

## HURRICANE-RISKSCAPES AND GOVERNMENTALITY

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**Summary:** In the Caribbean, starting with meteorological observation technologies and the transfer of the meteorological observation of the physical phenomenon hurricane into a societal, economic, and spatial risk, a mosaic of problematizations, rationalities, and practices aimed at ordering and governing space and population unfolds. Based on empirical material gathered to analyze the government of hurricanes in the Caribbean, this paper discusses possibilities to combine riskscapes and governmentality. The thesis of the paper is that, on its analytical level, the concept of riskscapes does not sufficiently address issues and effects of power relations. The paper addresses this gap by including Foucault's reflections on governmentality. For this purpose, the paper presents two theoretical chapters, one on the concept of riskscapes and one on Foucault's conceptualization of governmentality. These are followed by an empirical chapter in which the complex of problematization of hurricanes as risk, as well as resulting spatial effects, are highlighted. Moreover, it is shown how the analytical categories of the governmentality perspective can be applied to an investigation of riskscapes. Hereby, it is shown that riskscapes are the result of power relations.

**Zusammenfassung:** Ausgehend von meteorologischen Beobachtungstechnologien und der Übersetzung meteorologischer Beobachtung des physikalischen Phänomens Hurrikane in ein soziales, ökonomisches und verräumlichtes Risiko, entfaltet sich in der Karibik ein Mosaik aus Problematisierungen, Rationalitäten und Praktiken zur Ordnung und Regierung von Räumen und Bevölkerung. Basierend auf empirischem Material zur Regierung von Hurrikanen in der Karibik beleuchtet der vorliegende Beitrag Möglichkeiten Riskscapes und Gouvernementalität zusammenzudenken. Die These lautet, dass der Adressierung von Machtfragen und -effekten im Rahmen des Riskscapes-Konzepts auf analytischer Ebene bislang zu wenig Aufmerksamkeit geschenkt wurde. Der Beitrag plädiert dafür, diese Lücke mit Rückgriff auf Foucaults Überlegungen zu Gouvernementalität zu schließen. Hierzu werden zunächst in zwei theoretischen Kapiteln zum einen das Konzept der Riskscapes und zum anderen Foucaults Überlegungen zu Gouvernementalität vorgestellt. Dem schließt sich ein empirisches Kapitel an, in dem der Komplex der Problematisierung von Hurrikanen als Risiko, sowie die resultierenden räumlichen Effekte, schlaglichtartig beleuchtet werden. Des Weiteren wird nachgezeichnet, wie die analytischen Kategorien der Gouvernementalitätsperspektive für eine Untersuchung von Riskscapes Anwendung finden können. Dabei wird gezeigt, dass Riskscapes das Ergebnis von machtgeladenen Prozessen sind.

**Keywords:** Caribbean, political geography, governmentality, risk, hurricanes, riskscapes

## 1 Introduction

Every year, during the hurricane season from June to November, the Caribbean experiences more than a dozen storms. Some of these storms develop wind speeds above 118 km/h and thus are named and categorized as hurricanes. Hurricanes represent a ubiquitous hazard for the Caribbean region and are part of everyday life and everyday practices. One can observe a transformation through discourses and practices of the physical hazard into a societal, economic and spatial risk. Starting point of these transformational processes are meteorological apparatuses. Following meteorological observation techniques and warning systems, evolving around the construction of the risk 'hurricane', a wide range of problematizations, rationalities, technologies, and spatial practices unfold.

Therefore, examining hurricane events allows one to gain insight into the ongoing processes of organizing life and conduct in societies affected by the event. This becomes evident on a yearly basis and holds true for events as recent as hurricane 'Irma' and hurricane 'Maria' of September 2017. While 'Irma', among other things, shed light on the effects of the delicate political status of Puerto Rico, 'Maria' highlighted issues regarding resilience to climate change in places like Dominica. Caribbean leaders, such as BECKLES (2017, n.p.), point out that these events are "[...] revelatory of the horrific history that dwells in the ruins of the present". The year before, hurricane 'Matthew', one of the three major hurricanes of the 2016 season, revealed the level of vulnerability of several Caribbean territories. Especially Haiti was hit by the hurricane affecting around 2.1 million people and resulting

in the death of at least 546 people (OCHA 2016). Hurricane events not only reveal the vulnerability of people or governments on a national scale, as in Haiti, but they often reveal socio-spatial inequalities within societies as well. A well-known example, in this regard, is hurricane 'Katrina' (2005) which revealed the spatial dimension of social inequalities along the categories of ethnicity and class within the city of New Orleans, USA (HARTMAN and SQUIRES 2006). These observations are shared by many people throughout the Caribbean. In several interviews conducted in 2014 during my field research in Dominica, Martinique, and Jamaica, my interviewees pointed out that hurricane events reveal the functioning or non-functioning of society. This means that surrounding such events immanent societal structures and their spatial effects come to light.

One might argue that it is not just the event, but rather the (construction of) risk which is the key to understanding how governmental practices shape Caribbean hurricane-riskscape. Hereby, the spatial dimension of risk is of utmost importance. Even though the status of space for the construction of risk is acknowledged and there is much research on risk, in geography and other disciplines, there are only few publications which explicitly take the spatial dimension of risk into account (AGRAWAL 2005; EGNER and POTT 2010; FELGENTREFF and GLADE 2008; WISNER et al. 2004). Therefore, the proposed concept of riskscape (MÜLLER-MAHN 2014; MÜLLER-MAHN and EVERTS 2013) is a major step forward. This text offers another approach to scrutinize the complex structure of risk, space, and power. As, starting from FOUCAULT's (2007, 89) reflections on "differential risk", risk is seen as relational, power structures become necessarily the center of interest. To analyze socio-spatial manifestations and effects of these knowledge-power structures, I propose to combine the conceptual tool of riskscape with Foucauldian reflections on governmentality. My thesis is that questions of power are not yet fully addressed in the concept of riskscape. Therefore, the aim of this paper is to discuss how questions of power might be integrated. To do so, the paper discusses the concepts of riskscape and governmentality by way of recourse to empirical material gathered during my field research in Dominica, Martinique and Jamaica from March to July 2014<sup>1)</sup>. By combin-

ing the concepts of riskscape and governmentality, a key contribution of this text is to further develop the concept of riskscape and to continue ongoing theoretical reflections on the spatial dimension of risk.

## 2 The concept of riskscape

There are manifold conceptualizations of risk and how people deal with and give meaning to risk spanning roughly from realist to constructivist positions (RENN 2008). When one looks at the publications mentioned in the introduction, two observations stand out: First, there is still a divide between realist and constructivist positions within human geography. Second, human geographers, whether supporting weak or strong constructivist perspectives, seem to have reached a consensus on the understanding of risk (although this does not result in conceptual consistency). To summarize, the main points of the consensus are that risks are socially constructed and that the spatial dimension of risk is important (EGNER and POTT 2010; MÜLLER-MAHN 2007). Consequently, the relationship of risk and space becomes the center of interest. The character of the relationship of risk and space is twofold. On the one hand, spatial structures have effects on the distribution of risks in space and shape one's risk(s) at a specific place. On the other hand, practices in relation to risk shape the physical-spatial environment. Therefore, the inquiry into the relationship of risk and space lies at the heart of geographical risk research (MÜLLER-MAHN 2014). An analytical framework to grasp the entanglements of risk and space, or in other words, the spatial dimension of risk, is offered by MÜLLER-MAHN and EVERTS (2013) and their introduction of the term 'riskscape'. The basic assumption is that every day humans face manifold risks. Therefore, at the same place, there are different and entangled risk perceptions and risk practices. These are intertwined with the surrounding environment and have spatial effects.

MÜLLER-MAHN (2013, xviii) defines riskscape as follows: "Riskscape may [...] be understood as landscapes of multilayered and interacting risks that represent both the materiality of real risks, and the perceptions, knowledge and imaginations of the people who live in that landscape and continuously shape and reshape its contours through their daily activities". The term riskscape as a metaphoric and semantic combination of risk and

<sup>1)</sup> The complete corpus consists of policy papers, plans, maps, 27 'biographic-narrative' interviews, and field notes.

landscape, with explicit reference to APPADURAI'S (1990) switch from static place-based processes to dynamic and deterritorialized global cultural flows termed 'scapes', conceptualizes landscape as a space where the social construction of risk and material practices overlap and conflict. To grasp the dynamics of the differing constructions and material structures of risks in this arena, "[...] [risks] need to be analyzed within a common framework in order to understand how they collectively shape life and place" (MÜLLER-MAHN and EVERTS 2013, 24). In addition to the reference to Appadurai, MÜLLER-MAHN and EVERTS (2013) base their conceptual tool on the work of NOVEMBER (2002, 2008) on the spatiality of risk and overlapping risk perceptions, as well as on SCHATZKI'S (2010) practice theory. In other words, they derive the concept from different perspectives such as anthropology, practice theory, and human geography. Starting from November's focus on "[...] the multiplicity of risks relating to the same topic and/or the same place" and the question of "[...] how various risks coexist in one place" (MÜLLER-MAHN and EVERTS 2013, 27), the transfer of Appadurai's thoughts highlights the relational character of risk. Further, as this directs research to the "[...] analysis of the social rather than the individual [...] in terms of spatial impact and political relevance, it makes sense to analyze the -scapes that have become meaningful to a larger group or social formation" (MÜLLER-MAHN and EVERTS 2013, 25). It is not just the dominant perceptions of risk by groups, but the spatial practices that are deployed to deal with risks. Therefore, as "[r]iskscapes are practised and constituted in practice" (MÜLLER-MAHN and EVERTS 2013, 26) the investigation of riskscapes has "[...] to foreground human activity" (MÜLLER-MAHN and EVERTS 2013, 26).

A close reading of the riskscapes literature exposes a conceptual gap which needs to be addressed. This paper argues that the power dimension is underrepresented and reduced to a simplistic dichotomy of expert knowledge versus local knowledge (MÜLLER-MAHN and EVERTS 2013, 28-35). Since the concept is concerned with overlapping and sometimes conflicting perceptions and practices of risk, as well as the analysis of the social, questions of power and inequalities need to be taken thoroughly into consideration. This is not yet the case. In the interest of filling this gap, this paper suggests drawing on Foucault's reflections on governmentality and biopolitics to better integrate questions of power into the concept of riskscapes.

### 3 Riskscapes and governmentality

This section concentrates on Foucault's reflections on governmentality as well as the conceptualization of risk in governmentality studies. Furthermore, it discusses how these might help to integrate the power dimension into the concept of riskscapes. Foucault introduces and elaborates governmentality in the lecture series of 1977-1978 (FOUCAULT 2007) and 1978-1979 (FOUCAULT 2008) at Collège de France which he ties together as "history of 'governmentality'" (FOUCAULT 2007, 144). Government is the guiding concept of Foucault's works on governmentality. In his historical analysis, Foucault shows that government had, before it was embedded in the organization of the nation-state, a wide range of meanings which included among others "[...] the government of children, of families, of a household, of souls, of communities, and so forth" (FOUCAULT 2008, 2). Therefore, "[...] 'governing' is different from 'reigning or ruling' and not the same as 'commanding' [...]" (FOUCAULT 2007, 161).

Governmentality is the semantic combination of government and mentality which reflects Foucault's understanding of power and knowledge as entangled and reciprocally constituting. Governmentality includes all forms of action and fields of practice which structure human activities. In Foucault's words, governmentality can be understood as "[...] the set of institutions and practices, from administration to education, through which people's conduct is guided. This set of procedures, techniques, and methods that ensure the government of some people by others [...]" (FAUBION 2000, 295). In the lecture of February 1st, 1978 at Collège de France, he develops three dimensions of governmentality: First, governmentality is the entirety of institutions, practices, and technologies which allow exercising power, which is understood as "[...] a triangle of sovereignty-discipline-government (governmental management), whose primary target is population, whose principle form of knowledge is political economy, and whose essential mechanism or technical means of operating are apparatuses of security" (ELDEN 2007, 567). Second, governmentality describes the knowledge that historically revolved around the idea of government. Third, governmentality labels the results of a specific historical process, namely the change from the medieval state to the administrative state and its further developments (FOUCAULT 2007).

It can be derived from this that it is useful to distinguish between governmentality as a term for the investigation of forms of governing others and

the self (the manifold ways, practices and institutions through which the conduct of others and the self is organized) and governmentality understood as a specific historical analysis of the logic of the art of statecraft. Many scholars agree that the imprecise mixing of these two meanings would undermine the analytical strength of the concept (HUXLEY 2008; REUBER 2012; ROSOL and SCHIPPER 2014).

This paper is primarily interested in governmentality as a term for the investigation of forms of governing others and the self, as its main question is how risk, space and, power are intertwined in the riskscape emerging around hurricanes in the Caribbean and how conduct is 'governed through risk'. The link between governmentality and power lies in the notion of conduct. There are two dimensions to the notion of conduct. It is, simultaneously, the act of directing others by using more or less strict mechanisms of coercion (conduct of others) and the way of behaving in a field of possibilities (conduct of the self). While the mechanisms of conduct of others are well understood, Foucault's work enables a stronger focus on and a better understanding of the conduct of the self. At first glance, the field of possibilities to behave in a certain situation appears wide and unproblematic. The concept of governmentality helps to analyze which actions and practices are made possible in this field – and which are not: "The exercise of power is a 'conduct of conducts' and a management of possibilities. [...] To govern, in this sense, is to structure the possible field of action of others" (FAUBION 2000, 341). The enabling or restriction of possible action is thus the result of knowledge-power structures.

In short, one can identify two main points of governmentality that are helpful for political geographies of hurricane-riskscape in the Caribbean: First, the approach widens the scalar level of investigation, starting from the individual level of conduct of the self to entangled global arrangements. Second, it also widens the level in terms of content because it does not solely focus on political institutions but rather on the general structure of power relations in societies. Finally, it is important to point out that governmentality is not an attempt to work out a social theory including a distinct methodological inventory, on the contrary, it is a research perspective "that allows certain kinds of questions to be asked about how particular aspects of taken-for-granted social relations came to be as they are" (HUXLEY 2008, 1636). Accordingly, COLLIER (2009, 99) argues for an understanding of governmentality as "[a] topological analysis [that]

brings to light a heterogenous space, constituted through multiple determinations, and not reducible to a given form of knowledge-power. It is better suited to analyzing the dynamic process through which existing elements [...] are taken up and redeployed, and through which new combinations of elements are shaped".

The key categories for an analysis informed by governmentality are: Problematizations, rationalities, technologies, subjectifications, and constructions of space. Problematization in Foucauldian understanding is a process in which something, for instance a meteorological and physical phenomenon in the Atlantic, is rendered a problem through discourses and practices. The rendering of the phenomenon into a problem ('hurricane') enables the application of a distinct set of practices to address the newly established problem. The logic behind how the problem should be addressed is framed as rationality. Based on these rationalities specific methods, apparatuses, and techniques are applied to address the problem. These are subsumed under the category of technologies. As BRÖCKLING, KRASMANN and LEMKE (2011, 12) put it: "[...] studies of governmentality [...] investigate the discursive operations, speakers' positions, and institutional mechanisms through which truth claims are produced, and which power effects are tied to these truths [...]". However, as "[p]ower relations are rooted in the whole network of the social" (FAUBION 2000, 345), the analysis must not be restricted to institutions. Furthermore, the existence of prevailing unities must also be rejected: "Globalizing theoretical concepts such as 'risk society', 'neoliberalism', and 'state' do not form the opening but at most the endpoint of the analysis" (BRÖCKLING, KRASMANN and LEMKE 2011, 12). The ordering of space is central for analysis, as HUXLEY (2008, 1647) asserts: "Governmentality is seen to be inextricably spatial, from the volume of the body to the micro-spaces of the room to the expanse of the territory". The Foucauldian set of analytical categories may be useful to replenish the concept of riskscape with a perspective that helps to understand how risk is constructed and perceived, as well as how power relations play a vital role in the establishment and formation of dominant riskscape. The way people or institutions perceive or conceptualize risk, their riskscape, is not accidental or determined but rather the result of specific problematizations and the rationalities, technologies, and subjectifications that build on these problematizations. Hence, people's riskscape and people's conduct are continu-

ously shaped and reshaped through discourses and practices of governing risk or, to put it differently, through knowledge-power structures.

As already mentioned above, a governmentality perspective looks at the “[...] thousand and one different modalities and possible ways that exist for guiding men, directing their conduct, constraining their actions and reactions, and so on” (FOUCAULT 2008, 1-2). Over the last years, the expression ‘governing through risk’ has gained some popularity. According to O’MALLEY (2009, 8), the expression goes back to SIMON’S (2007) book ‘Governing through crime’. In this book, the author shows how government of juvenile crime goes “[...] from concerns about juvenile crime through measures in schools that treat students primarily as potential criminals or victims, and, later still, to attacks on academic failure as a kind of crime someone must be held accountable for, whether it be the student, teachers, or whole schools” (SIMON 2007, 5). ‘Governing through risk’ thus hints at the manifold modalities and ways to govern and control populations through the linkage of life and risk (ERICSON 2005). Therefore, the population becomes the center of interest for the analysis of the governmentality of risk.

Alongside government, a key concept of governmentality is risk. FOUCAULT (2007; 2008) conceptualizes risk within the framework of security. As part of the security apparatuses (which he frames with the key terms case, risk, threat, and crisis) risk is relational and becomes a primordial element of discipline. Risk is used to designate the potential threat of a case; it thus represents a technology aimed at controlling the conduct of people. In this sense, risk is embedded in a broader epistemological framework of governmentality and biopolitics. Built upon previous research on madness, delinquency and sexuality, the aim of governmentality as an analytical perspective is “[...] to show how the coupling of a set of practices and a regime of truth form an apparatus (dispositif) of knowledge-power that effectively marks out in reality that which does not exist and legitimately submits it to the division between true and false” (FOUCAULT 2008, 19). This is reflected in numerous works by authors of the so-called governmentality studies.

Similar to the conceptualization of risk in the concept of riskscapes, FOUCAULT (2007, 89) states that “[...] risks are not the same for all individuals, all ages, or in every condition, place or milieu. There are therefore differential risks that reveal, as it were, zones of higher risk and, on the other hand, zones of

less or lower risk”. Hence, the specific technologies, rationalities, and apparatuses to deal with risk differ. Consequently, the risk itself is not key to understanding but rather “[...] all manner of techniques, agencies and routines that will be brought to bear in order to make the risk governable” (O’MALLEY 2016, 110). Or, as EWALD (1991, 199) puts it: “Nothing is a risk in itself; [...] anything can be a risk; it all depends on how one analyzes the danger, considers the event”. Following on from this, in governmentality studies, risk is understood as “[...] a set of different ways, of ordering reality, of rendering it into a calculable form. It is a way of representing events in a certain form so they might be made governable in particular ways, with particular techniques and for particular goals: [...] risk is a calculative rationality that is tethered to assorted techniques for the regulation, management and shaping of human conduct in the service of specific ends and with definite, but to some extent unforeseen, effects” (DEAN 2010, 206-207).

There is a lot of potential overlapping of these conceptualizations of risk and riskscapes. In accord with NOVEMBER’S (2008, 1526) assertion that it should be analyzed how “[...] each risk situation generates its own process of arguments, strategies, calculations, alliances, and procedures, which may lead to the subsequent adoption of preventive measures, with their respective spatial effects”, the following analysis shows how hurricane-riskscapes can be analyzed through the lens of a Foucauldian governmentality perspective. This means that the analytical categories of governmentality (problematizations, technologies, rationalities, subjectifications, and construction of space) are applied to the analysis of riskscapes. The key questions of investigation thus are: What is identified as a problem that should be governed? Which rationalities form the basis of certain policies? Which processes, apparatuses, and techniques are used to make actions (im)possible? How is subjectivity constituted in governmental practices? How are spatial references constructed and on which logic are they based?

#### 4 Hurricane-riskscapes in the Caribbean

People in the Caribbean are regularly exposed to the risk of being affected by a hurricane. In order to monitor and control the hazard, the atmospheric phenomenon is observed, measured, and translated into a risk which is put in categories in accordance with distinguishing features such as, for instance, rotation, organization, and wind speeds. Throughout

the text at hand, this former-atmospheric-phenomenon-now-risk is referred to as 'hurricane'. This might be meteorologically imprecise, as storms are only categorized as hurricanes if their windspeeds exceed 118 km/h, but reflects practices and discourses which underline the extreme character of the event and the need to deal with it. No other hazard in the region "[...] is more characteristic than the hurricanes [...]" (SCHWARTZ 2015, xiii). The perception of being at risk differs widely, based on manifold internal and external factors. Without opening up the large discussion about these factors, it is important to point to the relational character of risk. Risk obtains its meaning only through allocation, in other words, in relation to a potential event. The potential event gets its risky character through a relay which translates the material aspect of the physical phenomenon into an abstract risk. One might understand the allocation of risk as a problematization, that is, a way of establishing a problem which needs to be addressed. Through observational practices of different meteorological services and the transformation of the observed data into maps, probabilities, et cetera, an atmospheric phenomenon becomes a problem for Caribbean people and societies. In order to cope and deal with the problem, a wide range of apparatuses and practices are established. The evaluation of the problem's 'riskiness' may differ widely.

The following analysis of hurricane-risksapes in the Caribbean draws on empirical material gathered during field research in Dominica, Martinique, and Jamaica from March to July 2014. The corpus consists of policy papers, maps, 27 'biographic-narrative' interviews, as well as field notes. Based on the empirical material this paper will present some of the existing risksapes that emerge from this material. Furthermore, it will show how risksapes and life are governed through the problematization of hurricanes as risk. In this way, the aim is to show that the power dimension is vital to the analysis of risksapes and to discuss how questions of power might be integrated into the concept of risksapes. Following an explanation of how the atmospheric phenomenon is problematized as risk through meteorological apparatuses, the paper will discuss risksapes of various fields of everyday life: First, conflicting risksapes of local governments and local people concerning regulations and emergency planning *ex ante* the event. Second, conflicting risksapes of security, dwelling, and spatial planning.

The Atlantic is monitored by various satellites, data buoys, and a fleet of hurricane hunter aircrafts. The collected data is the basis for computer mod-

els calculating current and future climatic conditions. The regional center for the Atlantic is located in Miami ('National Hurricane Center', NHC); the meteorological center for CARICOM members in Bridgetown, Barbados ('Caribbean Institute for Meteorology and Hydrology', CIMH); and the one for the French West Indies in Fort-de-France, Martinique ('Météo France Antilles/Guyane'). The presented meteorological services serve as a relay between meteorological observation and collective and individual practices. I will explore the system of observation and practices by way of two examples: Martinique and Dominica. At the identified crucial point, when information from meteorological observation is transferred into media and later conduct, knowledge is central. Questions of who produces and uses the information arise. Governmentality as a research perspective, based on the analysis of multi-scalar interrelations from the local to the global, allows to reveal historical effects of practices of governing conduct such as "[...] tracking the connections between colonial government and present practices of the management of space" (HUXLEY 2008, 1652-3). In the context of the study of hurricanes in the Caribbean, these connections are quite obvious and reflected, for instance, in the various collaborations of meteorological services. It is no coincidence that whereas the Dominica Meteorological Service gets information from the NHC and the CIMH; Météo France Antilles/Guyane collaborates with the NHC, other European meteorological services, and other stations of Météo France worldwide. The generated information is transferred, *inter alia*, in computer models, maps, tables, probability models, and images. This, in turn, greatly influences the organization of space.

Hurricane-risksapes come into being in the interplay between the created information; its transfer in representations of a probable risky event; following order, advice, or alike; and individual perceptions of risk in relation to place. In the case of Martinique, Météo France Antilles/Guyane classifies the information in a five-stage color system called 'vigilance'. On the basis of the given 'vigilance'-stage, the prefect transfers the meteorological 'vigilance'-stage to another five-stage system, a system called 'alerte'. This system contains instructions of conduct for individuals and the community, and puts in place emergency plans and actions. In Dominica, there is one classification system which only has two stages: 'watch' and 'warning'. Political action is undertaken by the local Office of Disaster Management (ODM) and, after the event, on request by the Caribbean Disaster

Emergency Management Agency (CDEMA)<sup>2</sup>. This proves the observation made by ADEY and ANDERSON (2012, 101) that “[e]mergency planning is a modality of future-oriented security”. The aim of the described system of meteorological observation turned into political action is to provide as much security as possible with regard to an unavoidable event. The rationale behind this is that a maximum of security can be achieved by exertion of control. The meteorological information is thus coupled with a set of individual and collective instructions. For instance, on August 16, 2007, Météo France Antilles/Guyane classified the approaching hurricane ‘Dean’ on the third ‘vigilance’-stage (“Rouge; Protégez-vous”). Based on this, the prefect issued a decree stating numerous mandatory individual and collective measures to be taken by the population. People were requested to head back to their homes and prepare for the upcoming hurricane. Additionally, the decree ordered to terminate economic activity, stop public transport, cancel public gatherings, and so forth (PRÉFECTURE DE LA MARTINIQUE 2007). Many of my interlocutors mentioned that in these types of situations, different risksapes conflict as the prefect’s decision about which actions should be taken (e.g. closure of the port, of businesses, curfew) often conflict with other perceptions of risk – with other risksapes (e.g. of meteorologists, businessmen, farmers). To name just one of many examples, the head of Météo France Antilles/Guyane reported for the case of hurricane ‘Dean’ that many people came by or called in to ask for advice. Among others, businessmen and farmers questioned the prefect’s orders and asked the head of the meteorological service for his opinion and instructions<sup>3</sup>. In the following, I will discuss two examples dealing with the governmentality of risksapes. One focuses on discourses about risk culture as a practice of ordering conduct and another on the organization of space through transformation of risk into zones.

The empirical material shows widespread discourses about ‘preparedness’ and ‘risk culture’. Many of the interlocutors framed their perceptions and practices concerning hurricanes by referencing these discourses during the interviews<sup>4</sup>. On many

occasions, they engaged in a discussion and evaluation of their own level of preparedness as well as the presence, or absence, of risk culture in their respective societies. For instance, to give just one example, Mr. Monteux stated that “[t]here is a sensitization. [...] for our territories, which are French, European, with all that this implies in terms of development and of sensitization [...] the people are educated, the people know how to react”<sup>5</sup>. The overarching claim is that the population needs to be prepared for hurricane events. The individual and collective ability to cope with the risk ‘hurricane’ is regarded as a personal or institutional quality which renders one a capable and active member of society. Therefore, preparedness and risk culture are more than discourses and can be understood as a set of technologies, rationalities and subjectifications, or, in other words, as apparatuses of security. The material side to this is important and it is “[...] vital to understand apparatuses of security as material compositions” (ADEY and ANDERSON 2012, 113), as it is reflected in the concept of risksapes. The materiality of risk, landscape, and affect is highlighted in one of the conducted interviews as an interviewee stated that “[t]here is a risk culture, which is engraved in memory”<sup>6</sup>. What he is referring to are practices of preparedness. That means each individual needs to take preparatory action with the aim of a collective risk culture. Individuals must decide when and how to clean up the garden, prepare the house, buy emergency supplies, et cetera. Subjectifications of the prepared citizen shape the conduct of the self; every year at the start of hurricane season people get into the habit of cleaning the garden, they buy emergency kits for their homes, and so on. They do so to show risk culture and preparedness to themselves and their community<sup>7</sup>. On an institutionalized level, another manifestation of this are the mentioned decrees issued by the prefect. Conduct of others is exercised by direct decrees and orders organizing circulation in public space, economic activity and so on. Consequently, these apparatuses of security are used to organize space and conduct. The quotes of

<sup>2</sup> Interviews with Mr. Degrace, April 17, 2014, Le Lamentin, MQ & Mr. Alexander, May 8, 2014, Canefield, DM.

<sup>3</sup> Interview with Mr. Degrace, April 17, 2014, Le Lamentin, MQ.

<sup>4</sup> Interviews with Mr. Monteux, April 17, 2014, Le Lamentin, MQ; Ms. Harris, May 10, 2014, Roseau, DM & Mr. Mason, June 4, 2014, Kingston, JA.

<sup>5</sup> “Il y a une sensibilisation. [...] pour nos territoires qui sont des territoires français, européens, avec ce que cela implique en termes de développement et de sensibilisation [...] les gens sont formés, les gens savent réagir”. My translation. Interview with Mr. Monteux, April 17, 2014, Le Lamentin, MQ.

<sup>6</sup> “Il y a une culture de risque qui s’est mise dans la mémoire”. My translation. Interview with Mr. Desmazon, April 25, 2014, Le Lamentin, MQ.

<sup>7</sup> Interview with Mr. Marques, May 2, 2014, Schelcher, MQ.

the interviewees show that these apparatuses of security influence which risk perceptions are enabled and which are restricted (FOUCAULT 1971). In other words, people's riskscapes are shaped by knowledge-power structures.

The second example of the governing of riskscapes is the spatial transformation of risk into zones in spatial planning. In 2004, the Martinican prefecture published a new instrument for regional development planning, the 'Plan Prévention des Risques' (PRÉFECTURE DE LA MARTINIQUE 2004). Using a color code, areas are classified in regard to different risks. Especially in places where the ascribed level of risk changed with the new instrument, conflicts arose as existing buildings were not in agreement with the new guidelines. For instance, in the 'bidonville' Trénelle-Citron in Fort-de-France, conflicts revolving around the tension between safety and local identity emerged (BOHLE 2015). One of the most important apparatuses to link space and conduct are zonal representations, this means "cartographic visualization of riskscapes or risk zones" (MÜLLER-MAHN, EVERTS and DOEVENSPECK 2013, 206). The 'Plan Prévention des Risques' has tremendous effects, defining who is at risk and who can feel 'secure'. The applied color code (white-yellow-orange-red-purple) underlines the need to take action. For example, if a plot of land is in the 'red zone', it is represented as at risk. Regulations come into force and specific practices (build, work, live) are now forbidden at this place. Through these representations, people may now be alerted and forced to rethink their behavior and practices related to the place. For instance, they could decide to move away from this place which is now defined as a risky area (conduct of the self). Furthermore, based on building codes and other regulations, people may be expelled from the area; ordered to change their homes; restricted from having access to their home by car; et cetera. These more or less forced practices lead to a new spatial organization (conduct of others), which may be conflictual or not<sup>8)</sup>.

In the context of the risk 'hurricane', manifold expressions of these processes can be found all over the Caribbean. In short, spatial planning as represented by the 'Plan Prévention des Risques' is at once an expression of a specific institutionalized riskscape, as well as actively challenging people's existing riskscapes. Following GROVE (2014), one can understand these processes as manifestations of biopolitics of life. Spatial organization is a key

element in Foucault's investigations and thus makes his work stimulating for geographers interested in risk, space, and power. Space and specific sites, or rather ideas of space and specific sites, are fundamental for power relations. "Space, then, is inseparable from government: Projects of government imagine spatial and environmental causalities, draw up plans and programs that deploy spatial techniques, and aspire to produce spatially specific conducts, even as they provoke counterconducts and counterspaces" (HUXLEY 2008, 1647). Zonation of risk and spatial planning are lucid examples of this. In Trénelle-Citron, as in many other places in the Caribbean, people build and live for various reasons in areas designated as 'risky'.

## 5 Conclusion

The logic of risk construction and the consequent spatial manifestations are fundamental for societal organization. The immanent knowledge-power structures shape conduct and life of Caribbean people. Starting with the construction of risk by meteorological observation techniques and its transfer through media, a wide range of problematizations, rationalities, technologies, and spatial practices are set off influencing people's conduct and shaping people's riskscapes. The presented empirical material supports the idea that riskscapes can be seen as overlapping layers, as put forward in the concept of riskscapes. Riskscapes and governmentality share a similar understanding of risk as both stress the importance of the spatial dimension of risk, as well as of the materiality of risk.

Hurricane-riskscapes are formed by the problematization of the risk 'hurricane' and the unfolding technologies, rationalities, and subjectifications. The examples presented highlight how knowledge-power structures define which practices are enabled and which practices are restricted. In this way, people's conduct is ordered either in a direct way, as conduct of others, or in a subtler way, as conduct of the self. The way people or institutions perceive or conceptualize risk, their riskscapes, is not accidental or determined but rather embedded in specific knowledge-power structures. Therefore, there is a need to better integrate this power dimension into the concept of riskscapes. This paper shows that a fruitful approach in this regard is to apply the analytical categories of a Foucauldian governmentality perspective to the investigation of riskscapes.

<sup>8)</sup> Interview with Mr. Saffache, May 12, 2014, Schœlcher, MQ.

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