effectiveness, the creation and sharing of structuring data for all public and private stakeholders involved in the field of energy renovation has become essential. Multiple data are already collected through a variety of reference databases (address, building height, heating system, energy performance class, etc.). However, these cannot be fully mobilised, in compliance with the *règlement général sur la protection des données* (General Data Protection Regulation), due to various reasons ranging from gaps in data entry to the way these databases are managed, as well as the lack of key pivot data. It is therefore crucial for public actors and stakeholders in public policy to have access to a common pool of reliable, usable and interoperable building reference data. The *Base de Données Nationale des Bâtiments* (National Building Database or BDNB)[23] developed by the *Centre Scientifique et Technique du Bâtiment* (*Scientific and Technical Centre for Building*, CSTB) and already used by several State operators, could serve as a useful starting point for this work.

12.1 – Conduct a study of existing systems to identify the databases and tools already available that could underpin this common resource

- **Leads: DHUP, MCIPREB,** CSTB, DGEC, DGFiP, ANAH, ADEME, SGPE
- **Timeline:** H1 2025

12.2 – Define a sustainable economic model for this digital common resource and implement it

- **Leads: DHUP, MCIPREB,** CSTB, DGEC, DGFiP, ANAH, ADEME, SGPE
- **Timeline:** H2 2025

Set up data sharing infrastructure

13 – Espace Numérique du Logement

Bring together in a single digital space, automatically interconnected with multiple databases, housing-related information by offering a unified interface tailored to different user profiles to simplify access to and sharing of data, particularly in the context of renovation

Since 2023, the *carnet d'information du logement* (*Housing Information Logbook*, CIL) has been mandatory for new and existing dwellings undergoing renovation works that significantly affect their energy performance. Similar to a vehicle maintenance logbook, it serves to centralise useful information on the characteristics of the dwelling and past works in order to preserve its value and safety, while facilitating further improvements to the dwelling's energy performance. A number of private offers have already been developed.

To go further and provide new opportunities in terms of supporting citizens and professionals throughout the renovation process, as well as enhancing public authorities' knowledge of the works undertaken, it is nonetheless necessary to create an underlying public infrastructure so that relevant

[23] Available at the following link: https://bdnb.io/

data can be securely shared among all stakeholders who legitimately need it (homeowners, tenants, *France Rénov'* advisers, *MaPrimeRénov'* or CEE grant administrators, local authorities, construction professionals, energy suppliers, property managers, diagnosticians, private service providers, etc.). This will, for example, allow citizens to benefit from a smoother digital renovation journey in a "tell us once" approach, with simplified grant application files, transfer of information between advisers and support providers, or personalised recommendations from advisers. It will allow public service operators for renovation to simplify or even automate case processing and reduce back-and-forth exchanges, and it will enable administrations to collect and analyse the data required to strengthen the effectiveness of public policies (for instance, measuring the effectiveness of particular types of works thanks in particular to the *référentiel numérique des travaux* –see action 3). It will also allow all actors who legitimately need it to develop more effective offers based on data they cannot themselves collect. These various elements are set out in the use case of the thematic area.

13.1 – Define the functionalities of the *Espace numérique du Logement* (*Digital Housing Space*) and its articulation with existing tools (e.g. CIL developed in digital format by private actors), ensuring optimal data sharing to avoid redundant entries

- **Leads: DGALN, ANAH**, ADEME, CSTB, DINUM
- **Timeline:** H2 2025

13.2 – Define the digital architecture of this new tool, in connection with the information system developments planned by ANAH, and create the necessary interconnections to feed it, in particular with the RIAL and the *GMBI* tool of DGFiP

- **Leads: DGALN,** DGFiP, **ANAH,** ADEME, CSTB, DINUM
- **Timeline:** Q1 2026

D Strengthen the "France Rénov'" brand and enhance its service offering

14 – France Rénov'

Strengthen and expand the offer of the France Rénov' brand and platform, which are at the heart of the strategy for developing energy renovation

The actions detailed below are an essential prerequisite to best equip and guide both professionals and users of these services.

14.1 – Improve the overall service offer of the *France Rénov'* website: develop step-by-step guidance, expand the directory of all professionals, publish

- **Leads:** DINUM, DGFiP, DGEC, DGALN, DILA, **ANAH**, ADEME
- **Timeline:** continuous improvement from 2023

the average case processing time over the past six months, etc.

14.2 – Improve the visibility of *France Rénov'* through increased investment in communication resources

- **Leads:** DINUM, DGFiP, DGEC, DGALN, DILA, **ANAH**, ADEME
- **Timeline:** from 2023

14.3 – Develop proactive approaches to direct users towards *France Rénov'*

- **Leads:** DINUM, DGFiP, DGEC, DHUP, DILA, **ANAH**, ADEME
- **Timeline:** from 2024

14.4 – Establish a "Single Renovation File" for the various grants available (initially ANAH grants, followed by CEE and local grants)

- **Leads:** DINUM, DGFiP, DGEC, DGALN, DILA, DGE, **ANAH**, ADEME
- **Timeline:** 2028

14.5 – Improve the tools available to *France Rénov'* professionals (advisers, support providers)

- **Leads:** DINUM, DGFiP, DGEC, DGALN, DILA, **ANAH**, ADEME
- **Timeline:** 2024-2025, then ongoing

14.6 – Reinstate investigation services such as *Mes Aides Réno* and *Mon Devis Sans Oublis* within *France Rénov'*

- **Leads:** DINUM, DGFiP, DGEC, DGALN, DILA, **ANAH**, ADEME
- **Timeline:** H1 2026

14.7 – Ensure the interoperability of all tools in the renovation pathway based on the unique housing identifier (proactive services, *France Rénov'* platform, grant files, public service operators' tools, etc.)

- **Leads:** DINUM, DGFiP, DGEC, DHUP, DILA, DGE, **ANAH**, ADEME
- **Timeline:** 2025-2026

Monitor energy consumption in public buildings

15 – Observatoire de suivi de la consommation énergétique des bâtiments publics

Equip the inventory and monitoring of the renovation of public buildings and its energy consumption (including the State, local authorities and operators)

The *directive relative à l'efficacité énergétique* (*Energy Efficiency Directive*, DEE) imposes on Member States a threefold obligation regarding the renovation of the public building stock (including the State, local authorities and operators):

- the obligation to reduce the final energy consumption of public buildings by 1.9% annually. All energy uses are concerned (buildings, lighting, fuel for carrying out missions, etc.);

- the obligation to renovate 3% of the floor area of heated and/or cooled buildings annually to the *BBC rénovation* level, for all buildings over 250 m² owned by these public bodies;

- the obligation to publish and keep up to date an inventory of buildings over 250 m² rented or owned by public bodies, with the aim of using it for the two previous obligations.

At present, there is no tool available to quantify the renovation dynamics of the public building stock and its consumption (including the State, local authorities and operators). It is therefore necessary to establish a national information system (either an evolution of the OPERAT platform[24] used for the *décret tertiaire* or a new platform) to collect this data.

Beyond European reporting, the platform should also address the real needs of end-users, for example through a planning tool for the renovation of the public building stock.

15.1 – Establish the platform for monitoring the energy consumption of public buildings and the renovation of the public building stock as required by the DEE

- **Leads: DIE, DHUP, DGEC, ADEME,** DGALN, DGCL, DAE, local authorities and other public bodies
- **Timeline:** H2 2025

[24] Available at the following link: https://operat.ademe.fr/

Illustration based on two use cases

Work on the two following use cases is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different "building blocks" of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the "use case vision."
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Reducing energy consumption in housing

As part of ecological planning, emphasis has been placed on reducing energy consumption in housing. To achieve this, it is often necessary to implement sobriety measures, or even to consider renovation of the property. Consequently, databases must adapt to support this effort, which will make it possible to improve the monitoring of public renovation policies, to personalise support for individuals in their renovation pathway, and to identify the most energy-intensive dwellings.

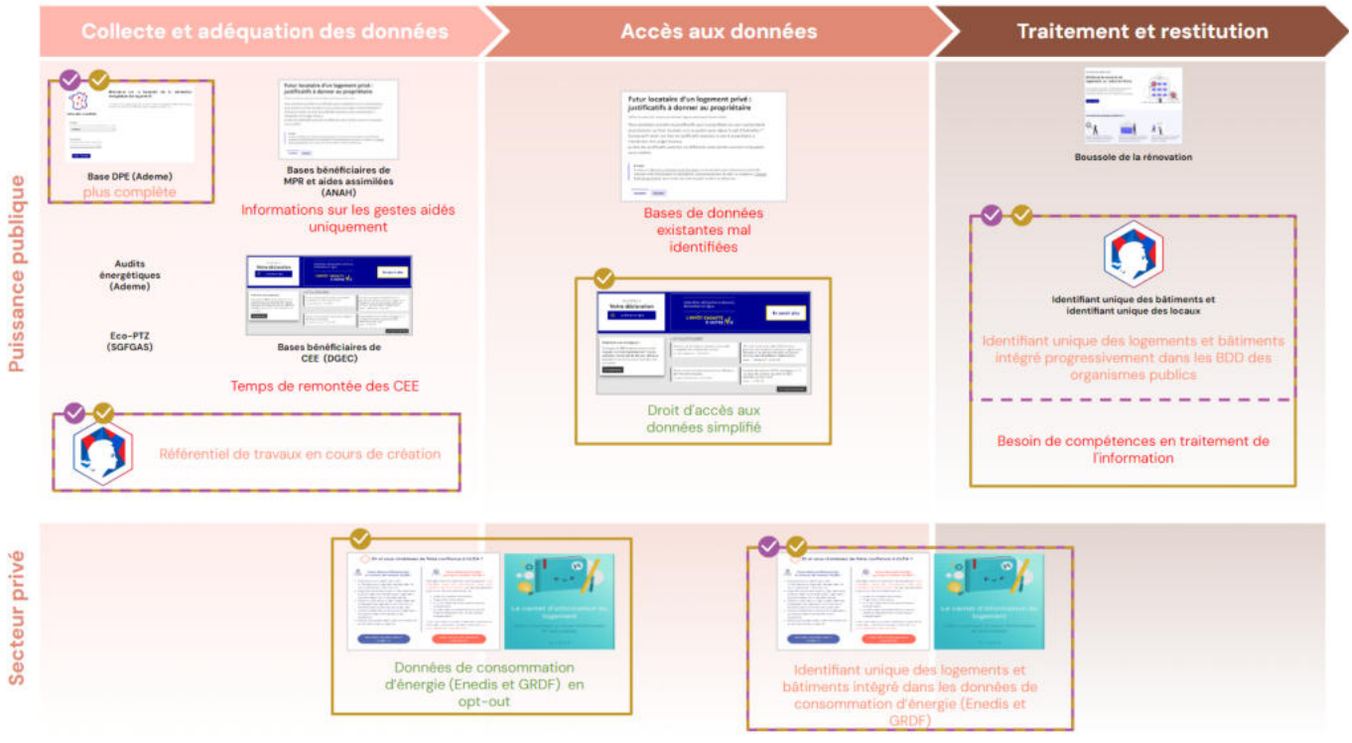
This determination to reduce the energy consumption of dwellings is currently hindered by the complexity of the procedures required to obtain access to data and to ensure its maintenance. The technical manipulations needed to exploit the data or to cross-reference it with other sources are burdensome.

Several indicators will make it possible to steer the project: the energy consumption of the housing stock as a whole or per dwelling, the share of dwellings that are *passoires énergétiques* (*energy sieves*, i.e. poorly insulated homes), and in the digital field the completion rate of housing and building identifiers in databases as well as the share of dwellings with a valid *diagnostic de performance énergétique* (*Energy Performance Certificate*, DPE).

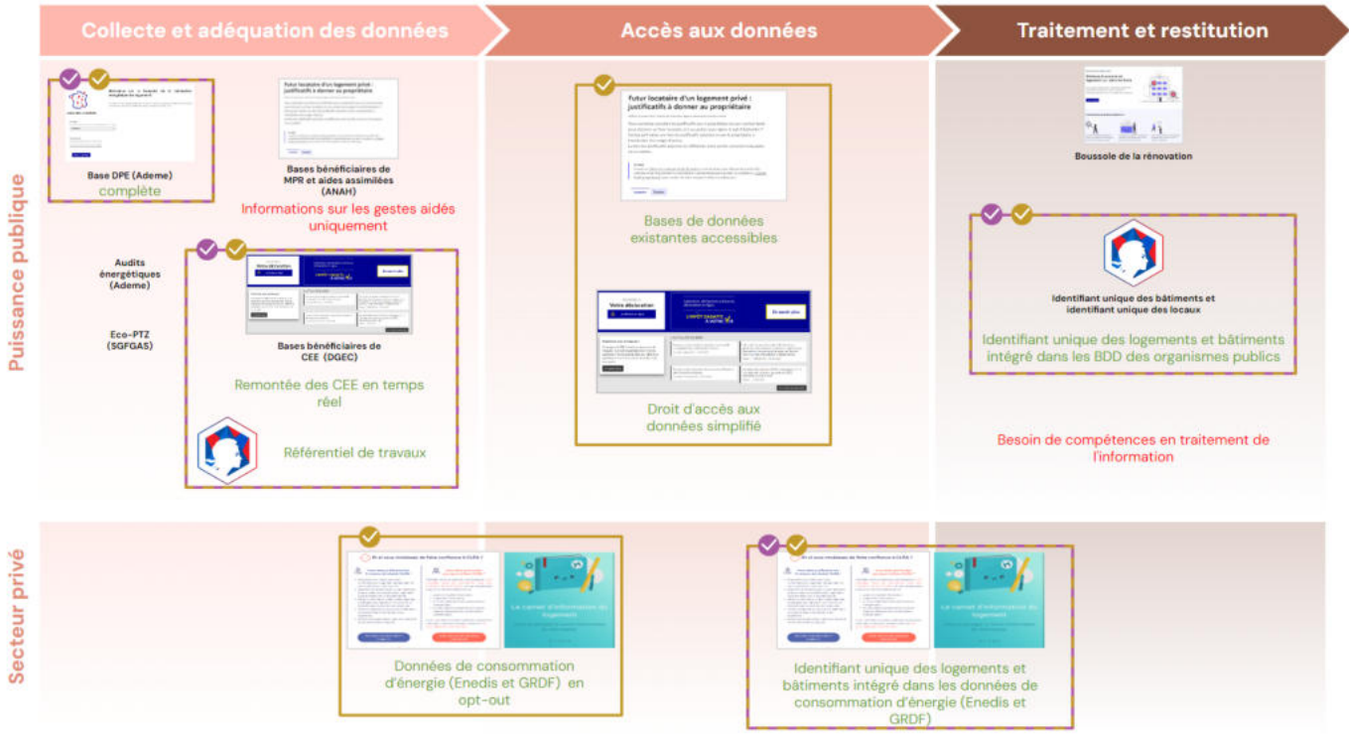
Personae – Current situation

Current situation

Medium-term situation



Target situation



Personae – Target situation

Yasmine is a young data scientist who has recently graduated from higher education. **She works in a start-up** that advises households on reducing their energy consumption (through efficiency and renovation), in order to offer them an optimisation of the works to be carried out and to propose financing tools. The company has a commercial offering. The technical administration of this offering is now simpler thanks to streamlined data provision, and the offering is more precise due to the possibility of cross-referencing the data now available as open data.

François is a research officer at an energy network operator. He is contributing to a wide-ranging forward-looking exercise on national energy needs by 2070, which he must both quantify and qualify. He needs to identify the energy consumption behaviours of economic actors and to understand how these evolve over time. This is facilitated by simplified access to consumption data, in terms of consent, timeframes and costs.

Philippe is an experienced government statistician at the Ministry. His main task is to produce official statistical indicators for the calibration and evaluation of public policies at the national level. He must provide information on the condition of the building stock, the works carried out, the impacts of renovations, and the households benefiting from support schemes. To do so, he needs rapid data reporting and the ability to link several databases. Philippe produces numerous statistical indicators whose quality and relevance are widely recognised. Thanks to real-time reporting, the indicators are now much closer to the present and the technical effort is reduced through the standardisation of descriptions and the simplification of access to individual consumption databases.

Célya is a local authority officer working in an inter-municipal authority. The elected representatives ask her to identify the buildings with the greatest renovation potential in her area, in order to inform and support households, often in very modest circumstances, on the renovation works to be undertaken. Célya is more successful in doing so, because the available databases are more accessible and comprehensive, but she still faces difficulties as her skills in information processing remain very limited.

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN TARGET VISION
DATA COLLECTION	Only part of the housing stock has an EPC less than 10 years old (less than half)	Increase the number of EPCs carried out in order to have the most comprehensive information possible on the housing stock	Make EPCs mandatory for all housing (including second homes)
	Administrative sources only provide information on subsidised measures		
	For EECs, data consolidation takes a long time (around two years)		
	Data on work carried out is unstructured and therefore difficult to use		
	The statistical methodologies used by the ONRE (e.g. estimation of EPCs for all dwellings) do not allow for use at a detailed territorial level	Increase the number of EPCs carried out in order to obtain the most comprehensive information possible on the housing stock	
ACCESS TO DATA	Access to individual energy consumption data requires lengthy procedures.	Individual provision of consumption data	
	The available databases are poorly identified and difficult to access		Set up a portal allowing queries to be made on the various databases, whose content will be updated more frequently
	Making consumption data available for evaluation or advisory purposes is sometimes difficult: consent, delays, costs	Individual access to consumption data	Set up a portal allowing queries to be made on the various databases, whose content will be updated at increased frequency
DATA PROCESSING AND RETURN	There are many information systems in the housing and energy sector, but they generally only allow data to be cross-referenced at a high cost in terms of IT and methodological analysis and development (and therefore expensive).	Quickly improve the identification of dwellings and buildings in all data collections and ensure the dissemination of the tax identifier for dwellings and the future building identifier	Set up a portal allowing queries to be made on the various databases, the content of which will be updated more frequently
	The use of available data often requires information processing skills.		
	Little non-aggregated data is available in open data, or the available data cannot be cross-referenced		Set up a portal allowing queries to be made on the various databases, whose content will be updated more frequently

Improve the citizen pathway for renovation

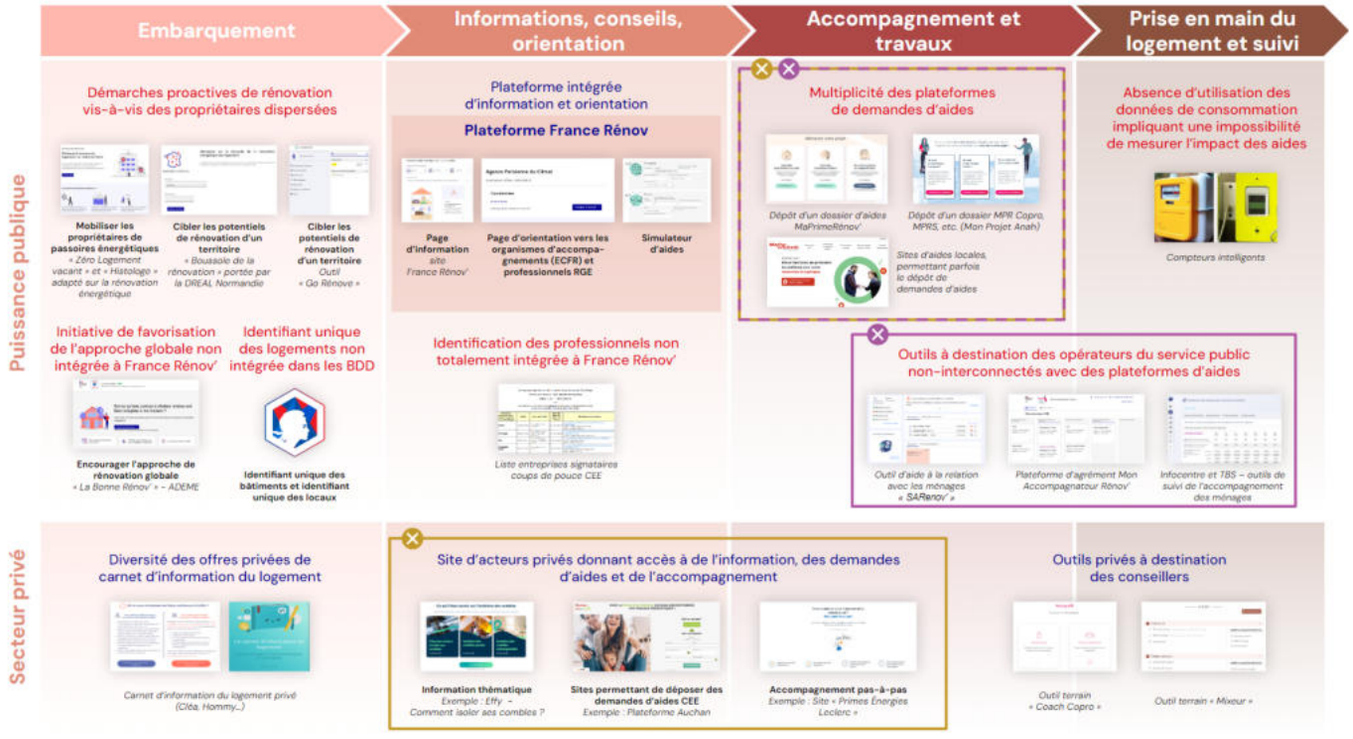
At present, citizen pathways for energy renovation remain multiple and complex depending on the property. Organised around a multitude of schemes such as *France Rénov'* and third-party schemes run by local authorities, they still suffer from a lack of visibility for the citizens concerned, a lack of clarity in the pathway and thus limited reassurance, as well as the need to undertake multiple procedures, which makes access to support schemes more difficult.

This use case focuses on ways to improve these citizen pathways, particularly in terms of ease of access to grants, visibility of the different possible pathways, and so on.

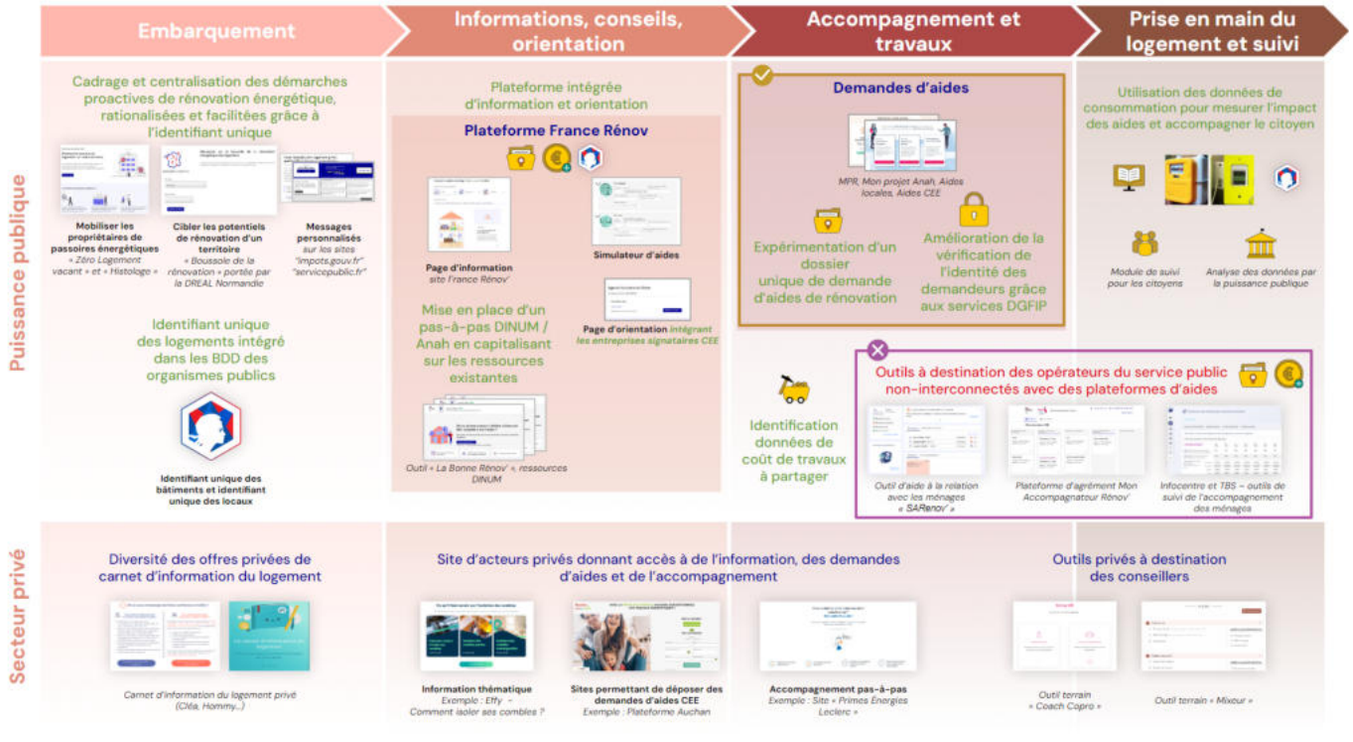
Several indicators will make it possible to steer the project, including first and foremost the overall number of renovations, and from a more digital perspective the number of connections to *France Rénov'*, the number of households proactively contacted, and the conversion rate of *France Rénov'* consultations into actual renovations.

Personae – Current situation

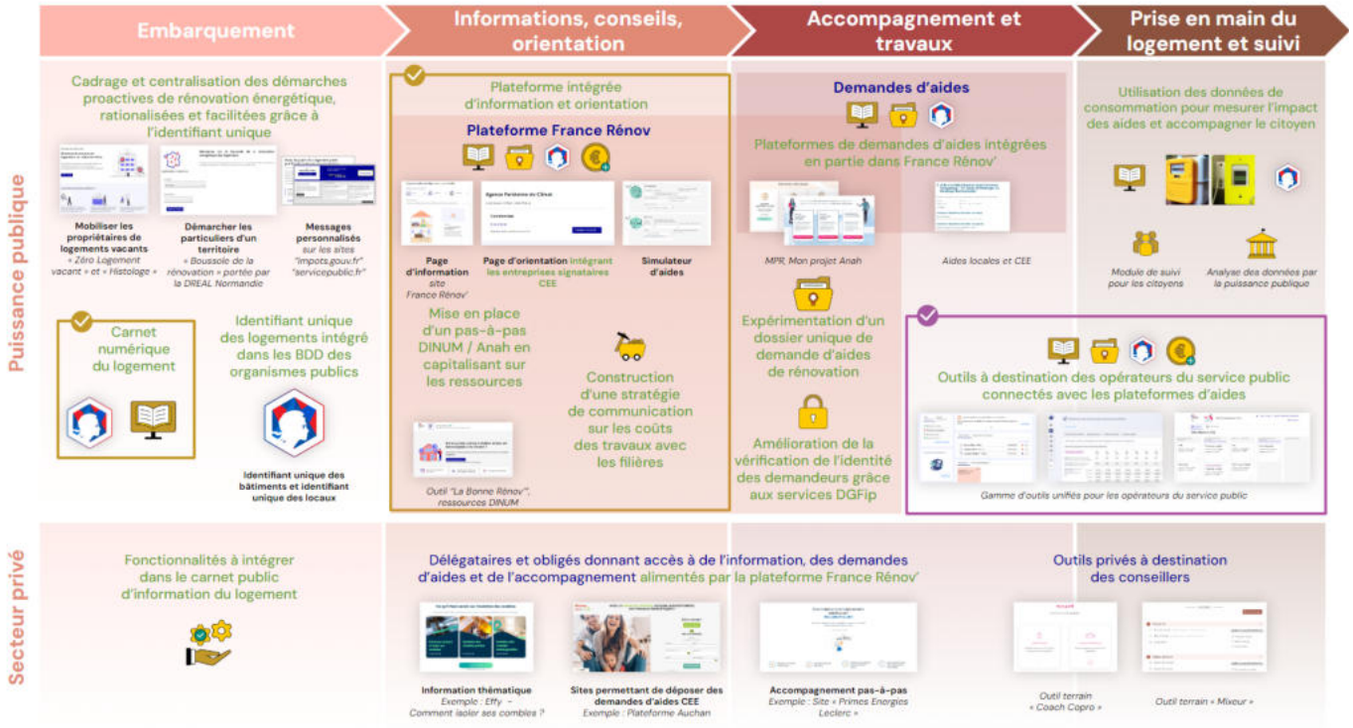
Current situation



Medium-term situation



Target situation



Personae – Target situation

Mélanie is a homeowner. She was redirected to the France Rénov platform from the digital housing portal while looking to replace her boiler, and she was able to submit applications for MaPrimeRénov (MPR) support and Energy Savings Certificate (CEE) support directly from her digital housing portal in a simplified way, thanks to the automatically pre-filled data.

Guillaume is a very modest homeowner of an energy-inefficient dwelling. He began renovation procedures after receiving a message through the digital housing portal.

Vincent is an adviser. He has access to important information on the households who come to see him, in particular through the data he can access via the digital housing portal, and he knows whether the households who have consulted him subsequently submit applications for support and undertake renovation works.

Julieta is a homeowner. She consulted the France Rénov website and was reassured by the renovation process presented there and by the average work costs displayed. She therefore made an appointment with a France Rénov adviser and then completed a single renovation application through her digital housing portal in order to benefit from both local and national schemes. Her home now consumes less energy, as she received guidance on how to manage her home after the works were completed.

Christine works in an inter-municipal authority in the housing department. She relies on tools for understanding the building stock to identify the neighbourhoods with high renovation potential, and she is able to closely monitor the dynamics of advice, support and works in her area.

Pierre-Louis is a tenant in a single-family house with energy performance problems. He can now report his situation on Histologe.

Mathilde is the owner of a flat in a condominium of 18 dwellings and is seeking to improve the energy performance of her home. She can now consult a step-by-step guide dedicated to the renovation of condominiums on the France Rénov website, and she has access to supporting arguments to try to convince the other co-owners to take action.

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN TARGET VISION
	A lack of use of existing channels to communicate with citizens (impots.gouv, property tax)		- Facilitate the targeting of households to encourage renovation - Share information throughout the support process
	Risks of scams linked to attempts to embark on fraudulent renovation projects or identity theft by malicious actors	Facilitate information exchange between administrations to help combat fraud (access to DGFiP data for identity verification)	
	Various tools exist to better target households, but there is a lack of coordination (DATAGIR, ZLV, Boussole de la rénovation, Go Rénove)	- Bring together tools for understanding the housing stock in order to target areas with high renovation potential and bring them to the attention of those working on the ground - Enable better targeting of renovation potential in order to mobilise the citizens concerned through existing digital platforms (service-public.fr, impots.gouv.fr, etc.)	Facilitate the targeting of households to encourage renovation
	Inability to obtain an accurate picture of the state of renovation of a housing stock (no unified digital CIL controlled by the State, no housing identifier)	- Provide educational content upstream and throughout the process - Produce an interactive step-by-step guide for citizens or co-ownership associations to clarify the key stages of the process and provide advice on how to avoid common mistakes. - Integrate the step-by-step guide into the France Rénov' platform, capitalising on the beta.gouv experiences of La Bonne Rénov and Datagir, and on the simulator currently being developed by Anah	- Sharing of information throughout the support process - Link to applications for assistance and financing
	A variety of entry points into the programme: CEE, France Rénov', Artisan	- Provide educational content before and throughout the process - Produce an interactive step-by-step guide for citizens or co-ownership associations to clarify the key stages of the process and provide advice on how to avoid common mistakes. - Integrate the step-by-step guide into the France Rénov' platform, capitalising on the beta.gouv experiences of La Bonne Rénov and Datagir, and on the simulator currently being developed by Anah	Sharing information throughout the support process
	A lack of access to comprehensive information on the professionals to contact (see open lists of signatories to the CEE coup de pouce charters)	Ensure that the information available on the France Rénov' website is comprehensive, particularly with regard to EEC stakeholders.	Use data on the costs of work to provide reassuring information to households
	A lack of clarity about the renovation process ahead and the absence of key information such as estimates of the cost of the work or the remaining costs to be paid		Use of data on the costs of work to provide reassuring information to households
	The need to ask households again for information that may already have been provided through other channels		Link with applications for assistance and funding
	A multitude of steps must be taken to secure the various types of funding available for similar applications	Integrate the value of EECs into ANAH assistance or try out a single application form for assistance, such as the "Dossier Facile" renovation application	- A single platform for applying for ANAH assistance, incorporating the single application process (communication with EEC stakeholders, local authorities, banks, etc.) - Information sharing throughout the support process - Link to aid and financing applications
	Overcharged, poorly executed or non-existent work carried out by unscrupulous companies	Facilitate information exchange between administrations to help combat fraud (access to DGFiP data for identity verification)	
	Lack of visibility on the actual completion of work by households being monitored		- Development of tools for advisors and support staff to improve information sharing throughout the process, based on a "tell us once" approach - Link to aid and financing application files
	Lack of use of the potential of smart meters to enable households to monitor their consumption and public authorities to measure the effectiveness of public policy	Develop a public tool (one of the features of the digital housing space?) enabling citizens to monitor their consumption via Gazpar and Linky, and allowing the associated data to be analysed by public authorities	Monitoring consumption after work

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in Down to Earth, this section reverses the matrix, moving from an action-based vision (the "what?") to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

- UNIS
- UNPI
- National Housing Confederation (CNL)
- Association of Real Estate Directors
- French Insurance Federation
- Federation of Building Material Distributors
- Federation of Electrical Industries
- Union of Wood Manufacturers and Builders
- National Union for Maintenance and Energy Efficiency Services
- Association of Construction Industries and Products
- Confederation of Craftsmen and Small Construction Companies
- Federation of Cooperative and Participatory Companies in Construction and Public Works
- French Building Federation
- Federation of Third-Party Organisations
- Federation of Trade Unions for Intellectual Services, Consulting, Engineering and Digital Technology
- SYNTEC-Ingénierie Federation
- National Union of Construction Economists
- National Union of French Architects'
- National Council of the Order of Architects
- Housing Cluster-FFB
- Real Estate Development Federation
- Social Union for Housing

Deployment table

STAKEHOLDERS	ACTIONS TO BE TAKEN
DGALN	Work on the legal framework to disseminate more widely and enable the use of local identifiers and buildings: make them mandatory in procedures once access to this data has been simplified and guaranteed
	Launch an investigation into the creation of a single reference database for works (in conjunction with ANAH and ADEME) and develop a deployment strategy
	Provide free access to data by including the Ministry for Ecological Transition in the next agreement between the High Council of Notaries and the State
	Roll out the national OCSGE tool and provide support to all users to ensure they are able to use it effectively
	Define the functionalities and architecture of the Digital Housing Space and how it will interact with existing tools (e.g. CIL developed in digital format by private actors), ensuring optimal data sharing to avoid redundant data entry and the interconnections necessary for its proper functioning
DGFiP	Make RLOC data more easily accessible (development of APIs and user interfaces), ensure data completeness (exception handling) and quality
	Adopt a "product owner" approach to communicate with user services and adapt access to this data in an agile manner according to the use cases considered
	Work to ensure consistency between the identification of premises and buildings
DGCCRF	Contribute to the development of a BP guide on "RGE" quotes
CGDD	Develop the legal framework for collecting personal data on housing and beneficiaries of state-subsidised housing loans (Eco-PTZ in particular)
	Define fair requirements for access to energy consumption data, the associated ethical framework and any legal barriers to be removed depending on the use case identified
ANAH	Simplify and improve the user experience for renovation assistance
	Contribute to the development of a digital reference framework for construction work
	Report on the effectiveness of public energy renovation policies through the production of key indicators and statistics
	Implement the unique premises identifier and the works reference system in business tools
ADEME	Contribute to the development of the digital works reference system
	Set up an observatory to monitor energy consumption in public buildings, in support of the DIE
IGN	Secure the continuous production of OCSGE data and ensure it is properly linked to regional tools
CSTB	Contribute to the development of a digital reference framework for construction work
	Contribute to the development of a digital reference framework for buildings
Energy distributors	Integrate premises and building identifiers into their information systems
	Work on the legal framework to simplify access to energy consumption data
Building professionals (tradespeople/inspectors)	Participate in defining the digital reference framework for construction work
	Systematically enter the premises and building ID
Software publishers for building professionals	Participate in defining the digital reference framework for construction work
	Adapt software to natively integrate the reference system and premises and building identifiers, and facilitate data exchange

RESOURCE CONSERVATION

Why?

The preservation of our resources is essential for successful ecological planning: it is not possible to conceive a transition that would have the effect of destroying our environment, on which human activity depends in many respects. Digital technology is essential for these issues of preservation and enhancement, in particular through the data that must be collected to ensure the monitoring of these ecosystems and guarantee their survival, or through the data necessary for the prevention and management of crises linked to resources.

At the scale of river basins, for example, given the challenges concentrated in water resources, it is necessary to be able to establish the right diagnoses. The challenge is to guarantee resilient and efficient management of the resource in order to ensure water for all, of a quality adapted to its use and with preserved ecosystems, in a context of climate change that is leading towards a scarcity of water resources (small cycle versus large water cycle). The development of tools in this sense is indispensable both to inform decision-makers and to allow users to take ownership of these issues.

High-performance tools and comprehensive data are, for example, essential to stop the urbanisation of areas subject to coastal change, to monitor the state of health of forests and limit the impact of fires, to detect waste trafficking and mountains of floating or exported waste in certain countries, or to ensure the summer sustainability of wetlands, reservoirs of biodiversity. They are also necessary for issues relating to air quality. The measurement of pollutant concentrations in the atmosphere constitutes one of the main avenues of knowledge, supplemented by modelling. They are necessary to provide information on the spatial distribution of pollution, to anticipate its evolution, to describe the human and natural activities at the origin of these concentrations and to quantify the pollution emitted directly by these sources.

At present, the situation is unsatisfactory: depending on the fields (Cross-cutting, Water, Sea and Coastline, Forest, Soils, Atmosphere, Health Risks and Pollutant Releases and Waste and Circular Economy), data is non-existent, too scarce or too scattered to be used correctly. In many cases, producers have to standardise their data to make it interoperable, relying on common reference frameworks. Information systems are sometimes redundant or too fragile to be used effectively on a large scale. It is therefore a matter of completing and improving knowledge with a view to sustaining or establishing collaborative data mechanisms that make it possible to share information, to bring communities together, and to support action.

Because of the wide variety of subjects, this part is set out thematically, resource by resource: it deals successively with the cross-cutting theme, water, sea and coastline, forest, soils, atmosphere, risks and pollutant releases and finally waste and the circular economy. Unlike the other chapters, the letters here do not correspond to a particular orientation of the organisation but to a particular theme.

What?

Each of the priority building blocks outlined in black under the “Preserve natural resources” theme below is the subject of a numbered “action”, detailed thereafter. These actions are structured into “orientations”, identified by letters, which correspond to the layers of the building. The orientations are arranged from bottom to top because, while all actions must be carried out in parallel to enable a product-based approach and to meet the urgency of the ecological challenge, they all rest on the foundations of the building, which must therefore be strengthened as a priority.

The structuring of each action is intended to be both educational and pragmatic: first the operational challenges are explained, followed by the current situation and associated difficulties, and then the sub-actions to be undertaken, with their designated leads and timelines. The leads are ranked from central administrations, to operators, and finally to local authorities; the main lead is indicated in bold. These actions and their timelines have been reviewed to incorporate the contributions of the public consultation, whether submitted in writing or during the hundreds of interviews conducted. They may subsequently evolve in an agile manner. These updates will be presented in summer 2025, and then annually.

RESOURCE CONSERVATION

Abouti
Avancé
Entamé
Naissant
Inexistant

Transversal | Eau | Mer et littoral | Forêt | Sols | Risques, santé et rejets polluants | Atmosphère | Déchets et économie circulaire

International
National
Local

Action principale

OBSERVATOIRES

RECHERCHE
- Data Terra - AERIS
- Odatis
- ILICO
- Green Data for Health

PILOTAGE
- Système d'information sur l'eau
- SI SPEA
- Dataviz des ventes de pesticides
- Aires de captage
- INPE
- SIMM
- Quadrige
- Atlas DCE
- Observatoire des ports de plaisance
- data.ifremer.fr
- Candhis
- Limites Maritimes
- Observatoire de l'éolien en mer
- INPN Espaces Protégés
- Cartofob
- Observatoire des forêts françaises
- Sites et sols pollués
- Observatoire européen des sols
- CASIAS
- Cartographie Argile
- BD MVT
- BD OREOL
- Base avalanche et risques en montagne
- ONRN
- BDHI
- Plateforme Indicateurs SNBC
- ClimatHD
- DRIAS
- InfoClimat

SERVICES NUMÉRIQUES

PROFESSIONNELS
- Portail substances
- Prhymo
- Labeau
- SEEE
- Sandre-services
- Cesmia
- Zones de captage
- Forages domestiques
- Strateau
- SONEL
- BDD dragages portuaires
- Portail trait de côte
- Naviforest
- OCRE
- PRSF
- e.cenaris
- Crisi
- Murex
- Terrass
- GISTRID
- SINOE-Déchets
- Services numériques régionaux
- Track-Déchets
- Inventaire PCB
- R-Nano
- SI LAV
- Bilans climat simplifiés
- MonAiot
- Portail du service national d'assistance REACH-CLP

C & P
- MilieuMarinFrance
- Plateforme d'évaluation
- eaufrance.fr
- MonGéoSource
- Géoportail de l'environnement
- Wikhydro
- IREP
- ClimEssences
- GéoLittoral
- Reportnet
- ERRIAL
- SYDEREP
- Copernicus
- e-Sol
- Guichet connaissance santé des forêts
- Géorisques
- Réglementations en forêt
- VIGICRUES
- Que faire de mes déchets
- Données sur l'air
- Cartothèque qualité de l'air
- Signalement-ambroisie
- Inventaire territoriaux des émissions
- Atmo Data
- Phyt'Atmo

CITOYENS
- Enquête d'eau
- Nav&Co
- Rivages
- BDD Débroussaillement
- Radiofréquences
- Pollens
- Un bon air chez moi
- Recosanté
- Service public d'information en santé environnement

SI MÉTIER CŒUR

SI ACTEURS PUBLICS TERRITORIAUX
- BDD connaissance AE
- BDD planification AE
- SI redevances
- Guichet rapportages (DCE et directive nitrate)
- Indicateur de gestion durable de la forêt
- Infosols
- GEREP
- GIDAF
- Gaspar
- ARIA 3
- SIOUH v2
- GUNENV
- BDREP
- Vigicrue
- CopCerema
- RNDTS
- SISE-Eaux
- GO-K-Phyto
- Certibiocide
- SNPE2
- Plamade
- GUN
- Prémhyce
- Aqui-FR
- BNPE
- SI assainissement collectif

INFRASTRUCTURES SOCLES

PARTAGE DE DONNÉES
- Jumeau numérique pour l'océan
- CARMEN
- Jumeau numérique pour la forêt
- Standards européens pour le rapportage
- DATA-Risques
- DataStudio Risques

DIFFUSION DE DONNÉES OUVERTES
- Naïades
- BNVD
- data.eaufrance.fr
- Hubeau
- ondes.eaufrance.fr
- Hydro-Portail
- ADES
- Propluvia
- Surval
- Catalogue de données SIMM
- Atlasanté

DONNÉES MÉTIER
- Cartographie des cours d'eau au titre de la police de l'eau
- Référentiel national des obstacles à l'écoulement
- Aquaref
- BD Lisa
- BD Topage
- BD Carthage
- SI continuité
- Carte milieux humides
- Litto-3D
- Ortho-Littorale
- Limite Terre-Mer
- Sextant
- BD Carto Etat-Major
- Renécofor
- Inventaire forestier national
- BD Forêt
- Dispositif de suivi des bocages
- LIDAR HD
- Computree
- BD RTM
- Carte des sols
- Plateforme Analytics/BI/AI
- REACH-IT
- Portail Substances chimiques
- Aqua-SISE
- Réseau de mesure de la qualité des sols (RMQS)
- Geod'air
- Inventaire National Spatialisé (INS)
- PREV'AIR
- IGCS
- BD SolU
- BD ETM
- BDAT
- Portail pressions

DONNÉES D'IDENTITÉ
- LDAP SIE

RÈGLES SOCLES

INTEROPÉRABILITÉ
- Schéma national des données sur l'eau
- Directive Cadre sur l'eau
- Directive Eaux Résiduaires Urbaines
- SANDRE
- Arrêté BCAE
- Schéma national des données du milieu marin
- DCSMM
- OHI Standards
- SAR-référentiels
- DCE
- Code forestier
- PNFB
- Stratégie UE pour les forêts
- Loi climat et résilience
- Décret n°2011-1371
- Stratégie UE sur les sols
- Loi UE sur la santé des sols
- IAL
- Arrêté GEREP
- Directive Inondation
- AIDA
- Code de l'environnement
- LCSQA
- Directives qualité de l'air ambiant
- Directive NEC
- Accord de Paris
- Textes sur déchets dangereux et transfrontaliers
- Reach
- Directive sur la qualité des eaux de baignade
- IntAIRieur
- PNSE
- Code de l'environnement - art L124-5
- Réglementation QAI dans le ERP
- Géostandards Risques

SÉCURITÉ
- Directive IED
- Règlement E-PRTR

A Cross-cutting

1 – Géoportail de l'environnement

Make users aware of the environmental regulations that apply to a plot in order to simplify procedures and guarantee the preservation of ecosystems and the protection of resources

Environmental regulations and constraints are highly localised, time-limited and often dispersed among multiple sources or reference frameworks that are sometimes not consolidated at national level (for example, *obligations réelles environnementales* allow property owners to establish environmental protection measures on their property). This makes procedures and access to information more complex for the public. Yet the user, whether professional or private, must be able to know reliably, for a given location, which regulations apply to them without having to browse dozens of websites or go to the town hall. The aim is to improve user information, for example by studying the relevance of a portal where all the regulatory zoning relating to different environments could be found, similar to the *Géoportail de l'urbanisme* for associated regulations. This need arises in a context where geographic data, particularly satellite data, are becoming increasingly numerous; it is therefore essential to make them accessible.

This service will therefore be tested on an initial use case relating to forests. The generalisation to other themes will then be studied.

1.1 – Develop standards and reference frameworks for sharing biodiversity and environmental regulatory data

- **Leads:** DGALN, **IGN,** OFB
- **Timeline:** Q4 2024 - Q3 2025

1.2 – Develop an initial use case with FOREG[25]

- **Leads:** DGALN, **IGN,** OFB
- **Timeline:** 2024-2025

1.3 – Design and develop the *Géoportail de l'environnement* and the services associated with relevant environmental themes, in particular by making geographic data – including satellite data – as accessible and shareable as possible

- **Leads:** DGALN, **IGN,** OFB
- **Timeline:** 2026-2027

[25] Available at the following link: https://foreg.beta.gouv.fr/

B Water

2 – SANDRE

Undertake the development of the missing reference frameworks required for the effective implementation of public policies on water, in particular between the different uses of water

priority reference frameworks necessary for the implementation of environmental policies (protection of watercourses, management of water resources, protection of wetlands, protection of catchment supply areas) are not currently consolidated or available. This development of reference frameworks is intended to be carried out within the framework of the National Water Data and Reference Framework Administration Service[26] (SANDRE).

2.1 – Facilitate the reporting of new needs to SANDRE and accelerate its alignment with European and international standards

- **Leads:** **DEB**, **OFB**, SGPE
- **Timeline:** 2025-2026

2.2 – Develop a reference framework of pressures on aquatic environments and data standards to make interoperable the pressure data collected as part of planning

- **Leads:** DGALN, **OFB**, Water Agencies
- **Timeline:** Q4 2025

2.3 – Develop a unified reference framework of all structures and abstraction points from the SANDRE dictionary "Water resource abstraction"

- **Leads:** DGALN, **OFB**, IGN, water agencies, local authorities
- **Timeline:** H2 2025

2.4 – Develop the unified reference framework "Drinking water catchments" making it possible to link abstraction structures with groundwater and surface water abstraction points, together with the different associated identification codes

- **Leads:** DGALN, **OFB**, IGN, water agencies, local authorities
- **Timeline:** H2 2025

2.5 – Complete the hydrographic reference framework by integrating data from the territories, organise its collaborative updating and provide the necessary maps for the different regulations

- **Leads:** DGALN, MASA, **OFB, IGN**
- **Timeline:** H2 2025

[26] Available at the following link: http://www.sandre.eaufrance.fr/v2/

2.6 – Finalise the national inventory of wetlands and enable its collaborative updating

- **Leads:** DGALN, MASA, **OFB**, IGN
- **Timeline:** H2 2026

2.7 – Finalise the national inventory of bodies of water and integrate it into the BD Topage. Improve the quality of the data and ensure its continuous updating

- **Leads:** DGALN, **IGN, OFB**
- **Schedule:** H2 2026

3 – Hubeau

Concentrate water data and facilitate their reuse to enable their valorisation

Water data (quality of water in natural environments, quantity of groundwater, water abstraction, price of water, polluting pressures exerted on water, etc.) are numerous, but still too little accessible and reusable. The aim is to facilitate their reuse by territories and their valorisation by companies and NGOs by moving towards APIsation and making them available in a single point. This will for example facilitate the development of services for the real-time management of water resources, flood and low-water alerts. It will make it possible to cross-reference data to open the door to new research work (for example, the links between the use of phytosanitary products and biodiversity).

3.1 – Develop APIs for all water observatories and make them available on Hubeau. In particular, improve the rapid availability of data on water abstraction

- **Leads:** DGALN, **OFB**, BRGM
- **Timeline:** Q1 2024 - 2026

3.2 – Accelerate iterations on endpoints (e.g. cross-referencing of data) to better meet user needs and open the code

- **Leads: OFB**, BRGM
- **Timeline:** Q4 2025

3.3 – Put in place animation actions to better publicise the potential of water data (annual hackathon, MOOC)

- **Leads:** DGALN, **OFB**, BRGM
- **Timeline:** 2025 and subsequent years

4 – Prémhyce Aqui-FR MétéEAU Nappes BNPE

Deploy priority models for anticipating water-related crises

Knowledge of the water resource and anticipation of its evolution could be improved to manage crises in a context of climate change. These models will be used to support decentralised services and central administrations.

4.1 – Transform the Prémhyce platform[27] into an operational tool that can be integrated into a forecasting chain. Put the interface into production and make the code open source	• **Leads:** DGALN, **DGPR**, INRAE • **Timeline**: Q1 2024 - Q3 2024: Analysis of pilot results Q4 2025 - H2 2025: New prototyping H2 2026 - 2027: adjustment and industrialisation
4.2 – Deploy *Prémhyce* to State services for operational forecasting of river levels during the summer period via an instruction	• **Leads:** DGALN, **DGPR**, INRAE • **Timeline:** 2027-2028
4.3 – Extend *Aqui-FR* and *MétéEAU Nappes*[28] to the whole French territory for groundwater level forecasting	• **Leads:** DGALN, **BRGM**, **OFB**, AQUI-FR consortium • **Timeline:** 2023-2027
4.4 – Continuously integrate the main simulation models into *MétéEAU Nappes*	• **Leads: BRGM** • **Timeline:** 2025-2027
4.5 – Implement weather chaining (*MétéoFrance*) in *MétéEAU Nappes*	• **Leads: BRGM**, MétéoFrance • **Timeline:** Q4 2026
4.6 – Develop models and tools for monitoring storage structures and irrigation in groundwater and surface water	• **Leads:** DGALN, CGDD, OFB, BRGM, IGN, **CNES** • **Timeline:** Q4 2023-H2 2025
4.7 – Develop tools for monitoring withdrawals and consumption	• **Leads: DGALN**, CGDD, OFB, Water Agency • **Timeline:** Q4 2023-H2 2025

5 – CARMEN LDAP SIE

Use generic building blocks for user identity and map distribution

Certain applications of the *Système d'information sur l'eau* (SIE, Water Information System) are now obsolete or difficult to maintain. At the same time, national core infrastructures are available. The old components must be decommissioned and users supported in the transition to new tools. It is also essential to align the SIE with other federating information systems (SIMM, SIB) and to interconnect the components with each other.

[27] Available at the following link: https://shiny.sk8.inrae.fr/app_direct/hycar-premhyce/
[28] Available at the following link: https://meteeaunappes.brgm.fr/fr

5.1 – Transfer to the *geoplateform*(or Geo-IDE[29]) the functionalities currently provided by *Carmen*

- **Leads:** DGALN, **OFB**, **IGN**, BRGM
- **Timeline:** Q4 2025

5.2 – Decommission the LDAP SIE in favour of *ProConnect*

- **Leads:** DINUM, **OFB**
- **Timeline:** Q4 2023-2024

6 – SI continuité

Enhance information on the ecological continuity of watercourses and on restoration in the associated policies

At present, information on obstacles to ecological continuity and on restoration works carried out is not sufficiently highlighted. The *SI continuité* will have to rely on the reference framework for obstacles to water flow (ROE)[30] and enable the implementation of the European regulation on ecosystem restoration.

6.1 – Finalise the national banking of data and restoration operations carried out on transversal obstacles, and carry out an inventory of obstacles to the lateral continuity of watercourses

- **Leads:** DGALN, **OFB**
- **Timeline:** H2 2026

6.2 – Build a collaborative information system for data entry and valorisation

- **Leads:** DINUM, **OFB**
- **Timeline:** H2 2026

6.3 – Ensure data openness and availability on data.gouv.fr

- **Leads:** DINUM, **OFB**
- **Timeline:** 2026

7 – Zones de captage

Set up a territorial tool for visualising water quality to adapt to local environmental issues

The aim is to provide farmers and local authorities with a tool that synthesises issues related to the protection of water resources so that they are aware of local environmental and health issues (drinking water production, quality of water bodies, AAC, ZSCE, PPC, etc.). Such a territorial visualisation tool will provide an integrated view at territorial scale of knowledge on water quality. It will be usable by farmers (similar to VigiEau[31]) and by private parcel management software (possibility of integrating data into OAD).

[29] Available at the following link: http://catalogue.geo-ide.developpement-durable.gouv.fr/catalogue/srv/eng/catalog.search;jsessionid=C15A883FCA6C12A2668EF4462604C72B#/home
[30] Available at the following link: https://www.sandre.eaufrance.fr/atlas/srv/fre/catalog.search#/metadata/070df464-73d3-4c00-be2f-93f2a97ef8f5
[31] Available at the following link: https://vigieau.gouv.fr/

7.1 – Build a tool for characterising diffuse pollution. Identify the data and indicators of interest for different stakeholders (including farmers and local authorities) enabling them to know and assess water quality in a given territory (AAC, exceeding of water quality standards, substances involved, land use, etc.)

- **Leads: DGALN**, **OFB**, MASA
- **Timeline:** Q4 2025

7.2 – Identify existing associated reference frameworks, their limitations and areas for improvement

- **Leads: DGALN**, **OFB**, MASA
- **Timeline:** Q3 2025

7.3 – Create a tool for visualising data/indicators on drinking water abstraction (health, environment and agriculture data)

- **Leads: DGALN**, **OFB**, MASA
- **Timeline:** H1 2026

8 – SI assainissement collectif

Redesign the current tools on collective sanitation (ROSEAU/VERSEAU) to make them more efficient and effective, in order to provide the possibility of support for planning and decision-making

The redesign of these tools must make it possible to considerably reduce the time devoted to them, by optimising their operation and simplifying business processes, in order to increase the overall efficiency of the tasks carried out. To this end, it is necessary to set up a new approach for taking into account the compliance of sanitation systems in the decision-making chain. This transformation includes an essential dimension that goes beyond reporting, by offering possibilities for planning works as well as decision-making support, in particular in the event of pollution in sensitive use areas. This redesign involves a greater transfer of responsibilities to the level of local authorities, thus promoting more active participation and more autonomous management of decision-making processes relating to the compliance of sanitation systems and their improvement.

8.1 – Merge the ROSEAU and VERSEAU tools and transfer their management to the DEB (Sain'eau project)

- **Leads: DEB, MASA,** DGALN**,** OFB
- **Timeline:** 2025-2026

8.2 – Promote data on *Assainissement collectif* (collective sanitation)[32] . Create visualisation tools to make data understandable and accessible

- **Leads: DGALN**, Water Agencies, OFB, IGN, Water Police Services (DDTM), DREAL/DEAL, OIEAU
- **Timeline:** 2024–2027

8.3 – Disseminate data relating to the assessment of the compliance of sanitation systems, as part of reporting under the Urban Waste Water Treatment Directive (ERU

- **Leads: DGALN**, Water Agencies, OFB, IGN, Water Police Services (DDTM), DREAL/DEAL, OIEAU
- **Timeline:** 2024–2027

[32] Available at the following link: https://www.assainissement.developpement-durable.gouv.fr/pages/data/carteIntSteu.php

Directive) and the Sewage Sludge Directive

8.4 – Create a mapping tool for the rainwater network to improve decision-making on sanitation

- **Leads: DGALN**, Water Agencies, OFB, IGN, Water Police Services (DDTM), DREAL/DEAL, OIEAU
- **Timeline:** 2025–2027

8.5 – Create an observatory on the use of non-conventional water, a system for collecting, analysing and monitoring relevant data on the use of non-conventional water

- **Leads: DGALN**, Water Agencies, OFB, IGN, Water Police Services (DDTM), DREAL/DEAL, OIEAU, other relevant ministries
- **Timeline:** 2025–2027

C Sea and Coastlines

9 – SIMM

Collect and share existing data to characterise the state of marine environments

Data on marine biodiversity is currently difficult to access. The action aims to bring together data on marine environments on the MilieuMarinFrance portal[33] and provide tools for accessing it (API). Aggregating this data will facilitate the technical secretariats' (ST PAMM) definition of action programmes for the preservation of marine environments and reporting under the Marine Strategy Framework Directive and regional sea conventions. It is also essential to align the SIMM with the other federating information systems (SIE, SIB) and to interconnect the components with each other.

9.1 – Collect and disseminate data on marine fauna and megafauna (elasmobranchs, turtles, seabirds, marine mammals)

- **Leads:** DGALN, **OFB**, Ifremer
- **Timeline:** Q4 2025

9.2 – Disseminate data on the assessment of marine environments, as part of MSFD reporting[34]

- **Leads:** DGALN, **OFB**, Ifremer
- **Timeline:** Q3 2025

9.3 – Streamline data dissemination portals MilieuMarinFrance, Géolittoral, Sextant, EoliennesEnMer, etc.

- **Leads:** DGALN, **OFB**, Cerema, Ifremer
- **Timeline:** Q4 2025

10 – GéoLittoral

Identify, complete and structure data on the evolution of the coastline according to the FAIR principles (Findable, Accessible, Interoperable, Reusable)

[33] Available at the following link: https://www.milieumarinfrance.fr/
[34] Available at the following link: https://dcsmm.milieumarinfrance.fr/

In the context of climate change, it is necessary to identify the data available locally and nationally on the coastline and to make them readable. Yet today, information on the "coastline" hazard is difficult to find and spread across several national, regional and local digital portals. Knowledge remains partial. Regulatory constraints for local authorities make it possible to address, to some extent, the change in the coastline, but there is still a real difficulty in identifying whether or not the municipality is concerned by this evolution. Once this data has been completed, it will also be necessary to put in place real simulation models at municipal level, fed by old and new data.

10.1 – Make information accessible on the single *GéoLittoral* portal[35], dedicated to this topic and bringing together data produced by all national stakeholders

- **Leads:** DGALN, **Cerema, BRGM**, IGN
- **Timeline:** H2 2025

10.2 – Ensure the compliance of municipal maps of exposure to coastline retreat via *Géoportail* and strengthen the link with *Géorisques*[36] and *GéoLittoral*

- **Leads:** DGPR, **Cerema, BRGM,** DGALN
- **Timeline:** H1 2026

10.3 – Better inform citizens about the coastline and its evolution by developing a dedicated tool on *GéoLittoral*

- **Leads:** DGALN, **Cerema, BRGM,** DGPR
- **Timeline:** H1 2026

10.4 – Create a section on *GéoLittoral* for elected officials and local government employees to identify whether their municipality is affected by coastal change

- **Leads:** DGALN, **Cerema**
- **Timeline:** H2 2025

10.5 – Produce missing data, such as HD LiDAR coastal slabs

- **Leads:** DGALN, **IGN**, Cerema, Coastal Observatories
- **Timeline:** H1 2026

10.6 – Provide real simulation tools with simple ergonomics, fed by the data available on *GéoLittoral*

- **Leads:** DGALN, **Cerema, BRGM**
- **Timeline:** 2027

10.7 – Raise the Technology Readiness Level (TRL) of the published simulation algorithms. Set up digital services intended for professionals (advanced Human-Machine Interface) to test the algorithms on a large scale (target TRL 9)

- **Leads:** DGALN, **Cerema, BRGM**
- **Timeline:** 2027

10.8 – Take into account feedback from design offices to improve simulation algorithms using machine learning

- **Leads:** DGALN, **Cerema, BRGM**
- **Timeline:** 2028

[35] Available at the following link: https://www.geolittoral.developpement-durable.gouv.fr/
[36] Available at the following link: https://www.georisques.gouv.fr/

11 – Jumeaux numériques pour l'océan

Develop digital twins of the different components of the ocean to provide industrial actors, public decision-makers and citizens, for their projects, the processing of their files or their right to information, with relevant contextual data and decision-support tools

Such a project requires the integration of socio-economic, environmental and risk data, potential analysis models, impact models on environments (including cumulative impacts), models of interactions between activities and optimisation and risk analysis tools. The different sub-actions below are envisaged.

11.1 – Identify the needs of industry and decision-makers regarding the uses of different digital twins

- **Leads:** DGAMPA, **Cerema**, OFB, Mercator Ocean International, Ifremer, SHOM
- **Timeline:** 2024-2025

11.2 – Collect the necessary data and store it in a database

- **Leads:** DGAMPA, **Cerema**, OFB, MERCATOR, Ifremer, SHOM
- **Timeline:** H1 2025

11.3 – Refine and adapt simulation models to the specific characteristics of digital twins

- **Leads:** DGAMPA, **Cerema**, OFB, MERCATOR, Ifremer, SHOM
- **Timeline:** H2 2025 - 2026

11.4 – Fully integrate models into digital twins

- **Leads:** DGAMPA, **Cerema**, OFB, MERCATOR, Ifremer, SHOM
- **Timeline:** 2028

D Forest

12 – BD Forêt

Know the location of French forests and distinguish between the main tree species or mixtures of species to provide professionals in the timber industry and those involved in the environment and land use planning with a geographical forest reference system

The Forest database[37] enables the precise location of forests and of the main tree species or their mixtures. Its uses are numerous: silviculture and production, carbon storage, mapping of forest habitats, air pollution, fire risks in particular through the updating of the informative zoning of *Obligations Légales de Débroussaillement* (Legal Obligations of Clearing), adaptation of forests to climate change (forest renewal), monitoring of pests (bark beetles, pine nematodes, etc.). Likewise, its users are multiple: State services, local authorities, actors in the forestry sector (managers, cooperatives, companies), software publishers, etc. One of the challenges is to industrialise and automate the updating process in order to meet the needs of users who wish to have data updated more frequently. The database must be produced in its version 3 and enhanced with artificial intelligence.

[37] Available at the following link: https://www.data.gouv.fr/fr/datasets/bd-foret-r/

12.1 – Produce a *Forêt* mask for metropolitan France, accessible via *Géoportail*

- **Leads: MASA**, **IGN**
- **Timetable:** Q2 2025

12.2 – Distinguish the species, according to a target nomenclature of 30 categories for mainland France and an adapted nomenclature for the overseas territories

- **Leads: MASA**, DGALN, IGN
- **Timeline:** Q1 2024 - 2027

13 – Inventaire forestier national

Know the state, the evolution over time and the potential of French forests across the whole territory to support decision-making on forest-related issues

The national forest inventory[38] is an essential aid to decision-making on major issues such as the evolution of the forest carbon sink, timber harvesting for the bioeconomy, biodiversity conservation, protection against natural risks, the state of forest soils, the health of trees, etc. It is at present only available in mainland France. Yet the forest area of the five overseas départements (mainly concentrated in French Guiana) is equivalent to half of the metropolitan forest area, and the carbon stock of the overseas forests is of the same order of magnitude as that of metropolitan France. Today, these forests are not subject to a regular knowledge and monitoring system due to the costs of such a programme and the absence of funding. However, methods and technologies for data acquisition and processing have progressed and will make it possible to deploy the inventory overseas through mixed solutions: lidar imagery and field data with the use of AI.

13.1 – Launch, for Guadeloupe, Martinique, La Réunion and Mayotte, the adaptation of the methods applied in mainland France and the production of forest information

- **Leads: MASA**, DGALN, **ONF, IGN**
- **Timeline:** 2025-2030

13.2 – In French Guiana, monitor and participate in experiments on the automated mapping of biomass

- **Leads: MASA,** DGALN, ONF, IGN
- **Timeline:** 2026, then regular updates

13.3 – Carry out the forest inventory of the Guianese forest according to zones and local priority issues

- **Leads: MASA,** DGALN, ONF, **IGN**
- **Timeline:** Inventory completed in 2028

13.4 – Develop and improve the national forest inventory in mainland France

- **Leads: MASA**, **IGN**
- **Timeline:** 2024-2030

This sub-action is divided into several elements:

- Improve the accuracy of results on forests, depending on forest area, which is expanding with agricultural abandonment, and forest heterogeneity, which is increasing under the effects of climate change (larger samples of points of the territory analysed by AI,

[38] Available at the following link: https://inventaire-forestier.ign.fr/

photo-interpretation, field observation and adaptation of statistical calculation chains)
- Produce new indicators on forest renewal in the dual context, on the one hand, of concerns about the effects of climate change and the pressure of large ungulates and, on the other, of monitoring the impacts of the reforestation plan (*France Relance* then *France 2030*)
- Prepare the protocols necessary to monitor annually the effects of climate change on the forest carbon sink (tree-ring measurements and production of reliable national and regional indicators)

14 – 

Improve access to thematic reference information on major current forest issues, as well as to services and observatories useful for knowledge and management of forests at territorial scale

Stemming from the ambition expressed by the forestry and timber industry at the 2022 Forest and Timber Conference, the French Forest Observatory[39] must collectively meet the challenge of knowledge and assist in the steering and evaluation of public policies, in strategy and planning, in management and exploitation, in connection with varied themes: forest health, adaptation to climate change, mitigation of the greenhouse effect, prevention and management of fires, state and evolution of wood resources and forest soils, accessibility of the resource, biodiversity (resilience of forest ecosystems), etc. The observatory may for example build on private initiatives such as *OpenForêt*. Indeed, private as well as public partnerships will play an important role in centralising and disseminating information. The observatory must evolve to improve ergonomics and user experience. The aim today is to make this knowledge system sustainable for the whole forestry sphere.

Furthermore, the global and homogeneous monitoring of biomass balance constitutes a key issue linked to data from forests and soils: the cross-referencing of biomass abstraction data and uses would make it possible to assess potential imbalances and adapt public policies. In this logic, forest management must evolve to a finer scale, that of the plot, and open up to themes other than wood resources alone. The Computree[40] and LiDAR HD[41] tools provide accurate and comprehensive dendrometric data and enable analyses of wood resources that are useful to owners and the industry. Computers must be made accessible to the public for better processing of remote sensing data. It is also essential to draw on scientific projects such as the BIOMASS satellite mission led by CESBIO, which aims to provide large-scale data on forest biomass.

14.1 – Set up a repository for forest data stored by partners in the forestry sector and offer a hosting and redistribution service service via the *geoplateform*

- **Leads: MASA**, DGALN, ONF, OFB, CNPF, FBF, **IGN**
- **Timetable:** Q1 2024 for connection to the Geoplatform, second version of the website in Q1 2025

[39] Available at the following link: https://observatoire.foret.gouv.fr/
[40] Available at the following link: https://computree.onf.fr/
[41] Available at the following link: https://geoservices.ign.fr/lidarhd

14.2 – Coordinate the network of producers of forest data and information with a view to producing content adapted to the needs of public policies (analyses, syntheses, datasets, maps, services)

- **Leads: MASA,** DGALN, ONF, OFB, CNPF, FBF, **IGN**
- **Timeline:** Ongoing action

14.3 – Create digital services and improve existing ones

- **Leads: MASA**, DGALN, ONF, OFB, CNPF, FBF, **IGN**
- **Timeline:** Ongoing action

14.4 – Make Computree available to the public

- **Leads: MASA,** DGALN, **ONF**
- **Timeline:** Q2 2024

15 – Jumeaux numériques pour la forêt

Show the forest "in operation" at different scales, from different perspectives, or through immersive navigation to simulate phenomena and show their impacts

This involves addressing concrete use cases with digital twins representing different parts of the French forest (see actions 18.1 to 18.3 in the cross-cutting section). They will be tested in a limited geographical area with the stakeholder community, then rolled out across geographical, administrative and functional areas. Several use cases have been identified:

- Risk prevention and management: predict the spread of a fire according to topography, species, scrubland, weather; anticipate the optimal intervention zones for firefighters; simulate the optimal layout of forests to increase their resilience to fire; simulate the impact of storms, avalanches and landslides in mountain areas, coastal erosion, etc
- Climate change mitigation and adaptation: simulate scenarios for monitoring the evolution of the health status of trees and forest renewal strategies, the condition of forest soils, the state of biodiversity, carbon storage potential, etc.
- Forest uses: simulate the impacts of forest management practices on wood mobilisation (by area, by species, etc.), on the environment (carbon storage potential), etc.

15.1 – Investigate forest use cases for France's digital twins

- **Leads: MASA**, **IGN, INRAE, INRIA, Cerema**
  Other actors with complementary expertise will join the group of Leads. Actors from the forestry sector will naturally be involved, to an extent yet to be defined, in order to advance this topic.
- **Timeline:**
  Q1 2024:
  – Initial list of validated forest use cases (topics, stakeholders, partners, roadmap)
  – User communities mobilised and structured
  Q1 2025:
  – 1 prototype local forest use case
  – First version of a meshed data base and an object-oriented model for a region, an open working environment for researchers and an integrated simulation model

2026:
– 1 operational use case generalised across a territory (watershed, landscape region, administrative region, coastline, etc.)
2028:
– Complex use cases (combination of several models) operational across the entire country
– Extensive pool of accessible data and panels

16 – ClimEssences Plateforme d'évaluation

Update and improve diagnostic tools to meet regional needs

Forests have considerable adaptive capacities, which are expressed through natural selection during recurring regeneration phases. This dynamic often takes place over several centuries due to the length of the life cycle of a tree. Certain climate projections point to an increase of 4°C by 2100; this anthropogenic phenomenon is much faster than natural variations in climate. Forests will therefore have to face within a few decades a thermal shock equivalent to a natural climatic evolution that would normally have taken place over 10,000 years. Natural adaptation alone is therefore too slow, which makes human intervention necessary.

To identify courses of action, in particular regarding which species to favour, it is necessary to have a sylvo-climatic diagnostic tool enabling anticipation. ClimEssences[42] is intended to be this tool. It provides an analysis of "climatic compatibility" between a series of forest species. Thus, it has been estimated that by 2050, 30% of French forests would be in a situation of "climatic discomfort" and that between 2080 and 2100 this rate should reach 50%.

ClimEssences also makes it possible to detect European climatic areas and the associated species. This tool is therefore useful to public policies, but also to managers and owners since it makes it possible to model the vulnerability of forests.

At the same time, it is necessary to develop a tool for assessing forest dieback of sanitary origin. Today, the only method of control consists of detecting contamination clusters very early in order to eradicate them by harvesting timber and eliminating any possibility of contagion. This presupposes detection mechanisms that are rapid and effective. It is therefore necessary to accelerate the detection effort (ground observations and remote sensing) by developing an up-to-date evaluation platform accessible to all.

16.1 – Update ClimEssences to incorporate the conclusions of the IPCC and TRACC

- **Leads: MASA,** DGALN, **ONF**, IGN, CNPF
- **Timeline:** Q4 2024

16.2 – Link ClimEssences and Zoom 50 (plot-based diagnostic tool)

- **Leads: MASA,** DGALN, **ONF**
- **Timeline:** H1 2025

16.3 – Build a platform for assessing health-related tree decline

- **Leads: MASA,** DGALN, **ONF**, IGN, DSF, CNPF
- **Timeline:** H1 2025

[42] Available at the following link: https://climessences.fr/

17 – Renécofor

Increase the accessibility and visibility of data collected on forest ecosystems at national scale, and thereby promote their use by a greater number of scientists and other potential users

This network of 102 permanent plots in forests has accumulated over 30 years of data heritage organised in structured databases with no equivalent in Europe. Yet this database is largely underused by the scientific community even though it offers a very interesting set of information to understand and explain the long-term mechanisms at work in forest ecosystems. Renécofor[43] enables France to document its response to the European Union on the effect of air pollution on forests.

The aim is to raise awareness of this tool and make better use of the information it provides. There exists a similar tool in French Guiana called Guyafor.

17.1 – Provide open access to raw data through their publication, for each thematic domain, in the new open data repository recherche.data.gouv.fr

- **Leads: MASA**, DGALN, DGEC, **ONF**, IGN, Gip Ecofor
- **Timeline:** Q4 2025

17.2 – Increase the visibility and usability of data: production of data derived from raw data; production of analyses and online data visualisation tools; proposal of new forest health indicators in conjunction with the Forest Observatory

- **Leads: MASA,** DGALN, DGEC, **ONF**, IGN, Gip Ecofor
- **Timeline:** Q4 2025

18 – BD RTM

Organise the opening up of RTM database data and models to provide references for the development of land use policies

The RTM (Restauration des terrains en montagne - Mountain Land Restoration) databases[44] are of great interest for taking mountain risks into account in land use planning policies (avalanches, landslides, torrential floods, torrential lava flows, rockfalls, glacial and periglacial risks). They are useful for decentralised government departments, elected officials and economic stakeholders in the regions.

However, the associated expertise and engineering tools should be made available to private design offices as reference methods on which to base their services. To this end, it is necessary to structure a process for opening up and disseminating these resources to users.

18.1 – Organise the wide opening (open data) of existing RTM databases fed by the ONF RTM and future PAPROG

- **Leads: MASA,** DGPR, **ONF**
- **Timeline:** Q4 2025

[43] Available at the following link: https://www.onf.fr/renecofor
[44] Available at the following link: https://geo-onf.opendata.arcgis.com/maps/760c436f2736431fb0cae21c14c7414b/about

information - This work is to be carried out in close collaboration with the DGPR (event database and PAPROG) and MASA (works database). It will be necessary to analyse how, beyond this dissemination/provision of data, local authorities can in turn contribute to the databases.

18.2 - Organise the wide opening of spreadsheets and software developed by the RTM, with associated legal analysis

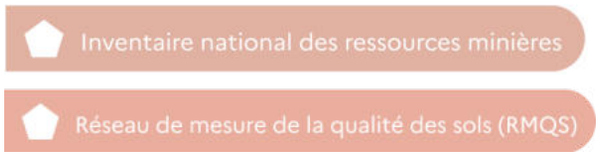
- **Leads: MASA,** DGPR, **ONF**
- **Timeline:** Q4 2025

18.3 - Drawing inspiration from the RTM model to develop a dune management engineering service

- **Leads: MASA,** DGPR, **ONF**
- **Timeline:** Q4 2025

E Soils

19 -



Strengthen and formalise the production of data on soil composition and condition across all territories, including overseas territories

The last mining inventory of French soils was conducted between 1975 and 1992 by the BRGM. This is no longer sufficient and needs to be updated to include metals essential to the transition that were not included at the time, such as lithium for electric vehicle batteries.

At the same time, soil quality and condition must also be better monitored. The main tool for understanding soil conditions in France, the Soil Quality Measurement Network (RMQS), is currently only available in mainland France and does not allow for the rapid acquisition of comprehensive data for monitoring soil conditions, as required by the European directive "*soil monitoring and resilience*" directive published in summer 2023.

19.1 - Define the framework for the national inventory of mineral resources

- **Lead agencies:** DIAMMS, DGALN, **BRGM**
- **Timeline:** Q3 2025

19.2 - Gradually make data available to industry to identify anomalies/indicators of interest

- **Lead agencies:** DIAMMS, DGALN, **BRGM**
- **Timeline:** Q1 2026

19.3 - Promote in-depth investigation by public or private actors of

- **Leads:** DIAMMS, DGALN, **BRGM**

indicators of strategic interest with a view to encouraging the development of new mining projects	• **Timeline:** H1 2026
19.4 – Launch a soil sampling campaign in overseas territories	• **Leads: GIS Sol** (INRAE, BRGM, IGN, OFB, ADEME, MTE-CT, MASA, etc.) • **Timeline:** H1 2025, then every 15 years
19.5 – Consolidate and improve access to data from the soil information system	• **Leads: GIS Sol** (INRAE, BRGM, IGN, OFB, ADEME, MTE-CT, MASA, etc.) • **Timeline:** H2 2025

F Atmosphere

20 – Inventaire National Spatialisé (INS) PREV'AIR

Ensure that atmospheric emission data is regularly updated and improve its dissemination

The implementation of public policies on air quality requires the most up-to-date information possible at national level on sources of pollution and their impact on air quality. The National Spatial Inventory (INS) quantifies emissions from human and natural activities. At the same time, PREV'AIR[45] provides air quality forecasts and maps at national level. These tools need to be strengthened.

20.1 – Ensure regular updating of spatial and temporal data on emissions in France in accordance with defined benchmarks	• **Leads: DGEC**, INERIS, Atmo federation, regional stakeholders • **Timeline:** Q1 2024 - Q4 2026
20.2 – Develop a query API to facilitate the retrieval and use of INS data	• **Leads: DGEC**, INERIS • **Timeline:** Q4 2025 - Q2 2026
20.3 – Develop a query API to facilitate the retrieval and use of PREV'AIR data	• **Leads:** DGEC, **INERIS** • **Timeline:** Q4 2025

21 – Geod'air

Improve information reporting through reference systems and facilitate data use to better guide public policy

Geod'air[46] is the national air quality database. Managed and implemented by INERIS as part of the Central Air Quality Monitoring Laboratory, it has been providing reference data and statistics on air quality in France since 2013. The source data comes from the monitoring system operated in each

[45] Available at the following link: https://www.prevair.org/
[46] Available at the following link: https://www.geodair.fr/

region by approved air quality monitoring associations. Geod'air provides long-term air quality trends and real-time information that is made available to the public. It must be continuously improved.

21.1 – Develop data repositories to enable the integration of new types of data or new data providers

- **Leads: DGEC,** LCSQA/INERIS, IMT Nord-Europe, Atmo federation
- **Timeline:** Q4 2026

21.2 – Improve the existing data dissemination API to meet user demands

- **Leads:** DGEC, **LCSQA/INERIS**
- **Timeline:** Q3 2025

21.3 – Develop an application for entering, validating and integrating metadata from the national air quality monitoring repository into Geod'air

- **Leads: DGEC**, **LCSQA/INERIS**
- **Timeline:** 2027

Risks, Health and Pollutant Emissions

22 – Géostandards Risques

Define a new standard to standardise risk data, enable better exchange and improve data quality

The challenge is to build a standard that is both a production and exchange standard. Designed as the successor to COVADIS V2, it will standardise practices and enrich data on hazard analysis, issues and prevention plans. The format will be supported by tools to facilitate its adoption and will provide richer, more consistent and more reusable data.

22.1 – Review the process for creating and transmitting TRI and PPR (Territoire à Risque d'inondation Important, Plan de Prévention des Risques) data to ensure consistency and usability of the data for Géorisques and other tools using this data

- **Leads: DGPR**, CNIG, IGN, BRGM, Decentralised Services
- **Timeline:** 2023-2026

23 – Aqua-SISE

Consolidate water quality monitoring data and improve its use and value

The sanitary quality of drinking water and bathing water is regularly monitored by regional health agencies (ARS), whose analysis results are fed into the national SISE-Eaux d'Alimentation and SISE-Eaux de Baignade databases.

Given the issues of technological obsolescence and scalability of the Sise-Eaux applications, these databases need to be overhauled in order to improve the technological performance of the tools and better meet user needs. The Aqua-SISE project has two components:

- The Aqua-SISE "Management" component aims to replace the current databases with a new database containing all water health monitoring data.
- The Aqua-SISE "Decision-making" component aims to produce the tools needed to use and exploit the data.

The transfer of this data to Hubeau is also essential to strengthen the interoperability of systems and enable simplified, centralised access to this information.

This action is linked to action 7 on water abstraction from 2025-2026.

23.1 – Set up a module enabling the mapping of non-compliant distribution units	• **Leads: DGS,** DNUM of the MSP, DGALN, DNS • **Timeline:** Q4 2025
23.2 – Establish national *reporting* tools (dashboard, indicators, reports) on water health monitoring data	• **Leads: DGS,** DNUM of the MSP, DGALN, DNS • **Timeline:** Q4 2025
23.3 – Redesign websites providing information to the public, professionals and water stakeholders	• **Leads: DGS,** DNUM of the MSP, DGALN, DNS • **Timeline:** H1 2026

24 – DATA-Risques

Accelerate collaboration between public stakeholders for the sharing of non-public risk data

It is becoming increasingly important to share risk data between public stakeholders. This tool, based on the DATA-Risques model (*open data*), will offer the same services as the latter (queries, export and API) but with security by data and user profile. This will make it easier to share non-public risk data between ministries and will accelerate the progress of joint projects and the interoperability of information systems.

24.1 – Create the DATA-Risques tool (open source and RIE)	• **Leads: DGPR**, BRGM • **Timeline:** minimum version in Q4 2025, mature version in 2027

25 – DataStudio Risques

Make better use of data to anticipate the impact of public policies, evaluate their results, and measure risks and the best actions for resilience and vulnerability reduction

The objective is to build a technical solution based on risk data and other available data to facilitate the creation of analyses, *data crunching*, and fixed or dynamic dashboards on risks, their prevention and their impacts.

25.1 – Build the technical foundation, source data and set up the tools to run a Datastudio/AI capable of providing insights and assessments on risk issues on demand. Improve communication on risks, the progress of preventive actions and the use of public funds

- **Leads: DGPR**, CGDD, BRGM
- **Timeline:** launch of a PoC in Q4 2024, followed by ongoing action

26 – Plateforme Analytics/BI/AI

Ensure effective control to protect citizens and the environment

Public authorities' business solutions can become more effective by improving access to data and using artificial intelligence. The CNAM and DGFiP are already successfully using these solutions to optimise their controls. In a context of staff shortages and increasing expectations, AI can significantly improve the performance of inspection tasks.

26.1 – Assist with inspection preparation (Envinorma + Complément 360° inspection, etc.) by compiling a summary document containing the applicable texts and decrees, reference data from connected tools, and points to watch out for during the inspection

- **Leads: DGPR**, DNUM, BRGM
- **Timeline:** Q1 2024-2027

26.2 – Set up an AI/expert system for targeting controls, points to be checked, and detection of anomalies and/or fraud

- **Leads: DGPR**, DNUM, BRGM
- **Timeline:** 2025-2027

26.3 – Build an AI system that allows comparison of similar companies

- **Leads: DGPR**, DNUM, BRGM
- **Timeline:** 2025-2027

26.4 – Design an AI monitoring system that alerts environmental inspectors to major changes affecting companies

- **Leads: DGPR**, DNUM, BRGM
- **Timeline:** 2025-2027

26.5 – Establish control over information generated by AI

- **Leads: DGPR**, DNUM, BRGM
- **Timeline:** 2025-2027

27 – MonAiot

Develop a data exchange portal between the Administration and businesses on risk management

Businesses have high expectations for improved visibility in the processing of their files and easier communication with the Administration, particularly in the context of the green industry bill. They are willing to contribute more and help resolve any issues quickly. MonAiot[47] is the point of contact

[47] Available at the following link: https://monaiot.developpement-durable.gouv.fr/

between the inspectorate and businesses. Its development should improve dialogue and the efficiency of agents in the field. In particular, it centralises various tools such as GUN, Gidaf and GEREP.

27.1 – Accelerate *workflows* and create innovative solutions to give companies greater visibility on the processing of their files

- **Leads: DGPR,** DGALN, BRGM
- **Timeline:** 2026

28 – Géorisques

Make Géorisques[48] the government's website on risk awareness, prevention and resilience, aimed at professionals and individuals

In the context of climate change, risk prevention must be stepped up to protect property and people. Citizens, mayors and local authorities must be given the means to play their part and have the right tools to prepare and protect themselves. In this context, particular emphasis must be placed on overseas territories to take into account the specific risks of these areas and also the means of communication.

28.1 – Rethink the website's approach to focus primarily on specific audiences and local authorities

- **Leads: DGPR**, BRGM
- **Timeline:** Phase 1 (Préventix) in 2022, Phase 2 in 2023 (Préventix II) and Phase 3 from Q4 2024 (Préventix III)

28.2 – Create a risk repository (Data-Risques), 100% addressable via API and in various export formats

- **Leads: DGPR**, BRGM
- **Timeline:** Base (Open Data) in Q4 2025; DATA-Risques RIE (non-public data) from Q3 2025 to Q4 2027

28.3 – Create a sharing and information space for the entire Risk community in the broadest sense (public and non-public), Res-O-Risque or Agora-Risques

- **Leads: DGPR**, BRGM
- **Timeline**:
  - Q2 2025: identify communities and needs for 2025, create basic tools
  - Q4 2025-2027: Create services, disseminate and deploy

29 – Green Data for Health

Mobilise and promote environmental data for national and regional public authorities, research stakeholders, private stakeholders and health and environment associations

[48] Available at the following link: https://www.georisques.gouv.fr/

In order to better understand and promote the reduction of the impact of various types of pollution that affect our health (using a One Health approach), *Green Data for Health* is a service offering that facilitates the mobilisation of environmental data for environmental health, a major challenge of the ecological transition and action no. 18 of the PNSE4 (National Health and Environment Plan 4[49]). It is structured around three components:

- An online catalogue of resources (data, reuses, tools) (gd4h.ecologie.gouv.fr);
- Legal assistance;
- Data projects (data challenge, call for research projects, experiments in the regions, working group on data interoperability, investigation of needs in terms of tools and methods for mobilising health and environment data in the regions, etc.);
- Implementation of action 23 of the interministerial PFAS plan for the identification of contaminants in the environment;
- Citizen training on health and environment data;
- A French community for health and environmental data and its coordination

Governance is shared between health and environmental stakeholders: the State (including the DGPR and CGDD for the MTE-CT, the DGS and DREES for the MSP, and the DGRI of the MESR), research organisations (INSERM), public agencies and operators (Santé publique France, ANSES, INERIS, OFB, ADEME, Cerema, EHESP), and the Health Data Hub.

In April 2025, a framework agreement was signed by the 14 partner entities to strengthen the sustainability of shared governance and designate ANSES as the entity responsible for this mission.

29.1 – Enrich the online environmental data catalogue and set up data harvesting.

- **Leading entities: CGDD,** DGPR
- **Timeline:** Q1 2024

29.2 – Consolidate and promote the legal support offered to encourage the mobilisation of environmental data, both in terms of making it available and sharing its reuse. Develop a legal self-assessment tool

- **Leads: CGDD,** DGPR
- **Timeline:** Q4 2024

29.3 – Initiate, finance and support health and environment research projects

- **Leads:** CGDD**,** DGPR, **Health Data Hub**
- **Timeline:**

Q4 2023: support for research projects selected following the call for projects conducted jointly with the Health Data Hub.
Q1 2024: establishment of a group of experts to select topics for a second call for projects and select research projects.
Q2 2024: start of support for projects from the second wave of the call for projects.
Q2 2025: launch of the third wave of the call for projects.

[49] Available at the following link: https://sante.gouv.fr/sante-et-environnement/les-plans-nationaux-sante-environnement/article/plan-national-sante-environment-4-pnse-4-an-environment-one-health-2021-2025

29.4 – Stimulate regional health and environment projects on health-friendly urban planning

- **Leads: CGDD,** DGPR
- **Timeline**:

Q4 2024: consolidation of expertise on health-friendly urban planning to embed data in the implementation of public health and environment policies at the local level.
Q2 2025: finalisation of support for the winning projects.

29.5 – Establish a use case to promote the interoperability of data from PFAS monitoring

- **Leads:** CGDD, **DGPR**
- **Timeline:** Q4 2024

29.6 – Coordinate the French Community for Health and Environment Data, which has nearly 450 active members (researchers, experts, hospital practitioners, associations, national and regional public actors, private actors)

- **Leads: CGDD,** DGPR
- **Timeline:** Q4 2025: new plenary meeting of the health and environment data community (4th)

29.7 – Set up and lead the "Geolocated Health Data" working group within the CNIG

- **Leads: CGDD**, DGPR, Health Data Hub
- **Timeline:**

Q1 2024: launch of the report on the possibilities for geolocating health data, and the study on key needs and uses and structural resources for health and environment stakeholders.
2025: promotion of the working group's deliverables

29.8 – Set up citizen training on health and environment data

- **Leads:** CGDD, DGPR, **Health Data Hub**, INERIS
- **Schedule:** launch of the second module in 2025

H Waste and the circular economy

30 – Trackdéchets

Establish a single platform dedicated to waste traceability.

Trackdéchets[50] is a digital tool initially created to improve the traceability of hazardous waste, ensuring it is sent to the appropriate collection and treatment services. At the same time, the National Register of Excavated Soil and Sediment (RNDTS) was created to meet the new waste traceability requirements introduced by the revised Waste Framework Directive in 2018 and the Law on Waste Reduction and the Circular Economy of 10 February 2020.

With a view to **streamlining** services, Trackdéchets and the RNDTS have been merged. All RNDTS features have been available on the Trackdéchets platform since May 2025.

30.1 – Continuously improving Trackdéchets

- **Leads: DGPR**, **BRGM**
- **Timeline:** 2022-H1 2025 (depending on waste types and features)

30.2 – Support for the packaging sector

- **Leads: DGPR, BRGM**
- **Timeline:** H2 2025-2026

30.3 – Providing real-time data for SINOE (ADEME)

- **Leads: DGPR, BRGM**
- **Timeline:** 2026-2027

31 – SINOE-Déchets Filières REP

Restore and promote data on waste (collection, treatment and cost) to help guide public policy and establish a waste strategy by local authorities

The SINOE Waste tool is fed by the results of three surveys conducted by ADEME and its regional partners among local authorities and professionals in the sector: Collection, Treatment and Cost. The Collection and Treatment surveys enable the monitoring of waste flows and treatment methods. The Cost survey enables the creation of cost and financing benchmarks for public waste management services, based on the completion of a cost matrix. This helps to optimise waste management services. However, this survey is conducted in parallel with the other two surveys. The data collected is sometimes redundant and does not follow the same timetable.

The complexity of the SINOE tool and the time required to consolidate and report the data delay its publication. This prevents close monitoring of decisions taken on waste management. It is therefore necessary to make the surveys annual and enable the production of annual data on waste management.

In addition, the Extended Producer Responsibility (EPR) schemes, monitored via the SYDEREP tool, aim to mobilise stakeholders (manufacturers, distributors and importers) with a view to reducing the environmental impact of products throughout their life cycle. A lot of data is collected as part of the monitoring of these schemes, but a lack of standardisation prevents this data from being cross-referenced effectively. Harmonisation of data standards between SINOE and SYDEREP is therefore essential to improve overall analysis, strengthen the consistency of public management and facilitate the evaluation of waste management policies.

[50] Available at the following link: https://trackdechets.beta.gouv.fr/

31.1 – Integrate new modules and functionalities: characterisation of household waste, new waste streams (waste from economic activities, new EPR sectors, etc.)

- **Leads:** DGPR, **ADEME**
- **Timeline:** 2026

31.2 – Streamline existing databases and ensure better interoperability between databases (SINOE, SYDEREP) and promote the standardisation of data from EPR channels

- **Leads:** DGPR, **ADEME**
- **Timeline:** 2026, then ongoing

31.3 – Consider more frequent reporting of EPR and waste data

- **Leads: DGPR,** ADEME
- **Timeline:** H1 2027

31.4 – Manage access to databases for European reporting purposes

- **Leads:** DGPR, CGDD, **ADEME**
- **Timeline:** 2025

31.5 – Harmonise section headings in line with regulations (e.g. energy recovery and R1, waste streams by material, explicit treatment streams)

- **Leads:** DGPR, **ADEME**
- **Timeline:** 2026

31.6 – Support observatories in their role of coordinating observation at local level to harmonise observation practices in line with European reporting requirements

- **Leads:** DGPR, **ADEME**
- **Timeline:** ongoing

32 – Suivi des métaux stratégiques

Formalise, structure and strengthen data production on imports, exports and uses of strategic metals in the ecological transition

The ecological transition is driving growing demand for critical metals such as cobalt and graphite. It is therefore essential to establish rigorous monitoring of data on the flows and uses of these metals in order to improve our knowledge of value chains and optimise metal recycling and reuse practices.

32.1 – Establish a consolidated and regularly updated database on the flows and uses of strategic metals

- **Leads: OFREMI, BRGM,** ADEME
- **Timeline:** Q1 2026

32.2 – Identify data needs on critical metals and propose improvements to data capture that could lead to changes in traceability policies

- **Leads: OFREMI,** BRGM, **ADEME**
- **Timeline:** Q1 2026

Illustration using two use cases

Work on the two following use cases is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different "building blocks" of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the "use case vision."
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Planning water resources and managing crises

Recent summers have highlighted the growing need for more accurate water resource management. This requires, in particular, precise and detailed knowledge of water withdrawals in the area.

Currently, the withdrawals recorded are not representative of all those made and are only provided on an annual basis, with a delay of one to two years. There is no data cross-referencing service, which often depends on variable reference systems depending on the data source. Furthermore, the data does not include real-time monitoring or information on the resource from which the withdrawal was made. This hinders crisis anticipation and management in particular.

Several indicators will be used to monitor the project: changes in household water savings or the number of municipalities experiencing drinking water supply disruptions at least one day per year from a business perspective, or, in particular, the number of dashboards produced, changes in data consumption, and the number of meters with remote transmission for operational indicators.

Personae – Current situation

Marie-Agnès is the mayor of a municipality of 10,500 inhabitants. She is keen to make her residents more responsible in their use of water. She is therefore looking for personalised and local information, such as ready-to-use figures showing the evolution over the past ten years of actual abstractions and water uses. In a crisis situation, she must be able to know how the resource and demand (in particular for drinking water) are evolving among her residents, in order to anticipate the need for emergency supplies.

Olivier is the Prefect of Pyrénées-Orientales. To support him in his decision-making, he needs the fullest possible information on the state of the resource and the environment, including the levels of severity. In order to assess compliance with water use restrictions in a drought crisis, he must have in Synapse the data relating to abstractions and water uses, together with monitoring elements (data and summaries) to complement the environmental indicators already available in Synapse.

Arnaud is a farmer. He has declared his planned abstractions (7,000 m³ for the year) and is seeking to declare his actual abstractions each quarter (5,300 m³ in September). During periods of restrictions on water use, he is looking for a single site that will inform him, on a daily basis, of his obligations and of the restrictions applying to his activity.

Hannah est représentante d'une association environnementale. Elle participe à différentes instances publiques et est mobilisée par des citoyens, au nom desquels elle s'assure de la bonne répartition de la ressource. Elle souhaite disposer des historiques, par usage, de l'ensemble des prélèvements en eau tout au long de l'année, et d'informations sur leur impact sur les écosystèmes, ainsi que de retours d'expérience sur les crises précédentes.

Astou is an officer at the Departmental Directorate of Territories (DDT) in Vaucluse. In order to assess the allocation of authorised volumes among agricultural, individual and collective users in relation to the availability of the resource from the OUGCs, she must have information on the volumes actually abstracted as well as on the identity and activity of the abstractors. In a crisis situation, all the information handled by her department must already be available in Synapse, including on water uses.

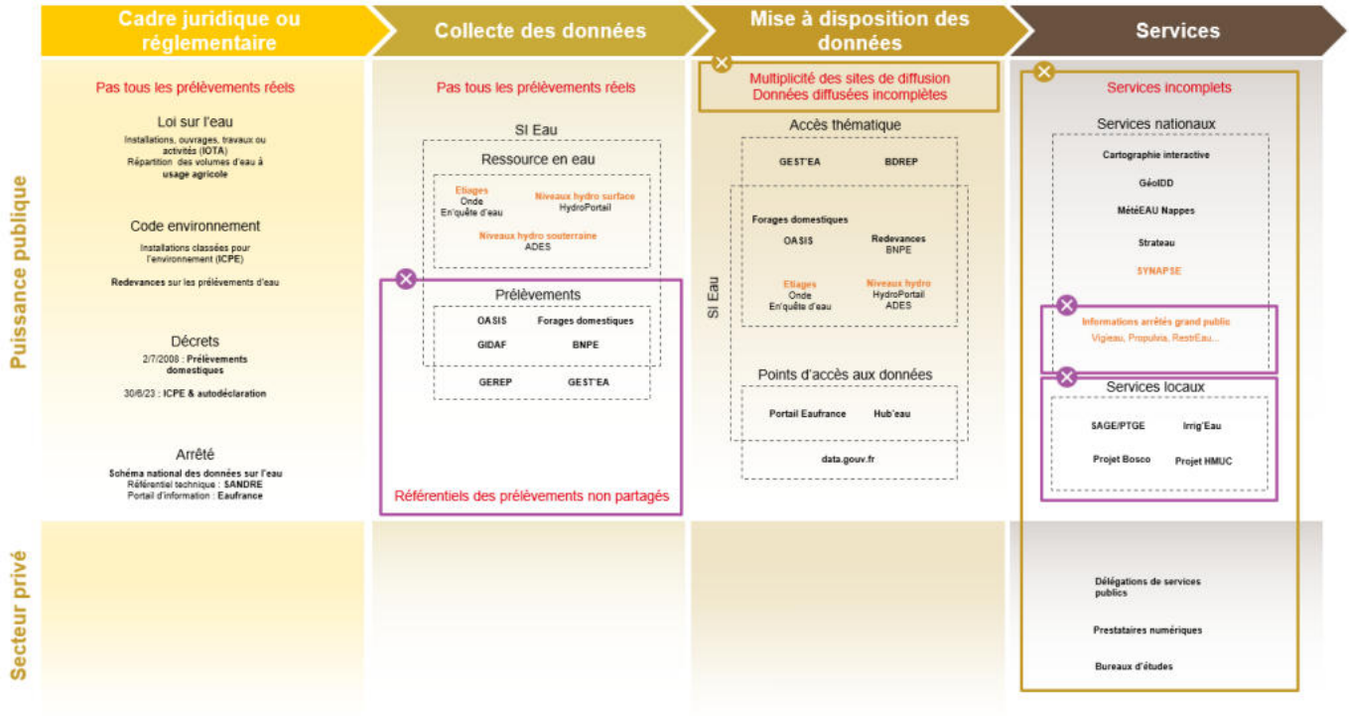
Nicolas is a hydrogeologist. He is currently studying the functioning of the Nantes aquifer. To calibrate his model, he is seeking the complete set of abstractions from 2015 to 2022 for the lower Loire catchment area, in connection with the impacted resource (the aquifer).

Gaëlle is a resident of Corbières (66). She knows that everyday actions matter and would like to have benchmarks on the effectiveness of local policies and the efforts of the residents of her community, such as their quarterly water consumption, the breakdown of consumption by use, and consumption by area. During periods of restrictions on water use, she is looking for a single site that will inform her, on a daily basis, of the restrictions that apply to her.

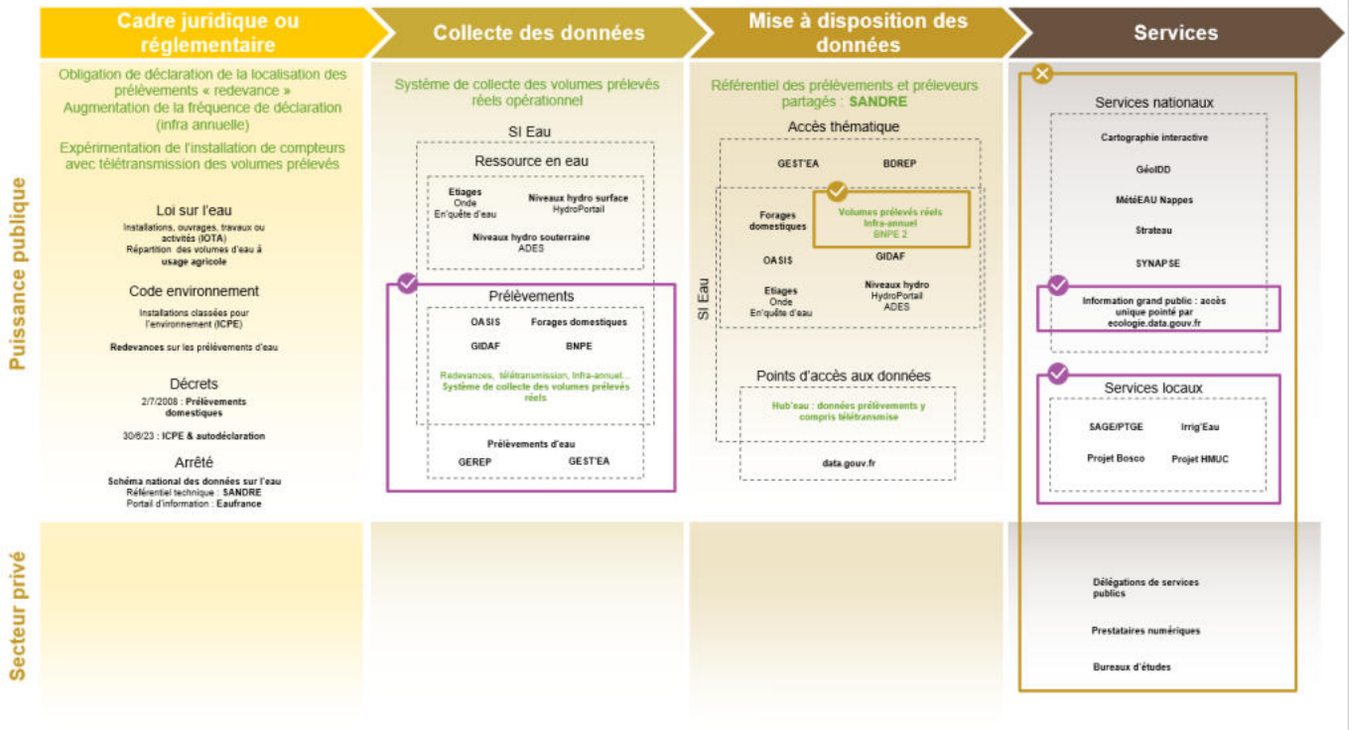
MARIE-AGNÈS
mayor

ARNAUD
farmer

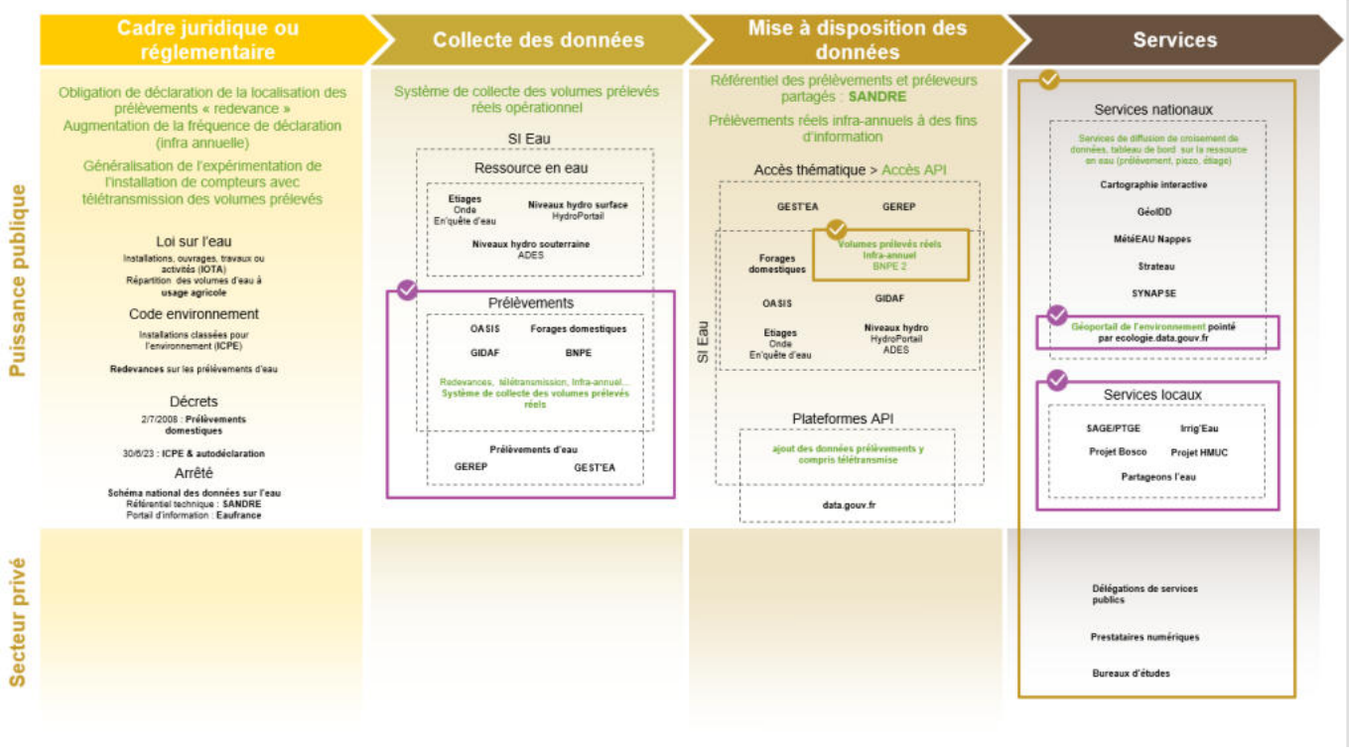
Current situation



Medium-term situation



Target situation



Personae – Target situation

Marie-Agnès is the mayor of a municipality of 10,500 inhabitants. She is keen to make her residents more responsible in their use of water. She now has access to personalised and local information, such as ready-to-use figures showing the evolution over the past ten years of actual abstractions and water uses. In a crisis situation, she can monitor the evolution of the resource and of demand, particularly for drinking water, among her residents in order to anticipate the need for emergency supplies.

Olivier is the Prefect of Pyrénées-Orientales. To support him in his decision-making, he needs the fullest possible information on the state of the resource and the environment, including the levels of severity. To assess compliance with water use restrictions during a drought crisis, he has in Synapse the data relating to abstractions and water uses, together with monitoring elements (data and summaries) to complement the environmental indicators already available in Synapse.

Arnaud is a farmer. He has declared his planned abstractions (7,000 m³ for the year) and can now declare his actual abstractions each quarter (5,300 m³ in September). During periods of restrictions on water use, he has access to a single site that informs him, on a daily basis, of his obligations and of the restrictions applying to his activity.

Hannah is the representative of an environmental association. She takes part in various public bodies and is called upon by citizens, on whose behalf she ensures the fair distribution of the resource. She has access to historical records of all water abstractions throughout the year, broken down by use, as well as to information on their impact on ecosystems and to feedback from previous crises.

Astou is an officer at the Departmental Directorate of Territories (DDT) in Vaucluse. In order to assess the allocation of authorised volumes among agricultural, individual and collective users in relation to the availability of the resource from the OUGCs, she must have information on the volumes actually abstracted as well as on the identity and activity of the abstractors. In a crisis situation, all the information processed by her department is available in Synapse, including on water uses.

Nicolas is a hydrogeologist. He is currently studying the functioning of the Nantes aquifer. To calibrate his model, he is seeking the complete set of abstractions from 2015 to 2022 for the lower Loire catchment area, in relation to the impacted resource (the aquifer).

Gaëlle is a resident of Corbières (66). She knows that everyday actions matter and would like to have benchmarks on the effectiveness of local policies and on the efforts of the residents of her community, such as their quarterly water consumption, the breakdown of consumption by use, and consumption by area. During periods of restrictions on water use, she accesses a single site that informs her, on a daily basis, of the restrictions that apply to her.

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN THE TARGET VISION
	Only part of the actual volumes extracted must be declared on an annual basis	- Make it mandatory for water abstractors to report the actual volumes abstracted and the location of the abstracted resource below the levy threshold, specifying the frequency of reporting (at least once a year) - Make it mandatory for certain extractors to install meters with remote transmission of the volumes extracted (measure 12 of the water plan), start of the trial in 10 areas	Additional regulation: make it mandatory for certain extractors to install meters with remote transmission of the volumes extracted (measure 12 of the water plan): generalisation of the trial in 10 areas
	Declaration of the resource from which the withdrawal subject to a levy is not mandatory	Make it mandatory to provide information on the location of the resource abstracted for abstractions subject to the levy	
	The BNPE (National Water Withdrawal Database) only collects and makes freely available data on fees relating to withdrawals	- Collection, in addition to fees, of authorisations and declarations for actual volumes withdrawn of less than 10,000 m3 with an inter-annual time interval - Dissemination to all, in addition to fees, of new data: volumes withdrawn of less than 10,000 m3 with an inter-annual time interval	- Collection, in addition to fees, authorisations and declarations of actual volumes withdrawn of less than 10,000 m3 with an inter-annual time interval (continuation) - Dissemination to all in addition to new data collection fees: volumes collected below 10,000 m3 with an inter-annual time interval
	Declared withdrawal data (water points, authorised annual withdrawal volume for all uses, possibly the declared annual withdrawal volume) are only accessible to internal departments. Many DDTs use their own systems: national data coverage and consistency not guaranteed	Work on the point-source data entry service and the real-time data collection service	
	Water withdrawals are subject to a monitoring report, the format and content of which are at the discretion of the operator, with the information necessary for inspection by the Classified Installations Inspectorate. Reporting threshold lowered for withdrawals from 50,000 to 7,000 m3/year (ministerial decree of 26 December 2012, amended by ministerial decree of 31 January 2008). Operators shall also send their sampling data to the relevant water agency for the calculation of the fee.	In addition to the fees, authorisations and declarations for actual withdrawals of volumes less than 10,000 m3 with an inter-annual time interval	Collection in addition to abstraction fees and authorisations and declarations of actual volumes abstracted less than 10,000 m3 with an inter-annual time interval (continuation)
	Non-shared sampling and sampler reference systems	Work on reference systems for withdrawals and withdrawers	
	Hub'eau concentrates and disseminates data on water resources by theme via API	- Dissemination to all, in addition to withdrawal fees, of new data: volumes withdrawn below 10,000 m3 with an inter-annual time interval and experimental data: volumes transmitted remotely over a limited experimental area - Provision of some national services	- Distribution to all in addition to new data collection fees: volumes collected below 10,000 m3 with an intra-annual time step and distribution of experimental data: volumes transmitted remotely across the national territory - Provision of a complete set of national services
	Strateau, a digital decision-making support model that reconstructs total water demand based on socio-economic data at all spatial scales: V1 currently being finalised	Provision of a number of national services	Provision of a complete set of national services

Managing coastal erosion

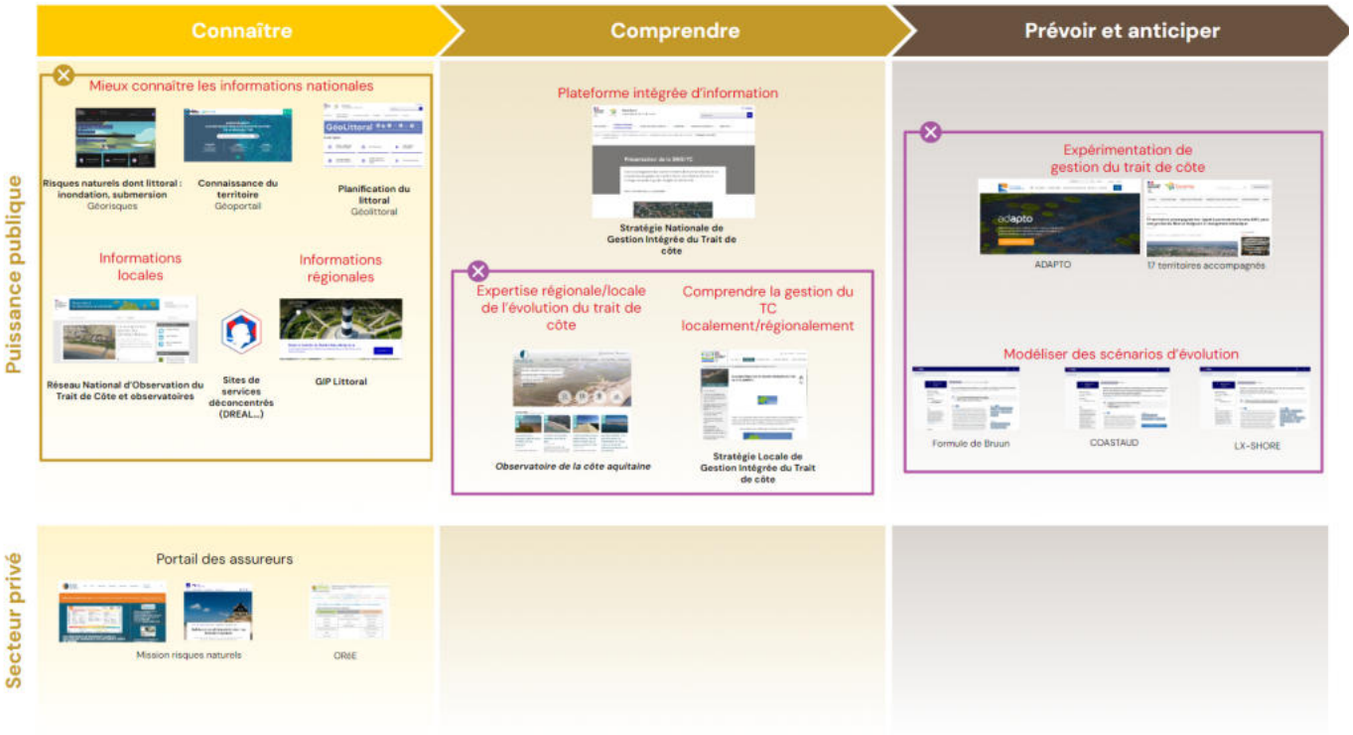
Climate change requires not only measures to mitigate emissions in order to limit global warming, but also measures to adapt to the new climate reality.

The issue of coastal erosion requires an effective digital strategy: although this is a major challenge for the coming decades, the data available on the subject is highly variable, unworkable, unharmonised and unstandardised. It is also difficult to access and there is a lack of tools to exploit or use it.

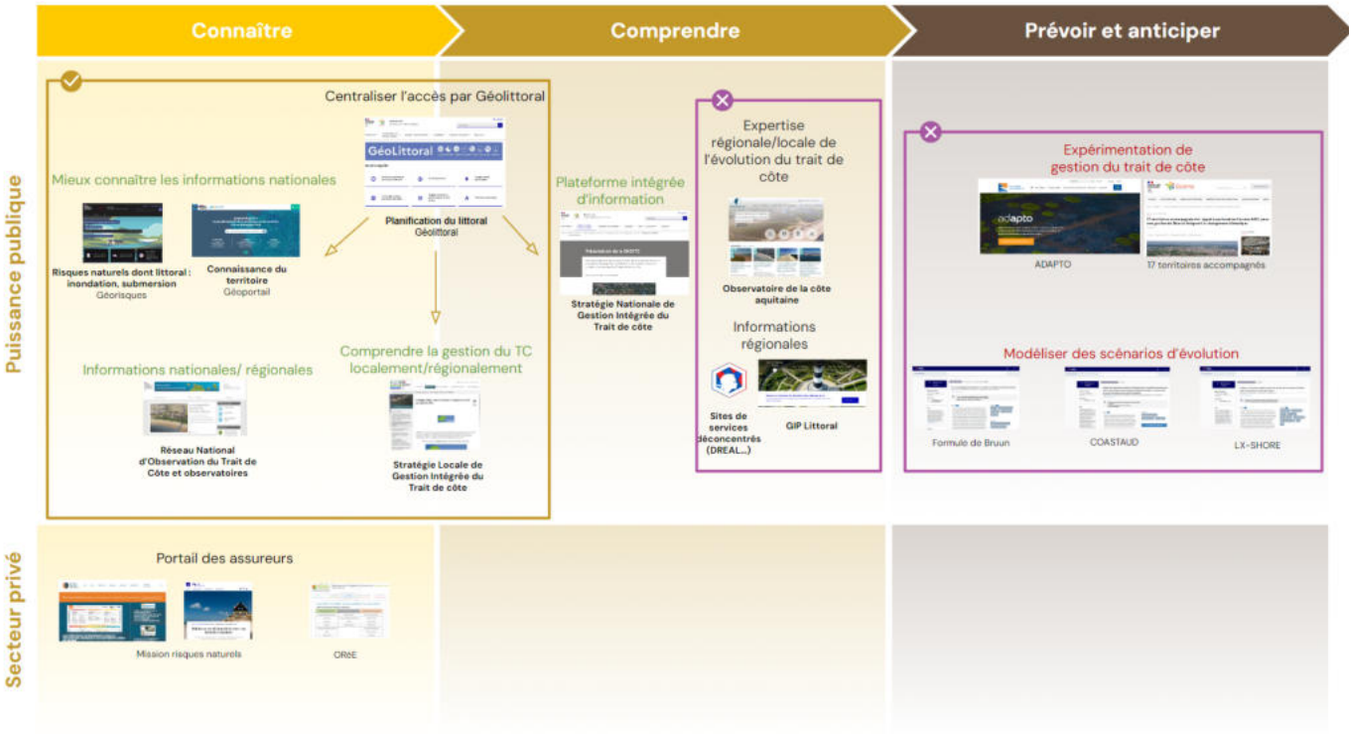
For these use cases, the indicators selected are, from an operational point of view, the number of visits to the GéoLittoral and Géorisques websites with a "coastal line" entry, the number of simulation scenarios carried out annually, and from a professional perspective, the number of local urban development plans (PLUs) that take into account coastal evolution, the number of local coastal evolution maps published on GéoLittoral, and the percentage of municipalities that have taken into account the risk of coastal evolution.

Personae – Current situation

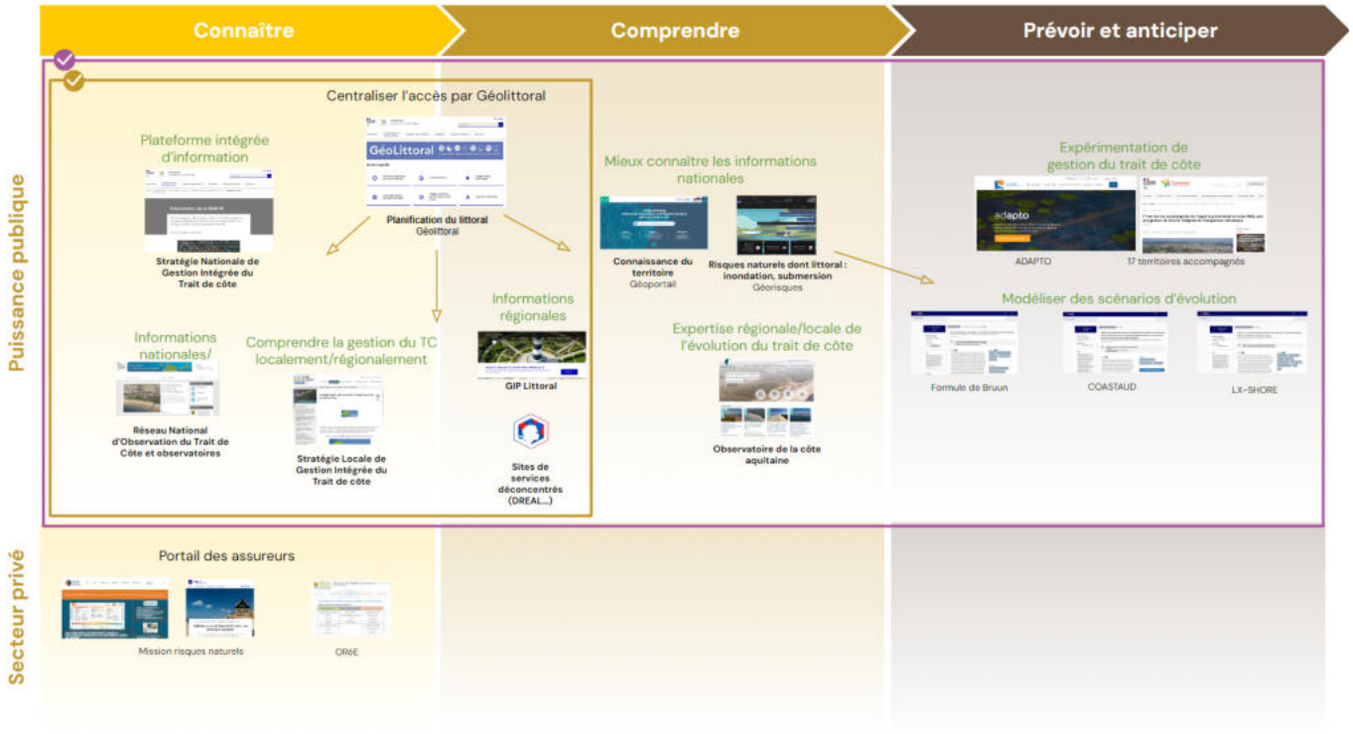
Current situation



Medium-term situation



Target situation



Personae – Target vision

Karine is the owner of a house on the coast. She is worried because she sees television reports about coastal erosion and can find the information that concerns her by using Géolittoral.

François is a potential buyer of a house on the coast. He has consulted Géolittoral to find out what risks his future home is exposed to. In this way, he has been able to obtain the relevant information on coastal erosion.

Albert is a notary. He must inform François about the risks associated with the property for sale. He can find the information through Géolittoral, and Géorisques.

Swann is a risk engineer in a consultancy firm who must respond to Andréa regarding the revision of the Local Urban Plan (PLU). Thanks to the tools available to him, he can provide predictions of coastal erosion.

Andréa is the mayor of a small coastal municipality. She must soon revise her Local Urban Plan (PLU) in accordance with the Climate and Resilience Act. Through the tools available to her, she can determine whether her municipality is affected by coastal erosion and she knows the procedures to follow.

Bettina works in an inter-municipal authority in the urban planning department. She is frequently consulted by the technical departments of the municipalities. Bettina has tools to identify the neighbourhoods with a high potential for coastal erosion and is familiar with the dynamics of support.

Christiane is an insurance agent. François comes to her to insure his home located in a coastal municipality. Christiane must assess the potential risks. She can find relevant indicators to determine the amount of the premium, taking into account the risk of coastal erosion.

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN TARGET VISION
	Information that is difficult to find, spread across several national, regional and local portals	Information accessible on the single GeoLittoral portal, dedicated to the topic and bringing together data produced by all national stakeholders	
	(Very) partial knowledge of the risk of coastal change		Data made FAIR and centralised to provide comprehensive information
	All risks affecting real estate are gathered in the Géorisques portal, except for coastal erosion	- The Géorisques portal refers to GéoLittoral for information on the coastline of the municipality - Complete the My Home, My Risks report on Géorisques with information on coastal elevation changes in the municipality, if relevant	
	Regulatory constraints but real difficulty in identifying whether the municipality is affected by changes in the coastline	Entry for elected representatives and local authority officials on GéoLittoral to identify whether the municipality is affected by the risk of coastline change	
	Lack of tools for the general public to understand the phenomenon and its mechanisms		Organisation of theoretical simulations of coastal phenomena affecting the municipality for the general public
	Lack of generic tools for an initial approach to this risk at the municipal level	Entry for elected officials and local authority staff on GéoLittoral with a step-by-step approach to disseminating the procedure to be followed: main stages, detailed stages, operational guide for elected officials/staff	
	No list of professionals capable of implementing a comprehensive approach for the municipality	Entry for elected officials and local authority staff on GéoLittoral with a step-by-step guide to the procedure: main stages, detailed stages, operational guide for elected officials/staff	Creation and enhancement of a database of professionals/steps in the coastal management process chain
	No forecasting tools in the vast majority of cases		Provision of user-friendly real-life simulation tools, fed by data available on GéoLittoral
	A few experiments carried out with a few municipalities		Regular information for professionals when new data is made available on GéoLittoral
	Scientific publications on simulation scenario algorithms	- Increase in TRL of published algorithms (target TRL 7) - Implementation of digital services for professionals (advanced HMI) to test the algorithms on a large scale (target TRL 9)	Feedback from design offices taken into account to improve simulation algorithms using *machine learning*

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

Water:

- Aquascop
- Aquasys
- Sisteer
- Live
- Somei
- Altero
- Cieau
- Anteagroup
- Safege/Suez
- French Hydrotechnical Society
- Professional Federation of Water Companies
- National Federation for Fishing and the Protection of Aquatic Environments
- EDF

Sea and Coastline:

- Keran
- Artelia
- Egis
- France Assureurs

Forest:

- National Wood Federation
- French Forestry Experts
- National Federation of Local Contractors
- Openforet
- National Federation of Land Development and Rural Settlement Companies
- Professional Committee for the Development of the French Furniture and Wood Industries

- Union of French Forestry Cooperatives
- France Wood Forest
- Federation of Private Forest Owners of France
- Fransylva
- France Wood Industry Enterprises
- Forestry company of the Caisse des dépôts et consignations

Soils:

- National Federation of Agricultural Trade Unions

Atmosphere:

- Interprofessional Federation of Atmospheric Environment Professions

Risk, Health and Pollutant Emissions:

- France Assureurs
- Central Reinsurance Fund
- Natural Risk Mission
- French Building Federation
- Confederation of Craftsmen and Small Building Companies (CAPEB)
- Construction Quality Agency
- European Centre for Flood Risk Prevention
- French Association for the Prevention of Natural and Technological Disasters
- Confederation of Geodesy, Cartography and Cadastre
- French Insurance Federation
- CEHTRA (*Consultancy for Environmental and Human Toxicology and Risk Assessment*)
- National Centre for Prevention and Protection
- Higher Council for the Prevention of Technological Risks
- CSTMD (Advisor on the Safe Transport of Dangerous Goods)
- National Federation of Environmental Clean-up Activities

Waste and circular economy:

- Circular Fashion Federation
- Professional Federation of Recycling Companies

Deployment table

STAKEHOLDERS	ACTIONS TO BE TAKEN
DGALN	Validate the solutions recommended by the WG
	Establish governance in conjunction with the Water IS and the water plan
	Manage services for recording actual spot withdrawals and collecting data in real time
	Deploy meters and remote reading modules in the test area
	Test under real conditions in the departments previously involved: data communication by meters on the one hand, and their reception, banking, processing and dissemination by the water information system tools on the other
	Assess the scope, validate the feasibility and measure the impact of the new data acquired on existing systems and the expectations of the target audiences. If validated, roll out gradually
	Conduct feedback on the deployment of Prémhyce for operational forecasting of river levels during the summer period
	Transform the Prémhyce platform into an operational tool that can be integrated into a forecasting chain. Put the interface into production, make the code open source and then deploy the platform to government departments.
	Build a tool for characterising diffuse pollution. Identify data and indicators of interest to the various stakeholders (including farmers and local authorities) to determine and qualify water quality in a given area (AAC, water quality standard exceedances, substances involved, land use, etc.).
	Finalise the reference framework for water catchment areas and specify how it will be managed and updated, facilitate collaborative updating; merge the catchment area database with the Grenelle SOG priority infrastructure monitoring database.
	Extend the forest inventory to overseas territories
	Stabilise the functioning of the French forest observatory
	Produce and deploy a digital twin of France for forests (e.g. the forest component of the cross-cutting Digital Twin of France project), particularly for fire propagation and forest adaptation to climate change
	Stabilise RMQS funding and launch the overseas campaign
DGPR	Make Géorisques the government website for knowledge, prevention and resilience in the face of risks: improve services, create a risk reference framework, redesign for local authorities and individuals
	Review the process for creating and transmitting TRI and PPR data to ensure consistency and usability of the data for Géorisques and other tools using this data
	Run a DataStudio/AI to be able to provide insights and assessments on risk topics on demand
	Develop and industrialise AI systems to improve the efficiency of risk and pollutant discharge action plan controls
	Develop the Trackdéchets tool for waste tracking and traceability
	Ensure communication between the waste and circular economy information systems, facilitate information sharing and collaboration between tools to implement more effective policies and accurately monitor progress
MASA	Overhaul the ROSEAU and VERSEAU tools and transfer their management to the DEB (Sain'eau project)
	Produce and update the Forest DB v3 using deep learning
	Extend the forest inventory to overseas territories
	Stabilise the functioning of the French forest observatory
	Produce and deploy digital twins for forests, particularly for fire propagation and forest adaptation to climate change
	Update and develop ClimEssences
	Facilitate access to and use of forest data by publishing raw data on recherche.data.gouv.fr, developing analyses, visualisation tools and indicators linked to the forest observatory.
	Stabilise RMQS funding and launch the overseas campaign
MIOM	Identify relevant datasets and reference sites
	Participate in work on data output formats to ensure the interoperability of data flows
	Add harvested volumes and harvesting authorisations/user types to SYNAPSE
DGEC	Ensure regular updates of spatial and temporal data on emissions in France in accordance with the benchmarks defined in the national spatialised inventory of atmospheric emissions
	Develop a query API to facilitate the retrieval and use of data from the national spatialised inventory of atmospheric emissions

	Develop data repositories to enable the integration of new types of data or new data providers into Geod'air and improve the existing API
	Develop an application for entering, validating and integrating metadata from the national air quality monitoring repository into Geod'air
DGS	Improve AQUA-SISE through map visualisation, national reporting tools and a redesign of information websites for the public and water professionals.
OFB	For the design of an environmental geoportal, develop standards and repositories for sharing regulatory biodiversity and environmental data, with an initial use case for forests (FOREG)
	As technical coordinator of SIEau, mobilise stakeholders around new solutions
	Develop the Hubeau 2 project into an API platform: coordination, co-design, co-production, interoperability aspects
	Accelerate iterations on endpoints (e.g. data cross-referencing) and open up the code to better meet user needs
	Coordinate a reuse base and ensure continuous improvement of services by producing new APIs for accessing and enhancing basic data (at least one API for public use) and integrating new synthesis or cross-referencing APIs
	Add metadata for new APIs to the Environment Geoportal
	Develop APIs for all water observatories and make them available on Hubeau (six APIs per year)
	Implement promotional activities to raise awareness of the potential of water data (annual hackathon, MOOC)
	Develop models for assessing water stocks (groundwater and surface water)
	Support SANDRE in modernising its processes to accelerate the integration of new emerging needs and compliance with European and international standards
	Develop a reference framework for pressures on aquatic environments and data standards to make pressure data collected for planning purposes interoperable
	Develop a unified "drinking water abstraction" reference framework to link abstraction structures with groundwater and surface water abstraction points and the various associated identification codes
	Complete the hydrographic reference framework by integrating data from the territories, organise its collaborative updating and make the maps required for the various regulations available
	Finalise the national inventory of wetlands and enable its collaborative updating
	Finalise the national inventory of water bodies and integrate it into the Topage database. Improve data quality and ensure it is continuously updated
	Include in the Geoplatform/GeoIDE the functionalities currently provided by Carmen
	Finalise the national database of data on obstacles to the continuity of watercourses
	Build a collaborative information system for data collection, analysis and dissemination on the ecological continuity of watercourses
	Develop a tool for characterising diffuse pollution. Identify data and indicators of interest to the various stakeholders (including farmers and local authorities) that enable the quality of water in a given area to be assessed and classified (AAC, water quality standard exceedances, substances involved, land use, etc.)
	Disseminate data relating to the assessment of marine environments, as part of MSFD reporting
SANDRE	Develop and structure national water reference systems and ensure their interoperability, collaborative updating and alignment with emerging needs and European standards.
	Adapt and disseminate the two reference systems for "samplers" and "structures and sampling points", taking into account the new scope (samplers and structures affected by the lowered thresholds)
BRGM	Co-design and co-produce applications to complement existing Hubeau building blocks or make adjustments to them (platform developments, API format, etc.)
	Develop and deploy new water data valorisation services.
	Extend Aqui-Fr (AQUIFR consortium) and MétéEAU Nappes (BRGM) to the whole of France for groundwater level forecasting.
	Develop models for assessing the availability of groundwater stocks
	Make Géorisques the government website for knowledge, prevention and resilience in the face of risks: improve services, create a risk reference framework, redesign for local authorities and individuals
	Review the process for creating and transmitting TRI and PPR data to ensure consistency and usability of the data for Géorisques and other tools using this data
	Develop a structured national framework for inventorying mineral resources, facilitating industrial access to geological data, and encouraging the exploration of strategic deposits by public and private actors

	Develop the Trackdéchets tool for waste monitoring and traceability
	Create an up-to-date database on strategic metal flows to guide policies on the traceability and recovery of metal deposits.
OFREMI	Create an up-to-date database on strategic metal flows to guide policies on the traceability and recovery of metal deposits.
INERIS	Ensure regular updates of spatial and temporal data on emissions in France according to benchmarks defined in the national spatialised inventory of atmospheric emissions
	Develop a query API to facilitate the retrieval and use of data from the national spatialised inventory of atmospheric emissions
	Develop a query API to facilitate the retrieval and use of PREV'AIR data
Cerema	Redesign and deployment of STRATEAU, then promotion to local authorities (municipalities and EPCIs)
	Improve information and digital tools on coastal evolution by centralising data on Géolittoral, making it more accessible to citizens and elected officials, and developing simulation tools and algorithms
	Develop digital twins of the ocean that provide industrialists, public decision-makers and citizens with information for their projects, file reviews or right to information
	Produce and deploy digital twins for forests, particularly for fire propagation and forest adaptation to climate change
ONF	Stabilise the functioning of the French forest observatory
	Produce and deploy a digital twin of France for forests (i.e., the forest component of the cross-cuttingNational Digital Twin project), particularly for fire propagation and forest adaptation to climate change
	Update and develop ClimEssences
	Facilitate access to and use of forest data by publishing raw data on recherche.data.gouv.fr, developing analyses, visualisation tools and indicators linked to the forest observatory.
IGN	For the design of an environmental geoportal, develop standards and benchmarks for sharing regulatory biodiversity and environmental data, with an initial use case for forests (FOREG)
	Establish a single location where all regulated areas converge (in one place, know for sure whether an area is regulated without having to search dozens of sites (with a high risk of omission) - useful for water but also for other environmental areas and issues
	Complete the hydrographic reference system by integrating data from the territories, organise its collaborative updating and make the maps required for the various regulations available
	Finalise the national inventory of water bodies and integrate it into the Topage database. Improve data quality and ensure it is continuously updated
	Include in the Geoplatform/GeoIDE the features currently provided by Carmen
	Produce and update the Forest DB v3 using deep learning
	Extend the forest inventory to overseas territories
	Stabilise the operation of the French forest observatory
	Produce and deploy a digital twin of France for forests, particularly for fire propagation and forest adaptation to climate change
	Review the process for creating and transmitting TRI and PPR data to ensure consistency and usability of the data for Géorisques and other tools using this data
INRAE	Produce and deploy digital twins for forests, particularly for fire propagation and forest adaptation to climate change
	Stabilise RMQS funding and launch the overseas campaign
Other public operators	Extend Aqui-Fr to the whole of France for groundwater level forecasting
	SGPI: Produce and deploy digital twins for forests, particularly for fire propagation and forest adaptation to climate change
	INRIA: Produce and deploy digital twins for forests, particularly for fire propagation and forest adaptation to climate change
	Ecolab: Run a Datastudio/AI to be able to provide insights and assessments on risk topics on demand
	ADEME: Connect the waste and circular economy information systems, facilitate information sharing and collaboration between tools to implement more effective policies and accurately monitor progress
Private operators (consulting firms, public service delegations, major operators	Fédération Atmo: Ensure regular updates of spatial and temporal data on emissions in France according to defined benchmarks
	LCSQA: Improve the existing API for disseminating Geod'air data to meet user demands

BIODIVERSITY

Why?

The current biodiversity crisis, driven by human activities, represents a major challenge for our societies. Our well-being and very existence depend on the environmental conditions and resources provided by ecosystems. More fundamentally, how can we justify a model of development that results in the irreversible disappearance of species, and in some cases, entire branches of the tree of life? The work of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) has identified five principal pressures on biodiversity: changes in land and sea use, overexploitation of certain species, climate change, pollution, and invasive alien species.

To reverse this trend, two complementary approaches must be pursued simultaneously: on the one hand, the implementation of nature and biodiversity policies (such as the protection of habitats and species, and the restoration of ecosystems and populations); on the other, the systematic integration of biodiversity considerations into all sectors of activity in order to minimise their impacts.

Digital technology is an essential tool in supporting biodiversity conservation and restoration policies. Data producers (associations, citizens, managers, private actors, etc.) require harmonised methods and standards to generate structured data that can be effectively reused by stakeholders in the field (government departments, local authorities, land managers, and others). At present, such information is often difficult to access and challenging for non-specialists to interpret. It is therefore necessary both to strengthen biodiversity monitoring capacities and to develop or improve digital services, enabling every actor to fully understand the biodiversity issues relevant to their activities.

This need is particularly acute in the fields of development and spatial planning, which determine the organisation of all other activities and where the most effective levers for biodiversity action are found at the territorial level.

Citizens, for their part, lack sufficient information to act more effectively in support of biodiversity in their daily lives, especially concerning applicable regulations and the vulnerability of species and ecosystems, whether common or remarkable, close to them or visited for recreation. There is therefore an urgent need to provide tools that reinforce the coherence of existing systems, strengthen individual connections to the natural environment, ensure understanding and respect for regulatory requirements, and enable activities to be organised in ways that integrate biodiversity concerns as effectively as possible.

The strategy is structured around three main priorities. The first is to strengthen core infrastructure, existing data systems, and their interoperability, in order to preserve and disseminate data at the highest level. The second is to reinforce biodiversity monitoring in order to establish a robust and coherent knowledge base, while also developing new methods such as environmental DNA. The third, and arguably most critical, is to translate and contextualise this data and to develop digital tools that allow it to be easily understood and adopted by all stakeholders, particularly those involved in planning and development.

What?

Each priority building block outlined in black under the theme "Preserve biodiversity" is the subject of a numbered "action" detailed below. These actions are structured into "guidelines" identified by letters, which follow the layers of the building. The guidelines are classified from bottom to top because, although all actions must be carried out in parallel in order to work in "product" mode and meet the urgent ecological challenges, they are all based on the foundations of the building, which must therefore be improved as a priority.

Each action is structured in an educational and pragmatic way: the business challenges are explained first, followed by an assessment of the current situation and associated issues, and then the sub-actions to be undertaken, along with their Leads and timetable. The Leads are classified according to central government departments, operators and regions; the main leader is indicated in bold. These actions and their timetable have been reviewed to incorporate the contributions of the public consultation, submitted in writing or during hundreds of interviews. They may be subject to change in an agile manner. These changes will be presented in summer 2025 and then annually.

BIODIVERSITY

Abouti
Avancé
Entamé
Naissant
Inexistant

Transversal | Activités, pression | État de la biodiversité | Réponse, gestion

International
National
Local

Action principale

OBSERVATOIRES

RECHERCHE
- Infrastructures de recherche (Data Terra,...)

PILOTAGE
- Observatoire de l'artificialisation
- Observatoire des collisions infrastructure-faune
- Observatoire National de la Biodiversité
- Observatoires de Vigie-Nature
- Observatoire des forêts françaises
- Observatoire national des bocages
- Indicateurs de gestion durable
- Inventaire forestier national
- Observatoire de l'éolien en mer

SERVICES NUMÉRIQUES

PROFESSIONNELS
- Chass'Adapt
- Centre de ressources OFB
- Tableaux de chasse
- Boîte à outils Biodiversité (BOB)
- CarHab
- SPOT
- FOREG

C & P
- NatureFrance
- Pratiques autorisées dans les aires protégées pour les acteurs (PAAPA)

CITOYENS
- CRAC
- INPN espèces
- OPEN
- INPN Espaces
- Pl@ntNet
- Compteur BIOM

C

SI MÉTIER CŒUR

SI ACTEURS EXTERNES
- GéoMCE
- SI exploitants/propriétaires forestiers
- SI associations naturalistes

SI ACTEURS PUBLICS TERRITORIAUX
- DatABC
- Plateformes régionales SINP habilitées
- SI gestionnaires d'espaces (parcs nationaux, conservatoires,...)

INFRASTRUCTURES SOCLES

B

PARTAGE DE DONNÉES
- SI statistiques et milieux agricoles
- Géoportail de l'environnement
- Système d'Information Biodiversité (SIB)
- Infrastructures techniques des données de biodiversité
- SINP
- Recolnat
- GBIF
- PNDB
- Référentiel de séquences d'ADNe environnemental et standards (INPN/SIB/ CARET)

A

DIFFUSION DE DONNÉES OUVERTES
- SIMM
- INPN (dont openobs)
- SIB : catalogue

DONNÉES MÉTIER
- INIES
- Géorisques
- ZNIEFF
- CiTIQUE
- Schéma national de surveillance de la biodiversité terrestre
- Contours des parcelles
- Réseaux de suivi de la faune sauvage
- SEXTANT
- Dissco
- Epifaune
- SI CITES
- Outils naturalistes : Oisons, Cardobs, Geonature
- Cartographie des zones humides
- Dispositifs de franchissement
- Mesures compensatoires
- SI chasse
- SI Aires protégées
- SI trame écologique
- Bases biodéchets
- SI N2000
- SI Espèces exotiques envahissantes

DONNÉES D'IDENTITÉ
- Oscean, Songe

RÈGLES SOCLES

INTEROPÉRABILITÉ
- TAXREF
- Standards qualité des sols
- format de rapportage aires protégées
- Standards SINP
- Normes phyto
- ISO 14091
- ISO 14090
- Méthodologies communes internationales
- Schéma national des données de biodiversité
- Standards internationaux : TDWG (Darwin Core...), Eunis
- SIB : CARET

SÉCURITÉ
- Systèmes de certification (FSC...)

ÉTHIQUE
- Loi biodiversité
- Conventions internationales (GBIF, Ramsar, Berne...)
- Stratégies : SNB, SNAP...
- Loi énergie climat
- Textes européens : DHFF, DO, DCSMM, REEE, futur règlement sur la restauration
- Systèmes de certification
- Code de l'environnement L124-4 et espèces sensibles

A Strengthen the basic infrastructure and interoperability with other systems

1 – Infrastructures techniques des données de biodiversité

Sustain and secure technical infrastructure for biodiversity data to enable long-term access for all

Biodiversity data must be supported by a technical infrastructure that guarantees three benefits to the producers, operators and managers of these resources:

- Data security to ensure its integrity, sustainability and usability at all times
- Large storage volumes to provide human actors and machines with a single location for storing and accessing this heterogeneous data (data, metadata, multimedia resources, etc.)
- Fast access to this data for reading, writing, updating and deletion thanks to high, highly available upload and download speeds required for technical exchanges (API) between the storage location and consumer systems, in order to support a user experience that meets current standards

1.1 – Strengthen the solution for highly secure, available and resilient data storage through the implementation of NetApp

- **Leads:** DGALN, MNHN
- **Timeline:** H2 2025

1.2 – Consolidate the deployment of the high-speed, high-availability network by moving the infrastructure to a French public data centre

- **Leads:** DGALN, **MNHN**
- **Timeline:** H1 2026

2 – Système d'Information Biodiversité (SIB)

Continue and strengthen the implementation of the Biodiversity Information System (SIB) to organise biodiversity data

Understanding trends in species and ecosystems, as well as identifying the levers for action to influence these changes, requires reliable knowledge of the state of biodiversity and of the various pressures and management measures applied, including those implemented by sectoral actors outside biodiversity policies. The SIB, currently under development, is the federating information system for organising and monitoring the availability of these data. The main challenge is to better structure and share data from the 31 public policies identified in the national biodiversity data scheme (CITES, hunting, ERC, natural heritage, etc.).

It is particularly important to ensure interoperability between the SIB and other federating information systems (SIE, SIMM, PNDB), which requires both technical and functional consistency across these

systems. In addition, each sectoral information system must operate within a common framework (standards and governance defined by the SIB) while maintaining its own specific arrangements to meet the needs of its business lines and users.

2.1 – Gradually overhaul and harmonise federated information systems to ensure interoperability with the SIB	• **Leads: OFB-PatriNat** • **Timeline:** 2026
2.2 – Have an operational SIB technical reference system by strengthening its Technical Reference Administration Centre (CARET) in order to improve internal (inter-business IS) and external (SIE, SIMM, PNDB, international) interoperability	• **Leads:** DGALN**, OFB-PatriNat** • **Timeline:** Q1 2024: reference framework for pressure types; Q3 2025: reference framework for management and restoration measures
2.3 – Provide support to business ISs in expressing their needs, implementing their business plans, and taking the technical reference framework into account in regulatory texts and in data production, management and dissemination systems.	• **Leads:** DGALN**, OFB-PatriNat** • **Timeline:** Q4 2025

2.4 – Consolidate IS on biodiversity in agricultural environments	• **Leads:** DGALN, CGDD, relevant business IS managers, **OFB-PatriNat**
	• **Timeline**:
	  ○ Q4 2023: assessment of biodiversity policies lacking data on agricultural environments
	  ○ Plan for progress until 2030 aimed at providing access to data with the required accuracy and involving agricultural stakeholders in this knowledge

2.5 – Populate the biodiversity data access catalogue on Naturefrance	• **Leads: DGALN**, OFB-PatriNat • **Timeline:** by H1 2026, 100% of data covered by the SIB will have been added to the catalogue
2.6 – Ensure metadata flows from business information system catalogues and the SIB catalogue (Naturefrance[51]) to other cross-cutting	• **Leads:** DGALN, **OFB-PatriNat** • **Timeline:** harvesting by Écosphère in Q4 2025

[51] Available at the following link: https://naturefrance.fr/

catalogues (data.gouv.fr, Écosphère[52])

2.7 - Consolidate the organisation of business IS and formalise it through their respective business models

- Natura 2000 IS: one of the cornerstones of the nature restoration policy (draft EU regulation)
- Protected Areas IS: cornerstone of the national strategy for protected areas (SNAP 2030)
- Hunting IS: conservation management of migratory species, reduction of game damage
- Ecological network IS: restoration of continuity, removal of obstacles (resilience of ecosystems to climate change)
- SI professions involved in agriculture: see above

- **Leads: DGALN**, OFB-PatriNat
- **Timeline:** 2025, occupational scheme covering invasive alien species (EU regulation), then other occupational ISs as soon as possible

B Produce and structure new data to document the status and trends and evaluate the action

3 - Schéma national de surveillance de la biodiversité terrestre

Publish and implement a national terrestrial biodiversity monitoring scheme to document the state of biodiversity and its evolution with a view to its preservation

France is one of the few European countries without a structured, long-term system for monitoring the status and trends of biodiversity, particularly terrestrial biodiversity.

Historically, biodiversity monitoring in France has relied largely on initiatives by stakeholders (notably associations) and research programmes, without any national coordination. This has resulted in partial and uneven coverage, with certain areas better monitored than others (for example, biodiversity in overseas territories is much less documented than in mainland France) and certain components of biodiversity remaining largely unknown (for example, birds are far better monitored than invertebrates).

[52] Available at the following link: https://ecosphere.fr/

Moreover, it is difficult to identify temporal trends of improvement or decline on the basis of heterogeneous data. It is therefore essential to establish a reliable indicator for monitoring biodiversity trends in France and for assessing the impact of the measures implemented to halt its decline.

3.1 – Validate and enrich the general monitoring scheme to provide reliable monitoring of biodiversity trends

- **Leads:** DGALN**, OFB-PatriNat**
- **Timeline:** Q4 2025

3.2 – Develop new scientific methods for monitoring biodiversity and test their industrialisation

- **Organisers:** DGALN**,** OFB-PatriNat, **research operators** (MNHN, CNRS, INRAE, etc.)
- **Timeline:** Ongoing

3.3 – Better formalise the organisation and financing of the monitoring mechanisms identified in the plan and deploy them in the field

- **Leads:** DGALN**, OFB-PatriNat**
- **Timeline:** Q4 2026

3.4 – Define reference standards for data dissemination (national and international)

- **Lead agencies:** DGALN, **OFB-PatriNat**
- **Timeline:** ongoing until H2 2026

3.5 – Update existing indicators within the framework of the ONB/INPN

- **Lead agencies: CGDD, OFB-PatriNat**
- **Timeline:** Q4 2025

4 – Référentiel de séquences d'ADNe environnemental et standards (INPN/SIB/ CARET)

Develop services enabling the consolidation and dissemination of biodiversity monitoring data from environmental DNA (eDNA)

The collection and analysis of DNA fragments present in the environment is a novel approach to identifying species and rapidly improving understanding of biodiversity in a given area. For example, this method can be used to detect the presence of rare and hard-to-observe species, as well as species that have recently appeared in an ecosystem.

This innovative technique is now ready for large-scale deployment, particularly as France is among the most advanced European countries in this field. The challenge is to establish national public tools that can be used by private actors to complement biodiversity inventories and monitoring, especially in areas that remain poorly documented, such as marine environments and overseas territories.

4.1 – Establish and maintain a repository of genetic sequences

- **Lead partners:** DGALN, **MNHN**, **OFB-PatriNat**, OFB, research operators

	• **Timeline:** Q1 2024: launch of the project, Q2 2025: production of the repository
4.2 – Define, implement and disseminate data standards by supporting stakeholders in sharing data produced in information systems	• **Leads:** DGALN, **OFB-PatriNat, MNHN** • **Timeline:** Q4 2025-Q1 2026
4.3 – Bring together and support stakeholders involved in collecting this data	• **Leads:** DGALN, **OFB-PatriNat**, Vigilife • **Timeline:** from Q1 2026
4.4 – Regulate the use of this method for regulatory monitoring	• **Leads: DGALN** • **Timeline:** Q1 2026
4.5 – Produce methodological guides for stakeholders/managers	• **Leads:** DGALN, **Vigilife, PatriNat (OFB, MNHN)** • **Timeline:** Ongoing
4.6 – Disseminate tools (reference framework, data standards, methodological guides, etc.) internationally	• **Leads: DGALN, Vigilife, PatriNat (OFB, MNHN)** • **Timeline:** Q2 2026
4.7 – Roll out the use of eDNA on a large scale (France and overseas territories)	• **Leads: DGALN, Vigilife, PatriNat (OFB, MNHN)** • **Timeline:** Q4 2025 - Q4 2027

C Translate data for action by integrating it into the business information systems and digital services of sectoral stakeholders

For all of these digital services, the objective is to develop both an interface directly usable by end users and interoperability tools between software applications (such as APIs) that can be integrated into the information systems and digital services of sectoral actors. The co-construction of these developments between biodiversity stakeholders and sectoral users will be further strengthened.

5 – Boîte à outils Biodiversité (BOB)

Promoting biodiversity data to improve its use by natural space managers

The Biodiversity Toolbox provides information on the biodiversity issues at a site or network of sites. This assessment tool provides a standardised response by leveraging all zoning information (rules or knowledge) and data on species and ecosystems currently available in the National Natural Heritage Inventory.

The service offered to natural area managers (local authorities, businesses, associations) will provide them with an overview of the biodiversity issues at their sites and any regulatory constraints to inform

their management decisions. It will include SPOT, a tool for modelling the potential presence of protected or endangered species.

This project is the industrialisation of a prototype developed with socio-economic stakeholders (EDF, quarry operators, natural area managers, etc.), currently benefiting from sponsorship funding.

5.1 – Produce an initial version of the service with the space module

- **Leads:** DGALN, **PatriNat (OFB, MNHN),** sector users
- **Timeline:** Q2 2025

5.2 – Define a stable economic model that takes into account long-term system maintenance

- **Leads:** DGALN, **PatriNat (OFB, MNHN),** sector users
- **Timeline:** Q3 2025

5.3 – Produce a second version of the service with the species and ecosystems module

- **Leads:** DGALN, **PatriNat (OFB, MNHN),** sectoral users
- **Timeline:** Q1 2026

5.4 – Enhance the BOB API to enable the use of data in environmental accounting and reporting processes

- **Leads:** DGALN, **PatriNat (OFB, MNHN)**
- **Timeline:** Q1 2026

6 – FOREG

Assess the feasibility of a digital service to provide forestry stakeholders with data on forests, in particular on the probability of the presence of protected species, so that they can carry out their management activities while limiting the impact on these species

As knowledge of forest biodiversity is limited and unevenly distributed across the country, the Foreg project ([53]) aims to use existing data (types of environments, species, etc.) to model the potential presence of protected or endangered species in forests.

6.1 – Conduct a feasibility study for such a service, taking into account the needs of state forest owners and managers

- **Leads:** DGALN, **IGN,** sectoral users
- **Timeline:** Q4 2023

6.2 – Develop the FORESP digital service to support forestry stakeholders in taking protected species into account

- **Leads:** DGALN, **IGN,** sector users
- **Timeline:** H2 2025 for a first version of the tool

6.3 – Develop forest use cases and associated services by identifying missing data to better meet user needs

- **Leads:** DGALN, **IGN,** OFB
- **Timeline:** Q4 2024 - Q3 2025

[53] Available at the following link: https://foreg.beta.gouv.fr/

7 – Pratiques autorisées dans les aires protégées pour les acteurs (PAAPA)

Raise awareness of protected areas or areas of concern (30,000 sites) and of authorised, discouraged or prohibited practices in the 10,000 areas regulated for biodiversity in France (30% of the territory)

Although France adopted an ambitious national strategy for protected areas (SNAP) in 2021, it is based on a wide variety of types of areas regulated for biodiversity, often leading to a lack of awareness among stakeholders and citizens of the concrete impacts of these regulations on their activities. The aim is therefore to develop digital services targeted at specific communities of stakeholders (e.g. renewable energy project developers, citizens or farmers) that enable everyone to find out about the protected areas in their territory and the practices that are authorised or prohibited in each of these areas.

7.1 – Define a management/authorisation typology that is "understandable" by non-specialists	• **Leads:** DGALN, **MNHN, OFB,** sectoral users • **Timeline:** Q4 2025
7.2 – Structure the databases needed to manage this information	• **Leads:** DGALN, **OFB-PatriNat,** sectoral users • **Timeline:** H1 2026
7.3 – Develop an initial pilot version	• **Leads:** DGALN, **OFB-PatriNat,** sector users • **Timeline:** H2 2026
7.4 – Develop and deploy a white label web service and API	• **Leads:** DGALN, **OFB-PatriNat,** sector users • **Timeline:** 2027
7.5 – Develop and deploy a free INPN spaces mobile app enabling all citizens to discover protected areas around them	• **Leads:** DGALN, **OFB-PatriNat,** sector users • **Timeline:** 2027

8 – CarHab

Provide land use and planning stakeholders with information on natural environment mapping tailored to their contexts

Covering the entire national territory with maps of different types of natural habitats is a major step forward in gaining a more comprehensive view of biodiversity issues in different areas. This enriched data must be made available to as many people as possible, in particular by integrating it into digital information systems and services.

8.1 – Finalise and update national mapping of natural habitats (including overseas territories)	• **Lead actors: DGALN,** OFB-PatriNat, MNHN, IGN, CBN, sectoral users • **Timeline:** Q4 2026

8.2 – Contextualise this data to make it accessible to non-specialists

- **Lead agencies: DGALN,** OFB-PatriNat, MNHN, IGN, CBN
- **Timeline:** Q1 2026

8.3 – Disseminate this contextualised data in the information systems and digital services used by land use and planning stakeholders

- **Leads: DGALN,** IGN, sectoral users
- **Timeline:** Q1 2027

8.4 – Disseminate this data via data.gouv.fr and the Geoplatform

- **Leads: DGALN,** IGN
- **Timeline:** Q1 2027

Illustration of a use case

Work on the following use case is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different “building blocks” of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the “use case vision.”
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Taking biodiversity into account in urban planning decisions

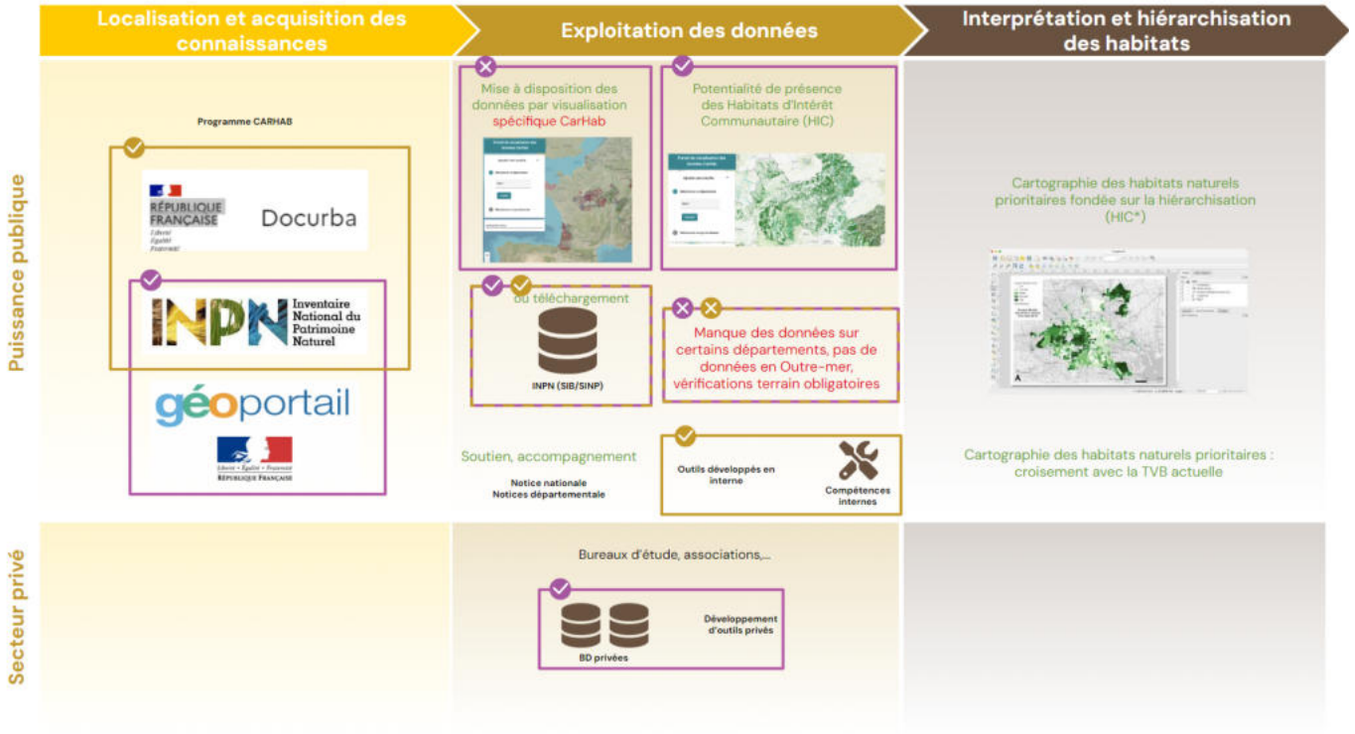
Government departments and local authorities responsible for land use and planning, as well as the organisations that support them (such as urban planning agencies and consulting firms), often lack a clear and comprehensive understanding of the biodiversity issues within their territories. As a result, measures aimed at reducing pressures on biodiversity, restoring ecosystems and ecological continuity, and promoting renaturation are frequently overlooked or insufficiently implemented.

This situation arises because the tools and information currently available offer only partial, fragmented, or overly complex perspectives, which do not readily allow biodiversity knowledge to be integrated into digital business processes and administrative tools.

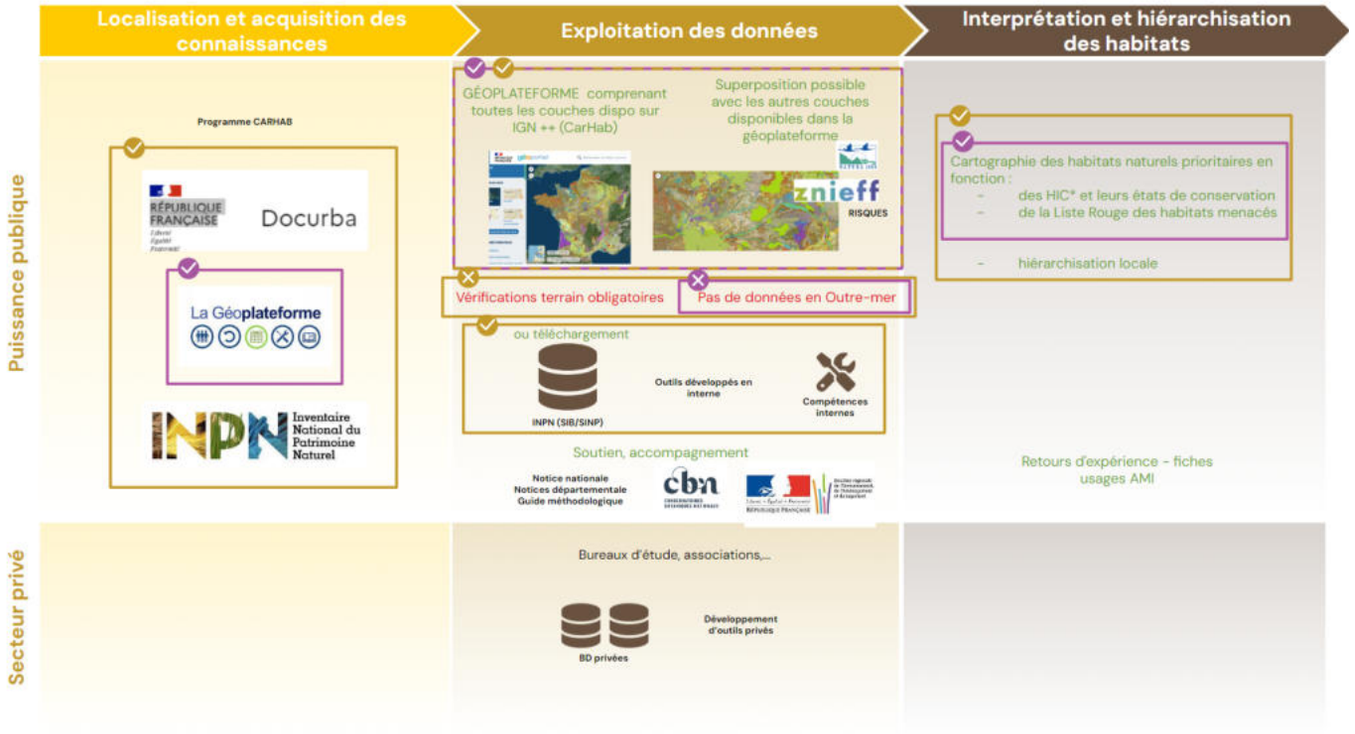
In this context, relevant monitoring indicators may include, from a professional perspective, the number of views of CarHab mapping via the geoplateform and the evolution of the conservation status of natural habitats (as reported to the European Union). From an operational perspective, indicators may include the number of CarHab data downloads and the volume of visits to the DocUrba platform.

Personae – Current situation

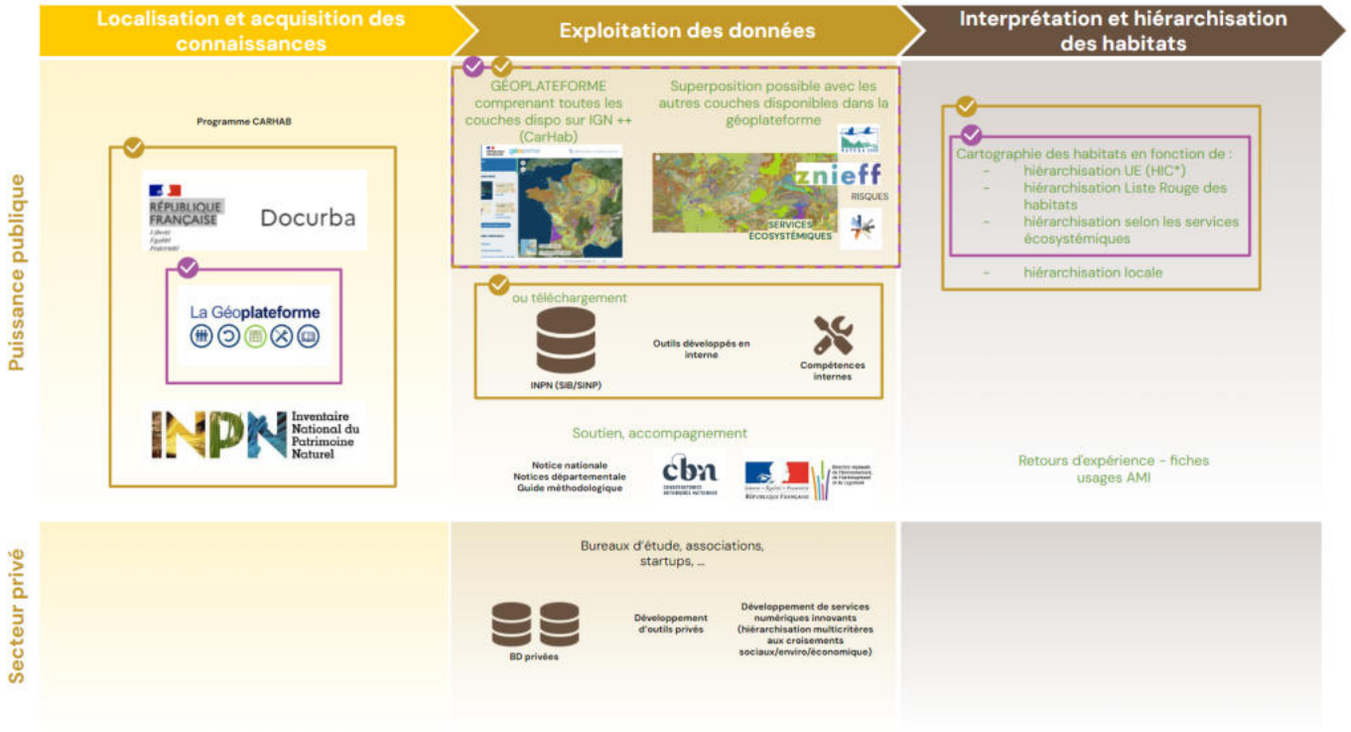
Current situation



Medium-term situation



Target situation



Personae – Target vision

Laurent works in the environment department of a regional council and has been asked to draft the environmental section of the new Regional Plan for Spatial Planning, Sustainable Development and Territorial Equality (SRADDET). He knows that his department wants an ambitious document in terms of biodiversity, particularly with regard to strengthening ecological continuity, protecting and restoring ecosystems, and re-naturalising urban areas. He succeeds in gathering the regional and local data relating to the natural habitats present in his area and in assessing the associated protection and restoration challenges.

In cases where Nirmala or Laurent are in the Overseas Territories, the cartographic data on terrestrial natural habitats (CarHab) are available.

Nirmala works in an urban planning agency. She has been commissioned by the local authority to help prepare its Local Urban Plan (PLU(i)). She knows that the inter-municipal team has strong ambitions in terms of biodiversity, particularly with regard to strengthening ecological continuity, protecting and restoring ecosystems, and re-naturalising urban areas. The official information from the State authorities (porter-à-connaissance) may not arrive for six months to a year, so she is beginning the territorial diagnostic without their guidance. She has tools to gather the data relating to natural habitats in the inter-municipal area and to assess the associated protection and restoration challenges. She succeeds in proposing a Sustainable Development and Planning Project (PADD) that meets the local authority's ambitions in terms of biodiversity.

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN THE TARGET VISION
	Sources are not necessarily known and included in the recommendations of the DDTs or design offices	Promotion of CarHab data through feedback from webinars/conferences	They are integrated into the tools used to develop planning documents
	20 departments in mainland France completed in 2023 and 0 complete regions	All departments in mainland France are online on the INPN in 2026 and are reliable	CarHab data exists for the entire territory (including overseas territories) and is enriched with information on issues related to the habitats presented (level of protection, probability of presence of protected species, vulnerability/rarity at national and/or regional level, etc.)
	Download and viewing only via the INPN website (not necessarily known to those involved in development and planning)	Download and viewing via the IGN geodatabase (feed from the INPN)	The information is accessible in the same way to project owners, design offices, etc.
	To overlay other geographical layers, they must be found and downloaded into your own tool (few overlays in the INPN viewer)	Interoperability studies between the various tools and maps developed (wetland mapping, OCS GE, etc.). Overlay possible between CarHab layers and other layers available in the Geoplatform	- Overlay possible between all CarHab layers and other layers available in the Geoplatform - Mapping of ecosystem services based on the CarHab habitat reference system available on the Geoplatform
	The available data is "expert" and not always easy for non-specialists to understand, nor can it always be used in third-party digital services (administrative procedures, simulators, etc.).	Drafting of a methodological guide in addition to national and departmental notices / Support from the National Botanical Conservatories (CBN) and the DREALs	
	Limited to the European hierarchy of Habitats of Community Interest	Addition of the red list of habitats (IUCN) and habitat conservation status (DHFF) to the CarHab habitat viewer	CarHab facilitates the translation of nature restoration issues (draft EU regulation) into planning documents (limitation of pressures on priority habitats)
	No feedback or support	Use feedback and CarHab usage sheets following the two AMIs in 2023 and 2024	- CarHab contributes to strengthening the ecological continuity network (evolution of the TVB) - CarHab informs planning stakeholders about urban renaturation issues (TVB connection) - Development of innovative digital services for multi-criteria analysis based on ecosystem services and combining social, environmental and economic issues
	Modelling based on probability of presence (field verification required for localised data)	Launch of work to define confidence intervals (large-scale field accuracy)	CarHab data is made more reliable through the introduction of confidence intervals (large-scale field accuracy)

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

- National Biodiversity Committee
- Linear Infrastructure and Biodiversity Club (CILB)
- Renewable Energy Union (SER)
- Federation of National Botanical Conservatories (CBN)
- Conference of Protected Area Managers
- Conservatory of Coastal Areas and Lakeshores
- Office for Insects and their Environment (OPIE)
- French Society for the Study and Protection of Mammals (SFEPM)
- Herpetological Society of France (SHF)
- Tela Botanica
- Syntec Ingénierie (professional engineering federation)
- Association of Ecological Engineers (AFIE)
- Foundation for Research on Biodiversity (FRB)
- Representative of natural area managers
- Representatives of biodiversity research organisations
- Representative of the ARB network (metropolitan France)
- Representative of the ARB network (overseas territories)
- Representative of the network of Water Agencies

Deployment table

ACTORS	ACTIONS TO BE TAKEN
DGALN	Strengthen and consolidate the implementation of the Biodiversity Information System, including its core infrastructure and business information systems
	Publish and finance the terrestrial biodiversity monitoring scheme
	Include the actions of the SINP/SIB roadmap in the dialogue with operators
OFB	Develop federated information systems and bring together SIB/SIMM dynamics to strengthen their interoperability
	Develop recognition of the National Biodiversity Observatory
	Consolidate the *open data* requirement for all funding from the intervention budget
	Apply the DINUM grid
MNHN	Develop and strengthen the infrastructure of biodiversity information systems (SIB, PNDB, RECOLNAT) and ensure their consistency and interoperability
	Establish and maintain the genetic sequence repository for ADNe
	Link the internal standardisation process (standards office) to the standardisation work of federated information systems (SIB in particular)
PatriNat (OFB, MNHN)	Structure the coordination of eDNA deployment
	Develop and deploy: BOB, PAAPA, CarHab, INPN Espaces
	Generalise data exposure via API
	Continue the PNDB/SIB alignment
IGN	Distribute data via Géoportail/geoplateform
	Develop and deploy FOREG
	Contribute to the implementation of biodiversity monitoring and the SIB
Management establishment (ONF, CdL,	Contribute to the implementation of biodiversity monitoring
Research establishment (CNRS, INRAe, etc.)	Develop new methods for monitoring biodiversity
	Contribute to the ADNe genetic sequence database
Naturalist associations	Contribute to the implementation of biodiversity monitoring
Local authorities	Contribute to the implementation of biodiversity monitoring
Private actors	Vigielife: Supporting the rollout of ADNe in France
	Digital players (development of digital-based services): integrate data provided by public information systems (SINP, SIB)

PRODUCTION

Why?

In 2021, combined greenhouse gas emissions from industry and energy accounted for 122 million tonnes of CO_2 equivalent. Production is therefore central to the ecological transition. It can be analysed through four interconnected sectors, each with its own specific characteristics and level of advancement in the digital field: the production of goods, their transport, the associated financial flows, and energy production, with cross-cutting issues relating to employment and skills.

Industry

The decarbonising industry requires a clear understanding of the different patterns of energy consumption across companies in order to promote substitution with decarbonised energy sources or the optimisation of processes. Such data is essential to enable public authorities to monitor and assess changes in energy consumption and greenhouse gas emissions, to calibrate public policies for the ecological transition, and to plan the development of energy infrastructure (gas, CO_2, hydrogen, etc.). Digital technology also supports real-time monitoring of companies' environmental performance and enhances the effectiveness of their decarbonisation strategies.

However, information on the environmental performance of manufacturers, together with other data required for the sector's transition, is currently fragmented across multiple, non-integrated processes. This creates a dual challenge: on the one hand, it imposes a burden on manufacturers through repeated data requests that run counter to the "tell us once" principle; on the other, it limits the capacity to manage the transition effectively by sector or by region.

Freight transport

The transition of the freight sector requires a modal shift towards cleaner forms of transport (rail and river), greater intermodality between modes, and the optimisation of logistics chains to reduce kilometres travelled and improve load factors.

Freight transport and logistics have historically received limited monitoring by public authorities, as they fall under the principle of freedom of trade. Available data has declined in recent years due to resource constraints or reduced reporting requirements, particularly for intra-European flows. The renewed ambition for logistics, defined in 2020 by public and private stakeholders, and formalised in the national logistics strategy published in December 2022 and updated with the 2025–2026 logistics and freight transport roadmap, requires the establishment of robust data systems and monitoring tools to assess public policies.

Currently, knowledge of freight mobility remains highly fragmented: data is siloed by mode, vehicle flows are relatively well documented, but freight flows are poorly understood, vary significantly by sector, and are primarily held by private companies. This situation hinders strategies for modal shift, the structuring of logistics corridors, and the pursuit of sustainable economic development, particularly in the context of reindustrialisation. France lags behind its European neighbours at a time when logistics activities are being increasingly structured at European and global levels.

Energy

Digital technology enables the State and local authorities to strengthen energy policy management by improving knowledge of consumption across sectors, promoting energy pooling at local level, and equipping private actors with tools to improve performance.

The absence of standardisation, the limited accessibility of data, and the fragmentation of existing systems remain significant barriers to the effective implementation of public policies.

Actions relating to energy consumption in buildings are addressed in the *Better Housing* section of this framework.

Finance

Public funding alone is insufficient to ensure the ecological and energy transition of the French economy. The contribution of the private sector is indispensable, and the greening of finance must be accelerated. This entails redirecting private financial flows towards activities that support the transition while reducing investments in activities that impede it. To achieve this, investors require more accurate and comprehensive information on the strategies of the companies they finance, including performance indicators, targets, and transition plans.

The standardisation and digitisation of sustainability data, and its eventual availability through a single portal, are essential to improving its reliability and usability. Such measures would also facilitate advanced data use, for example through artificial intelligence applications.

However, before such a system can be established, harmonised standards for corporate and financial reporting must be developed at the European and, ideally, global levels. Current European legislation (CSRD, taxonomy) is being drafted with the objective of establishing a single platform for the centralisation of corporate ESG performance data (ESAP). While awaiting these standards and reporting obligations, priority must be given to ensuring coordination between national, European, and global initiatives, and to developing tools to process and operationalise this data for institutional stakeholders such as banks, insurance companies, public authorities, and civil society.

Jobs and skills

The ecological transition directly affects nearly 8 million jobs in the private sector (notably in industry and energy, construction, transport, agriculture, and food) and will require the training of more than 2.8 million people by 2030 to address both ecological planning needs and generational workforce renewal. Meeting this challenge, in addition to addressing national, regional, and local governance issues, requires detailed knowledge of labour demand and skills needs, as well as the supply of initial and continuing vocational training to meet those needs.

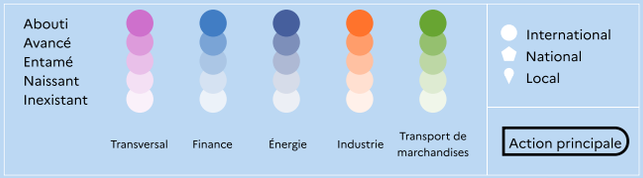
Given the breadth of the issues, this section is organised thematically, resource by resource: it addresses industry, freight transport, finance, energy, and finally jobs and skills. Unlike other chapters, the subsections here correspond not to an institutional focus but to specific themes.

What?

Each of the priority building blocks outlined in black in the "Better production" theme is the subject of a numbered "action" detailed below. These actions are structured into "guidelines" identified by letters, which follow the layers of the building. The guidelines are listed from bottom to top because, although all actions must be carried out in parallel in order to work in "product" mode and meet the urgent environmental challenges, they are all based on the foundations of the building, which must therefore be improved as a priority.

Each action is structured in an educational and pragmatic way: the business challenges are explained first, followed by an assessment of the current situation and associated issues, and then the sub-actions to be undertaken, along with their Leads and timetable. The Leads are classified according to central government departments, operators and regions; the main leader is indicated in bold. These actions and their timetable have been reviewed to incorporate the contributions of the public consultation, submitted in writing or during hundreds of interviews. They may be subject to change in an agile manner. These changes will be presented in summer 2025 and then annually.

PRODUCTION



OBSERVATOIRES

RECHERCHE
- Enershare (Energy Data Space)

PILOTAGE
- Observatoires des données énergie et industrie (CEREN)
- Portail taxonomie
- Observatoire des objectifs régionaux climat-énergie
- Plateforme de transparence ENTSO-E
- Electricity Maps
- Tableau de bord des données logistiques
- Observatoire de la décarbonation de l'industrie
- Données locales de consommation d'énergie
- Tableau de bord ENR
- Portail d'identification des terrains disponibles pour des implantations industrielles

SERVICES NUMÉRIQUES

PROFESSIONNELS
- Impactlens
- Ecobalyse
- Plateforme Impact
- Mandarine Biodiversity score
- Transition écologique des entreprises
- Plateforme de dépôt des audits énergie
- Plateforme de gestion de transports
- Plateforme « Mission Transition Écologique »
- C'Bilan

C & P
- DH Enedis
- PowerDis
- NZDPU
- PAUE/ESAP
- EnergyMapper
- France Chaleur Urbaine
- Étiquette énergie
- Plateforme de reporting des données extra-financières

CITOYENS
- Scan4Chem
- Track My Watt
- Digital product passport
- Prosper Actions
- Calculateurs carbone
- Apps énergéticiens
- Adapt.sh
- Mon compte collectivité Enedis
- Toxiscore
- App Enedis « À mes côtés »
- SINOE Dechets
- API EcoWatt

SI MÉTIER CŒUR

SI ACTEURS EXTERNES
- SI financeurs et assureurs
- Carbon Disclosure Project
- SI CCI/CMA
- SI entreprises (industriels, transporteurs, gestionnaires d'infrastructures...)
- SI DSO/TSO
- SI Sobre Energie
- SYDEREP (suivi des filières REP)
- Logiciels ACV (Simapro, Brightway...)

SI ACTEURS PUBLICS TERRITORIAUX
- ALDO
- SI cadastres solaires EPCI
- Portail cartographique des EnR

INFRASTRUCTURES SOCLES

PARTAGE DE DONNÉES
- IREP/GEREP
- Point d'accès national EFTI
- Partage des données logistiques

DIFFUSION DE DONNÉES OUVERTES
- Portail open data des données du transport de marchandises et de la logistique
- Agence ORE
- Enedis Open Data

DONNÉES MÉTIER
- BEGES - centre de ressources et plateforme de dépôt des BEGES reglementaires
- Bilans Climat Simplifiés
- Outil Potentiel RCF (Réseaux de Chaleur et de Froid)
- Inventaire national des ressources minières
- ODRE
- SI national et territorial de suivi des consommations des organismes publics
- Portail national du foncier d'activité économique
- BD des entrepôts logistiques
- BD des aides publiques
- BD nationale de la consommation énergétique des navires
- Données pour le fléchage des fonds vers la transition écologique
- Service national d'identification des gisements d'économie d'énergie
- Registre de déclaration des rejets
- ONDE
- Audit énergie entreprises
- Base empreinte

RÈGLES SOCLES

INTEROPÉRABILITÉ
- Corporate Responsibility Reporting Directive (CSRD)
- Textes français : loi AGEC, loi climat et résilience
- PEF
- Analyse de cycle de vie
- Taskforce on Nature-related Financial Disclosures (TCFD)
- IFRS 1/2
- Ecolabel sur les produits financiers
- Indices financiers bas carbone : CTB et PAB
- norme EU GBS
- Taxonomie
- Sustainable Finance Disclosure Regulation (SFDR)
- STI TAF
- Spécifications EFTI
- Modèle de données pour les chaînes logistiques
- Label bas carbone
- Standard de données pour l'accès aux Zones à Faible Émission (ZFE) et aux aires de livraison
- Outil de calcul des émissions évitées d'un projet
- GHG Protocol
- Labels pour les fonds durables (ISR, Greenfin, Finansol...)

A Industry

1 – Observatoire de la décarbonation de l'industrie

Harmonise, centralise and disseminate data flows related to the ecological transition of industry

The collection and analysis of data from industrial sites concerning their inputs (notably energy consumption), their outputs (in particular production volumes and greenhouse gas emissions), and the characteristics of their equipment (such as age and efficiency) are essential to steering the ecological transition of industry.

Such data is used by public authorities, network operators and industrial stakeholders to monitor and understand trends in energy consumption and greenhouse gas emissions (in conjunction with the SNBC and the PPE for the management of national objectives), to calibrate public policies for the ecological transition (such as the CEE scheme), to plan investments in energy infrastructure (including potentially for CO_2 transport and storage), and to conduct forward-looking studies (for example ADEME's *Transition(s) 2050*, *Futurs Énergétiques 2050*, and RTE's *Bilans Prévisionnels*) that inform energy and ecological planning, in particular the SFEC.

Currently, CEREN (*Centre d'Études et de Recherches Économiques sur l'Énergie*) is the main body centralising data on industrial consumption and on the industrial technology base, since the study of equipment characteristics within sites requires field surveys. Beyond the need to ensure the long-term sustainability of CEREN's "Industry" activity, the present organisation of industrial decarbonisation data reporting shows two major weaknesses.

First, CEREN surveys are conducted in parallel with other data collection mechanisms without systematic coordination between them (such as INSEE's EACEI surveys, INERIS's GEREP declaration, ADEME/DREAL energy audits and energy performance plans, the Industry Pact, the Business Pact, and ETS reporting under the Emissions Trading Scheme). For example, most of these mechanisms are not based on actual energy meter data. Moreover, mandatory energy audits and energy performance plans do not lead to the systematic valorisation of the data collected, even though such data comes from costly and resource-intensive fieldwork.

Second, the data delivered by CEREN is not fully usable, as it is provided in aggregated form to comply with statistical confidentiality rules. This prevents further calculations or cross-referencing and, in its current state, cannot be made publicly available.

There is therefore a significant challenge in consolidating and making this data accessible through the creation of an industry decarbonisation observatory. Such an observatory would simplify reporting for businesses, strengthen management capacities, and gather data on the 50 highest-emitting sites, on 30,000 industrial SMEs, and on the digital platform for business engagement supported by the DGE.

1.1 – Map the sources of data on decarbonisation of industrial sites, structure the reporting of this data and assess the technical and regulatory feasibility of pooling data from surveys and databases (in particular with INSEE)	• **Leads: DGEC, DGE, CGDD**, ADEME, CEREN, INSEE, INERIS • **Timeline:** 2025
1.2 – Establish governance for the collection and use of this data, specifying the role of CEREN in this governance	• **Leads: DGEC, DGE, CGDD**, ADEME, CEREN, INSEE, INERIS • **Timeline:** 2025
1.3 – Remove regulatory or administrative barriers Examples: management of statistical confidentiality or trade secrets, *open data* issues, changes to the specifications or missions of the actors concerned, changes to energy audit requirements, etc.	• **Leads: DGEC, DGE, CGDD**, ADEME • **Timeline:** H1 2026
1.4 – Identify industrial carbon and hydrogen storage capacities	• **Leads: BRGM, ADEME,** DGEC, CGDD • **Timeline:** 2024 for carbon, 2026 for hydrogen
1.5 – Coordinate data collection, centralise associated databases and make them available as open data as far as possible	• **Leads: DGE, CGDD**, CEREN, INSEE, ADEME • **Timeline:** 2026

2 – Portail national du foncier d'activité économique

Research and monitor economic land use in France in a context of land use restraint

In February 2023, the Banque des Territoires and Cerema were commissioned by the Ministry for Ecological Transition and the Ministry for Industry to develop a national economic land portal as part of Priority 1 of the national mission to mobilise industrial land, launched in March 2023. This priority focuses on facilitating the identification of productive land available across the regions.

The France Foncier+[54] is conceived as a truly national and territorialised system. It seeks to reconcile land planning objectives (reindustrialisation, land scarcity, and the redevelopment of existing sites) by providing a comprehensive overview of economic land and fostering connections between project developers and local economic development actors.

The operational objectives of the portal are:

- To structure knowledge and monitor economic land use and territorial planning in a context of resource scarcity.

[54] Available at the following link: https://www.banquedesterritoires.fr/produits-services/services-digitaux/france-foncier

- To identify available economic land, in both the short and medium term, in order to facilitate the establishment of economic projects.
- To promote a harmonised national inventory.
- To implement a collaborative platform maintained by a network of users.

Developed jointly by Cerema and the Banque des Territoires, the portal is designed to serve two main user groups:

- Economic stakeholders wishing to develop or establish activities in France, for whom the portal will provide a single entry point to identify suitable territories and relevant local contacts.
- Local authorities, who can use the portal to promote their land and property assets and strengthen their land-use strategies in a context of necessary restraint. In addition to a mapping module for identifying land opportunities, the portal will include documentary resources and best-practice examples to support planning projects.

2.1 – **Launch the MVP version of the portal to meet the needs of manufacturers looking for undeveloped or developed land and the needs of local authorities to identify land**	• **Leads:** DGE, DGALN, ANCT, **CDC, Cerema** • **Timeline:** Q3 2023, Q1 2024
2.2 – **Launch an improved version of the portal including a connected version for local authorities so that they can update data directly, more land observation services for local authorities, more information services (best practices on ZAN, etc.) and services promoting networking between ecosystem players, as well as interoperability with regional portals**	• **Leads:** DGE, DGALN, ANCT, **CDC, Cerema** • **Timeline:** H1 2025
2.3 – **Develop an interface with the DGFiP's information systems to integrate business area holiday data into the portal and keep it up to date**	• **Leads: DGFiP**, DGE, DGALN, ANCT, **CDC, Cerema** • **Schedule:** H2 2025
2.4 – **Carry out interoperability work with national (IGN, CSTB, etc.) and regional (PACA, BFC, IDF) databases**	• **Leads:** DGE, DGALN, ANCT, **CDC, Cerema** • **Timetable:** H1 2025

3 – Plateforme « Transition écologique des entreprises »

Launch a platform to support microbusinesses and SMEs in the ecological transition

There are now many public schemes designed to support businesses in their ecological and energy transition, from assessing their situation to taking concrete action: diagnostic tools, subsidies, loans, calls for projects, etc. However, many businesses, particularly the smallest ones, are not yet aware of these schemes, which can lead to a phenomenon of non-take-up of aid. The aim of the platform, Transition écologique des entreprises (Ecological transition for businesses)[55], is to increase the number of businesses committing to ecological transition in order to scale up, while simplifying and streamlining the process for businesses to access aid and support schemes.

3.1 – Launch a beta version incorporating a self-assessment tool and personalised recommendations for support provided by Bpifrance, ADEME and CCI/CMA

- **Leads:** DGE, CGDD, **ADEME**
- **Timeline:** Q4 2023

3.2 – Improve the beta version based on user feedback and additional work, in order to add personalised recommendations for action, refine the beta version's functions and add more built-in assistance

- **Leads:** DGE, CGDD, **ADEME**
- **Timeline:** Ongoing from Q1 2024

3.3 – Create an interface between the Ecological Transition for Businesses platform and Cerema's ASSETT system, and explore opportunities for cooperation between ADEME and CEREMA to develop a complementary offering for businesses and local authorities in view of the latter's role in driving the local economy

- **Leads: ADEME, Cerema,** DGE, CGDD
- **Timeline:** H2 2025-H1 2026

B Freight transport

The challenge is to gradually build a genuine national information system for logistics and freight transport that will enable the ecosystem to manage its decarbonisation.

This involves producing a foundation shared by all stakeholders (data standard), national databases, and tools to facilitate data access and analysis.

[55] Available at the following link: https://mission-transition-ecologique.beta.gouv.fr

4 – Modèle de données pour les chaînes logistiques

Define a common language enabling communication between logistics stakeholders for networked operation and interaction with public authorities

Today, freight transport data is often structured by mode of transport or economic sector, which is highly siloed, making it difficult for public actors to consolidate and for small and medium-sized freight transport companies to operate in a network, for example to pool flows. However, logistics providers already have an overview of the flows they manage for all modes. Logistics providers and other stakeholders must therefore work together and share their perspectives in order to develop a data model that will be essential for leveraging data exchanges, thereby streamlining logistics chains with a view to reducing associated emissions and promoting collaboration between companies. The aim is to ensure the interoperability of data from all logistics activities with industrial production activities (*supply chain)*, in line with the standards currently being defined at European level, particularly in the context of the digitisation of transport documents (eFTI project).

4.1 – Develop a new data model

- **Leads: DGITM**, AFNOR
- **Timetable:** review of existing models in 2023, initial definition of the data model in H2 2025

5 – Atlas National de l'Immobilier Logistique

Build a national register of logistics warehouses[56] for public and private stakeholders to optimise logistics flows in line with the ecological transition

This register, which can be updated automatically, must include environmental issues (energy production, land use, age of the stock) and needs (changes in vacancy rates and land prices). The data will be produced using data from private actors, with the public authorities acting as a trusted third party.

5.1 – Create this register of logistics warehouses

- **Leads: DGITM**, CGDD, DGE, AFILOG, France Logistique
- **Timeline:** in Q4 2023, define the scope and framework with the SDES and private stakeholders; produce a new periodic atlas in Q3 2024

5.2 – Enhance the National Logistics Property Atlas with warehouses of 10,000 m² or more and include data such as distance to a multimodal hub, suitability for electrical connections facilitating vehicle recharging, and the ability to operate multi-level storage

- **Leads: DGITM**, CGDD, DGE, AFILOG, France Logistique
- **Timeline:** H2 2025

[56] Available at the following link: http://dataviz.statistiques.developpement-durable.gouv.fr/Entrepots/

6 – Partage des données logistiques

Create a national platform to federate data exchanges between private and public players in freight transport and logistics*, including a section on *open data

Until now, public authorities have relied mainly on cumbersome, costly and therefore infrequent surveys to estimate logistics flows, even though these are now largely computerised in the information systems of companies in the sector. The issue is one of data sharing, as with data on people's mobility, but with greater economic stakes and returns on investment in logistics, by enabling large-scale pooling of flows and considerably improving public authorities' knowledge of goods flows by sector.

After analysing needs and existing solutions, the next step is to set up a neutral data-sharing infrastructure controlled by public actors. It will be possible to draw on EONA-X (an association bringing together major European players such as the SNCF Group, the ACCOR Group, Air France-KLM, the ADP Group, Amadeus, Marseille Provence Airport, the Renault Group and Inria; mobilised in particular for mobility management during the 2024 Olympic and Paralympic Games in Paris) and on feedback from private-public data sharing initiatives such as the CEE EVE programme with the participation of ADEME or at European level in the Netherlands.

6.1 – Consolidate data exchanges in the form of a national platform, including an *open data* section

- **Leads: DGITM**, DGE, ADEME
- **Timeline:** review of data and possible technical solutions for use in H2 2025 and gradual implementation in 2026

6.2 – Develop interactive visualisation and mapping tools for logistics to enhance the value of data and facilitate understanding of logistics issues and dialogue with regional stakeholders

- **Leads: DGITM**, CGDD, DGE, AUTF, France Logistique, Régions de France
- **Timeline:** Q4 2025 for the installation of the Geographic Information System and initial mapping

7 – Tableau de bord des données logistiques

Facilitate analysis and communication of system data to steer the decarbonisation of freight transport and logistics

While statistics and indicators for freight transport have long been available, there has been a lack of multimodal dashboards providing an overview of logistics indicators.

The DGITM and the DGE, in collaboration with Gustave Eiffel University, began developing the first tables in 2023. These must be completed and industrialised, gradually improved based on the national logistics information system, incorporating the indicators of the national logistics strategy, and made accessible to the various stakeholders. Relevant indicators on freight transport and logistics in relation to the ecological transition will also need to be published for government departments, local authorities and economic sectors.

One of the first use cases will be the monitoring of transport activities by major shippers in France.

7.1 – Publish a national logistics dashboard and a breakdown for

- **Leads: DGITM**

each metropolitan region

- **Timeline:** Q3 2025 – initial version

7.2 – Produce a customisable dashboard enabling each player to define their own analysis grid and logistics dashboards by sector
This will be done starting with one or two pilot sectors: Inter-Cereals and/or France Chimie.

- **Leads: DGITM,** CGDD
- **Timeline:** specification of requirements and analysis of synergies with the project initiated by the CGDD Q4 2023; implementation Q4 2025

7.3 – Establish monitoring of transport activities of major shippers in France

- **Leads: SGPE,** DGITM, DGE
- **Timeline:** design in H2 2025

8 – Standard de données pour l'accès aux Zones à Faible Émission (ZFE) et aux aires de livraison

Standardise the data to be used by local authorities to manage access to major urban areas

The introduction of Low Emission Zones as part of the ecological transition is changing the conditions of access to certain urban areas. The success of measures to manage freight transport flows and urban delivery, particularly for the implementation of these zones, requires communication and consultation with stakeholders, but also tools that provide the right information directly to the navigation assistance services used by professionals. This involves standardising the relevant data, in particular data describing delivery areas.

8.1 – Implement a data standard for access to LEZs

- **Leads: DGITM**, GART, CNIG
- **Timeline:** diagnosis and roadmap in 2023-2024, implementation in 2027

9 – BD nationale de la consommation énergétique des navires

Establish a national system for collecting energy consumption and emissions data from maritime freight transport

Decarbonising maritime transport requires accurate knowledge of the consumption of different ships by fleet segment (container ships, bulk carriers, ferries, etc.) in order to ensure the proper deployment of levers for ecological transition (change of energy on board, improvement of energy efficiency and operational efficiency).

At European level, the MRV (*Monitoring, Reporting & Verification*) system collects data from ships with a gross tonnage of more than 5,000 GT calling at European ports. Ships below this tonnage are not monitored. There is currently no national system for reporting ship energy consumption data, which means that it is not possible to identify the emissions of ships calling at French ports at a more detailed level than the consolidated data for the sector produced by CITEPA based on reports from fuel suppliers, for example by distinguishing between ferries and container ships. However, each fleet

segment will have to implement specific decarbonisation measures, which will require monitoring their respective consumption.

Furthermore, it is not currently possible to determine the emission value of sustainable fuels injected into fossil fuels, as the blenders responsible for this injection are separate from the fuel suppliers.

Finally, data reporting systems are often based on spreadsheets or even paper forms, which poses challenges in terms of reliability, aggregation and monitoring.

9.1 – Set up a national database on ship energy consumption

- **Leads: DGAMPA**, DGEC
- **Timeline:** 2026

Finance

10 – Données pour le fléchage des fonds vers la transition écologique

Improve transparency and monitoring of private funds allocated by financial actors to the ecological transition and the extra-financial performance of companies

The law stipulates that 10% of regulated savings managed by commercial banks must be allocated to financing the ecological transition[57] . However, several technical obstacles (classification of assets as "green") and obstacles linked to the banks' economic model, based on intermediation, make it difficult to know precisely where these savings end up.

Beyond regulated savings, greater transparency on all loans/funds allocated by the various financial players to businesses and households would help ensure that sufficient funding is allocated to the transition, as proposed in particular by the Institut de la finance durable (Institute for Sustainable Finance).

10.1 – Increase the granularity of information reported via the Banque de France on the use of these savings and improve communication with savers and businesses

- **Leads: DGT**
- **Timeline:** Q3 2025

[57] Law No. 2023-973 of 23 October 2023 on green industry: https://www.legifrance.gouv.fr/loda/id/JORFTEXT000048242288/2025-01-25

10.2 – Define objectives in terms of transparency of data on financial actors' outstanding amounts allocated to the ecological transition and deduce the requirements in terms of data reporting and changes to financial actors' information systems	• **Leads: DGT**, CGDD • **Timeline:** Q4 2025
10.3 – For all funds dedicated to the ecological transition, anticipate data reporting to ensure management and maximise impact	• **Leads: SGPE** • **Timeline:** Ongoing

11 – Plateforme de reporting des données extra-financières | NZDPU | PAUE/ESAP

Promote the accessibility and transparency of non-financial data from companies

Compliance with climate and environmental targets requires companies to report on their environmental performance and transition plans consistent with European and national ambitions.

Financial actors and public authorities alike are expressing the need for simplified and accessible access to companies' non-financial data. Companies, for their part, are concerned about having to complete multiple non-harmonised reports for their various investors, against a backdrop of far-reaching regulatory reform and initiatives.

- At European level, the ESAP platform will centralise the reporting data of companies subject to the CSRD. However, this platform will not be in place until 2028, when CSRD reporting will begin:
  - in 2025 for the 2024 financial year for companies already subject to the NFRD, i.e. companies with more than 500 employees,
  - in 2026 for the 2025 financial year for companies with more than 250 employees,
  - in 2027 for the 2026 financial year for publicly listed companies with fewer than 250 employees.

  At the same time, a simplified voluntary standard will enable non-listed SMEs that wish to publish a report. These thresholds may change following the decisions taken in the context of the Omnibus package currently being discussed at European level**.**

- In France, non-financial data on companies is currently collected on the AMF basis for listed companies and transmitted to the DILA. The Banque de France will introduce a climate indicator for all companies with a turnover of more than €750k, in particular to harmonise the climate data requested by all financial institutions and make this data available to them and to the public authorities (around 300,000 companies concerned, i.e. a wider scope than those subject to CSRD).

The DGE aims, via the "[58] CSR Portal", to support companies, particularly the smallest ones, in completing their various non-financial disclosures. It seems appropriate to pool the extra-financial reporting data that companies will complete on a single national platform, whether this is data collected for the purposes of meeting the reporting requirements of the CSRD or other data, such as that collected by the Banque de France for its climate indicator, which could potentially act as a third-party collector for CSRD reporting in order to promote the uniformity of requests.

- [59]At the global level, the *Net Zero Data Public Utility* (NZDPU or "*One Planet Data Hub*") initiative led by Bloomberg and gradually taken over by the UN aims to establish a global platform for the voluntary collection of non-financial data from companies. A proof of concept was launched at COP28. The challenge for France and the European Union is to promote public governance and free and open reporting standards (particularly for the sectoral classification of companies, for which ISIC codes are the reference in all countries) that are compatible with local and national standards in order to ensure the greatest possible openness of the platform. The question of the reporting method also needs to be considered: direct input by companies, with a risk of redundancy, could be replaced by more efficient input by national third-party collectors or, in the long term, via the European ESAP, which will aggregate company data upstream.

11.1 – Implement a national platform that brings together the various reports from companies on their non-financial data in connection with the Banque de France's future climate indicator, which will be able to feed directly into ESAP at European level and NZDPU at global level.

- **Leads: DGT, DGE,** Banque de France, CGDD
- **Timeline:** 2026

First step: H2 2025, set up the information system to collect CSRD reporting data and produce an initial analysis report on CSRD reporting data

11.2 – Define France's position on the standards of the future NZDPU platform and promote them in discussions on its implementation

- **Leads: DGT,** DGE, Banque de France, CGDD
- **Timeline:** Q4 2025

11.3 – Analyse the first CSRD reports published by companies and draw conclusions for future developments

- **Leads: SGPE,** DGT, DGE, CGDD
- **Timeline:** H2 2025

11.4 – Conduct a feasibility study on changing the accounting plan for companies to include issues related to the ecological transition

- **Leads: ANC, DGT,** DGE, CGDD, **National Council of Chartered Accountants**
- **Timeline:** Q4 2025

12 – Outil de calcul des émissions évitées d'un projet

Establish a reference method and associated data to calculate the emissions avoided by a project or company

[58] Available at the following link: https://portail-rse.beta.gouv.fr/
[59] Available at the following link: https://nzdpu.com/home

Public authorities, both at national and local level, are asking companies applying for project funding or public aid to measure the tonnes of CO_2avoided by their project, service or structure, in order to promote those with the greatest impact. Many financial institutions also wish to promote the tonnes of CO_2avoided by the companies in their portfolios.

However, there is not yet a single recognised external reference method or associated database that enables an organisation to calculate avoided emissions. Existing methods are generally complex and sometimes questionable, particularly with regard to the reference situation chosen. Project developers therefore call on private firms to produce this information, with no guarantee that the results will be comparable between companies and projects. Some institutions, such as the Climate Dividend Association, and industry federations are seeking to fill this gap by working on a database of avoided emission factors applicable to different sectors.

This situation raises questions about the role of public authorities in relation to private initiatives. The establishment of a flexible reference method and the associated tools and data would make it possible to measure the emissions avoided by companies and their investments in a consistent manner and promote the comparability of projects.

12.1 – Define a method for calculating the emissions avoided by a project or company

- **Leads:** DGEC, **ADEME**, DGT, in collaboration with associations and federations that have already explored initial avenues
- **Timeline:** H1 2026

D Energy

Monitoring the renovation of public buildings and their energy consumption (including government buildings, local authority buildings and those of operators) is covered in the Better Housing priority (action 15).

13 – Portail cartographique des EnR

Have a harmonised information base to inform local authorities' decision-making and enable them to provide information on their renewable energy acceleration zone projects for planning purposes

With the law on accelerating renewable energy, France wanted to give local authorities the means to define, at the municipal level and in consultation with citizens, areas suitable for the installation of new land-based renewable energy production facilities (wind, solar, biomass including biogas, geothermal, etc.) in order to achieve national energy decarbonisation and national energy production diversification targets. etc.), in order to achieve national targets for decarbonising energy and diversifying national energy production. To support local authorities in defining these "renewable energy acceleration zones", the State has committed to developing a renewable energy mapping portal[60] providing them with a

[60] Available at the following link: https://planification.climat-energie.gouv.fr/

harmonised information base to inform their decision-making and enabling them to enter their zone projects into an online tool.

13.1 – Develop the portal by gradually improving the available versions (in particular by enriching/upgrading the data sets and features offered) to take into account user feedback and needs

- **Leads: IGN**, **Cerema**, DGEC
- **Timeline:** Q4 2023, then ongoing

13.2 – Design and launch the user support offering

- **Leads: IGN**, **Cerema**, DGEC
- **Timeline:** Q3 2025

13.3 – Design an *ex ante* framework (standards, tools, platforms, methods provided by the State, and ecosystem of data producers) and a common framework for the production, updating and continuous improvement of geographical data relating to the deployment of renewable energy production facilities

- **Leads: IGN**, **Cerema,** DGEC
- **Timeline:** 2026

13.4 – Structure the reporting of renewable energy data in order to monitor installed and planned capacity

- **Leads: DGEC**, SGPE
- **Timeline:** H2 2025

14 – Suivi et pilotage des ressources de biomasse

Develop a comprehensive overview of local biomass resources and uses for bioenergy

Our biomass resources are diverse and renewable, but limited in terms of both quantity and quality. Biogas, biomethane, esters (rapeseed, sunflower), ethanol (corn, wheat, beet, sugar cane and wine lees) and wood are used for bioenergy. The constraints on resources mean that priority must be given to different uses of biomass and that those for bioenergy must be limited to heating networks (after application of the EnR'CHOIX approach) and, in very limited circumstances, to heating. The aim will therefore be to consolidate the work of regional biomass units and their monitoring tools in order to develop a comprehensive overview of resources and uses at local level (subject to technical and legal feasibility) and of the biomass cycle, in terms of flows and stocks.

This work will be supported by the scientific interest group (GIS) for biomass created in 2024 by ADEME, FranceAgriMer, IGN and INRAE to serve as a reference body on biomass and its uses, in support of public policy.

14.1 – Transpose EU RED3 Directive (requirement for "cascade use" to be legally enshrined) and conduct a legal analysis of the framework for managing biomass use data

- **Lead departments: DGEC**, DGPE, SG MTE-CT
- **Timeline:** Legal analysis Q3 2025, transposition 2026

14.2 – Study the possibility of enriching the renewable energy mapping portal with data on the type and quantity of biomass inputs used for energy production

- **Leads: GIS Biomasse**, DGPE
- **Timeline:** 2026

15 – CEE - Identification et suivi des gisements d'économie d'énergie

Set up data reporting from EECs to ensure their management and measure their impact

The Energy Efficiency Certificate (EEC) scheme requires energy suppliers and distributors to encourage energy savings. Currently, there is insufficient knowledge of the potential savings and their cost (potential study carried out every four years by ADEME, lack of real data). However, this data is essential for effective public policy management (setting energy saving targets, monitoring progress towards targets) and for stakeholders to be able to mobilise existing potential efficiently.

The project consists of dynamically updating energy saving potential in line with the economic and regulatory context and making this data available to EEC stakeholders. To do this, it will be useful to rely on new data that provides insight into potential (Linky data, Gaspar data, industrial site data, etc.) within an ethical and secure framework. The administration and EEC obligors will thus be able to identify the potential to be mobilised to achieve their objectives, target their actions where the potential is most socio-economically relevant, the cost of achieving this potential (EEC price) and the remaining obstacles to be overcome.

15.1 – For the sixth EEC period, define the information to be provided by the applicant when applying to open an account on the national EEC register, the criteria for assessing the application and the information to be provided subsequently to demonstrate the impact of the funding.

- **Leads: SGPE, DGEC**
- **Timeline:** H2 2025

15.2 – Define the "target need" for the use of the tool in the regions (analyses to be carried out before the allocation of public aid) and identify the functionalities targeted by the tool

- **Leads: DGEC**, MASA, ADEME, FranceAgrimer, IGN, FCBA
- **Timeline:** launch of working groups at the end of 2023, working group reports at the end of Q1 2024

E Jobs and skills

16 – Observatoire 4.0 de France Travail et du RCO

Gain a precise understanding of the employment and skills needs of regions for the ecological transition, as well as the initial and continuing vocational training available to meet these needs

The ecological transition is giving rise to new professions, transforming existing ones and changing the needs of different employment areas. The France Travail and RCO (Réseau des Carif-Oref[61]) 4.0 observatory makes it possible to monitor changes in these employment and skills needs (by providing quantitative and qualitative answers to questions such as: what jobs are available? What is the available workforce? What are the needs of businesses? What are the prospects?) and to monitor the existing talent pool. The other challenge at regional and departmental level is to develop initial and continuing training in line with the ecological transition in response to the needs of the territory. As supply and demand for jobs and skills are linked to a labour pool, this issue is monitored within the framework of the regional COPs.

16.1 – Integrate the classification system for jobs related to ecological planning (green, brown and strategic jobs for the TE) into ROME 4.0 with support from ONEMEV

- **Leads: France Travail**, RCO, DGE
- **Timetable:** H1 2025

16.2 – Generalise the use of the 4.0 observatory to feed into regional employment and skills work, as part of year 2 of the COPs

- **Leads: SGPE**, France Travail, RCO, DGEFP, DGE
- **Timeline:** H2 2025

16.3 – Generalise the use of the orion.inserjeunes.beta.gouv.fr platform by regions and departments to organise initial and continuing training in their areas

- **Leads: Regions, DDT,** France Travail, RCO, DGE
- **Timeline:** H2 2025

[61] OREF = Regional Employment and Training Observatories; CARIF = Training Resource and Information Centres

Illustration of a use case

Work on the following use case is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different "building blocks" of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the "use case vision."
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

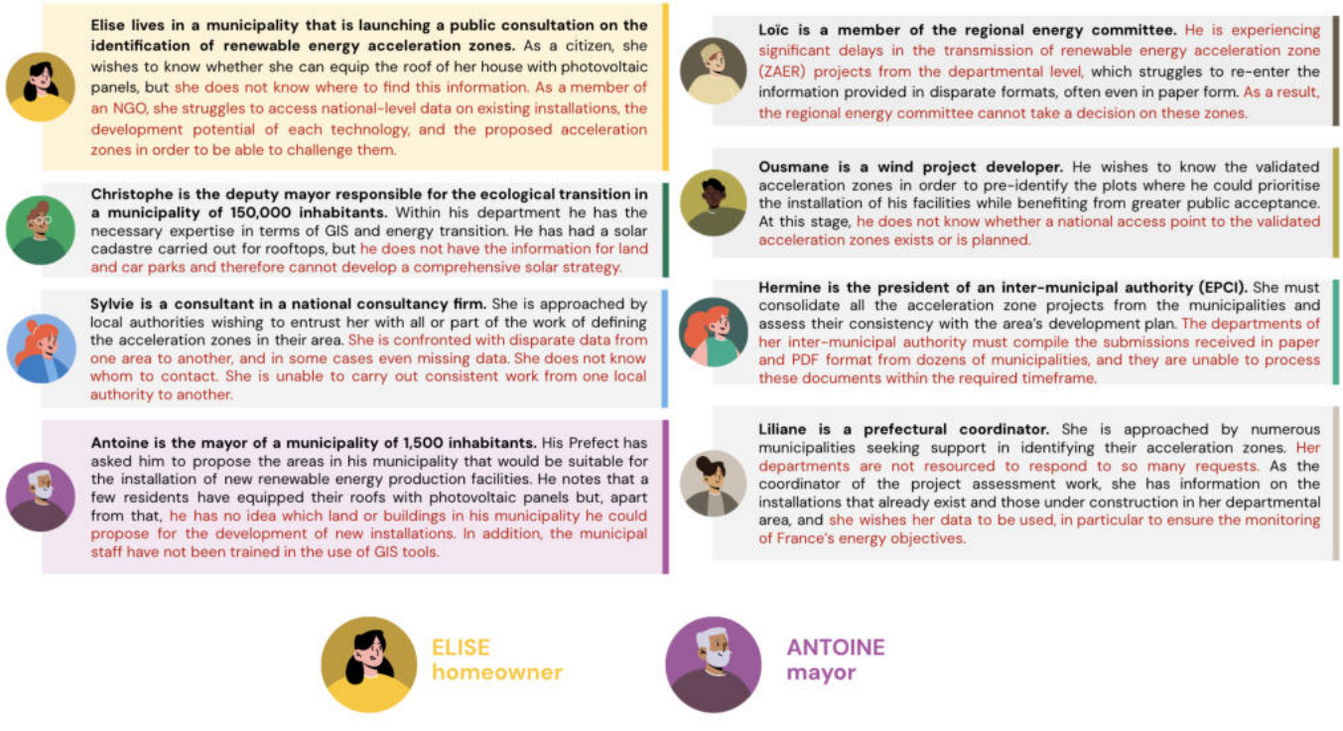
Effectively deploying renewable energy

The ecological transition requires a significant effort in the field of energy decarbonisation. To achieve this, renewable energies and the establishment of acceleration zones where they can be implemented are essential. However, the data needed to assess the quality of an acceleration zone is still too difficult to obtain for some municipalities, slowing down this joint effort.

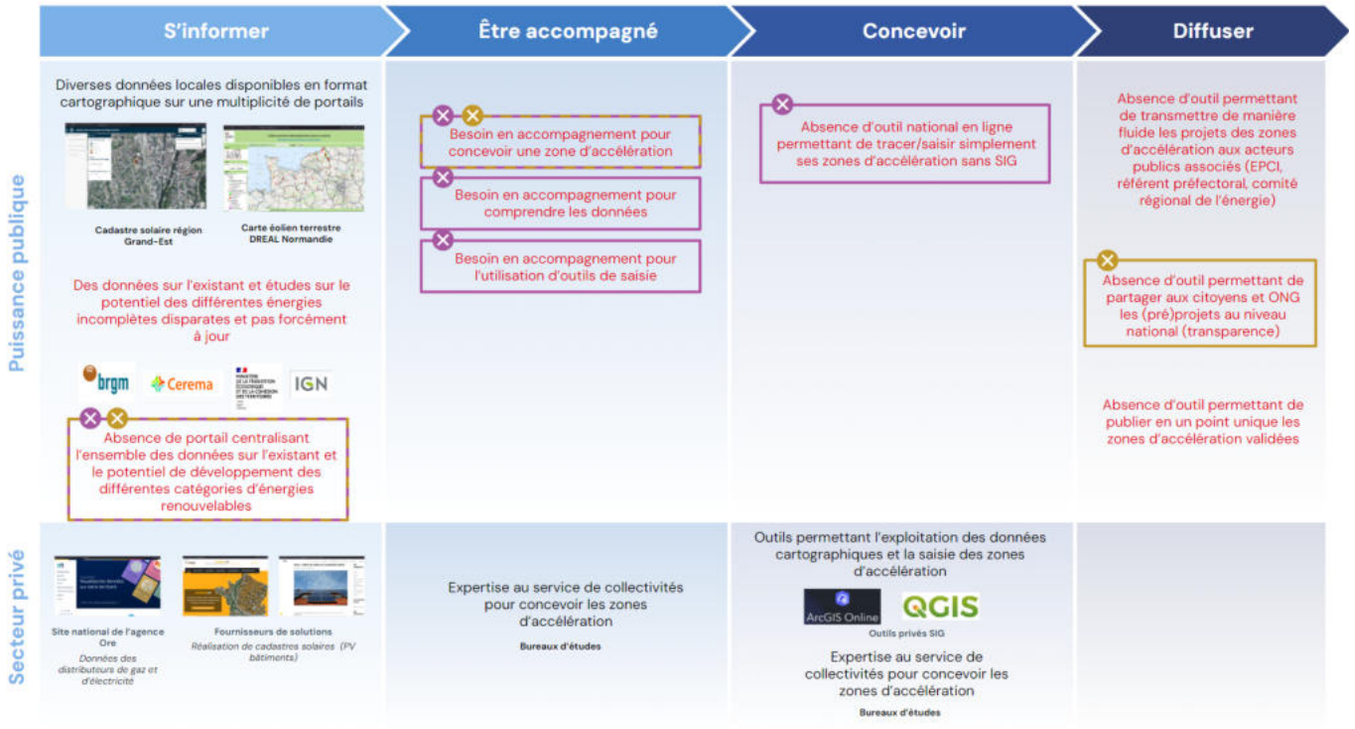
To achieve the effective deployment of renewable energies, this use case focuses on the creation of a renewable energy mapping portal in France.

Several indicators will be used to monitor the project: from an operational perspective, the number of connections and time spent per connection, profiles created, downloads, and acceleration zones entered; and from a business perspective, monitoring of installed renewable energy capacity, the number of municipalities that have mapped their acceleration zones, and the enrichment of geolocated knowledge on renewable energy available to the public.

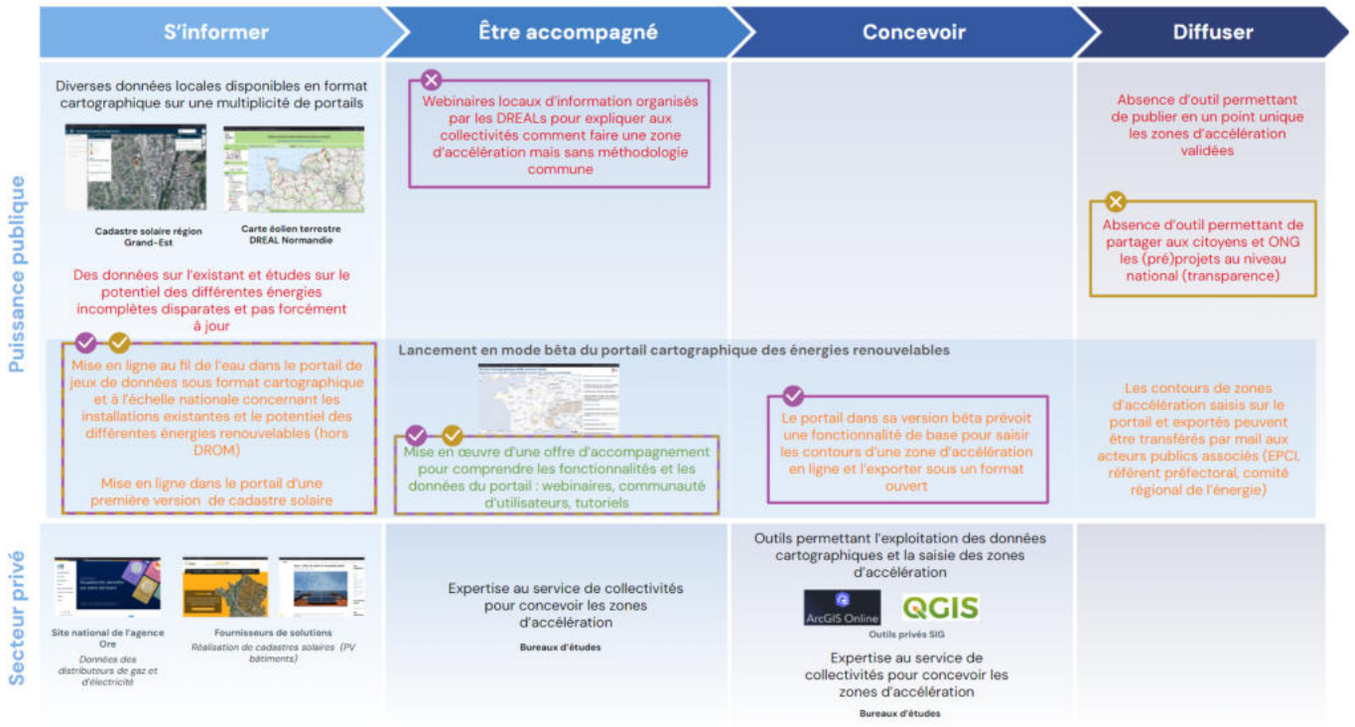
Personae – Current situation



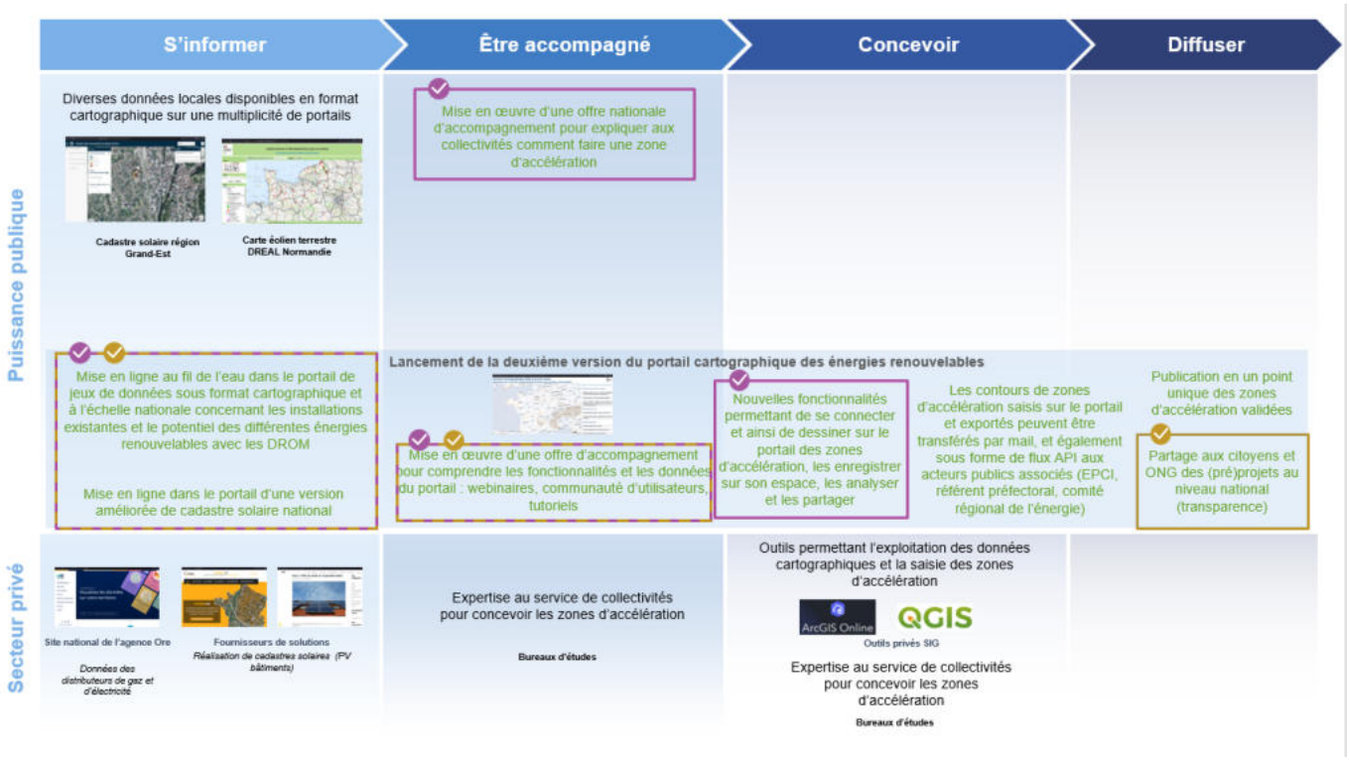
Current situation



Medium-term situation



Target situation



Personae – Target vision

Elise lives in a municipality that is launching a public consultation on the identification of acceleration zones. As a citizen, she wishes to know whether she can equip the roof of her house with photovoltaic panels, and she knows where to find this information. As a member of an NGO, she may have the possibility of accessing national-level data on existing installations, the development potential of each technology, and the proposed acceleration zones in order to be able to challenge them.

Christophe is the deputy mayor responsible for the ecological transition in a municipality of 150,000 inhabitants. Within his department he has the necessary expertise in terms of GIS and energy transition. He has had a solar cadastre carried out for rooftops, and he also has the information for land and car parks, which enables him to work on a comprehensive solar strategy.

Sylvie is a consultant in a national consultancy firm. She is approached by local authorities wishing to entrust her with all or part of the work of defining the acceleration zones in their area. She has access to relatively complete and consistent data across the whole territory, enabling her to carry out uniform work from one local authority to another.

Antoine is the mayor of a municipality of 1,500 inhabitants. His Prefect has asked him to propose the areas in his municipality that would be suitable for the installation of new renewable energy production facilities. He notes that a few residents have equipped their roofs with photovoltaic panels, and he can use the digital resources at his disposal to identify land or buildings in his municipality that he could propose for the development of new installations. However, the municipal staff have not been trained in the use of GIS tools.

Loïc is a member of the regional energy committee. He records in good time the transmission of renewable energy acceleration zone (ZAER) projects from the departmental level, which enter the information provided.

Ousmane is a wind project developer. He wishes to know the validated acceleration zones in order to pre-identify the plots where he could prioritise the installation of his facilities while benefiting from greater public acceptance. He can use the national access point for the validated acceleration zones.

Hermine is the president of an inter-municipal authority (EPCI). She must consolidate all the acceleration zone projects from the municipalities and assess their consistency with the territorial project. The departments of her inter-municipal authority can use the digital tools at their disposal to compile the submissions from the municipalities, but they are still unable to process these documents within the required timeframe.

Liliane is a prefectural coordinator. She is approached by numerous municipalities seeking support in identifying their acceleration zones. Her departments are not resourced to respond to so many requests. As the coordinator of the project assessment work, she has information on the installations that already exist and those under construction in her departmental area, and her data is used in particular to ensure the monitoring of France's energy objectives.

Summary table

PHASE	IDENTIFIED PROBLEMS	MEDIUM-TERM SOLUTIONS	SOLUTIONS IN THE TARGET VISION
	Disparate information from one region to another		- Creation of a new version of the energy mapping portal on the Geoplatform (https://planification.climat-energie.gouv.fr/)
	Some data is missing and there is no local budget to have it calculated by a consulting firm		- Creation of a new version of the energy mapping portal on the Geoplatform
	Some data is available online, but how can its accuracy be verified?		- Creation of a new version of the energy mapping portal on the Geoplatform
	No single place to find information		- Creation of a new version of the energy mapping portal on the Geoplatform
	No possibility of digitally entering zoning information if you are a small municipality without a geographic information system (GIS)		- Creation of a new version of the energy mapping portal on the Geoplatform - Continue consolidating and publishing datasets on potential (e.g. publication of hydroelectricity, improved solar cadastre) - Add data sets in map format for the French overseas departments and regions - Register (as a local authority, decentralised service, regional energy committee, etc.) to have a personalised space
	No possibility of cross-referencing data if you are a small municipality without a GIS		- Creation of a new version of the energy mapping portal on the Geoplatform - Log in (as a local authority, decentralised service, regional energy committee, etc.) to access a personalised space
	Need for support and training to design acceleration zones		- Creation of a new version of the energy mapping portal on the Geoplatform - Design of an ex ante and common framework for the production, updating and continuous improvement of geographical data relating to the deployment of renewable energy production facilities (with DREAL/Connaissance mission) - Proposal for a national support package to design acceleration zones - Mapping acceleration zones on the portal, recording them in its space and sharing them
	More details needed on the layout of acceleration zones		- Integration of the OCGSE into the geographical energy portal
	Need to facilitate the dissemination of acceleration zones (projects and final versions)		- Create a new version of the energy mapping portal on the Geoplatform - Disseminate validated acceleration zones in the form of API feeds

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

Industry:

Professional federations and national interprofessional organisations

Freight transport:

- AUTF
- TLF Union
- France Logistics
- GART
- Intercéréales
- France Chemistry
- FNTR
- OTRE
- U2M
- FNLV (rental companies)
- FIEV (vehicle equipment)
- CSIAM
- FP2M

Finance:

Professional organisations in the financial sector

Energy:

- French Gas Association (AFGaz)
- Technical Association for Energy and the Environment (ATEE)
- Higher Council for Construction and Energy Efficiency (CSCEE)
- Companies for the Environment
- Federation of Electrical, Electronic and Communication Industries (FIEEC)

- NEGAWATT
- Renewable Energy Union (SER)
- French Electricity Union (UFE)
- French Federation of Fuel, Motor Fuel and Heating (FF3C)
- National Association of Energy Retailers (ANODE)
- Renewable Energy Liaison Committee (CLER)
- Electricity of France (EDF)
- Enedis
- Federation of Energy and Environment Services (FEDENE)
- French National Association of Independent Electricity and Gas Operators (AFIEG)
- Electricity Transmission Network (RTE)
- Union of Energy-Using Industries (UNIDEN)
- French Union of Petroleum Industries (UFIP)
- Union of Independent Petroleum Importers (UIP)
- National Union of Local Electricity and Gas Companies (UNELEG)
- Professional Union of Private Gas Industries (UPRIGAZ)
- ENERPLAN
- French Wind Energy Association (FEE)
- Group of Energy Saving Certificate Professionals (GPCEE)
- National Energy Ombudsman (MNE)
- Citepa
- Cired

Jobs and skills:

- France Travail
- RCO
- AFPA
- ONEMEV
- OPCO
- OPMQ

Deployment table

ACTORS	ACTIONS TO BE TAKEN
DGE	Map the sources of decarbonisation data for industrial sites, structure the reporting of this data and assess the technical and regulatory feasibility of sharing data between surveys and databases (in particular with INSEE).
	Establish governance for the collection and use of this data, specifying the role of CEREN in this governance
	Coordinate data collection, centralise the associated databases and make them as open as possible
	Implement a national platform that brings together the various reports from companies on their non-financial data in connection with the Banque de France's future climate indicator, which will be able to feed directly into ESAP at European level and NZDPU at global level
DGEC	Map the sources of decarbonisation data for industrial sites, structure the reporting of this data and assess the technical and regulatory feasibility of pooling surveys and databases (in particular with INSEE)
	Establish governance for the collection and use of this data, specifying the role of CEREN in this governance
	Coordinate data collection, centralise the associated databases and maximise their use as open data
	Transpose EU Directive RED3 (requirement for "cascade use" to be legally enshrined) and conduct a legal analysis of the framework for managing biomass use data.
	Define the "target need" for the use of the regional renewable energy mapping portal (analyses to be carried out before the allocation of public aid) and identify the functionalities targeted by the tool
DGITM	Develop a new data model for supply chains
	Implement a data standard for access to low-emission zones
	Enrich the National Logistics Property Atlas with warehouses of up to $^{1,000\ m^2}$ and include data such as distance to a multimodal hub, suitability for electrical connections facilitating vehicle recharging, and the ability to operate multi-level storage
	Consolidate logistics data exchanges in the form of a national platform, including an *open data* section
	Publish a national logistics dashboard and a version for each metropolitan area
	Produce a customisable dashboard enabling each stakeholder to define their own analysis grid and logistics dashboards by sector
	Develop interactive visualisation and mapping tools for logistics to enhance the value of data and facilitate understanding of logistics issues and dialogue with regional stakeholders
CGDD	Map data sources on the decarbonisation of industrial sites, structure the reporting of this data and assess the technical and regulatory feasibility of pooling surveys and databases (in particular with INSEE)
	Establish governance for the collection and use of this data, specifying the role of CEREN in this governance
	Implement coordination of data collection, centralisation of associated databases and their exploitation as much as possible in open data format
DGT	Improve the granularity of information reported via the Banque de France on the use of these savings and communicate more effectively with savers and businesses
	Define objectives in terms of transparency of data on financial actors' outstanding amounts allocated to the ecological transition and deduce the needs in terms of data reporting and changes to financial actors' information systems
	Implement a national platform that brings together the various reports from companies on their non-financial data in line with the Banque de France's future climate indicator, which will be able to feed directly into ESAP at European level and NZDPU at global level
	Define France's position on the standards of the future NZDPU platform and promote them in discussions on its implementation
	Conduct a feasibility study on changing the corporate accounting plan to include issues related to the ecological transition
National Council of Chartered Accountants	Conduct a feasibility study on changing the chart of accounts for companies to include issues related to the ecological transition
SGPE	For all funds dedicated to the ecological transition, anticipate data reporting to ensure management and maximise impact
	Analyse the first CSRD reports published by companies and draw conclusions for future developments
	Monitor the transport activities of major shippers in France (report on invoiced amounts based on vehicle energy consumption)

Cerema	Launch the MVP version of the portal to meet the needs of manufacturers looking for undeveloped or developed land and the needs of local authorities to monitor land use
	Launch the improved version of the portal, including a connected version for local authorities so that they can update data directly, more land observation services for local authorities, more information services (best practices on ZAN, etc.) and services promoting networking between ecosystem players, as well as interoperability with regional portals
	Develop an interface with the DGFiP's information systems to integrate vacancy data for business parks into the portal and keep it up to date
	Carry out work to define interoperability between existing databases
	Create an interface between the Transition Écologique des Entreprises platform and Cerema's ASSETT system, and study the possibility of merging the two platforms
	Develop the portal, gradually improving the available versions (in particular by enhancing/developing the data sets and features offered) to take into account user feedback and needs
	Design and launch the user support offering
	Design an ex ante framework (standards, tools, platforms, methods provided by the State, and ecosystem of data producers) that is common to all for the production, updating and continuous improvement of geographical data relating to the deployment of renewable energy production facilities
	Study the possibility of enriching the renewable energy geographic portal with data on the type and quantity of biomass inputs used for energy production
CDC	Launch the MVP version of the portal to meet the needs of industrialists looking for undeveloped or built land and the needs of local authorities to monitor land use
	Launch an improved version of the portal including a connected version for local authorities so that they can update data directly, more land observation services for local authorities, more information services (best practices on ZAN, etc.) and services promoting networking between ecosystem players, as well as interoperability with regional portals.
	Develop an interface with the DGFiP's information systems to integrate vacancy data for business parks into the portal and keep it up to date
	Carry out work to define interoperability between existing databases
DGFiP	Develop an interface between the DGFiP's information systems and the national economic activity land portal to integrate vacancy data for business parks into the latter and keep it up to date
IGN	Develop the portal, gradually improving the available versions (in particular by enhancing/developing the data sets and features offered) to take into account user feedback and needs
	Design and launch user support services
	Design an ex ante framework (standards, tools, platforms, methods provided by the State, and ecosystem of data producers) that is common to all for the production, updating and continuous improvement of geographical data relating to the deployment of renewable energy production facilities
	Study the possibility of enriching the portal with data on the type and quantity of biomass inputs used for energy production
ADEME	Identify industrial carbon and hydrogen storage capacities
	Launch a beta version of the "Ecological Transition Mission" platform and improve it based on user feedback
	Create an interface between the Ecological Transition for Businesses platform and Cerema's ASSETT system, and study the possibility of merging the two platforms
	Define a method for calculating the emissions avoided by a project or company
BRGM	Identify industrial carbon and hydrogen storage capacities
	Define the framework for the national inventory of mineral resources
	Gradually make data available to manufacturers to identify anomalies/indicators of interest
	Promote in-depth investigation by public or private actors of indicators of strategic interest with a view to encouraging the development of new mining projects
France Travail	Integrate the nomenclature dedicated to occupations related to ecological planning (green, brown and strategic occupations for the TE) into ROME 4.0 with the support of ONEMEV
	Generalise the use of the orion.inserjeunes.beta.gouv.fr platform by regions and departments to organise initial and continuing training in their territory
DDT	Generalise the use of the orion.inserjeunes.beta.gouv.fr platform by regions and departments to organise initial and continuing training in their territory

FOOD & AGRICULTURE

Why?

From field to plate, the food chain will need to undergo significant transformation in the coming years. To manage these changes, agriculture and the food industry must strengthen their capacity to measure, decide, optimise and report: measure in order to better understand and guide decisions, optimise the pace of change on a daily basis, and report on the achievement of objectives at both national and European levels. This will require, in particular, the broader, controlled and coordinated use of digital technologies. While agriculture is the second largest source of greenhouse gas emissions after industry, responsible for 81 million tonnes of CO_2, it is also central to the solution. The sector has the potential to reduce inputs and, even more importantly, to adapt by producing sovereign, sustainable and healthy food, supplying non-food biomass, and sequestering carbon in grasslands and croplands, while preserving the environment and biodiversity.

To this end, the "Better eating" action plan has several strands.

Firstly, creating, consolidating and sharing agro-environmental reference frameworks and databases that match the scale of the ecological transition. From soil to plate, national databases already represent a valuable resource. To make them fully usable for ecological planning, they must be reorganised into coherent, interoperable systems and enriched with information that is either already available but not mobilised for the common good, or that can be obtained in the future by encouraging data holders to share it. The effectiveness of the many tools available to farmers to manage their holdings, to consumers to make informed choices, to manufacturers to meet their specifications, and to the government to steer agricultural and food transition policies depends on the strength of solid, well-documented databases. For example, farmers and the plots they cultivate require digital identifiers to enable activity monitoring and production traceability. Knowledge of soils can be improved by facilitating access to standardised and scalable data. Environmental labelling on food products requires databases of both “generic products” and “real products” in order to calculate environmental scores.

Secondly, creating basic infrastructure for steering ecological planning. Data interoperability must be strengthened to ensure secure and coordinated circulation, particularly through a protected data-sharing infrastructure linked to the European level, with the aim of providing farmers with effective tools to adapt to climate change.

Thirdly, modernising existing information systems and services. Since much of the transition is taking place at the local level, support for stakeholders is being provided through the development of the "ma cantine" platform and the creation of a tool shared by "local food projects". These two initiatives are at the heart of food system change and territorial transformation.

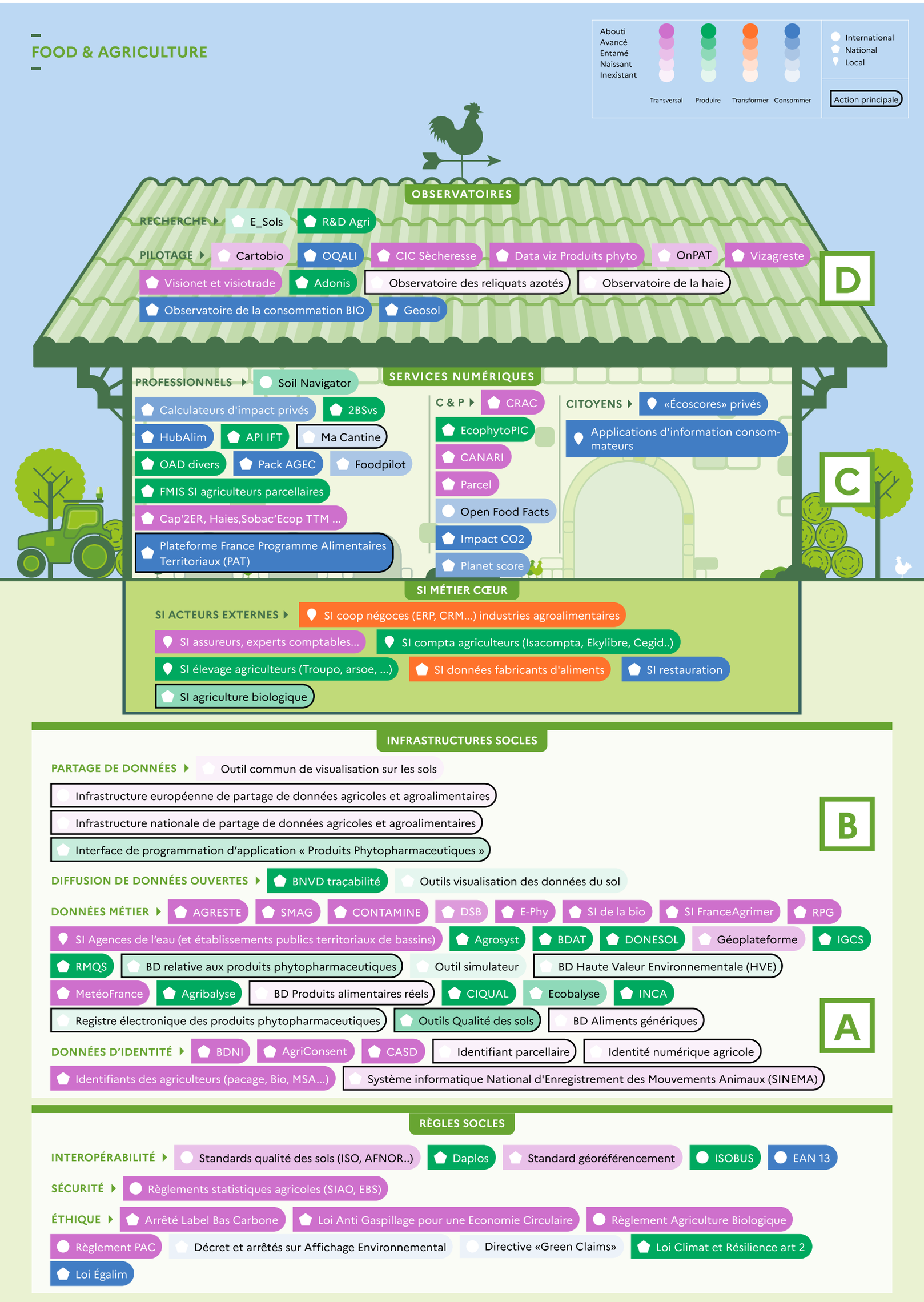
Finally, developing thematic digital spaces. Data collection for monitoring and steering ecological planning is being advanced through the establishment of observatories for nitrogen residues and hedgerows.

What?

Each of the priority building blocks outlined in black in the "Better eating" theme is the subject of a numbered "action" detailed below. These actions are structured into "guidelines" identified by letters, which follow the layers of the building. The guidelines are classified from bottom to top because, although all actions must be carried out in parallel in order to work in "product" mode and meet the urgent environmental challenges, they are all based on the foundations of the building, which must therefore be improved as a priority.

Each action is structured in an educational and pragmatic way: the business challenges are explained first, followed by an assessment of the current situation and associated issues, and then the sub-actions to be undertaken, along with their Leads and timetable. The Leads are classified according to central government departments, operators and regions; the main leader is indicated in bold. These actions and their timetable have been reviewed to incorporate the contributions of the public consultation, submitted in writing or during hundreds of interviews. They may be subject to change in an agile manner. These changes will be presented in summer 2025 and then annually.

FOOD & AGRICULTURE



A Create, consolidate and share agro-environmental reference frameworks and databases that are commensurate with the challenges of the ecological transition

1 – Identifiant parcellaire

Have a parcel identifier to facilitate the flow of data from field to plate

Each year, when applying for Common Agricultural Policy subsidies, farmers declare their crop rotations and geolocate all their cultivated plots. This data can be exported and retrieved by the farmers themselves, who use it in their exchanges with downstream sectors to ensure traceability across the entire value chain.

Including a unique annual parcel identifier in this export would facilitate data exchange and parcel identification for all actors in the value chain. This would streamline relations between farmers, cooperatives, processors and distributors, while also encouraging farmers to view digital technology as a tool for creating value.

1.1 – Include the unique annual parcel identifier in the Common Agricultural Policy (CAP) remote declaration export available to farmers in order to facilitate traceability throughout the value chain, with the farmer's consent.

- **Leads: MASA, ASP**
- **Timeline:** between CAP campaigns H1 2025

1.2 – Implement management of plot history following a preliminary study, where applicable: inter-annual links between plots, stable plot identifier over time for API query services (restricted access)

- **Leads:** MASA, **IGN**, **ASP**, INRAE
- **Timeline:** results of the preliminary study in H2 2026

2 – Identité numérique agricole

Roll out digital identity for agriculture among public and private stakeholders to streamline and secure data exchanges

Farmers connect to numerous public and private digital services on a daily basis, each of which requires a separate username and password. The growing number of services linked to business information and sector-specific legal requirements (for example GAEC) is making connections increasingly complex and heightening cybersecurity risks.

ProConnect, the public authentication service for professionals, already fulfils the requirements for connection and identification to services involving sovereign information (surname, first name, legal

entity, etc.). The ProConnect module should therefore be deployed on a large scale across both public and private services operating in the agricultural sector.

2.1 – Enable and widely deploy the integration of the ProConnect service across all public and private digital services useful to farms by making the agricultural sector a priority in the ProConnect roadmap and implementing any necessary legal changes.

- **Leads: DINUM**, MASA, CGDD, **private** stakeholders
- **Timeline:** Q3 2025

3 – Système informatique National d'Enregistrement des Mouvements Animaux (SINEMA)

Ensure animal traceability in accordance with European regulations and leverage data for better health management

Animal traceability has historically been managed through dedicated databases, most notably the BDNI for cattle. Beyond its primary function, the BDNI also supports other uses, including the extraction of data by the ASP for the payment of CAP subsidies based on cattle ownership periods, the feeding of health databases, and the management of farms, owners and identification markers. Designed more than 20 years ago, the BDNI has gradually evolved through the addition of successive layers.

European animal health regulations that entered into force in April 2021 introduced new requirements for animal traceability, particularly the management of operators, that is, the legal entities responsible for carrying out animal movements, and the traceability of the movements themselves.

In response, the creation of the National Animal Movement Registration System (SINEMA) has been approved. This system will enable the management of all categories of operators and the traceability of various animal species (ruminants, pigs, poultry, domestic carnivores and equines). It serves multiple purposes, such as providing real-time information essential for managing health and economic crises, as well as for the payment of CAP subsidies.

To achieve this, SINEMA integrates and connects:

- Existing national operator databases managed by professional branches (CDAF for ruminants, pigs and poultry, SIRE for equines and ICAD for carnivores).
- A new movement database, supplied by animal owners and managed by MASA.
- A data warehouse, supplied by the movement database, to store, open, enhance and cross-reference movement declarations with each other and with other data from the Food Information System (SIAL), while making available to the ASP the information required for CAP payments.

3.1 – Develop a roadmap for data from the Feed Information System (SIAL) with the initial objective of strengthening animal traceability in accordance with the LSA and defining a framework for the

- **Leads: MASA,** DINUM, project management assistance
- **Timeline:** Q4 2025

interoperability of animal traceability data, setting rules for delegates responsible for the BNO and movement databases

3.2 - Develop SINEMA

- **Leads: MASA**
- **Timeline:** Q2 2027

4 - Outils Qualité des sols

Organise and strengthen existing foundations through the large-scale acquisition of new data, with the aim of deploying soil data visualisation tools and developing a multi-criteria simulator that integrates soil, climate and environmental management data to inform decision-making.

Essential to our food supply, soils also provide fibre, biomolecules, bio-based materials and energy. They contribute to the quality of freshwater resources, help mitigate the greenhouse effect, and support infrastructure. As immense reservoirs of biodiversity, soils host more than a quarter of all species described to date.For a long time, soil was regarded solely as a medium for crops, to which the necessary inputs for their growth and protection needed to be added. This perception is now changing. Soil is increasingly recognised as a heritage to be preserved, or even restored, due to its fragility, its vulnerability to stress, and its inability to regenerate on a human timescale.Protecting and restoring soils in the context of multiple transitions (energy, food, ecological, etc.), which involve significant changes in agricultural and forestry production,requires a shift towards more sustainable practices. In this perspective, it is essential to consolidate and improve access to soil data, which is currently federated within the *SI Sol*, in line with action 19.5 of the "Better protection of ecosystems" axis.

However, foresters, farmers and their support structures (cooperatives, chambers of agriculture, independent advisors), together with public authorities at both national and local levels, lack sufficient data and reference frameworks to assess soil status and health. This prevents them from identifying achievable improvements and from taking appropriate measures to maintain or restore soil health, or to promote such actions through mechanisms such as labels, carbon credits or payments for environmental services. The main challenges for the coming years are to promote data flows between stakeholders, to acquire data on new variables (for example contaminants and biodiversity), to substantially increase the number of analyses in order to improve data quality, and to make this information both accessible and operational. This should be achieved in particular through a national portal, modelling and simulation tools, decision-support instruments, and interfaces that encourage different forms of participatory science.

4.1 - Resolve legal issues or questions associated with the dissemination of soil data or the acquisition of private data

- **Leads:** MASA, **INRAE (Gis Sol)**, RMT Sols et Territoires, Patrinat, IGN, Chambers of Agriculture, Arvalis
- **Timeline:** H1 2025

4.2 - Simplify data transfers by defining standards and developing automated extraction, exchange and provision methods that are compatible with the current dynamics of the European Union

- **Leads:** MASA, **INRAE (Gis Sol)**, RMT Sols et Territoires, PatriNat, IGN, Chambers of Agriculture, Arvalis, analysis laboratories
- **Timeline:** Q4 2025 - H1 2026

4.3 – Identify methods for sharing the results of private analyses, with the consent of the owners, with scientific research and private stakeholders

- **Leads:** MASA, **INRAE (Gis Sol)**, RMT Sols et Territoires, PatriNat, IGN, Chambers of Agriculture, Arvalis, software publishers, analysis laboratories
- **Timeline:** H2 2026

4.4 – Deploy a common tool/portal for accessing and viewing soil data, maps and information (e.g. geoplateform, IGN)

- **Leads:** MASA, CGDD, **INRAE (Gis Sol)**, RMT Sols et Territoires, PatriNat, IGN, Chambers of Agriculture, Arvalis
- **Timeline:** first deliverable in H1 2026

5 – BD Haute Valeur Environnementale (HVE)

Create a database to centralise and disseminate more detailed data on HVE certification

This database will enable the roll-out of environmental certification to be monitored and evaluated on the basis of HVE audit results. It will also provide information on the practices implemented by farmers committed to environmental certification.

5.1 – Develop a tool to collect all data from the audit grids of certified farms, enabling this data to be used and the HVE certification process to be managed

- **Leads: MASA**, MTECT, ASP
- **Timeline:** Q2 2024 to H1 2025

6 – BD Aliments génériques

Create a common standard covering metadata for the 2,500 generic foods listed in public food databases to make them interoperable

For food products, there are currently several generic databases: Contamine on contaminant pollution (ANSES), INCA-Albane on individual food consumption (ANSES), Ciqual[62] on the nutritional composition of foods (ANSES), and Agribalyse[63] (ADEME) on environmental impacts calculated using the LCA (Life Cycle Assessment).

Interoperability between these databases will enable recommendations to be developed that incorporate all food characteristics. This should make it possible to take into account all nutritional, environmental and health aspects simultaneously in nutritional recommendations, while taking into account actual individual food consumption (age, geographical location such as metropolitan France and overseas territories, etc.) in order to remain pragmatic. Adherence to these recommendations can be monitored by various studies, including the "Albane" food consumption study, which is a continuation of the INCA studies.

6.1 – Create a database on the environmental impacts of generic

- **Leads: MTECT**, ADEME

[62] Available at the following link: https://ciqual.anses.fr/
[63] Available at the following link: https://agribalyse.ademe.fr/

foods (or extend Agribalyse to impact scores)

- **Timeline:** Q2 2024 (after arbitration on the definition and calculation methods for environmental labelling)

6.2 - Make existing databases interoperable (new database on the environmental impacts of generic foods, Ciqual, Contamine) using the metadata standard

- **Leads:** MTECT, **ANSES,** INRAE, ADEME
- **Timeline:** 2025-2027

7 - BD Produits alimentaires réels

Create a database of "real food products" and their environmental impacts, which will enable interoperability with nutrition data for around 30,000 branded foods, and establish data exchange channels between the various databases

Article 2 of the Climate and Resilience Act stipulates that "marketers shall make available, in an open format that can be freely used and processed by an automated system, the data taken into account in environmental labelling". A database centralising the data used for environmental labelling, the list of which will be set by decree in 2024, and the environmental scores calculated by manufacturers, or "real food database", is a simple way for marketers to meet this obligation.

This action goes beyond the food sector and concerns all goods and services covered by Article 2 of the Climate and Resilience Law.

7.1 - Establish the components of a single interoperability standard, distinct from Oqali, between public (Oqali) and private (OpenFoodFacts, Yuka, Scan'Up, ConsoTrust, Kantar, GH1, etc.) actors. Test it and roll it out at European level as part of the joint DG SANTE NCD 2024-2027 action with the Joint Research Centre (JRC).

- **Leads:** CGDD, MASA, DGS, **ANSES,** INRAE, selected private partners such as GH1, OpenFoodFacts, Scan'up and ConsoTrust JRC
- **Timeline:** 2024-2027
  2024-2025:
  Development of a first version of a single standard for branded foods
  and testing of the first version of the single standard by the various partners
  2026-2027:
  Finalisation and publication of the single standard after consultation

7.2 - Define the terms and conditions for sharing public data to mutually enrich this reference framework and private databases (currently populated according to the interests of their users, who are consumers with expertise in the environment/nutrition, hence a lack of representativeness)

- **Leads: CGDD,** INRAE, ANSES, DGS, DGAL
- **Timeline:** 2024-2026

7.3 - Organise the transmission and storage of environmental scores and the information needed to calculate environmental scores (e.g. origin of ingredients, labels,

- **Leads: CGDD**, DINUM
- **Timeline:** Q3 2024

types of packaging used), the list of which will be set by decree in early 2024, in a "real products" database, linked to the Ecobalyse tool (public calculator) or private calculators used by manufacturers

B Create basic infrastructure to drive environmental planning

8 – Catalogue de données MASA à l'usage des administrations

Share data collected by MASA among government departments to enable the implementation of necessary public policies

MASA has a wealth of data from statistical surveys and administrative and control procedures required for several public policies. In order to disseminate this data, the status of each piece of data or dataset must be defined for all reference databases to ensure compliance with rules on business confidentiality, statistical confidentiality and personal data protection.

Where legally possible, they must be available for use in ex-ante or ex-post evaluations of public policies, such as assessing the impact of agriculture on water catchment protection, the impact of water restrictions on irrigation and livestock farming, and the consideration of agricultural practices in environmental labelling.

8.1 – Create a catalogue of initial data sets that meet regulatory dissemination criteria, fed by MASA departments, and set up channels for transmission between central government departments via data.gouv.fr (open data and restricted access data)

- **Leads: MASA, CGDD**
- **Timeline:** H1 2025

8.2 – Mobilise the Geoplatform to open up data and share visualisation and cross-referencing tools for shared use between different departments and third parties

- **Leads: MASA**, CGDD, IGN
- **Timeline:** Ongoing

8.3 – Integrate the graphic parcel register and the BDNI into the catalogue so that central administrations and decentralised services can easily access them, in accordance with the legal framework in force	• **Leads:** MASA, CGDD, **ASP** • **Timeline:** 2027, following action 7.2
8.4 – Identify useful data sets available from private actors (NGOs, associations, companies). Open up and disseminate these data as widely as possible	• **Leads: MASA, CGDD** • **Timeline:** H1 2026, then ongoing
8.5 – For all agricultural data, clearly distinguish data from organic farming	• **Leads: MASA, CGDD** • **Timeline:** H1 2026, then ongoing

9 – Infrastructure européenne de partage de données agricoles et agroalimentaires

Coordinate national and European data-sharing infrastructures in the agricultural sector to facilitate transnational data exchanges and thus the roll-out of European policies and new digital services for farms

As part of its 2020-2024 mandate, the European Commission has established the Union's digital strategy with the aim of ushering in Europe's "digital decade" for the benefit of citizens and businesses, while helping it achieve its goal of climate neutrality by 2050. This objective requires strengthening the EU's digital sovereignty, in particular its ability to set standards instead of following those of others and to create its own infrastructure.

The French government, agricultural organisations and research institutes are involved in the Horizon Europe research projects[64] and have contributed their expertise to the following projects:

- "Agriculture of data" research projects, involving INRAE and agricultural technical institutes
- DataSpace Agriculture (CEADS), for which the European Commission has selected the AgriDataSpace consortium[65], composed of 15 partners from 10 Member States, to prepare for the deployment of the future data space in 2024
- EDIC Agrifood, for which the French government has volunteered to coordinate with certain Member States to set up a new transnational operator responsible for governing the basic infrastructure needed to roll out the CEADS

The vision behind these projects serves both the principle of free movement of data and interoperability within the European area, and the construction of digital sovereignty in the key sector of agriculture.

It is now necessary to give political impetus to these projects by consolidating them, activating the EDIC Agrifood working group and responding to the call for applications published in Q1 2024 as part of the *Digital Europe Programme* to deploy the CEADS via the AgriDataSpace.

[64] Available at the following link: https://www.horizon-europe.gouv.fr/
[65] Available at the following link: https://agridataspace-csa.eu/

9.1 – Design the European data-sharing infrastructure within the "Agriculture of data" project to provide solutions for public policy makers and the agricultural sector

- **Leads: MASA**, ASP, INRAE, IGN
- **Timeline:** project launch in Q1 2026

9.2 – Bring the national data-sharing infrastructure into line with the GAIA-X European interoperability standards (level 3 – sovereignty) to prepare for the construction of the European Agricultural and Food Data Space (CEADS) in accordance with the roadmap defined by the AgriDataSpace consortium

- **Leads: MASA**, CGDD, DGE
- **Timeline:** 2025–2026 (depending on the development of European infrastructure)

9.3 – Interconnecting national data infrastructures with the European Agricultural and Food Data Space (AgriDataSpace)

- **Lead partners: MASA**, CGDD, DGE within the AgriFood EDIC
- **Timeline:** Q4 2025 (depending on the operational status of the data space and the effective creation of the EDIC Agrifood)

10 – BD relative aux produits phytopharmaceutiques

Consolidate existing databases for plant protection products in order to make better use of the data collected

The objective is to structure a common reference framework for plant protection products, and to sustain and improve the production and use of the national database of sales made by distributors of plant protection products (BNVD). It will serve as a reference for data requirements on plant protection products at the level of territorial areas of interest (sub-national, often sub-regional or even trans-regional) for research and public policy support (e.g. AAC action plans, Natura 2000 management plans, etc.).

10.1 – Support, disseminate and promote the tool among research teams (agronomy, ecology, health, etc.) and administrations for the monitoring and evaluation of public policies

- **Leads:** MASA, **CGDD,** ODR, OFB
- **Timeline:** Q1 2024

10.2 – Consolidate the common reference framework between databases on plant protection products

- **Leads:** CGDD, MASA, **OFB**
- **Timeline:** Q2 2024

10.3 – Improve the spatialisation model in order to refine knowledge

- **Lead agencies: CGDD**, ODR, OFB, MASA
- **Timeline:** Q1 2025

of pressures and impacts on the environment

10.4 – Improve the ergonomics and potential of the query tool, integrate new extraction perimeters into routine operations (AAC type, Natura 2000 sites, etc.) and extractions in different formats

- **Leads: CGDD**, ODR, OFB, MASA MASA
- **Timeline:** H2 2025

10.5 – Make the spatialised BNVD interoperable (via API) with other thematic applications (Gis SOL / PPP^{sols}, BRGM / PPP^{ESO}, etc.)

- **Leads: CGDD**, ODR, OFB, MASA
- **Timeline:** 2026

10.6 – Build on the regional mapping work carried out by the DRAAFs as part of the territorialisation of Ecophyto 2030 to enrich and consolidate data on plant protection products

- **Leads: DRAAF**, MASA
- **Timeline:** 2026

11 – Registre électronique des produits phytopharmaceutiques

Create a standardised electronic register of plant protection products

Although the establishment of a centralised register in each Member State is not yet mandatory (as provided for in the regulation currently being negotiated on the sustainable use of plant protection products, the SUR Regulation), it is nevertheless essential that public authorities anticipate and make available to users who so wish an application that would enable data to be transmitted in the required format when the centralised register is established.

11.1 – Make available an electronic register of plant protection products and develop a public government tool to provide users of plant protection products with a free, paperless tool that complies with regulatory requirements

- **Leads:** MASA
- **Timeline:** 2026

11.2 – Conduct a campaign to roll out the electronic register to support users of plant protection products in complying with this new requirement

- **Leads: MASA**
- **Timeline:** H1 2026

11.3 – In conjunction with action 9, enable the interoperability of the electronic register with European data infrastructures

- **Carriers: MASA**
- **Timeline:** H1 2026

12 – Interface de programmation d'application « Produits Phytopharmaceutiques »

Develop an API to access, for statistical purposes, data on plant protection products contained in field management software

Member States' obligations to report statistical data on the use of plant protection products are changing, with increased frequency. This monitoring, currently carried out every four years for each major crop family, will become annual and will be more specific in terms of geography and the number of crops.

The statistical surveys used to date to collect this information would be particularly costly to carry out annually, both for the MASA and for farmers. It is therefore necessary to explore other technical means of producing the information, using field management software, in a manner that respects farmers' consent. This information will make it possible to better monitor changes in use and better understand the link with weather and pest pressure.

12.1 – Set up an API and consent management system allowing the voluntary reporting of information entered into field management software

- **Leads: MASA**, software publishers
- **Timeline:** Q3 2024

12.2 – Conduct a test with volunteer farms and analyse the data to assess the relevance of this system in light of European statistical monitoring requirements and existing surveys

- **Leads: MASA**
- **Timeline:** Q2 2025

C Modernise existing business information systems and digital services

13 – SI agriculture biologique

Consolidate and enhance the information system on organic farming to improve its use by the various stakeholders in the sector and the general public

The organic farming information system is a large-scale project that has been running for several years, led by Agence Bio and supported by MASA, MTECT and INAO. It has made it possible to structure the data collected from the controls carried out by organic certification bodies, to set up an organic observatory, to overhaul the directory of organic operators and to launch the Cartobio public data

space[66], which allows users to find out whether a plot of agricultural land in France is farmed organically or not.

This work now needs to be consolidated in order to improve the availability of tools and databases for stakeholders in the ecosystem and for citizens.

13.1 – Finalise the Cartobio professional space open to certification bodies and deploy the tool during inspections (updated after each inspection)

- **Leads:** MASA, CGDD, Cartobio start-up team, **Agence Bio**
- **Timeline:** Q1 2024

13.2 – Disseminate Cartobio's certified organic parcel data as *open data* and make it available through public data visualisation tools to enable cross-referencing with other data and geographical layers

- **Leads:** MASA, CGDD, **Agence Bio**
- **Timeline:** Q2 2025

13.3 – Enrich the information base collected from the organic information system and improve the quality of the data in the information system

- **Leads:** MASA, CGDD, **Agence** Bio
- **Timeline:** Q4 2024

13.4 – Adapt the interface of the organic professionals directory for each user profile (administration, consumer, professional), improve the visualisation of all data on producers and downstream professionals, including commercial and collective catering

- **Leads:** MASA, CGDD, **Agence Bio**
- **Timeline:** Q4 2024

14 – « ma cantine »

Accelerate the development of the public digital service ma cantine[67] to support collective catering operators in achieving the objectives of the EGalim law for healthy, sustainable and high-quality food.

The service provides information to collective catering operators on their legal obligations, makes support tools available to help them meet these obligations and, finally, enables them to submit data online, particularly on the supply of sustainable, high-quality products. This enables national and regional management of public policies on collective catering, in particular the Government's priority policy of "ensuring that 50% of products used in collective catering are high-quality and sustainable, including 20% organic".

The current challenges relate, on the one hand, to the registration and retention of new users (those who are less committed and equipped) and, on the other hand, to simplifying the use of the online

[66] Available at the following link: https://cartobio.agencebio.org/
[67] Available at the following link: https://ma-cantine.agriculture.gouv.fr/

reporting service so that users do not see *my canteen* as a constraint but as a real lever for transition and a single point of entry for collective catering.

14.1 – Strengthen the rollout of *my canteen* for managers and users with the necessary services: tool for monitoring and steering purchases towards EGalim objectives, annual reporting to the administration, data transparency	• **Leads: MASA**, DINUM • **Timeline:** Q1 2024
14.2 – Simplify the user experience and enhance the value proposition for users through personalised services and information	• **Leads: MASA**, DINUM • **Timeline:** Q2 2024 to Q4 2025
14.3 – Develop new services tailored to user needs: tools for diagnosing and monitoring food waste, API interfacing with third-party software, facilitation of file imports, EGalim observatory.	• **Leads: MASA**, DINUM • **Timeline:** Q4 2024 to Q4 2025
14.4 – Improve and disseminate more widely the resources and data from *my canteen* to facilitate their use	• **Leads: MASA**, DINUM • **Timeline:** Q1 2026, then ongoing

15 – Plateforme France PAT (Projets Alimentaires Territoriaux)

Create a digital service for Local Food Projects (PAT) to support PAT Leads in the food and agroecological transition at the local level

PATs are an innovative approach that brings together all food stakeholders at the local level around a diagnosis and an action plan tailored to locally identified needs. PATs are now widely recognised as a means of scaling up and initiating transitions at local level in order to meet the challenges of supplying the catering sector with local, sustainable and high-quality products, bringing production closer to consumers, combating food insecurity and food waste and, more broadly, environmental and economic resilience, accelerating food and agroecological transitions, and contributing to France's food sovereignty.

This project was launched as part of the ecological planning and structuring of the PAT network, and was then extended through the National Strategy for Food, Nutrition and Climate (SNANC) in 2025. The "France PAT[68] " service was developed under an agreement with Terres en Ville and Chambres d'agriculture France, and a first version of the service is now available.

In addition to funding, the current challenges include, on the one hand, characterising and assessing the impact of PATs – these are often heterogeneous projects at the outset and there is no centralised database – and, on the other hand, the fragmentation of the more than 460 PATs across the country,

[68] Available at the following link: https://france-pat.fr/

which often face similar challenges but do not always have a platform for sharing best practices and tools.

15.1 – Create a national database of PATs	• **Leads: MASA** and DRAAF, Terres en ville, Chambers of Agriculture of France, ADEME, INRAE, regional PAT networks, PAT Leads (including local authorities), PAT partners • **Timeline:** Q1 2024 to initialise the database, annual update of files
15.2 – Develop a resource centre and share best practices	• **Leads: MASA** and DRAAF, Terres en ville, Chambers of Agriculture of France, ADEME, INRAE, regional PAT networks, PAT Leads (including local authorities), PAT partners • **Timeline:** Q1 2024 to initialise, updates as required

Develop observatories

16 – Observatoire des reliquats azotés

Create a national observatory for nitrogen residue indicators in order to have a benchmark for evaluating the effectiveness of practices and measures aimed at reducing water pollution from agricultural nitrates

The quality of water bodies in terms of pollution from agricultural nitrates is not improving sufficiently overall in France. Today, three quarters of France's agricultural land is classified as a nitrate vulnerable zone. The French nitrate action programme imposes so-called medium measures in vulnerable zones, relating to agricultural practices, aimed at reducing pollution and eutrophication linked to agricultural nitrates.

The "nitrogen residue at the start of winter" (REH) indicator is an excellent result indicator, intermediate between the impact indicators for nitrate pollution of water bodies and the means indicators relating to agricultural practices. It makes it possible to assess the progress and impact of the measures implemented by farmers, while enabling the public authorities to better monitor and evaluate the effectiveness of their public policy on nitrates. In addition, for farmers, this measure makes it possible to adjust nitrogen fertiliser inputs to the needs of the soil and crops, thereby saving money. Finally, these data make it possible to assess ammonia levels in the air in connection with work on air quality.

In this context, the creation of a national observatory for residual amounts is a priority recommended by the General Inspectorates for the Environment and Agriculture in their 2020 report. The database created will be anonymised and must be able to receive the same information from the GIS SOL, existing or planned regional or local observatories (Oise, Eure, Hauts-de-France, etc.), and specific projects (PSE or research, for example).

16.1 – Set up a remote procedure for volunteer farmers to submit their nitrogen residue results (mandatory analyses under the derogations)

- **Leads: MTECT, MASA**, analysis laboratories, INRAE
- **Timeline:** Q2 2024

16.2 – Link this data to other databases (e.g. RPG, BDSol, etc.) to enable better analysis of REH information

- **Leads: MTECT, MASA**, analysis laboratories, INRAE
- **Timeline:** Q1 2025

16.3 – Return data enabling regional management and national monitoring, in line with the implementation of public policies

- **Leads: MTECT, MASA**, INRAE, local authorities
- **Timeline:** H2 2025

17 – Observatoire de la haie

Establish an observatory and a cartographic reference system for effective monitoring of hedge management across the country

The observatory will enable long-term monitoring of hedge development, while also monitoring their management and use, as well as biomass production and sustainable hedge management.

The reference system will incorporate all observations made by the State and its operators. It will be fed by a partnership and stakeholders other than the State and its operators, in particular local authorities, will be able to contribute to data collection and feed the observatory, for example by reporting data. This data will be disseminated in formats that enable stakeholders to use it in their own tools and, in accordance with the regulations in force, the reference framework will be accessible to the public.

17.1 – Have an initial linear hedge monitoring model, which will be fed by the State, its operators and actors other than the State and its operators, in particular local authorities

- **Leads:** MASA, MTECT, **IGN**, OFB, INRAE
- **Timeline:** H2 2025

17.2 – Integration into the observatory of data relating to the monitoring of hedge management and enhancement, as well as monitoring of biomass production

- **Leads: MASA, MTECT, IGN, INRAE**
- **Timeline:** release of modules in phases in H1 2026 and 2027

Illustration of a use case

Work on the following use case is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different “building blocks” of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the “use case vision.”
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Enhancing soil quality

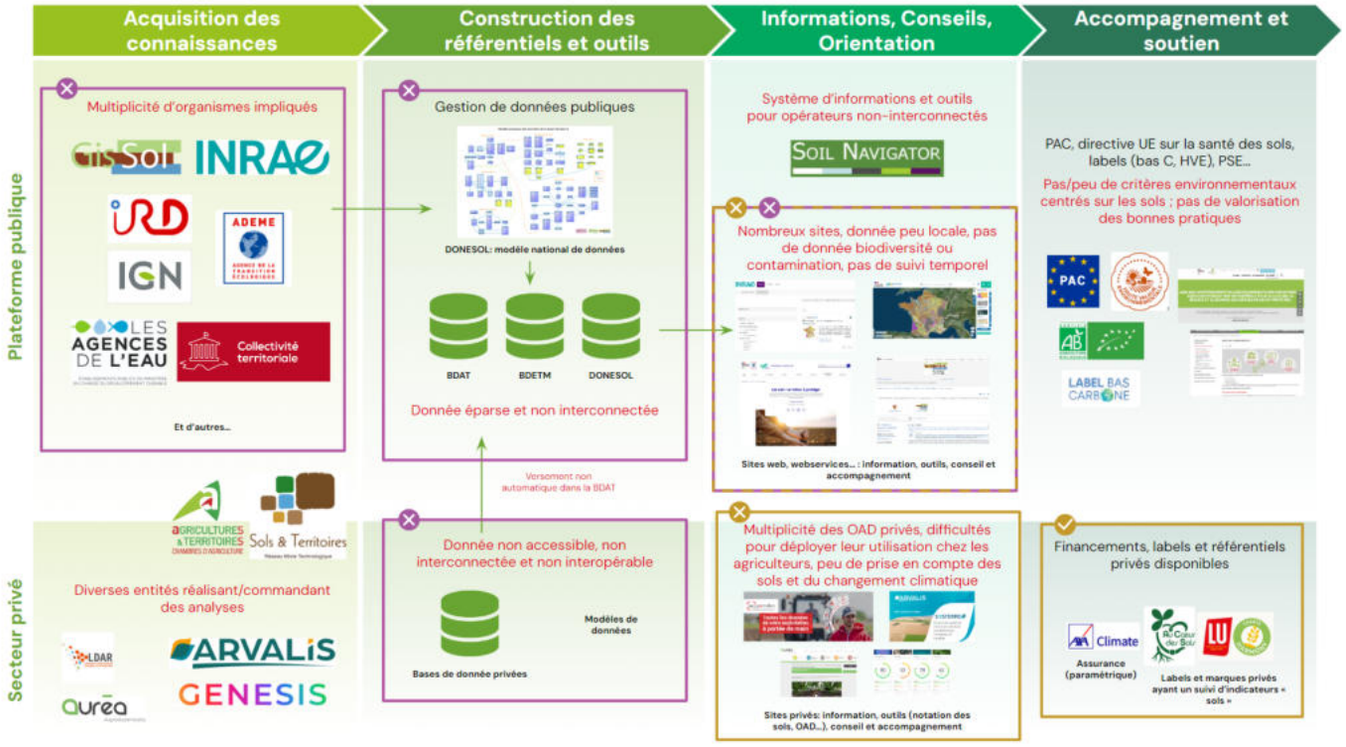
Soil lies at the heart of agricultural challenges and, more broadly, constitutes one of the key elements of the ecological transition. As the foundation of infrastructure, a reservoir of biodiversity and home to around a quarter of all known species, soil provides numerous ecosystem services such as water purification and flood risk reduction, and plays a central role in climate regulation. As the medium for crops, it is also essential to food supply, providing fibre, materials and energy.

However, data on soils remains incomplete and difficult to access, as does the information it could provide to support soil preservation and management. This issue has become all the more urgent in the context of accelerating climate change.

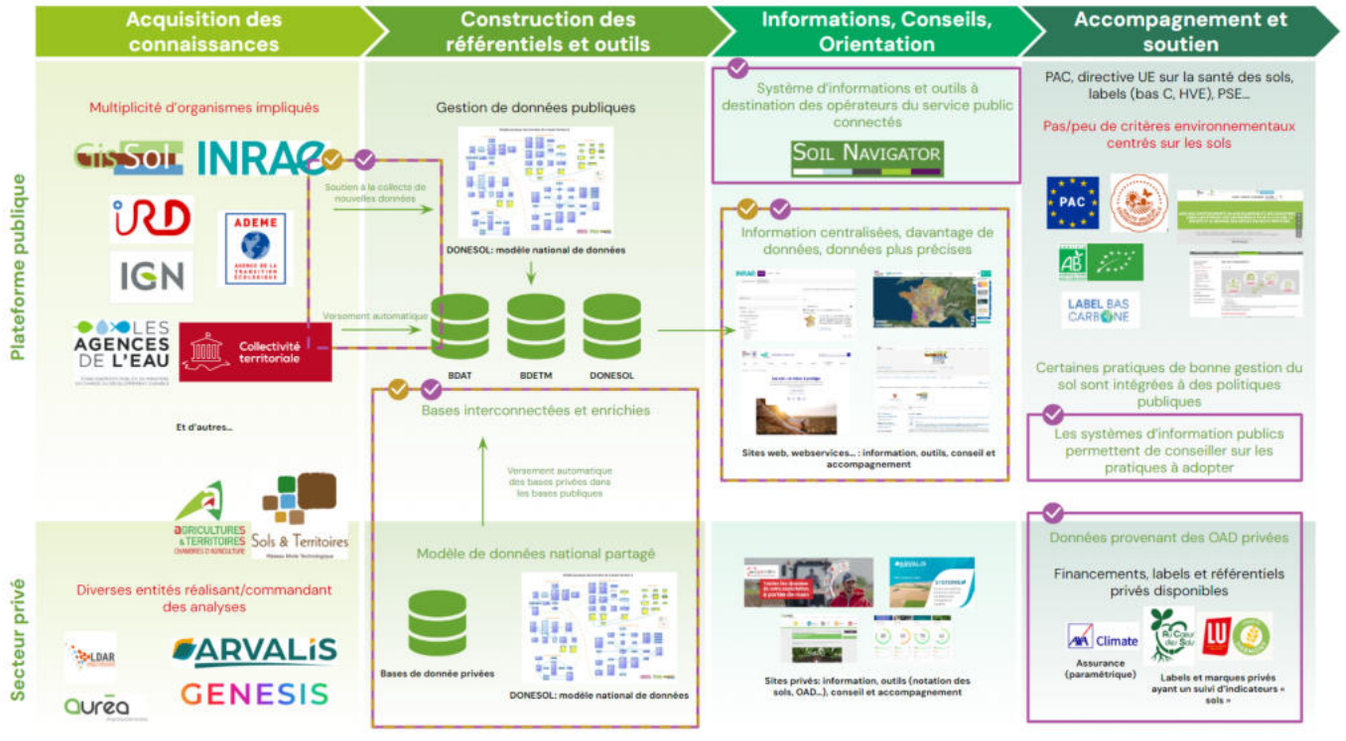
This use case on soils will be monitored through several indicators. From an operational perspective, these include the number of soil analyses recorded in the database (covering physico-chemical characteristics, biodiversity, pollution and other components), the number of downloads or dataset accesses via the soil data portal, the number of visits to the "soil" platform and professional accounts created, and the number of decision-support tools integrating soil data. From a business perspective, indicators include the progress of soil data coverage across the territory, the percentage of restored soils, and the number of soil data or indicators used for reporting to the European Commission under the Soil Health Monitoring Directive.

Personae – Current situation

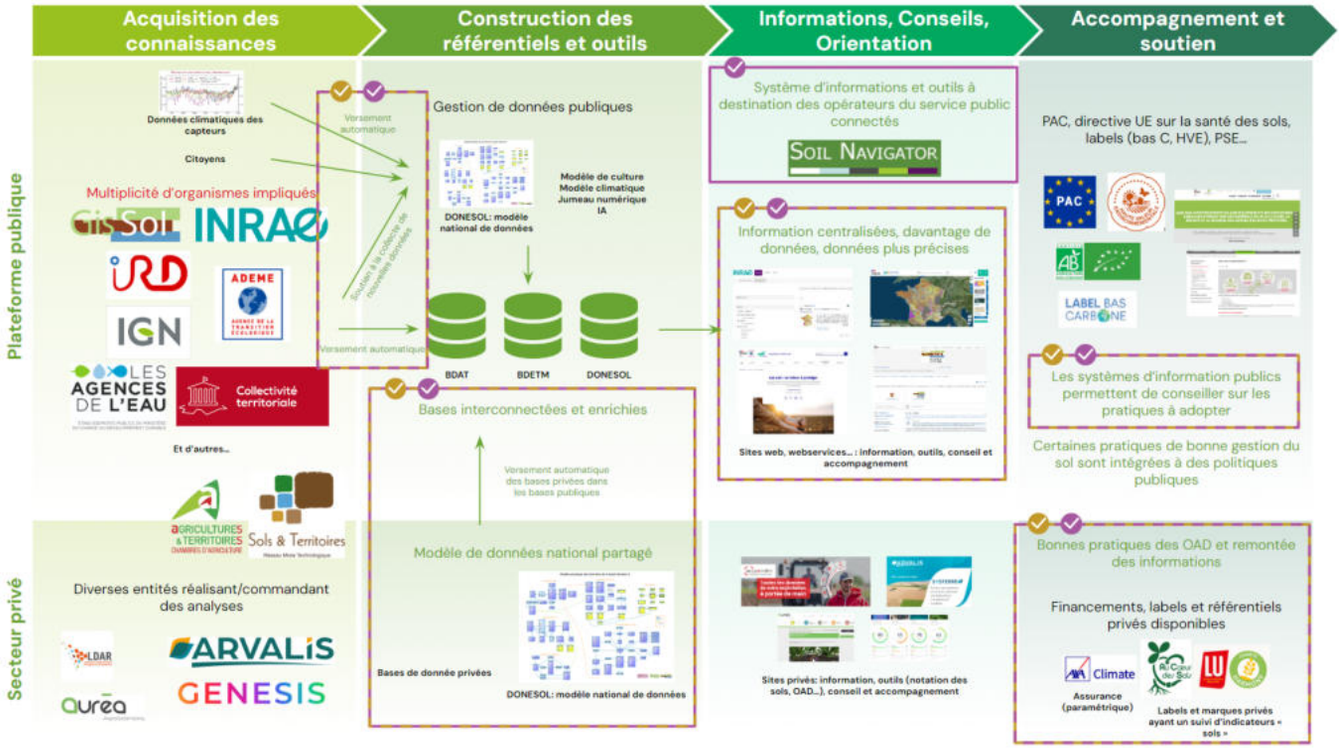
Current situation



Medium-term situation



Target vision



Personae – Target vision situation

François is an agricultural adviser. He has to repeat information to the farmers who come to see him on a wide range of issues relating to the adaptation of their practices to climate change, particularly soil management, as well as new support schemes (PSE, LBC, etc.). He has soil analyses carried out, which he is able to interpret more effectively at local level, and he uses the improved decision support tools (OAD) of his organisation to provide advice. He is able to take climate change into account. While he can always turn to private labels, public support schemes are available to assist with the transition. He can monitor soil health in his area and is able to provide better advice and follow-up to his farmers. He knows which practices are eligible for funding and can monitor the support schemes.

Lucile works in a local authority. She must adapt the planning of her area and its economic support policies to address current challenges (climate change, food sovereignty, population flows, mobility) while ensuring consistency with regulatory requirements: development of Territorial Food Projects (PAT), the zero net land take (ZAN) objective, and contribution to achieving France's carbon neutrality target. She has access to reliable, accessible and intelligible data to consider which soils should be allocated to which uses.

Etienne works in government. He is preparing public policy tools to implement the agricultural component of ecological planning. He wishes to draw on the knowledge developed by the scientific community to promote best practices for storing carbon in soils and to develop relevant indicators for monitoring the evolution of practices (such as soil cover and hedgerows) and the changes in soil carbon storage. With richer, more accessible and dated data, together with models, he is able to produce reports on the evolution of practices and on soil quality, incorporating climate trends. He can also rely on the monitoring of public and private support schemes that encourage changes in practices in favour of soils.

Béatrice is the head of an agricultural cooperative. She wishes to update the specifications for her members by including the maintenance, and ideally the improvement, of soil health (including biodiversity considerations). She has a simple tool to monitor the practices implemented and their consequences on the farmers' soils.

Antonio is the head of a soil analysis laboratory. He carries out thousands of analyses each year for the farmers in his area. With the consent of the farmers, he can contribute to the enrichment of the national database in order to improve knowledge of soils and provide farmers, in the analysis report, with reference values enabling them to assess the health status of the soil analysed.

Lisa is an agronomist and data scientist in an agricultural start-up. She develops decision support tools to assist farmers, agricultural cooperatives and advisers in the implementation of agroecological practices. She can easily access a wide range of data collected on French soils in order to develop a new decision support model (OAD) that identifies the agricultural practices most suitable for retaining water in the soil and storing carbon.

Anne is a farmer. She has consulted her agricultural adviser to identify good practices for adapting to climate change, particularly drought, through better soil management. She has had soil analyses carried out. She is also seeking funding to support this transition. With richer, more diverse and more accessible data, her adviser is able to interpret her soil analyses more effectively and to recommend the appropriate practices. He can also take climate change into account in his recommendations thanks to more comprehensive decision support tools (OAD) and platforms. Public support is available for changes in practices, supported by a national information system in addition to private initiatives (such as labels).

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM SOLUTIONS	SOLUTIONS IN THE TARGET VISION
	Lack of data at the right scales	New data is being acquired from the public (e.g. support for GIS Sol for the acquisition of biodiversity and contamination data at various scales) and is enriching national databases	- Development of new sensors for soil monitoring - The development of participatory science increases data on the territory - Acquisition of new data continues in the public and private sectors
	Duration of acquisitions, parameters measured	New data is acquired from public sources (e.g. support for GIS Sol for the acquisition of biodiversity and contamination data at various scales) and enriches national databases	- Development of new sensors for soil monitoring - The development of participatory science increases data on the territory - Acquisition of new data continues in the public and private sectors
	Private data not available/interconnected, opaque methods	- Access to private data is possible following analysis of various texts (e.g. anonymised, reported to the municipality/canton). This data enriches national databases. - A national data format discussed and then shared, enabling the interconnection of public and private national databases	- Development of new sensors for soil monitoring - All private data enriches national databases in accordance with the national format - The development of participatory science increases the amount of data available on the territory
	Legal framework for data access and sharing (GDPR rules, Aarhus Convention)	Access to private data is possible following analysis of various texts (e.g. anonymised, reported to the municipality/canton). This data enriches national databases.	- Development of new sensors for soil monitoring - All private data enriches national databases in accordance with the national format - The development of participatory science increases the amount of data available in the region
	Acquisition cost		- Development of new sensors for soil monitoring - The development of participatory science increases data on the territory
	Scattered and unconnected data	Data processing to produce information that can be used by stakeholders (at different spatial and temporal scales)	
	Lack of data for temporal monitoring	- New data is being acquired from the public (e.g. support for GIS Sol for the acquisition of biodiversity and contamination data at various scales) and is enriching national databases - Data processing to produce information that can be used by stakeholders (at different spatial and temporal scales) - Assistance with the extraction/insertion of anonymised data (e.g. averages for plots)	The acquisition of new data continues in the public and private sectors
	Lack of data on all topics	- New data is being acquired in the public sector (e.g. support for GIS Sol for the acquisition of biodiversity and contamination data at various scales) and enriches national databases - Assistance with the extraction/insertion of anonymised data (e.g. averages for plots)	- The development of participatory science is increasing the amount of data available for the territory - Acquisition of new data continues in the public and private sectors
	Interoperability of public/private data	- A national data format is being discussed and then shared, enabling the interconnection of national public and private databases - Assistance with extracting/inserting anonymised data (e.g. average values for plots)	- Development and use of a historical plot ID (for monitoring soils and practices) - All private data enriches national databases in accordance with the national format
	Incomplete, unconnected OADs and tools	New soil data is fed into OADs (existing/new), enabling crops to be managed based on soil conditions and to be managed/preserved	Soil data and simulation tools are integrated into ODA (existing/new), enabling crop management and simulation of management options based on soil condition.
	Low accuracy, scattered and incomplete information	- Assistance with extracting/inserting anonymised data (e.g. average values for plots) - A user-friendly access tool/portal combining data access, map production, collaborative space, etc. (e.g. IGN Geoplatform)	Comprehensive interface: the portal combines data access, map production, a collaborative space, etc. It integrates simulation tools that take into account climate change and hazards in order to better assess risks
	Lack of interface with ADAs	New soil data is fed into the OADs (existing/new), enabling crops to be managed based on soil conditions and to be managed/preserved	- Soil data and simulation tools are integrated into DAOs (existing/new), enabling crop management and simulation of management options based on soil conditions. - Comprehensive interface: the portal combines data access, map production, a collaborative space, etc. It integrates simulation tools that take climate change and hazards into account in order to better assess risks
	Little harmonised public monitoring (outside the CAP) of changes in agricultural practices that are harmful or beneficial to soil	- A user-friendly access tool/portal combining data access, map production, collaborative space, etc. (e.g. IGN Geoplatform) - New soil data is fed into ADAs (existing/new), enabling crops to be managed based on soil conditions and to be managed/preserved	- Soil data and simulation tools are integrated into the OADs (existing/new), enabling crop management and simulation of management options based on soil conditions. - Comprehensive interface: the access portal combines data access, map production, a collaborative space, etc. It integrates simulation tools to incorporate climate change and hazards and better assess risks.
	No consideration of climate change and soil specificities		Development of simulation tools (AI, machine learning, digital twins, etc.)
	Ethical issues related to access to soil quality data (insurers, speculators, obligation to provide personal data)	Access to private data is possible following analysis of various texts (e.g. anonymised, reported to the municipality/canton). This data enriches national databases.	Development and use of a historical parcel ID (for monitoring soil and practices)
	Little harmonised public monitoring (outside the CAP) of changes in agricultural practices that are harmful or beneficial to the soil	- Private ADOs are increasingly incorporating indicators on soil practices, which are valued economically - Certain good soil management practices are incorporated into public policies	- Funding for good practices and agricultural guidelines - Private ADOs incorporate and monitor the roll-out of good practices for soil
	Multiplicity of private initiatives	New soil data is fed into (existing/new) OADs, enabling crops to be managed based on soil condition and to be managed/preserved	- Funding for good practices and agricultural guidelines - AOs enable the transmission (with the farmer's consent) of soil-related practices - Soil data and simulation tools are integrated into OADs (existing/new), enabling crop management and simulation of management options based on soil conditions. They incorporate climate change and hazards in order to better assess risks
	Challenges in rolling out their use among farmers	New soil data is fed into ABAs (existing/new), enabling crop management based on soil condition and soil management/preservation	- Tools and AODs that are easier to use and tailored to each farm - Soil data and simulation tools are integrated into ADAs

			(existing/new), enabling crop management and simulation of management options based on soil conditions. They incorporate climate change and hazards in order to better assess risks
	Few public incentives for changing practices to be recommended	New soil data is fed into the OADs (existing/new), enabling crops to be managed based on soil conditions and to be managed/preserved	- Tools and ADAs are easier to use and tailored to each farm - Soil data and simulation tools are integrated into DAA (existing/new), enabling crop management and simulation of management options based on soil condition. They incorporate climate change and hazards in order to better assess risks

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

- Intercéréales
- Terres Univia
- National Centre for Dairy Economics (CNIEL)
- Interprofessional Association for Seeds and Plants (SEMAE)
- GEMAS (Soil Laboratory Association)
- GENESIS
- Chambers of Agriculture France - Digital
- FNSEA
- Young farmers
- Agricultural Cooperation
- Les Greniers d'Abondance
- Collectif Nourrir
- RNEST
- 2BSvs

Deployment table

ACTORS	ACTIONS TO BE TAKEN
MASA	Mobilise legal expertise on the status of soil analyses and support data acquisition and sharing
	Include the parcel identifier in CAP remote declaration exports and study the feasibility of its historicisation
	Promote the use of digital agricultural identifiers in the public and private spheres
	Develop a tool for collecting and promoting HVE data
	Facilitate the sharing of MASA data that can be communicated to administrations and encourage the consensual and secure exchange of data
	Ensure the interoperability of national and European infrastructures
	Create a register of plant protection products and an API
	Develop the "*Ma cantine*" and "Projets Alimentaires Territoriaux" platforms and offer new services
	Develop the hedge observatory
DINUM	Enable and widely deploy the integration of the ProConnect service across all public and private digital services useful to farms by making the agricultural sector a priority in the ProConnect roadmap and implementing any necessary legal changes
MTE-CT	Show the environmental impacts of 2,500 generic foods
	Develop and implement public policies to increase the volume of data on soil quality (other environments)
	Collect mandatory data at national level on nitrogen residues (agricultural environments), environmental scores and their calculations. Make them available at the appropriate level
	Maintain and improve the "Spatialisation of sales of plant protection products" database
INRAE	Conduct a legal analysis of soil data to identify the conditions for opening up historical data
	Identify opportunities for collecting and making soil data available in an operational manner for different audiences
	Work with professionals to investigate ways of encouraging agricultural data holders to give their consent for the transmission of their soil analysis results, then launch the mechanisms
	Define a standard data format to be used in EU projects and by the EUSO
ANSES	Contribute to the development of metadata standards for databases on generic foods and real foods
ADEME	Create a database on the environmental impacts of generic foods (or extend Agribalyse to include impact scores)
	Create a national database and resource centre for Territorial Food Projects (PAT)
	Make existing databases (Ciqual, Agribalyse, Contamine) interoperable using metadata standards
IGN	Establish a baseline for hedge evolution (using AI, Lidar, etc.)
	Deploy collaborative data collection and data *visualisation* solutions with the Geoplatform
	Conduct a feasibility study on plot history
ASP	Adapt the RPG data export format to include the annual plot identifier
	Provide the IGN with the data needed to carry out the feasibility study for plot history
Agence BIO	Consolidate and enhance information systems relating to organic farming
Soil analysis laboratories	Adapt software to facilitate data exchange
	Obtain consent from owners of non-subsidised analysis data
Professional software publishers	Adapt software to facilitate data exchange
	Obtain consent from users

CONSUMPTION

Why?

As with food, changing consumption habits is a key component of the ecological transition. This section of the plan focuses on the interface between production and consumption, which largely depends on the information transmitted by producers to consumers.

The presentation of information to consumers raises several issues relating to the definition, standardisation and availability of data. Public and private actors have complementary roles to play, with a shared emphasis on developing digital commons. In broad terms, the proposal is to pool databases, methodologies and calculation tools, that is, the entire technical foundation that must be applied consistently, while relying on private experts for data collection and for the industrialisation of impact calculations for each product.

For example, if a local authority wishes to compare the environmental impacts of two models of protective footwear for its employees, and two different methodologies produce divergent results, it becomes very difficult to integrate environmental performance into its procurement contract. It is therefore essential to examine closely how the environmental impacts of products and services are established, and to ensure that all relevant environmental information for each product or service is made available.

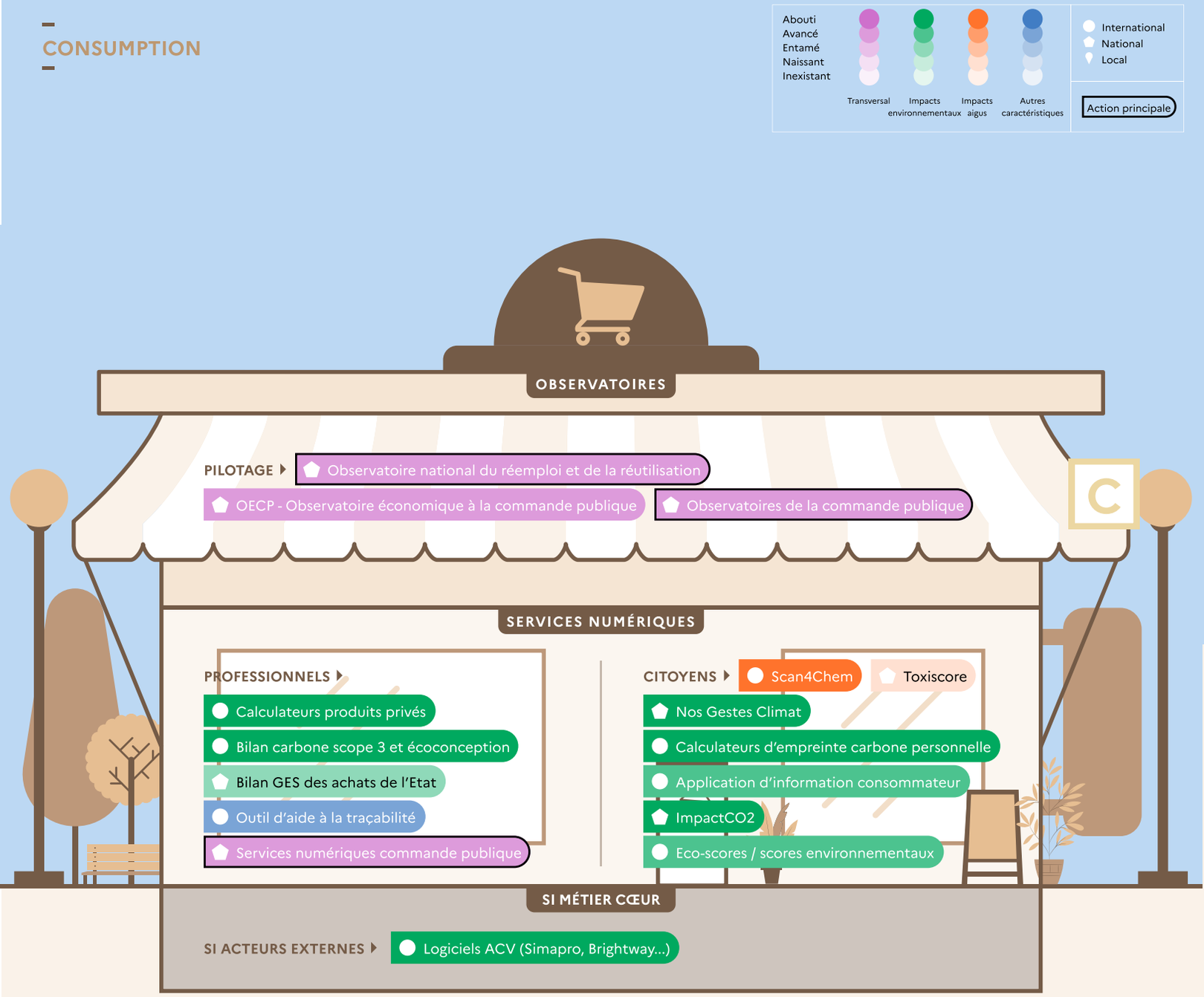
Better consumption also requires the capacity to guide public policy on the basis of performance indicators. Key questions include: what is the environmental impact of the purchases made by different administrations? How much material, waste and CO_2 has been avoided through the reuse of different categories of products? This is the final focus of this theme.

What?

Each of the priority building blocks highlighted in black in the "Better consumption" theme is the subject of a numbered "action" detailed below. These actions are structured into "guidelines" identified by letters, which follow the layers of the building. The guidelines are listed from bottom to top because, although all actions must be carried out in parallel to work in "product" mode and meet the urgent environmental challenges, they are all based on the foundations of the building, which must therefore be improved as a priority.

Each action is structured in an educational and pragmatic way: the business challenges are explained first, followed by an assessment of the current situation and associated issues, and then the sub-actions to be undertaken, along with their Leads and timetable. The Leads are classified according to central government departments, operators and regions; the main leader is indicated in bold. These actions and their timetable have been reviewed to incorporate the contributions of the public consultation, submitted in writing or during hundreds of interviews. They may be subject to change in an agile manner. These changes will be presented in summer 2025 and then annually.

CONSUMPTION



INFRASTRUCTURES SOCLES

PARTAGE DE DONNÉES
- Bases de données Génériques (Ecoinvent, Sphera...)
- Base de données EF (UE)
- Ask Reach

DIFFUSION DE DONNÉES OUVERTES
- Inventaires C&L
- SCIP

DONNÉES MÉTIER
- Règles de catégories PEF (UE)
- Outil de calcul de l'indice de réparabilité
- Base de données Produits réels
- Base de données services (transports, tourisme, numérique...)
- Base de données Produits agrégée
- Ecobalyse (outil de calcul public gratuit)
- Ecobalyse (méthode de calcul)
- Base Empreinte

B

A

RÈGLES SOCLES

INTEROPÉRABILITÉ
- Règlement Reach CLP
- Socle technique européen PEF
- Normes ISO d'analyse de cycle de vie (14040 et 14044)
- Loi Climat et Résilience (article 2 et textes d'application)
- Loi AGEC et textes réglementaires (article 13-1 + indice de réparabilité)

A Harmonise and make widely available the calculation of the environmental impact of products

1 – Base Empreinte

Establish a public database of generic impacts (or life cycle inventories) that can then be used to calculate the impacts of different products and services in a harmonised and transparent manner

Any assessment of a product's impact based on a life cycle analysis methodology relies on life cycle inventory data. To calculate the impacts of a T-shirt, you need to know the impacts of the cotton it is made from, the yarn spinning process, the fabric knitting process, the fabric finishing process, the T-shirt manufacturing process, but also the kilowatt-hours of energy used at each stage, the transport by truck or ship used between each stage, etc. If the assumptions about these basic building blocks are not robust and shared, the assessment of the T-shirt's environmental impact will inevitably be flawed.

The aim of the Empreinte database[69] is to bring together in a single database all life cycle inventories that can be used for environmental labelling (textiles, food products, etc.), calculating the impact of digital technology, organisational carbon footprints, various bonuses or eco-contributions that can be indexed to environmental impacts, etc.

Several options are available to ensure that the Empreinte database contains the best data available. The Swiss non-profit association Ecoinvent[70] currently has the world's largest database with 19,000 data sets (not open). A partnership between ADEME and Ecoinvent has been established for the textile sector, and discussions are underway to expand this partnership to allow both the widest possible audience to access an initial set of open data and expert users to understand all the assumptions that led to the establishment of this data and to perform more accurate calculations. Other models, such as financing and conducting new life cycle inventories, are also being considered to ensure that relevant data is available to a wide range of users and for a variety of purposes.

A first step was taken in early 2024 to serve as a basis for the implementation of environmental labelling for textile products through a pilot partnership with Ecoinvent. Several steps remain to be taken: consolidation of the ADEME-Ecoinvent partnership over time, at an "acceptable cost"; extending it to other product categories, including digital products and services in 2025-2026; enriching the Footprint Database with strategic data through the construction of new ICVs; seeking convergence with a similar database project led by the European Commission (EF 4.0), which should be available from the end of 2026.

1.1 – Make available a first set of data for textile products, based on a pilot partnership with Ecoinvent

- **Leads:** CGDD, **ADEME**
- **Timeline:** Q1 2024

[69] Available at the following link: https://base-empreinte.ademe.fr/
[70] Available at the following link: https://ecoinvent.org/

1.2 – **Develop a database providing access to open data and extend it to new product categories (furniture, cosmetics, etc.)**

- **Leads:** CGDD, **ADEME**
- **Timeline:** 2025

1.3 – **Anticipate and prepare for the convergence of life cycle inventory databases at European level**

- **Leads:** CGDD, **ADEME**
- **Timeline:** 2025-2026

1.4 – **Ensure the convergence of life cycle inventory databases at European level**

- **Leads:** CGDD, **ADEME**
- **Timeline:** 2027

2 – Ecobalyse (méthode de calcul)

Define harmonised methodologies for calculating the environmental impacts of as many products and services as possible in order to reduce calculation costs, ensure consistency of results and accelerate the implementation of environmental labelling

Using a Lego analogy, if two people are given the same set of bricks to build a car, they may each choose different ways of assembling them and arrive at very different results. To harmonise environmental impact calculations, it is therefore necessary to specify the methodology for assembling the "bricks" in the form of an "assembly manual". In life cycle analysis, this role is fulfilled by product category rules, which define the level of detail required for parameters and the default values to be applied when non-essential information is missing.

For example, if a garment is dyed in China, assumptions regarding the electricity mix to be applied, the distances to be taken into account, and the default chemical substances used in dye baths must all be harmonised. Without such harmonisation, two design offices could, in good faith, arrive at different results for the same parameters, undermining trust, comparability and, ultimately, producer commitment.

According to the government's timetable for the introduction of environmental labelling, calculation methodologies will first be developed for textile and food products, before gradually being extended to other categories of products and services as resources allow. As with generic impact databases, a European harmonisation objective must be integrated from the outset in order to be achieved in the longer term. At European level, the Product Environmental Footprint (PEF) framework is currently recommended by the European Commission, although it will need to evolve to reflect the expectations set out in 2023 in the draft Green Claims Directive, including the consideration of microplastics and ecosystem services from extensive agriculture.

Finally, while it is essential to establish a clear framework for an initial level of calculation, coordination with private experts will be required to enable the production of more accurate impact assessments using a wider range of parameters.

This action is linked to the Ecobalyse building block[71] as this free public calculation tool can be an effective support for the work of defining calculation methodologies (see action 3 below). However, calculation methodologies must be clearly defined and documented so that they can be implemented by any qualified expert.

For the methods, a "Tier" approach is planned, similar to that used by the IPCC. Tier 1 represents the simplest and most generic method, defined by Ecobalyse at the sectoral level. It enables all companies to score their products at low cost, although it cannot claim a high degree of accuracy. For companies capable of ensuring good product traceability, more precise assessments should be made possible. For example, the assessment of a yoghurt will not rely on the "average French milk" brick but on a "specific milk" brick, which specifies factors such as the soy content in cattle feed or the presence of a methane digester on the production farms. While maintaining overall methodological consistency, this approach makes it possible to highlight eco-design initiatives through more detailed assessments.

The work to define Tier 2 and Tier 3 will require the involvement of sectoral stakeholders and experts to identify the priority parameters to be specified and the ranges of values to be applied. This work will be carried out primarily by private stakeholders. ADEME and the MTE will be responsible for validating these approaches and ensuring their methodological consistency. Sector-specific tools will also need to be developed to support their implementation.

2.1 – **Finalise a first version of the calculation methodologies for food and textile products**	• **Leads:** CGDD, MASA, DGE, DGCCRF, **ADEME**, OFB • **Timeline:** for textiles, Q2 2024 for the first version, iteration and stabilisation of a first regulatory version in Q2 2025 For food products: Q2 2025 for the first version, first iteration in Q4 2025
2.2 – **Begin work on defining a calculation methodology for other product categories (cosmetics, furniture, transport, electronic and digital products, etc.)**	• **Leads:** CGDD, MASA, DGE, DGCCRF, **ADEME**, OFB • **Timeline:** Q3 2025 for the first categories
2.3 – **Anticipate and prepare for the convergence of product impact calculation methods at European level**	• **Leads:** CGDD, **ADEME** • **Timeline:** Q4 2025 Anticipating and preparing for convergence must be integrated as a factor in the development of French methodologies.
2.4 – **Ensure the convergence of product impact calculation methods at European level**	• **Leads:** CGDD, **ADEME** • **Timeline:** 2027

3 – Ecobalyse (outil de calcul public gratuit)

Provide a free public calculation tool that ensures access to regulatory methods and data

[71] Available at the following link: https://ecobalyse.beta.gouv.fr/

For several years, the eco-design sector has relied on private experts and proprietary tools, which have played a decisive role in the development and implementation of methodologies. With the introduction of environmental labelling, the number of products whose impacts will be assessed is expected to increase significantly. The resulting impact assessments are intended not only to be presented directly to consumers but also to serve various public policy and private needs, such as sustainable public procurement or the calculation of scope 3 carbon footprints.

It is therefore essential that:

- The calculation methodology is developed in a transparent manner, with a high level of stakeholder understanding and participation, including from those who are not specialists in life cycle analysis (for example, professional federations, environmental or consumer protection associations).
- The implementation of these calculations, which will be mandatory for a wide range of products and services, be made available at very low cost, with a free public solution accessible to all.

A first version (beta) of the Ecobalyse tool[72] is already online. It allows calculations for food and textile products.

Such a tool should not be considered as competing with private tools and experts. On the contrary, the role of experts (research consultancies, start-ups, etc.) is more essential than ever in quantifying the environmental impacts of as many products and services as possible. Their contribution is particularly valuable in:

- Automating calculations by integrating them into the information systems of producers and distributors (for example, traceability and supply chain management).
- Providing additional expertise beyond the calculations required by future regulatory methods, enabling those who wish to do so to incorporate more detailed and accurate data into their assessments (see "Tier 2/Tier 3" display).

In keeping with the principle of digital commons, the governance of the free public calculation tool, and of the methodologies to which it will provide access, will require particular attention.

3.1 – Finalise the development of the free public calculation tool Ecobalyse for food and textile products

- **Leads: CGDD**, ADEME
- **Timeline:** for textiles, Q2 2024 for a first version, iteration and stabilisation of a first regulatory version in Q2 2025 for food products: Q2 2025 for a first version, iteration in Q4 2025

3.2 – Extend the Ecobalyse calculation tool to new product categories for which methodological work is underway (cosmetics, furniture, transport, electronic products, etc.)

- **Leads: CGDD**, ADEME
- **Timeline:** Work to begin in Q4 2025 for the first categories, then new categories to be added regularly depending on available resources

[72] Available at the following link: https://ecobalyse.beta.gouv.fr/

B Develop a "product" vision to facilitate the deployment and reuse of information useful to consumers

4 - Passeport Numérique des Produits

Introduce the Digital Product Passport for as many products as possible on the market, allowing all regulatory information and information necessary for the proper traceability of the product life cycle to be attached to it

Regulations are evolving, for example:

- The introduction of a repairability index (which will gradually become a sustainability index).
- The decree implemented Article 13-1 of the Anti-Waste Law, which makes it mandatory to provide consumers with information on certain environmental characteristics (traceability, presence of microplastics, etc.).
- Environmental labelling for the clothing sector, made mandatory by Article 2 of the Climate and Resilience Act.
- Obligations relating to the share of expenditure on reused, recycled or remanufactured products in 17 product families, applicable to certain public purchasers, the State and local authorities (Article 58 of the AGEC Law).
- The adoption at European level of the Ecodesign for Sustainable Products Regulation (ESPR) in July 2024, which establishes eco-design requirements for sustainable products.

Information characterising products must be collected by producers and those placing them on the market. It must in some cases be made available to consumers, at least on a dedicated web page (Article 13-1 of the Anti-Waste Law), or even "in an open format that can be freely used and processed by an automated system" (Article 2 of the Climate and Resilience Act).

The mandatory integration of this information into the Digital Product Passport (Passeport Numérique de Produit – PNP), as provided for under the ESPR, will allow professionals and consumers to access information on traceability, life cycle and reuse. In particular, the PNP will provide details on the origin of products, their composition, and options for repair, dismantling and recycling. The PNP will be phased in across Europe from 2027, beginning with textile products. Its technical and legal framework must be defined at national level under the leadership of the CGDD.

Among the information to be included in the PNP, the most advanced work is currently being carried out jointly by DINUM and the CGDD and concerns the repairability index (smartphones, lawnmowers, washing machines, etc.). The declaration of product-related data in a PNP will become possible following the entry into force of the sustainability index, which will progressively replace the repairability index from 1 January 2024 (Article 16 of the AGEC Law). Ensuring the inclusion of minimum "Level 1" parameters (for example materials and the geographical distribution of production stages) necessary for calculating the environmental display within the PNP will be key to its smooth and widespread deployment.

Each PNP will be accessible via a QR code or an NFT chip affixed to the product, giving access either to a dedicated page on the manufacturer's or supplier's website, or, in cases where the manufacturer or supplier fails to provide the required information, to a minimum dataset supplied through a European data-sharing infrastructure. This initiative could serve as the foundation for opening up data on product environmental performance, repairability and durability.

4.1 – Define French specifications for the Digital Product Passport (PNP)

- **Leads: CGDD**, ADEME, industry federations
- **Timeline:** H2 2025

4.2 – Establish the French legal basis for the Digital Product Passport

- **Leads: CGDD**, ADEME
- **Timeline:** H1 2026

4.3 – Contribute to the design of the European data-sharing infrastructure for the PNP

- **Leads: CEN-CENELEC, CGDD**, MEAE, ADEME, industry federations
- **Timeline:** H2 2025-2026

4.4 – Maximise the availability of environmental labelling and repairability/sustainability index data to create a virtuous circle

- **Leads: CGDD**, MEAE, ADEME
- **Timeline:** 2027

5 – Méthodologie de calcul de l'impact environnemental des services

Develop service databases which, following the model of real product databases, will list the regulatory information that must be made available for all services offered to consumers

For services, while the objectives are similar, certain adjustments must be considered. Unlike products, services cannot be identified using barcodes.

Transport and tourism services, which generate significant environmental impacts, could be prioritised. Several initiatives are already under consideration in this area, including a data hub project containing generic information that could serve as a basis for quantifying the impacts of specific services (for example, a flight or a night in a hotel), as well as the "sustainable tourism" dashboard project. Digital services could also be included in this prioritisation.

5.1– Define the methodology for calculating the environmental impacts of services

- **Leads: CGDD**, DGITM, DGE, ADEME, DINUM
- **Timeline:** H1 2026

5.2 – Study solutions for disseminating environmental characteristics in the case of

- **Leads: CGDD**, DGITM, DGE, ADEME, DINUM
- **Timeline:** H2 2026

services, particularly transport, tourism and digital services

6 - Base de données Produits agrégée

Develop an aggregated product database which, like Open Food Facts[73] for food products or the Ecobalyse declaration database[74], would bring together all available information to characterise each product (repairability index, environmental impacts, chemicals used, etc.).

Information describing a product may come from multiple sources, both regulatory and non-regulatory. For example, a food product can currently be characterised by its nutritional attributes (regulatory data) and by an estimate of its environmental impact (data that is not yet regulated). An organisation such as Open Food Facts, which operates as a digital community, compiles all available information characterising food products into a single database. This aggregation of information facilitates its use and exploitation, whether to inform consumers or for academic purposes.

Drawing on the food product model, such a database would not necessarily need to be managed directly by public authorities. However, it should be established as a digital commons, with the objective of ensuring that all available data is shared widely and without restriction.

6.1 - Establish a strategy to develop an aggregated product database with digital commons status

- **Leads:** **DINUM**, CGDD, ADEME
- **Timeline:** H1 2026 (Start of work)

6.2 - Develop an operational aggregated product database

- **Leads:** **DINUM**, CGDD, ADEME
- **Timeline:** 2027

7 - Module d'information des consommateurs sur la réparabilité et le réemploi

Inform consumers about the repairability, reuse, recycling and end-of-life of their products through a module that can be integrated into the Coach (J'agis[75]) and any other consumer information tool.

Information on the repairability and reusability of products must be centralised in order to make it more easily accessible to consumers. A comprehensive information module would make it possible to address essential questions regarding the life cycle of products, such as: Is the product repairable? Where can it be repaired and by whom? What is the cost of repair compared to purchasing a new product? How can a non-repairable item be recycled? Is the repair eligible for financial assistance? How can the repair bonus, introduced to reduce repair costs, be obtained?

[73] Available at the following link: https://fr.openfoodfacts.org/
[74] Available at the following link: https://affichage-environnemental.ecobalyse.beta.gouv.fr/
[75] Available at the following link: https://jagis.beta.gouv.fr/

This module would be linked to the digital product passport (see action 4) to draw on the information provided and feed it back into the system based on the data collected.

An initial effort to centralise and map information on the circular economy has been made through the websites "longue vie aux objets" (long life for objects)[76] and "que faire de mes déchets" ("what to do with my waste")[77], run by ADEME. This database must be further developed and expanded in order to continue raising awareness of reuse and repairability. Achieving this requires incentives for manufacturers to provide more detailed information on the products they place on the market. The resulting data will be incorporated into the existing database through the creation of a dedicated consumer information module.

7.1 – **Develop the legislative framework to encourage manufacturers to document the repairability, recyclability and reusability of each of their products.**	• Leads: **CGDD,** DGPR, ADEME, DGCCRF, consumer associations • Timeline: 2024
7.2 – **Expand the directory of repair services categorised by product type**	• Leads: **CGDD**, **DGE**, **ADEME**, DGCCRF, consumer associations • Timeline: 2026
7.3 – **Develop the consumer information module on repairability and reuse, giving priority to its API-isation so that it can be integrated into other information systems**	• Leads: **the coach team (*J'agis*),** CGDD, ADEME • Timeline: 2026

8 – Mesure de la pression publicitaire

Open up data on advertising in traditional and online media in order to measure the level of advertising pressure currently exerted on segments of the supply concerned by energy efficiency assumptions, and to develop the regulatory framework for commercial communications for sustainable consumption.

Advertising is a powerful driver of consumer spending. Although traditional media remain a major channel of communication, online advertising (social media, influencer marketing, video, digital signage, etc.) will account for 54% of the market in 2023[78] . Of this, 27% of digital advertising revenue will come from social media (known as "social" advertising). Today, digital advertising is growing rapidly, with an increase of +228% between 2013 and 2023. Several databases already exist to track developments in the sector, including those of France Pub, Kantar Media, IREP, INSEE and the e-advertising observatory published annually by Oliver Wyman. The Digital Services Act (DSA) adopted in 2022 by the European Union provides in Articles 39 and 40 that large and very large online platforms must make the

[76] Available at the following link: https://longuevieauxobjets.ademe.fr/
[77] Available at the following link: https://quefairedemesdechets.ademe.fr/
[78] Source: France Pub

advertisements they broadcast available. These databases will make it possible to define criteria for assessing the environmental impact (positive or negative) of commercial communications.

8.1 – Set up a working group to measure the relative weight of advertising for certain product categories, in particular on the basis of the registers made available by large online platforms (DSA Art. 39), and develop the regulatory framework for commercial communications accordingly

- **Leads: SGPE**, Arcom, DGCCRF, CGDD, DGE, ADEME
- **Timeline:** H2 2025-H1 2026

8.2 – Provide a regulatory analysis on limiting internet users' exposure to commercial advertising on very large platforms

- **Leads: DGMIC**, SGPE, Arcom, DGE
- **Timeline:** H1 2026

C Assess and reduce environmental impacts at the public policy level

9 – Observatoire national du réemploi et de la réutilisation

Mobilise the environmental impacts of products to drive the environmental performance of reuse and recycling

The National Observatory for Reuse and Recycling[79] is the competent national body for monitoring the environmental performance of reuse. It seeks to provide as accurate a picture as possible on the basis of available data. However, this data often resembles resource indicators, such as the number of products reused.

The use of product-specific data would enhance these analyses, for example by estimating the environmental impacts avoided through reuse or recycling, on the assumption that these practices prevent the production of new products. Such analyses would make it possible to identify the products whose reuse or recycling generates the greatest environmental benefits, thereby supporting the prioritisation of public policy efforts.

This type of assessment requires that the observatory first have access to sufficient data for the product categories concerned.

[79] Available at the following link: https://filieres-rep.ademe.fr/observatoire-reemploi-reutilisation/presentation

9.1 – Estimate the environmental performance of reuse by mobilising textile product information

- **Leads:** DGPR, **ADEME**
- **Timeline:** 2026

9.2 – Estimate the environmental performance of reuse by extending it to other relevant product categories

- **Leads:** DGPR, **ADEME**
- **Timeline:** 2027

10 – Services numériques commande publique

Develop tools enabling public purchasers to favour reuse or recycling, and estimate the impact of such practices

For private purchases, various digital services already promote the reuse or resale of second-hand goods (such as books or bicycles).

For public procurement, in order to address the challenges of resource efficiency and the circular economy, and to enable stakeholders to comply with growing legal obligations (notably the implementing decree relating to Article 58 of the AGEC Law), several digital services have been established by public authorities. These include the reporting of essential public procurement data in open data format on *data.gouv.fr*. The reporting of this data is supported by interfaces connecting the different digital tools used by purchasers (administrations and local authorities).

This effort to ensure interoperability between tools (ORME, APPACH, APProch, PLACE, Chorus) must be pursued to make it easier for purchasers to apply environmental clauses. Furthermore, it is necessary to facilitate both the donation and the purchase of products from public services (sales of public property, accessible via the encheres-domaine.gouv.fr platform).

For donations of movable property, a dedicated website (dons.encheres-domaine.gouv.fr) enables donations between administrations and local authorities, although it still requires improvement. By definition, donations have no market value; however, under the AGEC Law, the objectives set require that donations received as part of responsible purchasing be valued in monetary terms. To address this issue, a table has been designed for purchasers to complete, separate from the accounting software used by staff responsible for managing expenditure. This table assigns a value to a wide range of goods. However, the lack of integration between this spreadsheet and existing tools makes it difficult to monitor indicators effectively.This has highlighted the need for a more integrated tool to record data on donations, as recommended in proposal 14 of the Article 58 evaluation report, with the aim of enabling the monetary valuation of donations in the future. A feasibility study should therefore be undertaken to determine whether this functionality can be incorporated into the existing website or whether alternative solutions would be more appropriate.

10.1 – **Conduct a feasibility study on automating the declaration of the value of donations**	• **Leads: DGFiP (DNID)**, CGDD, DAJ MESFIN • **Timeline:** results of the feasibility study Q4 2025
10.2 – **Optimise the donation platform itself**	• **Leads: DGFiP (DNID)**, CGDD, DAJ MESFIN • **Timeline:** 2026
10.3 – **Map the information systems used to implement environmental obligations related to public procurement (procurement processes and reporting)**	• **Leads: DAJ MESFIN**, CGDD, ADEME, local authorities (France Urbaine in particular) • **Timeline:** H2 2025
10.4 – **Explore changes to be made to information systems (at least APPACH, APProch, PLACE and Chorus) to simplify the implementation of environmental considerations in a "tell us once" approach**	• **Leads: DAE,** DGFiP, DAJ MESFIN, ADEME • **Timeline:** 2026
10.5 – **Study the feasibility of setting up a dynamic (i.e. near real-time) inventory of public assets to better determine actual needs when making purchases**	• **Leads: DAE,** DGFiP, DAJ MESFIN • **Timeline:** 2027

11 – Observatoires de la commande publique

Mobilise the environmental impacts of products and services to manage the environmental impacts of public procurement

Today, public procurement is primarily assessed and managed using resource-based indicators, such as the proportion of contracts that include an environmental clause. The National Plan for Sustainable Procurement (PNAD) sets this share at 100 percent by 2025, in anticipation of the legal requirement of 100 percent by August 2026 at the latest, as established by Article 35 of the Climate and Resilience Law.

Beyond individual purchases made at the initiative of contracting authorities, public procurement constitutes a powerful lever for transforming consumption and production patterns. Consuming better also means being able to steer public procurement, as a public policy tool, on the basis of performance indicators. Key questions include: what is the environmental impact of purchases made by different administrations? What emissions are generated by each purchase? Which environmental clauses are the most effective? The development of such metrics requires that product impact data be made available and integrated into the tools used by public procurement observatories at both national and local levels.

In order to deploy new management tools as rapidly as possible, technical options exist for estimating the carbon impact of purchases, even before a comprehensive product database is available. One promising option is the use of sector-specific monetary ratios, meaning average environmental impact per euro spent, depending on the category of product or service purchased (for example furniture, clothing, or food products), most likely identified using European CPV codes. Ratios of this kind are already in use, for instance in personal carbon footprint monitoring tools connected to users' bank accounts.

The widespread deployment of environmental cost data through *Ecobalyse* will provide a tool directly applicable to public procurement. This will make it easier to introduce clauses that reward products with superior environmental performance. Pilot projects can be launched rapidly in the textile sector (such as workwear) and in the food sector (such as catering), before being extended to other categories.

11.1 – Estimating the impact of public procurement based on sectoral monetary ratios

- **Leads: CGDD,** DAJ MESFIN, ADEME, UGAP purchasing group, local authorities (France Urbaine in particular)
- **Timeline:** Q3 2025

11.2 – Estimate the impact of public spending based on product information

- **Leads: DGFiP**, DAJ MESFIN, ADEME, local authorities and public procurement observatories (prospective pilot: Syndicat Mixte Numérique Bretagne)
- **Timeline:** Q2 2026, starting with food and textile products

11.3 – Study the feasibility of implementing a data purchasing policy (e.g. advertising, mobility, mobile phones, etc.) common to public services

- **Leads: DAE**, DGFiP, DAJ MESFIN, local authorities and public procurement observatories
- **Timeline:** H2 2025

Illustration of a use case

Work on the following use case is structured as follows:

- An explanatory overview of the operational challenges and of the current state of digital tools and associated data, together with the impact indicators to be monitored.
- A description of the problems encountered in the current situation by various personae who play a role in the chosen use case.
- The journey of two of these personae through different “building blocks” of the framework in the current situation, in the medium term, and in the target situation. The pain points indicated in red along these journeys are progressively improved thanks to the actions set out in the section above (turning green). These two personae are the same as those appearing in the general elements of the “use case vision.”
- A description of the improved target situation for all personae.
- A summary table of the actions to be undertaken in the medium term and in the target situation at each stage of the journey to address the identified problems.

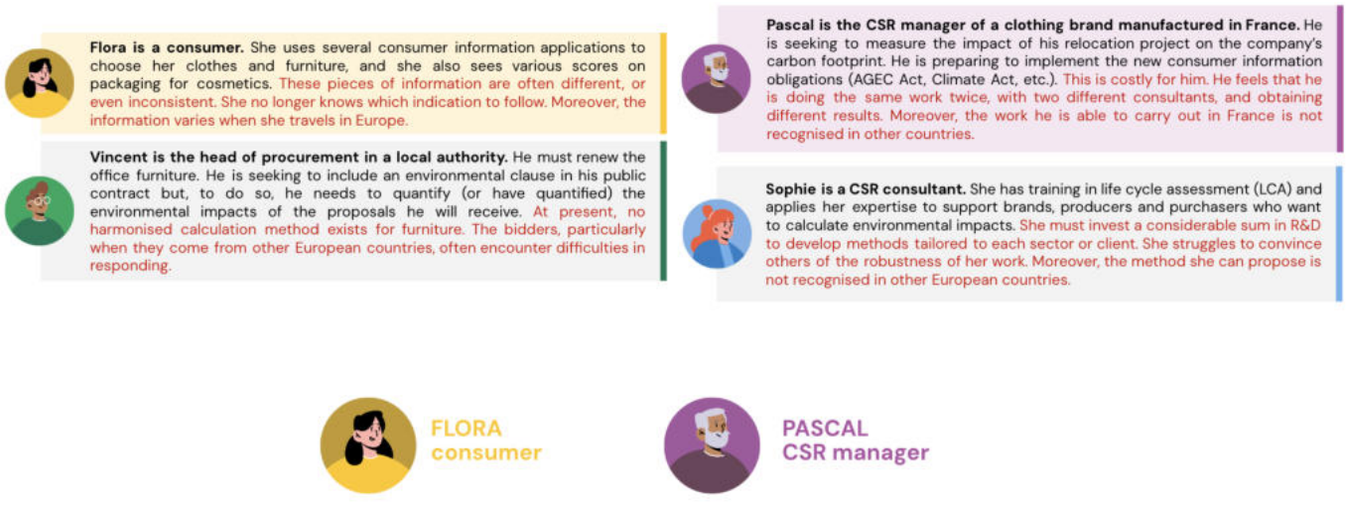
This structure makes it possible to test a product-based approach on a few priority use cases. **Many other use cases exist and can be added progressively over time.**

Make environmental cost measurement more reliable and consistent

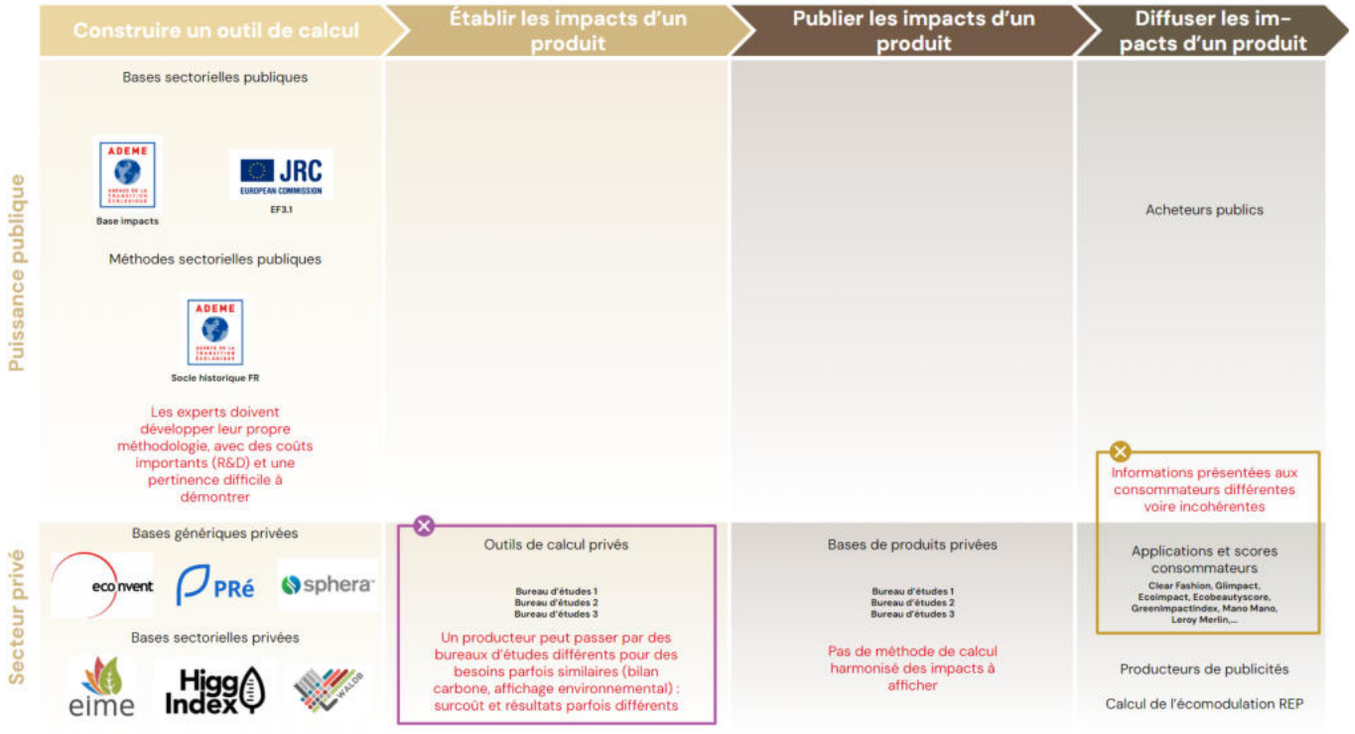
Through their consumption practices, individuals have the capacity to contribute actively to the ecological transition. However, in order to identify best practices, accurate and comprehensive data on the environmental cost of products is required. At present, such data remains incomplete or inconsistent, which makes it difficult to compare two different products, or even the same product across different countries.

This use case examines methodologies for calculating the environmental cost of consumer goods. The indicators applied include, for business monitoring, the share of the carbon footprint of French consumption covered by an eco-score, the proportion of advertisements providing information on environmental impacts, the percentage of public procurement contracts including an environmental clause, and the share of EPR schemes that have integrated an eco-contribution modulation based on environmental criteria. The main operational indicators are the number of sectoral methodologies developed, the number of consulting firms or experts using *Ecobalyse* to support their clients, the number and relevance of life cycle inventories made available through the *Empreinte* database, the number of brands that publicly disclose the impacts of their products, and the total number of products covered.

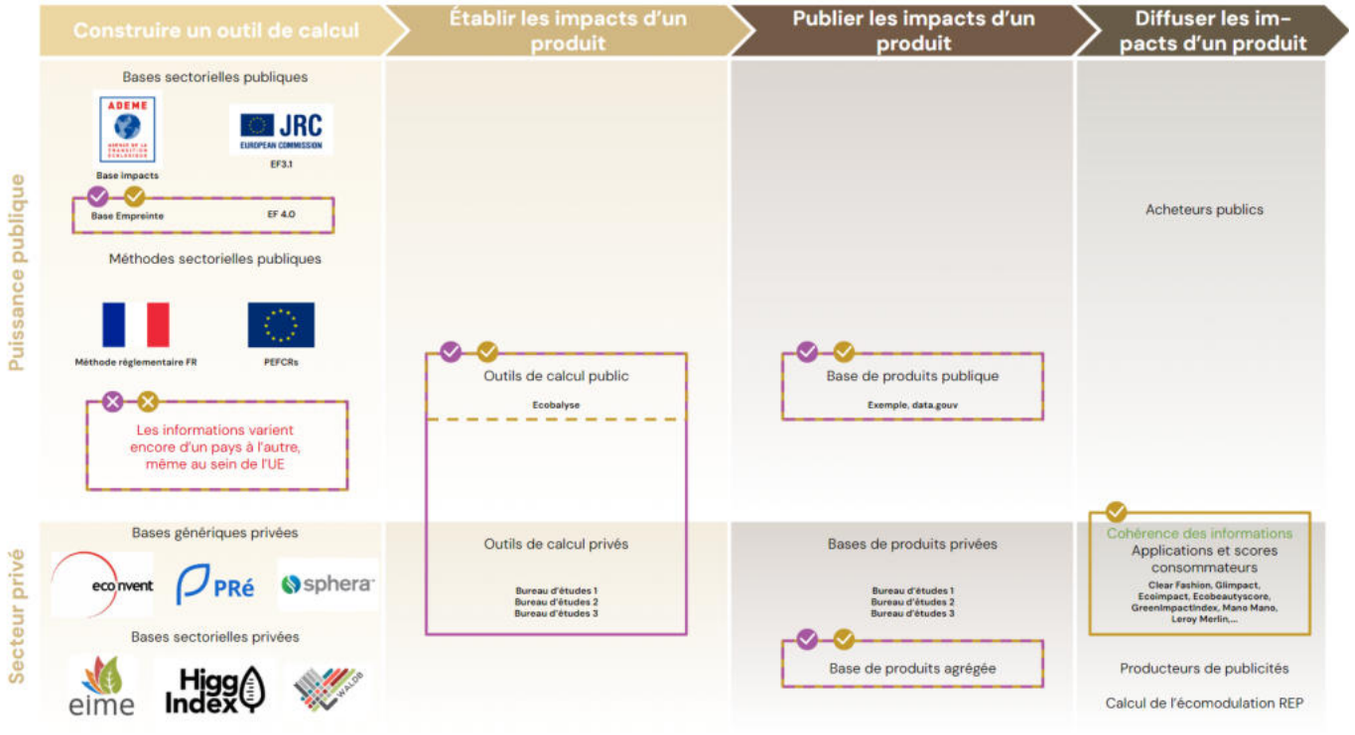
Personae – Current situation



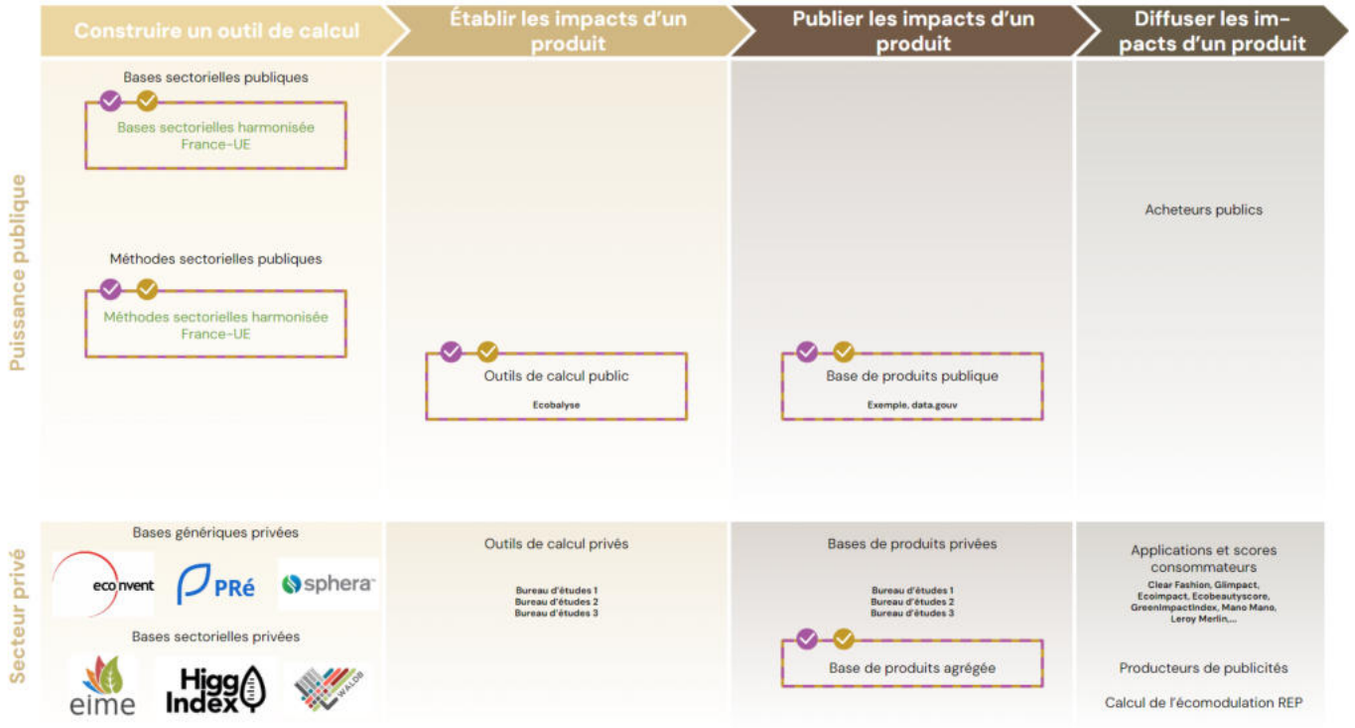
Current situation



Medium-term situation



Target vision



Personae – Target vision

Flora is a consumer. She uses several consumer information applications to choose her clothes and furniture, and she also sees various scores on packaging for cosmetics. These pieces of information may still differ, but they now provide consistent information, as they are built on the same technical basis. The information is harmonised when she travels in Europe.

Pascal is the CSR manager of a clothing brand manufactured in France. He is seeking to measure the impact of his relocation project on the company's carbon footprint. He is preparing to implement the new consumer information obligations (AGEC Act, Climate Act, etc.). He is now being offered lower rates with the guarantee that each consultancy will apply a method framed by regulation. Moreover, the work he carries out in France can be recognised in other European countries.

Vincent is the head of procurement in a local authority. He must renew the office furniture. He is seeking to include an environmental clause in his public contract but, to do so, he needs to quantify (or have quantified) the environmental impacts of the proposals he will receive. He can now require in his call for tenders the quantification of the environmental cost using a regulatory method.

Sophie is a CSR consultant. She has training in life cycle assessment (LCA) and applies her expertise to support brands, producers and purchasers who want to calculate environmental impacts. She can now rely on a public sectoral database, a public method and a public tool to deploy a reference method for her clients quickly and at lower cost. The method she can propose may be recognised in other European countries.

Summary table

PHASE	PROBLEMS IDENTIFIED	MEDIUM-TERM ACTIONS	ACTIONS IN THE TARGET VISION
	Several competing and different private databases	A public database in France (Empreinte database) provides access to high-quality data	
	Limitations of existing public databases (aggregation, terms of use)	A French public database (Empreinte database) provides access to high-quality data	
	Public sector methodologies still under development	Public regulatory sector methodologies are established at the French level	
	Legal framework for access, use and dissemination of life cycle inventory data	The legal framework for accessing data from the Empreinte database allows for its use and dissemination. Contribution procedures are in place.	
	High R&D costs for experts wishing to enter the market	More limited R&D costs for experts wishing to support brands and buyers	
	Different FR and EU databases		Convergence of public databases in France (Empreinte database) and the EU (EF 4.0)
	Different FR and EU methods		Convergence of FR (Climate Law) and EU methods
	Each expert/consultancy firm is required to propose its own assumptions	Each expert/consultancy retains the ability to differentiate themselves through their expertise, but a set of shared assumptions (public method) ensures consistency	The basis for establishing impacts is recognised at European level
	Sometimes different tools (and service providers) are used for very similar needs (product impacts, scope 3 of the carbon footprint or GHG protocol, etc.)	The same tool (and service provider) can meet different needs (product impacts, scope 3 carbon footprint or GHG protocol, etc.)	The basis for establishing impacts is recognised at European level
	The calculated impacts are known to the producer and the design office but are difficult to share with third parties	- The calculated impacts are made available to third parties through a public database - An aggregated database (to be developed jointly) further facilitates access to and use of data from different public databases (environmental impacts, chemicals, repairability, etc.).	Publishing impacts makes sense even at European level
	Limited transparency on the data taken into account in the assessment by each producer/design office	Within the limits of commercial confidentiality, transparency on the data taken into account in the assessment by each producer/design office	Publishing impacts makes sense even at the European level
	Environmental labelling: Risk of confusion; depending on the application, the information presented to consumers or purchasers is different or even inconsistent	Environmental labelling: The information presented to consumers or purchasers is consistent (but not necessarily identical)	Regardless of the use (environmental labelling, advertising, public procurement, eco-contribution), it may be relevant at European level
	Advertising: Risk of greenwashing and strong advertising pressure encouraging overconsumption	Advertising: Clear information to be provided and measurement of advertising pressure for products that are harmful to the environment	Regardless of use (environmental labelling, advertising, public procurement, eco-contribution), it may be relevant at European level
	Sustainable public procurement: Difficult assessment of environmental criteria	Sustainable public procurement: environmental criteria easier to integrate	Regardless of its use (environmental labelling, advertising, public procurement, eco-contribution), it may be relevant at European level
	EPR eco-contribution: Modulation according to impact difficult	EPR eco-contribution: Modulation according to impact more accessible	Regardless of the use (environmental labelling, advertising, public procurement, eco-contribution), it may be relevant at European level

How?

To ensure that the action plan set out above is implemented effectively, the deployment strategy is a key component. As Bruno Latour suggests in *Down to Earth*, this section reverses the matrix, moving from an action-based vision (*the "what?"*) to an actor-based vision in the deployment table below.

In addition to (1) NGOs, associations and think tanks, and (2) digital industry stakeholders already identified in the general framework and to be consulted across all themes in the first instance, the list (3) of professional groups set out above will be consulted on a theme-by-theme basis.

Any actor wishing to be added to this list is invited to send a request to planification-ecologique@pm.gouv.fr. For reasons of efficiency, the committee will only include representative organisations. Alongside these representative bodies, exchanges will also take place with individual actors in their own capacity.

Professional stakeholders

Distribution:

- Federation of Commerce and Distribution
- Alliance du Commerce

Sectoral actors:

- In climate mode
- High Fashion and Fashion Federation
- Ecobeautyscore
- Green Impact Index
- FCBA
- French Furniture
- French Textile and Clothing Institute

Environmental scoring expert:

- CarbonFact
- Fairly Made
- Sami
- Wellow
- Clear Fashion
- Waro
- Glimpact
- EcoImpact
- Quantis
- RDC Environment
- EVEA
- Ecoinvent
- OpenFoodFacts
- Eco2 Initiative

Other applications:

- Carbon footprint association
- Refashion (and other eco-organisations)
- Local public procurement observatories

Deployment table

STAKEHOLDERS	ACTIONS TO BE TAKEN
CGDD	In conjunction with ADEME, ensure the convergence of product impact calculation methods at European level
	Finalise the development of the free public Ecobalyse calculation tool for food and textile products
	Extend the free public Ecobalyse calculation tool to new product categories for which methodological work is underway (cosmetics, furniture, transport, electronic products, etc.)
	Define the methodology for calculating the environmental impacts of services.
	Study solutions for disseminating environmental characteristics in the case of services, particularly transport and tourism, and establish the corresponding bases
	In conjunction with DINUM, develop an operational aggregated product database
	Estimate the impact of public procurement based on sectoral monetary ratios.
	In conjunction with AFNOR, define the specifications and legal basis for the French Digital Product Passport (PNP) and contribute to the design of the European PNP data-sharing infrastructure.
	Make environmental labelling and repairability/durability index data as open as possible to create a virtuous circle
	Develop the legislative framework to encourage manufacturers to document the repairability, recyclability and reusability of each of their products.
	Establish a directory of repair services categorised by product type
DINUM	Establish a strategy to develop an aggregated product database with digital commons status and implement it
DGE	Set up a directory of repair services categorised by product type
DGCCRF	Contribute to the development of methodologies for calculating the environmental impact of different product categories
	Develop a consumer information module on repairability and reuse
SGPE	Set up a working group to measure the relative weight of advertising for certain product categories, in particular based on the registers made available by major online platforms (DSA Art. 39), and develop the regulatory framework for commercial communications accordingly
DGITM	In conjunction with the CGDD, study solutions for disseminating environmental characteristics in the case of services, particularly transport and tourism, and establish the corresponding bases
DGPR	In conjunction with the ADEME, estimate the environmental performance of reuse by mobilising product information
DGFiP	Conduct a feasibility study on automating the declaration of the value of donations
	Optimise the donation platform itself
	Estimate the impact of public spending based on product information
DAJ MESFIN	Map the information systems used to implement environmental obligations related to public procurement (procurement processes and reporting)
	Support the CGDD in estimating the impact of public spending based on sectoral monetary ratios
	Support the DGFiP in estimating the impact of public spending based on product information data
	Support the DGFiP in conducting a feasibility study on the automation of gift value declarations, then optimise the gift platform
DAE	In conjunction with the DAJ MESFIN, upgrade the information systems related to public procurement (at a minimum APPACH, APProch, PLACE and Chorus) to simplify the implementation of environmental considerations in a "tell us once" approach
	Study the feasibility of implementing a data purchasing policy (e.g. advertising, mobility, mobile devices, etc.) common to public services
ADEME	Set up an initial pilot database for textile products
	Set up a free database built around an ambitious partnership with one or more data providers
	Ensure the convergence of life cycle inventory databases at European level
	Finalise a first version of the calculation methodologies for food and textile products
	Begin work on defining a calculation methodology for other product categories (cosmetics, furniture, transport, electronic products, etc.)
	Ensure the convergence of product impact calculation methods at European level

	Support the CGDD (Ecobalyse state start-up) in developing a free public calculation tool that will make regulatory methods available.
	In conjunction with the CGDD, study solutions for disseminating environmental characteristics in the case of services, particularly transport and tourism, and establish the corresponding databases
	In conjunction with DINUM, develop an operational aggregated product database
	Support the CGDD and the DGFiP in estimating the impact of public spending.
	Estimate the environmental performance of reuse by mobilising product information
AFNOR	Define the French specifications for the Digital Product Passport (PNP)
	Contribute to the design of the European data-sharing infrastructure for the PNP
ARCOM	Using the registers made available by major online platforms (DSA Art. 39), define a method for assessing the environmental impact of an advertising campaign
DGMIC	Conduct a technical and regulatory feasibility study to define maximum quantities of commercial communications on major platforms
Private experts in environmental impact assessment	Set up effective tools and services to scale up environmental impact calculations by applying them to entire product catalogues so that each product has a quantification of its environmental impacts.
Producers and distributors (products and services)	Carry out (or have carried out) environmental impact calculations for each product (or service) placed on the market in France.
	Publish these results, along with other information (repairability/durability index) in an institutional database of actual products.

LIST OF ACRONYMS

The tables below list the acronyms used in the reference document for each action leader.

Central government	
AMDAC	Ministry Data, Algorithms and Source Code Administrators
CGDD	General Commission for Sustainable Development
DIAMMS	Interministerial Delegation for Strategic Mineral and Metal Supplies
DNS	Ministerial Delegation for Digital Health
DSF	Department of Forest Health
DIE	State Real Estate Directorate
DILA	Directorate of Legal and Administrative Information
DICOM	Communications Department (of a ministry)
DAE	State Procurement Department
DAJ	Legal Affairs Department
DGALN	Directorate-General for Planning, Housing and Nature
DGEC	Directorate-General for Energy and Climate
DGCCRF	Directorate-General for Competition, Consumer Affairs and Fraud Control
DGPR	Directorate-General for Risk Prevention
DGS	Directorate-General for Health
DGAMPA	Directorate-General for Maritime Affairs, Fisheries and Aquaculture
DGCL	Directorate-General for Local Authorities
DGE	Directorate-General for Enterprise
DGFiP	Directorate-General for Public Finances
DGITM	Directorate-General for Infrastructure, Transport and Mobility
DGT	Directorate General of the Treasury
DINUM	Interministerial Directorate for Digital Technology
DNUM MTE-CT	Digital Department of the MTE-CT

MASA	Ministry of Agriculture and Food Sovereignty
MEAE	Ministry of Europe and Foreign Affairs
MESFIN	Ministry of Economy, Finance and Industrial and Digital Sovereignty
MESR	Ministry of Higher Education and Research
MIOM	Ministry of the Interior and Overseas Territories
MSP	Ministry of Health and Prevention
MTE-CT	Ministry of Ecological Transition and Territorial Cohesion
SGPE	General Secretariat for Ecological Planning
SHFDS	General Secretariat, Senior Defence and Security Official
SNUM MASA	Digital Service of the MASA

Other national public bodies	
ADEME	Agency for the Environment and Energy Management
AFNOR	French Standardisation Association
ASP	Services and Payment Agency
ANSC	Digital Agency for Civil Security
ANAH	National Housing Agency
ANCT	National Agency for Territorial Cohesion
ANSSI	National Agency for Information System Security
ANSES	National Agency for Food, Environmental and Occupational Health Safety
AOM	Mobility Organising Authority
BRGM	Geological and Mining Research Bureau
CDC	Deposit and Consignment Office
Cerema	Centre for Studies and Expertise on Risks, the Environment, Mobility and Development
CEREN	Centre for Economic Studies and Research on Energy
CNPF	National Centre for Forest Ownership

CSTB	Scientific and Technical Centre for Building
CNIL	National Commission for Information Technology and Civil Liberties
CNIG	National Council for Geolocation Information
CBN	National Council of Bar Associations
CSN	Higher Council of Notaries
CNAM	National Health Insurance Fund
GART	Group of Transport Authorities
IFPEN	IFP New Energies
Ifremer	French Research Institute for Exploitation of the Sea
INERIS	National Institute for Industrial Environment and Risks
IGN	National Institute for Geographic and Forest Information
INSERM	National Institute of Health and Medical Research
INSEE	National Institute of Statistics and Economic Studies
INRIA	National Institute for Research in Computer Science and Control
INRAE	National Institute for Research in Agriculture, Food and the Environment
LCSQA	Central Laboratory for Air Quality Monitoring
MNHN	National Museum of Natural History
OFB	French Office for Biodiversity
ONF	National Forestry Office
SHOM	Hydrographic and Oceanographic Service of the Navy

Territorial bodies

DDT	Departmental Directorate for Territories
DRAAF	Regional Directorate for Food, Agriculture and Forestry
DREAL	Regional Directorate for the Environment, Planning and Housing
DRIEAT	Regional and Interdepartmental Directorate for the Environment, Planning and Transport