MASTERARBEIT | MASTER'S THESIS

Titel | Title

Toxic Homes as a Result of Governmental Practices of Injustice - Framing Environmental Justice in Bayview Hunters Point in the Interactions of the Government, the Law, and the Community

verfasst von | submitted by

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angestrebter akademischer Grad | in partial fulfilment of the requirements for the degree of

Master of Arts (MA)

Wien | Vienna, 2024

Studienkennzahl lt. Studienblatt | Degree programme code as it appears on the student record sheet:	UA 066 656
Studienrichtung lt. Studienblatt | Degree programme as it appears on the student record sheet:	Masterstudium CREOLE-Cultural Differences and Transnational Processes
Betreut von | Supervisor:	ao. Univ.-Prof. i.R. Dr. René Kuppe

Acknowledgement

Words cannot express my gratitude to my parents and my sister. This endeavor would not have been possible without you.

Abstract (English)

Environmental justice is supposed to protect every population regardless of their ethnical and socioeconomic characteristics from environmental threats and thus secure a safe and healthy environment. The following thesis examines the absence of environmental justice in the community of Bayview Hunters Point, a low-income community of color located in the southeast of San Francisco, USA. In addition to my qualitative empirical research, I conducted a two-months internship at an environmental grassroots organization.

The aim of my master thesis is to research the issue of environmental justice within the American law apparatus as well as in the context of the discriminatory practices of local and state authorities. Shifting the perspective, I analyze the collective community power of the residents of Bayview Hunters Point in the interaction with environmental organizations to oppose the oppressive discriminatory pollution patterns of the government that result in environmental injustices in the form of environmental pollution and thus health issues.

Low-income and minority groups, like the Bayview Hunters Point community, are not only overburdened, and disproportionately affected by the placement of pollution facilities as they lack political, financial, and social resources to defend and protect themselves against such decisions but are also systematically disadvantaged and abandoned by government practices.

Abstract (Deutsch)

Umweltgerechtigkeit soll jede Bevölkerungsgruppe unabhängig von ihren ethnischen und sozioökonomischen Merkmalen vor Umweltbedrohungen schützen und so eine sichere und gesunde Umwelt gewährleisten. Die folgende Arbeit untersucht die Abwesenheit von Umweltgerechtigkeit in der Gemeinde Bayview Hunters Point, einer einkommensschwachen farbigen Gemeinde im Südosten von San Francisco, USA. Zusätzlich zu meiner qualitativen empirischen Forschung habe ich ein zweimonatiges Praktikum bei einer Umweltorganisation absolviert.

Ziel meiner Masterarbeit ist es, das Thema Umweltgerechtigkeit innerhalb des amerikanischen Rechtssystems sowie im Kontext der diskriminierenden Praktiken lokaler und staatlicher Behörden zu untersuchen. Indem ich die Perspektive wechsle, analysiere ich die kollektive Macht der Gemeinde von Bayview Hunters Point in der Interaktion mit Umweltorganisationen, um sich den unterdrückerischen, diskriminierenden Strukturen der Regierung zu widersetzen, die zu Umweltungerechtigkeiten in Form von Umweltverschmutzungen und -bedrohungen führen und Gesundheitsproblemen auslösen.

Einkommensschwache und Minderheitengruppen, wie die Gemeinschaft von Bayview Hunters Point, sind nicht nur übermäßig belastet und unverhältnismäßig stark von der Platzierung von Umweltverschmutzungsanlagen betroffen, da es ihnen an politischen, finanziellen und sozialen Ressourcen fehlt, um sich gegen solche Entscheidungen zu wehren und zu schützen, sondern sie werden auch systematisch benachteiligt und von den Praktiken der Regierung im Stich gelassen.

Content

List of Figures

List of Abbreviations

BVHP ..... *Bayview Hunters Point*
CAA ..... *Clean Air Act*
CalEPA ..... *California Environmental Protection Agency*
CES ..... *CalEnviroScreen 4.0*
CRA ..... *cumulative risk assessment*
DTSC ..... *Department of Toxic Substances Control*
ECRCO ..... *External Civil Rights Compliance Office*
EIS ..... *Environmental Impact Statement*
EPA ..... *United States Environmental Protection Agency*
Greenaction ..... *Greenaction for Health and Environmental Justice*
HPN ..... *Hunters Point Naval Shipyard*
IVAN ..... *Identyfiying Violations Affecting Neighborhoods*
NEPA ..... *National Environmental Policy Act*

1 Introduction

1.1 The Need for Environmental Justice

> "The environmental justice movement is the confluence of three of America´s greatest challenges: the struggle against racism and poverty; the effort to preserve and improve the environment; and the compelling need to shift social institutions from class division and environmental depletion of social unity and global sustainability" (Bullard 1994: 298)

Within the framework of environmental justice its purpose is to identify the link between environmental threats and its effect on disadvantaged communities. The majority of disadvantaged and overburdened communities are predominantly made up of minorities and/or low-income population groups. The environmental justice movement emerged in the 1980s in reaction to the disproportionate burden of environmental risks and pollution on low-income neighborhoods and communities of people of color (Atapattu and Schapper 2019). Environmental justice is an interface between social movements, research and policymaking and is a lively and productive field of action (Bellina 2022). Environmental justice is needed to achieve a safe and healthy environment including the absence of the disproportional burden of environmental threats leading to health issues. Many environmental decisions in the past as well as in the present are unjust and unethical. The distribution of environmental pollution sites does not happen by coincidence (Finkel and Golding 1995).

During my fieldwork research about environmental justice in Bayview Hunters Point (BVHP) three overall questions have emerged from which subordinate questions and matters arise.

How does the legal framework of the United States approach environmental justice? How and to what extend are environmental laws in the context of environmental justice and environmental protection applied by government authorities?

What are the systematic, institutional, and political causes of discriminatory pollution patterns in the United States in the context and interrelation of environmental justice?

How does the BVHP residents frame their collective power in the cooperation with environmental organizations in order to address environmental injustices in their community? What role do government authorities play in this?

The following thesis identifies the environmental injustices in BVHP. On the one hand the goal is to analyze the legal framework addressing environmental justice and environmental protection by law and the systematic and structural discrimination pollution patterns in the United States resulting in an unequal protection of disadvantaged low-income neighborhoods

and communities of color. In addition, the impact on the community´s health and burden of environmental health risks are determined. On the other hand, the aim is to analyze the measures both conducted by community members and environmental organizations as well as government authorities in order to promote environmental justice. The community-based engagement and actions are the core of addressing environmental hazards within environmental justice movement. A guideline for community engagement is developed.

In the following work, I am relying on my two months fieldwork conducted in the BVHP Community, located in the southeast of San Francisco. The overburdened community is disproportionately affected by environmental hazards resulting in health problems for residents.

In Chapter 2 my field research and the methods used, as well as their reflection is documented.

Chapter 3 documents and then discusses the socio-cultural and economic factors of the community and the environmental threats faced by the local population in BVHP. The extent to which the people of BVHP are aware of the environmental injustices within their community is described in this chapter. In addition, the environmental justice indicators in relation to BVHP are examined in detail.

In Chapter 4, I outline the history of the emergence of the environmental justice movement from various socio-political, civil, health and human rights movements. The concept of environmental justice is defined, and the performance of justice is discussed.

Chapter 5 then discusses the contextual application of environmental laws and human rights in relation to environmental justice and environmental protection. The influence of environmental justice on the legal framework is analyzed and the enforceability of environmental protection and environmental justice through the law is addressed. In addition, it analyses the effectiveness of the practical implementation of the legal framework by government agencies.

In Chapter 6, the systematically discriminatory pollution patterns in the United States that lead to the absence of environmental justice are explained. The focus is on the direct link between environmental justice and poverty and ethnicity.

Chapter 7 discusses the link between environmental justice and human health. The negative health impacts of environmental injustice and thus pollution on local populations is the driving factor behind the fight for environmental justice. The existence of and connection to health disparities is important here, which intensifies the consequences of above-average exposure to environmental threats and the associated health consequences.

The final chapter analyses the engagement and involvement of the BVHP community in the fight for environmental justice. It documents community-based actions and methods of collaboration between community members and environmental organizations. Additionally, the methods used to achieve environmental justice through the United States Environmental Protection Agency (EPA) and the community's trust in the EPA are discussed.

Before proceeding to the main part, environmental justice will be reviewed from an anthropological perspective and the need for anthropology in the environmental justice framework is elucidated.

1.2 Anthropological Perspective on Environmental Justice

In the early twentieth century, a general interest and awareness of the ecological dilemma began to develop. The human sciences played an important role in this. Nevertheless, after the war, modernist theories about technology and progress led to a paradigm shift that replaced the human sciences and assigned the ecological dilemma to the natural sciences alone. Yet it is this exclusively natural science approach to environmental problems that is itself part of the real problem. This is because the concept of environment is a socio-cultural construct. Thus, the change of perspective to social sciences and humanities is necessary in order to work out a solution to the environmental problem. However, this is not a substitute to the natural sciences, but a complementary contribution to create a multifaceted approach to solving the problem. Global environmental changes are creating challenges for human society. The contribution of the humanities and social sciences to these challenges is necessary as environmental change is increasingly a product of human actions. The destruction of the environment is one of the central current challenges for us as a society, both from an individual and collective perspective. The concept of the Anthropocene is one of the most recent and influential ones. It involves the advocacy of the view that the dominant element in shaping the world is human beings themselves. Through the increasingly accepted idea of Anthropocene, it comes to the "recognition of a gradual but accelerating switch from a nature-dominated to a human-dominated global environmental system" (Pallson et al. 2013: 4). In this process, it is human actions that deform the environment, in an ever more rapidly changing context (Pallson et al. 2013).

In 2010, the International Human Dimensions Programme on Global Environmental Change published a diagram (Figure 1) demonstrating the role and significance of social and natural sciences in the context of the environment. This indicates the equal weighting of the

two science sectors. Furthermore, it emerges that social sciences "take greater responsibility for dealing with *responses* to global environmental change" (Pallson et al. 2013: 5).

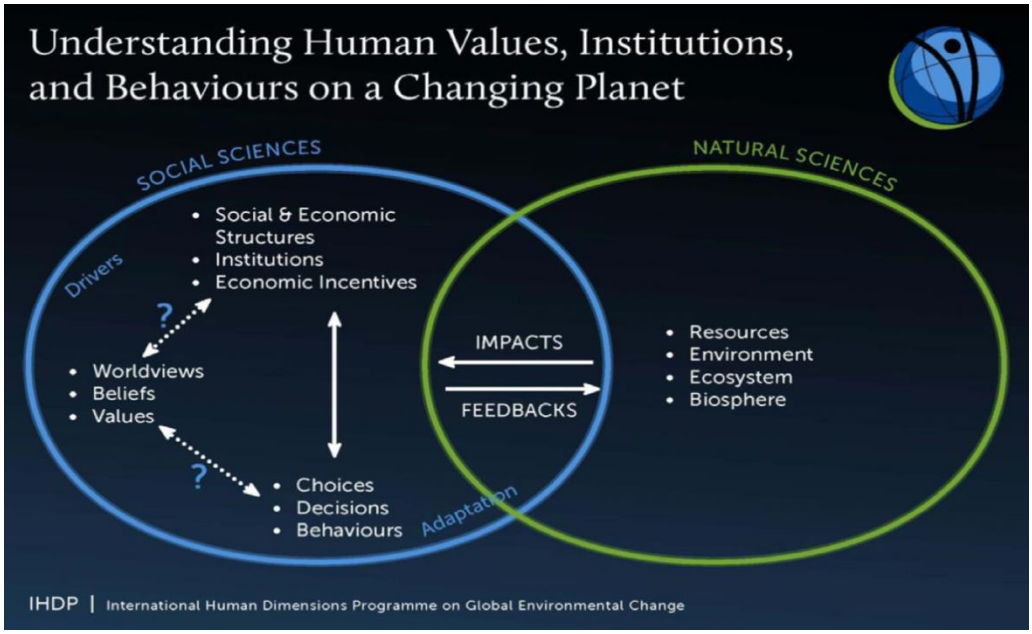


Figure 1: Significance and relation of social science and natural science in the context of a changing planet.

Although the diagram is only a partial advance, whose conception assumes an autonomous social world with intelligible inputs and outputs, the environment is already an integral part of the consideration and knowledge of social sciences and humanities. However, the figure ignores the ability of the social sciences to understand and work with the results and findings from the natural sciences. Nevertheless, further effort must be undertaken by the social sciences in order to recognize the environment as a social category as well as completely understand the concept of the environment (Palsson et al. 2013). Reconsidering recent environmental issues through an anthropological lens signifies addressing the ecosocial challenges of the present by "combin[ing] the issue of equity with a sensitivity to human constructions of nature" (Tassan 2022: 16). Environmental justice "itself, [is] understood both as a specific experience of social struggle and as an interdisciplinary field of academic reflection initiated by the sociologist Robert Bullard (1990)" (Tassan 2022: 13). Through analyzing the relationship between the environment, humans, and culture, Anthropology "deconstruct[s] the nature-culture dichotomy that characterizes [environmental justice]" (Tassan 2022: 14). In addition, through its research on people's different understandings and conceptions of justice, and in combination with other scientific expertise across local and professional disciplines, anthropology can develop practical solutions to reduce environmental risks and create and promote environmental justice. Further,

environmental threats impact the areas of health, community, science, and justice, which are all subject to social categories and therefore to Anthropology (Harnish 2016).

Anthropologists are able to research the contexts in which communities are experiencing environmental risk. Thereby, it is not only about identifying the risk but also the inversion of the risk as well as remediation once the threat occurred. In addition, anthropologist can collaborate with environmental scientists and contribute to cumulative risk assessments from an in-depth empirical, community-based perspective. By conducting participatory research, an anthropologist can navigate and cooperate with governmental agencies to improve the communication as well as the interaction between communities and responsible authorities Through ethnography, a method used in anthropology, a better understanding of environmental values and the conceptualization and treatment of environmental issues can be achieved. The ethnographic tools reveal the plurality of perspectives that may be overlooked in a quantitative study (Checker 2007).

In the following thesis I will examine environmental justice from an anthropological and socio-political perspective in regard of the environmental justice movement, legal foundations, discriminatory pollution patterns, socioeconomic causes for environmental injustices, and the work of environmental organizations and community engagement to achieve environmental justice.

2 Case Study: Bayview Hunters Point

During my fieldwork in San Francisco, I spent two months as an intern at Greenaction for Health and Environment (Greenaction). The multiracial grassroots organization Greenaction for Health and Environmental Justice addresses environmental issues in communities like BVHP. They fight for clean air and water, energy and climate justice, a zero-waste future without dumping and burning, the cleanup of contaminated sites and the protection of indigenous lands. As I started my internship, I have not yet decided on a specific case study for my topic of environmental justice in the United States. After two weeks and after getting to know the organization, the communities, and issues they were working with I decided to focus on the BVHP Community in San Francisco because I would have a good access to the field and the community as they are located in San Francisco and Greenaction is constantly cooperating with them. Therefore, I specified my topic and decided to investigate the environmental injustices in BVHP, the discriminatory pollution patterns behind it and the ways in which its community engages to fight for environmental health and justice.

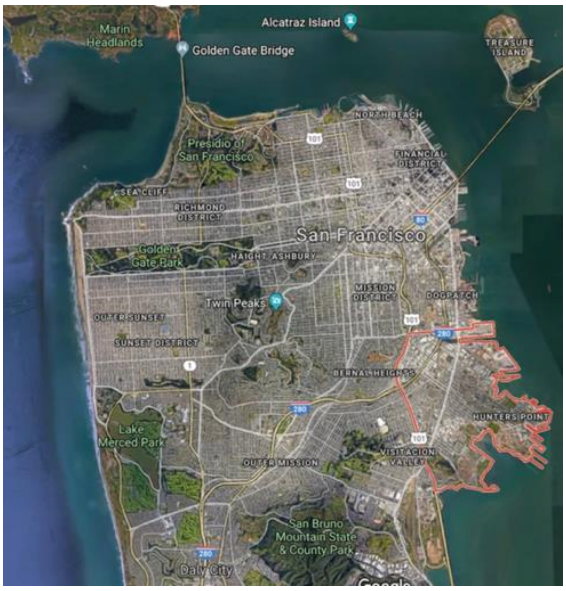


Figure 2: Map of San Francisco. BVHP outlined in red.

2.1 Fieldwork: Methodology

2.1.1 Internship at Greenaction for Health and Environmental Justice

The internship was a good opportunity for me to get involved into the work with community organization and to get access to the community of BVHP and its cooperation with Greenaction. My supervisor introduced me to the current issues of environmental justice and talked to me about historical movements of the fight against environmental injustices. During my internship I have done research on waste-to-energy facilities, and I helped my supervisor to research, collect and summaries information about pollution sources in California and the United States. I got to know how to use different tools to frame pollution and air quality management in BVHP. I learned about the permit application process and the issues of facilities running without permits. I had the chance to take part in different kind of meetings with community members and agencies. Furthermore, I helped with organizational work as well as recreating and summarizing presentations and documents. I got a direct access to events, meetings, and documents regarding the community BVHP.

2.1.2 Interviews

After deciding on my case study, I continued my research and reached out to possible interview partners. I used qualitative semi-structured interviews as they are a useful exploratory tool to investigate different facets of the research topic. As the interview questions are less set, the interviewees are given more freedom in what they say.

I decided to conduct my first interviews with some of staff members who were partly also residents of BVHP. That was a great opportunity to get information on a personal as well as on a professional level. Even though, everyone was supportive and agreed on the interview, it was difficult to conduct the interviews. I had to rescheduled most of the interviews several times as either the interviewees forgot about the interview in general or they had another appointment. Only my first interview with A. was conducted on the first arranged date. The other four interviews were rescheduled between two and four times. Furthermore, each of the interviewees preferred to conduct the interview via Zoom as they mostly worked from home and were still cautious due to Covid-19 as some of them have serious health issues. So far, I conducted 5 interviews:

I conducted my first interview with **A.**, a Youth and Community Organizer at Greenaction. The interview was held via zoom and lasted about 30 minutes. She explained how she´s working organizing a youth academy in BVHP in order to train and educate young residents to become leaders in the fight for environmental justice within their community. She talked about the youth engagement and the applied strategies as well as the occurred challenges.

My second interviewee was **K.** She was born and raised in BVHP and is Bayview Hunters Point Community Organizer/ Program Coordinator at Greenaction. She asked me to send her the questions beforehand. After sending here my interview guideline that contained around 10 open questions, we met in the office a few days later as she was the only one willing to conduct the interview in person. She mentioned that she chose between 3-5 questions to answer and started to take notes. After asking her for the permission to record it and after explaining its purpose she preferred to write the answers down and to send it to me even though I explained her that it would be more helpful for me to talk instead of receiving written answers. She answered 5 questions in one or two written sentences. The answers were short and included only the basic information and no personal experiences or detailed explanations to my questions.

S. was the third person I interviewed. The interview was held via zoom and lasted about 85 minutes. She is a resident of BVHP and joined Greenaction one year ago as Community Organizer/Policy Advocate. S. told me about the historical and present events regarding environmental injustices and pollution in BVHP. She talked to me about her personal health issues and disease her family members and friends have due to the hazardous environmental burden. Further, she described the civic community engagement and involvement in fighting the environmental and health disparities. She explained me that the government is well aware of the environmental hazards in BVHP but does little to nothing to address the health risks that

cause the problems. S. sees the roots of these injustices in structural racism. She talked to me about personal experiences where she was discriminated because of her color either from the state or the people in San Francisco. According to her, in order to solve the environmental injustices structural racism must be eliminated as it is the root causes for the discriminatory pollution patterns.

I talked in an interview with **B.**, the founder of greenaction, about the general aspects and roots of environmental justice and community-based work as well as community engagement and actions. The interview was conducted via zoom and lasted 25 minutes. He explained how Greenaction is cooperating with communities to address environmental and health disparities, and how the government is trying to get involved but not seriously accomplishing its goals. B. states that community engagement is the key instrument to achieve changes in their environment.

H. is the founder of a community organization in BVHP, and we talked via zoom for 45 minutes about the environmental injustice in BVHP. H. was born and raised in BVHP. She became an activist for environmental justice after her mom died after a disease. She talked to me about her personal stories regarding experiencing racism and suffering from health problems resulting from the environmental hazards in her community. Further, she explained how public community engagement and involvement works and the role of the government, which is not performing its work.

Furthermore, I talked informally with some residents during a monthly Bayview Hunters Point Environmental Justice Task Force Meeting, where I got to hear about their health issues and what is currently going on in BVHP. The informal talks will be further described in my participant observation. In addition, I contacted the California Environmental Protection Agency (CalEPA) and asked for an interview, but I have not received an answer. I also tried to reach some residents in a BVHP community group on Facebook, but nobody reacted to my interview request and messages.

2.1.3 Participant Observation

Observation is defined as "the systematic description of events, behaviors, and artifacts in the social setting chosen for study" (Marshall/Rossman 1989: 79). I used (participant) observation as a tool for collecting data and to observe how the residents of BVHP engage in different events and settings and how actors like grassroot organizations and governmental agencies interact with the community. It was a useful tool to observe the atmosphere especially regarding emotions like anger, (mis)trust and faith between these actors.

A few days after I have arrived in San Francisco, Greenaction was celebrating their 25th anniversary in a community center in BVHP. Around 100 people, mostly residents and engaged community members were taking part in the event. Official government agencies like the CalEPA were invited to join the event as well but none of them attended. The event was primary about the history of Greenaction, the environmental injustices and the achievements so far. I was helping to serve the food at the buffet, which was a good opportunity to observe the social setting of the event and the behaviors of the guests. Unfortunately, due to my work I had not enough time to talk to people about the environmental injustices going on in BVHP. Even though, I got a first impression of the work of Greenaction especially regarding their cooperation and interaction with the community members. Several residents of BVHP held a speech, where they were talking about the environmental issues in BVHP as well as personal experiences concerning their health issues. One resident and father, who is now too working for Greenaction, founded the Bayview Hunters Point Mothers and Fathers Committee for Health and Environmental Justice after several family members died after illness. He told me afterwards that his mother died of cancer, his dad died due to high blood pressure, and both his sister and twin brother died in young ages. He declared that theses sickness related deaths of family members are his motivation for engaging in the fight for a healthier environment in BVHP. The speakers were passionate, and all the guests were strongly commitment to social and environmental justice. They atmosphere was positive and empowering, but at the same time I could feel the anger of the people and the frustrations about the injustices in BVHP. They also claimed their lost trust in the government as they are not reacting to the community's request to act and working on the environmental issues.

I conducted a photographic observation in BVHP. I walked through BVHP observing the social and geographic setting of the community. One stop on my walking tour was the Hunters Point Naval Shipyard (HPN shipyard), a superfund site where toxic and radioactive contamination occurs. The HPN shipyard is one of the main pollution sites in BVHP and the community is still demanding a full clean-up by the United States Navy. Around the HPN shipyard, there is a densely built settlement as visible in the photographs Figure 5 and Figure 7. I took the following pictures of the HPN Shipyard on the first of March 2023. Most of the buildings on the HPN shipyard seem to be old, abandoned und decrepit (Figure 4 and 6) but I saw a few people working on the HPN shipyard.

Figure 3: HPN shipyard building: “U.S. NAVAL RESERVE CENTER 104”

Figure 4: View over HPN shipyard from a public road.

Figure 6: HNP shipyard.

Figure 5: Apartments vis-à-vis the HPN shipyard.

Figure 7: HPN shipyard: abandoned buildings.

Figure 8: Apartments facing HPN shipyard.

I had the chance to take part at different meetings and events. During our weekly staff meeting at Greenaction current projects and plan were updated, and as they are working a lot with the BVHP community there are several things been going on while I was there. A. was responsible for the youth academy scholarship building and educating the leaders of tomorrow in BVHP. K. was planning a Toxic Tour with students through BVHP in order to locate all the pollution sites and educate the students. Unfortunately, the event had to be rescheduled due to the weather and I was no longer in San Francisco to be able to attend the event. I was part of a zoom meeting with the CalEPA. CalEPA asked Greenaction for support in working with the BVHP community as they would not be able to achieve significant changes or rather improvements of the environmental issues in BVHP. One problem the women was mentioning was that the community outreach is difficult, and they would not have access to the community. Therefore, they asked Greenaction to bring together CalEPA and the community. The CalEPA is trying to improve their work and to try new methods, e.g., working together with grassroots organizations like Greenaction. Beside zoom meetings with Greenaction staff regarding organizational work the responsible persons from CalEPA attended the Bayview Hunters Point Environmental Task Force meeting in order to talk directly to the residents and learn more about their concerns and claims.

Greenaction launched the Bayview Hunters Environmental Task Force in 2015 as part of the statewide Identifying Violations Affecting Neighborhoods (IVAN) network. The "multi-stakeholder problem-solving collaboration bringing together residents, some businesses, and local, regional, state, and federal government agencies to protect health by responding to community pollution complaints" (Greenaction 2023a).

The "Bayview Hunter Point Environmental Justice Task Force Meeting**"**, which is organized by Greenaction, is supposed to take place monthly. Currently, it is taking place via zoom as well as in person in a community center in BVHP. During my fieldwork, the meeting was only held once in two months, and I am currently waiting for the next date to be published to take part via zoom. I attended the meeting on the 15th of march in person at the Alice Griffith Community Room in BVHP (Figure 8). It was a hybrid meeting. 20 people participated via zoom and another 20 people on site. Snacks and drinks were provided. The attendees were largely consisting of local residents, in addition to two CalEPA employees (on-site), a fire department commissioner (online), A., the founder of a BVHP Community Foundation (online), whom I was later privileged to interview, and a responsible party from Department of Toxic Substances Control (DTSC) (online).

Figure 9: Alice Griffith Community room, in BVHP.

The atmosphere on-site seemed to be very familiar. I had the impression that most of them already knew each other and spoke intimately with each other. I was being told in a conversation, that some of the attendees already know each other since school. As a recurring meeting, most participants attend meetings regularly and are committed to BVHP. Since there were problems with the beamer, the transmission of the meeting had to be done via a laptop. The audio was only output through the laptop as there was no speaker. The meeting was organized and led by K., a Greenaction staff member, whom I interviewed later as well. At the beginning, but also during the meeting, she had to make sure that the participants did not talk too loudly and in a jumbled way. It happened a few times that what was said via zoom was not understood, because the people on-site were talking to each other and jumbled up and the audio was so quiet. There was also some commotion as people were often getting something to eat or go around. Overall, it was a very chaotic meeting, partly because it was hybrid, but also because it was messy on site and the technology wasn't working properly. Nevertheless, the meeting was informative and interesting, and I had the chance to meet some of the community members in person and talk to them informally.

The meeting started by talking about the dumps in BVHP. The BVHP Community Air Monitoring Project was then discussed, and the results of the last month were reviewed. Due to the storms, seven out of eight monitors were damaged and only one was still working at the time.

The staff member of CalEPA, who attended the event with a colleague in person, promised to try to find better ways to engage community violation and trying new efforts

especially regarding BVHP. She reported that the responsible staff at CalEPA will schedule weekly meetings and take part at the BVHP Environmental Justice Task Force Meeting in order to understand what the main concerns of the community are and to figure out how to help. Furthermore, they want to research pollution sources and inform the community. After she had finished talking, one man stood up and asked her "Isn´t CalEPA to protect lies? They don´t know how it is to be on ground zero and to have kids that have cancer!". He then proposed that the only way for CalEPA to be able to help the BVHP community is to understand at first what is going on. The general attitude towards the CalEPA seemed to be very critical. There appeared to be no trust and the statements of the employee were critically questioned and her suggestions doubted.

The responsible person from DTSC, who has only been on this job for 6 months, claimed that he understands that there exists no trust between the community members and governmental agencies. He aimed to outreach to the community to receive input and learn how to engage. Furthermore, he wanted to improve the communication between the community and DTSC and create new guidance, also using the approach of sea level rising. He wants to do things differently and work more effectively and faster, even though there are a lot of technical issues to work through. To my impression, he seemed honest and concerned. Moreover, he seemed to be accepted and appreciated by the community. Even though, K. reminds him in a friendly manner that he has to be aware of the fact that he has not be exposed to the environmental and health issues like the residents of BVHP.

The commissioner of the Fire Department of San Francisco informed about a training program to help neighbors being active and prepared for emergencies.

During the conversations, one woman mentioned her breast cancer diagnosis and that she believed the dust and pollution in the BVHP was the cause of her illness. Thereupon a woman states that "everything is connected. The air, our mind, our body and our soul. All is connected".

The woman, who sat next to me showed me a picture on her phone. It pictured a hole under her house. She told me that there were several holes in the house through which raccoons could get inside. Despite all the problems with her house and the environmental and health issues in BVHP, she told me, she is unable to raise the financial resources to move to another, safer neighborhood. After the meeting, I talked to another woman. She mentioned without wanting to get too much into detail that she is starting to have serious health issues, so she will soon have to visit the hospital. However, she explained to me how widespread the health issues are in BVHP. She told me about a friend of hers who suddenly went bald. Two other friends suffer from asthma. In addition, she told me that the water in BVHP is dirty, and she is worried

about the dust and air pollution. She requests studies of the air and especially of the black dust. A man joined our conversation and told of his asthma condition. He reported his observations of children in his neighborhood getting sick and clarifies that they suffer from asthma like him, cancer, and nose bleeding.

Moreover, I am a subscriber of the Facebook group *Bayview Hunter´s Point (S.F.)* with more than 4,000 members. In addition to announcing events, posting pictures and personal experiences and concerns, the group publishes articles, news, and information on the issue of environmental justice in the BVHP. The group also repeatedly calls on the residents of BVHP to oppose environmental pollution and thus the government. In addition, updates, and current articles about the clean-up actions in HPN shipyard, for example, are posted. By posting articles in the group, residents are reached and awareness increases.

2.1.4 Framing Tools, Events and Collected Data

During my internship we had workshops each conducted in two parts. In the first workshop we have learned how to apply for a grant, and we were collecting possible grant opportunities. The second workshop was about the ABC´s of permit processes. We were educated how a permit process is issued. Furthermore, we have talked about the problem of facilities using the system of permit processes to keep them running even though their permit has already expired as DTSC fails take their responsibility to shut down facilities with an expired permit.

CalEnviroScreen 4.0 (CES) "is a screening methodology that can be used to help identify California communities that are disproportionately burdened by multiple sources of pollution" by the California Office of Environmental Health and Hazard Assessment (2023). The interactive mapping tool outputs results by census tract such as the pollution burden (ozone, drinking water contaminants, diesel particulate matter, cleanup sites, hazardous waste, solid waste sites, …) and population characteristics (asthma, cardiovascular disease, low birth weight, housing burden, poverty, unemployment, …). The tool is available in Spanish as well, which makes it more accessible for the communities as 89.704 Spanish speaking people are living in San Francisco, often in poorer communities affected by environmental hazards (SF.GOV 2023).

The area of the BVHP is divided into several defined areas, so-called census areas for the purpose of the census. The following data refers to the Census Tract 6075023200, which is located in the middle of BVHP marked in dark red within the circle drawn on the map of Figure 9. The CES Percentile of BVHP according to CES is between 70-100 (Figure 9). The CES Percentile is the percentile of the CES Score which describes the Pollution Score multiplied by

Population Characteristics Score BVHP, along with Treasure Island (CES Percentile 89), a man-made island northeast of San Francisco, is the most polluted area in San Francisco. As shown in Figure 9, the areas in BVHP have an CES Percentile of 75 - 92, whereas the rest of San Francisco, with the exception of Downtown (CES Percentile 76) and the adjacent areas (CES Percentile between 50 and 60), is marked in dark green to light green and yellow respectively, i.e., an percentile between 1 and 60 according to CES (California Office of Environmental Health and Hazard Assessment 2023).

From Figure 10 it can be read that the area of BVHP is ranked 92nd in CES percentile and has a higher pollution burden than at least 88% of California. Further, Figure 11 and 12, shows the detailed information provided by CES for this area in terms of specific results for exposure and environmental effects (Figure 11) as well as sensitive populations and socioeconomic factors (Figure 12).

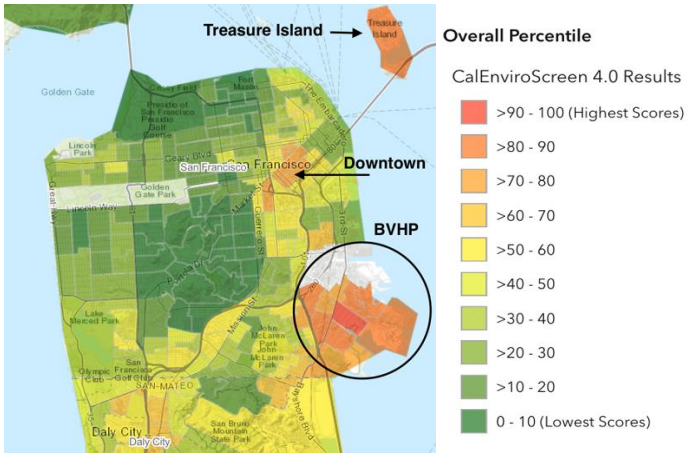


Figure 10: Overall Percentile of BVHP according to CES highlighted in the circle.

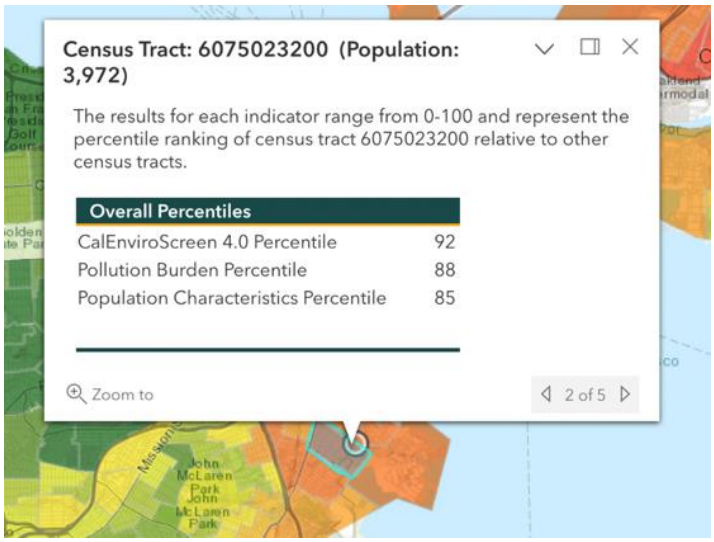
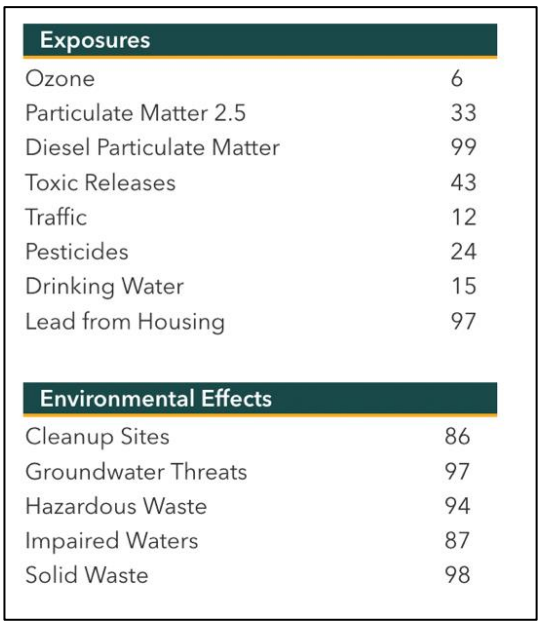


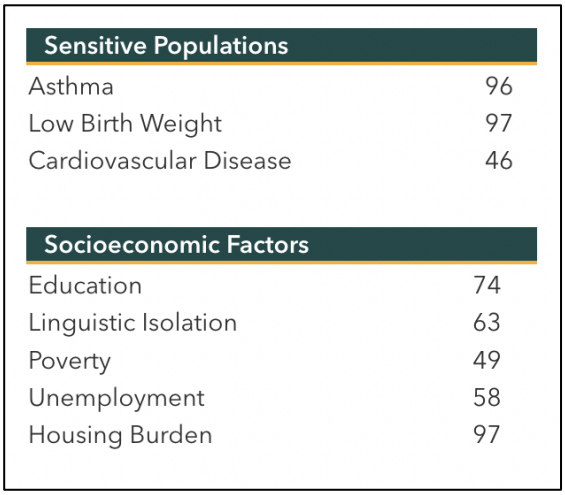
Figure 11: Output of CES for Census Tract 6075023200 located in BVHP.



Exposures	
Ozone	6
Particulate Matter 2.5	33
Diesel Particulate Matter	99
Toxic Releases	43
Traffic	12
Pesticides	24
Drinking Water	15
Lead from Housing	97

Environmental Effects	
Cleanup Sites	86
Groundwater Threats	97
Hazardous Waste	94
Impaired Waters	87
Solid Waste	98

Figure 13: CES: Exposures, Environmental Effects of BVHP.



Sensitive Populations	
Asthma	96
Low Birth Weight	97
Cardiovascular Disease	46

Socioeconomic Factors	
Education	74
Linguistic Isolation	63
Poverty	49
Unemployment	58
Housing Burden	97

Figure 12: CES: Sensitive, Socioeconomic Factors of BVHP.

CES is a useful framing tool to filter data by census track and identity polluted communities in California. There exists another online framing tool called “IVAN Bayview Hunters Point” managed by Greenaction. The community-based monitoring system helps identify and report environmental problems affecting BVHP and southeast San Francisco. Users can furthermore view local reports and access documents and minutes meetings.

I attended the “Climate and Environmental Justice Conference 2023. Faith-based, community-based, and academic collaboration for action” from April 27 - 28, 2023 at Santa Clara University. The conference was a hybrid meeting which made it possible for me to attend it via zoom. The meeting facilitated the organization of coalitions between communities and universities to enhance environmental justice in Northern California. The focus of the conference discourse was on goal to create and strengthen strong partnerships with grassroots organizations and authorities and to pursue a participatory and collaborative method for teaching about climate and environmental justice. In addition, strategies were developed to improve community-based research for environmental justice by considering the factors of ethnicity and income, building up capacities, and cocreate guidelines for activist actions. Different case studies of environmental injustices and community engagement were presented, which was very interesting and helpful to learn more about different forms of activism and strategies as well as the challenges of community-based work in the context of the collaboration with academic alliances. Academic justice work is not only about receiving funds, but also about community work. One of the speakers talked about BVHP, the experienced structural racism as well as the gentrification from which the community is suffering. She explained that

many residents are not aware of the toxic pollution hazards, therefore her priority is to inform and educate them. According to her, it takes a collaborative effort as it takes someone from the inside to realize what is going on from the outside.

2.2 Reflection of the Methodology and Fieldwork

The fieldwork in San Francisco was my first practical experience regarding empirical field research as I started my studies during Covid-19 and all empirical practices were cancelled.
My major challenge was time. I had two months in San Francisco but as many events and meetings were conducted online it took me longer than expected to get access to the field even though I had a good access to the field in the first place due to my internship at Greenaction. However, to get more in touch with the residents I would have needed more time. Nevertheless, the combination of the informative documents, framing tools, meetings, events and interviews I was able to get a broad overview about the environmental issues in BVHP as well as about the community engagement. In particular, the semi-structured interviews were useful in understanding personal experiences and stories of living in the BVHP and experiencing environmental and health risks. In addition, through the various methods I have learned how community engagement works and which strategies must be applied for such an involvement to be successful. I was able to get a broad insight into the work and organization of grassroots organizations. Furthermore, I learned about the cooperation between community, government, and grassroots organizations.

3 Living in Bayview Hunters Point: Experiencing Environmental Injustices

3.1 Community Profile of Bayview Hunters Point

The BVHP is a low-income community of color located in the southeast of San Francisco inhabiting about 37,900 residents composed of as 36 percent are Asian-American, 25 percent African-American, 24 percent Hispanic, 12 percent White, 3 percent Other and 0,6 percent Native (California Office of Environmental Health and Hazard Assessment 2023). The ethnic profile of BVHP will be further analyzed in the chapter 3.4 Environmental Justice Indicators in the Context of BVHP.

In San Francisco, BVHP was a long-time dumping ground for hazardous and unwanted uses. Until World War II, the city placed all slaughterhouses and meat processing plants in BVHP. After World War II, shipbreaking yards, scrap yards, steel mills, material recycling and

energy production facilities, and the HPN shipyard predominated the neighborhood. In the 1960s, during the construction of Candlestick Park, the Shoreline became a place where rubbish was haphazardly dumped, resulting in BVHP and the Shoreline becoming an undesirable landscape characterized by waste landfills and junkyards. To date, BVHP is dominated by toxic landfills, pollution facilities and unwanted land use. During World War II, many cities in California experienced a large influx of African Americans. Numerous African Americans came to San Francisco, especially to BVHP, to work in the HPN shipyard. Since then, historic housing segregation and poverty have prevented many from leaving the area. When the HPN shipyard closed in 1974, about 10,000 people lost their jobs. The neighborhood was severely affected by the impact of unemployment and still had an overall unemployment rate of 14.1 percent and among African Americans of 17.7 percent in 1990. Until 2008, the area was dominated solely by industries and there were no cinemas, theatres, clothing, or coffee shops that makes an area livable. Today, though, there exits restaurants, an opera house, and shops (Rechtschaffen 2008).

Today, the rate of unemployment in BVHP is twice as high as in the rest of San Francisco. The rate of poverty is more than two times higher that of other areas of the city. In addition, BVHP is one of the communities with the lowest high school graduation percentage (Environmental Science Associates 2017).

The residents are disproportionately affected by hazardous environmental pollution sources as well as by the radioactive and toxic contamination of the HPN shipyard Superfund site. Other pollution sites include the Southeast Sewage Treatment plant, under-regulated and unregulated dirty industries, diesel freight transport, the Port of San Francisco, and two freeways. The residents suffer from a high rate of asthma and cancer and the community is ranked as one of the communities in the United States most at risk from pollution (Greenaction 2023a). The area of BVHP is outlined in red in the following Figure 1 including the Hunters Point Naval Shipyard.

3.2 Environmental Pollution Sources in BVHP

Fifty percent of the land in San Francisco that is being used as industrial sites is located in BVHP. The residents of BVHP are exposed to various kind of pollution sources. Traffic, heavy industries, and energy plants harm the environment. In addition, the HPN shipyard, categorized as a superfund site by the government is in BVHP (Greenaction 2004). In the following, I will examine some of the major pollution sources in BVHP.

The HPN shipyard Superfund Site is located on the coast in southeast San Francisco and covers 866 acres of land and water. Adjacent to the border, i.e., northwest, and west of the shipyard, the municipality of BVHP is located with housing and recreation areas as well as commercial and industrial uses.

Figure 14: HNP shipyard in the southeast of San Francisco in the community of BVHP.

Figure 15: HPN Shipyard.

The HPN shipyard was actively used from 1869 until 1991. First as a commercially operated dry dock until the Navy acquired it 1936 and began military operations in 1939. The Navy operated at the shipyard to decontaminate and remediate ships used for nuclear bomb testing in the Pacific, which resulted in radioactive pollution of the area. However, this is not the only

operation of the Navy that causes radioactive poisoning. The Naval Radiological Defense Laboratory was situated at the shipyard from 1946 until 1969. The operations conducted by the laboratory polluted “soil, dust, sediments, surface water and groundwater with petroleum fuels, pesticides, heavy metals [including arsenic, lead, mercury, chromium], polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs) and radionuclides” (Greenaction 2023b: 87). After the Navy terminated activities in 1974, the shipyard was assigned to the Office of the Supervisor of Shipbuilding, Construction, and Repair. For 10 years, from 1976 to 1986, the majority of the yard was leased to Triple A Machine Shop Inc. The company used the area commercially to repair ships which resulted in the continued environmental pollution of the site. Regardless of the lease and transfer of control, it is the Navy that is responsible for the shipyard today and thus for the environmental pollution that still emanates from the site today. This responsibility also includes the investigation of environmental pollution and the clean-up of the site. The EPA is the leading supervisory authority. DTSC, CalEPA, and the San Francisco Bay Regional Water Quality Control Board act as control bodies. They monitor whether the Navy's remediation work is carried out appropriately and meets the requirements for the protection of people, their health, and the environment. In 1989, the HPN shipyard was listed by the EPA as Superfund site. Since 1991, the shipyard has been part of the States Department of Defense's Base Realignment and Closure Program, which manages the shutdown of the military site and its future prolific use as residential and recreational area. In 1992, the remediation work began, which continues to this day. Since then, more than one billion USD has been spent on the clean-up. The buildings of the shipyard continue to be rented out by the navy for industrial or commercial use (Greenaction 2023b; Paustenbach et al. 2022). The clean-up plans of the Navy and the government authorities to ensure a healthy and safe environment for all envisaged that a considerable amount, and therefore a high concentration, of radioactive waste would remain on the site. The toxic waste left behind is located adjacent to the coast, among other places. As the Navy realized how high and widespread the pollution of the HPN shipyard was and instead of disposing of the pollution, they simply buried it ensuring that the cover would last a long time. They covered the toxic materials up with up to one meter of soil or ten centimeters of asphalt. The rising sea water level threatens to flood the waste dumps and uncover the buried waste and thus spread the contaminated waste over land and in the water along San Francisco. Covers do not protect or shield the people or environment from the poisonous pollution. In addition, the waste can be brought to the surface by vegetation, digging animals, or rising water levels. The city knowingly participated and contributed to this, even though this is denied in public (Hirsch et al. 2019). The navy hired the company Tetra Tech EC

and paid between 350 million dollars and 3450 million dollars to carry out clean-up work as well as testing of the pollution. Whistleblowers have alleged that workers were instructed by supervisors to throw clean soil collected from outside the shipyard into holes dug in the shipyard, and then to take a sample of the clean soil from these holes in the shipyard to test for toxic pollution. Thus, it appeared that the sample taken, i.e., the alleged soil in HPN shipyard, had been decontaminated and no longer contained any pollutants. The samples were therefore deliberately manipulated by testing external clean soil instead of the actual soil from the shipyard. In addition, there were other illegal acts of collusion and manipulation of the data used to evaluate the pollution levels. Between 90-97 per cent of the tests conducted by Tetra Tech EC were falsified or otherwise altered. In 2018, two supervisors for radiation protection technicians of the Tetra Tech EC company were sentenced to prison for eight months after these allegations of planned manipulation were investigated. All dates raised by Tetra Tech EC in relation to HPN shipyard were declared invalid (Wagner 2018; Hirsch et al. 2019; Greenaction 2023b). Jeff Ruch, former Executive Director of Public Employees For Environmental Responsibility, stated that "Hunters Point is unfolding into the biggest case of eco-fraud in U.S. history" (Dizikes and Cabanatuan 2018).

In 2000, a Proposition P that required a complete clean-up of HPN shipyard by the Navy to establish a healthy and safe environment for residential and unrestricted use was passed with a majority of 86% of San Francisco voters. As a result, the city of San Francisco approved the Proposition P as official policy. The protests about the clean-up, the high turnout and agreement on the proposition and the demand for a full clean-up of toxic, cancer-causing materials by the community are unique regarding its formality and clarity. The protests about the clean-up, the high turnout and agreement on the proposition and the demand for a full clean-up of toxic, cancer-causing materials by the community are unique regarding its formality and clarity (Hirsch et al. 2019).

In 2001, the navy interrupted the clean-up process again because more contamination than expected was found. A few years later in 2009, the Navy decided to rearrange the clean-up plan from removing toxic materials to burying them and thereby decided not to allow unrestricted access and use of the shipyard as a residential and recreational area. The following timetable shows a lucid overview of the clean-up actions by the Navy (Hirsch et al. 2019)

Figure 16: Timetable of clean-up actions by the Navy.

Until today, the clean-up process is ongoing. According to the Navy following methods and measures will be used to achieve a complete clean-up for a safe environment:

> "Installation of below- and above-ground walls to prevent water and soil movement and limit erosion; Increases in the elevation of HPNS shoreline; Excavation and removal of contaminated soils; Treatment of contaminated groundwater; Long-term monitoring and maintenance to ensure that treatment technologies remain effective" (America´s Navy 2023: 1)

Once the clean-up is finished, the area will be assigned to the city of San Francisco and thus will be used for redevelopment (America´s Navy 2023).

The HPN shipyard is divided in several specific areas, so-called parcels, to improve the organization of the clean-up actions. The following map (Figure 17) of the HPN shipyard presents the parcels.

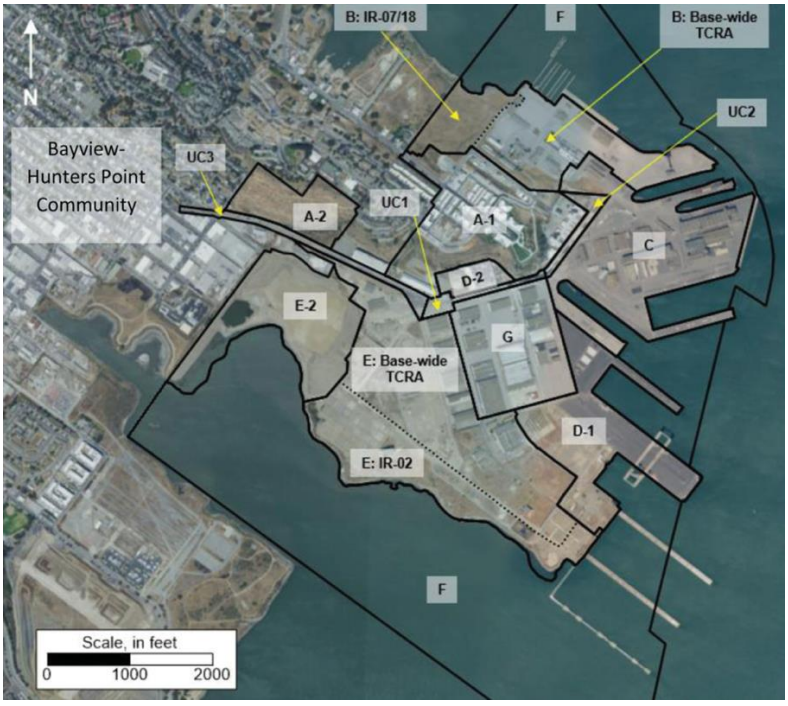


Figure 17: HPN shipyard divided in subsites.

According to the recent status of the Navy and EPA, Parcel A as well as Parcel D-2 require no further activities after the clean-up operations have been completed and the parcels were assigned to the San Francisco Development Agency. Parcel B is described as followed:

> "The long-term remedy included excavation and disposal of soils, installation of soil covers, installation of a revetment along the shoreline, a soil vapor extraction system to remove VOCs, groundwater treatment, removal of radiologically contaminated structures, monitoring and institutional controls to maintain the remedy in the long term and prevent exposure to contaminants. Excavation and disposal of contaminated soil finished in 2010. Construction of the covers and revetment, operation of the soil vapor extraction system and treatment of contaminated groundwater are ongoing. Access restrictions prevent exposure to contaminants" (EPA 2022d)

The same applies for Parcel C, Parcel D-1, Parcel G and IR-07/18. In Parcel UC-1, the contaminated soils were either covered or removed but the soil vapor testing is still in process. In Parcel UC-2 there were similar remedial measures as in Parcel B. The remaining radiological and chemical contamination of the groundwater is to be reduced by the natural process of attenuation of contaminants in the groundwater. In Parcel E, E-2, F and UC-3 the ongoing process includes remedial action, maintenance work and surveillance. Compared to the other parcels, the EPA did not perform a five-years review for these parcels. Such a review serves to ensure that the remedial actions implemented, as intended, protect human health and the environment (EPA 2022d). Parcel E-2 is estimated to be a declared industrial landfill with approximately 90 meters of the most threatening elements listed by the EPA (Sumchai 2020). In August 2023, a routine re-investigation of the area found a radiological cover marker in Parcel C. According to the Navy, the radiological exposure does not affect the health of residents and the environment as the level of exposure is too low (Department of the Navy 2023).

These data show that although the Navy has carried out clean-up operations, there is still pollution in several parcels. For this, the Navy's solution seems to be to simply ban access to protect people from the radiological and chemical pollution or to wait until the natural process further reduces the pollution (EPA 2022d). Nonetheless, the clean-up actions of HPN shipyard are not complete the redevelopment of the area already began. 112 affordable apartments will be built to be completed by 2025. More housing is planed (Nelson 2023).

During my interviews and informal talks community members reported their frustration. For them, the Navy's clean-up operations are not sufficient, and they demand a full clean-up of the NHP shipyard. S. told me that "You could pull up the shipyard and it tells you it is toxic. It

tells you it is contaminated. So, this is the governments sites that show you that these areas are contaminated but yet they are not doing anything to preserve the health […] of the residents." The Bayview Hunters Point Mothers and Fathers Committee, Marie Harrison Community Foundation, and Greenaction for Health and Environmental Justice cooperate and request a complete clean-up by the Navy.

Figure 18: Poster demanding a full clean-up of the HPN shipyard by the Navy.

The poster is published and distributed to the public on the internet, in newspapers and newsletters and in the form of a printed poster to raise awareness among the public and residents of the BVHP that the clean-up is ongoing on one side, and on the other side to attract the Navy's attention to deliver on its promises of a safe and complete clean-up of the HPN shipyard.

BVHP is located in District 10 and occupies the majority of it. My interviewee H. explained the following to me:

> "District 10 is where industry is literally between housing or on top of the housing and we have a lot of industrial polluters in our community that have been operating with our community for a very long time due to a lack of enforcement. […] That means that they are making millions while really not given a thought about our community all because they are so disrespectful in their practices. […] They need to be held accountable" (appendix 1.5).

In addition to the superfund site HPN shipyard, several additional pollution sources contaminate BVHP and negatively impact the health of the community.

Pier 70 was one of the largest sites for heavy industry in the United States. Starting in the 1850s with blasting powder manufactures, several additional facilities were operated at Pier

70 such as iron and steel mills, machine manufactures, gasworks, shipbuilding, and ships repairs. Most recently, ship repairs were carried out there, which were terminated in 2016 due to a business conflict (Wilson n.d.). Long-term utilization by heavy industry has led to contamination of the soil and groundwater including contaminates such as “heavy metals, petroleum hydrocarbons, polycyclic aromatic hydrocarbons (PAHs), [and polychlorinated biphenyl]” (Greenaction 2016: para. 10). The development of new residential and commercial use of Pier 70 is planned by the Port of San Francisco in cooperation with Orton Development, Inc. and Forest City Development. However, a complete clean-up of the remained contamination for the area is currently not scheduled. As with the shipyard, the rising sea level will jeopardize the expansion of contamination impacting the community of BVHP and the environment.

Candlestick Point is a recreational area that used to be a landfill site before the Candlestick Stadium was built upon. The stadium was demolished in 2015 and a recreational park was planned. In order to clean up the area, soil was removed. Local residents and environmental organizations expressed their concerns as to whether the remediation was being carried out properly and completely. They also criticized that the process lacked transparency towards the community. During the remediation process, air quality deteriorated as dust and diesel emissions grew (Greenaction 2016).

Brownfields are disused industrial wastelands that were used for industrial purposes. Many brownfields have been contaminated by industrial use. More than 150 brownfields exist in BVHP. Many of them are located at the shoreline which are even more endangered by rising sea levels, as pollution would spread more through contact with the water. The government wants to redevelop these areas, but without carrying out an appropriate clean-up. Marie Harrison from the Marie Harrison Community Foundation invented the campaign #CanWeLive operated by the youth to call for a complete clean-up of the brownfields and the HPN shipyard before they are reused (Greenaction 2016; California Air Resources Board 2023).

The Southeast Treatment Plant located in BVHP is the largest sewage plant in San Francisco as it treats more than 80 percent of San Francisco´s sewage. As the plant was built in 1952, some of its facilities is outdated, has been in use longer than permitted or no longer meets current standards, resulting in odors that affect the neighborhood of BVHP During the BVHP Environmental Justice Task Force Meeting one resident demanded the present EPA employees to test the dust as “there is something in the dust”. She was certain that the dust harms the residents. The city of San Francisco announced that the facility will be modernized with a focus

on protecting the environment and the health of residents (San Francisco Water Power Sewer n.d).

Circosta Iron & Metal Company is a scrap recycling facility is situated next to the crossing of two freeways. The pollution caused by the recycling of plastics and metals, in conjunction with vehicle emissions, generates hazardous air pollution (Greenaction 2016).

The PG&E Power Plant was shut down in 2006, after Greenaction and residents of BVHP demanded its closure. In February 2023, the full clean-up was completed. The land and water of the plant were contaminated with "large amounts of PCBs, THP diesel, arsenic, lead, asbestos and other hazardous substances" (Greenaction 2016: para. 8) and affected the residents. According to Greenaction, a few residents living close to the site still claim to be impacted by the contamination. Redevelopment plans for the area earmark new public housing projects on and near the former power plant and the building of 118 units was finished in 2021 (Greenaction 2016).

3.3 Awareness of the BVHP Community of the Absence of Environmental Justice

Environmental justice activism emerged out of collective community engagement. Many of the activist organizations address several issues and follow a holistic approach. Their agenda includes various issues besides environmental justice, such as education, housing, medical care and many more. These include organizations such as the Marie Harrison Community Foundation, based in BVHP, focusing environmental justice on the one hand and on promoting housing, jobs, health care and education on the other. The Bayview Hunters Point Community Advocates, a grassroots organization operated by BVHP resident, engages in environmental justice, food sovereignty, and community outreach. The non-profit organization Bayview Hunters Point Foundation for Community Improvement empowers a clean, safe, and healthy community regarding its environment as well as public health, social and human services, social justice, and housing. In addition, there are organizations that focus exclusively on the issue of environmental justice like Greenaction.

Some of these organizations have emerged from the commitment of the residents and in many organizations the affected residents themselves are active. The residents of BVHP are well aware that they are exposed to disproportionately high levels of environmental pollution as a result of environmental injustice. Even the authorities are aware of the high environmental threats to which the community of BVHP is exposed.

While talking with residents of BVHP, either during an interview or an informal talk, it became evident that the residents are well aware of the environmental injustices going on, as

they are confronted with them on a daily basis, and it affects their everyday lives. Talking with H., her greatest sorrow is the human health. She says: “So, my mainly concern is the health of residents and when I am thinking about that, I am thinking about my children”. She explains further that “it is like getting hit from all the sides. […] We cannot choose where we live. Where we live is really based of our income”. H. concludes that she hopes to be alive “long enough to be the last generation that has […] this kind of level of exposure”. K. criticizes: “We are expected to be grateful for housing placed on radioactive toxic waste, while other neighborhoods are able to breath quality air.” In an informal talk, I was told that the government could not be trusted because they did and still do not keep their promises to take action to remedy the grievances. Other BVHP residents agreed and emphasized this statement.

On the one hand, the residents are concerned about people's health and at the same time are furious with and distrustful of the authorities. On the other hand, they still have hope that the next generation, because of their committed activism, will be able to live a better life in environmental justice and without excessive environmental pollution.

No secret is made of the absence of environmental justice in BVHP, however environmental organizations and residents in particular are constantly working to raise awareness and disseminate information. The aim is to maintain a constant presence so that they are not forgotten and continue to be penalized by the authorities.

I will go into more detail about the community-based engagement in the fight for environmental justice, after I have discussed the historical, socio-political, legal and health aspects of the environmental justice movement.

3.4 Environmental Justice Indicators in the Context of BVHP

In the following I am drawing on the *Environmental Justice Analysis for Bayview Hunters Point* conducted by the Environmental Science Associates in 2017. Most of the data dates back more than 10 years. Where available, I updated the data and facts with the most recent information available. More recent data was not always available, which is why some of the outdated data from the analysis was used. The data taken from CES is from different years, but according to the CES website it is based on the most recent information available. The specific year of the data collection by CES is mentioned accordingly.

Environmental justice indicators are settings, conditions, or characteristics under which a particular area or neighborhood, compared to other neighborhoods, has either high or low incidence which need to be taken into account in the identification and analysis of environmental justice.

Ethnic minority as well as income are two of the major indicators when it comes to determine environmental justice or rather environmental injustices (Environmental Science Associates 2017). The Council on Environmental Quality, established in 1969 by NEPA to promote and maintain public health and environment, defines a minority population either if,

> "the minority population of the affected area exceeds 50 percent; or […] the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis" (Western Rail Yard Infrastructure Project 2021: 19).

It is about individuals living geographically close to each other or a group belonging to the same minority but geographically dispersed, either temporarily or permanently. Both groups are exposed to common environmental settings and impacts. A minority population also exists when the addition of different minority groups in total reaches the percentages mentioned above (Environmental Science Associates 2017). BVHP is a minority population, composed of different minority groups living together in physical proximity, as 36 percent are Asian-American, 25 percent African-American, 24 percent Hispanic, 12 percent White, 3 percent Other and 0,6 percent Native. The average was calculated from the data provided for each Census Tract by BVHP in CES. The data from CES was compiled in 2019 as part of the American Community Survey (California Office of Environmental Health and Hazard Assessment 2023).

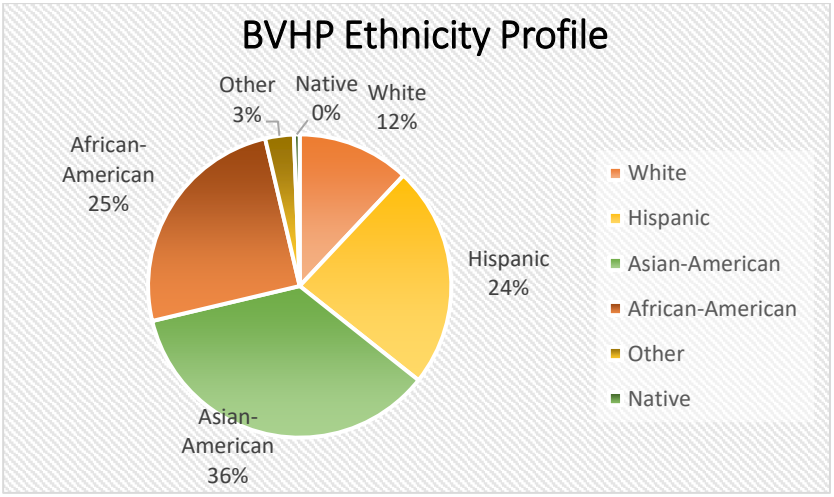


Figure 19: BVHP Ethnicity Profile.

If one looks at the data of the individual Census Tracts, i.e., of sub-areas in BVHP, it becomes visible that the percentage of ethnicity can sometimes vary greatly depending on the part of the area. The following map from BVHP shows the respective Census Tracts labelled with the

corresponding number. The map below shows BVHP with its Census Tracts, followed by a table with the specific ethnic profiles of each Census Tract, highlighting the highest number of ethnic populations within the Tracts.

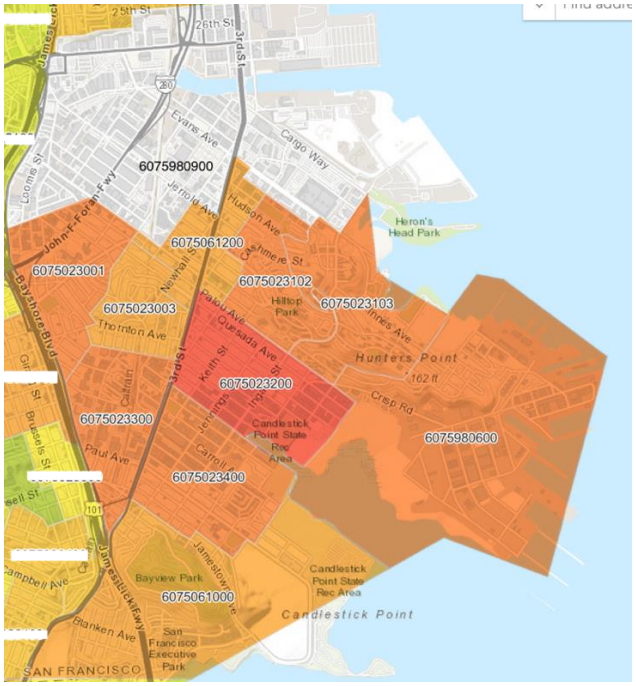


Figure 20: The Eleven Census Tracts of BVHP.

Census Tract	African-American	Asian-American	Hispanic	White	Other	Native
6075980900	7,19	22,19	18,91	51,72		
6075023001	11,08	73,88	7,67	4,87	2,5	
6075023003	21,11	49,73	20,15	8,06	0,95	
6075061200	27,95	29,96	32,48	8,02	0,96	0,62
6075023102	51,33	20,75	20,77	5,25	1,89	
6075023103	50,87	17,99	22,6	3,63	4,91	
6075980600	33,77	24,64	21,3	14,06	6,23	
6075023300	14,17	53,62	24,58	6,87	0,75	
6075023200	27,32	16,92	43,66	10,15	1,96	
6075023400	17,92	24,88	41,16	8,6	7,43	
6075061000	15,04	60,63	9,32	11,82	3,18	

Figure 21: Ethnicity Profile per Census Tract .

In 6 of 11 cases, the percentage of one of the minority groups already corresponds to over 50 %, as circled in red in the table. In other cases, the sum of the percentages is well above 50 per cent. The percentage of whites is about 52 percent exclusively in the Census Tract 6075980900,

an area where only 253 people live. There exists no CES score for this tract due to low-population and/or missing reliable socioeconomic data. In the other areas in BVHP, the percentages of the white population are between 4 and 15 percent.

To compare, the 873,965 residents of San Francisco are 42.3 percent White, 32.1 Asian, 15 Hispanic, 5.5 percent African, 4.6 Other, and 0.5 percent Native American or Pacific Islander. The minority populations combined in BVHP represent a percentage of 88.6 percent of the population, whereas in San Francisco the average minority population percentage is about 57 percent. To conclude, ethnicity is an indicator within the environmental justice analysis for BVHP as the community is to be considered a minority population with an average of around 31 percent more minority population than the County of San Francisco (Environmental Science Associates 2017; California Office of Environmental Health and Hazard Assessment 2023).

The second important indicator related to the concern of environmental justice is the income factor. According to the U.S. Department of Housing & Urban Development, an income below 30 percent of the median income of an area is extremely low income. Households with less than 50 per cent of the median income are very low income. Salaries of up to 80 per cent or less of the median income counts as low income.

Figure 19 represents a comparison of the median household income and poverty level of families and individuals of BVHP, San Francisco, and California. The data from figure 19 and 20 refer to the census tract from 2009-2013. There exists no information or exact numbers about the income or poverty rate of BVHP in such detail for more recent years. According to the following table, more than 19 percent of the families in BVHP are below the poverty level, which represents a higher percentage than in San Francisco (8.2 percent) and California (12 percent). Likewise, more than 21 percent of the individuals living in BVHP are below the poverty level compared with 13.5 percent in San Francisco and 15.9 percent in California (Environmental Science Associates 2017).

	Bayview-Hunters Point	San Francisco	California
Households	10,932	345,344	12,542,460
Median Household Income	$58,033	$75,604	$61,094
Median Household Income in Comparison to County[1]	Low Income	--	--
Total Families	7,928	156,742	8,603,822
Families below poverty threshold	19.3%	8.2%	12.0%
Total Individuals (total population)	37,363	817,501	37,659,181
Individuals below poverty threshold	21.2%	13.5%	15.9%

Figure 22: Median Household Income and Poverty Threshold of BVHP, San Francisco and California from 2009-2013.

The following table shows the median household income of the community of BVHP in comparison of San Francisco. Dependent on the census tract, the median income is considered to be either extremely low income (one census tract), very low income (one census tract), low income (four census tracts) and not low income (five census tracts).

Census Tract	Median Household Income	Median Household Income in Comparison to San Francisco
6075980900	$ 158,015	Not Low Income
6075023001	$ 51,659	Low Income
6075023003	$ 79,890	Not Low Income
6075061200	$ 50,924	Low Income
6075023102	$ 34,617	Very Low Income
6075023103	$ 18,846	Extremly Low Income
6075980600	$ 77,500	Not Low Income
6075023300	$ 75,857	Not Low Income
6075023200	$ 43,906	Low Income
6075023400	$ 54,786	Low Income
6075061000	$ 101,925	Not Low Income

Figure 23: BVHP Median Household Income Estimates by Census Tract from 2009-2013.

According to CES, BVHP is between the 44th and 98th highest CES score for poverty in California, with an average of about a percentile of 60 (California Office of Environmental Health and Hazard Assessment 2023).

Even though, five tracts in BVHP are not a low-income neighborhood according to the definition of the U.S. Department of Housing & Urban Development, the community of BVHP is classified a low-income community in environmental justice concerns. Moreover, figure 19 shows that BVHP compared with San Francisco and California has a lower median household income as well as a higher rate of families and individuals living below the poverty level (Environmental Science Associates 2017).

Furthermore, besides ethnicity and income, several additional environmental justice indicators apply for the community of BVHP. The indicators are divided in contamination levels, neighborhood characteristics, population attributes as well as community and social commitment. Not every indicator that has a negative environmental impact on BVHP is also an environmental justice indicator, as there are environmental impacts that are evenly concentrated in one city and thus do not constitute an environmental justice case. Therefore, it requires a detailed analysis of the indicators to determine the presence of an environmental justice

indicator. Thus, it must be assessed whether an indicator implies an excessively high and disproportionately adversely distributed environmental impact as opposed to surrounding communities or the urban average. A disproportionate adverse distribution of environmental impact is when it affects a population group consisting of one or more minority and/or low-income population groups that are exposed to a higher environmental burden in contrast to non-minority and/or higher-income communities.

Within the first category contamination levels, the ozone concentration, which results in serious health threats, is not considered an environmental justice indicator for BVHP as the concentration in BVHP as well as throughout San Francisco is lower compared to the rest of California. Therefore, there is no disproportionate burden exclusively imposed on the population of the BVHP.

Particulate matter consists of solid or liquid ultrafine particles and is produced, for example, by emissions from motor vehicles, power and district heating plants, furnaces and heaters in residential buildings, during metal and steel production, during the handling of bulk goods or as a natural consequence of soil erosion. Especially particular matter in size PM2.5, that are less than 0.1 µm in diameter, poses a major health risk. The ultra-fine particles can enter the bronchial tubes, lung tissue and bloodstream and can lead to severe lung and heart disease. Although San Francisco and BVHP have lower concentrations of particulate matter than the state of California, the average concentration in BVHP (7.54 micrograms per square meter) is two percent higher than the rest of San Francisco (7.38 micrograms per square meter). However, the higher particulate matter levels do not affect all Census Tracts of BVHP, but mainly in the northern and western area, especially around Islais Creek Channel, which is located in Census Tract 6075980900. Thus, 4.4 percent of BVHP residents are exposed to concentrations of 10 µm or greater. Therefore, particulate matter (PM2.5) is an indicator of environmental justice in BVHP (Environmental Science Associates 2017). However, diesel particulate matter is not a concern for environmental justice in BVHP, as the concentration is lower than the average rate in San Francisco.

For the indicator of toxic releases from facilities BVHP is ranked between 42nd and 50th percentile according to CES data from 2015 to 2017 (California Office of Environmental Health and Hazard Assessment 2023). In comparison, the percentile of the remaining San Francisco Census Tracts ranges from 36 to 51, indicating that BVHP and San Francisco have similar toxic release rate. This indicates that the indicator for toxic releases from facilities does not represent an indicator for environmental justice in BVHP.

In the BVHP, 5.5 percent of residents are exposed to a cancer risk of above 100 cases per million people caused by toxic air pollutants whereas in San Francisco the residents are being subjected to a rate of 3.3 percent. This difference in percentage characterizes BVHP as an overly affected neighborhood when it comes to being exposed to toxic air pollutants that cause cancer risk. This indicator represents an environmental justice matter.

Nuisance odors can be subjected as environmental justice concern even though there exists no standard method to quantify the extent of the odor. The Southeast Treatment Plant, San Francisco's oldest and largest, treats 80 per cent of San Francisco's wastewater and is located in close proximity to residential areas, exposing residents to odors. There are no comparable plants in other parts of San Francisco that cause odor nuisance and thus nuisance odors are an environmental justice concern in BHVP.

The clean-up of brownfield sites for redevelopment purposes can release and spread toxic substances that affect the adjacent environment and neighborhood. About 33 percent of all brownfields in San Francisco are based in BVHP that occupy 3,6 square kilometers of 12,6 square kilometers of the whole area of BVHP. Given that about 29 percent of BVHP is covered by brownfields, representing a disproportionately great amount, brownfields and its clean-up is an indicator for environmental justice (Environmental Science Associates 2017).

Hazardous waste sites can cause harmful threats to human health and the environment. The Census Tracts for BVHP are ranked between 84th and 98th percentile for hazardous waste sites, with an average percentile of 92.3. The citywide average ranks in the 67.8th percentile. This data from CES refers to the year 2021 (California Office of Environmental Health and Hazard Assessment 2023). Once again, the higher presence of waste generators and facilities in BVHP is an indicator for environmental justice. The same additionally applies to landfills and other kinds of facilities.

Zoning for industrial use not only brings jobs to an area, but also the risk of pollution. In 2011, 7 percent of the city of San Francisco was zoned for industrial use, whereas 38 percent was intended for industrial use in BVHP. Thus, land use for industrial purposes indicates environmental justice issue in BVHP.

In contrast, polluted discharges, contamination of drinking water, agricultural use of pesticides, groundwater threats, and leaking underground storage tanks are in the case study of BVHP not an indicator for environmental justice concerns.

For the second category neighborhood characteristics, four indicator types apply as environmental justice concern for BVHP.

Within San Francisco, there exists an affordability gap when it comes to renting an apartment or house. The residents of BVHP have an average annual income of $48,517 and an average rent of $31,800 for a two-bedroom apartment. If one assumes that the rent should make up about 30 percent of the salary, the average salary would have to be about $98,600. This means that there is an affordability gap of about $50,000. For the County of San Francisco, the "ratio of rental affordability gap to median income is 63 percent" (Environmental Science Associates 2017: 41), whereas for BVHP it is 103 percent. Since the affordability gap in the BVHP is twice the San Francisco average, it is an indicator of environmental justice for the BHVP. In the absence of more recent data, these refer to 2012. However, it is assumed that the gap will widen rather than narrow as a result of the price increase in rents (Environmental Science Associates 2017).

The frequency of foreclosures indicates an environmental justice concern in BVHP, as the rate of foreclosures in BVHP was at 0.62 percent in 2014, compared to San Francisco´s rate of 0.15 percent. Foreclosures are in correlation with unemployment, property value and the frequency of mortgage securities issued by non-governmental agencies or companies that underperform conventional credits and are high priced. BVHP has an unemployment rate that is double the average ratio in San Francisco. From 2005 to 2006, 31 percent of credits issued in BVHP were high priced and issued by private securities, a higher rate than in any other neighborhood in San Francisco (San Francisco Controller's Office 2014; Environmental Science Associates 2017).

Displacement caused by gentrification mostly affects low-income residents as property prices rise while wages remain the same. Being forced to move to another area can result in a loss of one's social capital and cause stress. 31.1 per cent of BVHP residents who are classified as low-income are affected by the possibility of displacement. In contrast, 22.6 per cent of San Francisco residents who are also considered low-income live in an area affected by displacement. Therefore, displacement within poor communities such as BVHP represents a case for environmental justice issues.

When the rents are higher that the income people are forced to move to less expensive neighborhoods or become homeless. Thus, homelessness is an indicator for environmental justice concerns as individuals might end up homeless when their income is lower than the renting costs or not present at all. 30 percent of the homeless people are living in District 10, where BVHP is located. Only District 6 has with 47 percent a higher rate. Apart from that, no other District has a higher percentage than 9 and most are below 4 percent of the overall homeless population in San Francisco.

Access to a well-developed public transportation system as well as bike lanes enables residents can make use of health care systems, take part in social activities and access food, work, and education. The lack of both transportation systems and bike lanes makes BVHP a case for environmental justice concern. In addition, well-developed cycle paths are an environmentally friendly, affordable, and sporting activity that also provides access to different services.

Walkability provides similar benefits to cycling, but with 29 percent of respondents in BVHP rating walking as unsafe or very unsafe during the day and 65 percent at night, the indicator walkability is an environmental justice concern in BVHP.

Further indicators for environmental justice concerns are the presence and performance of schools, recreational spaces, open and green spaces, average burden of childcare, and access to healthy food and financial services. Education scores in BVHP are one of the lowest in San Francisco. Recreational spaces and open green spaces are less proximal and fewer in total numbers in BVHP. Healthy food stores and financial services are considerable further away in BVHP, too. The average cost of childcare is higher in BVHP as they often do not receive subsidies. Due to the lack, distance, or quality of educational and recreational spaces this indicator is relevant in the analysis of environmental justice concerns in BVHP.

In the context of neighborhood characteristics, ownership affordability gaps, affordable housing stock, rent burden, overpopulation of the area, housebuilding, housing conditions, residential mobility, and access to motor vehicle are not subject to represent an indicator for environmental justice concern in BVHP (Environmental Science Associates 2017).

Even though income was already discussed as an indicator for environmental justice concern, poverty is one aspect to be analyzed when it comes to the third category of population attributes. For the category of poverty BVHP, e.g., the average of every Census Tract within BVHP, ranks in the 63rd percentile on CES. In comparison, San Francisco´s average percentile is 34.6. The data was collected from 2015 to 2019 (California Office of Environmental Health and Hazard Assessment 2023). Therefore, poverty is an indicator for environmental justice concerns within the community of BVHP.

Another indicator for the population attributes category is the rate of unemployment. According to the San Francisco Department of Public Health, unemployment is closely related to the issue of poor health with an increased mortality especially through heart disorders and suicide. According to CES, based on data from 2015 to 2019, the unemployment rate is ranked 67.7 for BVHP and 32.8 for San Francisco. Furthermore, there is a difference in the cardiovascular disease category. With a percentile of 37.1 BVHP is ranked more than double

than San Francisco in total with a percentile of 16, which supports the hypothesis that the two factors are related (California Office of Environmental Health and Hazard Assessment 2023; Environmental Science Associates 2017). Thus, unemployment represents an indicator for environmental justice.

The Earned Income Tax Credit is a support program for individuals and families with a low or moderate income through reducing the amount of taxes payable or refunding taxes (Internal Revenue Service 2022). In 2013, 29 percent of taxpayers living in BVHP applied and received the tax credit. San Francisco´s average is 12 percent and thus BVHP has the highest number citywide. Considering the difference in the percentage of receiving the tax credit, this indicator is a concern for environmental justice in BHVP.

Further, health must be considered in the analysis of environmental justice concerns. In the absence of environmental justice, toxic environmental exposure can harm residents. Within a community some members are more vulnerable than others. This includes young children and old(er) people. As young children are not yet fully grown, harmful environmental influences can affect them more and have an impact on their body and development. For older people, who already suffer more often from illnesses, toxic environmental pollution leads to the aggravation of already existing health problems Environmental Science Associates 2017). According to data on CES from 2019, in BVHP, 14,4 percent of the residents are age 10 or less whereas the citywide average for children the same age is 7,7 percent. Residents with the age of 65 or greater represent 13,4 percent of the population in BVHP compared to a citywide average of 18 percent. Therefore, in the context of BVHP only the indicator of young residents is a concern for environmental justice as the number is higher than the citywide average. The factor of the population of old(er) residents does not represent a case for environmental justice issue as San Francisco's average is higher than in BVHP (Census Reporter 2022; California Office of Environmental Health and Hazard Assessment 2023).

In San Francisco, the rate for prenatal care increased from 87.3 percent in 2010 to 91.1 percent in 2021. In comparison, in 2012 only 69.2 percent of pregnant women received prenatal care in their first trimester which among the three neighborhoods with the lowest prenatal care rates (Sinicrope 2014). As the prenatal care of pregnant women in the first trimester is lacking compared to the citywide standards, this indicates a concern for environmental justice in BVHP.

In addition, a low birth weight, e.g., newborns weighting less than 2500 gram, is an indicator for environmental justice concerns in BVHP. BVHP ranks in the 85.5^{th} percentile on CES and San Francisco ranks in the 47.8^{th} percentile for the indicator of low birth weight according to data collected from 2009 to 2015 (California Office of Environmental Health and

Hazard Assessment 2023). Newborns who are underweight are particularly at risk for future diseases and infant mortality. Therefore, a high rate of children being born with low weight represent a concern for environmental justice in BVHP.

BVHP has a higher hospitalization rate of asthma than 92.4 percent of California. San Francisco ranks in the 41st percentile on CES (California Office of Environmental Health and Hazard Assessment 2023). Asthma attacks can be triggered due to the exposure to toxic air contaminants. Thus, the rate of visits to the emergency room due to asthma is considered an indicator for environmental justice in BVHP.

To prevent hospitalization or a visit to the emergency room, quality preventive care is required. If this kind of basic and preventive care is lacking, hospital admissions occur that could have been avoided. In BVHP, for every 100,000 hospital admissions, there are 1,931 hospital admissions that could be prevented with proper preventive care. This is the highest rate in all of San Francisco. Most communities have a preventable hospitalization rate below 1,000 persons per 100,000. Hence, preventable hospital admissions are a concern for environmental justice in the case of BVHP.

The fourth and final category is community and social commitment. Communities with high voter turnout are less frequently reporting poor health or inadequate health care. In the 2018 midterm elections, voter turnout in San Francisco was higher than usually at 74.4 percent. However, the high voter turnout was not evenly distributed across the city´s districts. BVHP had the second lowest voter turnout in the city at 57.3 percent (Knight 2018). The difference in voter turnout within San Francisco, its several neighborhoods and BVHP result in an indicator for environmental justice concern for BVHP (Environmental Science Associates 2017).

The absence of educational attainment of adults is often an indicator for the exposure to contamination and therefore a concern for environmental justice. The level of education is "an element of socioeconomic status and social determinant of health" (Environmental Science Associates 2017: 61). CES examines the percent of population over 25 with less than a high school education based on data collected from 2015 to 2019. BVHP ranks in the 66.6th percentile for adults with an education attainment lower than a high school degree, e.g., BVHP has a lower educational attainment that 66.6 percent of California. San Francisco ranks in the 38.6 percentile (California Office of Environmental Health and Hazard Assessment 2023). This concludes that the educational level of adults is an indicator for environmental justice in BVHP.

Violence directly affects the health of a community. In BVHP, violent crime rates are the main contributor to premature mortality for men. However, health consequences are not the exclusive consequences of violent acts. The consequences of violent acts can have an indirect

effect on third parties. In this context, children and adolescents can be traumatized by witnessing acts of violence and develop psychological problems. Further, families and social contacts can be interrupted and destroyed by incarceration due to violent acts (San Francisco Department of Public Health 2013). From 2010 to 2012, 106 violent crimes per 1,000 inhabitants occurred in the BVHP. In San Francisco, by contrast, there were 53 crimes per 1,000 inhabitants. Thus, the prevalence of crime acts is an indicator for environmental justice concern in BVHP.

The San Francisco Department of Public Health invented a Community Resiliency Indicator System to examine whether a neighborhood is more or less resilient to climate change based on 36 factors divided in nine top categories. Many of these factors were already discussed above. In 7 categories (hazard risk, environment, health, economy, demographics, public realm, transportation), BVHP achieved the lowest possible score. In the remaining two categories (housing and community), BVHP scored a 2 out of 5. Hence, BVHP is considered to be least resilient and therefore being resilient to climate change represents a concern for environmental justice in BVHP.

4 Environmental Justice in the United States

4.1 Historical Development of the Environmental Justice Movement

The first environmental justice protests emerged in the early 1980s from various mainstream civil and social movements and activism. According to Faber and McCarthy (2003) the environmental justice movement evolved out of six different pre-existing political movements: “the civil rights movement” headed by African-Americans and dispossessed people of color, “the occupational health and safety movement” to protect undocumented laborers and immigrants, “the indigenous land rights movement” for advocating cultural sovereignty of Natives, “the public health and safety movement” specifically regarding lead poisoning and toxic pollution patterns, “the solidarity movement for promoting human rights; and the social/economic justice movement” involving poor communities of color that are being oppressed (Faber and McCarthy 2003: 45-46). Faber and McCarthy emphasize that all these activists creating community-based organizations and local and supranational networks emerging of these various movements are united in the fight for ecological democracy.

One of pioneering protest in the environmental justice movement, and thus its cornerstone, took place in Warren County, North California in 1982. The rural community,

largely populated by African Americans, was chosen as the storage site for more than 30,000 yards of soil contaminated with PCBs. Over 500 participants of the nonviolent protest were arrested. While the protests were not successful, it was a landmark achievement as it was the first time African Americans united and mobilized to protest discriminatory pollution patterns and injustices. The protests were instrumental in the U.S. General Accounting Office's 1983 investigation and study of the locations of hazardous waste sites in EPA Region IV, i.e., Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and 6 Tribes. The results highlighted a distinct connection between the locations of harmful facilities and the socioeconomic status and ethnicity of the surrounding communities. In 75 percent of the communities siting such facilities the majority of the population is African American; however, African Americans represented only 20 percent of the region´s population in 1983. This demonstrates that the distribution of hazardous sites is not equal, but disproportionately often located in communities of color although they represent a minor part of the overall population (Bullard 1994). In 1987, the United Church of Christ Commission for Racial Justice published the study "Toxic Wastes and Race in the United States" analyzing the correlation between the siting of sources of hazardous pollution and the ethnic and socio-economic factors of surrounding communities. The study was the first of its kind relating the link between environmental risk and ethnic and social factors. A year later the first environmental justice organization called West Harlem Environmental Action emerged in New York to promote environmental and health quality in neighborhoods inhabited by people of color. In 1990, the Indigenous Environmental Network was created to achieve environmental justice through building an economically sustainable environment. In the same year, the EPA created the Environmental Equity Workgroup to address the issue of the disproportional environmental risk from which people of colors and low-income communities suffer. In addition, also in 1990, Dr. Robert Bullard published "Dumping in Dixie", the first book examining environmental injustice cases in communities of color in the United States (EPA 2023c). People of color became more and more involved in activism to fight for social and environmental justice. A national activist movement developed out of this. In October 1991, the First National People of Color Environmental Leadership Summit, organized by people of color, represented presumably one of the most significant events in the environmental justice movement. During the four-day summit, taking place in Washington D.C., it was proven that it is feasible to adopt a multiracial, holistic, and multi-issue approach in the movement for justice. Various strategies and plans for the continued fight for environmental justice in the U.S. and around the world were shared, discussed, and debated. 650 participants represented more than

300 different environmental organizations consisting of people of color (Bullard 1994). Together, the multinational delegates developed the *Principles of Environmental Justice*. The 17 principles, when applied, will enforce and lead to the implementation of justice. The document evolved as a guide for the emerging environmental justice movement. The preamble of the document, written from the perspective of the Summit's participants of color, emphasizes the need for environmental justice and its principles, and declares the fight against the unjust distribution of environmental risks in communities of color to ensure a safe environment where culture can be celebrated, nature is sacred, and its spiritual interdependence can be restored. In addition, they insist on securing the liberation of communities of color from political, economic, and cultural constraints imposed by colonization and marginalization.

4.2 Framework of Environmental Justice

The EPA (2022a) defines environmental justice as followed:

> "Environmental justice (EJ) is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies."

It is defined in further detail that *fair treatment* requires no group of people to be disproportionately affected by any hazardous environmental pollution patterns emerging from economic decisions, governmental policies, or profit-oriented actions. *Meaningful involvement* involves the opportunity for people to take part in decision-making processes about actions concerning their environment and health. The responsible officials try to include the participation of affected persons and facilitate their involvement. Further, the issues of the community members must be heard and considered during the process and their participation can have an influence on the government's decision. The EPA aims to equally protect all people from environmental hazards and health issues as a way to ensure a safe environment to grow, live and work (EPA 2022a).

Robert D. Bullard, one of the pioneers in the field of environmental justice with significant influence, provides a similar definition. According to him, "environmental justice embraces the principle that all people and communities have a right to equal protection and equal enforcement of environmental laws and regulations" (Bullard 2018). David Schlosberg, a professor of Environmental Politics, explains that a correct definition of environmental justice must include equity, fair "distribution [of environmental goods and bads], [social] recognition,

participation [of affected individuals and groups], and capabilities [of transforming goods]" (Schlosberg 2009: 5). Further, the movement must encompass political and economic rights and fundamental necessities and functioning of both individuals and communities. He argues for a broadly accessible, pluralistic understanding of environmental justice including diverse tools and inclusive discourses to "strengthen the explanatory (and mobility) power of the movement" (Schlosberg 2009: 8).

The framework aims to reveal the underlying presumptions and mechanisms that produce and reinforce the unequal distribution of environmental hazards and the unfair treatment of certain groups of people in relation to it. Bullard (2005) formulates five attributes fundamental to the framework of environmental justice. First, every human being has a right to protection from environmental hazards. Second, the movement´s focus is to prevent harm before it even occurs. Third, the Precautionary Principles for the protection of employees, communities, and ecosystems are applied. According to the principles, which were established out of national law, timely and anticipatory action must always be taken to avoid environmental damage. The focus is on two characteristics: risk avoidance and resource conservation. The former refers to the fact that if there is insufficient information about the environmental impact, the extent and probability of the impact are considered as a precautionary measure in order to avoid environmental hazards (Bullard 2005). The second refers to the careful use of natural resources, which is reflected in the interests of the next generation (Umweltbundesamt 2021). Fourth, the movement seeks a paradigm shift where polluters must prove that their actions are non-discriminatory instead of affected minorities having to prove that they are being discriminated by polluters and suffering from environmental threats. Fifth, the use of actions and resources is used to address the elimination of disproportionate environmental pollution (Bullard 2005).

4.3 Doing Environmental Justice: Performing Concepts of Justice

As mentioned in the previous chapter (mention chapter) and by Bullard (2005), the concept of environmental justice is based on a holistic approach that draws on and emerges from various other movements (see 2.1, mention chapter) and is composed of different concepts of justice. The movement addresses the question of justice and its various concepts. The main concepts of justice on which the movement is built are described below.

Among the earliest requirements in the environmental justice approach is the call for *distributive justice* of environmental hazards. This approach is one of the historical foundations of the movement. Based on this, the approaches and definitions of environmental justice expanded. The concept refers to the distribution of inequalities in a community. Environmental

benefits, such as trees, parks, clean air, the non-existence of polluting industries that promote the quality of life, and environmental hazards like the siting of pollution sites, polluted air, and water are distributed unequally (Boström and Davidson 2018).

In addition to the distributional and procedural approach, *recognition* focuses on the need to recognize minority groups and the underlying social conditions. The intersectional approach makes explicit that the principle of distribution does not follow neutral rules but is influenced by unjust structures. Therefore, the approach of distributive justice is complemented with theories of justice that examine the emergence and process of existing inequalities in order to create a holistic approach of environmental justice. The concept of recognition refers to the political as well as social and cultural recognition of individuals and group. This recognition is the basic prerequisite for the development of a positive self-image, for social as well as institutional equality, and for equal opportunities. The absence of recognition produces exclusion and vulnerability. If there is a lack of recognition in relation to environmental conflicts, this leads to a non-perception, misperception or discrediting of the affected persons and their concerns. In the context of environmental justice, recognition plays a crucial role, as it can be used to show who is affected and disadvantaged by a conflict and under what circumstances (Bellina 2022).

Procedural justice is based on the concept of recognition and is located at the level at which distribution takes place and quality of life is created. Even if there is formal equality before the law, participation processes are often unequally accessible, creating a disadvantage at the process level for communities fighting foe environmental justice. If social, political, and financial resources are accessible to an individual or group, they can thus prevent the acquisition of environmental facilities in their neighborhood. As a result, polluters locate in communities that lack resources because they can provide less resistance. At this point, the environmental justice framework can point to where conditions need to be changed and resources needed to enable fair processes and equal participation (Bellina 2022). Thus, procedural justice is demanded to ensure that participation and access to information are guaranteed and that decisions are made according to the principle of ‘free informed consent’, i.e., the provision of truthful and non-manipulated information on all relevant aspects. The procedural approach also focuses on equity for communities inhabited by minorities. Procedural justice is given when community members are offered possibilities for a meaningful involvement and active engagement about environmental changes in their community by participating in the environmental decision-making process of the government and the company involved (Boström and Davidson 2018; Pederson 2010).

A justice approach that focuses on the *capabilities* of individuals sees the social goods that are to be distributed equitably, for instance education, and health and its development, as enabling them to lead a good life. Limited access to these goods affects health and other areas of life. These capabilities are also significant factors to engage in the struggle for environmental justice (Bellina 2022).

In the human rights approach, advocates of the environmental justice movement are seeking a *substantive righ*t that everybody, regardless of gender, ethnicity, income, or social status, be protected from the influence of hazardous environmental factors and to strive for a healthy environment as a right to every individual.

Some of the more modern proponents of environmental justice shift away from the previous concepts and emphasize a holistic approach towards *productive justice* that does not rely on distributional or procedural approaches, but rather questions decisions before they are implemented to prevent potential environmental threats.

In the context of productive justice, the concept of justice is also applied to the non-human and animal sectors. In the so-called *ecological justice*, justice is understood as responsibility towards the environment (Pedersen 2010).

Individuals or communities experience *corrective justice* when, after environmental harm has already occurred, they receive an appropriate remedy and compensation for the environmental hazards that have caused them suffering (Boström and Davidson 2018).

Furthermore, environmental justice calls for *geographic equity*. The siting of toxic facilities neither happens coincidentally nor fair. In general, the distribution of pollution sources follows the ethnic, income, and economic characteristics of communities. Geographic equity implies the location of hazardous facilities and unwanted land-use in relation to the surrounding community as well as the access to health, education, and (environmental) safety (Finkel and Golding 1995).

In addition, the framework of environmental justice implies the concept of *social equity*. Social equity is the "fair and equitable distribution of public services, and implementation of public policy, and the commitment to promote fairness, justice, and equity in the formation of public policy" (American Society for Public Administration 2023). If social equity is to be reviewed, the role of specific characteristics, i.e., ethnicity, income, social status, political power and so on, in the decision-making of environmental concerns need to be evaluated (Finkel and Golding 1995).

Environmental Justice manages to differentiate the concept of justice in environmental conflicts with the above-mentioned concepts and can analyze in concrete conflict situations

which barriers prevent fair preconditions, processes and results. Doing Environmental Justice thus means the multi-layered analysis and the resulting practice with the aim of enabling environmentally related justice. It is essential to understand how the different principles of justice are composed and interconnected in the socio-political context. The demand for environmental justice implies a demand for the different approaches to justice. The elements of the justice approaches are an integral part of the analysis of environmental justice (Bellina 2022).

The historical development and current principles and approaches of environmental justice illustrate that the concept neither has an utter nor superior or single definition. Rather, the concept of environmental justice is composed of holistic approaches that can vary from individual to individual as well as context. It is an indistinct and vague concept with overlapping ideas considering the several approaches, "the relationship with environmental justice is one of diversity and variation, as well as accordance and agreement" (Pederson 2010: 49).

The environmental justice movement aims to prevent unjust and dangerous environmental and health hazards. The goal is to prevent such pollution patterns affecting residents and communities from occurring in the first place.

5 Environmental Law and Human Rights: Analyzing the Legal Approach towards Environmental Justice and Protection

Laws serve to resolve problems. When environmental violations occur, the question arises as to who is responsible and whether there are laws that prevent such incidents or require remediation and redress. An efficient and secure system of environmental protection would make an important contribution to guaranteeing the welfare of future generations and the livelihoods of people who depend on natural resources. The latter group often includes indigenous or marginalized people (Anton and Shelton 2011). The application of a legal basis related to human rights and environmental laws to ensure environmental justice is based on various considerations. In the following chapters it will be demonstrated that no concrete law exists to enforce environmental justice. Rather, a various set of rules provides a broad basis for addressing environmental justice, which consists of human rights, environmental rights, and rights to protect the environment. To clarify, "the United States is a constitution-based federal system, meaning power is distributed between a national (federal) government and local (state) governments" (National Geographic Society 2023: para. 1). Federal law applies for everyone in the United States whereas the state law is subject to the ones who are located in the respective state. In this case, we consider the state law of California. State law can be partly supreme or

subordinate to federal law, depending on its subject matter. State law can enact additional laws and grant more freedoms to the people affected. However, state law can never restrict a federal law (USA Corporate Services Inc. n.d.: para. 2). In what follows, I refer to both federal and California state law, as it is necessary to consider both levels of laws because they cover different environmental justice issues.

5.1 Framing Environmental Rights in the Context of Relation between Environmental Protection and Human Rights

The concept of environmental rights is adapted diversly. Some scholars refer environmental rights by "procedural rights of access to information, participation in decision-making, and access to remedies" (Atapattu and Schapper 2019: 4). Other scholars define environmental rights in the sense of the legal basis for experiencing and living in a healthy environment. Still others apply environmental rights in the form of a holistic approach that addresses all rights related to environmental concerns (Atapattu and Schapper 2019).

Human rights law relates to environmental protection in four different forms. The first approach is mainly procedural and primarily based on the focus on specific human rights guarantees in the development of environmental instruments. This involves human rights standing in favor of environmental protection with a focus on the rights of freedom of association for individuals of non-governmental environmental groups as well as the right to information about potential pollution and environmental hazards. The problem with this approach lies in the flawed compliance with most environmental agreements, raising doubt on the effective accomplishment of environmental protection targets. By comparison, human rights are subject to better developed methods of control and are thus more promising in successful implementation.

The second type, which is purely anthropocentric, involves existing human rights laws and their institutions. Here, the guarantees of human rights are revised or applied when the use of the laws is impaired or prevented by environmental damage. The goal of this approach is to protect and preserve the environment to the extent that various rights that ensure a healthy life can be secured, including, for example, the right to life, health, clean drinking water, as well as the right to private life, culture, and many more. In this regard, the protection of the environment is an instrument and is not for personal gain. The focus is on the impact of environmental damage for existing human rights. Thus, many serious cases of concrete or imminent environmental damage can be addressed. The important advantage of this approach is that existing human rights complaint with levels of environmental protection below those required

to uphold guaranteed human rights. Nevertheless, the approach is insufficient because it omits risks of non-human life or ecological procedures.

Within the third approach, environmental concerns are to be fully built into human rights, thus creating a "new human right to an environment" (Anton and Shelton 2011: 130), where the environment is defined as not purely anthropocentric and not exclusively for human benefit, but an environment based on sustainability and ecological balance in respect to the future. This approach has been partially implemented successfully in the international context. However, there are environmentalists who adhere to an anthropocentric perspective. Moreover, the concept of the right to the environment meets with criticism, as opponents claim that the concept cannot be filled with adequate content and that the quality of environmental conditions cannot be evolved according to justiciable criteria.

The fourth and final approach considers environmental protection as an instrument of personal duties and responsibilities and excludes the anchoring of environmental protection in law. Even in some texts on human rights the environmental protection thematize appeal to the personal responsibility of people and their duties, thus balancing the environmental protection.

Considering the different approaches, it is emphasized that "the interrelationship of human rights and environmental protection is undeniable" (Anton and Shelton 2011: 131). On the one hand, the implementation of international human rights relies on the protection of the environment, as this is the only way humans can benefit from the multiple and sustainable resources without which they could not survive. Polluted air and soil, dirty water and water shortages, and reduction of food resources affect health and impact survival. On the other hand, the exercise of human rights through, for instance, the right to information or participation, leads to a strengthening of environmental protection. Moreover, the participation of affected communities in decision-making about pollution sites can lead to an improvement in decision-making and thus can prevent hazardous environmental threats.

Although there is a shared essence of interest and undeniable relation of human rights and environmental protection, the two issues differ. The concept of environmental protection cannot be fully included in the human rights, otherwise it would modify them and thus falsify the agenda. Ecologists are engaged with the conservation of biodiversity and species that are of no benefit to humans or, on the contrary, are even dangerous. Thus, environmental protection means protecting nature on the basis of its inherent value rather than on the basis of active benefit to humans. In addition, there are some human rights that have no overlap with environmental protection and are thus completely irrelevant to it. These include, for example,

the right to have a name or to marry. These rights have no bearing on the implementation of environmental policy or on environmental damage.

The perception that human beings are a component of the global ecosystem can align the goals of human rights and environmental protection, since the two concepts aim at the "highest quality of sustainable life for humanity within existing natural condition" (Anton and Shelton 2011: 132). The primary goal of human rights is intragenerational equity, which means the protection of individuals within a current and specific society. The environmental goal adds an additional objective to ensure that life is sustained worldwide by harmonizing the requirements of the current generation of every species with those of the future. This also involves, on the one hand, an intragenerational equity and, on the other hand, additionally an interspecies equity. The three goals combined can be considered as the principle of environmental justice (Anton and Shelton 2011).

This chapter demonstrates how human rights relate to environmental protection and identifies its legal basis and goals. In the following section I analyze the concrete legal basis that applies in the context of addressing environmental justice concerns.

5.2 Legal and Regulatory Foundations in the United States Approaching Environmental Justice

Human rights are based on the dignity of the human being and are intended to preserve it. On the one hand, there are laws that a person is entitled to by virtue of belonging to a nation, such as the right to vote. On the other hand, there are laws that apply to every person, due to the fact that the person is a human being. These rights belong to every individual. However, not only people are protected from the law, but also animals, companies or meanwhile even the environment such as rivers or forests (Atapattu and Schapper 2019). Protecting the environment simultaneously implies protecting a community in the sense of reducing harmful environmental impacts and risks or preventing environmental hazards. Environmental justice is achieved when the environment, and by extension communities, are equally protected from environmental harm through environmental laws, regardless of their socio-cultural, ethnic, financial, or economic circumstances. Environmental justice is not explicitly codified in a single federal law. It exists a sum of environmental federal laws building a legal approach towards protecting the environment and its communities and promoting environmental justice and equitable environmental outcomes. It is rather an approximation, which is composed of different federal laws and not a concrete concept of an anchoring of environmental justice in the American federal law. The federal laws enacted by the Congress cover only some of the environmental and pollution issues. Even the federal laws that address certain environmental concerns

commonly inhabit discrepancies and gaps in the legal regulation. The environmental problems that are targeted and the laws that are subject to gaps and discrepancies depend on who possesses the most influential power in the political process and what their priorities are. As a result, not many lawmakers have prioritized environmental hazards in poor communities of color (Lazarus 1993). The unfair treatment of minorities and the discriminatory structures of the authorities, which directly affects the protection of the environment and its communities, reflected both in environmental laws and, conversely, in environmental justice, will be discussed in more detail in the following chapter 6. However, before I do so, I elaborate on the American federal environmental laws, regulations, and executive orders as well as Californian state law that have been passed to protect both their environment and their community and represent a foundation to address environmental justice concerns.

5.2.1 Executive Orders Addressing Environmental Justice Under Federal Law

Executive orders addressing the issue of environmental justice have been issued in the past. An executive order is issued by the president of the United Sates or a Governor and is equal to the power of a law and administrates actions of the federal government. Further, it does "not require any action by the Congress or state legislature to take effect, and the legislature cannot overturn it". Usually, the approval of a law takes more time than that of an executive order (Legal Information Institute 2023).

The Executive Order 12898 - *Federal Actions To Address Environmental Justice in Minority Populations and Low-Income Populations*, enacted by the former president William J. Clinton in February, 1994, aimed to have agencies address and priorities issues of health and environmental hazards faced by low-income communities of color in the context of environmental justice and to create and follow strategies to address them. The order stipulates "an interagency Federal Working Group on Environmental Justice" (Exec. Order No. 12898, 1994: 7629) summoned by the EPA in association with various agencies, for instance among others the Department of Health and Human Services, Department of Justice, Department of Energy, Department of Labor, Department of Defense. The working group establishes a guide for the various agencies to use to identify environmental and health impacts in poor communities of color. In addition, the working group is intended to coordinate various agencies involved in environmental justice and serve as an interface. Another important task of the working group is data collection, research, and examination as well as public meetings. According to the order, each federal agency is required to create an environmental justice strategy "that identifies and addresses disproportionately high and adverse human health or

environmental effects of its programs, policies, and activities on minority populations and low-income populations" (Exec. Order No. 12898, 1994: 7630). The strategy should imply, inter alia, policies, enforcement of public participation, implementation of laws about human health and the environment.

In 1997, William J. Clinton signed Executive Order 13045 - *Protection of Children From Environmental Health Risks and Safety Risks*. The order does not specifically discuss environmental justice, but nonetheless the order and its requirements have implications for the issue of environmental justice and its realization in the concrete relation to children. The order is implemented under the regulations of Executive Order 12898 addressing environmental health and safety threats that might have a disproportionate impact on children according to the EPA. Children are more susceptible to harmful substances and products because their bodies are still developing and absorb more pollutants in proportion to their body weight than adults. In addition, protective measures are often not adapted to the physical characteristics of children, and they are also unable to protect themselves (Exec. Order No. 13045, 1997).

Almost 30 years after Executive Order 12898, President Joe R. Biden signed another order in April 2023 that the government must expand and reinforce to fulfil the promise of achieving environmental justice in all communities of the United States. The Executive Order 14096 - *Revitalizing Our Nation's Commitment to Environmental Justice for All* recognizes that there is still much work to be done to achieve environmental justice and states:

> "We must advance environmental justice for all by implementing and enforcing the Nation's environmental and civil rights laws, preventing pollution, addressing climate change and its effects, and working to clean up legacy pollution that is harming human health and the environment" (Exec. Order No. 14096, 2023).

Besides the focus on equitable labor, housing, energy, and transportation opportunities, the order prioritizes a significant involvement and collaboration with affected communities as these are essential elements in the pathway of achieving environmental justice. As in Order 12898, the government assumes that data collection and qualitative research and the participation of affected individuals in decision-making processes are two of the key elements in combating environmental injustice. Furthermore, health and environmental risks related to climate change and environmental injustices should be identified and targeted. In addition, the Order calls for the exposure and dismantling of racist patterns of discrimination that impact the wellbeing, environment, and security of minorities. Following a "whole-of-government approach to environmental justice" (Exec. Order No. 14096, 2023: 25252), the order is based on diverse other executive orders that help drive success in achieving environmental justice. Besides

Executive Order 12898, this includes among others the following orders: Executive Order 13985 - *Advancing Racial Equity and Support for Underserved Communities Through the Federal Government* (2021), Executive Order 13990 - *Protecting Public Health and the Environment and Restoring Science To Tackle the Climate Crisis* (2021), Executive Order 14052- *Implementation of the Infrastructure Investment and Jobs Act* (2021), Executive Order 14057 - *Catalyzing Clean Energy Industries and Jobs Through Federal Sustainability* (2021) (Federal Register n.d.).

According to the U.S Department of Labor the Executive Order 14008 - *Tackling the Climate Crisis at Home and Abroad* (2021) represents the most aspirational work plan to date for achieving environmental justice by the federal government. The order acknowledges that every American has the right to a safe and healthy life and environment, but in fact, many people do not have access to safe areas, including work, education, housing, and recreation. In addition to the requirements for coping with climate change, the order further demands to secure environmental justice in every community of the United States through developing strategies for its enforcement (Department of Labor n.d.; The White House 2021). When Biden signed Executive Order 14008, he declared the Justice40 Initiative, a historic commitment promising that "40 percent of the overall benefits of certain Federal investments flow to disadvantaged communities that are marginalized, underserved, and overburdened by pollution" (The White House n.d.). The whole-of-government approach combats climate change and supports environmental justice. The federal government must undergo a reform in order to achieve the set targets. Each federal agency is required to review whether their programs are subject to the Justice40 Initiative and elaborate a revision of their programs. Meaningful participation of community in the process of determining the program is prescribed as well as the collection of data about the program benefits in marginalized communities. Agencies like the EPA, Department of Labor, Department of Health and Human Service and several more have already released their program according to the Justice40 Initiative.

5.2.2 Acts Addressing Environmental Justice Under Federal Law

In the context of legislation, "an act is a term for a formal body of law" (Legal Information Institute 2022) that requires the approval of the Congress. Commonly, a set of provisions covering the same topic is referred to as an act. At times, a draft law can also constitute an act (Legal Information Institute 2022). The legislation of an act is subject to a process that involves various stages, so-called trackers, in order to become a law. After the legislation have been Introduced (1), Passed House (2), Passed Senate (3), forwarded To President (4), it Became

Law (5). As part of the process the legislation might additionally resolve differences. Not every legislation achieves the last stage to become law, many legislations come to a standstill in the course of the process (Congress.gov n.d.).

In 1994, the federal Civil Rights Act, signed by former president Lyndon Johnson became effective. The act prohibits "discrimination because of race, color, religion, sex, or national origin" (National Archives 2022). The act enforces the right to vote and equal employment opportunities. In addition, discrimination in federal agencies and public institutions is prohibited and desegregation public education is enshrined in federal law (National Archives 2022). In the context of environmental justice, Title VI – *Nondiscrimination in federally assisted programs* of the federal Civil Rights Act is significant. Section 601 states that:

> "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance" (National Archives 2022).

Therefore, federal agencies, including the EPA, must ensure that their federally funded programs and activities have non-discriminatory structures. According to the new added regulations to the act in 1992, the EPA and its respective Office of Civil Rights must handle and investigate complaints submitted under Title VI. The EPA approves and enforces federally funded environmental programs and environmental decisions. When these environmental decisions, such as the siting of waste facilities, are based on discriminatory decisions, complaints can be filed. According to the EPA, since 1992, a small percentage of decisions have resulted in a complaint being filed with the EPA's Office of Civil Rights (EPA 2022c). If, for instance, communities of color experience a disproportionate share of environmental hazards from pollution facilities approved by the EPA and federal agencies based on discriminatory decisions and actions made for financial, economic, political, or other advantage, the matter violates Title VI of the federal Civil Rights Act.

The federal Civil Rights Act provides for the first time a legal basis to prohibit discriminatory federal actions and environmental decisions in theory. A basis that can be used to address discriminatory pollution patterns and environmental injustices. The recent case *Students for Fair Admissions v. Harvard University* represents an example for the violation of Title IV under the federal Civil Rights Act of 1964. The plaintiff, Students for Fair Admissions, claimed that Harvard's admissions policies discriminated against Asian-American applicants by imposing higher standards on them compared to applicants of other races. The Harvard implies the factor ethnicity in the admission process which ultimately negatively impacts the

applicants for whom their ethnicity is not an additional positive consideration. The procedure of advantaging and disadvantaging, e.g. discriminating applicants is prohibited under Title IV of the Civil Rights Act of 1964. The case was first rejected twice by lower courts before the case went to the US Supreme Court, which ruled in favor of the plaintiff. The connection between the process of Students for Fair Admissions v. Harvard and environmental justice might not seem immediately apparent, but there are several indirect ways in which the two can be related. Both environmental justice and educational equity coincides with the same category of social justice. Environmental justice advocates seek fair treatment and involvement in environmental decision-making for all people, regardless of their ethnicity, income, and other factors. Similarly, advocates for educational equity strive for fair access to quality education for all students, regardless of their background and ethnicity. The Harvard admissions case, with its focus on alleged discrimination against Asian-American applicants, raises questions about fairness and equity in the educational system, which align with broader social justice concerns. Both environmental justice and educational equity address systemic inequities within society. In the Harvard admissions case, the debate extends beyond individual instances of discrimination to encompass broader questions about the fairness of admissions policies and the role of ethnicity in shaping educational opportunities. Similarly, environmental justice advocates challenge the structural factors that lead to disproportionate environmental burdens on marginalized communities, such as the siting of polluting facilities in low-income neighborhoods of color. Environmental justice and educational equity are both underlying discriminatory structures that result in individual harm, disadvantages, and restricted access to a safe and healthy environment or to adequate education. The case is interesting for the environmental justice framework not only because the basic principles and the problem of discrimination overlap, but also because the lawsuit won can serve as a precedent and point the way for further decisions in areas of (environmental) justice. The decision will undoubtedly influence how institutions approach the consideration of ethnicity in admissions. The rulings issued by the United States Supreme Court hold significant implications for American society and the integrity of the legal system. As the Supreme Court is the highest court in the United States, its judgment carries out profound ramifications “that shape the country’s legal system, political environment, and societal norms” (Iftikar and Nguyen 2024: 4). The main duty of the court is to interpret and enforce the U.S. Constitution. However, its rulings often extend beyond the realm of law, profoundly affecting our society (Iftikar and Nguyen 2024; Supreme Court 2023). Thus, this case can serve as a landmark that forces the exclusion of ethnicity in any decision-making process, be it in the context of admission to a university or in the context of

deciding on the placement of a harmful environmental facility. Since the decision to site toxic facilities is often made based on socioeconomic and ethnicity, and the assumed defenselessness of the community that comes with it, the discriminatory decision-making processes similar to this case could be challenged in court and prohibited in the future. However, the decision-making process on environmental issues and site selection is much less transparent. Unlike Harvard University, which openly treated ethnicity as a factor of influence, government agencies do not make their decisions on environmental issues based on a specific set of criteria. This can make it more difficult to identify and challenge discriminatory decision-making criteria. Ultimately, only time will tell to what extent this case will set a precedent for future legal proceedings in the area of environmental justice.

It was not until 1992 that a proposed federal law exclusively addressing the issue of environmental justice was passed. The proposed *Environmental Justice Act of 1992* is a result of a series of research data, protests and case studies of environmental injustices based on discriminatory treatment patterns. The proposed act, introduced by the former Senator Albert Gore, should "establish a program to assure nondiscriminatory compliance with all environmental, health and safety laws and to assure equal protection of the public health" (102nd Congress n.d.). The act was supposed to protect the ones who experience the highest risks of environmental contamination and suffer most from environmental threats. Ultimately, however, the act failed in committee. The act did not pass the stage of introduction (Tracker: Introduced) within the legislation process as it failed in committee. It lacked sufficient measures to address the problem. While the approach was in the right direction, it lacked the essential link between environmental injustice and ethnicity and thus could not have taken an equitable approach to the distribution of environmental hazards. Furthermore, it did not address the problematic of the decision-making criteria of siting pollution facilities, and it did not provide a legal remedy that affected people could invoke to challenge threats in court (Hasler 1993).

Almost three decades later, in 2022, the *Environmental Justice for All Act* was introduced, "a bill to restore, reaffirm, and reconcile environmental justice and civil rights, and for other purposes" (117th Congress, n.d.). The Congress has not yet passed the act (Tracker: Introduced). In the context of environmental justice, the proposed act would reinforce existing laws, define the tasks of agencies, support local organizations and communities, and improve their meaningful engagement. The bill recognizes that low-income communities of color and other minority groups are disproportionately affected by environmental threats due to ethnically, socially, and economically discriminatory practices by federal agencies (117th Congress, n.d.). It remains to be seen whether the Congress will enact the bill.

Even though there is no act yet that deals exclusively with environmental justice, there exists other federal laws that contribute indirectly to the achievement of environmental justice by covering parts of the problem. The federal environmental laws should ensure protection for the environment and human health.

The *National Environmental Policy Act* (NEPA) was signed in January 1970 by former president Richard M. Nixon to become federal law (Tracker: Became Law). The Congress intended the new act to develop environmental policy at the national level and to establish the Council on Environmental Quality. The intentions of the act are to

> "declare a national policy which will encourage productive and enjoyable harmony between man and his environment; to promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man" (Department of Energy n.d.).

The act represents the first major environmental legislation in the United States for protecting the environment. It was stipulated that the federal agencies should examine possible pollution and evaluate the environmental impacts before deciding whether to carry out the action. The act requires that any negative environmental impacts of a proposed action must be disclosed in the proposal and a possible alternative option to the action must be presented. In addition, the social and economic consequences of environmental actions must be considered by agencies. Further, the public must be informed about the decision-making process. Actions covered by NEPA would be, for instance, the construction of airports, motorways, or buildings. Agencies must improve their programs to create and maintain safe and healthy environmental conditions for living without exposing people to environmental and health risks (Department of Energy n.d.; EPA 2022b; NEPA.GOV n.d.). The practices under NEPA, in the view of Executive Order 12898, are essential for recognizing the absence of environmental justice and approaching the issue. Thereby, the Council on Environmental Quality supervises the NEPA process as well as the adherence of Executive Order 12898 carried out by the federal government. At every level of NEPA's processes, there may be environmental justice concerns that need to be considered. The concerns about impacts on sociocultural and economic circumstances as well as the environment need to be covered and addressed by NEPA. Environmental justice needs to be considered in each of the following phases of the NEPA process: scoping process of socioeconomic and ethnic characteristics of the affected community; timely and significant involvement of the public during the entire NEPA procedure; determination of the demographic conditions of the affected environment, analysis of the distribution of hazardous environmental and health impacts on those affected (after having identified environmental injustices);

encouragement of the community to participate in the development of possible alternatives to the authority's proposed measures; preparation of a public record of decision providing information about the decision-making process, and mitigation measures to reduce the impacts (EPA 1997).

Moreover, in order to protect the environment and the inhabitants, the NEPA requires a detailed document, the so-called Environmental Impact Statement (EIS), for federal actions that may cause environmental hazards. An EIS is submitted by federal agencies when a proposed federal action is found to have adverse effects on the environment and its inhabitants (EPA 2023e). EISs are mandatory when a federal agency suggests a significant federal action that substantially influences the environment, as specified by NEPA (UC Santa Cruz n.d.: para. 2). The process of EIS is used as an instrument to identify and analyze the potential negative environmental impact, adequate options, and possible remedial measures. The process thus facilitates engagement and the development and analysis of information by the public and the authorities at state and federal level. Within the EIS process, proposals can be improved in regard of environmental protection by identifying adequate alternatives and possible remedies. Moreover, as part of the EIS process decision-makers are provided with detailed information about the affected environment on which the project should be realized. Environmental conditions and possible impacts are discussed. The provision of in-depth information is the underlying basis on which the proposal will be accepted or denied. A proposal can be denied within the EIS process if the impacts cannot be adequality remedied. A proposal can either be accepted on condition that measures to protect the environment are implemented, or without any additional requirements at all. Overall, EIS plays a crucial role in the federal environmental review process by providing decision-makers and the public with detailed information about the potential environmental effects of proposed federal actions and considering alternatives to minimize adverse impacts on the environment. Especially for disadvantaged groups, the EIS process is a broad opportunity to participate in the planning of federal projects that may have a direct impact on the environment (Department of Ecology n.d.). The EIS by the NEPA had a leading role which resulted in the application of similar requirements in the United Nations in 1987 as well as in more than 100 other countries (Middleton 2021). NEPA plays a significant role in shaping environmental policy and decision-making processes in the United States, "[h]owever, not until the courts began interpreting NEPA did the stature´s real meaning become clear" (Train 1974: 910). More than 400 legal cases and trials have already been filed under NEPA, which are typically conducted through the preparation of EIS. These include, for instance, the current ongoing cases Signal Peak Energy, LLC v. Haaland (2024), Sierra Club v.

U.S. Forest Service (2024), and Green Oceans v. U.S. Department of the Interior (2024) (Climate Change Litigation Databases n.d.). The trial *Calvert Cliffs´ Coordinated Committee v. Atomic Energy Commission* from 1972 represents one of the earliest cases in which NEPA has been interpreted. Thus, this case was a signpost for all further complaints and lawsuits under NEPA and sets a precedent. The committee argued that the Atomic Energy Commission violated NEPA in approving their project by not conducting an EIS. The case confirmed that NEPA applies to federal agencies such as the Atomic Energy Commission and that conducting environmental assessments is an essential requirement for approving projects that may have potentially significant environmental impacts. In addition, the case concluded that federal agencies are obliged to perform the procedural obligations mandated by NEPA to the utmost extent feasible (NEPA.GOV n.d.).

Although environmental justice legislation has not yet been enacted, environmental federal laws have been issued since 1970 that do not address environmental injustice, but the individual environmental laws represent a subset of environmental justice. The environmental laws cover certain areas or pollution problems that can arise in the context of environmental injustice. The following example of the federal Clean Air Act (CAA) is intended to explain the context.

The CAA was enacted by the Congress in 1970 and signed into federal law by President Richard Nixon in the same year (Tracker: Became Law). The act regulates and control the air emissions and prevents and control air pollution from hazardous pollution facilities and means of transportation in order to address the public health risks caused by polluted air. The act mandates that the EPA adopt requirements that maximize reductions in emissions from dangerous air pollution sites. Since 1990, the act has been constantly revised and articles have been added in the process (EPA 2023a). The Earth Day in 1970 was considered a milestone in terms of raising awareness of environmental problems in the American public and likewise, the federal CAA was a significant milestone in terms of environmental concerns. The act was not exclusively about setting standards for air quality control. It was also about raising awareness of the issues among the general public and the business community. The Congress saw the need for a change in the public's views on environmental protection in order to achieve an improvement (Rogers 2016). The act is not about air pollution caused by the absence of environmental justice. It is about the general improvement of emissions and the protection against air pollution, where and for what reason they have arisen is irrelevant. This implies that not all cases that are subject to the CAA are environmental injustices, but all cases that are environmental injustices in relation to air pollution are included in the act. The CAA is a

complex and far-reaching federal law under which numerous trials and lawsuits have been filed such as United States v. Cinergy, United States v. Ohio Edison (2004), and United States v. American Electric Power (2011) (The Office of the Attorney General William Tong n.d.). One of the landmark precedent cases of CAA is "Massachusetts v. Environmental Protection Agency" from 2007. In this case, the Supreme Court ruled that carbon dioxide and other greenhouse gases are air pollutants under the CAA. The court further held that the EPA has the authority to regulate greenhouse gas emissions from motor vehicles if it determines that they endanger public health. This decision played a significant role in shaping the EPA's regulatory authority over greenhouse gases under the CAA (Justia U.S. Supreme Court Center n.d.).

The detailed example of the CAA illustrates the connection with environmental justice of such acts. The same principle of applying the act to the concept of environmental justice is reflected in other environmental laws. These include, among others, the following briefly summarized federal acts:

- Environmental Quality Improvement Act of 1970: improvement of the quality of the environmental through the prevention and control of environmental pollution, natural resources, transportation and economic development (Tracker: Passed Senate);
- Clean Water Act of 1972: development of standards for surface water quality and a regulatory framework for the discharges of contaminants into the aquatic environment (Tracker: Became Law);
- Marine Protection, Research, and Sanctuaries Act of 1972: prohibits dumping waste into the ocean /Tracker: Became Law);
- Resource Conservation and Recovery Act of 1976: authorization of the EPA to control toxic waste at every stage of its process (from production to disposal) (Tracker: Introduced);
- Toxic Substances Control Act of 1976: empowerment of the EPA to impose the registration, recording and screening requirements and restrictions on chemical substances (Tracker: Introduced);
- Comprehensive Environmental Response, Compensation, and Liability Act (Superfund) of 1980: Remediation of unregulated or abandoned toxic disposal locations and other emergency discharges of harmful substances into the environment (Tracker: Became Law);
- Nuclear Waste Policy Act of 1982: regulations about storing and disposing radioactive waste (Tracker: Became Law);

- Pollution Prevention Act of 1990: Increase awareness of how to minimize pollution through more cost-efficient transformation in production, operation and use of materials, as existing regulations focus on treatment and disposal (Tracker: Passed House) (EPA 2023b).

However, although Congress enacts laws, it is up to the executive bodies to implement the laws (Rogers 2016). While litigation under both federal and regional environmental laws is a supplement to, and not a replacement for bringing discrimination claims under civil laws, environmental laws offer the possibility to engage in the decision-making process and to contest the establishment, extension, and operation of pollution sites (Engelman Lado 2019).

5.2.3 California State Laws Promoting Environmental Justice

In California, environmental justice is under state law. In 1943, the Government Code, an act passed and in force in California, was first adopted and has been subject to constant amendments and additions since then. Within Title 7 Planning and Land Use [65000 – 66499.58], Article 4 Powers and Duties [65040 – 65040.17], effective in 2020, refers to environmental justice as

> "the fair treatment and meaningful involvement of people of all races, cultures, incomes, and national origins, with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies" (State of California 2020: 2)

including the provision of healthy environment and the removal of pollution sources (State of California 2020).

In February 2018, the Bureau of Environmental Justice was founded by California Attorney General Xavier Becerra and was approved for enlargement by California Attorney General Rob Bonta. The bureau is part of the Environment Section at the California Department of Justice and is the first office of its type within an office of an Attorney General. Its objective is to address, promote, and secure environmental justice in the State of California "through oversight, investigation, and enforcement of the law" (Office of the Attorney General 2018: para 1.). The primary goal is the protection of people living in California from environmental threats who suffer disproportionately from environmental risk. The work of the office is intended to prevent and fine illegal and harmful releases into the air and water caused by facilities, especially in communities that are already disproportionately burdened by pollution. Environmental pollution from toxic materials such as lead should be prevented and eliminated,

and the pollution of drinking water is to be remediated. Another significant responsibility of the office involves contesting the actions of the Federal Government that fail to sufficiently safeguard public health and environmental protections. In addition, it is to ensure and enhance the application of the California Environmental Quality Act as well as laws related to land use planning (Office of the Attorney General n.d). The California Environmental Quality Act obliges local and state authorities to provide information to the relevant decision-makers and the public about possible environmental risks posed by proposed projects. If the planned project has the potential to have a negative impact on the environment, a more comprehensive and detailed information document, the so-called Environmental Impact Report, must be prepared. In contrast to the EIS, Environmental Impact Reports are mandated by public agencies operating at the state, city, or county level. In California, this report becomes necessary when a project's environmental repercussions meet the criteria outlined in the California Environmental Quality Act, indicating a significant impact (UC Santa Cruz n.d.: para. 3). The California Environmental Quality Act Guidelines, found in Title 14, Division 6, Chapter 3 of the California Code of Regulations, serve as administrative measures for enacting the act. These guidelines mirror the stipulations outlined in the Public Resources Code, alongside judicial interpretations of the law and practical planning considerations.

Furthermore, the guidelines outline how to decide if an activity necessitates an environmental review, specify the steps required in conducting the review, and detail the content needed in environmental documents. These guidelines are applicable to all governmental authorities operating within the state of California (Governor`s Office of Planning and Research. (n.d.).

Similar to federal laws, the state of California has enacted several environmental laws and regulations at the state level that, while not specifically addressing environmental justice, include environmental measures to protect certain environmental areas in order to promote environmental and human health. The enforcement of California's environmental state laws is carried out by a network of state and local agencies, each tasked with overseeing compliance with regulations pertaining to particular environmental area, including air quality, water management, harmful waste, solid waste, and pesticide usage. For instance, these include the California Air Resources Board, DTSC, Department of Pesticide Regulation and Department of Resources Recycling and Recovery (CalEPA n.d.). Several environmental laws on Californian state level are briefly summarized in the following:

- Porter-Cologne Water Quality Control Act of 1969: protection and enhancement of water quality in California, regulation of the discharge of pollutants into surface waters and effective management of water resources (California State Water Resources Control Board 2024);
- California Coastal Act of 1976: protecting and conserving the California coast, its resources and its environment, regulation of the development and land use along the state´s coast (California Coastal Commission 2024).
- Safe Drinking Water and Toxic Enforcement Act (Proposition 65) of 1986: protection of the drinking water sources in California to prevent harmful diseases that can be caused by toxic chemicals in the water; obligation of companies to report on drinking water pollution (California Office of Environmental Health Hazard Assessment n.d.);
- California Clean Air Act of 1988: improvement and maintenance of air quality in California, reduction of emissions coming from vehicles and facilities (California Air Resources Board 1998).

Moreover, the Senate Bill SB 1000 Environmental Justice Element Requirement became effective as a California state law in 2018 in order to address environmental justice concerns in local land use planning. According to SB 1000, municipalities and counties must either incorporate an environmental justice component into their planning or infuse policies, objectives, and goals referring to environmental justice into various aspects of the state´s General Plan. Furthermore, the state legislation outlines a mechanism for communities to actively engage in the decision-making processes regarding land use planning within their local areas (California Environmental Justice Alliance n.d.).

The legal situation at federal and state level differs, but in combination and in cooperation with the common goal of achieving environmental justice, it is a first step. However, there is still a long way to go to achieve environmental justice, especially in the area of the legal framework and its reliable implementation. As the case study on BVHP also shows, laws are not always implemented accordingly or do not adequately cover the problem. I will address this problem of inadequate enforcement of laws at the end of this chapter.

5.3 The Impact of the Environmental Justice Movement on the Environmental Regulation Framework

According to Kaswan (2013) environmental justice had an “important but modest role” (Kaswan 2013: 153) in influencing environmental law. The environmental justice movement

has shaped the environmental law framework in different ways. Thus, the most significant from of impact is the influence of grassroots groups that seek to address environmental issues through political and legal action. This civil engagement has a history of successes as well as failures. All in all, the environmental justice movement's effect on environmental law and regulatory agencies remained modest. However, with growing evidence of inequity in the distribution of environmental justice, the government responded with certain initiatives. These include some of the regulations and strategies already mentioned above such as the Environmental Equity Workgroup, Executive Order 12898, National Environmental Policy Act, Title VI of the Civil Rights Act, and Plan EJ 2014. These initiatives on the part of the government have created a procedural tool that draws attention to the iniquities of the distribution of environmental burdens. In addition, the policies, particularly NEPA and Executive Order 12898, led the government to collect and include demographic data and enhance communication with marginalized neighborhoods. This forced governmental decision makers to acknowledge the consequences of their work on environmental justice. Nevertheless, it is unclear to what degree this resulted in a change in the decision-making process in the sense of environmental justice. Executive Order 12898 does include significant assessment and planning strategies as federal policy, yet it does not correspond to a legally enforceable law or regulation that enforces environmental justice. Further, these steps have “not placed distributional outcomes or participatory control at the center of environmental decision-making” (Kaswan 2013: 155). More substantial environmental regulations such as Title VI are theoretically stable legal bases, but when it comes to practical implementation, strong enforcement is usually lacking leading to a weak outcome. The problem of inadequate implementation of laws and regulations by federal agencies is discussed in more detail in chapter 6.1 Politics of Pollution in the United States. A further obstacle is that citizens are not permitted to sue directly to enforce Title VI violations. If a citizen identifies a government violation of Title VI and wants to pursue against it, he/she must formally complain to EPA, which will then initiate an investigation of the violation. EPA's Office of Civil Rights is responsible for enforcing Title VI. However, ineffective management and inadequate authority regarding technical and interpretive issues result in a lack of enforcement. These factors, among others, contribute to the discontinuance of Title VI enforcement and its complaints. According to Kaswan, competent agencies are unclear to what extent they have the right to deny or impose requirements on environmental permits. EPA may be unwilling to implement environmental justice measures because it believes they are too drastic and ineffective. In addition, federal structures could make EPA reluctant to interfere in state-level concerns. If Title VI enforcement were to occur nonetheless,

it would still be the EPA that implements the measures rather than the community concerned, which may continue to be excluded from decision-making and participation as a result. Thus, this would be significantly deficient in terms of environmental justice, as active citizen participation is a key component of environmental justice (Kaswan 2013). One of the reasons why the environmental justice power has a minimal impact on environmental law is the lack of power of grassroot groups in terms of influencing federal policies and initiatives. The absence of power results on the one hand from the income and financial resources and social status of the group, and on the other hand of its capacity of organizational opportunities. The structure of decentralized grassroot groups prevents them from being included in national decision-makings which are characterized by more financed stakeholder organizations (Kaswan 2013). The lack of political power, financial and social resources will be further addressed under the chapter 6.2.

It is primarily the administrative authorities that promote environmental protection. Whereas the counter-majoritarian courts protect the rights and laws of minorities. The difference in view is often criticized by environmental justice proponents because numerous health and environmental standards of minorities and the poor are not adequately protected. This is mainly because regulatory standards in particular aim to provide the greatest possible good for the maximum amount of people. Within these standards, minorities and poor people and their problems are not considered. This lack of attention to the specific requirements of disadvantaged groups within the framework of environmental law also elaborates the difficulties when it comes to transferring power over environmental policy decisions. In particular, this concerns decisions transferred to the local level about the placement of pollution sites. Due to accusations of discrimination and the lack of participation of the local population in decision-making processes on waste disposal, the decision-making process was transferred to the local authorities. The community-based approach to shift the responsibility to local authorities was intended to enable more active participation of the local population in the decision-making processes. In reality, though, it was observed that the measure of transferring decision-making processes to the local level often lacked effectiveness in practice. In many cases, the grievances of disadvantaged groups could not be resolved in this way. This is by no means to say that a local community-based approach is misguided, but rather that there is a lack of implementation by local authorities, resulting in only isolated successes.

In the context of environmental regulation, human activities are assessed and accepted on the basis of the extent of their impact, harmful or beneficial, on the environment. In this framework, there is no project per se that is prohibited from the outset if it is classified as

harmful to the environment. Therefore, the following key questions arise: Does the activity cause active or passive damage to the environment? If so, is the project consistent with legitimate activity under government regulation? (Yang 2002).

5.4 Enforcing Environmental Protection and Environmental Justice by Law

Environmental protection, i.e., the fair protection of individuals from discriminatory pollution patterns based on their sociological characteristic like ethnicity, income, power, must be enshrined in the national law. Such regulations must take into consideration both the intentional and unintentional "effects of public policies and industry practices" (Finkel and Golding 1995: 244) from which low-income groups, communities of color and other discriminated people are suffering variously. With its practices, the government amplifies "a system where environmental protection is a privilege and not a right" (Finkel and Golding 1995: 241). Skin color and other sociological characteristics influence the extent to which a community is granted privileges or not. Discriminatory structures remain in place in spite of the existence of laws prohibiting such practices. Discriminatory structures and practices are not a new phenomenon in the rise of the environmental justice movement. Discriminatory patterns are already known from other areas of life, such as housing, employment, education. By issuing legislative mandates, a basis was created to address the disadvantages discriminated groups have to experience. These include, for instance, the Housing Act of 1949, Equal Educational Opportunities Act of 1974 or anti-discrimination laws enforced by the U.S. Equal Employment Opportunity Commission which prohibit discrimination and legislate equality in the different sectors. There is a need for initiatives, new laws, and regulations, as well as strict enforcement of already existing laws that address unequal environmental protection and counteract structural inequalities (Civil Rights Division n.d.; Finkel and Golding 1995).

According to Bullard, "the environmental protection apparatus is broken and needs to be fixed" (Bullard 2008: 16). To address environmental injustices and to enforce equitable environmental protection it is essential for the EPA to reconsider their working methods and their regulations by reacting to the current policies that create to the discriminatory and inequitable exposure of environmental hazards (Bullard 1994). The framework of environmental justice implies elements that are suggested to be applied to improve and ensure equal environmental protection nationwide. Further, the framework "adopts a public health model of prevention" (Finkel and Golding 1995: 244) whose strategic aim is to prevent environmental hazards before harm occurs in the first place to protect the population from environmental degradation.

Currently, an individual or community facing an environmental threat must prove that they are being harmed by a particular source of pollution. The framework requires a reversal of the burden of proof to improve environmental protection. The burden of proof is on polluters to prove that they are responsible for the harm that occurs through discriminatory pollution patterns that result in unequal protection of ethnic minorities and disadvantaged groups. Pollution source operators must demonstrate that their facility does neither harm the environment nor people. The polluters are required to proof that their pollution practices are not discriminatory.

Within the framework of environmental justice and the fight for equitable protection, uneven effects and statistical evidence should be allowed and considered in court to conclude discriminatory structures on the part of polluters or the government. By using specific resources and taking purposeful actions, the disproportionate impacts are remedied and redressed. Communities who are the most affected by environmental damage and health threats would be identified for actions and resources to be undertaken. By relying only on objective science, the exploitative workings of polluting industries in some communities are obscured which leads to a passive acceptance of the situation (Finkel and Golding 1995).

As the Executive Order 14008 entered into force it was decided that environmental justice must be addressed as central concern of the government, and thus new strategy must be developed to enforce the just application environmental laws. Therefore, in 2022, a Comprehensive Environmental Justice Enforcement Strategy was implemented by the Environmental and Natural Resources Division and the EPA's Office of Enforcement and Compliance Assurance including additional input from agencies such as the Department of Justice and community organizations. The strategy includes guidance for implementing and enforcing the Department of Justice's civil and criminal powers, in cooperation with the EPA and other government agencies, to provide timely and efficient remedies for environmental hazards caused by systemic injustices in order to promote environmental justice. The focus is particularly on communities with high minority and poverty populations as well as Tribal populations, which in the past have often been left out of the law and thus disadvantaged and exposed to greater environmental harm. The strategies consist of „a set of principles and actions to continue our work to advance environmental justice through the enforcement of federal laws" (U.S. Department of Justice 2022: 1). The working method requires transparency and full application of the legal apparatus to ensure that the ongoing violations of federal law affecting overburdened communities are addressed. Transparency implies that the communities concerned are provided with information on the measures planned and implemented by the

authorities. The information must be easily accessible and translated in several languages, so communities are able to learn about the environmental injustices they are affected by. The cooperation with EPA and other government authorities as well as the exchange with affected communities is part of the strategy. An Environmental Justice Enforcement Steering Committee was created in order to coordinate and ensure the application of the strategy. In addition, environmental task forces were established to support and organize the enforcement of the strategy. Writing protocols during investigation of potential environmental pollution threats should help to identify cases of environmental injustices and to gather information about the affected community. As part of this method, enforcement measures are carried out in accordance with environmental protection law, civil rights and other laws such as those on labor, health, and consumer protection. Further, the strategy recognizes the significance of the meaningful involvement of community participation in decision-making processes. Therefore, according to the strategy, community outreach must be improved through listening sessions and cooperation to create a step-to-step plan (U.S. Department of Justice 2022).

5.5 From Theory to Practice: The Performance of the Application of Laws and Regulations by Government Authorities in the context of Environmental Justice

The EPA's Office of Environmental Justice, founded in 1993, is responsible for the internal enforcement of Executive Order 12898 and creates agency and cross-agency plans for achieving environmental justice and manages grant programs. Nonetheless, the office has no power to implement its own policies. For example, since Executive Orders are created and signed by presidents, progress on environmental justice is directly dependent on the policies of each president. There has been some progress under Barack Obama. He had some technical tools developed, such as the EJSCREEN, to make it easier and faster to identify environmental injustices so that authorities can respond more rapidly. Under Trump, the successes were not only halted, but also scaled back. Trump cut the EPA's funding and thus also the funding for the Office of Environmental Justice and its grant programs.

The EPA's previous attempts to promote equal opportunities in pursuing environmental justice have so far not been sufficient. Dr. Clarice Gaylord, the first director of the EPAS´s Office of Environmental Justice, considers the minimal advance in the fight to eradicate environmental injustice in that the EPA is lacking the authoritative power and resources to monitor and enforce Executive Order 12898. The Director of the Environmental Justice Clinic at Vermont Law School, Marianne Engelman Lado explains that in order to effectively eliminate ethnic discrimination in the context of environmental justice, the EPA is required to

be responsible to enforce civil rights through the use of political capital whether inside or outside the EPA (Perls 2020).

In 2011, also under Obama's presidency, Deloitte was commissioned by the newly appointed head of the EPA, Lisa Jackson, to conduct a review of the EPA´s civil rights compliance and enforcement program in terms of its effectiveness and compliance. According to the report, the EPA's Office of Civil Rights does not sufficiently and reliably investigate Title VI complaints. Recipient checks for Title VI enforcement are either not performed at all or not performed timely or properly. The office fails to clearly define duties and lacks the ability to qualitatively train and review staff. In general, the report finds that the organization of the Office of Civil Rights lacks a structured and clear infrastructure and lacks guidelines and standardized processes and systems. In addition, the EPA does not sufficiently promote awareness of the implementation of Title VI among environmental authorities (Engelman Lado 2019). Deloitte concludes that the EPA is not paying enough attention to Title VI implementation and that the outcomes "resulted in a record of poor performance" (Deloitte Consulting LLP 2011: 2).

The External Civil Rights Compliance Office (ECRCO) is in charge of enforcing compliance by beneficiaries of EPA funds with Title VI of the Civil Rights Act, that prohibits discrimination based on color or ethnicity. In the private right of action with regard to Title VI is limited to those claims that relate exclusively to intentional discrimination. Public authorities are not subject to this limitation focusing on intentionality, according to the Supreme Court (Perls 2020). EPA's Title VI enforcement regulations prohibit the beneficiary of financial support from EPA funds “taking actions in their programs or activities that are intentionally discriminatory and/or have a discriminatory effect” (EPA 2017: 2) even if they appear neutral in advance. Consequently, overburdened communities rely on EPA to enforce its internal Title VI regulations to eradicate environmental injustices. For example, if a polluting facility is permitted in an existing overburdened colored community, those affected are not allowed to sue under Title VI unless they can provide evidence that the state has acted in a deliberately discriminatory manner. Yet, these persons can complain to the ECRCO on the grounds that the state's permitting of the pollution facility caused adverse impacts based on discrimination against the community because of its ethnicity or color, which violates Title VI by the state. ECRCO is responsible by EPA regulations for reviewing the programs and actions of recipients of EPA funds for regularity, in this case for discrimination. If there is a more detailed review based on the suspicion of discrimination present, the EPA can stop or delay payments to the recipient (Perls 2020).

In 2016, a report by the U.S Commission on Civil Rights reviewed the EPA's compliance with its environmental justice obligations came to the following conclusion:

> "EPA does not take action when faced with environmental justice concerns until forced to do so. When they do act, they make easy choices and outsource any environmental justice responsibilities onto others" (U.S Commission on Civil Rights 2016: 2)

The report discovered that EPA has difficulties providing "procedural and substantive relief to communities of color" (U.S Commission on Civil Rights 2016: 2) suffering from environmental injustice. EPA regularly misses deadlines and is significantly delayed in responding to Title VI complaints in the context of environmental justice. The agency is incapable of actively and properly investigating recipients and their actions for discriminatory impacts, due in part to lack of resources and staff. In addition, the report found that the EPA Office of Civil Rights has never stopped or revoked payments due to allegations of discrimination (U.S Commission on Civil Rights 2016).

In 2020, another report from the EPA's Office of Inspector General followed. It was revealed that ECRCO does not initiate investigations into compliance with Title VI but waits until complaints are filed against the regulation. Not until then does ECRCO examines the program data of the recipients of EPA funds. As a result, it is the responsibility of communities suffering from environmental injustices to take over ECRCO's duties and identify, document, and bring Title VI violations to a complaint. ECRCO prosecuted less than 25 per cent of the Title VI grievance received. To improve ECRCO's work, Obama acted during his presidency and published a *2015-2020 ECRCO Strategic Plan*, a *Title VI Case Resolution Manual*, and a *Title VI Compliance Toolkit*. Under the Obama administration, ECRCO found discrimination for the first and only time when it investigated a 1992 complaint against the Michigan Department of Environmental Quality. Despite the finding of discrimination, the EPA made no effort to remove funding from the department. Later, during Trump's tenure, of the 57 complaints filed, 16 were processed and no discriminatory intent and effects were found in any case (Perls 2020).

Not only the EPA fails to take upon their responsibilities. The DTSC who are taking care of permits for facilities are not doing their job as I learned during my internship as Greenaction. A permit can be reapplied by the DTSC. If the request to extend the permit is rejected, e.g., receiving a notice of deficiency, the third time, the facility officially has to be shut down. Even though there exists facility which permit request had been rejected three times, they are still running. Greenaction filed several complaints against DTSC for letting pollution facilities run without permit. For instance, the Chemical Waste Management Facility in

Kettleman City, California, were issued its original permit in 2003, which expired on June 20, 2013. DTSC issued 3 notices of deficiency to the company in response to its permit renewal application. Even though, the facility is still running today, 9 ½ years after the initial permit has been expired. This permit application process can be reviewed in the online tool "Envirostor". In addition, license requests and applications are processed slowly, which means that the license may expire before the application is reviewed (Greenaction n.d.).

To summarize, the application of environmental regulations and performances executed by government authorities is insufficient and thus ethnic minorities and low-income groups are not adequately and justly protected by the law (Yang 2002). The results of the various investigations and reports over the years clarify that the EPA is not carrying out its mission and tasks correctly and completely. To improve the overall work of the EPA several improvements are required. EPA must investigate Title VI complaints more quickly and reliably. They must examine the content of allegations and exercise their right to withdraw funding, revoke permits and issue penalties for non-compliance. Thus, they must take strict administrative action and seek effective remedies. EPA must prepare independent analyses of various environmental impacts and publish final investigation results. Furthermore, they must increase their transparency, reform their administrative organization, enhance staff education and training, and improve their cooperation with other responsible government authorities (Engelman Lado 2019). In addition, DTSC must shut down facilities running on an expired permit, and they need to follow up more closely on license checks and process requests more rapidly.

6 Environmental Injustice and Discriminatory Pollutions Patterns in the United States

The previous chapter analyzed the environmental laws and regulations that are supposed to enforce environmental justice and protection. This chapter demonstrates why, despite existing environmental laws and regulations, the institutional causes of discriminatory pollution patterns drive the United States to pursue pollution policies that result in the inequitable distribution of environmental hazards based on a community's sociopolitical, ethnic, and economic status.

Throughout the years, environmental inequities, and disparities in the distribution of environmental threats "have been created, tolerated, and institutionalized by local, state and federal action" (Bullard 1994: 15). When it comes to environmental injustices it is essential to investigate and analyze who benefits and who suffers from the environmental policies and which kind of discriminatory pollution patterns underlie them.

6.1 Politics of Pollution in the United States: Institutional Causes of Discriminatory Pollution Patterns

In 1984, Cerrell Associates, a government affairs agency located in Los Angeles, was instructed by the California Waste Management Board to conduct a study called 'Political Difficulties Facing Waste-to-Energy Conversion Plant Siting'. Based on 43 case studies of waste-to-energy projects, questionnaires and interviews, the study´s main part discusses and identifies "types of communities and the types of people that are most likely and least likely to oppose a Waste-to-Energy project" (Cerrell Associates 1984: 17). The study's demographic analysis is intended to facilitate the siting of waste incinerating facilities by planning in advance to locate them in communities where there is little or no opposition. The report identifies the criteria that determine the probability of resisting environmental facilities:

> "Members of middle or higher-socioeconomic strata (a composite index of level of education, occupational prestige, and income) are more likely to organize into effective groups to express their political interests and views. All socioeconomic groupings tend to resent the nearby siting of major facilities, but the middle and upper-socioeconomic strata possess better resources to effectuate their opposition. Middle and higher-socioeconomic strata neighborhoods should not fall at least within the one-mile and five-mile radii of the proposed site" (Cerrell Associated 1984: 26).

The study concludes that public decisions about pollution facilities, increase social injustice. The report shows that public opposition is the biggest obstacle to environmental waste management (Atapattu and Schapper 2019). Furthermore, the results of the study state that the following individuals or communities would be least likely to oppose incinerators: rural communities especially located in the South or Midwestern and farming communities, individuals with low-income and less education mostly above middle age, individuals who are catholic, conservative, republic and belief in economic benefits of a waste facility in their neighborhood as well as individuals who do not participate in social events. In contrast, urban communities in Northeastern and western as well as younger people, who are more educated, democratic, liberal, or belonging to the middle- or upper-class are more likely to resists the siting of pollution sites in their neighborhood (Cerell Associates 1984). Corporations and polluters actively target communities in the first category, which are less able to fight back because they lack the political and financial power to oppose the siting of pollution sources in their community (Diaz 2016).

According to my interviewee B., the study is "pretty much [about] how to overcome community opposition to be able to build garbage incinerators" (see appendix 1.4). He told me

that after publishing this report, the government tried to build three garbage incinerators in in a vastly populated, poor community of color in South Central Los Angeles, but what the government and the facility operators "didn´t expect is that the black community would organize and rise up and defeat it" (see appendix 1.4). This suggests that the study, which aimed to identify vulnerable communities for the construction of incinerators, is not universally accurate. The communities that the report expected would not resist because they lacked political power and financial resources did so, contrary to the report's estimates. For instance, BVHP is proof that a community can build resources through its collective power and by working with environmental organizations to fight back against polluters and the government. The PG&E Power Plant was shut down due to community-based activism. The cooperation of community residents and environmental organizations will be further examined in chapter 8.

The environmental justice movement in the United States aims to democratize protection from environmental and health hazards. This raises both ethical and political considerations about who gets protection from what, why, and how much. Even though the EPA argued that "environmental protection should be applied fairly" (Reilly 1992: 18), environmental legislation, laws, and policies in the United States are enforced in different and unequal ways for distinct regions and communities which bear environmental and consequently health hazards. The decision-making process of environmental regulations are based moral foundations, scientific data, and political and economic contexts (Bullard 1994).

Environmental laws and regulations that are already in place are not applied and implemented in an equitable manner. In doing so, certain individuals or groups are treated differently in front of the law than others, which can lead to dangerous health hazards as they cannot benefit or benefit little from the laws and regulations for environmental protection (Bullard 2008; Diaz 2016). The unequal application of health and environmental laws enforcements by the EPA was researched by a study conducted by the National Law Journals in 1992. The study highlights that communities of color or minorities experience fewer protections than white communities. While white communities obtain more rapid action from the government and achieve better results, communities with a large Black or Hispanic population are neglected. Thus, there exists a difference in terms of clean-up actions and punishments for polluters that can be attributed to the ethnicity of the residents. According to the study, fines for violations of environmental laws was about five hundred percent higher in predominantly white communities than in communities inhabiting mostly minorities. It also took 20 percent longer for toxic pollution sources located in neighborhoods with a majority of minorities as residents to be added to the state priority list to be eligible for cleanup (Lavelle

and Coyle 1992). Mennis (2005) concludes similarly. His research on pollution about air polluting facilitates in New Jersey shows that pollution sites located in neighborhoods with a high proportion of minorities receive fewer behavioral orders and lower fines for violations than pollution sites located in predominantly white communities. Hellend (1998) notes that the level of penalties for environmental violations is distributed differently. The deciding factor in determining how much the penalty will be is the economic capital of the community in which the pollution source is located. If an environmental facility located in an affluent area violates regulations, the facility is more likely to face closure than if a similar violation occurs at a facility in a minority community. The fact that penalties for environmental violations are lower in low-income and minority communities because the laws are not adequately enforced is an incentive for companies to locate their facilities in such neighborhoods. High penalties of environmental violations in white communities are a deterrent. The low penalties are accepted by polluters as these penalties are more insignificant than the effort to comply with laws. Consequently, no effort is made to avoid violations, but rather the penalties are tolerated and factored in up front (Diaz 2016).

Low-income and minority communities are not only disproportionately affected by the placement of pollution facilities but are also disadvantaged and abandoned by government practices. My interviewee B. confirms that the government uses discriminatory pollutions patterns and explains: “Yet, in most cases, [the government] continue their practices of injustice and pro industries, pro polluter practices” (appendix 1.4). This demonstrates that the current governmental practices expose communities of color and other minorities at an increased vulnerability (Bullard 2008). According to Bullard (1994), the government reproduce the environmental policy formulations in the favor of white communities having better education, higher income, and greater political power - attributes that are commonly tightly linked.

Existing environmental laws are not sufficiently implemented and, moreover, regulations are limited. For example, ineffective pollution control practices focus on reducing pollution to acceptable levels rather than preventing pollution before it occurs to protect people from pollutants (Faber and McCarthy 2003). The EPA can only successfully prevent the inequitable application of environmental laws that result in the endangerment of certain populations by addressing and eliminating the basic inequitable structures and governmental policies that underlie these discriminatory practices (Finkel and Golding 1995).

6.2 Relation between Environmental Justice, Power, Ethnicity, and Poverty

In 1987, the United Church of Christ Commission for Racial Justice published the study 'Toxic Wastes and Race in the United States', the first one of its kind, about the relation of the siting of environmental hazardous pollution sources and the racial and socio-economic factors of the surrounding communities. Church-based human rights organization found that communities of color and low-income populations are more affected by pollution sources. It is highlighted that ethnicity is not the single factor, but the most significant one when it comes to the location of pollutant sites. Socio-economic characteristics like poverty, employment, housing, education, and health must also be considered (United Church of Christ 1987).

As pollution is bound, companies or the state are contracted to take care of its treatment and disposal. In this way, chemical waste becomes a commodity that is mobilized to be transported locally, regionally, and supraregionally for further processing and disposal. A suitable location for the waste is chosen in such a way that the next treatment steps and storage can, on the one hand, be carried out in consideration of the political legal situation and, on the other hand, can be made cost-effective in terms of pricing. These 'efficient' places are in largely located in communities with less political power to oppose such incinerators or waste storage facilities. In addition, the price of land is lower in these places and residents tend to seek more jobs and would benefit from taxpaying businesses. Yet, these places are often located in low-income communities of color. The decision on the location of pollution plants is therefore based on capital market structures and economic interests, which aim to operate profit-oriented through cheap land and labor. This is one reason, among others, that hazardous facilities are not evenly distributed across the United States but are often located in poor communities of color Faber and McCarthy 2003; Boström and Davidson 2018).

In addition to the economic interests of polluters and government, sociopolitical structures contribute to the uneven distribution of environmental injustices. Among the most important sociopolitical characteristics of a community in terms to environmental justice are education, income, ethnicity, political power and voting behavior, social capital, as well as the residential property (Boström and Davidson 2018). The more limited the political power of a community, which can rarely muster the resources to mobilize and defend itself against environmental threats, the more vulnerable it is to the siting of incinerators, toxic waste dumps and other hazardous facilities. This consequently exposes the community to dangerous health problems and environmental threats from the state and the capital (Faber and McCarthy 2003). This indicates that landfill and facility operators are taking the path of least resistance, i.e., settling in communities that receive less protection from environmental threats due to their lack

of or lower political power and education, their poverty, and/or their high proportion of people of color. These places are so-called sacrifice zones. Thereby, the communities are often "viewed as expendable" (Bullard 2005: 85) whereas the white elite experience more protection (Bullard 1994; Bullard 2005). According to Bullard (2005), the characteristic of ethnicity as well as poverty are determining factors as to whether and to what extent hazardous environmental threats arise in a community, thereby creating an environmental risk for the residents. The siting of polluting facilities is a decision-making process that is about political conditions, not environmental and chemical factors. In practice, "the politics of pollution create vulnerable communities and environmental sacrifice zones" (Bullard 2005: 85) mostly populated by people of color, poor residents or inhabitants lacking an adequate access to medical care. With its corporate welfare policies, i.e., tax relief and connected inducements and giveaways, the government helps to establish sacrifice zones. This implies that the government is involved in the problem. The polluting companies employ economic blackmail, such as threatening to move to another location, as a method of obtaining concessions from the government. It is common for the operators of such facilities to promise the local, mostly poorer, residents employment opportunities as a way of making them favorably disposed towards the project. Nevertheless, these offers remain nothing but promises. There is no connection between the jobs in a factory and the surrounding residents. Thus, the job promises are not kept by the operators (Bullard 2005).

The economic, sociopolitical, and ethnic realities that cause the unequal distribution of environmental hazards and disadvantage certain populations often overlap, as the elements are often closely related and influence each other like the previous explanations demonstrate due to their overlapping elements. Thus, the causes of environmental injustice cannot be strictly separated, but rather result in a holistic amalgamation of diverse characteristics and influences. For instance, political decisions always have an economic impact that can lead to ethnic inequalities. Economic interests impact political realities and regulations resulting in disadvantages for ethnic minorities. Ethnic discrimination is always rooted in political systems and in most cases have an impact on economic structures (Boström and Davidson 2018).

6.3 A Critical Perspective on the Term *Environmental Racism*

In 1982, Reverend Benjamin Chavis, director the United Church of Christ by that time, first used and shaped the term of 'environmental racism'. Robert Bullard, professor of sociology, is a leading advocate of the environmental justice movement since 1979. Following Chavis by using the term of environmental racism, Bullard discusses the impacts of socioeconomic factors

on environmental justice but concludes that even though poverty and class do have an impact when it comes to environmental injustices, the decisive factor is only ethnicity (Bullard 1994). Thus, in all his work Bullard uses the term environmental racism. Many other scholars like Charles Lee, research director of the Commission of Racial Justice, continued to use the expression and it is nowadays a widespread term in the field of environmental justice. I have decided not to use the term. There are two main reasons for this.

First, in my research I have come across rarely any study or work that blames ethnicity exclusively for the unfairness of environmental justice. While ethnicity is often put first, poverty is always included. In my opinion, a holistic approach is needed to understand who is exposed to environmental hazards and why. There is no singular reason or cause, it is a pluralistic combination of factors of discriminatory patterns such as ethnicity; poverty; lack of political power, financial capital, and social network; and unequal enforcement of environmental law and regulations, resulting in the exposure of hazardous environmental pollution. Therefore, using the term environmental racism would view the issue too one-sidedly and not reflect the full plurality of perspectives.

Second, I do see a linguistic dichotomy with instrumentalizing the term ‘racism’. The discrimination of people of color and other ethnic minorities resulting in less protection form environmental hazards is in fact racism as racism is defined being the “process by which systems and policies, actions and attitudes create inequitable opportunities and outcomes for people based on race” (Australian Human Rights Commission 2019). In contrast, supporters of a narrower approach to the conceptual definition of racism see an overuse of the term as risking an impermissible broadening of the concept (Urquidez 2022). Overusing the term racism can result in a what Robert Miles (1989) calls ‘conceptually inflation’, i.e., that is, the term is used so broadly that it loses its detailed nature and thus its moral strength, thereby compromising concept of racism (Garcia 1997; Miles 1989; Blum 2002). I am not saying, of course, that the term should no longer be used, but its use must be critically reflected upon in order to protect the term from becoming loose, empty, inadequate or vague due to its overuse which could result in a relativization of the term and thus of the concept.

7 Environmental Justice and the Burden of Environmental Health Risk

As mentioned before, the environmental justice movement emerged out of various other movements and one of them was the movement for public health and anti-toxics. “Billions of gallons of highly toxic chemicals including mercury, dioxin, PCB´s, arsenic, lead and heavy

metals such as chromium" (Faber and McCarthy 2003: 51) were disposed in thousands of communities in the United States poisoning the drinking water and the land causing high rates of cancer, congenital defect, liver and nerve diseases and other health consequences. A study from 1991 by the National Research council discovered that over 41 million people live in places that are within a four-mile radius of a superfund waste site, of which there exists over 1500 in the US. In 1998, the Toxic Release Inventory of the EPA published that "23,000 industrial facilities reported releasing a total of 7.3 billion pounds of chemical pollutants into the nation´s air, water, land and underground" (Faber and McCarthy 2003: 51) whereby more than 90 percent of the chemicals were released directly on site, close to the surrounding communities.

One major focus of the environmental justice movement in the United States is on health. Environmental justice advocates for the health and safety of those who are most vulnerable but often have the least power and resources. In this context, environment is defined "as being where we live, work, play, worship, and go to school, as well as the physical and natural world" (Bullard 2005: 2). Thus, our environment consists of the air we breathe, the water we drink, the particles in the atmosphere we are exposed to as well as the condition and quality of our home, workplace, school and so on (Bullard 2005). Health is defined by the World Health Organization as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity" (World Health Organization 2023). It is further specified that this state is a human right and is granted everyone regardless ethnicity, class, religion, or gender. Health may seem like something individual and personal, but a closer examination reveals that individual health is influenced by multiple factors both on the individual and external level. The ethnicity of the individual, condition of its environment, access to health care and economic characteristics of the neighborhood influence the person´s wellbeing (Gee and Payne-Sturges 2004). Disease and mortality rates in the United States can be attributed to a person's ethnicity and social class, both of which are determinants of their health status. Both determinants are critical predictors of whether and to what extent access to adequate health care is available as well as resources to for preventive and health promoting resources. Thus, the observable health variations in terms of health care attributable to a person's socioeconomic and ethnic status bring up the possibility of the role of environmental contamination in relation to other societal attributes that influence health (Sexton and Adgate 1999).

In the following, I discuss the relationship between humans and the environment and how this interconnection affects human health. I refer to how hazardous environmental

pollutants can affect health. In doing so, I analyze how environmental injustices are related to health disparities and how the two concepts are interrelated. In addition, environmental health risk and health assessment are discussed in relation to environmental justice.

7.1 Relation between Environmental Injustices and Health Disparities

When environmental justice is approached from the perspective of risk-based decision making, the concept represents a consistent and legitimate environmental health issue. Considering environmental justice from the perspective of health risk assessment, the main goal is to identify communities and populations determining their comparative risk so that measures might be taken to prevent such risks. The group of people who are in principle subject to a high risk are those who are "exposed above some health- related benchmark or more susceptible to the adverse effects of exposures" (Sexton and Adgate 1999: 4). Those for whom both factors apply are most at risk. A growing amount of evidence exists that identifies the groups that suffer from both impacts disproportionately are low-income groups, which in turn are largely made up of people of color. Thus, it is low-income groups of color that are disproportionately exposed to health-threatening environmental factors and pollution, while also being more vulnerable to the associated health effects (Sexton and Adgate 1999).

The chemicals and toxins that pose a threat to the environment are the same ones that harm human health. One of the possible health effects of environmental pollutants or toxic materials exposed to the environment and thus to humans is cancer. In 1984, an early study from the U.S. Office of Technology Assessment conclude that 25 percent of Americans suffer from cancer at least once in their lifetime, while around 20 percent are dying from the disease. The National Center for Chronic Disease Prevention and Health Promotion (2022) has updated the information to indicate that one in three people will develop cancer once in their lifetime. Further, the study estimates that around 60 to 90 percent of cancer diseases can be traced back to the influence of environmental causes. Thereby, the environmental impacts are implying external factors such as food and smoking as well as environmental exposure like water, air, or chemicals. The percentage cannot therefore be related exclusively to environmental influences, but the study nevertheless shows how strong the consequence of environmental influences is on people's health (Bryant 1995). The Minnesota Department of Health (2023) draws a similar conclusion. They see lifestyle habits, for instance tobacco use, unhealthy and excessive consumption of food, as the primary cause of cancer. In addition, they recognize that being exposed to hazardous environmental pollution sources and chemicals made by humans increase the risk of cancer. Toxic substances like "[b]enzene, asbestos, vinyl chloride, radon, arsenic,

and trichloroethylene […] can increase the risk of cancer when people are exposed to them" (Minnesota Department of Health 2023a). Facilities like industrial manufacturing or waste disposal sites can release such hazardous toxins. Incorrect handling and treatment of toxic chemicals can also lead to a release with dangerous consequences (Minnesota Department of Health 2023a).

Asthma is a lung disease in which the bronchi are in a constant state of inflammation. In the United States, about 25 million people were suffering from asthma in 2021. Children are particularly susceptible to asthma, and it is the most common chronic disease among children (Centers for Disease Control and Prevention 2023a). The causes of asthma are not yet fully understood, but it is known that genetics, environment, and occupation are related to the development of asthma. In addition, asthma attacks can be triggered by environmental factors such as dust, air pollution, smoke, and non-environmental factors such as mold, pets or infections (Centers for Disease Control and Prevention 2023b). People who have asthma are "particularly sensitive to the effects of carbon monoxide, sulfur dioxides, particulate matter, ozone, and nitrogen oxides" (Bullard 2008: 12). According to Bullard (2008), low-income and minority groups are more prone to asthma mortality.

The different health outcomes depending on a community is called 'health disparity'. It is assumed that health disparities are created and maintained by the qualitative characteristics of the environment (Gee and Payne-Sturges 2004). The National Institute of Environmental Health Sciences (2021) explains that "environmental factors can lead to disease and health disparities when the places where people live, work, learn, and play are burdened by social inequities". So-called environmental health disparities occur when a community is disproportionately affected by disease due to poor environmental conditions in its neighborhood compared to more affluent communities living in healthier environments (Gee and Payne-Sturges 2004; National Institute of Environmental Health Sciences 2021). Different population groups are being differently exposed to harmful chemicals. Health disparities are resulting from a "prolonged social, economic, and environmental health inequities, such as structural racism, and a widespread lack of economic and educational opportunities" (Minnesota Department of Health 2023b: 1). Hence, the absence of health equity is the reason for health disparities. Health inequalities and thus health disparities can be traced to the causes of environmental injustices and thus be seen as a consequence of it. Environmental Injustice causes a disproportionately distribution of hazardous environmental pollution sources in low-income communities and neighborhoods of color like for instance in the community of BVHP. This disproportionately exposure of pollution sites and toxic chemicals are leading to an increased rate of illnesses like

cancer or asthma in the affected community. The reason for health inequities and disparities in affected communities lies in the same structural patterns of discrimination as the reason for the siting of the pollution facilities and the resulting environmental injustices, which in turn lead to illness and health disparities. Health disparities are a consequence of the absence of a clean environment and the lack of an adequate health care and health equity. To conclude, health inequality and disparity can be linked to the absence of environmental justice (Minnesota Department of Health 2023b; Braveman 2014).

7.2 Being Exposed to Environmental Threats: Health Issues and Disparities in Bayview Hunters Point

> ”We [BVHP residents] have the highest rate of cancer, asthma, and low birth weight. BVHP Residents 15 years taken off their life expectancy to environment impacts.”
>
> interviewee K. (appendix 1.2)

The difference between neighborhoods, that are as well contaminated, is the wealth of the community which results in health disparities. On the one hand, wealthier residents are able to afford air filters for their homes and further equipment to protect their health. On the other hand, they have better health care which in case of disease improves their treatment and recovery. S. remarks on the wealthy that “[…] they have great health care. They can afford […] good air filters and they own those homes and so they are able to do whatever it takes to medicate the damage” (appendix 1.3). BVHP residents are low-income and are therefore often not able for afford air filters or an adequate health care. This means, for instance, the medical care of low-income people only pays for a certain amount of cancer treatments, and once these have been carried out, the treatment ends there, even if the patient is not cured and needs further care.

The California Air Resources Board explains that “[r]esidents of [the BVHP] community have lower life expectancies and higher mortality rates from lung diseases, which can be partially attributed to constant exposure to air pollution” (California Air Resources Board 2023, para. 3). For asthma, BVHP is ranked in the 92nd percentile on CES, while the rest of San Francisco ranks in the 37th percentile. This means that the rate of asthma disease in BVHP are among the highest of the United States (California Office of Environmental Health and Hazard Assessment 2023). Bad air quality can lead to various health problems, among them cancer and asthma. Therefore, the perennial BVHP Community Air Monitoring Project was invented to determine particulate matter pollution. The eight monitors located in BVHP in order to constantly test the air pollution. Current measured values can be viewed online, and a

notification can also be activated that sounds an alarm if unhealthy air quality is reached (IVAN 2023).

During the meeting of the BVHP Environmental Justice Task Force a woman, a resident in BVHP, testifies that she is diagnosed with breast cancer. According to her, the environmental pollution, especially the dust, caused the cancer. Another woman adds that she keeps seeing kids in her neighborhood getting sick. The kids suffer from asthma, cancer, and nose bleeding. A third woman contributes that she is feeling sick and must go to the hospital. She narrates that friends of her suffer from cancer and others are getting bald. The underlying reason, she says, is environmental pollution, especially dust and dirty water. She appeals to the EPA to investigate the dust as she suspects harmful contents to be in the (black) dust. In my qualitative interviews, three of the interviewees talked about their illnesses. S., her family, and relatives lived or still live in BVHP. S. suffers from asthma since the age of three. Her niece died of cancer at the age of two. Her sister was diagnosed with cancer and other family members are also suffering from the disease. K. who was born and raised in BVHP suffers from asthma her whole life. Dr. Sumchai is medical director and chief examiner of the Hunters Point Community Biomonitoring Program and is engaged in the environmental justice and health movement since 1992. Starting in 2019, Dr. Sumchai conducted an independent survey in the frame of the Hunters Point Community Biomonitoring Program at HPN shipyard. Dr. Sumchai compares the landfill of the HPN shipyard with an “abscess beneath the ‘skin’ of the earth, a toxic dump where dead and dying elements of transmissible disease are buried and contained” (Sumchai 2020, para. 5). She elaborates on the metaphor, explaining that covering an abscess, which mirrors the Navy's covering of toxic materials in HPN shipyard, does not protect against the spread of the abscess or toxic chemicals. The landfill in Parcel E-2 is located adjacent to public housing and playgrounds. The location of Parcel E-2 can be reviewed in figure 17. The purpose of the survey was to test if the toxic materials that are located at the HPN shipyard can be found in the body of workers and residents living in a radius of 1.6 kilometers to the HPN shipyard. Therefore, urine was tested to detect 35 potential toxins and carcinogenic heavy metals, among others uranium, plutonium, lead, arsenic, manganese, and heavy metals. My interviewee H. got tested in 2019 within the first survey. Eight out of ten participants were found to have elements in their body that are also present in the HPN shipyard and landfill. Among them was H. She was positive for uranium and plutonium exposure in her body. Manganese was tested in every participant. Vanadium was first discovered in a family of four who was living in proximity to the HPN shipyard. Inhaling poisonous dust, vanadium infects the upper respiratory tract and the nasal mucosa and causes headaches and nosebleeds experienced by two members of the

family. This would explain the observation of neighborhood children suffering from nose bleeds mentioned by a woman at BVHP Environmental Justice Task Force Meeting. In addition, inhaling toxic dust can trigger asthma attacks. In general, inhaling toxic elements in form from dust is the primary way for pollutants to enter the body especially during construction and refurbishment at the HPN shipyard. In 2020, a further investigation found components in the bodies of 25 residents and workers (Sumachi 2020, Sumchai 2021). My interviewee S. stated that she did not get tested as she does not want to know whether she has toxic chemicals in her body. She explains: "I am 66 years old and so I just, you know, try to take good care of my health despite me living over there [in BVHP] and being gone to school over there" and summaries once more:

> "I am already impacted with the health I have, you know, I am not in 100 percent good health because in where I live in the environment, the environment I was exposed to […] and still exposed to. That is why you see me always wearing a mask. I was wearing a mask before Covid because the environment up in Bayview Hunters Point – I kept getting sick and kept getting […] asthma attacks and fires and stuff" (appendix 1.3).

7.3 Cumulative Risk Management in the Context of Environmental Justice and Health Disparities

The Executive Order 14096, signed by Biden in 2023, recognizes that (environmental) health, which is influenced by cumulative impacts of exposure, is directly related to environmental justice. The Executive Order states the following:

> "The cumulative impacts of exposure to those types of burdens [e.g., inequitable access to clean air and water; concentration of hazardous pollution] and other stressors, including those related to climate change and the environment, further disadvantage communities with environmental justice concerns. People in these communities suffer from poorer health outcomes and have lower life expectancies than those in other communities in our Nation. Moreover, gaps in environmental and human health data can conceal these harms from public view, and, in doing so, are themselves a persistent and pernicious driver of environmental injustice" (The White House 2023).

The assessment as well as management of environmental injustices and the consequential health disparities underlies an assessment of "combined threats from cumulative exposure to multiple environmental factors" (Sexton and Linder 2010: 4038). To undertake such a cumulative risk assessment (CRA), a workable process needs to be developed. However, the procedure for CRA is still in the stage of elaboration and its implementation is not yet mature. This is because adequate data is lacking, mechanistic comprehension is insufficient, and a verified analysis framework is missing. Therefore, there is still no proven evaluation that socio-economically

disadvantaged groups, often a community of color, have higher morbidity and mortality rates from cumulative risks resulting from exposure to toxic elements. Thus, there is a need for a sophisticated assessment model, based on in-depth knowledge and comprehension, to realistically assess the extent to which an environmental risk is unacceptable and what measures to reduce and eliminate the risk could be undertaken. This evaluation of the assessment process is carried out by so-called risk managers.

The CRA model is a science policy instrument used for organizing and analyzing information on the one hand, and studying, typifying and, if possible, quantifying the impacts of chemical and non-chemical stressors in the environment on the other. Chemical stress factors include benzene or mercury, for example. Non-chemical stress factors include among others unemployment and housing quality. Common risk assessments follow a one-dimensional approach, often focusing solely on one concrete chemical, one single source, one particular health category, and one certain ecological category. In contrast, CRA follows a holistic approach that takes into account different stressors, diverse sources, different endpoints, and multiple routes of exposure. CRA analysis a particular community or population instead of a single source of pollution by considering all significant sources causing exposure of the population (Sexton and Linder 2010; MacDonell et al. 2017). To specify, CRA consists of analyzing collective health consequences in relation to several stressors. Furthermore, it "broadens the spectrum of environmental agents being appraised to include psychological (e.g., residential crowding) and sociological (e.g., racial discrimination) stressors [not just chemicals]" (Sexton and Linder 2010: 4038). Socio-economic characteristics as well as site-specific attributes of real cumulative exposures actually encountered by people are studied. The focus is on practical experiences rather than theoretical data. CRA integrates the concept of vulnerability in an explicit way through analyzing the "a. biological susceptibility, b. exposure, c. preparedness to withstand stressor effects, and d. ability to recover from stressor effects" (Sexton and Linder 2010: 4039). In addition, the practice considers the history and detailed sequence of exposure in regard of various stressors. This can be relevant for risk prediction. CRA also incorporates the secondary or indirect environmental pressures, i.e., the environmental stressors that are not in focus but can add to the cumulative risks. As the context requires, CRA is either a semi-quantitative or qualitative analysis of research and data from environmental injustices and its stressors resulting in health disparities.

Due to its multiple approach in terms of theory, methodology, and calculation the realization is complex and is therefore still to be improved. Thereby, the practice must consider the factors of ethnicity and income when it comes to assess susceptibility.

So far, however, opponents of the CRA critique that it does not offer a significant impact on the influence of resources and political power that affect environmental decisions. In contrast, the supporter argues that the CRA "is an essential decision-making tool for identifying, documenting, and resolving issues of environmental justice" (Sexton and Linder 2010: 4042) as the concept provides a unified framework for risk analysis and responses to environmental justice questions, based on a common language. Additionally, the method is needed to assess environmental risks on the one hand, and to compare assessment and health risks on the other. CRA benefits people in the process since such a risk assessment can identify and rank the grievances and highlight the lack of resources to improve wellbeing. It is very likely that those at high risk often include people of color and/or low income. In order to address environmental justice concerns and various kinds of hazards governmental agencies as well as academics use CRA. Proponents include, for example, the EPA, the National Environmental Justice Advisory Council, and the National Research Council.

CRA is already in use for 25 years now while underlying iterative development and improvement including the application of both chemical and non-chemical stressors. Both the EPA and the National Environmental Justice Council argue that the assessment should broaden its scientific horizons to include both psychological and sociological stressors. This makes the analysis more realistic, as it describes the circumstances that exist in reality. Due to the additional stressors, the assessment of the risk analysis is more reliable and further more meaningful for the issues faced by authorities and decision-makers in the context of regulations. In addition, the broad approach makes the assessment more accessible to stakeholders. In the last ten years, the application of CRA has been used more frequently and in a variety of contexts. Nevertheless, the EPA has not yet succeeded in formally including psychosocial stressors such as discrimination and low-income in the implementation of a CRA. Due to new emerging tools and methodology the situation should change.

There is no specific model for the CRA with clearly defined content and processes; rather, it is an instrument that is adapted and implemented according to the respective circumstances. To give a general idea, conceptual model is demonstrated in figure 24. The model "postulates causal factors and pathways for cumulative health effects from exposure to chemical and nonchemical stressors" (Sexton and Linder 2010: 4044).

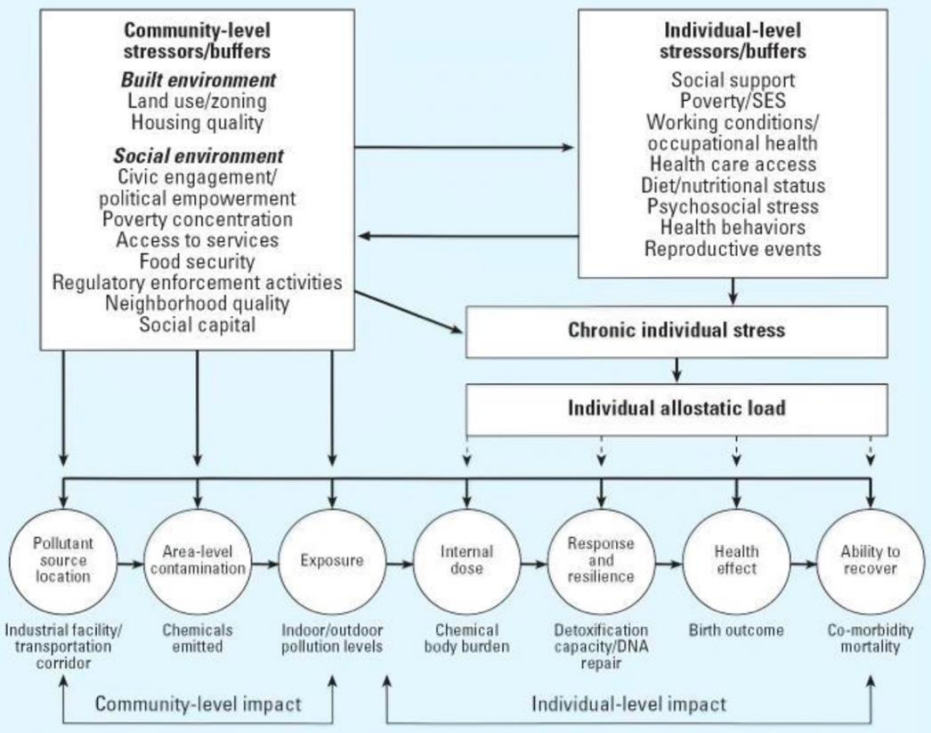


Figure 24: model visualizing health impacts from exposure to chemical and non-chemical buffers.

The model assumes that the influence of both chemical and non-chemical stressors has an impact on an individual's chronic stress. It is assumed that these stressors have an impact at the community level as well as at the individual level. Community level stressors and buffers include the category of built environment, which includes land use and housing quality, and the category of social environment, which encompasses civic engagement and political empowerment, poverty concentration, access to services, food security, regulatory enforcement activities, neighborhood quality, and social capital. Individual level stressors and buffers consist of social support, poverty, working conditions, occupational health, health care access, diet and nutritional status, psychosocial stress, health behaviors and reproductive events. The heightened chronic stress caused can lead to an elevation in allostatic load, which is understood as the cumulative effects of the process of adaptation to acute stress over time. Wear and tear on the body and brain, which results from chronic stress, can lead to disease due to high allostatic load. The model "uses the concept of allostatic load as a mechanism to link stress-induced biological responses to observed health disparities, thereby providing a viable method for incorporating psychosocial stressors into cumulative risk assessments" (Sexton and Linder 2010: 4044).

This model represents one of many possible frameworks of identifying non-chemical and chemical stressors. As there exists no consensus of a CRA model approaching health risk and environmental injustices several techniques are suggested to be applied (Sexton and Linder 2010).

First, the Cumulative Environmental Hazard Inequality Index is able to identify injustices in cumulative environmental threats. The index uses one measure to determine injustice and one measure to recognize the cumulative environmental threat. The injustices are linked to ethnical and socioeconomic factors by using the so-called concentration index. The concentration index was invented to measure the health disparities in socioeconomic groups. In addition, it can be used to assess injustices resulting from the vulnerability and impact of environmental threats that arise differently within socio-economic groups (Su et al. 2009).

Second, the Urban Health Equity Assessment and Response Tool is used as a decision support instrument to characterize and minimize health injustices. It serves to ensure that both local community members and authorities improve their understanding of unjust health determinants, risks, and outcomes in considering the divers socioeconomic circumstances. In addition, the tool enables users to utilize the information and the perspective in interventions or political decision-making processes. The tool compromises six steps: "Build an inclusive team; Define your local indicator set and benchmarks; Assemble relevant and valid data; Generate evidence; Assess and prioritize health equity gaps and gradients; Identify the best response" (World Health Organization 2010: 5).

Third, the Community-Focused Exposure and Risk Screening Tool by the EPA provides community members with fact sheets, reports, data, and tools in order to educate themselves about environmental treats and health risks as well as possible remedial measures. Thus, the tool offers guidelines to plan community projects. According to the last update of the EPA, the tool will no longer be updated even though it still remains available to the public (EPA 2023d).

Fourth, the Environmental Justice Strategic Enforcement Screening Tool issued by the EPA´s Office of Enforcement and Compliance Assistance serves as a tool to recognize disproportionate environmental and health hazards using 18 data tools that are approved or issued by the state. The data is divided in four categories: "(1) environmental, (2) human health, (3) compliance, and (4) social demographics" (UNECE 2016, para. 1). Communities of color and/or low-income suffering from disproportionate environmental risks and health disparities, e.g., environmental injustices, are determined and evaluated in practice and can thus be used for comparison (UNECE 2016).

Nowadays, appropriated frameworks and methodological procedures are needed to identify and assess the absence of environmental justice and the presence of health disparities. Thereby, the problem with the application of validated frameworks is that the combination of the techniques, such as those mentioned above, and their formulary evaluations of health effects incorporating chemical and non-chemical stressors, pollution and vulnerability factors can lead

to an analytically unsolvable assessment, either through lack of adequate data or calculation requirements. Even though, CRA is insufficient or partially erroneous, the assessment focuses on environmental injustices, that means, questions the reasons for disproportionate cumulative exposure, highlights the circumstances that lead to health risks, draws attention to the mechanism that cause health disparities. CRA cannot answer all questions from communities struggling with environmental injustice, but some can be addressed, such as possible actions to improve the environmental and health quality of the community. The strength of CRA lies in providing a formal structure within which scientific information on the combined health impacts of chemical and non-chemical factors is neatly organized. When CRA is properly applied, it provides a cumulative risk analysis and reveals the critical underlying hypotheses and scientific uncertainties. In addition, CRA raises relevant questions in relation to risk assessments, which in turn structure and guide the debate of its solution. Furthermore, and this is the most important point, CRA serves as a tool to support decision-makers (Sexton and Linder 2010).

When decisions about environmental justice are made "much [is] at stake […] whether they are risk-based or not, [they] will always be contentious" (Sexton adn Linder 2010: 4047). Through identification and classification of combined risks, CRA provides a systematized and unbiased approach that can influence policy decisions. CRA is used to recognize which combinations of chemical and non-chemical stressors can be dangerous to human health. In addition, the type and extent as well as the interactions with the population and the associated health effects of the exposure are described. The results of the CRA give a scientific foundation that can be used to guarantee that decisions about environmental justice and related risk management measures are determined effectively, efficiently, and justly. Effective means that the specified targets are met and that mitigation actions are implemented accordingly. Efficient means, for example, that measures are implemented as cost-effectively and time-efficiently as possible. Fair means that communities that are particularly at risk, i.e., mostly people of color or low-income, receive appropriate protection (Sexton and Linder 2010).

The influence of anthropology can improve CRA as the cooperation between anthropologists and environmental scientist can lead to a more comprehensive and precise risk assessment. The work of anthropologists would be to improve and develop the CRA process by ensuring that expertise and lay knowledge are linked and contextualized. With a community-based approach, anthropologists engage with affected community members who have local knowledge and historical experience of their community's environmental pressures and circumstances. In addition, community members can be trained by anthropologists to collect

cumulative data, health data and other records of pollution in their community. Working together, anthropologists and community members can develop surveys to gather more empirical data. Community members can then present the results to government authorities to voice their issues and concerns based on scientific data. The community members participate in the research process with the anthropologists and share control over it. Through this co-operation and acquisition of knowledge, community members can actively participate in environmental research in an attempt to improve their conditions and take precautionary measures to prevent further environmental threats. If such collaborations lead to decision-makers and other authorities recognizing the lay knowledge of local people as being as important as scientific knowledge, more communities would be considered at risk. (Checker 2007).

In the next chapter, I will further discuss the involvement of community members in the fight for environmental justice in BVHP through participatory cooperation with environmental organizations and governmental authorities.

8 Bayview Hunters Point Community Engagement and Action in the Environmental Justice Framework

It has already been demonstrated in the previous chapter that community resistance to the siting of pollution facilities is necessary to resist inequitable distribution, as the government offers less protection to low-income communities of color. Due to the lack of support and disadvantage from the government, poor communities of color must unite to fight for environmental justice.

Identifying the core aspects of environmental justice - i.e., the political, social and structural causes of environmental injustice, the ethical liabilities and practices of scholars, and the necessity for community-based action - demands "self-reflection, critical analysis and situation-sensitive resourcefulness" (Alexander et al. 2021: 37).

8.1 The Need for Community Engagement in the Fight for Environmental Justice

It is the economic structures, political systems, social structures, and underlying institutions, values, and lifestyles that produce environmental problems. This origin of environmental problems and their distribution proves that it does not merely require qualified managers to solve the problems, as more contributes to a general and comprehensive education regarding the environment. The professional practice of environmental education is dealing with the

transformation of personal beliefs and social dynamics that are essential for the organization of a just and sustainable human-environment relationship. Therefore, to solve the problem of environmental inequities in the BVHP, sustainable development, i.e., change that revolutionizes government institutions and systems, values, and lifestyles, is essential (Fajzieva and Brebbia 2001).

Various stakeholders, such as NGO's and community-based foundations, activists, residents, youth, or even government organizations such as the EPA or DTSC, are concerned with environmental injustices. Since in the majority of cases government agencies, i.e., qualified environmental managers, ignore the inequitable distribution of environmental burdens, it is the responsibility of others to draw attention to the problems and find a way to solve them. Environmental organizations, activists and concerned residents take on the roles of environmental educators. The following chapter focuses on the structures and tools that community-based organizations and affected inhabitants can adopt to change the social, economic, and economic constructs to resist environmental harm by achieving sustainable development.

When it comes to the organization of problem resolution and sustainable development, several conventional environmental organizations follow a corporate model where the participation of affected people is rather prevented when it comes to getting involved and engaged in problem solving (Faber and McCarthy 2003). As community participation and collective power in collaboration with environmental organizations are crucial in the fight against environmental injustice, strategies are needed to make such engagement successful. For instance, in collaboration with Greenaction, the BVHP community succeeded in shutting down the hazardous PG&E power plant.

A BVHP resident posted following statement on March 24 2023, in the Facebook group *Bayview Hunter's Point (S.F.)*:

> "I've been thinking [brooding emoji] and it's time for us natives (and allies) to save the city and (in doing so) redirect the city to a more sustainable and inclusive culture vs. the invasive, exploitative, greed-fueled corporate culture that has run the city in the ground (by waving large wads of money around)... Well, the well has dried up and now that all the smoke is clear and the dust starting to settle - it is becoming more and more apparent that all we have is us. I know that with the right people strategizing and working together - we can turn this thing around and serve as an example that other communities can, and will, follow. Drop a [mountain emoji] and your hood if this sounds like something you want to be a part of. Let's #SaveTheCity [fist emoji]"
>
> - anonymized Facebook post.

This post shows that the author, who lives in the BVHP, blames the city and its authorities for the grievances that the city is struggling with. Additionally, he demands community support as he believes the combined meaningful engagement is the only way to achieve a sustainable and inclusive culture.

In the following, I have drawn on my experiences, observations, and interviews during my field research, as well as on the literature, to develop a framework that contains many promising elements for successful and sustainable community engagement and their cooperation with environmental organizations to fight for environmental justice.

8.2 Framing Collective Power: A Guideline towards Sustainable Community Engagement and Cooperation with Organizations to Achieve Environmental Justice

8.2.1 Environmental Organizations

Grassroot, nongovernmental or other environmental organizations often involve and employ people who are themselves affected by the problems that such an organization is working against. At Greenaction, for example, 6 of the 9 staff members are natives in the areas they work in at the organization. The work at Greenaction illustrates how important and intensive the work between such an organization and the local people is. Such cooperation and support are crucial elements for achieving goals and resolving conflicts. In the following, I summaries the individual activities and tasks of grassroots organizations and private activists that form the basis for successful cooperation and achievement of goals. The guideline was created based on my personal experience during my field research as well as on research. The guideline provides a multi-issue, holistic, multi-racial, action-based approach for base-building strategies for community building.

Environmental justice can only be achieved when affected communities come together to exercise their collective power (Bullard 2005). However, this collective power is not a resource that a community possesses without any effort, at least this is true for communities that have little or no access to social, economic, and financial resources, i.e., communities of color or low-income. For this reason, the collective power in the struggle for environmental justice is composed of two actors. These are, on the one hand, the affected local people and, on the other hand, organizations working for environmental justice. Thereby, the main goal is to achieve environmental justice through the just enforcement of laws and regulation in relation to the distribution of environmental hazards and the prevention of environmental risks before they even arise. These goals can be achieved if a more vibrant and civil society is created out of the cooperation between committed organizations and affected people that make use of their

power and democracy. In the process, the two actors take on different tasks and complement and support each other.

In the context activism, it is necessary for an environmental organization to be accepted by the public as an active an equal partner in research and environmental decision-making. Only through this trust can be built in the affected communities and a cooperation between both is possible (Bullard 1994). Organizations like Greenaction can become aware of environmental injustices through different ways. It is either the affected people who approach the organization with their concerns or the organization becomes aware of environmental risks and contacts the local community to exchange information on the one hand and to check whether cooperation is needed and desired on the other. In the case of BVHP it was the people affected who turned to Greenaction for help and support. There are now three people from the BVHP community who are employed by Greenaction and specialize as community organizers, policy advocates or outreach specialists for BVHP. I experienced the second scenario during my internship. A staff member heard about a planned waste-to-energy facility in Redding, California. Working together, we researched the project. We reached out to the residents and spoke about their concerns about the project. B. told me in the interview that consensus is essential thereby. Collaboration only happens when the people concerned want the support. According to him, there has already been a case in which people were exposed to an environmental risk but refused the involvement of Greenaction.

Organizations use events or platforms such as social media, where they have a certain reach, to draw attention to cases of environmental injustice. Organizations try to mobilize as many people as possible. On the one hand, to use different resources and skills of people, but also to gain more attention and awareness, thus highlighting the urgency and necessity. However, they do not only try to reach the public, but also act as an intermediary between an affected community and government agencies. They liaise with various government offices, arrange meetings, and invite officials to meet with the community in order to engage and exchange with those affected. Greenaction's BVHP Environmental Justice Task Force meetings were regularly attended by CalEPA and DTSC officials. They listened to the concerns and problems of those affected and were able to form their own impressions of the situation on the ground. They also shared with those present their planned approaches and changes they plan to undertake to help the people of BVHP and to ensure more environmental justice. Cooperation between government agencies, entrepreneurs and communities is necessary to establish and maintain a sustainable neighborhood.

Grassroot or nongovernmental environmental organizations support and cooperate with communities in various methods. To lead a successful collaboration, it is fundamental to be organized. Organizations are the ones that set and lead regular meetings and work through points of order. Furthermore, organizations have financial, technical, and human resources with which they can support a community. For example, they receive grants for specific projects such as the BVHP Youth Academy or the Air Monitoring Project in BVHP. These financial resources can and are used exclusively for the project applied for. The latter enabled the purchase and installation of eight air quality monitors in BVHP to screen the air for pollution. Technical and human resources in this case are provided by a staff member who checks, documents, and evaluates the air quality at regular intervals and takes care of maintenance and repair. Organizations take on the role of investigators. They research environmental risks, identify sources of pollution, develop specific plans for change and improvement, document hazardous environmental threats and collect and analyze public health data.

Through outreach, environmental organizations try to reach those who are not yet engaged for various reasons. This is about extending awareness, making information available and providing services that some people would not otherwise be able to benefit from. In this way, organizations ensure that people are not excluded and by trying to reach everyone, anyone who is interested can participate.

"The practice of active listening, dialogue and frequent direct contact between front-line communities and distant allies" (Apostolopoulou and Cortes-Vazquez 2018: 90) are an essential part of the fight for environmental justice. Through these practices of horizontal exchange, which ideally happen before actions take place, organizations come to better understand the problems, challenges, and aspirations of those affected. Thus, organizations should not speak in place of the people affected, but rather provide them with a platform and a space to represent their own narrative, interest and share their problems and concerns (Apostolopoulou and Cortes-Vazquez 2018). It is essential that organizations create a safe space where people feel protected and respected and where they can tell their stories. As BVHP residents suffer from serious illnesses such as (breast) cancer and asthma and share stories of the death of family members, it is important to provide this safe space. Due to the Corona pandemic, this safe space was temporarily relocated, and meetings were held in online meetings. During my fieldwork, the regular Bayview Hunters Point Environmental Justice Task Force was held in a hybrid form, both online and in person, and I had the impression that people felt safe and heard as they reported intimate experiences. In addition, organizations are a kind of intermediary, whose function is to bring different communities in contact with each other so that they can support

each other, for example in the form of protest actions. This includes the further development of new organizational structures that rebuild social resources and strengthen the participation of communities in the democratic environmental decision-making process (Faber et al. 2003). However, environmental organizations do not only serve to provide the basis for communication, sharing and linking.

As explained in chapter 5.2, in many cases it is people with fewer social, economic, and financial resources who are affected by environmental injustice. Thus, it often affects the social classes that have less access to education. That is why organizations take on an educational mission. Those affected are informed about factual, legal, political, economic, and further procedures, decisions, and available information. The aim is to build up a broad basic knowledge and expertise of an environmental proje2ct or facility that could to an environmental threat. Stakeholders are taught in regular meetings, workshops, or events how to make use of their democracy and how to use their power.

Environmental organizations provide a legal and administrative advocacy. They offer legal tools in combination with a ready access to legal assistance. Legal expertise enables environmental injustices to be recognized and identified as human rights violations, which provides an important basis for legal action against projects, polluters or even the government in court. Furthermore, organizations and activists confront polluters to ensure the right to a livable and habitable planet for future generations (Bullard 2005).

A part of the work of organization is to provide and maintain the access to information. This does not online include the research and summary and publication of information about projects, facilities, political decisions, etc. but also the provision of these information in various languages. In the BVHP and in San Francisco in general, some residents are native Spanish speakers. Organizations and activists are also requesting that public meetings, minutes, and documents of government agencies be made available in different languages. In some cases, Spanish translations already exist.

In addition to building knowledge and sharing information with adults, Greenaction, for instance, also focuses particularly on the youth of a community who are affected by the issue of environmental injustices. The youth not only gain knowledge but also develop the skills to lead a community and act as leaders in the context of the campaign. It is significant to focus not merely on adults in the fight for environmental justice but also on the next generations, as it is a fight that must be continued for a long time.

Social movements like the environmental justice movement contribute significantly to the knowledge production. Movements engage in politics by protesting and culturally

contesting and additionally through producing various kinds of knowledge. The resulting blurring of boundaries between academics and activists is leading to a paradigm shift towards a new type of producing knowledge and science. The potential collaboration of scientists and activists leads to the emergence of science *with* the people rather than *for* the people, especially in the areas of „ethical irreducible uncertainties and ethical complexities“ (Funtowicz and Ravetz 1994: 198; Temper et al. 2015). As another strategy to challenge polluters, planned pollution facilities and projects or government plans, local environmental and health data must be collected and analyzed. Through this knowledge practice, activists and organizations can themselves become experts in understanding and, where appropriate, challenging scientific knowledge, such as licensing and permit procedures, chemical testing, risk assessments, environmental studies, health and safety investigations. Furthermore, in order to more successfully implement demands and legitimize views, not only are individuals scientifically trained, but experts and scientists are also brought in to engage in and build cooperation on equal terms (Temper et al. 2015).

Strong local organizations are required to achieve the goal of collective power. Through trainings, knowledge production, education, network and capacity building and participatory action the organization´s goal is the empowerment of communities for self-governance. The social capital of a community and a vibrant ecological democracy should be rebuilt in this way.

8.2.2 Activists

Front-line activists use the skills they have acquired through or with environmental organizations. These include, as explained above from the perspective of teaching environmental organizations, the use of their power and democracy, and meaningful public engagement. They collaborate with environmental organizations and are on the frontline, participating and organizing protests, community clean-ups, actions, and petitions. In safe-spaces or at public events and meetings, affected people stand up, speak out and tell their stories. They talk about their personal experience on the ground, they talk about the pollution in their community, how it affects the environment, and they report about the health consequences. Activist are taught to conduct community surveys and thus to raise awareness of local issues. Furthermore, they are taught to broaden and deepen their understanding of ecological impacts and the deep connection between justice and the environment. The exchange of experiences helps both the organizations and the government to recognize and understand the problems resulting from environmental injustice. In addition, those affected make their demands clear

with regard to the restoration of a healthy and livable environment and thus the elimination of environmental risks and environmental injustices.

Activists should attend public hearings. By showing their presence and contributing by sharing testimonies and concerns, they can raise awareness among the authorities. Affected people who participate in decision-making processes want to be accepted by the authorities and treated as equal partners. Activists should use and present their personal experiences as well as the historic experiences regarding the development and the changes in their neighborhood in terms of the environment, health conditions and the overall quality of life in their area. In addition, the affected community members should document the environmental pollution sites and their health impacts on the community through interviews and testimonies. Thereby, existing databases and records might be helpful to prove evidence for instance in the context of health statistics. By using the experiences and data a toxic profile of a community can be created, which is useful for presenting an overview of the health and environmental conditions of an area in public hearings in front of public authorities. In cooperation with governmental health departments activist can persuade a community health risk assessment. Community representatives can assist a health authority in identifying the health conditions, diseases, and environmental exposure of a neighborhood for evaluation purposes. In addition, the health status of the community can be assessed using popular epidemiology by integrating socio-demographic and historical surveys with community surveys. When community members cooperate with agencies or use available data or study outcomes it is necessary to critically question the information provided. The same applies to the information published by the operators on the environmental impacts of the facilities (Rechtschaffen 2008).

Both actors, organizations and individuals, should create an inclusive and reflective practice within the fight for social and environmental justice that visualize its power dynamics and recognize the risk of distance and the relevance of "staying true to those at the forefront of that struggle, who will reap the rewards of a victory, or suffer most badly from a defeat, to avoid replicating colonial power-dynamics" (Apostolopoulou and Cortes-Vazquez 2018: 90).

8.2.3 Process of Identifying and Addressing Environmental Injustices

The chapters above already examined the various tasks and methods of both engaged community members and environmental organization. In the cooperated engagement of the two actors a guideline of steps can be followed to achieve environmental justice. The procedures described correspond to the tasks and methods of both the persons affected and the

environmental organizations and are based on their prior cooperation and exchange of knowledge and resources. Some of the steps can also overlap or swipe in terms of timeline.

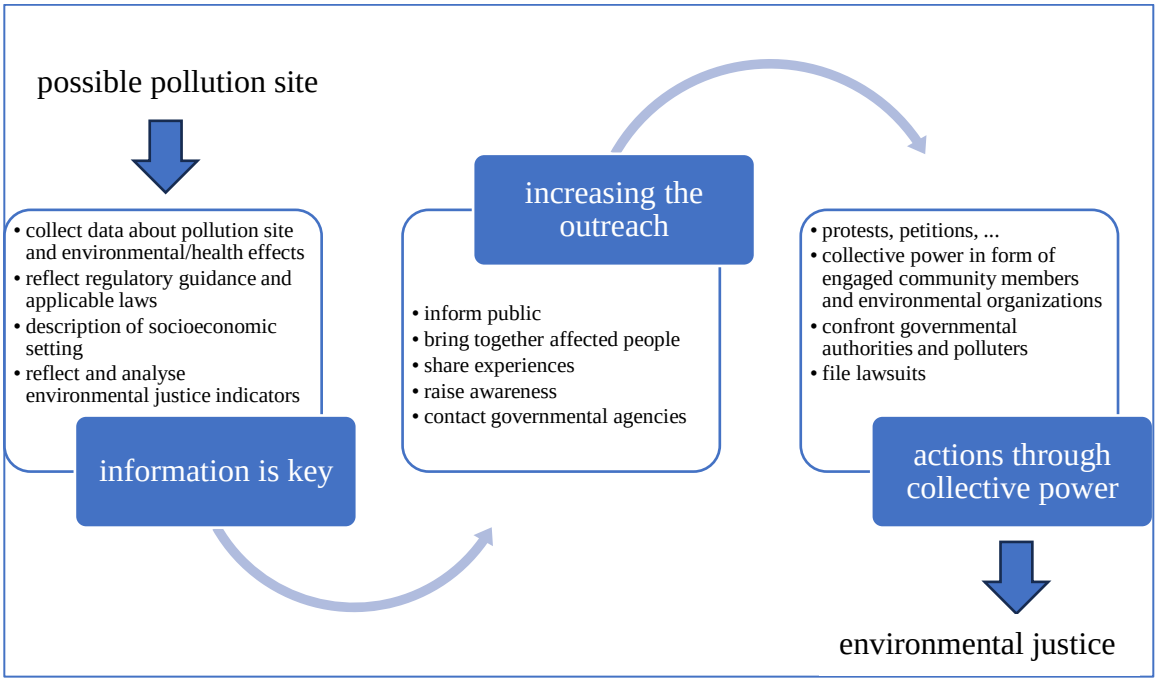


Figure 25: Process of Identifying and Addressing a Pollution Site.

After a pollution source is identified as a possible environmental injustice case the first step is to collect various kinds of information. Information and data about the contamination site should be collected. These include, for instance, processing methods, used chemicals, (in)valid permits, and material disposal. With these data an in-depth analysis of the regulatory guidance and applicable laws can be conducted. This involves reviewing federal environmental laws and regulatory actions such as Executive Order 12898, National Environmental Policy Act and EPA, as well as state regulations and agencies such as the California Environmental Quality Act. Through the collection and description of the socioeconomic setting and circumstances (total population, ethnicity, income, education, housing information, sex, age, unemployment) it is possible to analyze and compare the circumstance in BVHP with the ones of San Francisco. Existing data from the U.S. Census Bureau and other survey data can be used for this. After summarizing socioeconomic demographics, the environmental justice indicators are examined to determine whether and to what extent they apply in the specific case. Environmental justice indicators are among others are zones for industrial use, income, public transit systems, academic performance, recreational spaces. Thereby, the main indicators poverty and ethnicity are to be considered with special measures. The environmental justice indicators can be reviewed in chapter 3.4.

After, or even during, the data has been collected the public should be informed about the pollution site, the circumstances, and possible environmental and health effects caused by it. This step is based on raising awareness among community members, government authorities, politicians, environmental organizations, polluters, and the general public. Especially, community members should be brought together to cooperate and engage but other activists and interested people are also addressed. This method includes to contact and engage with authority agencies to draw attention to the problem and to achieve possible cooperation to eliminate the source of pollution and thus achieve environmental justice. By sharing the experiences of community members and letting them speak for themselves, their needs, concerns and (health) problems are heard so that more applicable plans and solutions can be found.

The last steps consist of the collective of the community, activists, and environmental organizations and manifests itself in actions. These actions can include protests, petitions, fundraising, (online) campaigns as well as the confrontation of polluters and authorities and the filling of a lawsuit. However, even though the consequence after following all the steps is environmental justice in the graphic, this does merely represent the ideal outcome. Most cases of actions, e.g., in the case of the HPN shipyard, show that demonstrations and other actions to combat pollution facilities are not successful or are only successful at a late stage. In order for actions to continue to be carried out, constant outreach work is needed, as well as the permanent updating of information. Therefore, the steps are to be repeated.

8.2.4 The Complexity of Environmental Engagement of Communities and Environmental Organizations

Fighting for environmental justice is subject to "complex social, political and historical dynamics" (Florea and Rhoades 2019: 89). There is a risk that when an environmental conflict is identified and fought against, an unreflective examination of the situation from a distant glaze takes place. In doing so, an accurate consideration of the context of the conflict is suspended and thus the understanding of who holds the power and influences the discourse remains absent. The distant actors advocating for environmental justice are often located apart from the reality of the communities and activists involved. The actors who are not on the front lines are located away from the political situation in which the environmental struggle is happening and are shielded from the repression and arrests of activists working for environmental justice. The protected position that such an actor occupies, if not critically reflected upon, can lead them to represent inappropriate interests and engage in misplaced strategies that may oppose or even

harm the wishes of those directly affected. Furthermore, actors who are not on the front lines may fail to perceive or misperceive the desires and aspirations of local populations and yet adopt their narrative. Stealing the narratives results in a shift of power from the community to more distant actors. There have been a few cases where international NGOs have taken over the struggles of local communities and disseminated their own narratives that did not necessarily match the narratives of the local affected community. In doing so, the distant actors can shift realities and use their power and expertise to control the discourse and influence the motivations of the resistance. Even though the danger of the distant glaze exists, the cooperation of local communities with national and international organizations are essential in order to support front-line actions. Strategies can be applied to overcome the risk of the distant glaze and its consequences. Active listening and regular eye-to-eye dialogue between activists on the ground and representatives of remote organizations before action is taken helps to better understand the underlying dynamics of the struggle. Instead of speaking for affected communities, assisting organizations should provide platforms in the context of which the voices of the people can be listened to. To summarize, it is essential for affected individuals fighting in front-line actions for environmental justice to develop reflective practices that highlights the power dynamics within the struggle, the risk of the distant glaze, and the importance of acknowledging the ones who are engaging at the forefront and suffering the most from environmental threats (Florea and Rhoades 2019).

8.3 Community-based Methods Established by EPA to Achieve the Promise of Environmental Justice

In 2004, the EPA has established the National Environmental Justice Advisory Council, a guide to provide environmental justice for all communities through both short-term and long-term actions. For this, eight interrelated categories are identified, which in their totality provide a long-term perspective and concepts for addressing environmental justice issues as well as environmental threats and consequences (EPA 2015).

1. Environmental justice is to be achieved through the institutionalization of action using a cross-governmental application of a solution-oriented cooperative model, called Environmental Justice Collaborative Problem-Solving Model (EPA 2015). The model is part of EPA's promise to sustainably achieve environmental justice in all communities, especially low-income communities, and communities of color, in addition to safe and healthy living environments, equal access to decision-making,

opportunity for meaningful public participation, and the equitable application of laws and environmental rights.

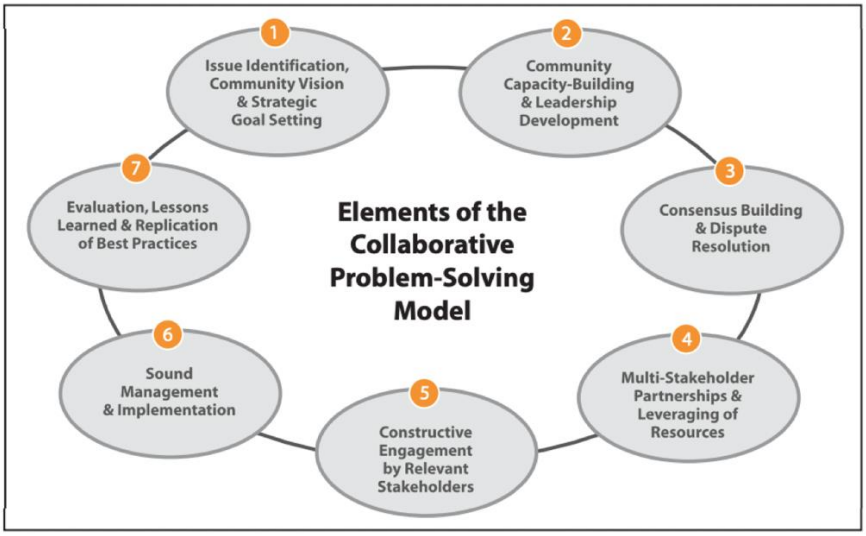


Figure 26: EPA's Environmental Justice Collaborative Problem-Solving Model.

The elements of the model overlap and cannot be clearly delineated. They should be used initiatively, prospectively, and iteratively. The order depends on the specific context and can differ. All seven aspects can be applied or only parts of them, depending on the situation.

The first element *Issue Identification, Community Vision & Strategic Goal Setting* begins with the identification of the pollution source. This is followed by a collaborative problem-solving approach in which community experiences, opinions and plans are incorporated at an early stage and used to set solution goals. The second aspect *Community Capacity-Building and Leadership Development* focuses on community education. It consists of training and teaching interested residents so that they acquire the relevant information about the issue, but also learn to develop and use their technical, leadership and other skills, for example through trainings or workshops, to achieve their goals. The third element *Consensus Building and Dispute Resolution* is used to find an efficient method of solving problems, making decisions, and resolving conflicts by involving all members of the community. This step goes hand in hand with the other steps and is always present, which makes it one of the more difficult elements. Within the fourth element *Multi-Stakeholder Partnerships and Leveraging of Resources alliances* are formed with major stakeholders and various organizations to share and exchange resources, set common goals, and create a joint work plan and methods to

achieve them. The fifth factor *Constructive Engagement by Relevant Stakeholders* includes cooperation with noncommunity-based actors, such as businesses, academics, or government agencies, from which they can obtain various forms of support and resources. The sixth aspect *Sound Management and Implementation* is about organized and well-thought-out management, which is necessary to achieve results. This includes, for example, optimization processes such as time and resource management or the identification and use of talents of the community. The seventh element *Evaluation, Lessons Learned, and Replication of Best Practices* focuses on the evaluation and analysis of results of projects and methods. It helps to identify and learn which ways of working and collaborating are successful, and which are not effective enough to achieve goals. It is not used after a project is completed, but rather over time as an ongoing process (EPA 2016).

2. In order to ensure environmental justice, all legal bases and agencies should be used and fully implemented.
3. Another proactive concept is "to address and overcome programmatic and regulatory fragmentation within the nation´s environmental protection regime" (EPA 2015: 4)
4. The concept of vulnerability needs to be completely and comprehensively integrated into EPA´s plans and research program, with particular reference to the socio-cultural factors.
5. A paradigm shift must be pursued that is based and built on a community-based and community-oriented approach to research and intervention.
6. The EPA decision-making process should take into account the social, economic, cultural and health aspects of a community, especially from a vulnerability perspective.
7. Effective methods and tools for screening and targeting environmental threats should be created and applied to identify communities in need of immediate action.
8. The lack of human, technical and financial resources in government agencies such as the EPA, but also within affected communities and stakeholders should be restored.

The document not only provides a guide to long-term approaches to achieving environmental justice, but also an overview of effective immediate actions, i.e., short-term actions. These include the establishment of community-based harm reduction projects; development of a manual of applicable mitigation actions; provision of resources for grassroots organizations; invention of tools to identify communities in need; enhancement of incentives for business and industry to minimize worsening environmental effects in polluted communities; dialogue

between scientists and stakeholders to improve problem solving capability and scientific understanding; foundation of the scientific base for the integration of vulnerability into EPA's assessment scales, strategies and research plans; provision of a guide to the exercise of statutory powers; emphasis of community-based approaches; creating an inter-agency and risk-based framework for environmental decision-making that incorporates the traditional lifestyles of Indigenous Tribes; reinforcement of the EPA´s social science capabilities and community know-how; and integration of the report's long-term concepts into EPA's strategic and budgeting programs (EPA 2015).

By addressing the subject of cumulative risks and impacts and by applying the short- and long-term concepts and actions, the understanding and treatment of environmental justice issues is enhanced. The paradigm shifts in the way EPA and government agencies operate enables them to take better and more effective measures to protect the environment, to reduce risk, prevent pollution and to achieve and maintain environmental justice through a cooperative, community-based, and holistic approach to problem-solving (EPA 2015).

The EPA and government agencies have already established some guidelines and methods for environmental protection and environmental justice, but the implementation and application of the measures in reality is different than on paper. A report from the Centers for Disease Control and Prevention acknowledges the improvement in general health in the United States but indicates that minority and ethnic groups and low-income communities are disproportionately affected by poorer health. The over-proportionality of poor health of poor health triggers frustration with the cumulative negative conditions among those affected and leads them to demand effective measures from the government to address the circumstances (EPA 2015).

8.4 Does the Bayview Hunters Point Community have Trust in the Government? A Perspective on Cooperation between Communities and the Government

My field study has shown that the government, in this case the CalEPA and DTSC, are becoming interested in environmental threats and environmental injustices such as in BVHP and are trying to find a way to adopt effective measures to solve the issues. However, this active interest is something that is relatively recent and the organization as well as implementation of measures is still in its infancy. The BVHP Environmental Justice Task Force Meeting as well as separate internal zoom meetings with CalEPA made evident that the responsible departments do not follow any concrete scheme, methods, or guidelines. Instead, they try to work together with environmental organizations, in this case Greenaction, in order to understand the basic problem and to develop solutions together.

The two CalEPA employees told the BVHP community to improve their understanding of the ongoing issues and to find better ways to engage in community violation. Further, they promise to attend the BVHP meetings regular and schedule weekly internal meetings. A participant in the meeting interrupted and asked suspiciously: “Is it not the CalEPA to protect lies? They do not know how it is to be on the ground zero; to have kids that have cancer”. Thereupon, the rest of the participants affirmed his accusation. They emphasized that they lacked trust in the authorities as they had been let down too many times.

During my interview with H., she speaks to me about the resentment and lack of trust towards the authorities. H. explained to me: “[…] so we learned a long time ago not to trust the government, right? Because we have been lied over and over and over again.”. She continued: “We are human beings and we are tired of living in a bubble and being the test subjects for all different stuff. […] it is almost like ‘Hey, if they die nobody really care’, you know?” (appendix 1.5). She said that the BVHP is the place where the government conducts test runs and where pollution facilities are deliberately placed. H. is convinced that the government is indifferent to the death of the residents.

While talking with K. about the government´s role in the context of environmental injustice in BVHP she mentioned: “I feel like the government and corporate polluters are being politicly correct by meeting with us, without true intention to enforce effective solutions for our community.”. K. added: “We want [t]he gov[ernment] to do their job and protect people and environment they are in office to protect, instead of treating us like we are expected to suffer and die young” (appendix 1.2).

S. explained me that the city of San Francisco decided to put people over profit even though they know the facts about the health and environmental effects of the toxicity suffered by the residents of BVHP. S. stated: “So, as it stands to reason, [the government authorities] do not want to address [the environmental injustice in BVHP]. The government is definitely in control over it […]. Do they care? No! Again, it is profit before people” (appendix 1.3). Further, she is of the opinion that the residents of BVHP would want to trust the government and the Navy, that they fulfil promises such as the complete clean-up of the HPN shipyard, and that they defend and protect the people, but that is not the situation in BVHP.

B. declares during the interview “Yet, in most cases, [the government] continue their practices of injustice and pro industries, pro polluter practices” (appendix 1.4). He demands that the government and the Navy must be hold accountable and investigated for their pollution practices in BVHP.

A DTSC staff member has communicated that he is aware that there is no trust between the community and his agency, as his predecessors and previous efforts to help people have failed. As he is new to his position, he wants to be a listener first and foremost to better understand the problems and concerns of the people affected. Measures taken so far have been slow and inefficient. In addition, there are many technical problems that the DTSC employee must work through. He made it clear that he would like to introduce a new way of working based on better communication. He is aware that the cooperation between the municipality and DTSC starts "pretty low, so the way is only up".

Trust has been destroyed, if it ever fully existed in the first place, and efforts to restore trust are ongoing, even though CalEPA and DTSC are currently trying to improve it.

9 Conclusion

BVHP, a community of color and low-income, is a place where the absence of environmental justice results in a disproportionate exposure to environmental pollution sources, like the superfund site HNP shipyard, impacting their overall health. The health of the BVHP residents is suffering from the constant exposure to contamination in the environment, where they are living and working.

Environmental justice is supposed to secure a safe and healthy environment and protect every population regardless of their ethnical and socioeconomic characteristics from environmental threats. Environmental justice is not solely about protecting against environmental threats, but also about avoiding threats in the first place.

Approaching environmental justice from a legal perspective, the relation between human rights and environmental protection is incontrovertible even though environmental protection cannot be fully incorporated in human rights. On the one side, human rights rely on environmental protection. On the other side, the enforcement of human rights strengthens environmental protection. Both human rights and environmental laws considering environmental protection are foundations for a legal basis to achieve and secure environmental justice. Within the American law apparatus, environmental laws in combination with human rights build a legal approach towards protecting the environment and its communities. It is an approximation towards environmental justice as the concept is not explicitly codified in law. Several Executive Orders and Acts, such as Title VI and Executive Order 12898 do recognize the need for environmental justice, but they only cover parts of the problem and inhabit discrepancies and gaps in the legal regulation. Thus, environmental justice has a significant, but moderate influence on the environmental regulation framework. The environmental justice

framework still requires a full and gapless integration in American law and a just, correct, and complete implementation as well as more transparency. Status quo is that measure to address and promote environmental justice conducted by government authorities such as the EPA are insufficient. The enforcement of the legal framework as well as actions are lacking implementation through the agencies. Especially Title VI, which prohibits discrimination based on ethnicity, poverty, income, religion, and gender, is not applied correctly. In addition, complaints about violations of Title VI are not or only slowly investigated. The agencies must be held accountable for their responsibilities towards communities suffering from environmental injustice. Supporting pollution practices government authorities must reconsider their working methods in order to address environmental injustices in overburdened communities. Thereby, Comprehensive Environmental Justice Enforcement Strategy was invented by the EPA in 2022. In addition, there must be a paradigm shift in the responsibility of providing evidence about harmful pollution practices. Currently, it is the affected community who must file a complaint about pollution sites and provide evidence of harmful practices. In order to ensure a fair treatment and protection of all people, it must be the polluter that should be responsible to provide evidence that their practices are not harmful to the environment or human. Moreover, authorities must recognize that meaningful participation of community members in decision-making processes on environmental issues such as the distribution of pollution facilities is essential and that all citizens must be given the opportunity to participate.

The absence of environmental justice results in a disproportionate exposure to hazardous environmental pollution sources causing harm to the human health and the environment. The systematic and institutional discriminatory practices conducted by the government agencies leading to environmental injustices have been and still are tolerated. It is not a coincidence that overburdened communities are inhabited by mostly ethnic minorities or low-income residents. They are more vulnerable to environmental injustices as they lack of political, financial, and social power and resources. The lower the political and financial power of a community, which rarely has the resources to mobilize and defend itself against environmental threats, the more vulnerable it is to the siting of incinerators, toxic landfills, and other hazardous facilities.

These differences in unequal protection by the government can be traced back to structural causes of discriminatory pollution patters. The government fails to provide a just protection to its residents. Low-income and minority communities are not only disproportionately affected by the placement of pollution facilities but are also disadvantaged and abandoned by government practices. Environmental injustices cannot be traced back to one specific cause, it is rather resulting from various combined circumstances. For instance,

political decision impact economic matters resulting in ethnic inequalities and economic interest influence political choices and regulations leading to disadvantages for ethnic minorities and low-income groups.

It is not only personal behaviors such as diet and exercise that influence an individual's well-being, but also the environmental conditions that surround them. The aim of the environmental movement is to create a healthy and safe environment in which there is no negative environmental impact on health. The constant influence of environmental threats in the immediate neighborhood can cause serious health consequences. In BVHP, the rates of asthma, heart disease, and cancer are above average compared to the rest of San Francisco. When looking at environmental justice from a health risk assessment perspective, the main objective is to identify communities and populations at comparable risk so that action can be taken to prevent such risks. Health disparities exacerbate the effects of environmental injustices. Again, wealth is decisive whether a person or a family is able to protect themselves from environmental hazards and in addition to afford an adequate health care. Wealthier neighborhoods in San Francisco, for instance, install air filters in their homes and take further arrangements to protect their health. In addition, a secure and sufficient health care ensures an appropriate treatment when a disease is diagnosed. To compare, some of the residents in BVHP are not able to afford a complete cancer treatment and must end it prematurely. The evaluation and handling of environmental injustices and the resulting health disparities is based on an assessment of the combination of threats posed by cumulative exposure to various environmental stressors. The science policy instrument organizes and analyzes information and researches, typifies and when possible, quantifies the impacts of chemical and non-chemical stressors in the environment.

Based on my fieldwork I came to the conclusion that the core element of the environmental justice movement is community engagement. The lack of trust in authorities as well as their unreliability with regard to the implementation of measures, handling of complaints and enforcement of laws require community-based action of BVHP residents in order to achieve progress in the fight for environmental justice. The cooperation between environmental organization such as Greenaction and BVHP community members represents a successful interrelationship that benefits from each other. On the one hand, environmental organizations train and educate community members in order to broaden and deepen their understanding of ecological impacts and learn about the underlying processes of environmental justice. Further, they act as intermediaries between the authorities and the community and organize meetings with community members to ensure that their voices are being heard by

agencies like EPA and DTSC. The provide the community with technical, administrative, financial, and legal resources. The empowerment of communities for self-governance, knowledge production, and capacity building provided by environmental organization equips BVHP community members with collective power and skills to engage in the fight for environmental justice. Thus, social capital of the BVHP community as well as a vibrant democracy can be rebuilt in this way. On the other hand, community members are the activist on the frontline of the movement participating and organizing protests, community clean-ups. They narrate and exchange their tales of woe and how environmental injustices affect the community of BHVP. They express their sorrows, demands, and needs towards organizations and authorities. They raise awareness among BVHP residents, environmental organizations, and government authorities. In addition, community activist can conduct surveys and collect data once they profit from training conducted by cooperating organizations. A core element of the cooperation of both actors is the identification of pollution sites in the in order to further promote the organization and implementation of community-based activism to eliminate environmental injustice. Thereby, the first step is to collect and analyze data on potential pollution sites. Second, public outreach must be strengthened to build collective power and raise awareness among the public and authorities. Thirdly, direct action is taken, lawsuits are filed, and polluters are confronted.

Environmental justice framework follows a holistic approach as the securing of environmental justice is based on an interplay between community members, environmental organizations, and government agencies in consideration of political, sociocultural, economic, legal, and financial circumstances. The spatial and ecological effects of environmental injustice have not yet been fully researched, as they are more complex and diverse than previous studies have assumed. Therefore, additional research and more data, especially about pollution impacts and health outcomes, is required to achieve complete reprocessing and ensure environmental justice. Since the government has no interest in eliminating environmental injustices and its measures are insufficient, it is the responsibility of residents to address the issue of environmental justice and contribute to research, remediation, and prevention.

List of References

Alexander, W., Wells, C., Lincoln, M., Davis, B., and Little, P. (2021). Environmental justice ethnography in the classroom: Teaching activism, inspiring involvement. Human Organization, 80(1), 37–48. Accessed August 20, 2023. https://doi.org/10.17730/1938-3525-80.1.37

America´s Navy. (2023). 2023 Annual Update of Cleanup Achievements for Hunters Point Naval Shipyard. Accessed September 5, 2023. https://media.defense.gov/2023/May/31/2003232999/-1/-1/0/HPNS_MAY_2023_ANNUAL%20UPDATE_FINAL.PDF

American Society for Public Administration. (2023). What Is Social Equity? Diversity? Equity? Inclusion? Accessibility? Accessed June 19, 2023. https://www.aspanet.org/ASPA/ASPA/About-ASPA/Social-Equity-Center/Definitions.aspx#:~:text=Social%20equity%20is%20the%20fair,the%20format for%20of%20public%20policy

Anton, D. and Shelton, D. (2011). Environmental Protection and Human Rights. Cambridge: Cambridge University Press. Accessed July 8, 2023. https://www-cambridge-org.uaccess.univie.ac.at/core/services/aop-cambridge-core/content/view/5FE6C03FCEA64FA1ADE90AF6F5E7AB89/9780511974571c2_p118-150_CBO.pdf/the-environment-as-a-human-rights-issue.pdf

Apostolopoulou, E., and Cortes-Vazquez, J. A. (2018). The Right to Nature: Social Movements, Environmental Justice and Neoliberal Natures / (First edition.). Boca Raton, FL: Routledge.

Atapattu, S., and Schapper, A. (2019). Human rights and the environment: Key issues. Abingdon, Oxon, United Kingdom: Routledge.

Australian Human Rights Commission. (2019). What is Racism? Accessed June 8, 2023. https://humanrights.gov.au/our-work/race-discrimination/what-racism

Bellina, L. (2022). Environmental Justice. In D. Gottschlich, S. Hackfort, T. Schmitt & U. Winterfeld (Ed.), Handbuch Politische Ökologie: Theorien, Konflikte, Begriffe, Methoden (pp. 63-78). Bielefeld: transcript Verlag. Accessed July 7, 2023. https://doi-org.uaccess.univie.ac.at/10.1515/9783839456279-005

Blum, L. (2002). Racism: What It Is and What It Isn't. In: Studies in Philosophy and Education, Vol. 21, 3. Accessed June 8, 2023. https://doi.org/10.1023/A:1015503031960

Boström, M., and Davidson, D. (2018). Environment and Society (Palgrave Studies in Environmental Sociology and Policy). Cham: Springer International Publishing.

Braveman, P. (2014). What are health disparities and health equity? We need to be clear. Public Health Rep., 129 Suppl 2(Suppl 2):5-8.

Bryant, B. (1995). Environmental justice: issues, policies, and solutions. Washington, D.C., Island Press.

Bullard, R. (1994). Unequal protection: Environmental justice and communities of color. San Francisco, Sierra Club Books.

Bullard, R. (2005). The Quest for Environmental Justice. Human Rights and the Politics of Pollution. San Francisco, Sierra Club Books.

Bullard, R. (2008). Environmental Justice in the 21st century by Robert D. Bullard. Accessed June 19, 2023. https://uwosh.edu/sirt/wp-content/uploads/sites/86/2017/08/Bullard_Environmental-Justice-in-the-21st-Century.pdf

Bullard, R. (2018). About Environmental Justice. Accessed May 23, 2023. https://drrobertbullard.com

California Air Resources Board. (1998). Changes in Penalties. California Clean Air Act Penalties. Accessed March 13, 2024. https://ww2.arb.ca.gov/sites/default/files/classic/enf/advs/advs29.pdf

California Air Resources Board. (2023). Bayview Hunters Point/Southeast San Francisco. Overview. Accessed November 4, 2023. https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program/communities/bayview-hunters-pointsoutheast-san

California Coastal Commission. (2024). Public Resources Code Division 20. California Coastal Act 82024). Accessed March 13, 2024. https://www.coastal.ca.gov/coastact.pdf

California Department of Public Health. (2022). California Vital Data (Cal-ViDa). Accessed October 1, 2023. https://cal-vida.cdph.ca.gov/VSQWeb

California Environmental Justice Alliance. (n.d.). SB 1000 Toolkit: Planning for Healthy Communities. Accessed March 13, 2024. https://caleja.org/2017/09/sb-1000-toolkit-release/#:~:text=Under%20SB%201000%2C%20cities%20and,elements%20of%20their%20General%20Plan.

Californian Environmental Protection Agency (n.d.). Enforcement Resources and Information. Accessed March 13, 2024. https://calepa.ca.gov/enforcement/enforcement-resources-and-information/#:~:text=The%20California%20Environmental%20Quality%20Act,mitigate%20those%20impacts%2C%20if%20feasible.

California Office of Environmental Health and Hazard Assessment. (2023). CalEnviroScreen 4.0. Accessed May 16, 2023. https://experience.arcgis.com/experience/ed5953d89038431dbf4f22ab9abfe40d/

California Office of Environmental Health Hazard Assessment. (n.d.). Proposition 65. Accessed March 13, 2024. https://oehha.ca.gov/proposition-65

California State Water Resources Control Board. (2024). Porter-Cologne Water Quality control Act. Accessed March 13, 2024. https://www.waterboards.ca.gov/laws_regulations/docs/portercologne.pdf

Census Reporter. (2022). San Francisco. Accessed October 1, 2023. https://censusreporter.org/profiles/16000US0667000-san-francisco-ca/

Centers for Disease Control and Prevention. (2022). Cancer. Accessed August 10, 2023. https://www.cdc.gov/chronicdisease/resources/publications/factsheets/cancer.htm

Centers for Disease Control and Prevention. (2023a). Most Recent National Asthma Data. Accessed November 3, 2023. https://www.cdc.gov/asthma/most_recent_national_asthma_data.htm

Centers for Disease Control and Prevention. (2023b). Learn How to Control Asthma. Accessed November 3, 2023. https://www.cdc.gov/asthma/faqs.htm

Cerrell Associates. (1984). Political Difficulties Facing Waste-to-Energy Conversion Plant Siting. Accessed June 6, 2023. http://www.voicesfromthevalley.org/wp-content/uploads/2011/10/cerrell_report.pdf

Checker, M. (2007). "But I Know It's True": Environmental Risk Assessment, Justice, and Anthropology. Human Organization, 66(2), 112–124.

Civil Rights Divison. (n.d.). About the Division. Accessed June 6, 2023. https://www.justice.gov/crt

City and County of San Francisco Department of Public Health. (2012). Prenatal & Care Infant Morbidity – Southeast Neighborhoods of SF. Accessed October 1, 2023. https://www.sfdph.org/dph/files/MCHdocs/Epi/GeographicDisparitiesInPrenatalCareInfantMortality_SoutheastSF_MCAH_Aug2012.pdf

Climate Change Litigation Databases. (n.d.). Principal Law. National Environmental Policy Act (NEPA). Accessed March 20, 2024. https://climatecasechart.com/principle-law/national-environmental-policy-act-nepa/

Congress.gov. (n.d.). The Legislative Process: Overview (Video). Accessed March 21, 2024. https://www.congress.gov/legislative-process

Deloitte Consulting LLP. (2011). Final Report. Evaluation of the EPA Office of Civil Rights. Accessed August 25, 2023. https://archive.epa.gov/epahome/ocr-statement/web/pdf/epa-ocr_20110321_finalreport.pdf

Department of Ecology (n.d.). Environmental impact statement process. Accessed March 13. 2024. https://ecology.wa.gov/regulations-permits/sepa/environmental-review/sepa-guidance/guide-for-lead-agencies/environmental-impact-statements

Department of Energy. (n.d.). The National Environmental Policy Act of 1969, as amended. Accessed June 27, 2023. https://www.energy.gov/nepa/articles/national-environmental-policy-act-1969

Department of Labor. (n.d.). Environmental Justice (EJ). Accessed June 25, 2023. https://www.dol.gov/agencies/oasp/resources/environmental-justice

Department of the Navy. (2023). Fact Sheet Hunters Point Naval Shipyard. Parcel C Radiological Deck Marker Recovery. Accessed October 20, 2023. https://media.defense.gov/2023/Sep/12/2003298671/-1/-1/0/PARCEL_C_DECK_MARKER_FACTSHEET__AUG2023.PDF

Diaz, S. (2016). Getting to the Root of Environmental Injustice. In: Harvard Environmental Law Review. Accessed June 27, 2023. https://harvardelr.com/2016/02/01/elrs-getting-to-the-root-of-environmental-injustice/#_ftn1

Dizikes, C. and Cabanatuan, M. (2018). SF shipyard activists frustrated by naval officials on alleged soil test fraud. Accessed October 21, 2023. https://www.sfchronicle.com/bayarea/article/SF-shipyard-activists-frustrated-by-naval-12827438.php#photo-15379951

Energy Justice Network. (n.d.). Energy Justice Network Factsheets. Accessed March 18, 2023. https://www.ejnet.org/ej/principles.pdf

Engelman Lado, M. (2019). No More Excuses: Building a New Vision of Civil Rights Enforcement in the Context of Environmental Justice, 22 U. Pa. J. L. & Soc. Change 281, 307.

Environmental Science Associates. (2017). Environmental Justice Analysis for Bayview-Hunters Point. Biosolids Digester Facilities Project and Community Benefit Program. Accessed September 1, 2023. https://sfpuc.org/sites/default/files/documents/SSIP%20BV-HP_EJ%20Report_with%20ES.pdf

Exec. Order No. 12898, 3 C.F.R. 7629 (1994). https://digitalcommons.law.buffalo.edu/cgi/viewcontent.cgi?article=1003&context=learning_from_title_vi

Exec. Order No. 13045, 3 C.F.R. 19885 (1997). https://www.govinfo.gov/content/pkg/FR-1997-04-23/pdf/97-10695.pdf

Exec. Order No. 14096, 3 C.F.R. 25251(2023). https://www.energy.gov/sites/default/files/2023-04/eo-14096-revitalizing-commitment-to-environmental-justice.pdf

Faber, D. and McCarthy, D. (2003). Neo-Liberalism, Globalization, and the Struggle for Ecological Democracy: Linking Sustainability and Environmental Justice. In: Julian Agyeman, Robert D. Bullard, and Bob Evans (eds.). *Just Sustainabilities: Development in an Unequal World.* Cambridge, MA: MIT Press.

Fajzieva, D., and Brebbia, C. A. (2001). Environmental health risk. Southampton: WIT Press.

Federal Register (n.d.). Executive Orders. Accessed July 24, 2023. https://www.federalregister.gov/presidential-documents/executive-orders

Finkel, A. and Golding, D. (Eds.). (1995). Worst Things First: The Debate over Risk-Based National Environmental Priorities. Washington DC: Resources for the Future.

Florea, I., and Rhoades, H. (2019). Possibilities and pitfalls of environmental justice action. In The Right to Nature (1st ed., pp. 84–97). Routledge.

Funtowicz, S.O. and J.R. Ravetz. (1994). The worth of a songbird: ecological economics as a post-normal science. Ecological Economics 10: 198-207.

Garcia, J. L. A. (1997). Current Conceptions of Racism: A Critical Examination of Some Recent Social Philosophy'. Journal of Social Philosophy, 28, 5-42.

Gee, G. and Payne-Sturges, D. (2004). Environmental Health Disparities: A Framework Integrating Psychosocial and Environmental Concepts. In: Environmental Health Perspectives, Vol. 112, No. 17. Accessed June 30, 2023. https://doi.org/10.1289/ehp.7074

Governor`s Office of Planning and Research. (n.d.). CEQA Process Overview. Accessed March 13, 2024. https://opr.ca.gov/ceqa/getting-started/

Greenaction. (2004). Pollution, Health, Environmental Racism and Injustice: A Toxic Inventory of Bayview Hunters Point in San Francisco. Accessed September 3, 2023. https://greenaction.org/wpcontent/uploads/2019/06/thestateoftheenvironment090204final.pdf

Greenaction. (2016). Pollution Problems in Bayview Hunters Point. Accessed June 5, 2023. https://greenaction.org/wp-content/uploads/2016/03/Pollution-Problems-in-Bayview-Hunters-Point-Factsheet-April-29_2016.pdf

Greenaction. (2023a). Bayview Hunter Point. Accessed May 13, 2023. https://greenaction.org/bayview-hunters-point/

Greenaction. (2023b). Ticking Time Bomb: Climate Change, Sea Level and Groundwater Rise, Shoreline Contamination, And Environmental Justice in the San Francisco Bay Area. Accessed September 4, 2023. https://greenaction.org/wp-content/uploads/2023/04/Greenaction-Report-April-2023-Shoreline-Contamination-and-Sea-Level-Rise-in-the-San-Francisco-Bay-Area.pdf

Harnish, A., Wilk, R., and Haenn, N. (2016). The Environment in Anthropology: A Reader in Ecology, Culture, and Sustainable Living / (Second edition.). New York, NY: New York University Press.

Hasler, C. (1993). The proposed Environmental Justice Act: I have a (green) dream. U. Puget Sound L. Rev., 17, 417.

Hellend, E. (1998). The Enforcement of Pollution Control Laws: Inspections, Violations, and Self-Reporting, 80 Rev. Econ. & Stat. 141, 152.

Hirsch, D., Caine, M., Altenbern, T., Williams, H. and Ford, A. (2019). From Cleanup to Cover Up. How the Navy Quietly Abandoned Commitments to Clean Up Hunters Point Naval Shipyard and is Instead Covering Up Much of the

Contamination. Accessed September 4, 2023. https://www.committeetobridgethegap.org/hunters-point-reports/FromCleanupToCoverup.pdf

Iftikar, J. S., and Nguyen, D. H. K. (2024). SFFA v. Harvard: Understanding and Contextualizing the Decision and Its Impact. In Change (New Rochelle, N.Y.) (Vol. 56, pp. 4–11). Philadelphia: Taylor & Francis Inc.

Internal Revenue Service. (2022). Publication 596 (2022), Earned Income Credit (EIC). Accessed September 29, 2023. https://www.irs.gov/publications/p596

IVAN. (2023). IVAN Air Monitoring. Accessed November 4, 2023. https://www.bvhp-ivan.org/air

Justia U.S. Supreme Court Center. (n.d.). Massachusetts v. EPA, 549 U.S. 497 (2007). Accessed March 21, 2024. https://supreme.justia.com/cases/federal/us/549/497/

Kaswan, A. (2013). Environmental Justice and Environmental Law. In: Fordham Environmental Law Review, 24(2), 149–179. Accessed July 5, 2023. http://www.jstor.org/stable/26195842

Knight, H. (2018). SF tops itself in voter turnout, but percentages uneven across city Accessed October 3, 2023. https://www.sfchronicle.com/bayarea/heatherknight/article/SF-tops-itself-in-voter-turnout-but-percentages-13415523.php

Lavelle, M. and Coyle, M. (1992). Unequal Protection. In: National Law Journal, Vol. 15, 3.

Lazarus, R. (1993). Pursuing Environmental justice – the distributional effects of environmental protection. Northwestern University Law Review, 87(3), 787–857.

Legal Information Institute. (2022). Act. Accessed July 26, 2023. https://www.law.cornell.edu/wex/act

Legal Information Institute. (2023). Executive order. Accessed July 24, 2023. https://www.law.cornell.edu/wex/executive_order#:~:text=An%20executive%20order%20is%20defined,the%20legislature%20cannot%20overturn%20it

MacDonell, M., Hertzberg, R., Rice, G., Wright, J. and Teuschler, L. (2017). Characterizing Risk for Cumulative Risk Assessments: Characterizing Risk for Cumulative Risk Assessments. Risk Analysis, 38(6).

Marshall, C. and Rossman, G. (1989). Designing qualitative research. Newbury Park, CA: Sage.

Mennis, J. (2005), The Distribution and Enforcement of Air Polluting Facilities in New Jersey, 57 Prof. Geographer 411–22.

Middleton, T. (2021). What is an Environmental Impact Statement? Accessed March 13, 2024. https://www.americanbar.org/groups/public_education/publications/teaching-legal-docs/teaching-legal-docs--what-is-an-environmental-impact-statement-

/#:~:text=In%20the%20United%20States%20at,to%20the%20environment%2C%20but%20rather

Miles, R.(1989). Racism. London: Routledge.

Minnesota Department of Health. (2023a). Cancer and the Environment. Accessed June 29, 2023. https://www.health.state.mn.us/communities/environment/hazardous/topics/cancerenvt.html#:~:text=Benzene%2C%20asbestos%2C%20vinyl%20chloride%2C,others)%20as%20known%20human%20carcinogens

Minnesota Department of Health. (2023b). Health Inequities, Environmental Injustice, and Cancer. Accessed June 29, 2023. https://www.health.state.mn.us/communities/environment/hazardous/docs/envinjustcancer.pdf

National Geographic Society. (2023). The Roles of State and Federal Governments. A discussion of the roles of the state and federal governments, and their concurrent and exclusive powers. Accessed March 23, 2024. https://education.nationalgeographic.org/resource/roles-state-and-federal-governments/

National Institute of Environmental Health Sciences. (2021). Environmental Health Disparities and Environmental Justice. Accessed June 30, 2023. https://www.niehs.nih.gov/research/supported/translational/justice/index.cfm

Nelson, A. (2023). Constructions Starts On Affordable Housing in Hunters Point, San Francisco. Accessed October 20, 2023. https://sfyimby.com/2023/05/construction-starts-on-affordable-housing-in-hunters-point-san-francisco.html

NEPA.GOV. (n.d.). Welcome. Accessed July 27, 2023. https://ceq.doe.gov/index.html

NEPA.GOV. (n.d.). Major Cases Interpreting The National Environmental Policy Act. Accessed March 21, 2024. https://ceq.doe.gov/docs/laws-regulations/Major_NEPA_Cases.pdf

Office of the Attorney General. (2018). Attorney General Becerra Establishes Bureau of Environmental Justice. Accessed March 13, 2024. https://oag.ca.gov/news/press-releases/attorney-general-becerra-establishes-bureau-environmental-justice

Office of the Attorney General. (n.d.). Environmental Justice. Accessed March 13, 2024. https://oag.ca.gov/environment/justice#:~:text=Under%20state%20law%3A%20“%5BE,(e)).

Palsson, G. et al. (2013). Reconceptualizing the ‘Anthropos’ in the Anthropocene: Integrating the social sciences and humanities in global environmental change research. Environmental Science & Policy, 28 (Special Issue: Responding to the Challenges of our Unstable Earth (RESCUE)), 3–13.

Paustenbach, D. and Gibbons, R. (2022). Radiological risk assessment of the

Hunters Point Naval Shipyard (HPNS). Accessed September 3, 2023. https://www.researchgate.net/publication/364747012_Radiological_risk_assessment_of_the_Hunters_Point_Naval_Shipyard_HPNS#pf10

Pedersen, O. (2010). Environmental Principles and Environmental Justice. Environmental Law Review, 12(1), 26-49.

Perls, H. (2020). EPA Undermines its Own Environmental Justice Program. Accessed August 22, 2023. https://eelp.law.harvard.edu/2020/11/epa-undermines-its-own-environmental-justice-programs/#_ftn3

Rechtschaffen, C. (2008). Fighting Back Against a Power Plant: Some Lessons From the Legal and Organizing Efforts of the Bayview-Hunters Point Community. West-Northwest Journal of Environmental Law & Policy, 14, 537–1703.

Reilly, W. (1992). Environmental Equity: EPA´s Position. In: EPA Journal, Vol. 18, 1.

Rogers, P. (2016). EPA History: The Clean Air Act of 1970. Accessed July 26, 2023. https://www.epa.gov/archive/epa/aboutepa/epa-history-clean-air-act-1970.html

San Francisco Controller's Office. (2014). Studying a Homeownership Stabilization Authority and Other Approaches to Assist Homeowners with Troubled Mortgages. Accessed October 1, 2023. https://sfbos.org/ftp/uploadedfiles/bdsupvrs/resolutions14/r0398-14.pdf

San Francisco Department of Public Health. (2013). Healthy HOPE SF: Baseline Conditions Assessment in Support of Healthy Design and Rebuilding of San Francisco's Distressed Public Housing. Accessed October 3, 2023. https://sfmohcd.org/sites/default/files/FileCenter/Documents/7645-3-HOPE%20SF%20Baseline%20Data%20Report_Final_7%203%2012.pdf

San Francisco Water Power Sewer. (n.d). Construction at the Southeast Treatment Plant. Accessed June 5, 2023. https://sfpuc.org/construction-contracts/construction-projects/sepconstruction

Schlosberg, David (2009). Defining environmental justice: theories, movements, and nature. Oxford University Press. Accessed May 23, 2023. https://doi.org/10.1093/acprof:oso/9780199286294.001.0001

Sexton, K. and Adgate, J. (1999). Looking at environmental justice from an environmental health perspective. In: Journal of Exposure Analysis and Environmental Epidemiology, Vol. 9 (1): 3-8. Accessed July 1, 2023. https://www.researchgate.net/publication/13107784_Looking_at_environmental_justice_from_an_environmental_health_perspective

Sexton, K. and Linder, S. (2010). The role of cumulative risk assessment in decisions about environmental justice. International Journal of Environmental Research and Public Health, 7(11), 4037–4049.

SF.GOV. (2023). San Francisco language diversity data. Accessed May 17, 2023. https://sf.gov/data/san-francisco-language-diversity-data

Sinicrope, Castle et al. (2014). Data Report for Our Children, Our Families Council. Accessed October 1, 2023. https://static1.squarespace.com/static/5c01d13ab98a788a7a0cfd93/t/6309538e4b1bdd2b7d0b0747/1661555601330/OCOF_Data%2BReport%2BAug%2B2015.pdf

State of California. (2020). Government Code. Section 65040.12. Accessed August 28, 2023. https://leginfo.legislature.ca.gov/faces/codes_displaySection.xhtml?sectionNum=65040.12.&lawCode=GOV

Su, J., Morello-Frosch, R., Jesdale, B., Kyle, A., Shamasunder, B., and Jerrett, M. (2009). An Index for Assessing Demographic Inequalities in Cumulative Environmental Hazards with Application to Los Angeles, California. Environmental Science & Technology, 43(20), 7626–7634.

Sumchai, A. (2020). The landfill in our bodies. Accessed October 24, 2023. https://www.indybay.org/newsitems/2020/04/04/18832105.php

Sumchai, A. (2021). About. Accessed October 24, 2023. https://asumchai.medium.com/about-8d036a259bc8

Supreme Court. (2023). Students for Fair Admissions, Inc. v. President and Fellows of Harvard College. Accessed March 14, 2023. https://www.supremecourt.gov/opinions/22pdf/20-1199_hgdj.pdf

Tassan, M. (2022). Rethinking environmental justice in the Anthropocene: An anthropological perspective. Anthropology Today, 38(3), 13–16.

Temper, L., Bene, D., and Martinez-Alier, J. (2015). Mapping the frontiers and front lines of global environmental justice: The EJAtlas. Journal of Political Ecology, 22(1), 254–278.

The White House. (2021). Executive Order on Tackling the Climate Crisis at Home and Abroad. Accessed July 25, 2023. https://www.whitehouse.gov/briefing-room/presidential-actions/2021/01/27/executive-order-on-tackling-the-climate-crisis-at-home-and-abroad/

The White House. (2023). Executive Order on Revitalizing Our Nation´s Commitment to Environmental Justice for All. Accessed November 3, 2023. https://www.whitehouse.gov/briefing-room/presidential-actions/2023/04/21/executive-order-on-revitalizing-our-nations-commitment-to-environmental-justice-for-all/

The White House. (n.d.). Justice 40. A whole-of-government initiative. Accessed July 31, 2023. https://www.whitehouse.gov/environmentaljustice/justice40/

Train, R. E. (1974). NEPA in the Courts: A Legal Analysis of the National Environmental Policy Act. Virginia Law Review, 60(5), 910–916.

UC Santa Cruz. (n.d.). Environmental Impact Statements & Reports. Accessed March 23, 2024. https://guides.library.ucsc.edu/EIS

Umweltbundesamt. (2021): Precautionary principle. Accessed May 23, 2023. https://www.umweltbundesamt.de/en/precautionary-principle.

UNECE. (2016). Environmental Justice Strategic Enforcement Assessment Tool (EJSEAT). Accessed November 3, 2023. https://aarhusclearinghouse.unece.org/resources/environmental-justice-strategic-enforcement-assessment-tool-ejseat

United Church of Christ. (1987). Toxic Wastes and Race. Accessed June 5, 2023. https://www.nrc.gov/docs/ML1310/ML13109A339.pdf

United States Environmental Protection Agency. (1997). Environmental Justice. Guidance Under the National Environmental Policy Act. Accessed July 27, 2023. https://www.epa.gov/sites/default/files/2015-02/documents/ej_guidance_nepa_ceq1297.pdf

United States Environmental Protection Agency. (2015). National Environmental Justice Advisory Council. Accessed August 21, 2023. https://www.epa.gov/sites/default/files/2015-02/documents/nejac-cum-risk-rpt-122104.pdf

United States Environmental Protection Agency. (2016). EPA´s Environmental Justice Collaborative Problem-Solving-Model. Accessed August 21, 2023. https://www.epa.gov/sites/default/files/2016-06/documents/cps-manual-12-27-06.pdf

United States Environmental Protection Agency. (2017). U.S. EPA's External Civil Rights Compliance Office Compliance Toolkit. Accessed August 24, 2023. https://www.epa.gov/sites/default/files/2017-01/documents/toolkit-chapter1-transmittal_letter-faqs.pdf

United Stated Environmental Protection Agency. (2022a). Learn About Environmental Justice. Accessed May 23, 2023. https://www.epa.gov/environmentaljustice/learn-about-environmental-justice

United Sates Environmental Protection Agency. (2022b). What is the National Environmental Policy Act? Accessed July 27, 2023. https://www.epa.gov/nepa/what-national-environmental-policy-act

United States Environmental Protection Agency. (2022c). The Facts on Title VI of the Civil Rights Act of 1964. Accessed July 30, 2023. https://www.epa.gov/ogc/facts-title-vi-civil-rights-act-1964

United States Environmental Protection Agency. (2022d). Hunters Point Naval Shipyard San Francisco, CA Cleanup Activities. Accessed October 20, 2023. https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.cleanup&id=0902722

United States Environmental Protection Agency. (2023a). Clean Air Act Text. Accessed July 26, 2023. https://www.epa.gov/clean-air-act-overview/clean-air-act-text

United States Environmental Protection Agency. (2023b). Laws and Executive Orders. Accessed July 28, 2023. https://www.epa.gov/laws-regulations/laws-and-executive-orders#majorlaws

United States Environmental Protection Agency. (2023c). Environmental Justice Timeline. Accessed August 17, 2023. https://www.epa.gov/environmentaljustice/environmental-justice-timeline

United States Environmental Protection Agency. (2023d). Update to the Community-Focused Exposure and Risk Screening Tool (C-FERST). Accessed November 1, 2023. https://www.epa.gov/healthresearch/update-community-focused-exposure-and-risk-screening-tool-c-ferst

United States Environmental Protection Agency. (2023e). National Environmental Policy Act Review Process. Accessed March 13, 2024. https://www.epa.gov/nepa/national-environmental-policy-act-review-process

Urquidez, A. (2022). White Individualism and the Problem of White Co-optation of the Term "Racism". Radical Philosophy Review, 25(2), 161-190.

USA Corporate Services Inc. (n.d.): Understanding State Laws versus Federal Laws. Accessed March 12, 2024. https://www.usa-corporate.com/new-business-resources/state-vs-federal-laws/

U.S Commission on Civil Rights. (2016). Environmental Justice: Examining the Environmental Protection Agency´s Compliance and Enforcement of Title VI and Executive Order 12,989. Accessed August 25, 2023. https://www.usccr.gov/files/pubs/2016/Statutory_Enforcement_Report2016.pdf

U.S. Department of Justice. (2022). Comprehensive Environmental Justice Enforcement Strategy. Accessed October 12, 2023. https://www.justice.gov/d9/pages/attachments/2022/05/05/02._asg_strategy_memorandum.pdf

Wagner, L. (2018). Former Tetra Tech Workers Sentenced For Falsifying Records in Hunters Point Radiation Cleanup. Accessed September 4, 2023. https://www.nbcbayarea.com/news/local/former-tetra-tech-workers-sentenced-for-falsifying-records-in-hunters-point-radiation-cleanup/61577/

Western Rail Yard Infrastructure Project. (2021). Chapter 19: Environmental Justice. Accessed September 15, 2023. https://railroads.dot.gov/sites/fra.dot.gov/files/2021-11/19_Environmental%20Justice_DEIS_FINAL.pdf

Wilson, R. (n.d.). History of Potrero Point Shipyards and Industry. Accessed June 6, 2023. http://www.pier70sf.org/history/p70_history.html

World Health Organization. (2010). Urban HEART: urban health equity assessment and

response tool: user manual. Accessed November 1, 2023. https://iris.who.int/bitstream/handle/10665/79061/9789241500784_eng.pdf?sequence=1

World Health Organization. (2023). Constitution. Accessed May 25, 2023. https://www.who.int/about/governance/constitution

Yang, T. (2002). Melding civil rights and environmentalism: Finding environmental justice's place in environmental regulation. The Harvard Environmental Law Review: HELR, 26(1), 1–32.

102nd Congress. (n.d.). H.R: 5326 – Environmental Justice Act of 1992. Accessed July 26, 2023. https://www.congress.gov/bill/102nd-congress/house-bill/5326/text

117th Congress. (n.d.). H.R.2021 – Environmental Justice For All Act. Accessed July 26, 2023. https://www.congress.gov/bill/117th-congress/house-bill/2021/text

List of Figures

Figure 1: Palsson, G. et al. (2013). Reconceptualizing the 'Anthropos' in the Anthropocene: Integrating the social sciences and humanities in global environmental change research. Environmental Science & Policy, 28 (Special Issue: Responding to the Challenges of our Unstable Earth (RESCUE)), 3–13.

Figure 2: Art House SF. (2019). Illustrated History of Hunters Point, San Francisco. Accessed May 19, 2023. https://www.arthousesf.com/blogs/news/hunters-point-san-francisco

Figure 3-8: Own photographs of photographic observation in BVHP during February 2023.

Figure 9: Own photographs of Bayview Hunters Point Environmental Justice Task Force Meeting on the 15th of March 2023 in the Alice Griffith Community room, BVHP.

Figure 10-13: California Office of Environmental Health and Hazard Assessment. (2023). CalEnviroScreen 4.0. Accessed May 16, 2023. https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40

Figure 14: Screenshot of Apple Maps of San Francisco.

Figure 15: The Center for Land Use and Interpretation. (n.d.). Hunters Point Naval Shipyard, California. Accessed September 3, 2023. https://clui.org/ludb/site/hunters-point-naval-shipyard

Figure 16: Hirsch, D., Caine, M., Altenbern, T., Williams, H. and Ford, A. (2019). From Cleanup to Cover Up. How the Navy Quietly Abandoned Commitments to Clean Up Hunters Point Naval Shipyard and is Instead Covering Up Much of the Contamination. Accessed September 4, 2023. https://www.committeetobridgethegap.org/hunters-point-reports/FromCleanupToCoverup.pdf

Figure 17: Paustenbach, D. and Gibbons, R. (2022). Radiological risk assessment of the Hunters Point Naval Shipyard (HPNS). Accessed September 3, 2023. https://www.researchgate.net/publication/364747012_Radiological_risk_assessment_of_the_Hunters_Point_Naval_Shipyard_HPNS#pf10

Figure 18: Marie Harrison Community Foundation. (2023). Environmental Justice. Accessed August 22, 2023. https://www.canwelive.org/environmental-justice

Figure 19 – 21, 23: Data retrieved from: California Office of Environmental Health and Hazard Assessment. (2023). CalEnviroScreen 4.0. Accessed May 16, 2023. https://experience.arcgis.com/experience/ed5953d89038431dbf4f22ab9abfe40d/.

Figure 22: Environmental Science Associates. (2017). Environmental Justice Analysis for Bayview-Hunters Point. Biosolids Digester Facilities Project and Community Benefit Program. Accessed September 1, 2023. https://sfpuc.org/sites/default/files/documents/SSIP%20BV-HP_EJ%20Report_with%20ES.pdf

Figure 24: Sexton, K., and Linder, S. (2010). The role of cumulative risk assessment in decisions about environmental justice. International Journal of Environmental Research and Public Health, 7(11), 4037–4049.

Figure 25: Own graphic based on fieldwork experiences.

Figure 26: United States Environmental Protection Agency. (2016). EPA´s Environmental Justice Collaborative Problem-Solving-Model. Accessed August 21, 2023. https://www.epa.gov/sites/default/files/2016-06/documents/cps-manual-12-27-06.pdf

Appendix

Appendix 1: Interview transcripts

Appendix 1.1: Interview with A., zoom call, San Francisco, 17.03.2023.
Appendix 1.2: Interview with K., written answers, San Francisco, 19.03.2023.
Appendix 1.3: Interview with S., zoom call, San Francisco, 20.03.2023.
Appendix 1.4: Interview with B., zoom call, San Francisco, 26.03.2023.
Appendix 1.5: Interview with H., zoom call, Vienna, 04.04.2023.