Préserver le paysage malgré la sécheresse

Keeping Corsica green in dry summers: irrigation water from sea and sun, carried together. A discussion paper.

8 November 2026 · Helmut Rode

> Avant tout, quelques mots en français. Je suis ingénieur et je viens d'Allemagne. Je sais qu'un expert venu du continent ou d'ailleurs en Europe est souvent accueilli d'abord avec une certaine réserve. Je le comprends, et ce n'est pas propre à la Corse : partout, celui qui arrive de l'extérieur avec une idée doit d'abord gagner la confiance. C'est un vrai défi, et je le prends au sérieux.
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> Je veux aussi être honnête : je ne parle pas bien français. Je l'apprends, mais pour travailler ensemble sur des questions techniques et dans la durée, nous aurons besoin de l'anglais. C'est pourquoi la suite de ce document est en anglais. Vous pouvez m'écrire en français ; pour les échanges oraux, ce sera l'anglais.
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> Pourquoi la Corse, malgré tout ? Parce que j'aime l'Île de Beauté. J'y suis venu très souvent et j'ai vu, été après été, la sécheresse gagner du terrain. Mon souhait le plus cher est de développer cette technologie ici, en Corse, avec des partenaires ouverts à cette démarche.

1. Drought is increasing

Corsican summers have been getting hotter and drier for decades. Météo-France measurements show it: at the Bastia station there were about 18 days a year with at least 30 °C in the 1950s, around 40 by the year 2000, and 77 in the record year 2024. In 2022 the dry-spell index was three times as high as in the 1950s.

Much suggests that this is a consequence of climate change and that the trend will continue. France itself is preparing, in its adaptation plan, for warming of 4 °C by 2100.

This raises the need for irrigation water. Vineyards, fruit trees, old trees and green spaces rely on regular rain. When it fails, they need more water, and precisely in the weeks when there is least of it.

Water is scarce, so scarce that watering has to be banned. In summer 2026 both départements of the island were on drought alert, Haute-Corse from late July into October, and the Plaine orientale even at crisis level. The restrictions cover the mains, groundwater and rivers, exactly the sources that farmers, communes and businesses depend on. In September, farmers blocked the ports of Bastia and Ajaccio to demand support against the effects of the drought.

No statistic records how many trees and plantings dry out in such a summer. But you will have seen for yourself how much nature suffers from the drought. A winegrower in Patrimonio had to water his young vines by hand every day for almost five months in 2026. Anyone who walks attentively through the villages and over the hillsides sees the signs almost everywhere.

CONTEXTE ET SOURCES

Série de mesures : exploitation personnelle des données de Météo-France, station de Bastia (n° 20148001), 1950–2025. Jours d'au moins 30 °C : environ 18 par an dans les années 1950, une quarantaine vers l'an 2000, 77 en 2024, année record. De plus, la nappe de la Strutta près de Patrimonio baisse chaque été d'environ 2,5 m (données du BRGM).

Plan d'adaptation : avec son troisième plan d'adaptation de mars 2025, la France se prépare à un réchauffement de 4 °C d'ici 2100 (maire-info, 11.03.2025).

Restrictions 2026 : alerte sur toute la Haute-Corse depuis le 29 juillet 2026 (Préfecture de Haute-Corse), Plaine orientale en crise, les deux encore en vigueur début octobre (Corse Net Infos, 09.10.2026). Alerte également en Corse-du-Sud (Préfecture de Corse-du-Sud).

Mobilisation des agriculteurs : blocage des ports de Bastia et d'Ajaccio le 24 septembre 2026 (Boursorama/AFP, ICI).

Patrimonio : entretien avec un vigneron début octobre 2026. Il n'avait pas plu depuis le 5 mai ; les vignes plantées l'hiver précédent étaient arrosées à la main tous les jours.

2. What we want to preserve

Do compensation payments solve the problem? They help farmers get through a lost harvest. But they do not bring back the tree that dried out, and no cheque repairs damage to the landscape.

So wouldn't it be better to keep the plants from drying out in the first place? A great deal depends on them:

- **A cultural heritage:** old trees on village squares, avenues, shade trees by churches and along paths, some of them well over a hundred years old. What is lost here does not grow back within a generation.
- **A distinctive agriculture:** vineyards, olive groves, chestnut groves and orchards shape entire valleys. Wine, olive oil, clementines, hazelnuts and chestnuts are part of what makes Corsica and what visitors take home.
- **A path of its own in tourism:** Corsica deliberately chooses tourism that lives from its typical nature and cultural landscape, not from mass. 44 % of overnight stays are at campsites; guests stay close to the landscape. Tourism accounts for about 39 % of the island's economic output.

Elsewhere it is already clear that guests adapt to the heat: people who experienced an unusually hot holiday in Spain return less often. Cooler places are in demand, and green landscapes and shade make a place cooler.

CONTEXTE ET SOURCES

Vieux arbres : un chêne-liège de 150 à 200 ans à Ghisonaccia a reçu le label « Arbre remarquable de France » (Corse Net Infos, 2019).

La voie corse dans le tourisme : la Collectivité de Corse le qualifie de « modèle alternatif », « à l'opposé du tout tourisme ou du tourisme de masse » (Assemblée de Corse, rapport 2022/O1/100). En 2025, elle réaffirme son « refus que notre île devienne une destination consommable, interchangeable » (rapport 2025/E2/129).

Visiteurs et paysage : en 2025, 44 % des nuitées en hôtels, campings et résidences de tourisme ont eu lieu en camping (INSEE 2025), contre environ un tiers pour l'ensemble de la France (INSEE 2024). Patrimonio et Saint-Florent, par exemple, sont labellisés Grand Site de France, et l'île entière est certifiée Or par Green Destinations (Agence du Tourisme de la Corse, 2026).

Économie et chaleur : le tourisme représente 39 % de l'activité économique, environ 3,4 milliards d'euros par an (INSEE, données 2017). Qui a connu des vacances inhabituellement chaudes en Espagne y revient environ 15 % moins souvent (CaixaBank Research, d'après The Local, 24.07.2026).

3. A new source of irrigation water

What if there were a new source of irrigation water? One that does not depend on the limited reserves in reservoirs, rivers and groundwater, nor on supply networks that reach their limits in dry summers?

Seawater desalination can be such a source, and it is nothing new. In the Pyrénées-Orientales, seawater is even explicitly exempt from drought restrictions. Could this apply to Corsica, where so much is at stake? If the authorities confirm it, water from the sea can flow exactly when gardens and green spaces may no longer be watered from the mains.

Desalination should, I believe, be the last resort, after saving and storing water. It costs material and energy, and it must not harm the sea. Where there is no other way, Corsica already uses it: since 2022 the commune of Rogliano on Cap Corse has been producing drinking water from the sea in times of shortage, in large quantities. Because there is one thing we cannot do: make it rain more often.

CONTEXTE ET SOURCES

Rogliano : unité d'osmose inverse depuis 2022, environ 500 m^3 d'eau potable par jour en période de pénurie (Corse Net Infos, 14.10.2022 ; 07.06.2025).

Eau de mer et restrictions : la préfecture des Pyrénées-Orientales écrit dans sa foire aux questions sur la sécheresse : « L'eau de mer n'est pas concernée par les mesures de restrictions des usages de l'eau. » Les dessalinisateurs privés y sont autorisés (Préfecture des Pyrénées-Orientales, 2023). Les arrêtés corses que j'ai lus (Haute-Corse 2022 et 2026) ne se prononcent pas sur ce point.

4. Sun instead of electricity

And what if desalination could do without fossil energy altogether, without a grid connection and without a single litre of drinking water? With nothing but the sea and the sun, in small units that provide irrigation water exactly where it is needed most?

That is exactly what solar thermal desalination can do. Everyone knows the principle from rain: the sun's heat evaporates seawater, the salt stays behind, and the vapour condenses into salt-free water. In a solar desalination unit, the heat released during condensation pre-heats the next seawater. In this way, the same solar heat yields several times as much water. A heat store lets the desalination unit work at night as well.

Unlike reverse osmosis units, such plants are not available off the shelf. The process is, however, well known and thoroughly researched, especially for small, decentralised units. Compared with reverse osmosis it is a simple and gentle technology:

- **Energy:** sun only, without the grid and without fuel.
- **Design:** no high pressure, no membranes, below 100 °C. Simple, robust parts that can be repaired on site.
- **Chemicals:** the aim is to operate without biocide, chlorine or antiscalant. Cleaning is done with citric acid.
- **Sea:** the return flow is only a few per cent saltier than the sea; it is diluted and measured at every site. Intake and return lie outside the seagrass meadows (Posidonia).
- **Landscape:** the central desalination unit sits on a trailer and leaves the site in winter. The solar collectors can be integrated as shade roofs over vines or parking spaces.

The real challenge lies elsewhere. The solar desalination units must run reliably for many years with little care, and the irrigation water must always stay clean, without seawater getting into the product. Experience shows that small desalination plants rarely fail because of the technology, but because of support, spare parts and money. The whole concept is designed around this: simple parts, maintenance and repair on the island, a meter and a conductivity measurement that show any deviation at once, and financing that holds over the years.

Staying small is deliberate. Where a commune needs hundreds of cubic metres of drinking water a day, a plant like the one in Rogliano is the better choice, also in terms of space and cost. The solar desalination units supply what such a plant cannot reach: scattered trees and green spaces that no pipe network leads to. The volumes are small compared with the island's consumption, but they go exactly where savings have to be made first in a drought.

The sun sends no bill. The water is still not free: the desalination units have to be built, looked after and maintained. How to share these costs fairly is the second half of the idea.

CONTEXTE ET SOURCES

Recherche : synthèse sur les installations solaires d'humidification-déshumidification pour l'approvisionnement en eau à petite échelle et décentralisé : Narayan, Lienhard et al., « The potential of solar-driven humidification–dehumidification desalination for small-scale decentralized water production », Renewable and Sustainable Energy Reviews 14 (2010) (MIT).

Projets précédents : le dessalement solaire par humidification a déjà été testé, par exemple dans le projet européen SODESA à Gran Canaria (2000–2003, CORDIS). La technique s'est révélée robuste, mais n'a pas trouvé de marché. C'est pourquoi je ne vends pas d'installations de dessalement : je livre de l'eau d'arrosage sur place, avec un suivi assuré par un seul interlocuteur, et je mesure chaque étape avant de construire la suivante.

Pourquoi les petites unités échouent : au large de l'île égéenne d'Iraklia, l'unité flottante « Hydriada » (80 m^3 par jour, 2007) a été abandonnée : problèmes techniques, coûts d'entretien élevés et une commune qui s'en est désintéressée (Arampatzis, Kartalidis, Assimacopoulos, 2017).

Rejet en mer : pour le pilote, 1 à 2 m^3 par jour, au plus environ 3 % plus salé et un peu plus chaud ; pour les unités Pluie Solaire suivantes, dilué à environ 1 %. Le Parc naturel marin du Cap Corse indique pour les herbiers une salinité critique de 39,3 g/l et des effets dès 1 à 2 g/l de plus (Parc naturel marin, avis 2023).

Ordre de grandeur : une installation de dessalement solaire de 1 000 m^3 fournit en une saison entière autant que l'unité de Rogliano en deux jours (Corse Net Infos, 30.04.2024).

5. Who bears the costs?

So here is a technical solution. But who should pay for it, and what would be fair?

Nobody can put an exact figure in euros on the value of a landscape. But everyone can estimate for themselves what they would lose:

- **The farmer**, above all his young plantings: vines, olives or fruit trees in which he has invested money and years and which do not yet bear fruit.
- **The commune**, the old tree on the village square, the avenue, the shade by the church. Plus the green spaces that many communes have created for their visitors, with drip lines to every plant. In the weeks when watering is banned, these lines stay dry. Water for the lines already in place would be the missing link.
- **Tourism**, the very thing guests come for. For scale: one per cent of tourist spending in Corsica is about €34 million a year. Twenty solar desalination units together cost about €200,000 a year, less than a tenth of a per mille of that spending.

And all of them together would lose something that cannot be put into figures at all: a landscape whose condition above all the young generation will have to live with.

Who should pay for adapting to climate change is a big question. Many will say: others caused it. That is not wrong. But waiting for them does not help the trees next August. The national adaptation plan contains some 200 measures but hardly any money. In the end, adaptation will probably have to be decided and paid for locally.

The earlier it starts, the lighter the consequences for the next generation. Those who act now preserve the landscape it will inherit. And with the solar desalination units they give it a tool to secure water for itself, even in dry summers.

There is a tailwind, too. That nature's services have a value that belongs in the accounts is now part of official statistics, at the United Nations, in the EU and in France. And having beneficiaries pay for such services has proven itself in many places: in Vittel, in Munich, in the Balearic Islands and in Corsica itself.

Taken together, wouldn't it make sense to share the costs in solidarity, among everyone who benefits from the landscape not drying out: communes, tourism and agriculture?

CONTEXTE ET SOURCES

Ordre de grandeur : les dépenses touristiques en Corse s'élèvent à environ 3,4 milliards d'euros par an (INSEE, données 2017), dont un pour cent à environ 34 millions d'euros. Vingt installations de dessalement solaire coûtent ensemble environ 200 000 euros par an.

Plan d'adaptation : troisième plan national de mars 2025, environ 200 mesures, presque pas de financement (maire-info, 11.03.2025).

Services écosystémiques dans la statistique : norme SEEA Ecosystem Accounting des Nations unies depuis 2021 (Capitals Coalition) ; règlement (UE) 2024/3024 avec des comptes des écosystèmes incluant expressément les services culturels, première année de déclaration 2024 (règlement (UE) 2024/3024) ; en France, le programme EFESE (Fondation pour la recherche sur la biodiversité, 2022).

Paiements pour services environnementaux (PSE) : un accord volontaire par lequel les bénéficiaires paient un service clairement défini, et seulement s'il est rendu (Wunder 2005, CIFOR). Vittel : Nestlé Waters avec 37 agriculteurs sur plus de 10 000 ha, en grande partie sous forme de prestations en nature (IIED). Munich : depuis 1992, les Stadtwerke soutiennent l'agriculture biologique, 190 exploitations, environ 1,5 million d'euros par an (SWM, 09.03.2026).

Exemples en Méditerranée : Baléares : depuis 2016, une taxe par nuitée soutient aussi des fermes qui entretiennent le paysage rural (Menorca.info). Corse : avec la taxe Barnier, les passagers maritimes paient pour les Agriate, Scandola ou les Bouches de Bonifacio (Weblex) ; l'Agence de l'eau Rhône Méditerranée Corse a son propre programme PSE, avec de nouveaux contrats à partir de l'automne 2027 (Agence de l'eau RMC, 2025).

6. The idea: an alliance for the landscape

This leads to the idea of an alliance, working title “Les Gardiens du paysage” (suggestions welcome): a commune, a tourism business and a farmer from the same area – neighbours, so to speak – join forces with a technical partner and together safeguard what is most valuable in their surroundings. As far as I know, no such model exists yet. Could Corsica lead the way?

- **Shared in solidarity: three shoulders instead of one.** The tourism business, the commune and the farmer share the annual costs according to a fixed key. The farmer pays a small fixed contribution. The commune can use the water itself, for trees, avenues and green spaces, or cover part of the costs for the farmers' plantings in its area. How it funds its share is up to each commune.
- **Payment for results.** The water goes to plots and trees specified in the contract. A remotely read meter records every cubic metre. If the volume delivered stays below 80 % of the agreed volume, all partners' contributions fall proportionally.

- **Site and use can be separate.** The Pluie Solaire unit needs a small spot by the sea, for example at a hotel, a campsite or the commune. From there the water can be taken to plots in the hinterland; the volumes are small enough for that.
- **The technical partner bears the responsibility.** It owns the desalination units and is accountable for operation in line with permits and the environment, for maintenance and for documentation, much like Agrivair in Vittel.
- **A visible contribution.** At the end of the season, hotelier, mayor and farmer inspect the plots together. A short report with meter readings and photos of the same spots before and after the summer shows what the contribution achieved. For businesses with the EU Ecolabel or Clef Verte, and for the destination on its way to Green Destinations Platinum, this is a concrete, verifiable contribution.

What it costs

According to current estimates, a Pluie Solaire unit built after the pilot costs about €10,000 to €12,000 a year. Between April and October it delivers about 150 to 200 m^3. The water thus costs about 5 to 8 cents per litre. Construction costs are conservatively spread over 15 years; the main parts should last 20 to 25 years.

	optimistic	middle	pessimistic
Water per unit, April to October	200 m^3	175 m^3	150 m^3
Cost per unit and year	€10,000	€10,500	€12,000
Price per litre	5 cents	6 cents	8 cents
Share of tourism business and commune, each	€4,800	€5,000	€5,800
Per guest and night (campsite example)	10 cents	10 cents	12 cents

The farmer pays €300 to €500 per season. The figures are based on calculations, not measurements, and are accurate to about ±50 %. The 2027 pilot will provide reliable values. So far the estimates have been falling, mainly thanks to the heat store that lets the desalination unit work at night as well.

Yes, this is more expensive than tap water. But in the weeks these desalination units are built for, there is no tap water for watering. The costs are more like an insurance premium: you pay so that there is water when it really matters. My benchmark is reverse osmosis in a comparably small unit powered by solar electricity; my aim is to stay below it.

Fair, not profiting from hardship. Anyone offering water in a drought may fairly be asked whether they want to profit from hardship. I do not. The price follows the costs, not the scarcity, and does not rise in a drought year. Every year the partners receive a report with the volume of water, measurements at the return flow, the condition of the plants and the cost per cubic metre, including my remuneration. If costs fall, the price falls too. But fair also means sufficient. Otherwise nobody will look after the desalination units for years.

CONTEXTE ET SOURCES

Exemple d'un camping : 200 emplacements, le taux d'occupation moyen corse de 45 % et, par hypothèse, trois personnes par emplacement donnent environ 50 000 nuitées par saison (INSEE 2025).

Fourchette des coûts : optimiste signifie construction en série et absorbeurs plus grands ; pessimiste, les premières unités Pluie Solaire avec 15 % d'eau en moins. Le calcul porte sur une saison d'avril à octobre, avec entretien, pièces de rechange, analyses d'eau, assurance et rémunération du partenaire technique.

Référence osmose inverse : la comparaison porte sur un petit appareil d'osmose inverse alimenté par l'énergie solaire, qui fournit le même volume d'eau, filtres, membranes et pièces de rechange compris.

7. My contribution: the 2027 pilot

I am an engineer in energy and process engineering, and I offer myself to the alliance as its technical partner. The task appeals to me greatly: to develop solar seawater desalination into a reliable technology, with the lowest possible operating costs and the least possible impact on the environment, so that the response to climate change does not fuel it further. If you would like to know more about the technology and my solution for Corsica, I will gladly explain it.

On my last trip to Corsica I kept hearing two questions: Is it allowed? And does it work? The 2027 pilot is meant to answer both.

- **The pilot unit:** I am building it in Germany right now, at my own expense. It sits on a car trailer and delivers 15 to 50 litres of irrigation water a day, which the host can use free of charge.
- **The site:** I am looking for a partner who gives the idea a chance and provides a spot directly by the sea, free of charge, for one season from May 2027, in the north or the south of the island.
- **Accompanying the pilot:** a commune, a tourism business and the host are invited to accompany the pilot. I am also seeking scientific support for the pilot from a research institution on the island. No financial commitment is needed; a letter of support and taking part in the end-of-season walk-through are enough.
- **The trial run:** meter, photo documentation and walk-through are tried out in 2027 exactly as they will later work in the alliance.
- **The authorities:** at the end of September 2026 I sent a preliminary enquiry to the Prefect of Corsica. Installation will only take place once the framework has been clarified.

8. Key points for a start

A few key points as a starting point for discussion, all of them open to your ideas:

- **Built to last:** the alliance runs for at least 15 years, as long as the desalination units take to write off. Like an insurance policy, it only works if it continues after wet summers too.
- **Review after three years:** after the 2030 season the partners take stock together. A partner can only leave early if the desalination unit delivers substantially less water than agreed over a sustained period, or if costs are substantially above the agreed range. The risk thus stays manageable: at most three annual contributions of a few thousand euros each.
- **Small and in many places:** after the pilot, Pluie Solaire units of 150 to 250 m^3 per season are to follow, a single one at most around 1,000 m^3. More water comes from more sites, not from bigger units. If one fails, only one site is affected.
- **Building on the island:** construction, installation and maintenance are to move to Corsica step by step, with skilled workers and businesses from here. The wood for the frames should come from Corsica wherever possible. I myself would like to live on the island for part of the year and look after the desalination units on site.

When	What
winter 2026/27	first conversations, video call with everyone interested, find a site for the pilot, clarify the framework with the prefecture
from May 2027	pilot in Corsica
autumn 2027	end-of-season walk-through, first results report
winter 2027/28	agree the first alliance, build the first desalination unit
from April 2028	first alliance unit in operation
after the 2030 season	joint review of the first three years

9. What is still open

An honest proposal also names its open points, and perhaps you already have answers to some of them:

- **Costs and volumes:** only the 2027 pilot will provide reliable figures. The water will remain more expensive than raw agricultural water. That is why the model is meant only for what is most valuable.
- **Seawater and restrictions:** the authorities still have to confirm that irrigation water from the sea is not covered by the restrictions in Corsica. The solar desalination units do not replace reservoirs and do not prevent bans. They keep green what dries out first when bans apply.

- **Survival volumes:** how much an old tree or a young planting needs at minimum in the driest period is to be determined with agronomists or arborists.
- **Wine-growing rules:** AOP vines in production may generally not be irrigated in summer. For winegrowers the model therefore targets young plantings. In 2026, plantings under three years old in the Plaine orientale could still be watered at fixed times, even at crisis level.
- **Communes' contribution:** under Art. L2333-27 CGCT, the taxe de séjour may also be used to protect and manage natural areas for tourism purposes. Whether this covers irrigation water for the landscape needs to be clarified with a commune, as do public procurement and state aid rules for public funds.
- **Permits:** every site by the sea needs its own clarification, and in marine protected areas such as the Parc naturel marin du Cap Corse et de l'Agriate or the Bouches de Bonifacio also with their management.
- **Support:** at first it depends on one person. That is why a local contact and documented procedures are needed early on.
- **First alliance:** the model needs a first place, anywhere in Corsica, where a commune, tourism and farmers start together.

CONTEXTE ET SOURCES

Viticulture en crise 2026 : à partir du 18 septembre 2026, la Plaine orientale était au niveau de crise. Des dérogations s'appliquaient à jours et heures fixes, notamment pour les plantations de moins de trois ans (Corse Net Infos, 17.09.2026).

Taxe de séjour : article L2333-27 du Code général des collectivités territoriales (CGCT).

Let's tackle it together

Corsica has decided not to use up its landscape but to preserve it. This idea can make a small, concrete contribution: water from sea and sun for what is most valuable, carried by everyone who lives from the landscape.

Much has been said about drought and climate change. What is missing now are solutions you can touch. So I am looking for people who want to take matters into their own hands rather than wait for the state to present and pay for solutions. People who want to make their own small contribution and are ready to try new ways, because the proven ones alone no longer suffice. Daring something new, for a good cause: that is what it is about.

This paper is a first attempt to bring together interests that have so far been pursued separately. I would like to develop it further with the people who want to take part, so that in the end not only the technology works but also a financing model that is fair and lasting. If the idea succeeds in one place, others may follow, in Corsica and on other Mediterranean coasts.

And because an idea only convinces once it works, I am also looking for a partner who provides a spot by the sea for the 2027 pilot (section 7).

Write to me whenever you like, and feel free to pass this paper on to anyone who might be interested.

> **Je me réjouis de chaque message sur ce sujet. Dites-moi ce que vous en pensez, et surtout : de quoi auriez-vous besoin pour vous y engager ?**

Further information

About the author: I am Helmut Rode, an engineer in energy and process engineering from Germany. Under the name Pluie Solaire (pluie-solaire.com) I develop small desalination units that use solar heat to turn seawater into salt-free irrigation water. I have been coming to Corsica for many years and have seen the summers grow drier and hotter. With small, decentralised units that solve a concrete problem, I would like to contribute an answer.

About this paper: This paper is a draft for discussion. In November 2026 it was sent to associations and organisations from agriculture, tourism and the communes across Corsica; it is published on pluie-solaire.com for anyone interested. It is not a finished offer.

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