

"As napalm": illustrating embodied and sensitive experiences of a slow disaster**Abstract**

Since 2011, massive strandings of Sargassum seaweed have had a significant impact on the lives of coastal communities in the wider Caribbean and West Africa. The SaRiMed project is an interdisciplinary academic study examining the emerging relationships between the environment and the ontologies resulting from the proliferation and decomposition of the seaweed. The study focuses in particular on the adverse impact of gaseous emissions on the material life and psychological well-being of local residents. One of the questions addressed in the research project concerned the translation of embodied and sensory experiences of this slow-onset environmental disaster (Nixon, 2011). The aim of this study is to make visible the narratives of pain, the lack of well-being and the loss of habitability, in order to bring them to the attention of a wider audience. To this end, it incorporates photographs of damaged landscapes and objects, as well as drawings and comic strips, created during and after the subjects' participation in semi-structured interviews conducted with two students, Alexia Carbeti and Lucas Pernock, during fieldwork in Martinique and Marie-Galante in 2021 and 2022. This presentation of the research field explains the photographic and graphic process employed and the significance it acquired in the dialogic relationship with the inhabitants of the affected areas.

Keywords

Sargassum, Inhabitants of the coastal caribbean, Environmental Health, Photographs, Drawing process, Body

The author

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Context

Since 2011, rafts of holopelagic brown algae have been drifting with the currents and crossing the Atlantic Ocean in such vast quantities that scientists have dubbed this phenomenon the GASB, for Great Atlantic Sargassum Belt (Wang, 2019). The causes of this Sargassum bloom are multifactorial and global in scale (Johns, 2020): it began in 2009 and 2010 due to powerful surface winds over the Sargasso Sea, which pushed a small portion of it away from the gyre—a marine vortex—in which it had been contained until that point. Now, large quantities of this seaweed are washing up along the coasts of the Greater Caribbean and West Africa, causing a wide range of problems at the micro-local level, whether ecological, economic, political, social or health-related. If it cannot be collected within approximately 48 hours, the Sargassum decomposes and releases several gases, two of which have been identified as being neurotoxic: H_2S (hydrogen sulphide) and NH_3 (ammonia). This abundance and decomposition of Sargassum have had a significant impact on the daily lives and health of coastal communities living in the Greater Caribbean and West African regions. The emergence and subsequent study of chronic environmental diseases have begun to be documented (Resiere D. et al., 2021; Banydeen R. et al., 2024). Indeed, physical and psychological symptoms emerged, including breathing difficulties, shortness of breath, a feeling of suffocation and sleep apnoea. For the SaRiMed research, on which this presentation is based, we considered health in the complex sense of the World Health Organization (WHO) definition, that is, as a “state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity”. Indeed, the impact of these gases extends beyond human beings to encompass non-humans and the more-than-human. These emissions not only spread through space but also influence daily life and social relations, revealing the relationship that individuals have with spaces. It has been shown that they also have a deleterious effect on electronics and metal, walls, jewellery, decorative objects, etc. Furthermore, leachate, a liquid produced by the exudation of Sargassum, pollutes the soil and emits foul odours that provoke revulsion and nausea. Thus, the arrival and accumulation of Sargassum and the consequences of its decomposition transform this mundane phenomenon into something extraordinary, owing to the constant focus on the dangers and risks involved – dangers and risks that we aim to highlight more effectively through a multi-modal approach utilising photography and graphic design.

Methodological framework

SaRiMed (Health issues related to Sargassum seaweed for coastal residents and medical mediation) (2021-2023) and SaRiMed 2 (2025-2027), funded by the Fondation de France (call for projects ‘The future of coastal and marine environments’), is an interdisciplinary and transdisciplinary project (social and medical sciences, art & science). The SaRiMed project was designed with the explicit aim of facilitating collaborative exploration and the dissemination of experiential knowledge regarding the abundance of Sargassum and the nuisance caused by its decomposition. All the islands and mainland territories of the Greater Caribbean are affected by this new and sudden phenomenon, which cannot yet

be categorised or quantified. This text focuses on the areas where the SaRiMed surveys were conducted. In Martinique, out of a population of 390,000, around 20,000 people across 11 municipalities are directly affected. In Marie-Galante (a French island in the Guadeloupe archipelago, also located in the Lesser Antilles), around 2,000 people, out of a population of 9,000 permanent residents, are directly or indirectly affected, particularly in the municipality of Capesterre-de-Marie-Galante (Ménez, Ranély Vergé-Depré & Béchacq, 2023). Also very close to Guadeloupe, the island of La Désirade is similarly hard affected: along 11 kilometres of coastline, almost half of the 1,300 permanent residents are directly impacted. Coastal development is extensive in Martinique, Marie-Galante and La Désirade, as in many island locations. It is heterogeneous in terms of the origins and socio-professional backgrounds of its inhabitants, as well as in terms of geography. The interplay of social classes in these coastal geographical areas is key to understanding how Sargassum, a physical and ecological phenomenon, becomes a political and social phenomenon, disrupting daily life in ways that are socially unequal.

What epistemologies and methodologies can help bring personal histories into the public sphere through research in the humanities and social sciences? Our research questions lie within the field of environmental health, impacted by potential chronic poisoning from neurotoxic gases: what are their trajectories, their flow, their behaviour, from the coastline to inside homes and car interiors? How do they alter the lives of residents? How can we observe the influence of these neurotoxic gases on our daily lives, our well-being, our health, and on our system of representations and relationships with our environment and our bodies within this slowly deteriorating environment? All of these questions lie at the core of the research project, which aims to assess the impacts and experiences of these gases on residents' daily lives from the perspective of the anthropology of disasters. We start to observe the development of a lay or popular epidemiology (Brown, 1997), the perception of a low-profile disaster (Dupuy, 2022) and the emergence of heightened intersecting vulnerabilities due to the abundance and decomposition of Sargassum, leading to environmental injustice (Nixon, 2011). The aim of the anthropological research is to capture the elusive nature of these ephemeral disasters (Ferrier, 2015), and this resistance to disorder (Haraway, 2016). This "crisis", which has occurred suddenly and repeatedly, in a relatively random manner depending on the commonly known as "seasons" of the Sargassum, acts as both a catalyst and a revelation.

The central theme of this paper will be the interplay between the visible and the invisible, beginning with the measurement of Sargassum masses and traces of gas on objects, and finally turning to the invisible - what is happening inside the body - and revealing contextualised knowledge through the lens of questions regarding the correlations between physical symptoms and damaged objects, as expressed traces of a global dysfunction. In the interviews, those participants highlight the measures they have had to implement due to the disruption, redistribution or disappearance of customary practices in the region. Avoidance strategies are put in place, as if one were living in an

area contaminated by industrial chemical pollution. As the philosopher M. Murphy writes (2017), « the ubiquitous condition of chemically altered living-being, a condition that is shared, but unevenly so, and which divides us as much as binds us »¹. These practices can either bring people together or drive them apart. They can facilitate social interaction around these avoidance practices by setting up citizens' groups or by sharing the results of lay experiences or contextualised expertise on gas. This text outlines empirical aspects of the research field and the "infra-ordinary of life" (Pérec, 1989): the banality of daily existence in its entirety of attachments to people, places and objects, and the "possibilities of life" (Tsing, 2017) despite the damage caused by the abundance of Sargassum on coastlines. The observation of risk measures requires also the application of phenomenology of perception (Merleau-Ponty, 1945) and co-construction of data. These highlight our intrinsic links with the environment and our bodily experiences through an objectified representation. However, this is not a matter of seeking to aestheticise the catastrophe (Ferrier, 2015), but rather a desire to represent and reflect the lives of the inhabitants as faithfully as possible.

How can we make the invisible effects on the body and on people's lives tangible, translatable and expressible? How can we represent gases, which are volatile yet present through the traces they leave on the material world and the smells, atmospheres and sensations they create? The question of visual representation that concerns us here moves from the degradation of landscapes and coastal developments—which is a matter of visual evidence— but we will follow the leads provided by the interviewees during the fieldwork in order to move from the overly visible to the invisible, namely 1/ what appears obvious and is visible from the outside, and which the ethnographer's regular returns allow to be situated in time; 2/ that which relates to attention to domestic objects, and which are shown by the inhabitants; 3/ that which relates to harm to the body and organs, and in this case the visual imagery generated by the inhabitants' narratives will be the method employed.

During the early phases of the SaRiMed project and throughout the first few months of the qualitative research, the alliance between art and science was still in its infancy; or rather, whilst this aspect of the work had been theorised through discussions with artists, it had not yet been put into practice. This alliance raised epistemological questions (what modes of knowledge are at stake?) and methodological ones, particularly regarding the media and artistic choices that support or condition alternative forms of research writing (printed books, online publications, photography, exhibition spaces, comic books, theatre, podcasts, performing arts, sensory mapping, dance, multimodality, etc.).

The methodologies employed for this research were devised and developed in three phases: the first phase involved the conceptualisation and drafting of the project; the second phase involved rethinking the research in light of the legal constraints

¹ Murphy adds that these new living conditions are determined not only by external sources of pollution – chemical pollution in the cases she is studying – but also by colonial capitalism and racism, a structural injustice that is also evident in the Sargassum phenomenon and which will be the subject of another article.

imposed by the GDPR, which necessitated a reconsideration of how the research would be presented and discussed in the public sphere; the third stage involved the unexpected contribution of graphic design to the research field, with the weight of an empiricism that subsequently took shape as a qualitative methodology. After several experiments, including dance, the decision was made to focus on dramatised readings, dubbed *Prolivariation*, and on photography. The decision to incorporate graphic representation as a form of creation and dissemination was made on the spot during the project. Its short- and long-term relational and aesthetic impacts would reorient this perspective on understanding and acknowledging the social impacts of Sargassum strandings, the main objective of the SaRiMed project, components 1 and 2. Indeed, the work carried out with Alexia Carbeti and Lucas Pernock during their student placement, which will be detailed in the second part of this text, enabled a reorientation of this perspective on understanding and acknowledging the social impacts of Sargassum strandings, by observing the relational dynamics that the creative works helped to foster in the moment, as well as in the short and long term. It was therefore through this research with local residents and the collaboration with visual arts graduates that the methodology was refined and expanded within the transdisciplinary work, particularly to interpret and convey what cannot be said or seen: situated knowledges, embodied experiences, and imagined projections regarding the impact on physical health, which still constitute a blind spot in public policy regarding this problem.

This presentation is based on semi-structured interviews, participant observation, and photographic and graphic work carried out on three islands in the Lesser Antilles, situated in the southern part of the Caribbean arc, between the Atlantic Ocean to the east and the Caribbean Sea to the west. These have been French departments and regions since 1948. This research has been conducted since 2017, and primarily as part of the SaRiMed research project from 2021 onwards, enabling more than 300 meetings to be held with a wide range of stakeholders in Martinique and the Guadeloupe archipelago, on the islands of Marie-Galante (2022) and La Désirade (2025, 2026), resulting in a total of over 250 semi-structured interviews that were recorded, transcribed and analysed, as well as around a hundred informal conversations, exploratory interviews, and over 200 responses to questionnaires concerning the impact of Sargassum on daily life. primarily involves semi-structured interviews and participant observation, as well as the use of photography and graphic design. The methodology employed by the social sciences and humanities team (the project coordinator and, since 2018, four student interns in their first and second years of their Master's degree, and two students studying for a Bachelor's degree in visual communication and graphic design) primarily involves semi-structured interviews and participant observation, as well as the use of photography and graphic design.

Our text is divided into two parts corresponding to the two visual anthropological approaches employed in this research project: firstly, the ethnographer's photographic work on the transformation of landscapes; and secondly, in a more substantial and intimate section, on the transformation of objects. In the second part, we will explain how

an ethnographic and graphic collaboration enabled the development of an artistic and scientific project, to highlight the contribution of visual anthropology in translating the inexpressible into images. Both practices drew on the experiential knowledge of local residents in order to make this contextualised knowledge—this lay epidemiology—visible.

Evidence from the trial: photographic practices exploring the Sargassum crisis

In our SaRiMed 1 and 2 studies, photographs are used for two purposes: firstly, as evidence, and secondly, as a tool to facilitate dialogue between interviewees and researchers during fieldwork, thereby enabling a two-way engagement:

“In addition to this ‘ethnographic engagement’, there is also a photographic engagement, which involves paying particular attention to the way in which images are taken and then shared by the anthropologist with the people involved in the research.” (Leon-Quijano, 2024)

To date, the photographs taken have focused solely on objects and the environment, and not on bodies or body parts (apart from hands resting on corroded objects), in order to respect the principles of anonymity. In employing visual practices, the aim here is to help build a body of evidence for the local residents: not to trace a past, but a present. The resulting visual testimony seeks to inscribe within the landscape—both physical and symbolic—the traces of the change brought about by the Sargassum, beginning with the materiality of that change, and contributes to an ongoing history. An implicit—and sometimes explicit—agreement is quickly established with the interviewees, whereby the ethnographer will enrich the findings and provide evidence through photographs of various forms of degradation, whether public—such as the degraded landscape—or private, such as houses or domestic objects. In this case, the photographs do not serve an aesthetic purpose, but rather act as a medium for a metric logic (Houdart, 2017) and the establishment of evidence (without intervening as legal evidence), at work in this display and photographic capture of degraded materiality.

From sudden disasters to slow-onset disasters, objects serve as witnesses to the event, and the black marks on taps, structural timber and PVC ceilings act as physical clues. These witness objects speak to those around them through their weathered, blackened, bluish appearance and their pitted surfaces. To convey their meaning beyond the domestic environment contaminated by gas, they call for the creation of a ‘subtle repertoire’ (Houdart, 2017) to reveal the breadth of the body of evidence pointing to the illness, and to distinguish between materials damaged by proximity to the seaside and the presence of the gas. The witness is thus engaged in a mode of expression that records, in a present-day context, what they have seen and wish to convey, whilst remaining wary of framing and fiction, but by striving to recreate a reality, confirmed by the interviewee’s gaze and their responses, as a testimony both at the time the image was taken and in the time that followed.

We will start with documentary landscape photography, which allows us to grasp

the physical scale of the problem. As regards the measurement of time, we can see that the suddenness of the event must be measured, as well as its transience—that is to say, its changing and unpredictable nature. This involves a shift from the macro (fig. 1) to the micro, through the accounts of those interviewed and the embodied, sensory experiences of residents affected by prolonged crises caused by Sargassum drift. ù



Fig. 1 View of the coast. Pointe Faula, Martinique. Photo by Florence Ménez, april 2021. DOI: 10.34847/NKLE.E5AA8201.

The documentation of the coastline through systematic photographs taken by local residents and shared on social media has made it possible to preserve a complete record of the brutality and unpredictability of this uncontrollable event. The coastal landscape can be observed from several vantage points: captured from ground-level perspectives and from a zenithal perspective using drone imagery. The most common viewpoint is that of the coastline looking out to sea. Thousands of photographs are shared on social media, particularly on Facebook, by those affected. These photographs serve as a medium for capturing the phenomenon, thereby documenting the continuity of the strandings and situating them within a regional Caribbean history; they provide evidence of its impact whilst expressing a sense of powerlessness in the face of it; and they also serve to challenge public authorities and ask what obstacles are preventing them from taking radical and swift action to prevent these strandings (Ménez, 2021). Allies are documenting and publicising the phenomenon: since 2018, a French sailor living in Mexico has set up a page where she voluntarily collects these various photographs from social media and dedicated satellite imagery websites, with the aim of creating a crowdsourced map of Sargassum strandings across the wider Caribbean (<https://sargassummonitoring.com/fr/>). These records have evolved from simple snapshots of a situation at a given moment to long-term documentation of an ongoing disaster (Dupuy, 2022) and calls for political action (Ménez, 2021). A significant proportion of the coastal views show the abundance of Sargassum that has washed up on the shoreline, as well as the continuous influx of this phenomenon. It seemed important for the project to also engage with these photographic practices of

documenting the unfolding event, through the uniformity of the landscapes covered in Sargassum and the various practices that persist and adapt within them (fig. 2). In order to provide as broad an overview as possible of brown algae strandings in terms of space and time, it is important to document and archive the various stages of the Sargassum's arrival, collection and decomposition (figs. 3 et 4).



Fig. 2 View of the coast. To practise his sport, a man crosses the Sargassum border. Pointe Faula, Le Vauclin, Martinique. Photo by Florence Ménez, 2019. DOI: 10.34847/nkl.aa6drm40.



Fig. 3 View of the coast. Collection of seaweed in the centre of Marie-Galante, Guadeloupe. Photo by Florence Ménez, 2022. DOI: 10.34847/nkl.f4af06n6.



Fig. 4 What used to be the sea: the coastline covered in dried algae behind our interviewee's house in Le François, Martinique. Photo Florence Ménéz, June 2021. DOI: 10.34847/NKL.799C51NY.

A "clue paradigm" (Ginzburg, 1980: 25) is adopted by all the residents interviewed: this indexical model is held up as material evidence of the 'dead' object. For the residents, photographing it was part of a process of transferring this evidence into the public sphere, just as the residents who posted on social media were doing themselves. Ginzburg distinguishes between "inanimate or living" indices provided by nature (animal tracks, for example) and those provided by "culture" (writing, for example). In this instance, the aim is to transform these clues of degradation—clues that are not static but in a state of constant transformation.

Evidence from the field: sharing a sensorial perception of the Sargassum crisis

This type of knowledge involves what Ginzburg calls "imponderable elements: smell, a glance, intuition" (Ginzburg, 1980: 32). We will start with smell as a volatile cue, one that is difficult to capture through photography or graphic representation. As for the odours emitted by Sargassum, different experiments can be conducted, but there is no particularly heated olfactory controversy. The smell of decomposing brown algae bears no resemblance to that of durian, the fruit that 'divides the world in two', studied by the anthropologist L. Mariani (2022). It does, however, offer a spectrum of what is bearable and what is not: for some residents interviewed, Sargassum may evoke the smell of low tide or the slightly sulphurous scent of mangroves, attributed by some to having become accustomed to the foul odour, and by others to the impossibility and incomprehension that a healthy life could exist with this smell / or a healthy relationship with one's environment. It is more a smell of 'rotten eggs', 'decomposing carrion' and 'corpses'. Odours fluctuate and can be present at any time of day. Sometimes, the fumes of toxic gases can be detected even before dawn, when the dew awakens the sense of smell.

Thus, to photograph or illustrate these clues, we must ourselves engage with a phenomenology of perception and share a community of experiences that is also reflected in this community of physical traces or in its life journey. Lucas Pernock, the

young graphic designer, 'grew up with Sargassum'; he is familiar with this experience, and this is evident in the way he reports not only on the responses of those interviewed during the study but also on his own reactions. Ethnographic research, particularly through the method of participant observation, relies on the sharing of experiences, including sensory experiences and the sensations and reactions triggered by smells. This constitutes a "sensory landscape" (Wathelet & Candau, 2013) that is constantly at our disposal, which we experience as residents, whether we like it or not, according to our own olfactory sensibilities and physical conditions. The aim is to put the researcher's body to the test, temporarily and in a protected manner, in order to interpret this landscape, whilst also attempting to escape it using the same strategies employed by the residents (for example, perfuming one's home, inhaling essential oils or seeking temporary refuge elsewhere). At the beginning, the interviewees ask us if we have ever had this kind of experience: "Have you ever found yourself unable to stand the smell?". It is indeed the case that the smell of Sargassum can be unbearable, causing nausea and immediate symptoms such as headaches. Our interviews took place in locations that best suited the interviewee's wishes and comfort; some wanted to conduct interviews "in the Sargassum", so that we could experience the physical strain, whilst others preferred to draw us into their ritual of escaping the unbreathable. We therefore sometimes conducted interviews in Marie-Galante, notably far from the strandings. Such was the case with the interviewee who wished to hold the discussion on the beach, in a spot sheltered from the sea breeze, where he retreats to relax and escape the confinement of his home, and thus escape the harmful effects of the gas on his domestic environment. The participant reports suffering from this odour, which causes him respiratory problems:

"I put a towel over my head so I could breathe normally, as if I had a sheet over my head. It was a towel to try and filter out some of the smell. A sheet isn't enough; it's too thin. The towel is thicker, made of terry cloth, so it filtered out some of the smell, and I didn't notice the smell as much, you see? I put a towel over my head. Sometimes it annoyed me too, so I'd take it off and I could smell it again. It was sickening. I couldn't stand it, I couldn't stay there. But little by little, I got used to it. Now I sleep there, and when I'm asleep, I don't even notice the smell anymore²."

At first glance, this clue about the smell seems to be a digression from the presentation's main aim, which is to highlight photographic and graphic representations of the slow-moving disaster. Yet smell influences the way we document the phenomenon. Indeed, the researcher's body is also put to the test, all the more so as we are not seeking to escape the Sargassum, but rather to live 'in the Sargassum' and to meet the people who live there³.

² Lucas sketched these strategies in his notebook while we were conducting the interview. These sketches will be the subject of another article.

³ I believe this involvement is necessary to achieve the most symmetrical relationships and experiences possible, even though – as I do not live there permanently, nor do the students on work-study programs – this short-term involvement may invite criticism. I am aware that it is much easier for us to leave the affected

Momentous events that will go down in contemporary history

We will continue with the 'glance', put forward by Ginzburg as a second intangible element: the issue at hand goes beyond the mere degradation of coastal landscapes and developments. The aim of this study is to view landscapes and objects as clues, and to explore the potential communicative function of the photographs, as presented in the interviews. For this perspective of the 'glance', we shall focus primarily on photographs of dilapidated objects. Firstly, it seems clear to us that the materiality of these objects presented to us crystallises a life, a history, a heritage and a daily existence that bind us and attach us to our everyday space, thus representing our habitability. Secondly, and here the third intangible element, 'intuition', comes into play: the presence of these objects serves as a testimony, as proof, that 'something is happening', and that 'when we see what is happening to the objects, we wonder what is happening inside our bodies'. The first material traces providing a 'clue paradigm' inscribed on the object are those of corrosion caused by gases. By observing the corrosion of pipes, jewellery, coins and household appliance parts, each resident creates their own 'natural home sensor', as it was described to us. A system for measuring environmental degradation is in place in almost every household, notably through an experiment involving placing coins on a table and checking how dark they have become: how many days does it take for the coin to oxidise? The demonstration is also carried out on personal items worn in contact with the body: several interviewees wore silver bracelets or rings and, thanks to the variation in their tarnishing, they could see the dangers they believed they were facing, which became a sort of barometer of danger. These marks are visible on jewellery and woodwork, and they can disappear even without cleaning, when the Sargassum no longer washes ashore for a few weeks (particularly on PVC ceilings, usually installed on terraces).

Most interviews begin with a list of damaged items, which the interviewee lists in a virtually systematic order, from the outside in. The list covers all parts of the building, from household appliances to more personal items, such as ceilings stained with black marks, taps (fig. 5) and tarnished mirrors, faulty televisions and air conditioners, unusable jewellery and decorative objects that people no longer wish to display. The objects are therefore discarded, hidden away in a drawer, and a sense of shame sets in. The ethnographer's intervention makes it possible to remove this object and place it in a space where discussion can be prompted. The object is no longer dirty, 'unclean' and useless; it regains a social purpose.

areas than it is for the local residents. Strategies shared along the coast are put into practice, on the advice of local residents, particularly the use of electronic devices, in order to bear witness to their living conditions. These possibilities raise moral and ethical questions, which can be resolved in part pragmatically through documentation and mediation work carried out outside the territory in question.



Fig. 5 In La Désirade, this tap, photographed here on the table on the interviewee's terrace during our conversation, will be placed in a transparent box and displayed at various events. Photo by Florence Ménez, August 2025. DOI: 10.34847/nkl.6154ztn6.

This tap has an unusual history: it had been dismantled by the local resident when I came to carry out an interview. He had just replaced it with a new tap. After photographing it (fig. 5), I asked him if I could take it away so that I could display it in a different context. He packed it into a plastic bag. You can see in the photograph that black marks are seeping out of it. I took this plastic bag back to my research laboratory in mainland France and bought a transparent Plexiglas box. The FaBlab (Open Factory) at the University of Brest then placed this tap (along with another oxidised tap, donated by a contact in Martinique) inside the box. At that point, the tap, weakened by oxidation and handling during transport, split into two parts. This evidence will be presented outside the context in which the problem arises. But also not just the object in 2D but in 3D. Indeed, the photographic process offers the possibility of sharing the effects of strandings outside the territorial context. The list of damaged property, as recounted by residents of the affected areas, draws on a tragic discourse, as evidenced by references to 'dead jewellery' or the 'dead television' (Ménez, 2019), or even in a summary and definitive conclusion about the situation: 'everything is dead', usually followed by the reflection already mentioned above: "when we see this, we wonder what is happening inside us". The damaged object, characterised by its state of deterioration due to oxidation, offers a subject of engagement that is both visual and discursive. Thanks to the focus that the camera or recorder applies to the object, it becomes a witness to a story in the process of being constructed, or rather of unravelling. The attention paid to the object, as a sensory and visual witness, then establishes a dialogic link between the ethnographer and the resident. This attention also serves to establish a channel for the dissemination of embodied experiences, situating the ethnographer within a domestic context that is likewise influenced, despite their relatively brief exposure to the sargassum and the possibility of disengaging (through their geographical mobility) from this experience. The intensity of the traces on her body will be reduced, but her task will be to bear witness to the traces of others' lives through photography and speech. This evidence will be presented beyond the context in which the problem arises.

Relational Ecologies and Attachments

As gases pass through homes and leave traces of their flowing or stagnant passage, measuring the effects of these gases on objects could, according to the residents' understanding, provide an insight into how these gases pass through the body. Residents interpret these traces as signs of oxidation, in addition to oxidation caused by salinity, which leaves traces of rust rather than black, volatile marks (Bérard & Ménez, 2024). Numerous clues are detected by the residents. Other clues are created by them: the experiment with coins, for example. The clues give rise to temporal markers, correlating with the arrivals of sargassum. However, this is also evident in the domestic environment, where it manifests as the deterioration of precious items through the oxidation process. A typical example is a decorative object in the home of a respondent in Marie-Galante, Guadeloupe, which was used to illustrate the degradation of these ubiquitous items. The resident cleaned one of the three spice jars (fig. 6) to show how the gases had oxidised the inscriptions 'nutmeg', 'cinnamon' and 'thyme' as well as the floral decoration. This phenomenon is due to the presence of a metallic component in the decoration.



Fig. 6 Small spice jars. Behind these three spice jars, you can see a teapot with an oxidised metal lid, a bottle of champagne with a once-golden label, also oxidised, and on the left, the cleaning product used. Capesterre-de-Marie-Galante, Guadeloupe. Photo by Florence Ménez, April 2022.
DOI: 10.34847/NKL.CDEBKIL3.

Traces to erase

The experience of 'seeing' was important in establishing the evidence. On several occasions during the interviews, we observed that the damaged objects were staged by the interviewees for the photograph. Not only did they arrange them in a particular way on a table, under suitable lighting, but they also offered to clean them to remove some of the traces, in a process that was performative here, for the purposes of photography and ethnography, whereas outside the interview setting it is a restorative act. This can be seen in the photograph showing a cymbal: the musician had no need to use his

instrument that day but nevertheless carried out the cleaning process in detail and to some extent. For smaller objects, such as spice jars, the cleaned object is placed in contrast to the uncleaned one, in a before-and-after arrangement, which also demonstrates the act of cleaning as a means of restoring the object's appearance and functionality, and as a symbolic erasure of the shame and fear of being regarded as 'unclean', because one does not take care of one's everyday objects, and is therefore not open to sociability. The sudden appearance of damage caused by algae in everyday life is reshaping the way we keep our homes clean and tidy. The opportunity to try cleaning was offered to me spontaneously, without my having to ask for it explicitly, accompanied by an almost ritualistic phrase: "You'll see the difference". The act of cleaning was accompanied by a discussion of the steps to be taken, the actions involved, the practices to follow, the products to use, how long the cleanliness would last, or the impossibility of restoring the object to its previous condition—and thus the necessity of abandoning the cleaning. The object was then stowed away at the back of a cupboard or left in plain sight. It was rarely thrown away, with the exception of electrical appliances, which have a different, non-emotional status. Televisions, fridges and air conditioners were therefore left outside, awaiting removal to the tip and replacement, generating not only material pollution but also a significant cost for residents (fig. 7).



Fig. 7 Alexia Carbeti created this other comic strip. It illustrates the difficulty residents told us about during interviews in keeping their electronic devices in good working order, as well as retailers' refusal to process these purchases when they are informed, at the point of finalising the purchase and providing their address, that the buyers live in neighbourhoods affected by Sargassum. Illustration by Alexia Carbeti, June 2021. DOI: 10.34847/nkl.1646wkvy.

This event also provided an opportunity to discuss strategies for protecting these objects. Whenever the interviewees offered to show me how and with what product they

cleaned their belongings, I asked to photograph this act of cleaning, which, taken out of context, would have seemed a mundane task. In this particular context, it is a battle against fumes, a battle for the territory of the home, the maintenance of domestic order and the elimination of dirt, regarded as an unwelcome presence, as something that does not belong here (Douglas 1966). Thus, I observed and photographed residents cleaning their jewellery (figs. 8 and 9), as well as a musician cleaning his cymbals (fig. 10) with various products, some of which were toxic. The three photographs presented here offer a series of visual testimonies.



Fig. 8 This participant shows us how she cleans her jewellery with a silver polish. Photo by Florence Ménez, April 2021. DOI: 10.34847/nkl.ffb200ah.



Fig. 9 To protect them as much as possible from corrosion, her jewellery is wrapped in cotton, then in a second layer of protection (tissue paper), and finally packed in a paper bag. Despite these protective measures, she notes: 'The jewellery is dead. We can no longer wear it.' Photo by Florence Ménez, April 2021. DOI: 10.34847/nkl.d9b86fco.



Fig. 10 On the island of La Désirade (Guadeloupe), a musician uses hydrochloric acid to clean his cymbals, which have been oxidised by gas emissions from Sargassum seaweed. La Désirade, Guadeloupe. Photo by Florence Ménez, August 2025. [DOI :10.34847/NKL.68CC110Y](https://doi.org/10.34847/NKL.68CC110Y).

As can be seen in the photograph showing a cymbal, the musician did not need to use his instrument that day, but he went through the cleaning process in detail and carried out part of it.

Epidemiology and situated knowledge: illustrating the discomfort

To introduce the second part, which focuses on visual anthropology with an emphasis on graphic design, I would like to share a second excerpt from the ethnographic research. In May 2021, a meeting was arranged at the Lycée Victor Anicet in Saint-Pierre, a town in northern Martinique on the Caribbean coast, spared by the strandings. In collaboration with a member of the College, a project was made for a class of students enrolled on a national diploma in fine arts, specialising in visual communication and graphic design. The aim of this emerging collaboration is to create the SaRiMed project logo. After the students presented various logos they had designed, Alexia and Lucas approached me to discuss the possibility of undertaking an internship on the project⁴. They have two differing perceptions of the nuisance caused by Sargassum, due to their life experiences. Alexia has been spared the presence of the seaweed as she lives in a town in the south of Martinique, but Lucas 'grew up with Sargassum', as mentioned earlier, in a town on the Atlantic coast.

The phenomenon began in 2011, coinciding with Lucas's tenth birthday, when a large build-up started to form in front of the family home, a house situated closer to the mangrove swamp, where the Sargassum became trapped and began to decompose. When concentrations of hydrogen sulphide and ammonia were high, his school was forced to close on certain days. On the first day of the course, a Monday morning in June 2021, we arrived at the seaside. Sargassum seaweed had accumulated in this highly urbanised neighbourhood, in a row of houses wedged between the bay and a hill. A lady

⁴ The graphic methodology was put into practice during a longer placement the following year, as part of the second phase of the qualitative surveys, which were conducted on the island of Marie-Galante, in the Guadeloupe archipelago, in June 2022, followed by a role as engineering assistant for Lucas Pernock, responsible for the project's graphic coordination. Alexia Carbeti was working on a project outside the scope of the main project.

called out to us and asked us to come up onto her terrace. She said to us: "When I see this sargassum, it kills me," using the same rhetorical register we had discussed in relation to 'dead objects'. I took out my notebook and Lucas took out his tablet. The lady had a lot to say about the impact of the seaweed on her life. She told us that her daily life had become a struggle, with symptoms such as nausea, palpitations and sleep disturbances. Like thousands of other coastal residents, she uses avoidance strategies, including relocating: she leaves her home for several hours a day, seeking hospitality from family members living far from the Sargassum, and using various tricks to protect herself (using essential oils, closing doors and windows, wearing face masks). Sometimes she feels discouraged and gives up; at other times, she perseveres and collects her oxidised belongings to clean them. I listen to this now all-too-common story, taking notes in my notebook and occasionally glancing at Lucas, who is also taking notes on his tablet. Then the lady feels she has nothing more to say. The conversation ends and Lucas turns his tablet screen towards us. We then see a portrait of the woman we've been speaking to.



Fig. 11 Portrait of an interviewer. Le François, Martinique, Lucas Pernock, June 2021. DOI: 10.34847/nkl.6d4f6qqg.

We are both surprised and delighted, in different ways: she, at seeing herself depicted in a drawing, and I, at being a direct witness to Lucas's artistic talent and insight. The drawing technique used by Lucas Pernock is known as 'character design', which involves taking one or more key elements of a character to highlight a particular trait of their personality. He also draws on cartoon-style illustration in his work. The drawing will reignite the conversation. This situation of simultaneous drawing and dialogic process forms the starting point for adjustments made to the interactions between the different techniques used in the descriptive, reflective and dissemination phases. It also explores the potential influence of these practices on the perceptions and knowledge of residents in areas affected by Sargassum. When it comes to measuring the effects on the body, we find ourselves at an impasse, as we are dealing with the inaccessible interior of the body—the unknown. We must therefore draw on our imagination to envisage how the gases might affect the inside of the body. The following ethnographic sequence will illustrate the issues we face when meeting people living near the coast, who must constantly strike a balance between their private lives and their immediate surroundings, where the sea once was. A few days into his placement, Lucas Pernock and I visit another affected

neighbourhood: the home of a retired teacher who had already welcomed me a few weeks earlier. Her garden surrounds her 1950s concrete house, which has four rooms on a single level. The garden borders a mangrove that gives off a strong smell of ammonia. The brackish water is greenish, dotted with unappetising white puddles and decomposing Sargassum. Previously, the sea reached the edge of our host's garden. During our visit, the sea is several dozen metres away, pushed back by a mass of Sargassum that has been washed ashore for weeks, fossilised into blocks with a mouldy surface (fig. 4). As usual, I took some photos to document the phenomenon. When I return in the coming years, I will take more photos and print them out at our contact's request so that she can see how things have changed. For example, by August 2025, the sea had regained ground and the clumps of Sargassum had been replaced by the flowing water. The only positive aspect of this scene is the growth of mangroves breaking through the surface. Near the mangrove, our contact points out what she perceives as a smell of carrion. The portable sensor we are holding indicates high levels of hydrogen sulphide. To grasp this altered landscape, we must mentally take note of all the things and beings that inhabit these places, either by noticing them ourselves or by having them pointed out to us. In this case, our interlocutor points out that her dog's eyes are red due to irritation caused by the brown algae. In another neighbourhood, a woman tells us about her cat's sensitive sense of smell and explains that it takes refuge in a safe spot in the house when the smell of Sargassum is present in the morning, when she wakes up and leaves the house. We do the same: we retreat to a safe spot. Our companion invites us in. She then repeats a scene she has already acted out with me. Here is the sequence of movements and postures she asks us to follow: she points to the armchair to the left of the door. She sits on the sofa almost opposite. She points to the armchair on the right for Lucas. The seating arrangement is by no means random. I told Lucas that when I first came here, our hostess had already tried this with me, so I was in Lucas's place. That day, the recorder was on the floor between us. I'm facing the corridor leading to the garden and the sea... which is no longer there. The wind carries the smell of rotten eggs. I feel as though I'm holding my breath. I breathe in that smell. And soon, I feel nauseous. I had to ask to sit on the chair to the left of the door. My reaction of disgust and my request to move proved to our hostess that her experiment was conclusive: she had created a virtual map of the gas dynamics in her house, and I had just proved her right. After the second experiment, which was identical to the first except for the presence of Lucas, who was to sit in the seat I had been assigned the first time, Lucas drew a map of the living room showing the flow of air, illustrating this by personifying it as a ghost and giving it the shape of a question mark (fig. 12).

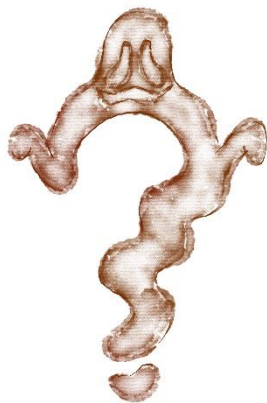


Fig. 12. What exactly are these gases? How do they spread? What effects do they have? Based on their observations, many participants now believe that they are heavy gases which circulate or linger at ground level, which is scientifically accurate. Lucas Pernock, june 2022. DOI: 10.34847/nkl.8f674a1t.

This sequence of gestures and postures serves a purpose: our interviewee is conducting an experiment in her living room so that her visitors can describe the effects of Sargassum on the body and how they gauge 'what is happening', much like the residents of Fukushima interviewed by the anthropologist S. Houdart (2017). We can also observe what the Sargassum drives people to do, and how they conduct experiments and generate knowledge in their homes, which have become laboratories for experimentation. Our interviewee describes her experimental protocol involving coins, a practice shared by other residents and one that I myself follow when staying in the affected areas: the coins are placed in the direction of the Sargassum drift, some in a small dish, others in a sealed plastic tube that previously contained tablets, and still others in a corner of the sofa. After several days, or sometimes even several hours, the result is the same for all the residents conducting this experiment: the coin shows black discolouration on the side exposed to the wind. Initially, she began a process of cleaning it, but subsequently, as is often the case, she gave up, either throwing it away or keeping it as evidence.

For those who experience it daily, these are not insignificant traces; they are the traces of a catastrophe that is neither radical nor spectacular because of its low intensity, but which is nonetheless a catastrophe. As we saw earlier, these signs make the consequences of the gas visible, and this aspect is captured in photographs. In contrast, accounts of the gas's effect on organs follow a narrative structure and a correlation between damaged object and damaged organs (Ménez, 2019). Thus, our interviewee tells us that one night, she didn't smell the gas, but felt it go down into her stomach. During this part of the interview, she mimes the gas rushing rapidly from her mouth along her digestive tract to her stomach and punctuates her gesture with a loud "bigidim." She also shared her fear of learning, after a follow-up chest X-ray, that the image would reveal a state of organ deterioration, which she imagined as blackened and damaged "like those of a smoker, even though [she] has never smoked." Lucas extrapolated an image of the

body's interior from our interviewee's description and drew lungs oozing Sargassum seaweed like blood.

The illustration that Lucas imagines based on this story echoes the opening lines of Aimé Césaire's poem "Dit D'errance," included in the collection *Cadastre : Ile de sang de sargassses* (Césaire, 1961). Lucas will use the same ghostly figure as the one used to represent what could be called the "gas issue" (fig. 12), a ghost that symbolizes the insidious and still unknown effects on the body (fig. 13).



Fig. 13 "I think about my lungs, they are the lungs that breathe and I think about smokers, for example, who smoke, who smoke and then when they go to the X-ray, the lung is all black." Design by Lucas Pernock, june 2022. DOI: 10.34847/nkl.bb0c3n1r.

Although the effects on the body remain uncertain, the region's inhabitants assess the future in relation to the present and other environmental pollution phenomena. This projection into the future (using intuition as a clue) includes the premonition that, as with the effects of the Kepone pesticide on human health, the effects of the gases will be measured over a much longer period than their actual occurrence.

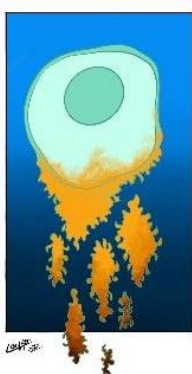


Fig. 14 "Sargassum destroys cells", says one interviewee in Marie-Galante, who fears that the gases emitted by Sargassum could affect cells. The illustrator decides to depict a cell, imagining it in the colour of the sea, from which seaweed oozes. Design by Lucas Pernock, june 2022. DOI: 10.34847/nkl.b857kamw.



Fig. 15 This illustration, created after an interview with a resident of Marie-Galante, provides the title for this text. Marie-Galante, Guadeloupe. Illustration by Lucas Pernock, june 2022. DOI: 10.34847/nkl.219c3m7h.

About thirty drawings have been made so far by Lucas Pernock, and 3 strips by Alexia Carbeti during her 15-day internship. Among these drawings, I chose one that to date best represented the imagined effects of bodily experiences. The title of this presentation 'like napalm', reflects the emphasis we wished to place on the descriptions of the gases, the dangers and the measures taken by the residents (fig. 15). This verbatim account struck us, as much for its historical significance as for the circumstances in which it was spoken: at the end of a semi-structured interview, when Lucas Pernock asked her his usual question ("what does this gas remind you of?"), the interviewee remarked with an ironic laugh that the gases released by the brown algae reminded her of napalm ("it was like napalm"), a chemical agent used by the United States during the Vietnam War with the aim of total destruction. She adds that the difference between the hydrogen sulphide released by the decomposition of Sargassum and napalm is the time it takes to cause death: on the one hand, chronic toxicity; on the other, an immediately lethal substance. She was herself surprised by her statement. She is not the only one to have been struck by the analogies that came to mind. A destructive, pervasive, harmful gas; a presence that is hard to bear. A whole range of imposed proximity and imposed control emerged during the interviews. The answer to the simple question posed by Lucas Pernock at the end of the semi-structured interview, which lasted about an hour, allowed for a sense of spontaneity to emerge on a foundation that had already been stirred up, explored and described during the hour preceding that question. Although asked by someone other than the person who had conducted the interview, it was nonetheless not detached from the rest of the conversation.

Conclusion for an epistemological opening

The aspect of the research focuses on different measures of risk, in particular the way in which empirical knowledge is formed and recounted. We have sought to describe this gas contamination and the resilience of bodies through various means: through

descriptive writing during a participatory ethnographic study, through interviews with residents, through documentary photography, and through this graphic approach to revealing the invisible by giving it form, so that it becomes almost tangible, translatable, and part of a narrative. We have employed photography and graphic design such as possible methods for revealing visible and invisible traces of damage to personal belongings and bodies.

The empiricism of this qualitative research, aimed at making visible bodily damage that is at first glance subtle, has produced an epistemological opening towards visual anthropology and its various ways of interpreting images co-produced in the field (Becker, 2007; Conord, 2007; Le Meur & Petit, 2023; Leon-Quijano, 2024; Pink, 2001; de L'Estoile, 2005). For the design part of our epistemological framework, we are thus following the example of others ethnologists who have formed fruitful partnerships with graphic designers, describing it as “anthropographism” (Doublier, 2017; Horiguchi et al., 2021; Roussel & Guitard, 2021), which enables “access to sensitive information and its representation” (Borsus, 2024). The functions of this drawing are often to reveal, in the truest sense of the word: “To reveal to someone something that was unknown, hidden or secret”, “To make something clear or obvious”, but also, in relation to photography, “To bring out the latent image on a photographic plate, film or paper”⁵.

In terms of the reception of these photographic and graphic documents, we have distinguished between the short and long term: in the short term, our relationship with our interviewees shows us that drawings, even more so than photographs, establish a dialogic relationship during the elicitation phase, by revisiting the interviewees to give them a large-format print (A3) or prints in the form of postcards, published in February 2026. This methodology, which functions here as a sensory translation, has been endorsed by local residents, some of whom told us that it helped them overcome the problem by creating visual representations of their unease. One woman told me, upon seeing the drawings: “I’m no longer afraid of the Sargassum because it has been personalised; I can now see it in a different light.” In 2025, during phase 2 of the SaRiMed project, we will continue this combination of ethnography, dramatised readings and graphic design—all of which are ways of capturing the world in detail—by focusing on ordinary interactions and seemingly mundane ways of life, part of everyday existence, yet an everyday existence transformed by environmental degradation. The co-creation of these means of narrating and conveying these embodied sensory experiences, through this mediation, was incorporated into the project’s design and its presentation to the funders: the Fondation de France, RESSAC and the UBO Foundation.

⁵ Definition of the Centre National de Ressources Textuelles et Lexicales (CNRTL) online : <https://www.cnrtl.fr/definition/r%C3%A9v%C3%A9ler>.

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