FRANCE STRATÉGIE

ÉVALUER. ANTICIPER. DÉBATTRE. PROPOSER.

23 july 2019

OBJECTIVE "ZERO NET ARTIFICIALIZATION ": WHICH LEVERS SHOULD BE USED TO PROTECT SOILS?

PRESENTATION FILE

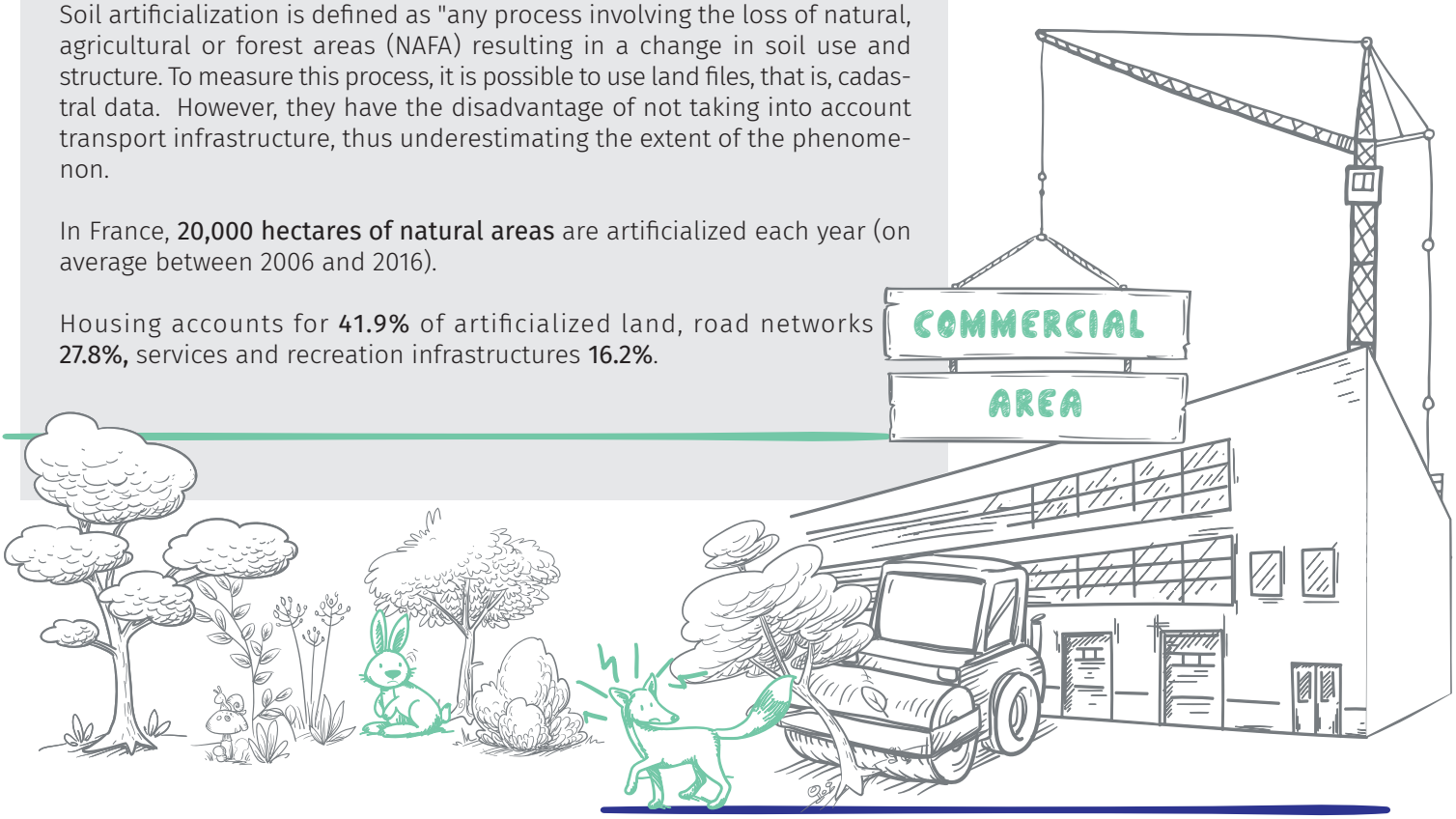
What is soil artificialization?

Biodiversity is currently undergoing massive and rapid erosion. The artificialization of soils is one of the main causes, because it destroys natural habitats and ecological continuities. It is, therefore, necessary to curb this phenomenon, and to renature artificial lands whenever possible. This is one of the aims of the biodiversity strategy, presented by the government in July 2018, which includes achieving "zero net artificialization" in the long term. France Stratégie offers solutions for achieving this goal. First and foremost: modify urban planning rules to encourage urban renewal and housing densification, and renature artificial spaces left abandoned.

Soil artificialization is defined as "any process involving the loss of natural, agricultural or forest areas (NAFA) resulting in a change in soil use and structure. To measure this process, it is possible to use land files, that is, cadastral data. However, they have the disadvantage of not taking into account transport infrastructure, thus underestimating the extent of the phenomenon.

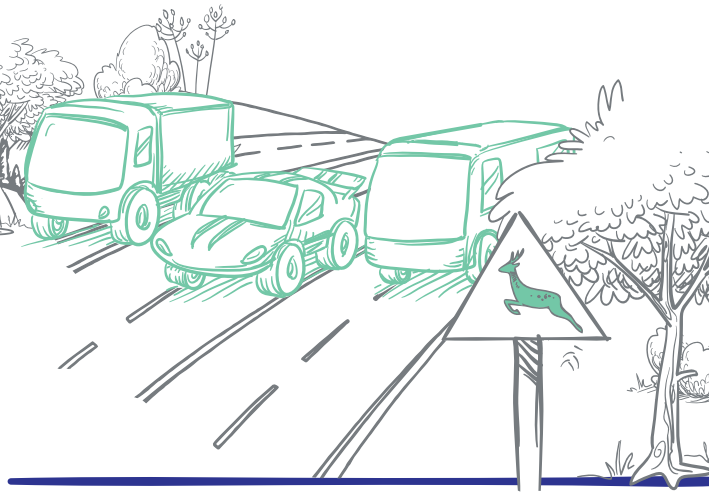
In France, **20,000 hectares of natural areas** are artificialized each year (on average between 2006 and 2016).

Housing accounts for **41.9%** of artificialized land, road networks **27.8%,** services and recreation infrastructures **16.2%**.



Peri-urbanization: cities spread out and encroach on the periphery.

Territorial sprawl: diffuse scattering of habitats and buildings in an initially rural area.



Development of the transport network.

What are the consequences of soil artificialization?

According to IPBES (Intergovernmental Platform on Biodiversity and Ecosystem Services), one million animal and plant species are now threatened with extinction. Artificialization destroys the natural habitats and ecological continuities necessary for wildlife to circulate; it also increases water runoff, and therefore the risk of flooding; and it prevents carbon sequestration.

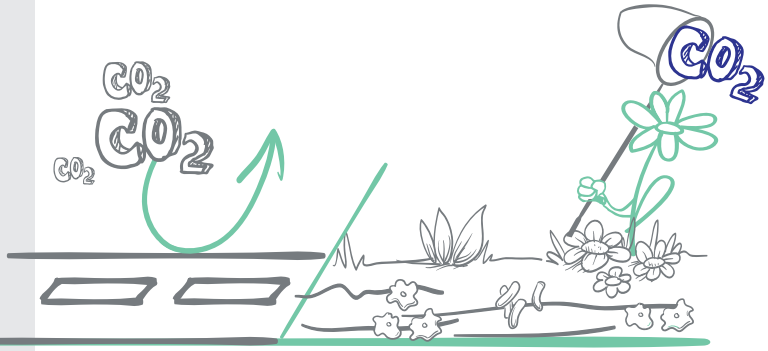
The first consequence: the destruction of soil biodiversity, landscapes, habitats, and animal and plant biodiversity

Depending on its nature, soil artificialization can have a varied impact on the environment:

- where the urban garden will preserve or even improve soil biodiversity, a built surface will, on the other hand, led to a high level of destruction of microbial biodiversity;
- where a rehabilitated quarry will contribute to the preservation of animal and plant biodiversity, a roadway will have a very negative impact on the maintenance of ecological continuity.

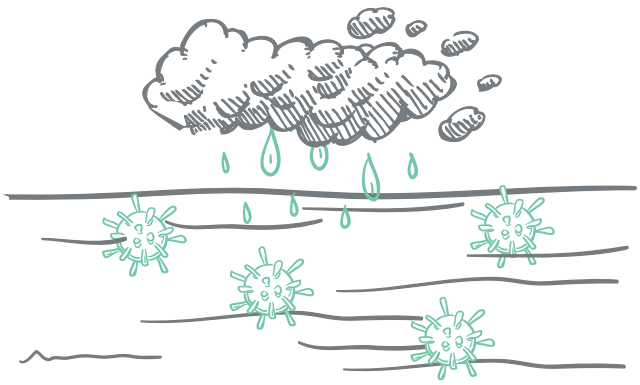
The second consequence: the increase in CO_2 emissions

Soil artificialization, such as sidewalks and roads, will also restrict the ability of soils to store carbon, potentially increasing CO2 emissions. Urban agriculture and the greening of cities, however, facilitate carbon storage.



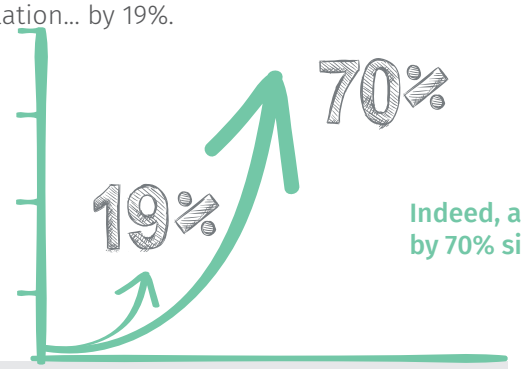
Third consequence: pollution

- Pollution of soil and water by toxic substances of industrial origin such as pesticides, organic components, heavy metals....
- Air pollution, linked to transport and industrial activities, with a surface absorption of fine particles by trees and almost no absorption of polluting particles.
- Noise pollution due to the low absorption capacity of sound waves by artificial floors.



Why artificialization is increasing faster than the population in France?

There is, of course, the demographic factor. But the increase in the number of households (+4.2 million since 1999) does not explain by itself the progressive dwindling of natural areas. The progression of artificialization in France is higher than the European average. Indeed, artificialization has increased by 70% since 1981; the population... by 19%.



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A preference for individual housing

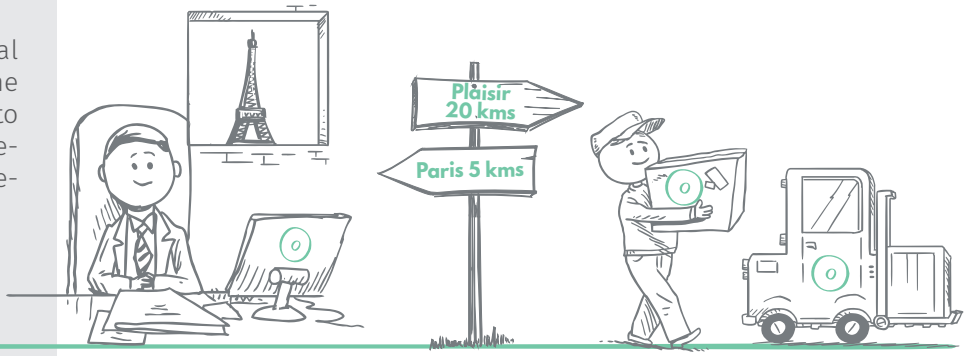
Households in France display a clear preference for individual housing. In addition, the increase in land prices in the city center is pushing the less well-off households to the periphery. As for wealthier households, more and more of them are seeking space, and proximity to nature, by moving away from large urban centers. This choice has been made possible by the reduction in the cost of commuting by car in recent years. These trends converge towards urban sprawl.

A tax framework that is not always appropriate

Nearly thirty taxes apply to urbanisable land. These taxes are important sources of funding for local communities. For example, property tax is 41 billion euros in 2017. In addition to these fiscal instruments, housing support policies exist aimed at developing the activity of the real estate sector, home ownership and urban renewal. These policies play a decisive role in the dynamics of construction.

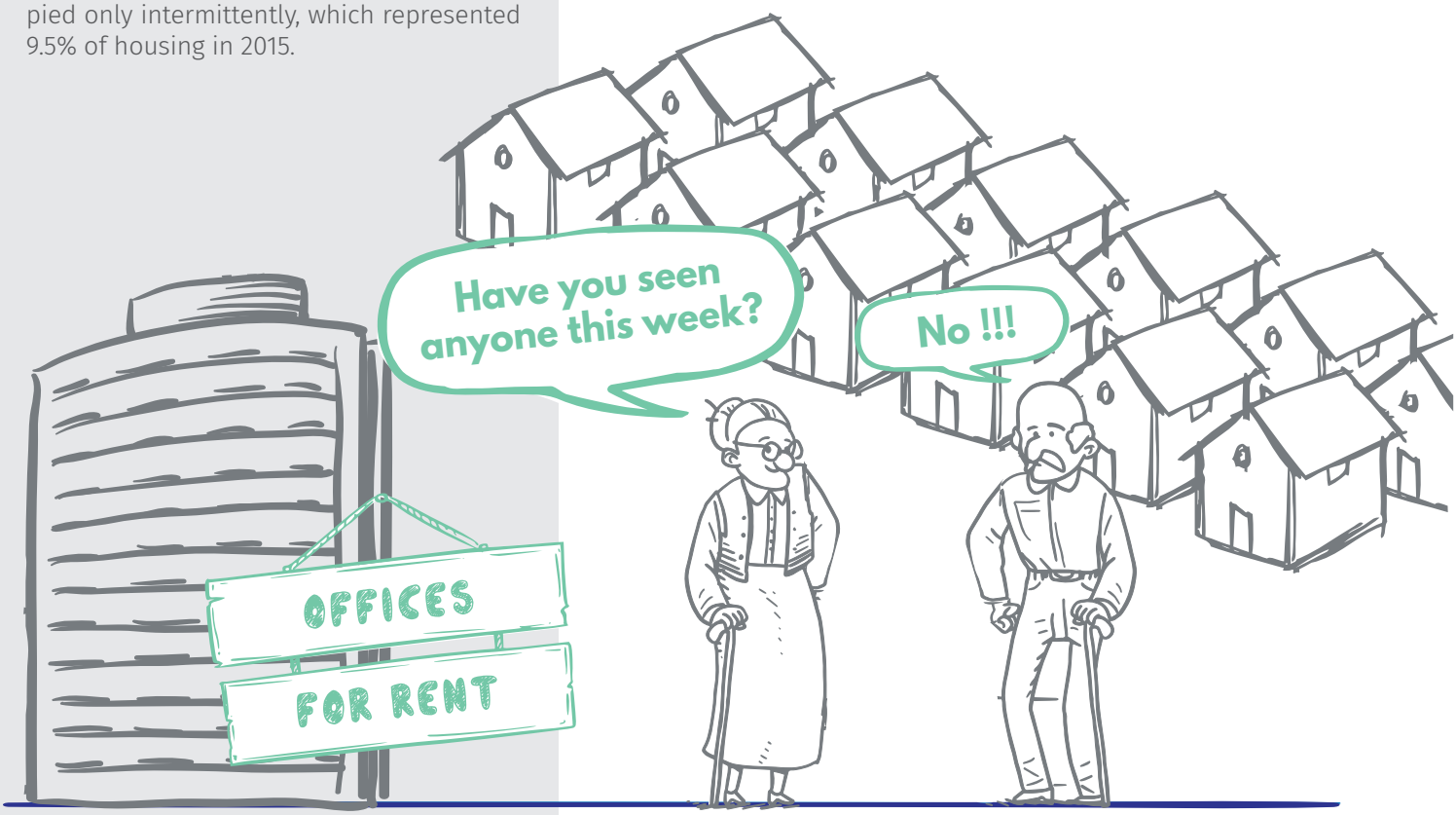
Companies encouraged to set up on the outskirts of city centers

The difference in land prices and local taxation between the city center and the periphery can encourage companies to locate part of their activities in the immediate vicinity of city centers, such as warehouses or commercial areas.



Many vacant dwellings

The high level of land artificialization in France can be explained by the under-exploitation of buildings (empty housing and offices) and the development of second homes occupied only intermittently, which represented 9.5% of housing in 2015.



Three scenarios for 2030

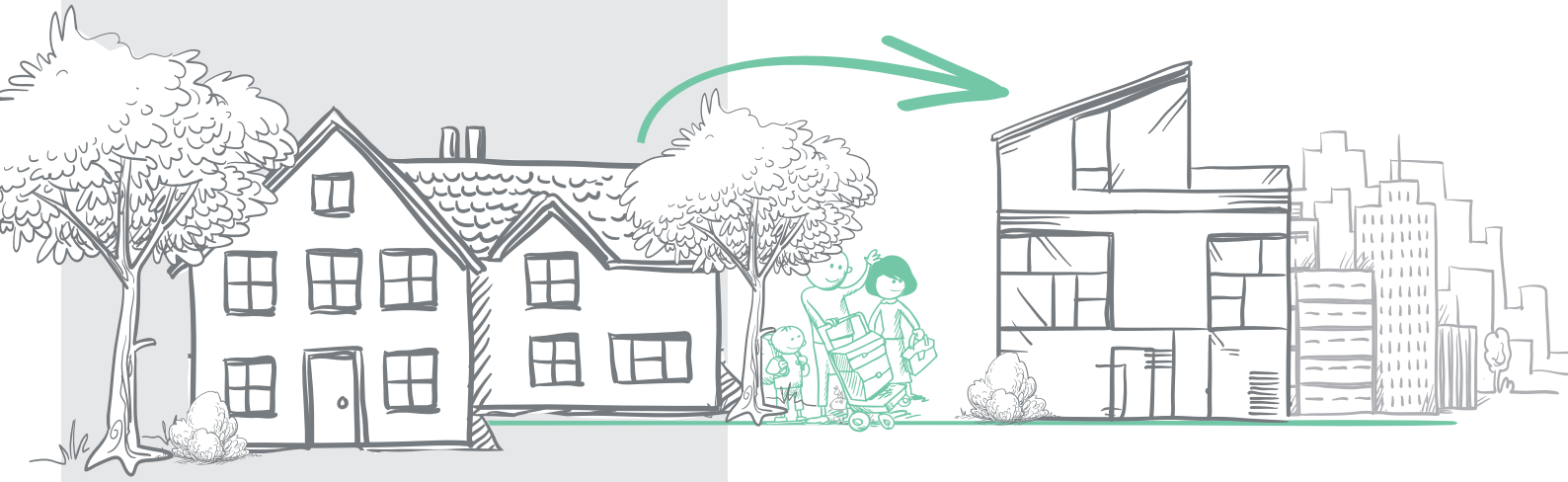
France Stratégie used an econometric model developed by the Ministry of Sustainable Development. This model makes the consumption of natural spaces depend on three variables: the built surface area, the urban renewal rate, and the density of the habitat (which corresponds approximately to the land use coefficient). The advantage: it allows alternative scenarios to be projected, excluding transport infrastructure.

The trend scenario

If current trends were to continue and no measures taken, artificialization would continue at a slightly increasing rate of around 20,000 hectares every year by 2030. This means that 280,000 hectares of additional natural areas would then be artificialized by 2030, slightly more than **Luxembourg's area for comparison**.

The "high densification" scenario

Increasing urban density and renewal rates could significantly reduce the consumption of natural spaces. This scenario would reduce the consumption of natural areas to 5,500 hectares every year by 2030 (compared to 20,000 in the trend scenario).anciel).



The "complementary" scenario

In the complementary scenario, the tightening of urban planning rules is compounded by the increase in land prices, with a price multiplied by five, and a decrease in the housing vacancy rate from 8% (in 2015) to 6%. This scenario would reduce the number of artificialized hectares to 3,650 every year by 2030, but it would require concrete measures that would be difficult to implement.

Objective "zero net artificialization".

This modelling exercise suggests that reaching "zero net artificialization" by 2030 would require a 70% reduction in gross artificialization and the renaturation of 5,500 hectares of artificial land every year. A perspective that requires "ambitious measures", concludes France Stratégie.

Improve knowledge of the dynamics of soil artificialization

It is essential to ensure precise monitoring of artificialization at local level and to compile this data at national level. From this point of view, an enrichment of the cadastre seems to be the most promising way forward. It will also be necessary to ensure that all stakeholders have access to the data necessary for the construction of territorial projects, and to the solutions available to control artificialization. This requires, in particular, the information and awareness of all stakeholders: administrations, local authorities, households, etc. The establishment of a soil artificialization observatory could contribute to these objectives.

Encourage densification with regulatory or fiscal tools

Several measures are possible to avoid incentives for artificialization:

- impose an obligation of densification by introducing in Local Town Planning a density floor and an urban renewal floor rate in each municipality for new constructions;
- exclude from eligibility for the housing support policies on un-man-made land;
- totally exempt from development tax projects that do not change the right-of-way on the built ground (elevation, renovation, reconstruction).

Establish a governance of soil artificialization

To ensure the coherence of planning instruments, it is necessary to have appropriate governance. Thus, three types of instances can be considered:

- at the scale of urban communities intermunicipalities, define targets for natural areas that could be artificialized as well as areas to be renatured;
- at departmental level, create a departmental council to reduce land artificialization, open to all relevant stakeholders and responsible for issuing authorisations for the artificialization of natural areas;
- at national level, set up a national council to reduce land artificialization, responsible for cross-cutting monitoring of all the measures put in place, to which the Soil Artificialization Observatory would be attached.

Combining renaturation and artificialization

To achieve the objective of "zero net artificialization", it would be desirable to make artificialization conditional on equivalent renaturation. Two devices are possible:

- set up a market of rights to be artificialized against renaturation. This renaturation must be certified by an authority guaranteeing the environmental quality of the renaturation;
- finance renaturation by adding an artificialization component to the development tax and returning the revenue to finance soil renaturation and densification of existing built land.

DOWNLOAD THE REPORT: OBJECTIVE "ZERO NET ARTIFICIALIZATION": WHICH LEVERS TO PROTECT SOILS? (PUBLICATIONS SECTION)

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