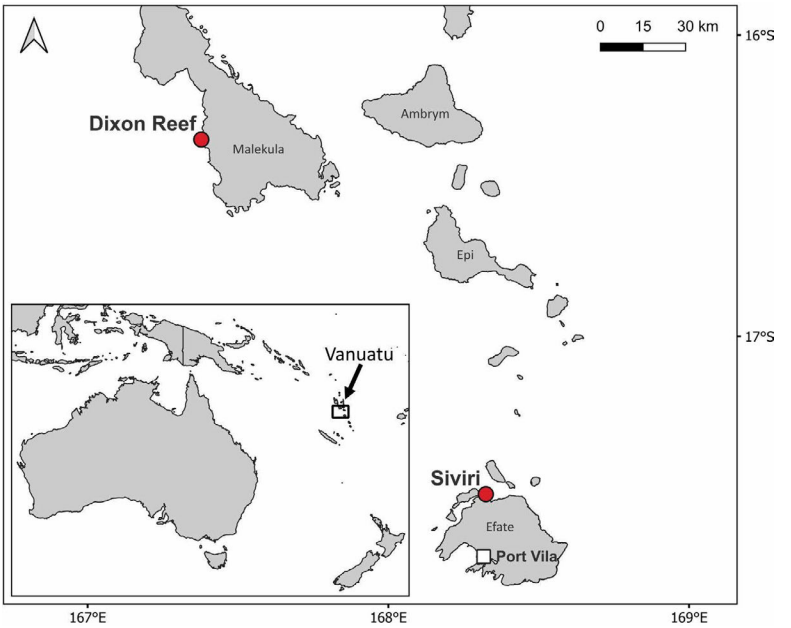
1 Introduction

Figure 1: Map of Vanuatu with research sites marked



D. Hetzel

Our hands and feet covered in dirt, we were sitting at the side of the garden areas, on the top of the hill overlooking the plateau. Jenny and I had worked there most of the day. The sun had long since passed its zenith, but it was still burning on our heads. Until that point, we had been removing weeds around pineapple plants and planting countless maize kernels and manioc stalks,

so-called 'hands' of manioc.[1] Now keen to find some shade, we hid underneath the finger-like leaves of the manioc plants. From our vantage point on the hill, we had a good view over the huge garden sites, cultivated by several families of the village of Dixon Reef. This was a stately area, around the size of a football pitch. However, the boundaries were difficult to discern, as the cultivation area of one family merged directly into that of another so that the garden areas stretched across the entire plateau and over the next green slope. Looking around, I was able to identify a wide variety of crops – banana,[2] taro[3] and tomato[4] – as well as some smaller pits with yam[5] vines ranking up. Also, at this time, maize[6] plants formed an impressive arrangement, planted sequentially over a number of weeks to ensure an interrupted period of cultivation. Maize was one of the main food crops at that time, since it is a successful crop in extremely hot conditions and there had been an unusually long dry period between 2015 and 2017, known as El Niño. Villagers in Dixon Reef on Vanuatu's island of Malekula had been working through this prolonged drought and the problems it had caused, especially for yam, the most important food and ceremonial crop.

I turned to my companion, Jenny, a young mother who grew up a little further north along the coast of Malekula and since her marriage, had been living in Dixon Reef. I had been accompanying her on her daily garden trips over the past couple of months: "Do you think nowadays you face more problems when doing your gardening?", I asked. I wondered whether the current dry spell would be something Vanuatu horticulturalists worried about, especially since the prominence of climate change discussions in the country more widely. She looked into the far distance, thought for a moment and then answered: "What do *I* think? In my opinion, now *everything* changes. *We* too used to do things differently. Before, other plants were planted, and if something didn't grow well, we had our methods. Today we just do it differently. And, now the times are also different and we have to do our best to go on."[7]

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1 Manihot esculenta

2 Musa ssp.

3 Colocasia esculenta

4 Solanum lycopersicum

5 Dioscorea ssp.

6 Zea mays

7 Quotations in the national language Bislama or the village languages Novol and Nasarian for Dixon Reef, and Nguna for Siviri, have been translated by the author into English for the sake of readability.

She was obviously irritated by my asking her opinion. Female horticulturalists from the islands of Vanuatu are usually quite shy to speak out. Her family lived quite a distance from national decision-making in the capital, Port Vila, further south on the island of Efate. However, Jenny gave me an important lesson: ni-Vanuatu[8] gardeners consider their lives and gardens to be undergoing diverse changes, mutually and constantly re-shaping both communal lives and cultivation practices. Over the course of many garden days and equally many conversations about climate change, I came to understand that environmental changes as well as changes in communal lives are two parts of the same process and are considered together by ni-Vanuatu to constitute the phenomenon called climate change. This notion is intertwined with how people interact with their environments in a flexible manner, and furthermore how they create and reshape their lives. Therefore, climate change can never be considered to be one or the other, separating social from environmental, but is rather better considered to be a single process encompassing both elements. Put another way, rather than taking differing perspectives on material matters of a predefined phenomenon, such change becomes part of the daily practices of cultivation and world making of the people of Vanuatu. Being themselves a part of the matter of climate change, they consider themselves to be actors in the creation of current realities. This book aims to explore processes of entangled change which moves the lives of horticulturalists, showing how cultivation is practised as a way of making sense of these all-encompassing transformations and a way for ni-Vanuatu gardeners to move their own lives forward.

In the course of this book, I describe and analyse an ensemble of practices for making sense of climate change in Vanuatu. I refer to these composed practices as *mekem garen*. Mekem garen is a Bislama expression I first heard when my host father in the village Dixon Reef set off to the cultivation sites outside the village, readying his bush knife, shouldering a spade and enthusiastically declaring that "hemi taem blo mekem garen" (it's time to make the garden). That day, he headed toward the garden areas to take care of his new yam garden plots. As a first attempt, this Bislama[9] term can be loosely translated into English as 'making the garden(s)'. While 'A New Bislama Dictionary' refers to

8 The term 'ni-Vanuatu' is the self-designation of the indigenous populations of Vanuatu. Only ni-Vanuatu lived in Dixon Reef at the time of my research.

9 Bislama is a Neo-Melanesian English-lexifier pidgin-creole and was introduced as the language of traders. It is now one of the national languages of Vanuatu.

'mekem' as a verb translated as 'make', mekem is a very familiar Bislama composition and can also be translated as 'take', 'behave', 'engage among many others'; while 'garen' can be referred to as 'food garden' (Crowley 1995). This expression, I argue, hints at a current development, not disruptive but rather transformative in several aspects of the ecological, economic and social elements of life. First, I take the vocal Bislama composition mekem garen as framing for a Vanuatu practice of creating climate change worlds, where gardening is becoming politically intertwined with forms of so-called adaptation measures. Herein horticulturalists in rural Vanuatu become climate change actors. Second, I will take mekem garen as a way of viewing horticulture in its practical process-oriented approach and rethinking dichotomies between environmental and social situated in the Anthropocene. Third, mekem garen becomes a methodological approach of collaborative cultivation in fieldwork, co-creating gardens and knowledge between my interlocutors and my anthropological research partner.

I consider ni-Vanuatu horticulturalists' practices to be essential for grasping gardening as flexible and multidimensional. In connection with this, I pose the following questions: how do cultivation and climate change come together in these complex interactions of mekem garen? Through this, what are the approaches of horticulturalists as climate change actors in times of change? I follow adaptation practices introduced by NGOs and connected to the cultivation of Vanuatu's 'aelan kakae' (island food), the locally produced food of the islands of Vanuatu. I trace ni-Vanuatu practices of everyday cultivation while understanding and creating what my interlocutors called klaemet jenj[10] (Pascht 2019). The Vanuatu garden thereby exceeds being a mere site of representation of how environmental changes materialise and how people perceive these shifts, instead becoming a communal ontological meeting point of my interlocutor's climate change worlding.

For this, in the anthropology of climate change,[11] others have started important points of discussions. As one of the first, Peter Rudiak-Gould acknowledged people in Oceania as participants in making sense of climate change as much as they are observers of its consequences, reliant on international committees for their definitions (Rudiak-Gould 2011). Understanding that local residents in Oceania are participants in shaping international

10 Arno Pascht (2019) refers to klaemet jenj as the localised but new concept of climate change.

11 As defined by Crate and Nuttall 2009.

discourse rather than simply provers of external predefinitions becomes an essential part of this.

> When it comes to climate change it is insufficient to assume and ascribe the scientific account of the causes of global warming – and to only then look to culture after the fact as a resource for adaptation or else a basis for vulnerability. Instead, their predisposition is to look beyond this Eurocentric folk-model and academic convention and to anticipate that Pacific peoples will have shifting and multiple explanations. (Crook and Rudiak-Gould 2018, 5)

Talking about climate change also includes the production of new concepts, by being involved in modes and practices created through scientific and localised encounters (Hastrup 2016). For Oceania, Rudiak-Gould emphasised that this phenomenon is both experienced and integrated within discourses about future scenarios, allowing local communities to build their own notions of climate change. In order to understand how people operate in their daily practical activities, not only through patterns of weather and climate, such discourses also interact with explanations, information and projection (Rudiak-Gould 2011). Other scholars write in line with this argument and describe practices in connection with climate change as informed by global narratives and political strategies (Ourbak and Magnan 2018; Rudiak-Gould 2013) and the interaction with natural scientific explanations of climate change (Pascht 2019). Publications like 'Thinking like a climate' (Knox 2020) re-direct our view towards these combinations of people acting with weather phenomena and thinking with the benefit of both experiences and scientific knowledge. In Hannah Knox's opinion, people are not only concerned with climate change effects in the form of weather phenomenon, but also of matter and explanations and scientific contextualisation (Knox 2020).

What then happens in and through Vanuatu gardening? This haptic praxis of creating environments and communities and the settings of scientific environmental change lead to a requirement for new explanations for the climate change phenomenon. Mekem garen becomes central to making what I refer to as 'climate change worlds' (see Chapter 2). Herein mekem garen forms an approach, constantly evolving, taking on board new influences, hinting as to how people see themselves as involved in these changes and supporting what Rudiak-Gould calls 'beyond the environmental' (Rudiak-Gould 2016). Discussions about climate change are very often of institutional origin and suggest a general understanding of concepts and environmental transformations, that

can be either accepted or rejected by actors in global arenas or localities (Hulme 2009). However, what I have learned from my ni-Vanuatu interlocutors is that this clear thinking runs up against realities where people navigate their thinking and actions through different contexts. This challenged my own thinking and hopefully will do the same for readers about current implications of a globalised climate change narrative. I want to contribute to the approach to this local and global crisis of our time by presenting a joint work of diverse understandings, by exploring how *life*, living together with humans and other-than-humans, is transformed and also re-created at the same time. Following my interlocutors on the Vanuatu islands of Efate and Malekula, there is also the reminder that this is not always about local people adjusting their lives but also a process based on hard-working pragmatism and flexible work in facing new challenges.

In my research, I especially engaged with people living on the west coast of Malekula, most of whom spend their lives in the Dixon Reef area. Additionally, I refer to other research partners in the village of Siviri on the main island of Efate, and to the work with political representatives and residents in Port Vila.[12] At the time of my research, the village communities of Dixon Reef and Siviri had been involved in adaptation projects for almost a decade, balancing national political implications and their own everyday cultivation. Over the following chapters, I will outline how participants acted in their cultivation practices following their workshop experiences and discuss the so-called 'heavy impacts' on horticulture. Explanations, statements, descriptions and practices of my interlocutors stand hereby always in relation to their village communities. Even while stating their own opinions, conversation partners in the villages referred to other equally important practices and explanations of others. Sometimes people are named and details of their lives are mentioned. When referring to either sensitive issues or more general understandings among my interlocutors, I sketched out scenes and discussions and grouped together participants, sometimes referring to the village communities as a whole. In some depictions, I have taken the liberty of merging biographies and changing names. This is not to say, of course, that everyone thinks the same

12 This research was part of the project 'Localising Global Climate Change Policies in Vanuatu: Reception of Knowledge and Cultural Transformation' (Grant number: 298643416) together with Arno Pascht, funded by DFG (German Research Association, as the main Funding Agency in Germany). This project considered livelihood practices in urban, peri-urban and rural communities in Vanuatu, both on Efate and Malekula.

– village members' perspectives differ according to a wide variety of factors including age, gender and social status. Furthermore, this is not a normative stance to show what has to be done, but it rather shows the range of relevant discussions and activities. All the people I have worked with over the years have contributed to this book – a book which discusses climate change in Vanuatu as a local example of a regional fight by island nations and Pacific Islanders to find ways forward in times of crisis, but also productive transformation in global matters. The topic is current climate politics in Vanuatu in reference to cultivation practices and how this draws attention to thinking anew about Melanesian everyday gardening in the Anthropocene. This contributes to a growing anthropological study of climate change.

1.1 An Island State in Times of Climate Change

Vanuatu is a republic in the South Pacific. As part of Oceania, it forms one part of the region of Melanesia.[13] The Y-shaped archipelago of Vanuatu numbers 83 islands, of which 63 are inhabited (Radcliffe et al. 2018). Those islands cover a total area of 12,190 km^2 (Mückler 2010, 162). Vanuatu is divided into six provinces: Malampa, Penama, Sanma, Shefa and Torba. Malekula is part of the northwestern province of Malampa, and on Efate in Shefa province the capital Port Vila is located (Vanuatu Project Management Unit 2024). Unlike the low-lying atoll islands of Micronesia, which have been gaining prominence in international climate forums because of sea level rise (Lazrus 2012), the islands of Vanuatu are "made up of Tertiary and Quaternary extrusive volcanic rocks and raised reef limestones, and Recent alluvium" (Pierce 1999, 150). In the discussions about climate change in Oceania, the islands of Vanuatu complement the picture by including the perspective from Melanesia.

With independence from the French and British condominium in 1980, the previously named 'New Hebrides' were re-named Vanuatu, for 'our land forever' (Adams and Foster 2024). Vanuatu became a parliamentary democracy and efforts to return the land to the traditional land owners increased (Clarke et al. 2013; Farran 2002). The majority of the population of indigenous ni-Vanuatu lives in lineage structures connected to the land of their ancestors. Over the last

13 Oceania was divided into three regions, Polynesia, Micronesia and Melanesia, by European explorers and cartographers (Tcherkézoff 2003). Although these denominations have often been criticised, they are still used by people in Oceania in most contexts.

century, missionaries and colonial administrations have led to compounded villages bringing together several clans or nasara.[14] Since independence, these villages have been included in regional and country-level government structures. Furthermore, population numbers have increased rapidly, and thus Vanuatu is a very young nation in the double sense. The share of population of those aged 15–29 totals 39% (Vanuatu National Statistics Office 2017, 1–3). Today's adults and adolescents born after 1980 contribute to a sense of national identity and now also strive for a new national climate movement (Hetzel 2016). They additionally shape the picture of the urban areas of Luganville on Espiritu Santo and the capital of Port Vila on the main island of Efate (Kraemer 2020). Although the urban population continues to grow (especially due to an increasing birth rate), 78% of the total population of 300,019, as of 2020, live in rural areas (Vanuatu Bureau of Statistics 2022, 2). As for the preliminary report for the agricultural census in the country of 2022, 225,023 agricultural household members live in rural areas (MALFFB 2022). The rural population is mainly concerned with agricultural production and is perceived as the backbone of the country's self-sufficiency in times of crisis (FAO 2020, 7). In turn, concerned with wider environmental issues, urban sites have become important junctions for knowledge and action being brought to the islands. This also provides younger ni-Vanuatu town residents with a new expert role, forming urban narratives on environmental transformations and striving to transmit information on key concepts and phenomena such as the greenhouse effect, global warming and sea level rise.

Such discourses are framed in English or French and then disseminated in the lingua franca, Bislama (Hetzel and Pascht 2017). Although there are still up to 100 vernacular oceanic languages spoken in Vanuatu (Lynch and Crowley 2001), people complain about a decline in traditional language use because more and more communication is conducted in the pidgin language, Bislama. Today, people in the area of Dixon Reef speak several languages but Novol and

14 Nasara may be described as patrilineal clans which were located as discrete groups in the interior of Malekula before relocation. Bratrud mentions that in Vanuatu it also refers to a historical place and typically to the ceremonial (dancing) ground (Bratrud 2011, 18; Lannoy 2004, 15). My Dixon interlocutors confirmed this when they explained that nasara for Dixoners is primarily the ceremonial ground which is the original place of the origin of the group. Nasara is a Bislama expression of relatively recent origin (Lannoy 2004, 261, 284).

Nasarian are the main indigenous languages (McCarter and Gavin 2011; Walworth et al. 2021). In Siviri, as in most places of Northern Efate, people speak Nguna (Schütz 1969). However, Bislama is the language to connect the islands from north to south. Today, urban and political communication mainly depends on Bislama expressions, especially when it comes to national working schemes like climate change programmes. Bislama is used for official communication, but also connects with new topics and technologies (Vandeputte-Tavo 2013). NGOs or governmental organisations working in rural areas conducts their workshops in Bislama, including climate change workshops. English terms are translated into Bislama, 'climate change' becomes 'klaemet jenis' or 'klaemet jenj', creating new common expressions but also novel conceptualisations (Pascht 2019). Referring to Bislama terms is also seen as (creative) engagement with international scientific terms, which are brought together with cultivation methods.

These workshops are based on a scientific discourse that is, for example, referred to in reports like that of the FAO (the Food and Agriculture Organization of the United Nations), which considers Vanuatu as extremely vulnerable to climate change-related adverse impacts and thus for the production of food (Allen 2015; FAO 2008). The Government of Vanuatu was among the first nations in Oceania to introduce the topic of climate change and the then Prime Minister, Ham Liñi, initiated the National Adaptation Programme for Action (NAPA) in 2005 as a "a country-wide programme of immediate and urgent project-based adaptation activities in priority sectors, in order to address the current and anticipated adverse effects of climate change, including extreme events" (NACCC 2007, 7). Since then, the political environment for climate action has become prominent and two bodies have been introduced: The National Advisory Board on Climate Change and Disaster Risk Reduction (NAB)[15] and the Department of Climate Change as part of the Ministry of Climate Change Adaptation, Meteorology, Geo-Hazards, Energy, Environment and Disaster Management, which also coordinates climate change policies.[16] These bodies work closely together with other ministries[17] to focus on disaster risk reduction and general (infrastructural) support for agriculture and community life, preparing the country for the decades ahead.

15 NAB 2021b

16 Government of Vanuatu, Department of Climate Change 2021

17 e.g. Ministry of Agriculture, Livestock, Forestry, Fisheries and Biosecurity (MALFFB 2021)

A decade after the initiative of the NAPA, tropical Cyclone Pam was considered one of the first indicators of anticipated climate-related challenges: on the night between the 13th and 14th of March 2015, Vanuatu experienced a category 5 storm, which went down in meteorological history, "as one of the strongest cyclones ever recorded in the South Pacific Ocean" (Gutro 2015, n. pag). This storm came from the northeast, heading directly over the central and southern islands, its strong winds affecting the whole country. Cyclone Pam hit the main island Efate with full force – there were several episodes of flooding, erosions in the coastal sections and power cuts for days afterwards (Rey et al. 2017). I witnessed this event during my first stay in the capital, Port Vila. After we had made it through the stormy night, getting up in the morning to see trees upside down and roof parts scattered, people in town, after an initial brief shock, immediately set about initiating recovery, health and food provision measures. Although the urban population faced financial problems after the storm (ibid.), what worried them much more were their relatives in the rural areas, on the many islands of Vanuatu. There, Cyclone Pam had not only destroyed houses and coconut plantations, but also garden crops. Images of green islands and white sands could no longer be met because of defoliated or destroyed trees and beach areas that had been turned over during the storm. This tropical cyclone also marked a turning point for the international press and Vanuatu received increased attention as being under threat of climate change.

Due to its categorisation as a Small Island Developing State (SIDS), Vanuatu is one of the countries in which issues of climate change are said to have "a very tangible impact" (United Nations Office 2021). Looking at natural science prognoses, the country is expected to be exposed to increasing natural hazards such as cyclones, earthquakes and floods over the next decades. Climate projections give several prognoses for weather events: rise of mean temperatures, more extreme rain events after which droughts might occur and cyclones intensifying but becoming less frequent. Ocean acidification and coral bleaching will further progress as well as changes to extreme weather events, although it is not certain whether these will be in enhanced or reduced form (CSIRO 2014). Cyclone Pam led to a short but intensive wave of reports about the consequences of anthropogenic environmental changes and the so-called vulnerability of small island states, citing Vanuatu as a worst-case example. On the one hand, this implicitly reproduced a narrative of what Carol Farbotko calls the 'wishful sinking' syndrome (Farbotko 2010), in which island states are reduced merely to their land size and instrumentalised to show the effects of global warming with intensifying weather phenomenon and sea level rises.

Vanuatu has been identified as vulnerable to extreme weather and pictured as a country that lacks resilience due to inhabitants' perceived inability to act on their own behalf (ibid.). On the other hand, the aftermath of Cyclone Pam also underlined a self-empowering narrative of ni-Vanuatu politicians about the country's capability to establish networks for adaptation across the country. During COP 27 in Morocco (in 2022), the then Climate Change Minister of Vanuatu, Ralph Regenvanu, sitting in the German pavilion next to Germany's foreign minister, emphasised the immense work of his country to consider and mitigate the effects of climate change, concluding with a mention of the huge financial burden which his country must bear and the financial compensation required from the international community as a result. These two narratives of vulnerability and self-empowerment culminated through this stormy event and, in Vanuatu, especially food gardens became connecting points for the discussions.

Since 2015, Vanuatu's politicians have been working rigorously to achieve international climate justice while also working on adaptation and mitigation measures within the country (Wewerinke-Singh and Salili 2020). Discussions about a problematic future have become matters of present concern. For years, agricultural programmes had ensured the adaption of cultivation methods, introducing new strategies and methods for soil preparation. Prognoses and analysis of 'extreme weather events' are embedded in a discourse approach to adaptation measures happening directly within the village communities (McNamara and Prasad 2014). On our way to an Agriculture and Food Security cluster meeting in late March 2015, I sat on the back of the truck and talked with one of the co-workers. Over the years, she had been involved in various relief efforts by international organisations and was now, after the storm, busy with the initial supply of food and distribution of seeds. This young ni-Vanuatu university graduate, who was volunteering in the food distribution cluster, identified Cyclone Pam as *the* proof of climate change: "Now we know what climate change looks like. This is what we have been preparing for all of these years." Measures for disaster risk reduction were intensified after this event.

For political actors in Vanuatu itself, Cyclone Pam marked simply another step for lives that have to change and are continually changing. Tropical cyclones of lesser intensity are somewhat common in Vanuatu, forming part of the annual weather cycle known to uproot root crops and pick apart the leaves of plants, but also bringing rain and enriching the soil (Russel and Horvat 2023). At the same time, flooding can be expected (Deo et al. 2021), causing crops to stand in water for days and, as my village interlocutors liked to put it,

start to 'stink'. When I asked them what to do in the case of uprooted or flooded harvests, they recommended immediately rushing towards the gardens once the winds had calmed down, saving what could be saved, replanting uprooted banana plants as well as every other root crop and then moving on to replant as fast as possible. Methods of dealing with cyclones and maintaining food security are well-known across the country. Even though people in rural communities have recently noticed a decline in their own efforts and an increasing dependency on disaster relief (Warrick 2021), new movements are also trying to pass on previous knowledge. The technique of harvest and replant was also proposed directly after Cyclone Pam, by the government and the specially formed Agriculture and Food Security Cluster to all communities across the country. Due to the severity of the storm, village communities were additionally supported through the distribution of seeds, planting material and processed food, such as rice or canned goods (McDonnell 2020; Wentworth 2020).

Beyond this political and media narrative about the storm, for many villagers, the drought that followed posed more difficulties. I left Vanuatu a few weeks after Cyclone Pam in April 2015, leaving my urban research partners in a busy but positive mood when it came to repairs of houses and food supply services. However, when I returned in October 2016, the El Niño drought persisted and people had become exhausted from the constant heat. These two related events became a test for the countrywide designed adaptation methods, in that people often chose to amend what they had been taught, and led to discussion about how to approach cultivation in challenging times among horticulturalists in the villages and beyond (see Chapter 4). Brochures and short animated videos explained El Niño and La Niña as the warm and cool phases which bring either sunny periods (El Niño) or extensive rainy events (La Niña) as part of the Pacific climate pattern of ENSO, the El Niño-Southern Oscillation (Chowdhury et al. 2007; Kelman 2019, 406; Power et al. 2013). When a prolonged El Niño period between 2015 and 2017 caused the rainfall in Vanuatu to drop sharply, people were already informed about scientific explanations and the whole country started discussing events in meetings, media and climate change awareness programmes. In the villages of Dixon Reef and Siviri during this time, my interlocutors were less worried about storms but quite exhausted by the constant sunny and hot working days. During my first visits, the chiefs immediately pointed towards their community's lost yield. Shrugging their shoulders about minor governmental and non-governmental organisations making food deliveries from ships, they remarked that yam was both

too small for consumption and not plentiful enough to leave as planting material for the next cultivation cycle. Climate reports described the combination of both events within one year as having posed particular problems: "The impacts of this year's El Niño event have made it doubly difficult for some people to recover. Many island communities have been struggling with serious food and water shortages caused by drought-like conditions." (Red Cross Red Crescent Climate Centre 2021, n. pag.)

I spent many hours between 2016 and 2019 with island communities, in Dixon Reef working with people in their garden areas, and additional months in the village of Siviri on Vanuatu's main island, Efate. Both communities had been selected to become sites for climate change adaptation programmes, as they were located in parts of the islands with low rainfall and where cultivation continues to play a decisive role in everyday life, albeit with different dynamics. Dixon Reef is a village of around 450 inhabitants. People live in nuclear or extended families in several houses, including small kitchen houses and sleeping houses, along the western coast of Malekula. In Siviri, located in the north of the main island of Efate, the approximately 400 inhabitants live at the seafront or along the ring road with direct connection to the capital, Port Vila. Over the past 10 years, they have started to bring their gardens either closer to their houses, to combine cultivation with wage labour in town or elsewhere on the island, or used plots scattered over the whole island, using their cars to visit the plots, mostly at weekends with their whole family. Dixon Reef gardens, however, lie outside the village and Dixoners have to walk some distance to reach their cultivation plots. In terms of changes to the way of life of ni-Vanuatu, agriculture plays an important role (Hetzel and Pascht 2019). Moving gardens, or rather cultivated areas, has become one approach in both places in these uncertain times (Chapters 4 and 5). These communities have not only become interested in being part of several workshop programmes to tackle climate-related issues in cultivation, but when my colleague Arno Pascht and I first visited both communities, they enthusiastically agreed to work with us to further talk about these topics. Although there were other social and economic concerns in the communities, the topic of climate change had already found its place in their view on how to ensure future supply with their own food.

1.2 Vanuatu Climate Politics

Over the years, the term food security[18] has been expressing the main concerns for many Pacific countries encountering changing environments. Various political actors aim towards food security and helping people to become 'resilient' to climate change.[19] Challenges for global agriculture through intensification of environmental hazards are one of the main results of the IPCC (Intergovernmental Panel on Climate Change) report (Mbow et al. 2019) and have been picked up for Vanuatu's farming system by the FAO (2013). The National Adaptation Programme has focused on conducting agriculture and food security projects (Maclellan 2015).

Ni-Vanuatu and their gardens form a key cultural and economic connection.[20] Even though fishing, animal husbandry and arboriculture hold complementary roles, horticulture stands out as both important for securing food and being part of ceremonial life, creating island landscapes at the same time (Calandra 2017; Mondragón 2018). For people in Dixon Reef and Siviri, fish and seafood make only a supplement or temporary cash product, as it is either not available every day or people do not fish on a daily basis. What they do is cultivate multiple garden parcels along the coast and inland. 'On the islands', ni-Vanuatu mostly live on what they grow in their gardens. Horticul-

18 The term 'food security' refers, in the context of international development, to people having access to enough food that they do not starve and that malnutrition is prevented. Countries dependent on agriculture and exposed to 'climate extremes' are considered to be at risk of food insecurity (Boliko 2019, 5–6).

19 For a critical approach to the concept of resilience, see McDonnell 2020. She explains the different origins of the term and its use in development discourse describing the 'strengthening' of people when facing environmental hazards (McDonnell 2020, 57). For further context, see Chapter 2. NGOs with whom we have had contact used the term 'resilience' in order to explain what people in rural areas needed in order to face climate change. I therefore use this term due to its use in climate change measures in Vanuatu following the Vanuatu Adaptation Program. "The program has developed the central concept of 'resilience' as a framework for action, to build capacity to respond to shocks and stresses and adapt to uncertain futures. This concept is illustrated in this report by two case studies – one focused on agriculture and food security projects in an isolated rural island; the other at the international level, as the government and people of Vanuatu intervene in global climate negotiations." (Maclellan 2015, 5)

20 Aside from fisheries, cultivation of food crops remains the biggest sector in the country and is considered to be one of the main targets of climate change adaptation, since for many people it is the main method of securing their livelihood (FAO 2008).

ture is characterised by shifting cultivation, as it is widely practised all over the Pacific, "to be the archetypal form of traditional agriculture in the tropics […]. In the Pacific Islands, it is found on almost all high islands and raised limestone islands where at least some secondary forest or productive grassland savanna remains" (Manner and Thaman 2013, 342). Supply for locally produced food through cultivation is considered to be increasingly under pressure so one of the foci of climate change forecasts is Vanuatu's rural population and the consequences for the horticulturalist farming system (CSIRO 2014; FAO 2016). Furthermore, Olivia Warrick states that the reasons are manifold and "attributed mainly to less robust subsistence agricultural systems and increasing dependency on external resources namely disaster aid, imported goods, money and knowledge" (Warrick 2021, 6). Since 2012, teams of national and international humanitarian agencies have developed a nationwide programme to address climate change (McDonnell 2020, 58). The resulting overarching programme was given the Bislama title 'yumi stap redi blong klaemet jenis'[21] ('We are ready for climate change') (Pritchard 2017). For agriculture, they especially promoted the adaptation of cultivation methods and developing new strategies, including the installation of home gardens next to the house. In this way, cultivation could be moved from 'the bush' closer to people's homes and could therefore supplement a new diet with vegetables which need closer monitoring (Maclellan 2015, 26). Consequently, numerous projects were designed. Along the coast of western Malekula, several villages underwent the same workshop schedules and consequently new forms of home gardens could be found in every single one. Dixon Reef first became a role-model for applying new strategies for cultivation, until the El Niño event when the gardens were left alone and the discussion about how to approach gardening in times of crisis took another turn (Chapter 4).

Through climate politics in Vanuatu, indigenous gardening is matched with ideas of climate change adaptation, and this has far-reaching consequences. Carlos Mondragón exemplified that new encounters in climate programmes on the Torres Strait islands in northern Vanuatu bring up and create new narratives: information about sea level rise shifted local perceptions of fluidity between ocean and land, in that the water takes land but also gives some of it for free, to a stark fixation on the shapes of islands and also

21 There does not exist a consistent writing form for the phrase 'climate change' in Bislama. I therefore refer to each document's spelling or the pronunciation of the people I worked with.

human communal settlements, including land use for gardening. Given the annual fluctuation of seawater and sea level, suddenly the water was marked as a threat, taking away land (Mondragón 2018). Reports of environmental degradation depict humans as merely reacting but Mondragón argues that knowledge regimes of adaptation programmes must be made transparent and must also rethink approaches that consider the agency of ni-Vanuatu. This would reflect on ni-Vanuatu human-environmental relations as processual and undergoing continuous alterations, especially when it comes to moving houses and gardens to other locations and therefore working with shifting land and sea (ibid.). The construction of food *in*security hints also at a history of island lives exposed to external influences, very often critically traced from colonialism, then globalisation and the opening to world markets, and finally influences through global warming with higher risks of extreme weather events. Often, this is described as causing food insecurity, in the form of self-organised and independent supply with local resources on the decline (Allen 2015, 1344; Campbell 2015, 1320).

This raises the question of how people living in Oceania are perceived by the international community. For the islands, where adaptation measures are meant to support horticultural practices, some examples paint a picture of far greater self-sufficiency. For example, Matthew G. Allen, working with communities on Malo, one of the outer islands of Espiritu Santo in the northern part of Vanuatu, emphasised local strategies for preventing food shortages. These strategies include selling cash crops and moving sometimes beyond 'traditional' food cultivation and preservation techniques, the consumption of imported foods rendering food supply more consistent and diversification giving more flexibility against economic changes (Allen 2015). For the author, these strategies are no less effective and thus disprove the "food insecurity narrative", which "entails a denial of agency on the part of Pacific Islanders" (ibid., 1341).

Nevertheless, or precisely because new things are met with curiosity, the open-minded village chiefs of both Siviri and Dixon Reef have also motivated their people to attend food security workshops investigating newly-introduced cultivation methods. This has opened spaces of thinking anew about what is done in terms of cultivation. Chiefs wanted their communities to take part in workshops because they were interested and valued new perspectives entering the community. When I attended my first workshops, a few years into the adaptation programmes, and the project manager, an engaged and practical-minded ni-Vanuatu woman from town, invited people for another session, the

community hall in Dixon Reef continued to fill. Very experienced gardeners of all ages explained that it was interesting to share thoughts about current challenges. It did not seem to be a contradiction for them to use offers embedded in a discourse of progressiveness for their own purpose. However, during one workshop, a discussion heated up when the project manager expressed concern and wanted to know why participants were not following the exact strategies shown. One of the elder men simply commented: "Because we also have our way of making the gardens." In the following chapters, I will detail this process – how new forms of cultivation become a comprehensive practice and integral part of mekem garen. Seeing how practices on the ground should be influential to policies, in the context of such implementation, people had chosen their own path to transform practices using their own means. At the same time, they want to be involved in new practices. It therefore also becomes essential to see the realities of everyday lives in which climate change adaptation programmes are a part now and how people navigate this – critical but also creative in the context of such programmes.

Through these programmes, villagers became part of Vanuatu climate discourses and practices. Furthermore, on a national level, Vanuatu gardening has become embedded in a self-declared national fight against climate change with rural self-sufficiency becoming quite central. As Maëlle Calandra explains, the entanglement of gardens and people on Tongoa, in central Vanuatu, has become once again the backbone for difficult times and the creation of new ways of dealing with challenges. She describes how the states of garden, crop or cultivar loss after Cyclone Pam started discussions about the severity of the event, which they then call 'disasta' (disaster). Calandra also underlines that it is another take to see how people operate with new concepts in their own environments, bringing in processes of change, instead of analysing the effects of predefined disastrous events (Calandra 2020). The way in which ni-Vanuatu work the ground and new discourse around the subject also brings changes to what they are doing and how they talk about current globalised narratives. A novel stance on Vanuatu gardens in the Anthropocene must include methodologies for dealing with disasters and their conceptualisation, but it also must also yet again look at what a garden is and what it means for local people when we are talking about climate change.

1.3 Reconsidering Vanuatu Gardening in the Anthropocene

Anthropological work on gardens in Melanesia has shown both that they are not solely about food cultivation and that gardeners are creating identities and communal lives (Bolton and Mitchell 2021; Calandra 2017; Nombo, Leach and Anip 2021; Rio 2007b). Bronislaw Malinowski brought Melanesian gardening to the centre of anthropological attention in his famous study on the coral gardens of the Trobriand Islands. He described the Trobriand gardeners' practices of working in their gardens as skilful ways of categorising the environment into untouched bush and cultivated land, making a landscape that both represented how the gardeners work and at the same time the individual becoming a part of the community by learning how to be a gardener (Malinowski 1935). Taking this relational approach even further, Philippe Descola (2013), in his very prominent example from the Americas, argues for dissolving the opposition between nature and cultural practices, showing the diverse relations between people, animals and plants. In his example, the Achuar people, living between the borders of Peru and Ecuador, did not aim to transform plants with their actions but rather showed that their work led to building up and maintaining certain relations. Descola refrained from analysing Achuar practices as transforming pre-defined categories of wild into domesticated, because people themselves do not undertake these distinctions, but rather think in terms of relations, mirroring blood relatives and relatives in marriage in their interaction with plants and animals (ibid., 6). Descola refers to Marilyn Strathern and how people in Papua New Guinea, where horticultural ways of living do not manifest a distinction between wild and domesticated, live in the absence of a concept of the natural environment (Strathern 1980). He compares these thoughts with the garden world of Amazonia, illustrating his narrative through the gardening conceptualisations of how to understand entanglements of humans and non-humans (Descola 2013, 62–70). In both cases, it is not the human who decides how the surroundings should look and domesticate them, but rather a constant enabling of the blossoming of relations between humans and more-than-humans and their surroundings.

The practices of Melanesian gardeners have been described as bridging concepts of culture and nature, including plants, animals and spirits, into a wider network of place-making. In Vanuatu, the collaboration with crops was intended to create genealogical connections to their father's and mother's relatives – taking gardens as social performances (Rio 2007b). The cultivation process does not create a distinction between these those practices; rather, it

encourages a holistic approach to gardening. Instead of viewing these cultivation and genealogical practices as mutually exclusive, it is possible to consider them together as a means of producing food and enhancing communal life: "Taro and Yam do not grow by themselves. They are always part of and embedded in, other relationships. Just like people" (Nombo, Leach and Anip 2021, 368). This also shows that the crops of the garden are embedded in cycles of ritual and practice as more than just food or cultural objects. Gardening itself is associated with ceremonial exchanges and rites of passage. These practices are also influenced by seasonal changes and weather events.

Current examples for Vanuatu show that those relational practices are performed and thus re-constituted in ceremonies, also in context of ecological crisis. Not long after Cyclone Pam and El Niño, people in Tanna, one of the southern islands of Vanuatu, staged a performance called the nieri. It was made with and from numerous newly harvested taro plants, reviving both the gardens after adverse weather events, as well as the social relations that are enacted alongside this (Mitchell 2021). Mitchell interprets this as important for both younger people to connect to activities and for their relationships with the elders: "This cyclone crystallised, for a new generation of Tannese, the multiple ways in which the lives of islanders and food gardens are entwined through sustenance, sociality and spirituality" (Mitchell 2021, 433). As she also emphasises, however, a huge ceremony at that point also showed the strength of the joint work of plants and people. Cyclones can only be faced by taking care of gardens and through this of people (ibid., 437). "Gardens allow people to fulfil social obligations by connecting them to a web of spiritual and material processes" (ibid., 443). Something similar happened in Dixon Reef. The year following the El Niño event, I accompanied some of the younger men on their garden day, were looking for a yam tuber to harvest. Sent by their families to gather the biggest crops for presentation at the next wedding ceremony, the young men were aware of their irreplaceable roles in this. The yam harvest of long tubers, reaching far into the ground, meant strong physical work. When we arrived at the side of the garden plots, one of the young men, being on his way to becoming the next chief of the village, explained that they had planted some of the yams they had received from their elders there, placing them in a separate spot next to the other garden parcels. Two boys took it in turns to dig up this yam with spades. They stood in the hole up to their shoulders in order to remove the entire length of the yam tuber. This team effort was rewarded when they finally uncovered a yam measuring approximately 1.7 metres in length, wrapping it around a tree branch to carry it back home. Back in the village, my host

father admired the yam and posited that he expected many more ceremonies this winter. This was the first time after Cyclone Pam that they had managed to gather enough for exchange in marriage ceremonies. Such ceremonies are of importance to fulfil reciprocal relations and also re-produce persons per se (Rio 2007a). In the following weeks, we harvested some more impressive yams and on one day I took one of these yams on my shoulder while my host family took a photo, feeling the weight of this garden crop and also feeling the importance of this accomplishment for my interlocutors. They managed to contribute to important cultural events from their own gardens, proving that they could both overcome the dry period and take part in forming kin relations.

Recent social science literature on climate change generally also challenges dichotomies of natural causes and social effects, human action and natural reaction (Hulme 2010, 2015). Additionally, the idea of the Anthropocene thus further blurs dichotomies of environmental and social and cultural (Chua and Fair 2019). In the time of anthropogenic climate change, markers of human influences in the form of more extreme weather events and changing land- and waterscapes inflict challenges for all everyday matters of lives. Amelia Moore calls for anthropological research in 'Anthropocene spaces', where the 'conjunctures' of those ideas that anthropogenic alterations again bring new implications for social and ecological live on this planet must be addressed through research. The author brings the island state of the Bahamas into the picture to show how those islands have attracted new international attention and are reimagined through the idea of the Anthropocene. Doing research in such contexts is to understand how these several medial and political globally connected discourses represent the idea of the Anthropocene (Moore 2015). Turning again to Vanuatu and the gardens, I follow Maria Paula Diogo and colleagues, who suggest that ethnographic approaches to Gardens and Human Agency in the Anthropocene (2019) "use the conceptual apparatus being developed within discussions on the Anthropocene to revisit and reassess former concepts associated with gardens and landscapes as localities where nature and culture converge and interbreed" (2019, 6). While all of these above-mentioned examples of Vanuatu certainly illustrate how gardening is about more than the environmental, they also concentrate on performative expressions, special moments of ceremonial encounters. That brings me to the question of what happens in the quotidian works of gardening in Vanuatu, in those moments of the Anthropocene in between performative events.

For Vanuatu, being brought into the politics of the Anthropocene means that gardens and gardening are set into new narratives in which the everyday

practices of food production are politically discussed as practices change for horticulturalists in and with their environments. As Vanuatu gardening in the 21st century becomes involved in climate change discourses, it is framed as a main economic basis for self-supply and cultivation and at the same time is labelled by governmental and non-governmental initiatives as a form of adaptative approach to ensure future lifestyles. How do these garden works become aggregations of negotiation of the Melanesian way of life? I take a closer look at what happens in the daily routines of gardening when it is put in the context of adaptation programmes and politics. Gardens and gardening are therefore not only an indigenous ni-Vanuatu practice but also reflect global matters. This includes the everyday practice as embodied work and how gardening in Vanuatu in the tradition of anthropological work can also be considered alongside matters of the Anthropocene. Sarah Pink considers gardens "as a process" (Pink 2012, 20), thinking in unbounded places towards a practice, "considering how it is not simply something that is done to and in gardens" (ibid., 96). Pink tries to see how garden work is processual in a double sense: as an experience, sensory bodily work that changes the environment, and at the same time how the garden itself can be known (ibid., 94). With my approach of mekem garen, I look at cultivation and communal work to understand what climate change is for ni-Vanuatu in rural areas, in the context of Vanuatu gardening with ideas set within the Anthropocene. This Melanesian practice of working for community and place therefore provides a lens for visualising new ways for future living. Furthermore, this practice is negotiated in relation to future imaginaries (cf. Bryant and Knight 2019) since adaptive measures are designed to aim for a liveable future on the islands (Chapter 6). Vanuatu gardening therefore becomes also a process that stands for more than simply a local example and the gardeners are more than simply the recipients of practical knowledge to be implemented.

1.4 Researching Mekem Garen

This book is part of a growing body of anthropological research on climate change, which is bringing together local activities in matters of planetary environmental crisis. Many scholars researching anthropological climate change encourage ethnographic work as engaged research to make others aware of local issues and their specific perspectives (Crate 2011; Eriksen 2020; Goodman 2018). Others bridge the activist or political claims of local actors (Barnes et al.

2013; Krause 2021). Listening to the many voices in this climate crisis, research is challenged at various levels. Especially in Oceania, opening up the topic brings up Pacific Islander's strivings for emancipation, political independency and justice (Chao and Enari 2021). Sophie Chao and Dion Enari create awareness that what is at stake for island communities is not only their life on the islands, but that they also have to assert themselves against hegemonic knowledge and praxis regimes (2021). My anthropological research plays a part in this. In Chapters 2 and 3, I will explore my interlocutors' engagement with some of those hegemonies, aiming to show that this is characterised by their original approaches of current issues and new conceptualisations of climate change. These new creations have resulted from interested engagement with the adaptation programmes rather than rebellion against them.

In Chapter 2, I describe this as 'climate change worlding' and show that this is ontological work that brings up different climate change worlds – contradicting or complementing, overlapping and defining each other. This contributes to the contextualisation of many and diverse political climate change practices. I aim to understand human action and interaction in the context of climate change as an all-encompassing phenomenon. This ethnography presents an example from the South Pacific and, with it, hints to broader global considerations. This is in line with Crate's definition of 'climate ethnography' as "ethnography for the world" (Crate 2011, 185). Michael Bollig points to a need for a change of perspective when he states that "while the sciences have focussed on the losers of climate change", ethnographic research can "show that there are winners of (the politics of) climate change" (Bollig 2018, 87), or at least that people deal with climate activities on their own terms and have their own ways of explaining what is happening and how to act accordingly. Jerome Whitington proposes "that 'climate change' designates a problem domain rather than a set of authoritative facts […] and stipulates that research must remain open to ontological difference" (Whitington 2016, 7). What Whitington calls ontological differences, I also call ontological assumptions, which work in 'worlding practices' (Blaser and de la Cadena 2018; see Chapter 2). As Arno Pascht and Eveline Dürr remarked in their introduction to an edited volume about environmental transformations in Oceania, this is not searching for the truths, rather it represents an interest in interpreting current activities (Pascht and Dürr 2017, 103) in order to understand the processes of climate change from daily activities and encounters, by including indigenous conceptualisation as one part of the picture.

I recognise that doing social science and anthropological fieldwork raises colonial heritage and therefore current fieldwork needs to attend to hierarchies of knowledge production. Acknowledging one's part in these studies means for many scholars following matters of care about the important stories research partners develop together (Daswani 2021, Declercq and Ayaka 2017). The process of fieldwork is a lot about learning, in various contexts, from, but especially with, people. This also includes unlearning what I brought with me from my institutional, personal and societal background. My research partners were the local experts in this, but in our work, we tried to open up shared spaces for learning. This meant for everyone involved finding ways of communicating what is experienced about current changes. This work has been characterised by various forms of learning through aspects of mekem garen: participating in adaptation workshops, gardening with my interlocutors and research partners, discussing gardening approaches, reflections with NGO and governmental representatives about food security, academic exchanges about Oceanic agriculture and climate change. Just as making a new garden includes a process of working together with humans, plants, soil, the weather and climate, my fieldwork included various forms of learning together with my research partners, in team research and through wider exchange in Vanuatu and Europe. Taking these frameworks and the work of gardening into the methodological process brings together physical labour and cognitive work.

During one of our almost daily conversations in Dixon Reef, the local teacher was searching for ways to explain current important variations in cultivation: "You know, all these questions you ask, we can't answer them, just live it and you'll see." My daily work opened up many contexts to see, but even more to interact with. Martin Sökefeld describes working with people during social science fieldwork as a form of interaction, thus they become 'Interaktionspartner', partners in this interaction, and fieldwork becomes a social process of communicating and acting together (Sökefeld 2007). Especially insular lives in the wake of the environmental crisis in Oceania, like Katerina Teaiwa emphasises, are formed by various connections spread in time and space, to land, sea and the ancestors. This mobilises communal action to 'Remember, Recommit, Resist' (Teaiwa 2018). Most of the people I have worked with see their own perception and actions beyond their own cosmos and island lives (Chapter 4). In this book, I don't specifically single out individual interlocutor's knowledge but want rather to emphasise my learnings through our interactions. I have then tried to put into words my hope that this can be followed by a wider interested community. Furthermore,

these expressions witness cultivation and life at a certain critical time in my interlocutors' lives as they move them forward. Hence, in my writing I refer to learning I experienced through discussions with several people and when describing points of discussions, I generalise or combine several discussions for the purpose of my interlocutor's anonymity.[22]

I accompanied people in Dixon Reef and Siviri walking through their environment and gardening in different spots along the coast and over the hills, in order to gain a "multisensorial embodied engagement" with my interlocutors and their environments (Pink 2009, 25). Experiencing and talking at the same time made it easier for me to ask questions and allowed people to interact by showing what they meant when answering my questions. Living and working together, practical participation in their everyday lives (Ingold 2011) and working with the senses was integral to the research. This was supplemented by various interview methods, which included conversations during work and on the way to our gardening days. These included 'go-along interviews' (Kusenbach 2003) and the visualisation of gardening methods as a basis for joint analysis. When I could not follow villagers on their working days in the bush, we developed walking maps of their movement, which render routes and practices visible for those who were not physically present. This method was inspired by other ethnographic mapping methods in social research (Clark 2011; Powell 2010). This method of 'walkabaots' (walks) was developed together with my research partners during our time in the village (see Chapter 5)

Furthermore, this book is a result of team research together with my anthropology colleague, Arno Pascht. During our months of both joint and individual stays in the village communities, we were complementing insights and findings – what Erickson and Stull name 'witnessing together' – and then discussing findings, sharing field notes and debriefing as key elements of team research (Erickson and Stull 2011). This special from of anthropological research included tandem and individual fieldwork over a period of 13 months from October 2016 to April 2019 on the island of Malekula and on the island of Efate. This followed my own three-month research project in 2015 on climate activism in Port Vila (Hetzel and Pascht 2017). This research collided with Cyclone Pam in 2015 which had an impact on further work, focusing on specific horticultural practices in connection to adaptive measures. The research design for the

22 Living together in the villages was also characterised by explaining anthropological work. Publications and anonymisation options were discussed in all interviews.

team research then envisaged a longer-term period of fieldwork for both researchers at more than one site. We worked in three places in Vanuatu, one urban and two rural. Dixon Reef and Siviri were contacted because they attended workshops in climate change programmes with a focus on agriculture over a longer period of time. This follows an approach to team fieldwork that includes working on the same topic but through the perspective of different members working with different groups or sites, events or time periods (Mackinem and Higgins 2007). Arno Pascht and I had different phases of individual stays, joint discussions and presentations and evaluation. This led to individual stays in the communities, joint meetings with partners such as NGOs and the National Advisory Board for climate change and several meetings between individuals in the communities. In addition to discussing interviews and observations, we considered our own experiences to be part of the fieldwork data (Luhrmann 2010). This included following a full gardening cycle, setting up our own new yam garden and taking on board the expertise of various visitors through instructions, taking this as an affective experience: "emotional reactions, sensory experiences, gut feelings and other embodied sensations" (Turunen et al. 2020, 6). During the period of fieldwork, I relied on experiences being shared as well as separate, with diverse kinds of expertise. I thereby follow an understanding that knowledge is both situated in and influenced by locations (Haraway 1988). During my fieldwork, working with my interlocutors in the garden plots, working with plants and soil, exposed to all weather elements, these experiences demanded incorporation into my work.

When interviewed about his own approach, anthropologist Andrew Scott further proposed approaching fieldwork as a communal learning process, "to attend to what your consultants in the field find puzzling and problematic. What are they preoccupied with or struggling to understand or trying to cope with? What do they wonder about?" (Golub 2014, n. pag.) In the context of climate change adaptation projects, one set of central questions posed by the people who discussed approaches to gardening is reflected especially in 'the case of the abandoned home gardens', small garden plots which were initiated in workshops as safety nets for adverse weather events and climate alterations. They included working in one spot, with specified methods of soil preparation and irrigation (see Chapter 4). In these home gardens, ontological assumptions about gardening came together. All the people involved, NGO representatives and villagers, were irritated by discussions that arose about whether the small home gardens were apt methods to secure livelihoods and why villagers left them behind during the El Niño event. This guidance through research by mo-

ments that might be a source of irritation not only for myself but also for the people I worked with, can be grasped through Anna Tsing's concept of 'friction', in which, through interaction, something new is created. "Attention to friction opens the possibility of an ethnographic account of global interconnection." (Tsing 2005, 6) I pay attention to friction additionally in order to arrive at insights about the topics of my research. I thereby take mekem garen as a Vanuatu practice in the tradition of the constant evolution of knowledge, crops and exchanges with other islands entangled in current climate change activities, including and making new practices. This becomes a way of seeing climate change worlding in its daily routines as a constant process of transformation.

I have put many of these learnings, in situ and in many conversations, into written words. These words will always stand in relation to the many thoughts of the people I have worked with on the topic of climate change.

1.5 Outline of the Book

In Chapter 2, I refer to current discussions of climate change in anthropology and social science research in Oceania, which primarily request, in line with demands from Pacific Islanders, the political and scientific communities to recognise residents of Oceania as actors in the climate change process on every level (Crook and Rudiak-Gould 2018; Farbotko 2010; Lazrus 2012). This demand also runs through a consideration of the issue of climate change as both global and local and leads to the question of who is defining climate change and how it is approached (Hastrup 2018; Hulme 2009). I approach this dynamic of global and local actors through a discussion of, on the one hand, a combination of reception and observation studies (Rudiak-Gould 2012) and, on the other hand, my engagement with encounters in adaptation projects (Pascht 2019). In capturing encounters as potentialities for the creation of something new, I withdraw from considering climate change as a translation from international to national 'ideas' (de Wit, Pascht and Haug 2018). In contrast, I discuss my frame as a production of this global idea at different localities in interactions. I use approaches that take these productive elements into account: Tsing's contribution of 'friction' (2005) and the contribution by de la Cadena and Blaser (2018), who refer to 'worlding practices'. I additionally refer to an approach that is led by ontological questions and ontological assumptions (Holbraad and Pedersen 2017).

Chapter 3 introduces 'worlding practices' in Vanuatu and Dixon Reef. It shows climate change reception in dialogue with urban narrratives, giving insight into discrepancies between what people say and act upon in urban political contexts and what is enacted on the community level. Following Rudiak-Gould's views on climate change as "beyond the environmental" (2016, 261), my interlocutors showed that they refer to both environmental and social changes simultaneously in their conversations about the climate. I argue that people engage with discourses based on natural science, distribute responsibilities between industrialised nations as well as their own actions and have a progressive approach to climate change expressed in their everyday cultivation practices. What they call 'envaeromen' (environment) is influenced by human action in terms of social connections as much as anthropogenic actions. New horticultural practices form a part of climate change for external actors, but also for people in Dixon Reef. The external actors assert that climate change must be addressed through agricultural adaptation strategies. However, everyday Vanuatu gardening is not restricted to food security, for the people of Dixon Reef.

Chapter 4 is the first of three chapters in which I concentrate on encounters of people in connection to gardening practices. It commences with the interactions of villagers and representatives of the Food Security programme over the home gardens – a method for immediate and permanent gardening close to the kitchen. Encounters in the project are characterised by what I call 'ontological friction' (Tsing 2005; Blaser 2009, 2013). I take this ontological friction as a starting point but also present how, through this friction, people living in the Dixon Reef area have indeed worked out practices of gardening in times of change. The case of the abandoned home gardens as the fulcrum of my considerations leads the way to further explorations into gardens and gardening. This is the first chapter in which I ask what gardening is and means for the people of Vanuatu. Further engagement with garden practices through literature in Vanuatu (Barrau 1958; Calandra 2017; Rio 2007b; Walter et al. 2007) and through ethnographic description show that in Dixon Reef, practices of diversification and constant renewal exist alongside each other. People never concentrate on one location for their gardening, but either plant different kinds of plants and varieties together or the same kind of plants in different places. This flexible approach to gardening is my first insight into the definition of gardening in Dixon Reef, and is, in my interpretation, at the same time a valid approach to climate change.

Due to this praxis of cultivating different kinds of plants and planting in different locations, in Chapter 5, I concentrate on gardening through move-

ment. I give ethnographic insights into the work of a gardening day and show how people do their gardening not at one locality but by being in motion. This chapter discusses the conceptualisation of the garden as a place by referring to the social science literature on place (Cresswell 2014; Pink 2012) and approaches to the Vanuatu concept of 'ples' (Bolton 1999; Hess 2009; Rodman 1992). This leads me to further question whether we should consider gardening as place-bound or interpret it as practices of movement. I discuss social science literature about place and practice and complement it with the phenomenological approach taken by Ingold, to which I refer due to his introduction of terms such as 'wayfaring' (Ingold 2007) and 'taskscape' (Ingold 1993). I adopt from this the ideas that practices come first and that gardening is a way of making the environment through movement.

Chapter 6 considers the notion that people in Dixon Reef, through their everyday practices of gardening, also create social relations. Since climate change is a future-oriented topic, this chapter takes gardening as a way of making sociality towards the future. I refer to literature on both sociality (Long and Moore 2012; Strathern 1988) and future (Bryant and Knight 2019; Rollason 2014), both in general terms and for Melanesia in particular, in order to frame the topic of sociality in gardening for the future. Furthermore, I show that people in the Dixon Reef area see gardening as a way of building relations. Although they explain that gardening and sociality are both imposed by change and do this through looking back and looking ahead (Hau'ofa 2008), they also emphasise that the everyday practice of gardening is important for the sheer fact of being alive in a community. People want to do everything they can to ensure that this praxis, although in changed form, will continue in the future.