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The Role of Foresight in the Development and Implementation of Climate Action Plans. The Case of Paris

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ABSTRACT

This article describes the use of a foresight study to create and implement a *Climate Action Plan* in Paris, France. Foresight is the purposeful and structured consideration related to long-term future and can be used in the process of strategic planning. City management is a challenge under dynamic global changes, so the use of foresight can support these processes. Therefore, it is worth pointing out good practices of appropriate application of foresight in cities. Paris was not accidentally chosen as the subject of the case study. France is one of the origins for both future studies and the foresight approach (*la prospective*), towards which today's school of foresight is leaning. The main hypothesis of the paper is that the foresight study commissioned by the City of Paris, made by a consortium of external entities, was a useful element of strategic planning in the city. Research questions referred to the use of recommendations and inspirations from the study *Climate Action Plan* and the evaluation of the Plan's implementation. They were also supported by observation on the purpose and structure of the study. The following methods were used during research: desk-research, document analysis, comparative analysis and in-depth interviews with authors, a city representative and scholars. The study showed that the research item *Paris, an air of change* has the characteristics of a foresight approach, was prepared for strategic planning, and was structured with a horizontal and holistic approach to the topic, which resulted in a significant part of the recommendations being translated into the *Climate Action Plan*, the City Office's actions being in line with them. The use of foresight for *Paris Climate Action Plan* can be considered an example that sets good practices for city management in long-term planning.

1. INTRODUCTION

In the context of shocks and crises (e.g., the war in Ukraine, the Covid-19 pandemic) and in the face of cities' structural problems, research defining approaches to managing and planning urban development on the long term appears to be relevant. Managing cities, with all their complexity, is a particularly difficult task if approached without a defined vision and preparation (Dziemianowicz et al. 2012). Strategic planning in cities turns into a necessity, operationalizing the vision and transforming it into goals and policies (Dziemianowicz et al. 2012).

Moreover, it refers to programming development on the long term and taking into account changes in the surrounding environment, as well as the internal characteristics of the organization. Strategic management can be considered, from this point of view, as working towards this type of development. City management enters the category of public management, governance and management of a given territory, related to the socio-economic and natural systems

operating within it, which are geographically embedded too (Sorkin et al., 1984). Hence, for example, Dziemianowicz (2023, p. 39) emphasizes the term "strategic area" as "a fragment of space distinguished by the strategic activity of its stakeholders". While urban planning is nothing new, methods of governance and strategic planning are spreading in the face of the global trend of urbanization (United Nations Human Settlements Programme, 2022) and growing pressure on urban decision-makers to take integrated actions that would address both local and global challenges (e.g. European Commission, 2024). Cities are creating overall development strategies, but also strategies or plans on specific themes - resilience, smart solutions, climate change adaptation, etc. The use of foresight seems to be of particular interest in this process.

Foresight is the purposeful and structured consideration about the future (or the study of the future). Foresight considerations of the future are usually focused on the long term, from several years to several decades ahead, and should not be confused with forecasting (United Nations Industrial Development Organization, 2005). They are not meant to predict one right future, but to display a range of possibilities and create a desired vision of the future. According to Lum (2016, p. 59), it is "insight into how and why the future may be different from the present". Deliberations are purposeful as they are meant to serve something - most often to guide strategic decisions, inspire decision makers, show threats and available opportunities (Slaughter, 1997; European Commission, 2021). Also, it is structured because it is needed to use proven methodologies of research, adapted to thinking about the future (Godet, 2002). In conducting foresight processes, it is necessary to make proper use of the information obtained, especially expert knowledge, so that the results are as substantial as possible (FOREN, 2001).

There are methods of analysis and tools dedicated to foresight research, such as, the RAND Corporation's The Delphi survey technique (RAND was one of the first organizations to develop proprietary approaches, starting in the 1950s in connection with military planning), but many processes are carried out using traditional methods of strategic analysis, including analysis of the current situation and drivers of change. For example, variations of the PEST method are used in an alternative format adapted to future research (Dziemianowicz et al., 2023). More important than which of the methods one chooses is understanding the principles of the process and the research objective, as well as maintaining research standards.

Lum (2016) uses a set of questions to which the process methodology should be adapted. These include questions about the past, present and future - changes that have occurred in the environment and their causes, today's state of affairs and potential drivers of change, or changes and threats depending on the consequences of today's actions. Special attention should be paid to the fact that the methodology of foresight may vary depending on the object of study.

The objects of foresight can be industries, organizations, markets, sectors, communities or territories (Borodako, 2009). This paper deals with the latter, and therefore focuses on territorial foresight – a process of considering the future of systems operating in the space of a geographic area (which may or may not include administrative boundaries) to assist in its planning and management.

Territorial foresight is applicable on a regional (Godet and Durance, 2011; Klasik and Markowski, 2010) or city scale (Government Office for Science, 2016). In both cases, there are many examples from Europe and around the world that demonstrate the applicability of the foresight approach to urban needs. Borodako (2009) lists 26 European countries where foresight has been applied in state or regional administrations, and Glińska (2013) points to examples of foresight initiatives during strategy development by cities: Bordeaux, Brussels, Ghent, Genk, Copenhagen, Helsinki, Dublin, Ljubljana, Seville, Donostia, Irun, Burgos, Toledo, Stockholm, Lincoln, Liverpool, Edinburgh, Birmingham.

Cities use foresight for strategic purposes, such as analysing current and future trends (Birmingham), identifying development challenges and creating a shared vision for the city (Brussels, Bourdeaux), generating scenarios for the city's development (Dublin), or visualizing the consequences of undertaken investments and development directions (Helsinki). Some cities (e.g., Copenhagen) conduct foresight processes only for marketing purposes and to open up discussion on certain topics (Glińska, 2013).

The Bordeaux metropolitan area created its vision for 2030 through a multi-track consultation - first with stakeholders and, after preliminary results were communicated, in public debates and a public survey (Bordeaux Métropole, 2011). The scenarios for the development of Wroclaw by 2050 took a more analytical aspect. They were constructed by detailing key variables and uncertainties, and then performing a real-time Delphi study, i.e., multiphase surveys of a group of experts assessing the statements about the year 2050 (Bednarczyk et al., 2021).

This article describes the use of a foresight study to create and implement an urban policy. The aim of this article is to empirically evaluate the usefulness of foresight on the indicated example in relation to the theoretical conceptual background. The case study in this article deals with the use of foresight in Paris, including details of the process, methodology and effects. Two documents are targeted in this article – the study *Paris, an air of change (*Elioth et al., 2017), which

will be referred to as "the study" and current Climate Action Plan (City of Paris, 2018a) which will be referred to as "the plan".

2. THEORY AND METHODOLOGY

The research presented in this paper was based on the case study approach, as its premise was to examine in depth one example of the application of a particular approach in urban management. Yin (2009, p. 2) mentions that "the case study method arises of the desire to understand complex social phenomena. In brief, the case study method allows investigators to retain the holistic and meaningful characteristic of real-life events (...)". One of the examples of the method's application mentioned next is "organizational and managerial processes". The assumptions that accompanied the conducted research meet the theory according to which a case study examines the circumstances of a phenomenon, along with the many different relationships of the actors involved and other conditions, and the specific sources, including interviews, and documents (Schramm, 1971). Out of the types of case study listed by Priya (2021), descriptive, explanatory, and exploratory, the following study is mainly descriptive, as it focuses on describing the phenomenon along with the context from which it arises. The case study of the use of foresight in the strategic planning process in Paris arose from several factors. First of all, the French conditions for the development of foresight studies are special when compared to other places. In France, the subject of "*la prospective*" has developed, a distinctiveness from the classical concept of foresight being subsequently emphasized. Godet (2012, p. 47) writes that "*la prospective*, similar to the concept of strategic foresight, is the discipline devoted to shedding light on action in the present by using the power of possible and desirable futures". At the same time, he points out that foresight focuses on pre-activity, anticipation and is mainly concerned with technological change, while *la prospective* focuses on proactivity and building the future and takes into account a range of non-technological factors (Table 1).

Table 1. Strategic foresight and la prospective: what's the difference?

Category	Strategic foresight	La prospective
Attitude and goals	Focuses more on pre-activity, prediction and anticipation	Focuses more on pro-activity and building the future
Key success factor for innovation	Focuses more on technical changes	It takes into account a number of elements in addition to technology, including social issues
Forecasting tools	System analysis; Delphi method; Scenarios (by Herman Kahn)	In addition, methods that integrate actors and projects that build the future
Positioning of scenarios	Central, reduced to a limited number of variables and using, among others, storytelling	Central, with more variables, more rigor, based on morphological analysis. Doubtful, as creating scenarios becomes an objective in itself
Final result and role of the Futurist/ Prospectivist	Products in the form of reports for stakeholders, containing substantive knowledge developed by futurologists	The main effect is to increase customer awareness by engaging them in the process of predicting and building a vision of the future. The prospectivist is the moderator of the process and supervises the methodology

Source: Godet, 2012, p. 48.

Although it is possible to formulate a thesis that today foresight goes beyond the framework given by Godet (2012) and is more holistic in nature, it is impossible to dismiss the French prospectivists' long and interesting history of building their own approach for the study of the future. The author of the *la prospective* approach is considered to be Gaston Berger, who described his theory back in the 1950s, and shortly after that the first organization related to future studies was established - the Association Internationale Futuribles, founded by Bertrand de Jouvenel (Schultz, 2015). After that, in the 1960s *la prospective* or foresight (depending on the sources) began to be used in the French public administration. Among the main entities using this approach at the time were the Ministry of Transport, the Ministry of the Armed Forces, the Commissariat General au Plan under French Prime Minister, and the Delegation for Regional Development (DATAR) (Roëls, 2020). Over the course of more than half a century, approaches and ideas in the French administration have changed, but the practice of looking at the future has not been abandoned. In recent years, its own internal units to study the future have been set up by the Ministry of Agriculture (Ministère de l'Agriculture et de la Souveraineté alimentaire, 2023) and the Ministry of Culture (Ministère de la Culture, 2021), among others. In addition, the Energy Regulatory Commission has conducted its own foresight process (Commission de régulation de l'énergie, 2022).

In view of the widespread prevalence of *la prospective* or foresight in the French public sector, this study was designed, in part, to notice how the attitude of the central administration translates into the

performance of city structures. A second contribution was the proficiency of Paris in pursuing policies relating to climate change. Adapting to climate change and reducing human impact on it is currently one of the global challenges. The European Union's development policy is directed, in addition to territorial cohesion, towards sustainable development and reducing greenhouse gas emissions (Gløersen et al., 2022). The trajectory to reduce emissions began being set by the EU in the early 2000s through a series of processes resulting in the adoption of the climate & energy package (European Commission, 2023). Climate change in territorial terms is intrinsically linked to resilience and vulnerability, i.e. the ability to anticipate and then absorb and adapt to shocks and crises, which directly relates to the effectiveness of foresight as a supporting tool (European Commission, 2020). Due to the complexity of the issues of adaptation and mitigation, the relevant strategic processes are being carried out at various levels of government in member states, as well as stakeholders in metropolitan areas. Paris is one of the pioneering cities in this regard. The first actions on sustainable transportation were taken in 2001, the first actions on reducing emissions in 2004, and, in 2007, the first Paris *Climate Action Plan* was created, focusing on environmental risks (C40, 2018). In 2012, the Plan received an update - it was supplemented with, among other things, renewable energy issues (C40, 2016). In 2018, the current *Paris Climate Action Plan* (City of Paris 2018a) was published, which is the focus of this article. The plan was based on extensive public consultation and the document *Paris, an air of change* (Elioth et al., 2017), called a foresight study. It reveals that the approach to climate action in Paris has evolved, adding new baseline elements. Combined with the French tradition of foresight studies, the analysis and plan for Paris could provide an interesting example of a foresight approach in cities. The main hypothesis of the paper is that the foresight study *Paris, an air of change* was a useful element of strategic planning in the city. "Useful" according to the Cambridge Dictionary, means "effective; helping you to do or achieve something." Unlike the term "used", "useful" implies that the indicated item realistically meets the needs of the subject using it. In contrast, *use* alone does not make something valuable. Usefulness can be determined if the recipients/organizers of the process confirm its relevance to their operations and it is actually used to further plans and, more importantly, implemented as part of ongoing actions. Such a hypothesis initiated the consideration why and how the study was developed and implied the following research questions: a). To what extent and in what form are the conclusions of the foresight project used in the *Paris Climate Action Plan*? b). Are the actions taken by the city authorities in line with the results of the foresight work and the recommendations made?

Section 3.1 is devoted to presenting the document *Paris, and air of change*, analysing whether it is actually a foresight study and what its purpose and process of preparation were. The first research question is reviewed in Section 3.2, and the second one in Section 3.3.

The research for this paper was conducted stationary, in Paris and remotely, in the first quarter of 2023 and was done in line with project financed by SSHN scholarship from the French Government. It included an analysis of the literature on foresight and *la prospective*, an analysis of the foresight study *Paris, an air of change*, a comparative analysis of the foresight study and the *Climate Action Plan*, and in-depth interviews with representatives of the City of Paris, the study's authors and researchers. The analysis of the foresight study was aimed at structuring knowledge about the document - the listed activities, goals and milestones, recommendations, and the methodology employed. The comparative analysis of the documents was carried out by verifying overlapping elements and tracing the implications of the study's recommendations in the Plan. In-depth interviews with the above-mentioned stakeholders differed according to the profile of each interviewee, and were based on questions about the need and purpose of the study, the consortium's cooperation with the city, the use of the study and the implementation of the Plan, as well as the general state of strategic management and the use of foresight in French cities. An interview scenario was prepared, containing questions about five specified themes: strategic planning and urban management in France, preparation of the *Paris, an air of change* document, cooperation between actors involved in the creation and implementation of *Paris, an air of change* and *Climate Action Plan*, usefulness of foresight or *la prospective* in urban management, and, eventually, evaluation of *Paris, an air of change* and *Climate Action Plan* in retrospect. Each theme was assigned from one to four questions (depending on the specialization of the respondent and the institution represented). Finally, four interviews were conducted with representatives of the City of Paris, Elioth (private enterprise and leader of the consortium that developed the *Paris, an air of change* document), Sorbonne University and L'Institut Paris Region. The time range of the interviews was of 30 to 90 minutes.

3. RESULTS AND DISCUSSION

3.1. Reasons and purpose of the foresight study

The study *Paris, an air of change* was done by a consortium consisting of Elioth, Egis Conseil, Quattrolibri, Mana (all of which are private entities) and was published in 2016. It is pointed out that this is the basic analysis on which the current *Climate Action*

Plan is based. The City of Paris commissioned the study, for two purposes.

Firstly, it resulted from the Paris Agreement, a legally binding international treaty signed by 196 countries at the UN Climate Change Conference in 2015. Its terms include taking action to limit the rise in global temperature to 1.5 degrees Celsius. Another result was the development of an update to France's Energy and Climate Law, which establishes that climate neutrality is to be achieved in France by 2050. The obligation applies to all French cities and regions (Law No. 2019-1147, 2019). Paris decided to test possible ways to achieve the target (which soon became an obligation) of its own climate neutrality, so a consortium of engineers, sociologists and creatives developed the study.

The second issue was related to preparations for public consultation and broad inclusion of urban stakeholders in 2017 and 2018. According to the C40 Knowledge Hub: "to help prepare the Plan, Paris commissioned the study to inform the debate and consultation with Parisians on the vision for Paris by 2050, and analysis into the social and economic impact associated with actions proposed by the city" (C40, 2018). Work on the study took place within a consortium commissioned by the city. A team of engineers from Elioth, Egis Conseil, and Quattrolibri worked on potential trajectories for changes in emissions from various sectors and plans for potential projects. Mana was responsible for the sociological and demographic analysis regarding the changes in Parisian society. Originally, Paris commissioned the development of three alternative routes that would lead to the goal of neutrality, but in the end it turned out that only one route was possible, requiring a number of new projects.

The first question to ask when analysing the study is: is it foresight or *la prospective* at all (despite the study's subtitle suggesting it)? In this regard, it is important to return to some of the issues underlying today's foresight and *la prospective* in common. Clearly, these are approaches that deal with studying the future, usually in the long term. Both approaches use a specific methodology, are based on a research approach, and are not purely statistical forecasting. Their task is to serve a cause, to help the organization plan and act accordingly. As such, they should contain recommendations or inspiration, tailored to specific needs.

A frequent, though not always required, element is the inclusion of a wide range of stakeholders. Based on the above set of claims, it can be argued that the study is characterized by a foresight approach, as will be discussed below. The study contains 3 parts - an introduction to the problem of climate change (The Challenge), a diagnosis of the state and potential trajectories of change in Paris (The Carbon Neutrality of Paris: The 2050 Vision), proposals for action and predictions for future change (All About Carbon Neutrality). In part one, the authors outline the problem and implications of climate change, and what needs to be done to reduce undesirable impacts, including the role of cities. The second part presents the effects of statistical modelling in the form of various emission change trajectories, as well as an overview of projects in five sectors: energy, construction, transportation, freight and consumption. The third part proposes action plans for the aforementioned sectors, the Carbon Neutrality Saga, as well as a concrete timeline for political and administrative decision-making within the terms of the municipal government. The study culminates with conclusions, as well as a description of interviews with experts and graphic images of utopias for inspiration.

Paris, an air of change addresses trajectories of change and plans in the next decades, so it meets the condition of considering the future. Statistical analyses, including modelling and simulation of trajectories in R software, were used extensively to develop the study. However, all the analyses had a follow-up in the form of conclusions and proposals for action derived from it. The element that gets more consideration lately is the "Carbon Neutrality Saga", a sociological work that describes qualitative changes in the Parisian society. The study can be considered a work of research, often relying on statistical data, but going far beyond it. Unfortunately, a full description of the methodology used in the project is lacking, so it is not possible to compare it with that advanced in the scientific literature. However, the consortium did not rely only on its own expertise, but also took into account the opinions of experts. Fourteen interviews were conducted with representatives of public administration, business and NGOs. In the context of the endorsing the foresight approach, insufficient inclusion of stakeholders could be faulted, but given the internal diversity of the consortium and the requirements of the contracting authority (especially the scheduled public consultations), this was not necessary. Rendering the purpose and results of the work, the authors of the study themselves write that they provide "not the Bible, but rather Aladdin's cave: a source full of opportunities, challenges, questions, innovations, different trajectories, ideas and stories" (Elioth et al. 2017, p. 1). The expanded recommendations, complemented by factual and graphic inspiration, are a clear contribution to the planning process.

3.2. Comparison of the study's recommendations with the content of the Climate Action Plan

The study was one of the elements within the work on the 2018 *Climate Action Plan*. At the time of its

enactment, the plan had a progressive goal of achieving total climate neutrality by 2050, and its outlook went beyond the administrative boundaries of Paris. It also had a promotional goal of spreading awareness of the changes taking place and legitimizing consensus in the urban community. As the plan's authors write: "the new Paris Climate Action plan outlines a common future for a carbon-neutral city by 2050, which is adapted to extreme climate events and resilient in response to crises and shocks. It conveys a positive message for a sustainable and equitable city for everyone" (City of Paris 2018a, p. 9). The plan's authors refer several times to the document *Paris, an air of change* as a cornerstone and source of analysis, but more important is what escapes the text. The goal of this chapter is to examine how many project ideas and targets are taken directly from the foresight study authors.

The structure of the plan is based on five parts - a preamble containing a look back at the activities undertaken, the vision and objectives of the plan, and four chapters, each of which is a story about another element of the vision. Sector activities are assigned to each of these four chapters. Interviewees of the in-depth interviews indicated that the plan is not something completely created from scratch, but a synthesis of new projects and actions or agreements from other strategic documents of the city. This approach was due to the plan's far-reaching nature and the layered nature of the issue of responding to climate change - the areas of action include infrastructure and supply (Energy, Mobility, Buildings, Urban Planning, Waste, Food), living environment (Air, Fire, Earth, Water) and governance (Energy transition, Mobilization, Governance, Finance, Carbon offsetting, Advocacy). The goals and actions are clearly listed in the *Paris Climate Action Plan 2050 synthesis* (City of Paris, 2018b).

In 11 cases, there were proposals for targets in the study in general or for specific sectors, while in 7 cases the targets were reflected in the *Climate Action Plan* (based on the *Paris Climate Action Plan 2050 synthesis*). They were either translated directly or their idea or meaning was preserved, but the values and time to target were changed. Transportation and freight targets are a clear example. The plan includes goals of "100% cycle-friendly Paris" by 2020, banning diesel cars by 2024, gasoline cars by 2030, and implementing a "low-carbon urban logistic plan for Ile-de-France region" (City of Paris, 2018b, p. 4). Although the goals do not sound identical, they are directly related to the study authors' proposals, in the form of "whole of the municipal fleet of vehicles should be clean" (Elioth et al., 2017, p.151), ban all vehicles not comply with euro 7 standard" and "halving the use of internal combustion-engine-powered vehicles in urban centres; adapting the organizational structure of logistics in Ile-de-France 2026" by 2030, "traffic ban for the most polluting vehicles" by 2044 and "100% clean vehicles; 30% of commuting trips by bicycle or similar means" by 2050 (Elioth et al., 2017, pp. 145-160, 251).

In two cases, the correspondence was partial, that is, for example, one of two or more proposals from the study were selected and implemented in the plan. In two cases the proposals were not included in the plan at all. An example of partial agreement between the documents are the goals related to the energy area, where the plan sets targets by 2050: "50% less energy consumption; 100% renewable and recovered energies by 2050; 20% energy consumption from local renewable energies by 2050" (City of Paris, 2018b, p. 3), while the study focuses on investment in renewable energy, leaving out the issue of reducing energy consumption.

Table 2. Translation of goals from foresight study to Climate Action Plan.

Thematic areas	Goals translation
General goals by 2020	None
General goals by 2030	Full (the main assumptions of the goals in the plan overlap with the proposals from the study)
General goals by 2050	Full (the main assumptions of the goals in the plan overlap with the proposals from the study)
Energy	Partial (the study lacks goals about reducing energy consumption)
Building and urban planning	Full (the main thematic ideas are the same, although the targets differ in the two documents)
Mobility	Complete
Food	None (the theme does not appear in the form of targets in the study)
Waste	Complete
Air	None (the theme is covered differently in the two documents)
Adaptation	Partial (compliance only in terms of offsetting by natural surfaces, among other things)
New governance and general involvement (of actors)	Full
Funding, compensation, advocacy	Full

It is worth noting here that the proposed goals in the study are much more precisely described, since their role was to inspire certain changes, more than to impose a specific framework. In setting goals in the plan, Paris declared far-reaching changes, such as setting a ban date for internal combustion vehicles.

On the other hand, the *Climate Action Plan's* goals are not always formulated with precision,

resulting in a great deal of subjectivity when comparing them to each other.

The question of actions leaves less doubt - in almost all areas, the inspiration from the Plan's creators can be seen through the study. There are three sections in the study, where proposals for actions to be taken are listed: "Overview of projects to be carried out" in chapter two, "Themed action plans" in chapter three, "Managing the carbon neutrality strategy timeline" in chapter three. Since the *Climate Action Plan* is descriptive in nature, the *Paris Climate Action Plan 2050 synthesis* document was used for comparison, where these are described as "Key actions".

Key activities in the plan have been assigned to 9 thematic areas, 8 of which link to suggestions from the study. One area without a reference in the study is waste management. The other 8 areas connect in varying ways. They range from highly general topics, such as tree planting/green space expansion (the "Adaptation" area), to clear inspiration or even transfer of project ideas from the study to the plan. The study proposes the establishment of so-called "climate ambassadors" whose role will be to provide information and communicate with the local community. The plan's synthesis includes the action "Recruit 150 volunteers for the Climate, who will mobilize others to participate in daily climate action." (City of Paris 2018b, p. 12). Moreover, unequivocally translated are recommendations to develop an extensive program to renovate buildings, equipping a significant portion of buildings with solar panels, or going beyond the borders of Paris and collaborating on logistics, agriculture and the creation of green spaces.

The study's authors confirmed that all project ideas were organic and did not stem from previous plans or expertise for Paris. Consequently, one should see the foresight study fulfilling one of its main roles - inspiring actions to meet requirements arising from trends.

3.3. Climate Action Plan implementation, further life of the study

One of the research questions of the project conducted was: *Are the actions taken by the city authorities in line with the results of the foresight work and the recommendations made?* Therefore, during the interviews and on the basis of desk-research, an attempt was made to see to what extent the *Climate Action Plan* is being implemented, especially the actions inspired by *Paris, an air of change*. According to the research, the answer to this question is clear, although not all planned actions were within the city's competence. In reality, the activities that depended on the city were implemented, as evidenced by the annual "Bleu Climat" evaluation reports. It shows that the city acted in all the fields highlighted in the plan. Following up on the inspiration from the foresight study, it is important to point to the implementation of an advocacy network for climate actions - the organization of broad consultations, the appointment of climate volunteers who serve as a link between the city and the communities. This also ties in with an important element of the study - the Climate Saga, where it was emphasized that without community understanding of the problem and acceptance of the goals, implementation of adaptation will be much more difficult. A major project to renovate buildings to meet energy requirements is also underway. According to Bleu Climat 2022 (City of Paris, 2023), renovations and renovation subsidies allowed a gain of 54% in energy consumption and 56% in greenhouse gas emissions compared to 2009.

Cases where the plan envisages activities on the scale of a metropolis or the Il-de-France region may seem particularly challenging. One of the goals was to create a planning document for logistics within the region. In fact, Il-de-France enacted in 2019 a Logistics Strategy for 2022-2027 (Stratégie Fret et Logistique de la Région Île-de-France Agir pour une logistique maîtrisée, performante et innovante, 2019), but this was clearly not within Paris' competence, so it is difficult to evaluate such a goal. An interesting example of the inspiration by the study and of making performance realistic is the example of investment by Paris in RES outside its administrative borders. Firstly, it was included in the study as a suggestion: "to offset its residual greenhouse gas emissions, Paris will participate in the funding and operation of renewable capacities outside its territory" (Elioth et al., 2017, p.85), while the plan records the action as: "New forms of territorial partnerships to reach 100% renewable energy" (City of Paris, 2018b, p. 3).

In fact, the realization of this goal has been undertaken through partnerships with the Metropolis and other entities along the Seine, through the initiative SEM Axe-Seine Energies Renouvelables (La Métropole du Grand Paris, 2022). This is confirmed by an interview with an expert on the Paris region, who says that Paris has also been making land purchases along the Seine to promote organic farming and counter pollution of the river. This is another example of a key action inspired by the study, which in the plan it is stated as "building a sustainable food system with 50% of the food consumed in Paris from agricultural products from the Paris Basin in 2030, and 75% in 2050" (City of Paris, 2018b, p.8) and in the study as "(...) the city must nevertheless also support transition on the production side (...) develop urban farming in Paris and sustainable farming in Ile-de-France" (Elioth et al., 2017, p. 93).

It should be noted that the implementation of such wide-ranging measures has taken place and is still taking place during a rather difficult period. Since the

plan was adopted, yellow vest strikes have swept through the French capital, then the COVID-19 pandemic began, followed by strikes on pension reform. The pandemic in particular is an explanation for the lack of implementation of previously adopted plans for many other cities (OECD, 2020). Moreover, attention should be paid to the characteristics of the planned measures. They often extend significantly beyond the administrative area of Paris, operate at the intersection of political and legal boundaries, or require very large financial resources. Such activities require strong involvement of external partners, who may have different motivations and visions for the future. Despite the adversities, it can be concluded that, for the most part, the plan's assumptions are being implemented. Given the scale of inspiration resulting from the foresight process, it must be acknowledged that this has been, at least so far, a valuable project. In terms of activities undertaken, another issue of interest is the foresight study. It would be good practice for this type of study to keep being done, and for its role and contributions to be distributed across multiple other plans and strategies. However, this was not the case with the study *Paris, an air of change*. After the *Climate Action Plan* document was produced, the study was abandoned by the City of Paris and no longer serves as an inspiration or analytical contribution. From the information obtained, it appears that city hall employees do not refer to the study or are not even familiar with it. On the other hand, the study sets an interesting precedent in the city. Interviewees stressed that it was not standard procedure for the City Council to allow the publishing of commissioned studies, let alone to promote them as a separate document. Most documents prepared for the city are not available to the public, for example, on the Internet. According to the interviewees, accepting such a situation implies the high utility and quality of execution (and presumably marketing value) of the performed analyses.

4. CONCLUSIONS

Summarizing the research conducted, it can be said that the hypothesis was confirmed. The purpose of the study by intent was to assist the planning process in Paris by answering questions that the city hall considered crucial. It was to be used as a pillar for the *Climate Action Plan* and further considerations. The structure of the study was based on three parts that presented a holistic picture of the city's future in the context of climate change, addressing the issues of emissions trajectory, social changes, proposals for action and the scenario for their implementation. Thus, it addressed the city's main problem - what are the possible paths to climate neutrality. However, too little space was devoted to a description of the methodology of the work to be able to make conclusions about the use of foresight methods. The employed methods were based mainly on an expert and analytical approach, without public participation and involvement of the city decision-makers, which is unusual, especially in French conditions. For example, this is significantly different from the approach used in Bordeaux, where the process was entirely based on socializing the debate about the future (Bordeaux Métropole, 2011). Nevertheless, it is also an example of meeting the expectations of the usefulness of a process tailored to the needs of the city, which separately conducted a very extensive public debate related to climate action and the city's vision. It also shows that the selection of methods in foresight research is flexible depending on the goals of the process, and the main axis is maintaining the research approach and principles of conducting research. It can definitely be confirmed that the conclusions of the study have found their way into the final strategic document. It can also be stated that the Paris authorities generally took into account the conclusions of the study, as well as implemented the plan's objectives. Ultimately, the usefulness of foresight study in strategic planning in the city in that particular case study can be confirmed, as it was helpful and awareness-raising for decision-makers. Nevertheless, one should bear in mind the time-limited usefulness of the analyses, which were sidelined after the Climate Action Plan was developed. The use of foresight in Paris was exemplary for several reasons. It imparted actual expert knowledge, which was only later consulted with a broader range of stakeholders, resulting in a high-quality substantive outcome. The comprehensive approach to the future, without being locked into one area or element of the system, only confirms this assumption. However, the most important thing is suitability for the city. The very broad use of inspiration from the foresight process and the consistent execution of activities in this direction are good examples of what should be the goal of any similar project.

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