Residents of the Chemical Valley demonstrated outside the Arkema site in Pierre-Bénite (France). Credit: LP/Cyril Michaud.

Exploring Para-legal Solutions to Protect Humans, Ecosystems, and Democracy: A Reflection in the Context of the Governance of Industrial Risks and Pollution

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The law organizes society by guaranteeing everyone's rights, duties, and responsibilities, in particular by ensuring the conditions for a healthy life. It is thus an important, even essential, tool for protecting populations exposed to health risks and responding to societal concerns generated by local environmental health issues. However, because of the many power relationships and issues specific to the various players involved, as well as its intrinsic weaknesses, the law is sometimes insufficient to fully ensure its protective role in the long term.

It is this incompleteness of the law that local residents and associations are confronted within the Chemical Valley (Vallée de la chimie), south of Lyon, France. This area has developed as a major industrial and economic platform since the second half of the 19th century and is home to a large number of chemical companies. These companies are subject to strict regulations concerning the major environmental risks they can generate; however, inspections show that they regularly break these regulations. In 2020, the Lyon group of Notre Affaire à Tous initiated a research project to document these violations and to ascertain the feasibility of taking legal action to shed light on the situation. The group also wanted to bring these companies into compliance with current regulations. The focus developed on the two industries that accumulated the most infractions, against which the Notre Affaire à Tous – Lyon built a legal case.

On 12 May 2022, two weeks before the launch of the legal action, a TV report was broadcast about per- and polyfluoroalkyl substances (PFAS) discharges in the Chemical Valley (Boudot,2022). PFAS, toxic fluorinated chemicals used in the manufacture of many everyday products, are the source of an unprecedented contamination of water, soil, and air and can be found in many foods and even in breastmilk. One of the companies targeted by the legal action, Arkema France, discharges 3.5 tonnes of PFAS per year into the Rhône River (Ayphassorho & Schmitt, 2022), a major pollution documented since 2011 (ANSES), with the first discharges dating back to 1957. Some samples taken from locally produced eggs and poultry show contamination levels over 100 times higher than the maximum recommended dose. Several PFAS act as endocrine disruptors, leading to serious pathologies of the liver, pancreas, and spleen, as well as malformations in developing fetuses (Polluants éternels , 2022). Moreover, these pollutants are characterized as "eternal" because of their very high resistance to degradation, their persistence and their mobility in the environment. In all, more than 350,000 people in the Chemical Valley could be affected by this health and environmental scandal. For Sébastien Sauvé, Professor of Environmental

Chemistry at the Université de Montréal, the Chemical Valley, with its factories and extensive historical production of PFAS, is a case of extreme exposure like few others in the world. He describes it as, "A glimpse of the worst - or one of the worst - scenarios we can have in terms of contamination" (Méallier, 2023). This situation directly breaches multiple agreements, laws, and regulations including Principles 6 and 7 of the Earth Charter, dealing with the prevention of ecological harm and sustainable lifestyles; the right to a healthy environment, recognized by the United Nations in July 2022; and the French constitutional principle (2005) and French fundamental freedom principle (2022).

The context of the PFAS scandal in the Chemical Valley is similar to other examples of major environmental health issues linked to local industries. In such cases, "concern [...] acts as the finally possible formulation of a question that would emerge into the open: is the industrial environment in which I live dangerous for my health and that of the inhabitants of my region?" (Osadtchy, 2016). Involving citizens is therefore essential to re-establishing a dialogue between civil society, scientists, elected representatives, and economic players, and devising long-term solutions to situations of chronic pollution (Laurent et al., 2022).

To what extent and how can citizens be involved in building such long-term para-legal responses to local environmental issues, such as chronic industrial risks and pollution?

Drawing on the lessons learned from actions taken after the PFAS Chemical Valley scandal and in other polluted industrial zones, we will see how, in reaction to the ineffectiveness of existing institutionalized forums for exchange, new channels of information (I.) and tools for

The Arkema plant on the banks of the Rhône, in Pierre-Bénite (France), in May 2022. Credit: Nicolas Liponne/Hans Lucas/AFP.

citizen empowerment and participation are being devised (II.), making it possible to envisage a new, local and more democratic governance of chronic industrial risks and pollution. These reflections are set in a French context but can be used in similar contexts elsewhere in the world.

I. Citizen Solutions to the Application of the Right to Information:

When it comes to industrial risks and pollution, particularly when they are chronic, the first challenge is to ensure that affected residents and, to another extent, employees of the companies responsible, can access and understand the information concerning them. French law has enshrined this right and created various mechanisms to make it effective. However, several regulatory and legislative changes have rendered these mechanisms ineffective, particularly since the 1970s, in contradiction with the stated objectives. Nevertheless, other, more democratic solutions can be imagined and are already being created to re-establish more effective channels of communication between industry and civil society.

For decades, industrial information in France has become more guarded and opaque, and overall, less accessible to the public. First and foremost, it is important to consider the evolution of regulations governing industrial pollution and risks have in France. This can be traced back to the early 19th century, when France's current regulations on industrial facilities were established, (and which) shaped environmental standards that were favorable to entrepreneurs. Waves of liberalization reinforced this trend that began in the 1980s. For a long time, the state ran strategic industries, but privatizations then accelerated in almost all industrial sectors. "By withdrawing from the capital of these companies, the public authorities relinquish their prerogatives of control. It also favors subcontracting and job insecurity, which contribute to the invisibility of both occupational and environmental risks in industrial production", explain researchers Renaud Bécot, Marie Ghis Malfilatre and Anne Marchand (2023).

All of this led to organizing the public debate around the industries as a tool for their social acceptability, rather than as an instrument for the democratic conduct of public policies concerning them (Osadtchy, 2016).

Thus, the waves of liberalization surrounding companies' environmental obligations, accompanied by a "cult of opacity, (a) desire to fragment information and (an) obsession with manufacturing secrecy, (have) inevitably (led) to mistrust" (Cheinet, 2020) on the part of civil society living near these facilities. Under these conditions, how can channels of trust be recreated to ensure the application of the fundamental principle of the right to information in environmental matters in contexts of chronic industrial risks and pollution?

In Europe, PFAS production plants are mainly located in Germany and in France with Arkema and Daikin in the south of Lyon, as well as Chemours and Solvay. Credit: AFP.

We must remember that information on the environment and pollution should not be merely a gesture conceded by manufacturers to concerned residents. In France, it is a right, "of any person to access information relating to the environment" 1 , established by the Environment Code. This principle acquired constitutional value when it was incorporated into the 2005 Charter of the Environment, which states that "everyone has the right, under the conditions and within the limits defined by law, to access information relating to the environment held by public authorities and to participate in the preparation of public decisions having an impact on the environment" (article 7) 2 . This right is also protected "at international level by the Aarhus Convention of 25 June 1998, on Access to Information, Public Participation in Decision-Making and Access to Justice in Environmental Matters, and was taken up at European level by Directive 2003/4/EC of 28 January 2003" (Droit d'accès , 2023).

Yet, despite these legal protections of the right to environmental information, it is still extremely difficult to access information that should be public. In May 2020, the European Commission gave France formal notice to improve access to environmental information (Droit d'accès , 2023). So, if the state and local authorities cannot compel industries to respect the law, including the right to information, and if the inspection services are limited in their ability to monitor controls due to a lack of resources (Fernandez, 2023), the only sufficient counterweight seems to lie in the integration of civil society into these processes of information and governance of industrial risks and pollution. The tension between, on the one hand, the lack of responsibility and care of the industry leaders, managers, and even government authorities to address this situation, and on the other, the citizens' sense of responsibility, fuels arguments to rethink the place and role of the citizens in environmental democracy issues like the management of industrial risks. Still, in the Chemical Valley, the PFAS scandal and the numerous offenses committed on these sites that rightly worried residents, reveals the lack of transparency,

comprehensibility, and space dedicated to informing citizens about the risks they face (Notre Affaire à Tous – Lyon, 2023).

Elsewhere in France, solutions have been developed to recreate safe, effective, and more democratic information channels. This is one of the aims of the Ecocitizen Institute for Knowledge of Pollution (IECP, by its acronym in French) in Fos-sur-Mer, another major industrial zone. IECP, founded in 2010, conducts local studies of all natural environments and their relationship to human health, as well as the risks and impacts associated with human activities, particularly industrial and logistics activities, all using its own funds. To this end, it has an independent laboratory for the preparation and measurement of samples, which are then entrusted to a network of partners. A scientific advisory board is also available to advise and validate a project or action programme from a scientific point of view, as part of a decision-making chain that ends with the Board of Directors, which then draws up the provisional budget for the project. This scientific board also guarantees the independence of the IECP.

150 participants registered for the meeting in Saint-Fons. Credit: Lucas Bessonna.

In Fos-sur-Mer, the IECP has created a channel for exchange and collective response, providing an institutionalized framework for information, communication, and awareness-raising on issues of chronic industrial risk and pollution. In the Chemical Valley, associations like Notre Affaire à Tous - Lyon and residents reflect on the creation of a similar local structure. Initial reflections suggest that a branch could be added to the IECP model, capable of monitoring and making accessible administrative documents relating to industries, to further the accessing and appropriating of information. Therefore, if the Eco-citizen Institute is a place of revived exchange, it can also be - and probably even more essentially - a place of citizen empowerment.

II. Reinventing Citizens' Ability to Act and the Right to Participate in Industrial Risks and Pollution

The IECP provides a framework for citizen participation; it aspires "to share power, to contribute to improving future decision-making and to enable citizens to become actively involved in environmental issues. [...], a principle of institutional planning which consists of involving interested parties or their representatives in the decision-making process. [...] This involvement is decisive with regard to the environment, because it arouses great interest due to the universality of the challenges to be met and the dangers associated with the irreversibility of

Residents in Oullins (France) participating in a meeting about PFAS. Credit: Rose Lamalle.

choices at international and national level" (Guillien and Vincent, cited by Hamdaoui, 2018, p. 569 - 570). The example of the IECP in Fos-sur-Mer shows that, in addition to being a channel for exchanging information, this system can be a real lever for citizen involvement and empowerment.

Indeed, the Fos-sur-Mer IECP goes beyond the creation of information and research. It represents a co-constructed mechanism between elected representatives, residents, and scientists, in a bottom-up counter-expertise approach whose output is intended to enlighten public debate, to "mediate between science and society" (Rotillon & Chamaret, 2023). What's more, it acts as a forum for democratic consultation, "an active form of participation in which citizens take the initiative. By (contrast), consultation is a passive form of participation, because it is initiated by the public authorities" (Prieur, cited by Hamdaoui, 2018).

Moreover, understanding the IECP's democratic role is essential if we are to grasp its power to transform the governance of industrial risks and pollution, or, more broadly, environmental health issues. This understanding is part and parcel of an increasingly widespread loss of trust in institutions, which is made all the more acute when scandals such as the PFAS scandal in Chemical Valley come to light. Mechanisms such as the IECP make it possible, beyond the proper transmission of this information and the scientific aspect, "to move away from an exclusive attitude of denouncing a health scandal" (Rey-Debove and Rey, cited by Hamdaoui, 2018) to a framework of appropriation of information relating to these issues and emancipation from their technicality and lack of transparency.

The role of citizens within the IECP is central, from governance bodies to the identification of pollution problems and research projects. A citizen's council, made up of around a hundred people who "use" the local environment (gardeners, fishermen, hikers, etc.), is trained in certain scientific observations in the environment, and can pass on its questions and queries

to obtain scientific answers. The very purpose of the institute - the participatory management of scientific research projects, i.e., "forms of scientific knowledge production in which actors from civil society participate, individually or collectively, in an active and deliberate way" (Laurent et al., 2022) - thus itself becomes a vector of empowerment. While the motivations, roles, and levels of involvement of civil society players may vary widely, these projects open up a repertoire of action for citizens, ranging "from data acquisition to empowerment" (Laurent et al. 2022). The citizen council is also represented on the IECP's board of directors, alongside researchers from the scientific council and other local players (associations, trade unions, local authorities, etc.), and is thus integrated into the decision-making process.

What's more, the long-term nature of this system means that it can act as a citizen and scientific sentinel in the face of chronic pollution, which is difficult to deal with through one-off studies or policies. Thus, while the IECP is not militant or political, its research and monitoring enable it to point out the responsibilities of industrialists and oblige elected representatives to take political responsibility for scientific findings (Osadtchy, 2016).

However, this example is still an exception in the French national landscape. As Olivier Laurent, an environmental health researcher at IRSN, points out, "as far as chronic risks in particular are concerned [...], opening up to society in the co-construction of research projects remains a field that needs to be developed in France, particularly as regards their links with environmental exposures" (Laurent et al. 2018). Participatory research models in the field of environmental health are more developed in other countries, like the United States, for example.

Still, in the Chemical Valley, as in other areas affected by industrial risks and pollution, citizens and associations inspired by the IECP model are also considering new ways of reclaiming their environment and acting on the risks to which they are exposed. The start of this mobilization work, which can be driven or accompanied by legal reflection, already appears to be a process of local democratic empowerment.

Using the examples of Fos-sur-Mer and the Vallée de la Chimie, their issues and mobilizations, we have observed how a mechanism, the IECP, can involve citizens in mobilizations on local environmental issues.

Although the right to information on environmental matters has been recognized by law, it is still very difficult to access information on these subjects, and furthermore, to even understand it. All too often, we must wait for the work of journalists or the occurrence of accidents to bring pollution or operational problems to light, and thus trigger pressure for politicians to seek answers and take action. Faced with this, another, more

democratic and long-term approach is proposed, which would enable the establishment of local citizens' watchdogs and rigorous scientific research tools based on participatory systems. On the one hand, this system would provide additional support for respecting the right to information and enable us to move beyond the reflex of denunciation and protest towards a place of multi-party exchange and co-construction of serious responses. On the other hand, it makes it possible to envisage the reappropriation of issues and territories by the citizens primarily concerned. In so doing, these movements are proposing a reinvention of the governance of industrial risks and pollution, from closed systems to more democratic ones, making it possible to envisage an industry more at the service of society and giving concrete form to a circumscribed local ecological democracy, attentive to the right to information and participation in environmental matters.

The IECP and the examples it inspires also make it possible to apply various principles of the Earth Charter, and even appear as a direct concretization of its Principle 13, which affirms the importance of “strengthen[ing] democratic institutions at all levels, and provid[ing] transparency and accountability in governance, inclusive participation in decision making, and access to justice” (Earth Charter Commission, 2000).

The words of Samih Hamdaoui, Professor at Mohammed V University in Rabat, highlights the need for more examples like IECP: "Today, more than ever, a new green democracy needs to emerge, so that all citizens can work together to develop tomorrow's solutions. The lessons of this democracy are not easy to assimilate; we are learning them in a tough fight against immobilism and bureaucracy" (Hamdaoui, 2018).

Photo credit: Eduard Müller

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